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**MULTINATIONAL  
ENTERPRISES,  
INSTITUTIONS AND  
SUSTAINABLE  
DEVELOPMENT**

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**MULTINATIONAL ENTERPRISES,  
INSTITUTIONS AND  
SUSTAINABLE DEVELOPMENT**

**ACADEMISCH PROEFSCHRIFT**

ter verkrijging van de graad van doctor

aan de Universiteit van Amsterdam

op gezag van de Rector Magnificus

prof.dr. D.C. van den Boom

ten overstaan van een door het college voor promoties ingestelde  
commissie, in het openbaar te verdedigen in de Aula der Universiteit

op donderdag 21 februari 2008, te 14.00 uur

door Fabienne Nadine Fortanier

geboren te Vlaardingen

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**Faculteit** Economie en Bedrijfskunde

## ACKNOWLEDGEMENTS

According to custom, the acknowledgements of a dissertation are the very few pages in which the 'doctor-to-be' can share a few personal words – implying that the rest of the work is objective, academic, and not personal at all. Yet without proclaiming an adherence to an excessively post-modernist perspective of science, I dare say that the other 300-odd pages of this document are also highly personal. In the first place, the process of writing the dissertation is a strong experience of personal growth. It is a process in which you learn that often, less is more, while you're continuously confronted with the fact that the more you learn, the less you know. It is a process of realizing that what you wrote last night as the top of your possibilities seems child's play in the morning, while anticipating that you'll feel the same tomorrow about what you wrote today. For me, the dissertation writing process has also been a period of much travel, many parallel projects, and way too little time.

But a dissertation is also highly personal in choice of topics and methods. Starting from a background in business administration, I have been intrigued for years by the role that firms play in society, by the great positive and negative emotions – see the anti-globalization movements – that the activities of the largest among them instigate, and by the great divergence in academic findings with respect to the societal consequences of the international activities of multinational enterprises in particular. It is this broad personal interest that has led me to embark on a wide range of different projects and papers in the past years, some of which have now been combined into this dissertation. Some of the papers in this thesis are already polished and published, others still a bit rough on the edges. But I am happy that together, they reflect the variety of topics that I have worked on – even if that has also resulted in a rather broad thesis title. I sincerely hope that these papers also combine the depth and rigor with the breadth and relevance that I believe academics with a sense of 'academic social responsibility' should strive for and that the particular topic of multinationals and development requires.

Luckily, I did not have to do this all alone. I am very grateful for the help of many, both professionally and personally. Without their comments, support, insights, time, advice, attention and suggestions, without their willingness to debate, discuss and explain so many of the large and small issues one unavoidably encounters on the journey of writing a PhD dissertation, and without their friendship and love, this dissertation would be of less quality, and the process of writing it much less interesting and fun.

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I now share my time between the University of Amsterdam and Statistics Netherlands. My new colleagues at SN have given me a warm welcome, and I have been lucky to find a great team of people with whom to tackle the wide variety of issues associated with measuring globalization and its consequences for the Netherlands. Dear Marjolijn Jaarsma, Frits Mullenders, Paul de Winden, Carola Mesters, Ken Arentsen, Giel Steijns, Mark Vancauteran, Martin Luppens and many others, I look forward to continue working with you!

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# 1 INTRODUCTION: DEVELOPMENT IN A GLOBALIZING WORLD

## 1.1 INTRODUCTION

Since the early 1980s, globalization has become one of the essential characterizing features of the world economy (Dunning, 2001a; Held and McGrew, 2000; Friedman, 1998), and it has been predicted to be the defining issue for the 21st century as well (Bhagwati, 2004a). Globalization – or the increased interconnectedness of nations, peoples, and economies – is often illustrated by the strong growth of international trade and foreign direct investment (FDI) in the past 25 years. Yet these economic variables are also strongly intertwined with the political, social, cultural and technological dimensions of globalization (Intriligator, 2004; Dreher, 2006a). Economic integration is facilitated by both unilateral trade and investment liberalization and political cooperation among nation-states in international institutions such as the World Trade Organization (WTO) or in regional integration agreements like the North American Free Trade Agreement (NAFTA) and the European Union (EU) (Dent, 1997; Muller, 2004). Innovations in information and communication technologies have revolutionized the exchange of information across borders and enabled the centralized coordination of internationally dispersed production activities (Castells, 2000; McMahon, 2002; Rifkin, 2000). Globalization is also a cultural and social phenomenon. Migration, travel and the media are often considered to both challenge and fuse existing belief systems and life styles, implying that an emerging – heavily American – ‘global’ culture is at the same time paired with increased, often religiously inspired, conflict (Barber, 1995; Berger and Huntington, 2002; Cowen, 2002; Huntington, 1996).

The expert opinions on globalization are as diverse as its dimensions. There are few other concepts that have yielded so much controversy among academics, policymakers and civil society in the past years. Large differences of opinion exist with respect to the exact definition of globalization and its distinctiveness from previous phases of integration (Streeten, 2001; Modelski, 2000; Jones, 2005). But more importantly, the effects of globalization are highly disputed. The proponents (e.g. Bhagwati, 2004b; Wolf, 2005; Soros, 1998) and critics (e.g. Jenkins, 2004; Stiglitz, 2004a; Hertz, 2001) of globalization strongly disagree about its effects on economic growth, income inequality, human development, employment, labour conditions, and the natural environment – in other words, for the triple goals of economic growth, social justice and environmental protection that together constitute what has been called ‘sustainable development’ (WCED, 1987).

As explained in more detail below, part of the controversy about the sustainable development effects of globalization is caused by a lack of specification of exactly which

dimension of globalization is studied, and of how sustainable development is defined and measured. Yet empirical evidence remains highly mixed for even very narrowly defined research topics. The prominence of globalization and the ambiguity of its effects, combined with the continued struggle of many countries with sustainable development (as document in for example the World Bank's World Development Reports and UNDP's Human Development Reports), point at a strong need for further research in this area.

This dissertation aims to contribute to the debate on the effects of globalization by focusing on economic globalization (as opposed to e.g. political or cultural), and more specifically, on FDI. Foreign direct investment is commonly defined as the investments made to acquire a lasting interest in enterprises operating outside the economy of the investor, in order to obtain an effective voice in the management of those enterprises (UNCTAD, 2006). By engaging in FDI, firms become multinational enterprises (MNEs) – enterprises with activities in more than one country. FDI is often considered to be the defining characteristic that distinguishes present-day globalization from previous eras of integration (Dicken, 1998; Dunning, 2001a; Jones, 2005). Since the early 1980s, FDI has grown at a much higher rate than total world production (Gross Domestic Product, GDP) and international trade. At present, total FDI stock as a percentage of GDP has risen to nearly 25 percent (UNCTAD, 2006). In many developing countries – the focus of most concerns on the negative effects of globalization – FDI has become a prime source of capital investment (OECD, 2002).

As yet however, considerable uncertainty remains as to the impact of FDI on sustainable development in both host and home countries. This is partly because most research on economic globalization has dealt with trade, not investment (Dunning, 2004). But more importantly, the studies that do address the development effects of FDI often tend to treat it as a rather homogenous flow of capital, whereas in fact FDI is highly diverse in nature (Lall 1995; Dunning 1993) and dependent upon the way in which MNEs create their international production networks (Dunning, 1993; Buckley and Ghauri, 1999; Stopford and Strange, 1991; Ruigrok and Van Tulder, 1995). Furthermore, only 500 MNEs are responsible for over 80 percent of worldwide FDI (Rugman, 2000). This means that the (micro-level) analysis of MNEs' characteristics and internationalization strategies is a necessary direction of research in trying to increase our understanding of the impact of FDI on sustainable development.

This chapter sets the stage for addressing the main research question of this dissertation: what is the impact of economic globalization – in particular FDI – on sustainable development? Section 1.2 will first give a more detailed overview of the concept of globalization, discussing its definition(s), the debates surrounding it, and its multifaceted nature, including FDI. Section 1.3 then focuses on development, reviewing how its definition has evolved over the past decades from mere economic growth to what is now called sustainable development. In addition, it summarises the main theories that have been put forward since the 1950s in order to explain how development comes about, paying special attention to the role that these theories have assigned (or not) to FDI and MNEs in the development process. Section 1.4 then turns to the most recent approach(es)

to development that gained prominence in the late 1990s and the early 2000s (as described in detail by e.g. Meier and Stiglitz, 2001). This new way of thinking about achieving development – identified by Dunning (2006) as a ‘New Development Paradigm’ – proposes a much more inclusive framework of analysis for the impact question of FDI compared to previous contributions, highlighting the role of actors (such as MNEs) and institutions. In doing so, this approach raises important new research questions that have not yet received sufficient academic attention. Three of these will be used as leading questions for this dissertation. Section 1.5 specifies how these questions will be addressed both theoretically and empirically, and provides the general outline of this study.

## **1.2 GLOBALIZATION: DEFINITIONS, DEBATES AND DIMENSIONS**

### **Definitions**

While there are already many books and papers written on globalization, it is difficult if not impossible to find two that hold the exact same definition of the concept. Box 1 presents a selection of definitions of globalization suggested by some of the most prominent contributors to the current debate. These definitions characterize globalization as either a fixed state or as an ongoing process, emphasize either the new achievements (‘integration’) or the abolishment of the old (‘barrier reduction’), and accentuate either the positive (‘convergence’) or negative (‘increased MNE power’) potential outcomes. Streeten (2001) has listed an additional 35 definitions, and the combined lists are by no means an exhaustive overview of all the different ways in which scholars have described globalization. Yet, some consensus regarding the main defining features of globalization has emerged (cf. Held and McGrew, 2000): most analysts now agree that present-day globalization is characterized by an increasing worldwide inter-connectedness of nations, peoples, and economies, facilitated by rapid changes in information and communication technologies and economic liberalization – primarily in the area of international trade and FDI.

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peoples, and economies, facilitated by rapid changes in information and communication technologies and economic liberalization – primarily in the area of trade and FDI.

#### **Box 1.1 Definitions of globalization**

- ‘a single underlying idea of ‘de-localization’: the uprooting of activities and relationships from local origins and cultures.’ (Gray, 1998:57).
- ‘an international system that involves the inexorable integration of markets, nation-states and technologies to a degree never witnessed before.’ (Friedman, 1998:9).
- ‘the integration of national economies into the international economy.’ (Bhagwati, 2004a:3).
- ‘the closer economic integration of the countries of the world through the increased flow of goods and services, capital, and even labour.’ (Stiglitz, 2006:4).
- ‘the integration of economic activities, via markets.’ (Wolf, 2005:ix).
- ‘a more advanced and complex form of internationalization, which implies a degree of functional integration between internationally dispersed activities.’ (Dicken, 1998:5).
- ‘the technological, organizational, and institutional capacity of the core components of a given system (e.g. the economy) to work as a unit in a real or chosen time on a planetary scale.’ (Castells, 2000:52).
- ‘the breaking down of national economic barriers, the international spread of trade, finance and production activities, and the growing power of transnational corporations and international financial institution in these processes.’ (Khor, 2001:3).
- ‘the major increases in worldwide trade and exchanges in an increasingly open, integrated and borderless international economy.’ (Intriligator, 2004:486).
- ‘an unparalleled increase in the flow of capital, goods, services, and information [as well as] political, legal and cultural exchanges which are assumed to bring convergence.’ (Esmer, 2006:183).
- ‘the process through which a number of historical world societies were brought together into one global system.’ (Modelski, 2000: 49).
- ‘the widening, deepening and speeding up of global interconnectedness.’ (Held *et al.*, 2000:54).
- ‘the process in which national cultures, national economies and national borders are dissolving.’ (Hirst and Thompson, 1999:67).
- ‘a process of greater integration within the world economy through movements of goods and services, capital, technology and (to a lesser extent) labour, which lead increasingly to economic decisions being influenced by global conditions.’ (Jenkins, 2004:1).
- ‘a word so portentous and wonderfully patient as to puzzle Alice in Wonderland and thrill the Red Queen because it means precisely whatever the user says it means.’ Barnett and Cavanagh (1994:13).

Despite the increased interconnectedness over the past three decades, many authors emphasize that we by no means (already) live in a truly 'global' world – let alone a global village. Much economic activity is still rooted within nation-states (Hirst and Thompson, 1999; Held and McGrew, 2000; Ruigrok and Van Tulder, 1995), and national institutions and economic policies are still central in the creation and distribution of wealth (Dunning, 2001a). Much cross-border trade and investment is still primarily regional (i.e., within North America, and within the European Union), rather than a truly global in nature (Rugman, 2000). In addition, globalization is not a recent phenomenon – there have been previous periods of increased international integration (see e.g. Modelski, 2000; Jones, 2005; Went, 2005); in particular from the late 19th century up until the start of the First World War in 1914. However, most researchers seem to agree that the current phase of globalization differs fundamentally from that in earlier times. Whereas around 1900, globalization mainly occurred through trade and the international movement of portfolio capital, today's world is characterized by deeper integration that takes place at the level of production through FDI (Dicken, 1998, Dunning, 2001a), facilitated by an unprecedented degree of government intervention to reduce the obstacles to international trade and FDI (Bhagwati, 2004a).

### **Debates**

Although controversy over definitional issues continues, the far more important debate with respect to globalization relates to its consequences for national economies, people and the natural environment. Many have argued that globalization has been paired with important improvements in human development indicators, such as life expectancy (from 46 to 64 years between 1960 and 2000), infant mortality (from 149 to 64 per 1000 births in the same period), adult literacy (from 46 to 73 percent), and real GDP per head (from 950 to 1250 US\$) (Streeten, 2001). Cross-country regressions also tend to show that integration into the world economy is positively associated with average annual growth rates (Dreher, 2006b).

But in recent years especially the negative aspects of globalization have received attention, particularly through the protests in Seattle, Genoa, Davos and other locations where G8, WTO or World Bank/IMF meetings were held, by what is often called the 'anti-globalization' movement. This movement encompasses a very diverse set of non-governmental organizations (NGOs) from all over the world, who reflect the increased global awareness – facilitated by the internet (Clark and Themudo, 2006) – of international environmental and social problems. Some of its more radical and militant participants are virulently anti-capitalists (as analyzed by Bhagwati, 2004b). But others have also expressed their concerns and critique in both the public and academic debates with respect to the negative impacts of globalization.

Stiglitz (2006), Intriligator (2004) and Amoore (2005) summarize the main points of discontent brought forward by the critics of globalization. They mention for example that critics argue that globalization inherently leads to increased financial risk and instability. Particularly the globalization of capital markets for short-term capital flows may have devastating and contagious consequences, illustrated by the Asian Crisis in the late 1990s



(Stiglitz, 2004a; 2004b). Interestingly, many proponents of globalization agree that capital-market liberalization and the inflow of short-term capital may hamper rather than help growth in emerging markets, and should hence be planned very carefully (Soros, 1998; Bhagwati, 1998; Mukand, 2006; Wolf, 2005).

A second issue of discontent is the shift of state sovereign power to on the one hand MNEs, and on the other hand, international organizations like the International Monetary Fund (IMF), the WTO and the World Bank. The prospect of the arrival but also withdrawal of investment by MNEs creates significant leverage for MNEs over policy makers (Gray, 1998) and may force states to cut down some of their social security systems that enhance labour cost (Adelantado and Calderón, 2006, Dreher, 2006a). The main critique on the IMF, WTO and World Bank is not only that they have imposed structural adjustment policies upon countries dependent on them for aid (Stiglitz, 2002), but also that they have made decisions that affected the lives of the millions of the world's poorest people who have no voice in these institutions (Jenkins, 2004).

But the main two points of concern regarding the effects of globalization as discussed by Stiglitz (2006), Intriligator (2004) and Amoore (2005), are firstly, that the distribution of the (potential) benefits of globalization is highly unequal, meaning that globalization leads to increased inequality and poverty, and secondly, that globalization advances material values and a focus on growth, with detrimental effects for employment (jobless growth) and the environment (increased production, consumption and transportation deplete resources and increase emissions and pollution). As these two themes are central to sustainable development and hence this dissertation, they are elaborated in a bit more detail below, including a review of the recent response to these concerns by the advocates of globalization, such as Wolf (2005) and Baghwati (2004a).

#### *Distribution of (potential) benefits*

One of the key arguments of those concerned with the distribution of the benefits (growth) of globalization is that in contrast to what many proponents assert, there are no guarantees that this distribution is equal, and for the benefit of all (Gomory and Baumol, 2004; Jenkins, 2005). Some even argue that globalization is the opposite of a universal state of equal integration in the world economy, as it works exactly because of cross-country differences (Gray, 1998). In particular 'main stream economists' (Gomory and Baumol, 2004; Kiely, 2005) (often also including IMF and World Bank employees) are criticized, for ignoring the short-term adjustment costs associated with increasing openness to trade and investment, which are argued to be potentially very large and painful, but also to last for decades (Gomory and Baumol, 2004). In addition, these economists are blamed for misinterpreting the poverty reduction in Asian emerging markets, which is argued to have occurred despite pro-globalization policies, and not because of them (Kiely, 2005). Ultimately, the critique boils down to the statement that mainstream economists conflate weak correlations between openness, growth and poverty reduction, with a strong claim of causation (Kiely, 2005, Jenkins, 2004). Several studies have now established that the effect of globalization on income distribution is

based on initial income levels (Ravallion, 2001) and that the poor in poor countries do not benefit much from trade (Milanovic, 2005; Jenkins, 2004).

The proponents of globalization (e.g. Wolf, 2005) in contrast tend to argue that globalization is good for the poor and reduces inequality. For example, an often-quoted study by the World Bank (2002) compared countries that were classified as ‘globalizers’ and ‘non-globalizers’ based on their growth of trade-openness, and concluded that globalizers experienced more economic growth. Similar results were obtained by Dreher (2006b). In addition, a famous study by Dollar and Kraay (2002) also concluded that the poor benefited one-for-one from economic growth (which is in turn is affected by globalization), a conclusion that was reiterated by Kraay (2006) who found that in the long run, growth is good for the poor, and hence does not lead to increased inequality. A final argument in favour of globalization is provided by Auer (2006), who argues that even if the net costs and benefits of globalization are difficult to establish, the countries that are excluded from the process are, and remain, the poorest, and hence experience too little, rather than too much, globalization.

**Table 1.1 Trends in global income inequality, 1950-2001**

	1950	1960	1970	1980	1985	1990	1995	2000	2001
<i>Global Inequality</i>									
GDP Ratio <sup>1</sup>	36.2	33.9	32.7	32.2	30.2	34.2	39.2	47	47.2
Gini Coefficient <sup>2</sup>	0.549	0.545	0.539	0.525	0.517	0.536	0.509	0.538	0.545
								0.545	0.543
<i>Average income as percentage of the North</i>									
South as a whole	19.3	18.6	16.2	15.9	15.3	14.5	14.6	-	14.9
Africa	15.8	13.6	11.7	10.3	8.9	7.7	6.8	-	6.6
Latin America	44.4	40.0	34.3	36.1	30.7	26.9	27.5	-	25.8
Asia (incl. China)	11.2	10.9	9.5	9.9	10.8	11.3	13.5	-	14.5
China	7.8	8.6	6.7	7.1	9.2	9.9	13.4	-	15.9
<i>World Bank WDI figures of global income ratios</i>									
Richest/poorest 20%				45.7		33.9		29.5	
Richest/poorest 10%				78.9		64.2		57.4	
Richest/poorest 1%				216.2		275.7		414.6	

<sup>1</sup> Ratio of the average GDP per capita of the 10 highest to 10 lowest ranking countries

<sup>2</sup> Coefficient of inequality where 0 represents perfect equality and 1 perfect inequality. Data are unweighted by population, for 107-149 countries. Series break due to split up of USSR, Yugoslavia, and Czechoslovakia.

Sources: Compiled from Sutcliffe (2004), citing Maddison (2003) and World Bank (2003)

How can academics that study the same phenomenon – global inequality – come to such widely differing conclusions? A major part of the disagreements on whether globalization leads to increased inequality is caused by the many different ways in which inequality and poverty can be measured, and which countries are considered. Stiglitz (2006) describes that as a general trend, globalization in the last two decades of the 20<sup>th</sup>

century has been paired with a small decrease in the percentage of poor, but an increase in the absolute number of poor people. Excluding China, the percentage of poor also has increased (from 36 to 40 percent between 1981 and 2001 using the 2 US\$ per day poverty line as criterion, or from 13 to 16 percent in that period for the 1 US\$ per day standard). Aisbett (2005), who compared some of the most authoritative poverty statistics, showed a difference in head-count of poor people in 1998 of 350 million (6.7 percent of the world population) to 2.8 billion (56 percent), and average changes between 1987 to 1998 ranging between +23 to -31 percent, depending on the poverty line chosen, the currency conversion method used, and whether household or national account data were taken. Sutcliffe (2004) finds similar discrepancies in measures of global income inequality, as illustrated in table 1.1. This table shows inequality measured by several indicators, some showing increasing, and others decreasing inequality. Taking a very longitudinal perspective, Bourguignon and Morrisson (2002) find that world income inequality worsened dramatically over the past two centuries, but remained relatively stable from the 1950 to the last date of their measurements, 1992.

In short, it is difficult to tell at present whether global poverty and inequality has increased or decreased over the past decades. In addition, globalization itself has been measured in various ways in the studies reviewed above. For example, although globalization in this context has been primarily understood – relatively narrowly – as trade, it has been measured by both the growth of the trade-to-GDP ratio (World Bank, 2002), and absolute levels of trade-openness (Wade, 2004; Jenkins, 2004 and Kiely, 2005). Finally, even among studies using the exact same variable definitions, results may differ due to sample selection (Aisbett, 2005). This means that definite conclusions on the causal relationship between economic globalization and inequality are yet hard to come by.

#### *Employment and environment*

Other issues of discontent with respect to globalization include its potential harmful impact on employment and the environment. Particularly for developed countries, many fear a decoupling of growth from job creation, partly due to increased competition from low-wage countries (Klein, 2000; Forrester, 2000; Korten, 1995). A key concern for many workers is to either lose their job or be forced to take a lower-quality one (Auer, 2006) as a consequence of outsourcing and off-shoring by MNEs. These concerns have even induced observers to predict a ‘20-80 society’, where only 20 percent of the population is necessary for production of all goods, and where the ‘superfluous’ 80 percent needs to be remained subdued by a combination of food and entertainment (Martin and Schumann, 1996). These fears for the employment consequences of globalization are not entirely unwarranted, as studies by Kletzer (2005) and Barnet and Cavenagh (1994) show, although net effects are easier to establish by sector than at a national level (Gomory and Baumol, 2004), and some studies highlight that over time, offshoring may also increase domestic employment (Bruno and Falzoni, 2003).

For developing countries, the social costs are primarily seen in the area of low wages and inferior labour conditions for employees of MNEs and their subcontractors, particular in

export processing zones (EPZs) (Klein, 2000). However, as Moran (2002) noted, FDI into such low-wage, low-skill activities such as the fabrication of garments, footwear and toys represents only a small part (less than 4 percent) of total FDI to developing countries. The overall majority of FDI is in more advanced industrial sectors such as electronics, auto parts, and pharmaceuticals, where jobs are better. In addition, Moran (2002) suggested that the alternative for many employees in low-wage, low-skill activities is worse, and argued that no other employers would create that many entry-level jobs for disadvantaged groups of the population, including women and minorities. MNEs are also known to pay higher wages than local firms (Caves, 1996), and to the extent that FDI leads to economic growth, wages also rise as a consequence of FDI, as for example the Chinese case showed (Yao, 1999).

With respect to the debate on the environment, those discontented with globalization – as summarized by Stiglitz (2006), Intriligator (2004) and Amoore (2005) – highlight two points. First, the increased production, consumption and transportation of goods due to globalization places a high burden on the natural environment via both the increased use of natural resources (e.g. oil, minerals, water), and increased pollution of soils, air, and water (e.g., greenhouse gas emissions). Proponents of globalization point out that the technological innovations associated with globalization increases the efficiency with which such resources are used, and that as incomes rise the demand for environmentally friendly goods increases too (the environmental Kuznets curve; cf. Grossman and Krueger, 1995). But the conclusion is generally that growth in production has outpaced that of materials and energy efficiency in the past 200 years (UNEP, 2005). Secondly, MNEs are accused of searching for ‘pollution havens’, those locations (often in developing countries) where environmental standards and the enforcement of those standards are lax, and where firms may locate their most polluting activities to escape the more critical public eye in developed countries. This would result in a ‘race to the bottom’ in environmental standards, in a global competition among countries for investments. Although there is limited evidence beyond case studies (Lucas *et al.*, 1992; Smarzynska and Wei, 2001; Wheeler, 2001), or certain sectors (Xing and Kolstad (2002) that such behaviour indeed occurs, there has been some evidence that competitiveness concerns have dampened governments’ enthusiasm to raise environmental standards (see Mabey and McNally, 1999; Nordstrom and Vaughan, 1999). Overall however, for both the social and environmental dimension of sustainable development, the consequences of globalization are far from clear.

### **Dimensions: a focus on FDI and MNEs**

The review of the previous section illustrated the main issues of debate on the effects of globalization. While many participants in the debate often have a political instead of an academic agenda, the claims of neither the proponents nor opponents are without empirical base. Indeed, a substantial part (though certainly not all, see chapter 2) of the controversy around globalization could be attributed to differences of opinion on what globalization actually is (or should be), and what the relevant dimensions and measures of economic, societal and environmental impact would entail. These different approaches

to conceptualizing globalization result in different research findings (Sumner, 2004). The fact that many observers generalize their findings on the effect of a partial dimension of globalization to the entire concept further obscures the debate (Jenkins, 2004). As Bhagwati (2004a: 7) summarizes: ‘...the popular discourse on globalization has tended to blur the lines between the different dimensions [of globalization] and speaks of globalization and its merits and demerits as if it were a homogeneous, undifferentiated phenomenon’.

Instead, globalization is clearly a multidimensional concept. Bhagwati (2004a) identifies trade, FDI, short-term capital flows, migration, and technology as the five main dimensions of globalization. Similarly, Intriligator (2004) identifies the economic, political, security, environmental, health, social and cultural dimensions of globalization. Stiglitz (2006) mentions – in addition to the economic dimensions of globalization - the international flow of ideas and knowledge, the sharing of cultures, global civil society, and the global environmental movement. Sumner (2004) distinguishes between policies towards globalization (e.g. reduction in tariff barriers) and the actual degree of globalization (e.g. the amount of trade to GDP). Also authors who aimed to measure ‘globalization’ as a concept, have tended to use composite indices consisting of a wide range of economic, political and social variables (Dreher, 2006a; Martens and Zywiec, 2006). However, many of those who insist on clarifying these dimensions are also guilty of blurring them themselves: much of the evidence Bhagwati (2004a) presents relates to the effects of trade, which he then generalizes to the entire phenomenon of globalization. Stiglitz (2004a, 2004b) critically analyzes the negative aspects of capital market liberalization, but summarizes his findings as general effects of globalization.

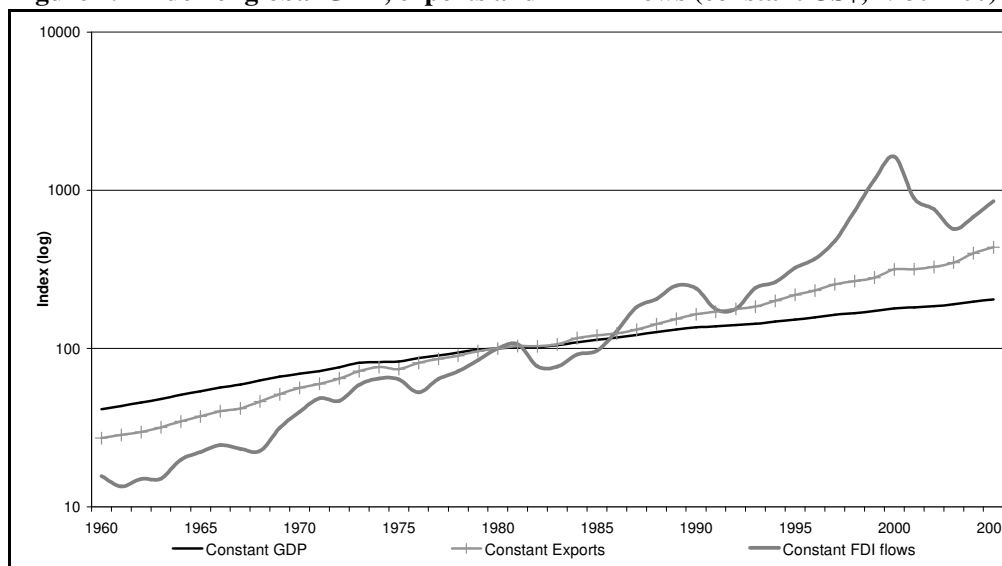
This dissertation seeks to avoid such confusion, and hopes to clarify rather than obscure the globalization debate by focusing on one dimension of (economic) globalization: FDI, or the activities of multinational enterprises. There are several arguments to favour the study of this dimension of globalization above all others. Firstly, as highlighted above, FDI is considered to be the defining characteristics of present-day globalization in comparison to previous phases (Dunning, 2001a, Jones, 2005, Dicken, 1998). Whereas around 1900, globalization mainly occurred through trade and the international movement of portfolio capital, today’s world is characterized by deeper integration that takes place at the level of production. Although trade continues to be important, Foreign Direct Investment (FDI) now forms a profoundly important linking pin between national economies.

Secondly, FDI and MNE international activity in general is also one of the most important dimensions of economic globalization. From the 1980s onwards trade and FDI have increased each year, both growing faster than total worldwide production. But FDI growth rates were considerably higher than the growth rates of international trade (see figure 1.1). In 2005, more than a third of all production is traded across national borders, and total foreign direct investment (FDI) stock as a percentage of gross domestic product (GDP) has risen to nearly 25 percent (UNCTAD, 2006). At the moment, more firms, and in more industries and countries than ever before are expanding abroad through direct

investment. MNEs play a decisive role as creators and disseminators of wealth in the present phase of globalization (Dunning, 2001a; Stiglitz, 2006).

Thirdly, in developing countries, on which most concerns on the negative effects of globalization are concentrated, FDI has become a prime source of external funding and capital investment, a point which by itself justifies a thorough evaluation of its impact.

**Figure 1.1 Index of global GDP, exports and FDI inflows (constant US\$, 1980=100)**



Source: GDP, Exports: World Bank WDI; direct investment flows: compiled from IMF IFS data.

Official development assistance (ODA) has remained stable, while FDI flows to developing countries have substantially increased in the 1980s and 1990s (OECD, 2006). The final argument in favour of a study of the effects FDI and MNEs is that considerable uncertainty remains as to the impact of FDI on development for both host and home countries. Most research on globalization focuses on trade, not on investment (Dunning, 2004). And even if studies focus on investment, they primarily consider macro-economic flows and not the individual strategies of (groups of) MNEs. Since only a relatively small set of MNEs (approximately 500) is responsible for the overall majority (80 percent) of global FDI (Rugman, 2000), the (micro-level) analysis of MNEs' characteristics and internationalization strategies may be an interesting and potentially fruitful direction of research in trying to increase our understanding of the impact of FDI on sustainable development. This aspect will be further reviewed in Chapter 2.

### 1.3 DEVELOPMENT: CONCEPTS AND THEORIES

#### Development: an evolving concept

One of the difficulties in examining the relationship between FDI and development is the very definition of 'development'. Since the 1950s, the definition of development as used

in both academic and policy debates has become increasingly inclusive. Up until the 1950s, development equalled economic (or GDP) growth, which was to occur through industrialization. An explicit distinction between economic growth and economic development was only made in the 1960s and 1970s by Furtado (1954), one of the leading Latin American economists of those days. Stressing the importance of both structural factors and technological advantage, he argued that economic development implied that economic growth should be self-sustainable, without dependency on more developed countries for industrialized and high-tech products.

In the early 1980s, the UN Development Programme's Human Development Reports stimulated the incorporation of a social dimension into the economic goals. Based on the work of in particular Amartya Sen (1973), Human Development was defined as the process of enlarging people's choices, by expanding human functionings and capabilities. This refers to the capability to lead a healthy and productive life, to communicate and participate in the community, and to move around freely. Echoes of this definition can also be found with Stiglitz (1998:3) when he explained that 'development enriches the lives of individuals by widening their horizons, [by] increasing life spans [and] improving the vitality of life.' The Human Development Reports advanced the Human Development Index (HDI), which has become an authoritative means of comparing welfare between countries. Not only economic growth was considered important, but also the distribution of this growth, as well as education, labour standards and human health.

The most recent extension of the definition has been the inclusion of broader sustainability concerns. Nowadays, the definition of 'sustainable development' – a term coined by the World Commission on Environment and Development (WCED, also known as the 'Brundtland Commission') in 1987 – includes economic growth, social justice and environmental protection, in order to 'meet the needs of the present without compromising the ability of the future generations to meet their own needs' (WCED, 1987:43). This definition is used in this dissertation.

Partly because of its increased inclusiveness, considerable disagreement continues to exist over the definition of development. Kanbur (2001) distinguishes three main areas of disagreement. First, the level of aggregation at which development is measured may differ from macro to micro. Overall national economic growth (macro) may not necessarily mean that the situation of each (sub-group of) individual(s) (micro and meso) has improved as well. Secondly, the time-horizon used may range from short-term (1-2 years), via medium (5 years), to (very) long term (more than 10 years). According to Kanbur (2001), those concerned with the medium term (mostly the 'traditional' economists) tend to disregard that due to adjustment problems, in the short term 'people may already be dead'. Similarly, medium-term policies may not be (environmentally) sustainable over the long term. The third difference relates to market structure and power. Some contend that markets are always competitive and the best way to allocate resources. Others argue that markets are not by definition competitive, and that large oligopolies, or the increasing bargaining power of capital versus labour stemming from internationalization of firms as such, makes that markets are not always the best way to allocate resources, and that state intervention is necessary.

The economic, social and environmental dimensions of sustainable development each cover a wide range of variables. The economic dimensions of development – which continue to be the most frequently addressed in the development debate – includes for example not only (productivity) growth, but also trade or domestic capital formation. The social dimension includes income inequality and poverty, but also education, health, and labour and human rights. Environmental dimensions could be measured by deforestation, depletion of (non-renewable) natural resources, biodiversity, emissions and pollution levels. The likely impact of FDI on these dimensions differs widely in size and direction (positive or negative). It is the balance of these individual issues that ultimately determines the impact of FDI on development.

Despite these disputes, there does seem to be an emerging consensus regarding the common elements of development. Stiglitz (1998) identified education, infrastructure, health, knowledge, and capacity building, and noted that a development strategy should be consistent with the natural environment within which it is embedded. Politically, this consensus is reflected in the UN Millennium Development Goals – a set of eight concrete though ambitious development goals that governments worldwide have committed to achieve by the year 2015 (see box 1.2).

#### **Box 1.2 The UN Millennium Development Goals**

- |    |  |
|----|--|
| 1. | Eradicate poverty and hunger                 |
| 2. | Achieve universal primary education          |
| 3. | Promote gender equality, empower women       |
| 4. | Reduce child mortality                       |
| 5. | Improve maternal health                      |
| 6. | Combat HIV/AIDS, malaria, and other diseases |
| 7. | Ensure environmental sustainability          |
| 8. | Develop a global partnership for development |

#### **An overview of development ‘paradigms’**

While the definition of development has extended over the past decades, theorizing on how to become more developed has continued to focus on economic growth. Development economics has traditionally been the field in which most theoretical contributions on how to achieve economic growth (and development more generally) can be found. The debate on the nature and causes of inequality between the ‘rich’ North-western Hemisphere and the ‘poor’ rest of the world has led to an abundance of theories. Although there are many differences among them, several different main groups of theories on economic development have traditionally been distinguished. These include the Western European Modernizers, the Latin-American Dependency school (including the World-System theorists), and the Neo-classical school. After an impasse in the 1980s, development economics has recently been broadened by influences from other academic disciplines, which resulted in approaches including New (or Endogenous) Growth theory.



**Table 1.2 Overview of theories**

	Key contributions	Role for FDI	Main points of criticism
<i>West European Modernity</i>	<ul style="list-style-type: none"> <li>• Importance of systematic reallocation of factors of production from low productivity (agriculture) to high productivity (industry) sectors.</li> <li>• Importance of capital investment, also in public goods as infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• FDI was warmly welcomed as a means to complement local savings to reach high levels of investment.</li> </ul>	<ul style="list-style-type: none"> <li>• No attention for human capital in raising productivity</li> <li>• Development assumingly occurred in isolation of external economic and political influences</li> <li>• Very a-historical, development was a standard process where each nation needed to go through</li> </ul>
<i>Dependency &amp; World Systems</i>	<ul style="list-style-type: none"> <li>• Focus on the global economic system and the international dimension of development</li> <li>• Explicit mentioning of the role of FDI in development</li> </ul>	<ul style="list-style-type: none"> <li>• In the 1940s, FDI was seen as possibility to add to local savings, together with import substitution</li> <li>• In the 1960s and 1970s, FDI and MNEs were conceived as extracting capital from the developing countries, and too capital-intensive. FDI was discouraged.</li> </ul>	<ul style="list-style-type: none"> <li>• States do not have control over their own fate</li> <li>• Structure of the world is by definition harmful</li> <li>• State centric, and serious cases of government failure</li> </ul>
<i>Neo-classic approaches</i>	<ul style="list-style-type: none"> <li>• The role of government failure</li> <li>• Importance of the allocation of resources as source of growth</li> <li>• Importance of trade as means to reach growth</li> </ul>	<ul style="list-style-type: none"> <li>• FDI as a firm-level decision is difficult to explain within the boundaries of the theory. Yet, as a factor of production ('capital') it was hypothesized to be attracted to places where it was scarce: developing countries.</li> </ul>	<ul style="list-style-type: none"> <li>• Hypotheses are incompatible with (developing country) reality</li> <li>• No model of dynamic growth (only static)</li> <li>• Technology is exogenous, sources of it are ignored</li> </ul>
<i>New Growth Theory</i>	<ul style="list-style-type: none"> <li>• Knowledge and technology drive growth.</li> <li>• Markets tend to monopolistic competition.</li> <li>• History, institutions and place matter</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing returns means that FDI exacerbate existing differences. Yet, in knowledge intensive industries, FDI can contribute through spillovers, especially of tacit knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• The openness of economies makes it difficult to assess whether knowledge spillovers actually occur</li> <li>• The assumption of constant returns on capital is very restrictive and not realistic</li> </ul>

The 'core' question of each of these theories does not address the role of FDI specifically, and most contributions in development economics have dealt with the issue of foreign investment only implicitly or in passing. Yet important insights have been generated by these approaches on the mechanisms through which FDI contributes to development. As elaborated below and summarized in table 1.2, Western European Modernizers started the debate in the 1950s by highlighting FDI's contributions to total savings and investments. The Dependencistas and Neoclassical theorists mainly debated on the nature of the competitive and linkage effects of FDI, while New Growth theory stressed the potential technology transfer effects of FDI. This coarse classification does

not do full justice to all the intricate dimensions and processes of development that contributors to development economics have identified. That is also not the purpose of this review (But see for example Hunt (1989), Leys (1996), Todaro (1997), Cowen and Shenton (1996), Baeck (1998), Kindleberger and Herrick (1977), or Meier and Stiglitz (2001) for more detailed overviews of the literature). However, a somewhat better understanding of the theoretical ‘quest for growth’ (Easterly, 2002) should both facilitate and embed a discussion on the contribution of FDI to (sustainable) development.

### **Modernizers**

A first group of development theories came up at the end of the 1940 and in the 1950s and involved mainly Western European scholars. These early Western theorists were concerned with the question of how to raise savings in developing countries. Inspired by the American Marshall Plan for Europe that suggested that large capital injections promoted development, they saw savings and investments as necessary condition for a ‘big push’ that would move developing countries out of the low-income-level equilibrium trap (Leibenstein, 1957) and to the stage of ‘take-off into self-sustained growth’ (Rostow, 1956). The emphasis on capital as stimulus for growth has been most straightforwardly formulated in the Harrod-Domar equation (cf. Harrod, 1939; Domar, 1947). This equation states that the rate of economic growth is determined by the level of savings and the capital-output ratio. Hence, in order to enhance economic growth, countries should both increase the level of savings and reallocate the factors of production from sectors with a low capital-output ratio (mostly primary products sectors) to sectors with high capital-output ratios (modern, mostly industrial sectors).

One of the main means to complement low domestic savings was to stimulate FDI. Though mainly treated as a flow of capital (and not for example as source of new technology), FDI was welcomed unanimously by the Western European theorists. This investment could either be equally spread across sectors of the economy (balanced growth, as supported by Rosenstein-Rodan (1943) and Nurkse (1953)), or be aimed at ‘growth poles’, that offered the possibility of forming an international comparative advantage (unbalanced growth, see Hirschman (1959)). By adding to the host country’s savings and investments, FDI may enlarge the production base at a higher rate than would have been possible if a host country had to rely on domestic sources of savings alone. FDI may thus build up sectors or industries in which local firms have not invested, enlarge the scale of existing plants or industries, or prevent existing firms from closing.

This approach of Modernization met with several points of critique, as summarized by Knoke (1990). Firstly, the sources of change and modernization were considered to lie within the nation, implying that development occurred in isolation of external economic and political influences. Secondly, the theories were largely a-historical, assuming a standard process where each nation should go through, independent of changing circumstances and (international) context. Finally, the role of human capital, knowledge and technology (in addition to) in raising productivity was not addressed.

## **Dependencistas**

A different cluster of theories originated in Latin America. In the Southern Hemisphere, the relatively positive attitude towards FDI that existed in the 1940s (Prebisch, 1949) radically changed in the 1960s, due to the growing disenchantment with the increased foreign control of Latin American industries. The so-called Dependency theorists (and World Systems approaches, see e.g. Wallerstein, 1976) pinpointed the structure of the international system as the main obstacle for the development of 'peripheral countries'. Foreign multinationals were thought particularly harmful as they consolidated and even strengthened the dependent position of developing countries (Furtado, 1954; Cardoso and Faletto, 1971; Frank, 1967; Sunkel, 1973).

Particularly the competitive effects of foreign MNEs and their (lack of) ties with local suppliers and buyers were considered to be detrimental (Biersteker, 1978). MNEs were thought to displace rather than reinforce production by local firms, either by directly crowding out comparable indigenous firms or by impeding the start-up of local firms. Also in labour markets (in particular those for skilled labour) and capital markets (credit), foreign firms were perceived to crowd out local firms. As MNEs were also strongly vertically integrated, the possibilities for linkage creation, e.g. in the form of buying from local suppliers, were very limited. The combination of these elements meant that capital outflows, in the form of profit repatriation and imports of intermediate products needed for MNE production, offset the capital inflows associated with MNE activity (Beer, 1999), possibly also due to the manipulation of transfer prices (Biersteker, 1978). MNEs were conceived of as gigantic 'suction pumps', extracting capital from the Third World to the First (Jenkins, 1987; Jansson *et al.*, 1995). The Dependency theorists also stressed other negative effects of multinational activity such as the lack of technology transfers and the inappropriateness of the technologies used – their capital-intensive nature contributed to massive unemployment, see Grieco (1986) – and its effect on income inequality (creating 'elite' labour).

## **Neo-classical economics**

When in the 1970s and 1980s a group of semi-industrialized countries in Asia achieved high growth rates after their insertion in the global economy, the attractiveness of the Dependency school stalled. The 'East-Asian Miracle' was allegedly much better explained by a third group of theories, the Neo-classical school. These Neo-classical theorists believed the (international) market to be most effective in allocating resources and maximizing aggregate economic welfare (cf. Bauer, 1984; Little, 1982; Bhagwati, 1977; Krueger, 1985). Especially the liberalization of international trade was advised, as goods could then be produced in (and exported from) the country where they could be made most efficiently, to the benefit of all parties concerned. Despite several later modifications or nuances to the model (strategic trade theory, the role of imperfect information), the neo-classical model remained based on the assumption of perfect competition that would put capital to its most efficient use.

The Neo-classical model focused mainly on trade, and not FDI. Indeed, the initial classical models were based on the assumption of immobility of factors (including

capital). And when FDI was included (Mundell, 1957), severe problems remained in explaining its occurrence: capital was predicted to flow to places where it was scarce and hence had a high return – highly inconsistent with observed patterns of FDI.

The mid 1980s witnessed an impasse in development theory (Schuurman, 1993). Although empirical research continued, it lacked an overall paradigm such as ‘dependency’. The rationale for this crisis in development theory laid first and foremost in the lack of results of development policies based on previous theories. Especially socialism was dismissed as viable alternative for capitalism, when growth in the Communist countries had stunted and the Berlin Wall collapsed in 1989. Only Neo-classicism was not affected, and it has – with a few modifications – remained the dominant stream in development thinking.

### **Endogenous growth**

Several approaches have aimed at filling the ‘gap’ in development theory. One of the most influential contributions to development theory is the so-called ‘New’ or ‘Endogenous’ Growth Theory, based on the work of Romer (1986) and Lucas (1988). New Growth Theory is a further elaboration of, rather than an alternative for, the neoclassical model. According to the New Growth theorists, ‘neoclassical theory is not wrong, but [...] incomplete’ (Cortright, 2001:1). Instead of viewing technology and knowledge as exogenously given (as in Neo-classical theory), New Growth theory considers technological progress as a product of economic activity. Technological progress is based on knowledge, which in contrast to physical factors of production, is characterized by increasing (instead of decreasing) returns on scale, as it is a non-rival good. Additional use of the knowledge has negligible marginal costs. According to New Growth theorists, the interaction between increasing returns on knowledge with the decreasing returns on physical capital results in a constant return on total capital. This constant return on capital drives dynamic growth.

The focus on technology as driver for growth in New Growth theory has already often been used to explain the importance of the skill and technology effects of FDI for domestic firms (see Ramírez, 2000; Baldwin *et al.* 1999; Borensztein *et al.*, 1998). These effects occur when new managerial or organisational skills, new products and new production processes are transferred – intentionally or unintentionally – to local firms. Since MNEs are concentrated in industries that exhibit a high ratio of R&D relative to sales and a large share of technical and professional workers (Markusen, 1995), they would be excellent sources of knowledge. New Growth theory provides a framework in which FDI can permanently increase the rate of growth in the host economy through technology transfer, diffusion and spillover effects (Nair-Reichert and Weinhold, 2001). Romer himself (1993) even highlighted the role that foreign firms could play in closing the ‘idea gap’ between developed and developing countries. He argues that nations are poor because its citizens do not have access to the ideas that are used in industrial nations to generate economic value, due to the reluctance of countries (e.g. due to their colonial heritage) to let foreign investors move in and interact with local firms.

## 1.4 TOWARDS A NEW DEVELOPMENT PARADIGM?

As the review above showed, development theories did not explicitly address the role of FDI until approximately the mid 1990s, although various theories did implicitly highlight that FDI could be a factor in host country development via its contribution to the capital stock, the transfer of technology, competition, and the creation of local linkages and trade. However, the most recent contributions have moved beyond the mere economic approach that has dominated development studies for a long time, see e.g. Greig *et al.* (2007) or Acemoglu (2004). The volume edited by Meier and Stiglitz (2001) on the frontiers of development economics is particularly illustrative: in the foreword, Stern (2001: viii) notes that “the understanding of well-being, and thus poverty, has gone beyond income.” The introduction by Meier (2001:3) provides an illustration of the changes in various dimensions of development theory since the mid-20th century, and describes a change of development goals towards sustainable development, theoretical changes towards New Growth theory, an increased focus on social (as opposed to physical) capital, an emphasis on getting the institutions right as a key role for governments in the development process, and the complementarity of states and markets. Meier (2001) suggested that the main task for future researchers in the field of development economic was to study these themes in much more detail. These new approaches to achieving development are also evident in the 8th UN Millennium Development Goal, that calls for a global partnership for development, in which public, private and non-governmental actors each play an active role

This new and broader approach to the means and ends of development have been suggested to form a ‘New Development Paradigm’ (Dunning, 2006) – as compared to an ‘Old Development Paradigm’ that constitutes primarily neo-classical economic thought. The New Development Paradigm (NDP) is a reflection of the new theoretical views and empirical evidence with respect to what ‘development’ ought to encompass, and how it should be achieved, and has been critically influenced by the works of Nobel-laureates Stiglitz (1998), North (1994, 2005) and Sen (1999) (cf. Dunning, 2006). The paradigm gained prominence in the mid-1990s, when a combination of trends and events – including the fall of the Berlin Wall, the advent of globalization, the greater awareness (due to the spread of ICT and internet) in the Western world of the development problems elsewhere, and the sometimes disappointing results of development policies based on neo-classical thinking – induced academics and policy makers to reassess their views on the nature of development and the development process.

The NDP includes three innovations compared to previous approaches to development (Dunning, 2006; Dunning and Fortanier, 2007). First, the NDP proposes to address a much wider range of development aims, including social and environmental development next to economic growth. It hence reflects the shift towards a more inclusive definition of development that has already been described above. Secondly, the NDP acknowledges that firms – domestic and foreign – play an active role in the development process (as do other actors such as governments, NGOs or local communities). This means that firms (MNEs) are no longer seen as passive profit-maximizers, but that the corporate response

to the ‘anti-globalization’ movement is taken seriously as a dimension worthy of analysis. For example, the UN Millennium Project (2005) identifies not only that the private sector (and MNEs) can contribute to achieving the MDGs by increasing productivity, creating jobs, paying taxes and ensuring the supply of necessary goods for reasonable prices, but also designates a number of relatively new roles for the private sector such as engaging in public private partnerships and responsible citizenship. The Global Reporting Initiative (GRI) comes to similar conclusions (GRI, 2004). The third element that is strongly emphasized in the NDP is the critical role of institutions in achieving development objectives. Since institutions are virtually all-pervasive in influencing development and in shaping the development effects of globalization – including FDI by MNEs – this point is elaborated in more detail below.

### **MNEs and sustainable development: the role of institutions**

Institutions have been defined by North (1989, 1991) as the humanly devised constraints that structure political, economic and social interaction. They consist of formal rules, the enforcement characteristics of those rules, and the informal norms of behaviour. The key goal of institutions is to create order and reduce uncertainty in exchange that is created by increased specialization and division of labour. By reducing transaction costs, institutions play a vital role in promoting economic growth, which also means, as North (1989:1323) adds, that governments are more than ‘a gigantic form of theft and income redistribution’ as commonly perceived by neoclassical economists. Already in the 1950s, Wolf (1955) analyzed that the problem of underdeveloped countries was not so much the shortage of knowledge or capital, but a shortage of the right kinds of institutions. Also empirically, many studies confirmed the importance of a range of different institutions for economic growth and development (see for example Rodrik *et al.* (2004); Scully (1988), Jalilian *et al.* (2007), Sokoloff and Engelman (2000), and Doeringer and Streeten (1990)).

Three main ways in which institutions shape the impact of FDI can be distinguished. First of all, as soon as MNEs invest in a foreign market and interact with local firms (including suppliers, buyers and competitors) and local staff, institutions are important as determinants of the extent to which a) transactions between these parties occur, and b) whether the local partners are able to translate the benefits into new business activities. The higher the institutional and governance quality and the better developed a host country’s property right protection, rule of law, and financial systems, the more likely local firms are to benefit from foreign firms (Rodrik, 1999; Alfaro *et al.*, 2004; Harrison and McMillan, 2003).

Secondly, institutions are important determinants of the location and nature of activities of MNEs, as they affect the relative transaction and coordination costs of production (and hence competitiveness) of MNEs while also representing the major immobile factors in a globalized market (Mudambi and Navarra, 2002). They hereby influence to what extent countries are exposed to FDI (and globalization more generally) in the first place. These institutions include both those in the home country of the MNE, in the host country (of inward investment), and international institutions (Kostova and Zaheer, 1999). Host country institutions strongly influence the extent of inward foreign direct investment. The

nature of home country institutions, such as the characteristics of the domestic market and business system, influences a large range of strategic and organizational characteristics of MNEs (North 1991; Wan and Hoskisson, 2003; DiMaggio and Powell, 1983). Despite trends towards globalization, the domestic institutional context remains important for the large majority of MNEs (see e.g. Harzing and Sorge, 2003), considering both the history of the firm that developed in that country and the large role that home countries still play as locations of production, R&D, and as main markets for even the most international firms. Strong country-of-origin effects have therefore also been identified for CSR relevant areas like codes of conduct and environmental reporting strategies (Kolk and Van Tulder, 2004), reputation effects (King and Lenox, 2000), the self-representation of international companies on CSR issues (Maignan and Ralston, 2002), environmental management practices in general and the approach towards specific issues like global warming (Kolk and Levy, 2004). Thus, domestic institutions still strongly influence the direction, type and nature of FDI, and hence also likely its consequences – although the latter point has not yet received extensive research attention. International institutions further facilitate the extension and coordination of foreign activities by MNEs. The institutions that affect the location and nature of MNE activity do not only include the ‘traditional’ business institutions such as competition regulation and patent law, but also to the norms and values regarding ethical and responsible behaviour by firms, which may partly be reflected in formal regulation in the area of social principles or environmental standards, but also informal institutions in the form of stakeholder pressure.

Thirdly, MNEs themselves can be seen as important institutions, as a means through which transaction costs can be reduced by internalizing them within the firm and via hierarchical coordination (Coase, 1937; Williamson, 1975; Hennart, 1977; Buckley and Casson, 1976). The way in which firms choose to coordinate resources across borders in unique ways in order to obtain competitive advantages (Penrose, 1959; Wernerfelt, 1984; Barney, 1991) influences their investment decisions and the way in which they interact with firms in the locations where they invest, and hence their consequences for development. This acknowledgement of the unique features of individual companies reflects the remark by Mudambi and Navarra (2002) that while the home, host and international institutional context influence the behaviour of organizations, they do not perfectly determine it.

## **1.5 MULTINATIONALS, INSTITUTIONS AND SUSTAINABLE DEVELOPMENT: OUTLINE OF THE THESIS**

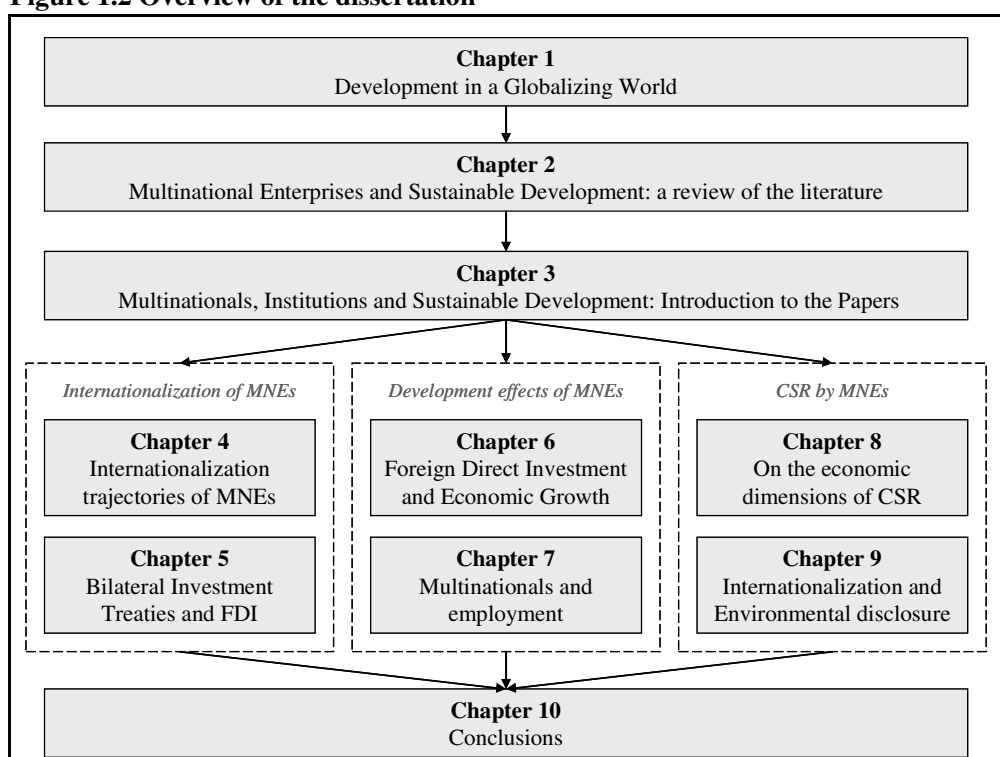
The NDP with its focus on the multifaceted concept of sustainable development and its attention for not only the passive but also the active roles of MNEs in development, outlines a wide range of potential research questions with respect to the consequences of FDI for sustainable development. In particular the role of institutions is considered vital, as a determinant and facilitator of both FDI and of sustainable development, and as a moderator in the relationship among these two concepts. The NDP helps to focus and

narrow down some of the most basic questions that are asked on globalization: how does it come about, what are its costs and benefits, how can the net benefits be enhanced? The following three research questions were hence defined:

1. *To what extent and in what way do home, host, and international institutions, and firm-specific factors, influence FDI and the internationalization of MNEs?*
2. *To what extent is the effect of FDI for sustainable development dependent upon the characteristics of that MNE, in particular its domestic institutional context?*
3. *What do MNEs actively do themselves to enhance their sustainability impact, and how are these activities influenced by firm characteristics and the institutional contexts in which they operate?*

These are key questions in the globalization debate: how does globalization come about, how does it affect the countries that are exposed to it, what do the main actors in the globalization process do to make their impact better, yet still fairly broadly phrased. This dissertation aims to contribute to answering these questions via a selection of focused empirical papers that each addresses one particular dimension of these problems. After a review of existing evidence on the impact of FDI on sustainable development and a more specific identification of the gaps in the literature where further research is needed in chapter 2, the subsequent chapters each provide a distinct empirical contribution based on a wide set of data sources and statistical analyses (see figure 1.2).

**Figure 1.2 Overview of the dissertation**





Following a short introductory chapter to the empirical papers in which the order and content of the individual papers is further explained (chapter 3), the first research question is addressed in chapters 4 and 5. These two chapters deal with the internationalization strategies of MNEs at both the micro (chapter 4) and macro (chapter 5) levels, and pay particular attention to how the institutional context – both domestically and internationally – shapes these strategies. The second question is addressed by chapters 6 and 7, that analyze the consequences of MNE activity for host (and home) countries with respect to economic growth (chapter 6) and employment (chapter 7). In particular the impact differences across MNEs from various home countries are analyzed in depth. The final research question – on the active contribution of MNEs – is addressed in last set of two chapters (8 and 9), that deal with how firms communicate on their active contributions with respect to their economic (chapter 8) as well as environmental impact (chapter 9). Chapter 10 aims to bring all the findings of all papers together, highlighting the links among the papers that yield additional insights and pose questions for further research. Also the policy implications and limitations of this dissertation are discussed.

## 2 MNEs AND SUSTAINABLE DEVELOPMENT: A REVIEW OF THE LITERATURE

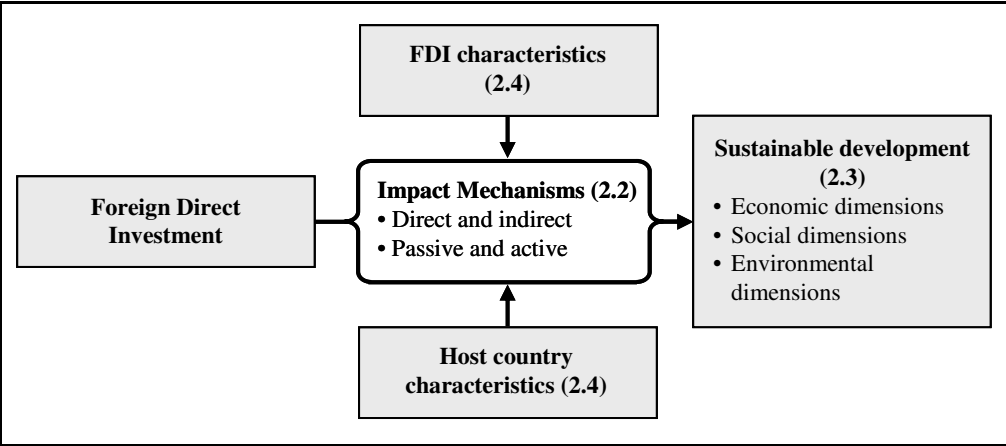
### 2.1 INTRODUCTION

From the 1980s onwards, economic growth and sustainable development in both developed and developing countries have increasingly been influenced by foreign direct investments (FDI) of multinational enterprises (MNEs). FDI stock is currently equivalent to 22 percent of global GDP (UNCTAD, 2005), and it has become the leading source of external finance for developing countries (World Bank, 2004; see also chapter 1). Many policymakers and academics, as well as development and finance institutions, anticipated positive effects of this inflow of FDI, in the form of increased competition and efficiency (Kokko, 1996; Markusen and Venables, 1999), technology transfer (Baldwin *et al.*, 1999), employment and wages (Aitken *et al.*, 1996), domestic savings (Bosworth and Collins, 1999), exports (UNCTAD, 2002), and multiplier effects through e.g. local purchasing that create local linkages (Javorcik, 2004). These externalities of MNE behaviour, or spillovers (Giroud and Scott-Kennel, 2006), in turn would lead to increased economic growth (Borenzstein *et al.*, 1998) and decreases in absolute and relative poverty levels (Tsai, 1994). For their part, MNEs have become increasingly involved in Corporate Social Responsibility (CSR) activities (Van Tulder and Kolk, 2001), and in exploring business opportunities at the so-called 'bottom of the pyramid' (Prahalad, 2005), thereby actively working to ameliorate their (social) impact on the countries in which they invest (Kolk *et al.*, 2006).

However, this promising picture of the effect of MNEs has not gone uncontested (Hertz, 2001, Korten, 1995; De Mello and Fukasaku, 2000; Kawai, 1994; Balcao Reis, 2001). Both the macro-economic effects of FDI and the nature of the more concrete contributions of MNEs to sustainable development continue to be fiercely debated in academia and among NGOs and policy makers. Concerns have been expressed that the presence of FDI could crowd out local firms and decrease competition; that foreign investment may decrease national welfare due to the transfer of capital to foreigners (Balcao Reis, 2001); that restructuring of acquired plants (in the context of e.g. privatization) may result in massive lay-offs; and that foreign technologies may not in all circumstances be appropriate for local markets (Xu, 2000). In more popularizing publications (Korten, 1995; Hertz, 2001; Klein, 2000) the potentially damaging effects of FDI (and the strategies of large multinationals) on the natural environment and social welfare have been stressed. The 'academic jury' is still out as to the consequences of FDI for host countries, as the empirical evidence is still far from conclusive and often even non-existent (see literature reviews by e.g. Caves, 1996; Blomström and Kokko, 1998; Meyer, 2004).

This chapter reviews the existing evidence regarding the effect of FDI on sustainable development, following the general framework outlined in figure 2.1. First, in section 2.2, the various impact mechanisms through which FDI can impact sustainable development are identified, based on those suggested over time by the various development theories reviewed in chapter 1. These impact mechanisms are classified as direct and indirect effects, and passive and active effects, of MNE activity. After this review of how FDI affects sustainable development, section 2.3 takes stock of the existing empirical findings on the extent to which FDI impacts the economic, social and environmental dimensions of sustainable development in host countries. This overview of existing empirical work on the impact of FDI suggests that the relationship between FDI and sustainable development is dependent upon host country conditions, and some have suggested that also MNE characteristics can be an important moderator of the FDI-development relationship. These two issues are reviewed in section 2.4. Section 2.5 concludes by taking stock of the debate and highlights directions for further research.

**Figure 2.1 The relationship between FDI and sustainable development**



**2.2 IMPACT MECHANISMS**

Foreign firms can affect host country sustainable development via a variety of mechanisms. Such mechanisms are not often explicitly empirically addressed (Alfaro and Rodriguez-Clare, 2004), but an understanding of these underlying processes is vital for analyzing the impact of FDI on development, and can be important for policy makers as well (Chung *et al.*, 2003). Examples of impact mechanisms include the transfer of technologies and skills to local firms (Baldwin *et al.*, 1999), changes in local market structure and competition (Kokko, 1996), and the creation of local linkages with suppliers (Javorcik, 2004). These have all been identified in the (economic and business) literature on the economic growth consequences of FDI. But as indicated in chapter 1, recent development theory also calls for the appreciation of the more active contribution of MNEs to sustainable development: MNEs may be key partners in the process of

societal transformation (Stiglitz, 1998), and their activities related to Corporate Social Responsibility (CSR) such as the implementation of environmental, health and safety management systems at their production sites, and engagement in philanthropic projects, may also have important consequences for sustainable development and should hence be considered as well.

The large variety of mechanisms may be classified along two axes that form a 2-by-2 matrix (table 2.1). In this matrix, the ‘location’ of a mechanism is positioned on the vertical axis, and the role of the multinational enterprise in that mechanism on the horizontal axis. The ‘location’ of a mechanism captures the conventional distinction between the direct effects of an investment, which occur solely at the site of the MNE, and the indirect effects, that occur at related organizations. For example, the workers that an MNE employs itself represent an affiliate’s direct employment effect; whereas the employment an MNE creates at a local supplier due to increasing demand for this supplier’s products, constitute its indirect effects for employment. The second axis, the role of the multinational, distinguishes between active and passive roles of MNEs (see Ullman, 1985; Moore, 2001). For those effects that occur without the MNE purposely striving to contribute to sustainable development, we ascribe a passive role for a firm; but when an MNE actively tries to beneficially affect sustainable development (though for example CSR related activities, or philanthropy), it assumes an active role. In reality, these four groups of mechanisms may not be so stringently separated – for example, the environmental management practices of a foreign MNE (direct, active) may spillover to local firms (indirect) without explicit training by the MNE (passive) – but they are useful for analytical purposes.

**Table 2.1. Mechanisms through which MNEs affect sustainable development**

Location	MNE role	
	‘Business as usual’	‘CSR’
Within MNE subsidiary	<b><i>Direct Passive Effects</i></b> <ul style="list-style-type: none"> <li>• Sheer size of the investment</li> </ul>	<b><i>Direct Active Effects</i></b> <ul style="list-style-type: none"> <li>• Environmental, health &amp; safety practices</li> <li>• labour conditions</li> </ul>
At related organizations	<b><i>Indirect Passive Effects</i></b> <ul style="list-style-type: none"> <li>• Competition, demonstration</li> <li>• Linkages and trade</li> <li>• Technology transfer</li> </ul>	<b><i>Indirect Active Effects</i></b> <ul style="list-style-type: none"> <li>• Philanthropy</li> <li>• Supplier requirements</li> <li>• Public-private partnership</li> </ul>

The remainder of this section will describe each of the four groups of mechanisms in more detail. First, the passive effects are discussed (direct and indirect). These are the mechanisms that are commonly distinguished in the literature on the development impact of FDI. Then the active effects of MNEs are identified. These mechanisms in which MNEs play an active role have only recently been given more attention, and although the amount of research in the area of corporate social responsibility is growing vary rapidly, much less is known about these mechanisms, especially with respect to their consequences for sustainable development.

## **Passive effects**

### *Direct effects: contributions to productive capacity*

The passive effects of an MNE for host country development can be relatively easily documented, especially for the economic dimensions of development. Direct passive effects occur when an investment by an MNE adds to the host country's savings and investment volume, and thereby enlarges the production base at a higher rate than would have been possible if a host country had to rely on domestic sources of savings alone (Bosworth and Collins, 1999). FDI may thus build up sectors or industries in which local firms have not (yet) invested, or enlarge the scale of existing plants or industries. Positive direct effects may also lie in salvaging and recapitalizing inefficient local firms (Lahouel and Maskus, 1999), thereby assuring that the scale of production does not decrease. Direct passive effects can be measured rather easily: it is the net increase (or decrease) in output and productivity, tax payments, employment (quantity and quality), and resource use and pollution, at the site of the MNE investment. In economic development theories (see chapter 1), these effects have been particularly emphasized in the 1940s and 1950s by the Modernizers.

### *Indirect effects (1): competition and demonstration effects*

While the direct effects of FDI may be substantial, most of the potential costs and benefits of foreign capital are caused however by the indirect effects of FDI, including competition and demonstration effects, linkages and trade, and technology transfer.

The competition and demonstration effects of FDI have implications primarily for the local firms that are active in the same industry as the MNE affiliates. Investments by MNEs can stimulate competition and improve the allocation of resources, especially in those industries where high entry barriers reduced the degree of domestic competition (e.g. utilities). Local firms have the option of copying the technology of the foreign affiliate, looking for other better technologies themselves or aiming to use their existing production capacity more efficiently by reducing X-inefficiency (WTO, 1998). In this way, the entry of an MNE may contribute to the dynamics and innovation in the local market (Lall 2000), and thus to economic growth. Newfarmer (1985) argues that because of the oligopolistic character on a global scale in many sectors, the entry of one MNE is often followed by others, with important (short-term) positive consequences for competition. Case studies however have indicated that it is not so much improvements in resource allocation, as a reduction in slack or X-inefficiency (i.e., more cost-conscious management, 'working harder') that makes a substantial contribution to productivity improvements (WTO, 1998).

However, MNEs with their superior technology, greater possibilities for utilising economies of scale and access to larger financial resources may also out-compete local, often much smaller firms (Agosin and Mayer 2000). When local industries are not well developed or not developed enough, foreign firms can take away part of the demand for products of local firms (Ahn, 2002), which may have serious consequences for the productivity and profitability of those firms (Görg and Strobl, 2000). This can eventually

lead to local firms being competed out of the market – ‘crowding out’ – especially when the foreign affiliate has better technologies and more financial resources available. This scenario is not unimaginable. Schiffer and Weder (2001) showed, based on a study of firms in eighty different countries, that larger firms and foreign firms faced fewer obstacles in doing business than medium sized firms, which in turn experienced less impediments than smaller or domestic firms. These potential effects need not be limited to product market competition alone, but can also extend to e.g. capital markets (credit) (Harrison and McMillan 2003), or labour markets – especially in the competition for high-skilled labour. In a strict economic sense, such crowding out does not have to be problematic, as long as local firms are replaced by more efficient firms. Yet, if crowding out decreases the quantity and quality of local employment, it may lead to negative social (and political) consequences.

Crowding out may also lead to higher market concentration, which increases the risk of monopoly rents and deterioration of resource allocation (and thus reduced economic growth). Empirical evidence shows that FDI is indeed likely to lead to higher concentration in most host countries (WTO, 1998; Caves, 1996), although a few exceptions exist (Cho, 1990; and Cho and Nigh, 1988). Almost all other studies have identified that MNE entry increases market concentration, see for example Lall (1979) for Malaysia, Blomström (1986) for Mexico, Willmore (1989) for Brazil, Parry (1978) for Australia, Papandreou (1980), Petrochilos (1989) for Greece, and Yun and Lee (2001) for Korea. High degrees of market concentration do not necessarily imply that competition decreases and market power is abused: as long as markets are contestable, firms will behave competitively (Baumol, 1982). But high degrees of market concentration are often already signs of markets that lack such perfect contestability (Shephard, 1984), and raise the risk of market power abuse (Tichy, 2000). Such abuses are not uncommon. For example, Levenstein and Suslow (2001) show that in 1997, US\$ 81.1 billion of imports into developing countries came from industries in which price-fixing agreements have been detected by either the United States or the European Union. These imports accounted for 6.7 percent of total imports to developing countries, and 1.2 percent of their combined GNP.

Local firms that are active in the same sector of an MNE may not only be exposed to new competition, the entrance of an MNE may also be associated with exposure to the (often) superior technology and managerial know-how of the MNE. Demonstration effects occur if the latter induces local firms to update their own production methods or managerial know-how with similar techniques (see also the section below on technology transfer). The successful use of a technology by an MNE in a local context reduces the (subjective) risk for local firms to use that same technology (Saggi, 2000). Competition and demonstration effects often reinforce each other. The increase of competitive pressure due to the entry of an MNE is in itself an incentive to upgrade local technologies, which in turn further increases competition, that stimulates an even faster rate of adaptation of the new technology (Sjöholm, 1997a). Wang and Blömstrom (1992) also stress that the higher the competition from domestic firms, the more technology a foreign subsidiary

has to bring in to remain competitive, and hence the larger the potential for technology spillovers.

Empirical evidence for both demonstration and competition effects is difficult to obtain. They are most likely to occur at the industry level (Saggi, 2000). Still, some general studies addressing horizontal linkages exist. Blomström *et al.* (1999) find that studies that compare new technology adoption by foreign owned and domestically owned firms tend to conclude that new technology is frequently introduced sooner by foreign owned affiliates and that competition spurs quicker adoption of innovations by both domestically owned and foreign owned firms. Aitken and Harrison (1999), using plant level data for Venezuela, found a positive relationship between foreign equity participation and plant performance implying that foreign participation does indeed benefit plants that receive such participation. However, this effect was robust for only small plants (less than 50 employees). For larger plants, foreign participation did not result in significant improvement in productivity, compared to domestic plants.

A key means through which demonstration effects may occur is via labour migration (from MNEs to local firms). Workers employed by the MNE affiliate become familiar with its technology and management practices. By switching employers or setting up their own business the technology is spread (Glass and Saggi, 1999). MNE affiliates usually try to avoid this kind of spillovers by paying an 'efficiency wage', a premium in order to keep employees from switching jobs to domestically owned competitors (Globerman *et al.*, 1994). Substantial evidence on the occurrence of labour migration exists. For example, Katz (1987) found that managers of local firms in Latin America were often trained in MNE affiliates where they started their careers, while others found similar evidence for South Korea (Bloom, 1992), Taiwan (Pack, 1997), and more recently, for Ireland (UNCTAD, 2005). An often quoted example is the Bangladeshi garment firm, Desh. Daewoo from Korea supplied Desh with technology and credit, and eventually 115 of the 130 initial workers left Desh to set up their own firms or to join newly set-up local garment firms (UNCTAD, 1999). Labour migration takes place more frequently if the local firm and the MNE do not compete fiercely in the product market; when training is general rather than specific; and when the absorptive capacity of the local firm is high, according to a model developed by Fosfuri *et al.* (2001).

#### *Indirect effects (2): linkages and trade*

Linkages between the MNE affiliate with local suppliers (and buyers, see Aitken and Harrison 1999) form the second main channel through which spillovers from FDI to local firms occur (Javorcik 2004). Backward linkages are relations with suppliers, forward linkages refer to relations with buyers – either consumers or other firms using the MNEs intermediate products as part of their own production process. Though linkage creation does not per se imply that technology or knowledge is transferred or spilt over, Blomström *et al.* (1999) show that in general it is unlikely that MNEs are able to fully appropriate all the value of these explicit and implicit transfers with their host country business partners. At the same time, the establishment of overseas forward linkages

(exports) by MNEs can serve as important marketing channels for local firms, and can bring in foreign exchange earnings.

Backward linkages are sourcing relations with suppliers, and are created when MNE affiliates buy their inputs from local firms (Alfaro and Rodríguez-Clare, 2004; Rasiah, 1994). This raises the overall output of local supplier firms. But MNEs can also contribute to raising the productivity of their suppliers. MNEs can provide technical assistance or information to increase the quality of the suppliers' products or to facilitate innovations (Kugler, 2000), and usually do not hesitate to train local suppliers (McIntyre *et al.*, 1996). Other spillovers from backward linkages include assistance in purchasing raw materials and intermediary goods, training in management and organisation, and assistance with diversification of (additional) customers (Lall, 1980). Not all backward effects are positive. For example, suppliers could fail to meet the higher required standards of quality, reliability, and speed of delivery, which may lead to bankruptcy and job losses. In addition, MNEs only improve welfare if they generate linkages beyond those of the local firms that they displace. This is not always the case, since MNEs often source their inputs through their own international production networks, which in addition could also have potentially negative trade balance effects (De Mello and Fukasaku 2000).

Many empirical studies have found evidence of the creation of backward linkages with suppliers (Lall, 1980; Wanatabe, 1983; UNCTC, 1981; Behrman and Wallender, 1976; Alfaro and Rodríguez-Clare, 2004; and Javorcik, 2004). Backward linkages tend to increase over time (Rasiah, 1994). Furthermore, linkages are more pronounced in large host markets, and if technological capabilities of local suppliers are sufficient and intermediate goods are used intensively (Rodríguez-Clare, 1996). In the end however, linkage creation by foreign affiliates in host countries depends largely on the affiliates' sourcing decisions (Chen, 1996).

Forward linkages refer to relations with buyers. These can be distributors, that profit from the marketing and other knowledge of the MNE, or downstream firms that take advantage of the availability of intermediate goods with lower prices or better quality. Downstream firms – but also end-consumers – can also benefit from lower prices arising from increased competition in their supply market (Pack and Saggi, 1999). Spillovers from forward linkages are important in most industries, and the downstream effects of FDI may be even more beneficial than the upstream effects (Aitken and Harrison, 1999). Linkages are not only created or changed at the national level, but also at the international level, with important consequences for trade. The relation between FDI and trade is however intricate. Inward FDI may form a substitute for the exports that previously served the market, or be complemented by additional imports when local inputs are not suitable (e.g. when local suppliers are not able to meet the quality standards or production volume to supply the MNE, or if suppliers in other countries are affiliates of the MNE). FDI may generate exports if the subsidiary is aimed to be an export platform using cheap local labour available in developing countries, or decrease exports when taking over a viable exporting domestic firm and producing for the domestic market only, serving previous export markets from other affiliates. The net



effect of inward FDI on exports should always be assessed in balance with their effect on imports.

The debate on whether FDI is associated with a net increase or decrease in a country's trade balance is still not settled conclusively. It is usually assumed that especially in Asian countries (Singapore, Hong Kong, Taiwan and Malaysia (Kumar, 1996), and China (Chen, 1997) FDI has triggered exports, although Ernst *et al.* (1998) showed that this was only the case for low tech products in countries with weak domestic business sectors. In Central and Eastern Europe (CEE), Hooley *et al.* (1996) established that FDI increased exports in Hungary, while Hoekman and Djankov (1997) found little evidence for that claim not only for Hungary, but also for four other CEE countries. De Mello and Fukasaku (2000) indicated that the effect of net FDI flows on trade balances was negative for Pacific Asian countries for the 1970-1994 period, and in Latin America for the 1970-1984 period. Especially in Export Processing Zones (EPZs) high exports are often combined with low local content, and high imports (Amirahmadi and Wu, 1995). Generally, for Southeast Asian (cf. OECD, 1998) as well as Latin American EPZs (Jenkins *et al.*, 1998), it was estimated that 80 percent of the value of exports is imported. Also for non-EPZ areas, imports increased after the investment was made, though they declined in the subsequent five years and exports increased (Fry, 1996).

#### *Indirect effects (3): Technology transfer*

An important part of effect of foreign entrants for local firms is related to the transfer of technology. This has been hinted at above for demonstration effects (local competitors), as well as in the case of e.g. training of buyers or suppliers. The importance of the potential transfer of skills and technology by FDI is explained by the New Growth Theory, which emphasizes the role of technological progress and knowledge in determining economic growth (see Ramírez, 2000; Baldwin *et al.* 1999; Borensztein *et al.*, 1998; Nair-Reichert and Weinhold, 2001). Technology transfer occurs when new managerial or organisational skills, or knowledge about products, design, and production processes are transferred – intentionally or unintentionally – from MNE affiliates to local firms (Blomström *et al.*, 1999). In this way, foreign firms could contribute to closing the 'idea gap' between developed and developing countries (Romer, 1993).

MNEs are often considered to be excellent sources of knowledge, because they are concentrated in technology intensive industries that exhibit high rates of Research and Development (R&D) expenditure and account for a large share of technical and professional workers (Markusen, 1995, Smarzynska, 1999; Baldwin *et al.* 1999). It is often argued that precisely because MNEs rely heavily on intangible assets (or Ownership advantages, see Dunning, 1988, 2001b) such as superior technology, they are able to successfully compete with local firms which otherwise would naturally have a comparative advantage because they are better acquainted with the host country business context. As part of the global profit-making operations of multinational enterprises, FDI, by its nature, involves the transfer of capital, technology and knowledge across countries. However, if technological upgrading becomes too dependent on decisions by foreign MNEs, this might impair the development of a local innovative basis. Moreover, MNEs'

(capital-intensive) technologies may not always be appropriate for developing country (labour-intensive) contexts (Caves, 1996), meaning that local firms may face difficulties in absorbing foreign technologies and skills. Finally, not all FDI may be accompanied by substantial amounts of high-quality technology. Many MNEs concentrate their R&D activities in their home country (Chen, 1996) or other developed countries (Correa, 1999). The rationale for this concentration can be found in the need for efficient supervision and scale economies in the R&D process itself (Caves, 1996), historical path dependencies (Globerman, 1997), and a lack of infrastructure and institutions to promote agglomeration economics and protect intellectual property rights elsewhere (Sachs, 1999; De Soto, 2000; Bennett *et al.* 2001). Developing countries only account for an estimated 6 percent of global R&D expenditures (Freeman and Hagedoorn, 1992). And even among those developing countries, expenditures are very concentrated (UNCTAD, 1999), and mainly involve adaptive tasks (Correa, 1999). This centralization of R&D is of particular concern for developing countries because in those cases where R&D takes place in developing countries, the expenditures have been found to generate significant efficiency gains, both within and across industries in the R&D performing country (Bernstein, 1989).

Despite these limitations, and despite the other channels of technology transfer that are also available (firms may also export products that embody the technology, or license technology to an agent abroad), FDI remains the most important means of technology transfer, especially for developing countries, for several reasons. First of all, an investment not only comprises the technology itself but also includes 'the entire package': the complementary resources such as management experience and entrepreneurial abilities (Baldwin *et al.*, 1999). Unlike trade in goods, where developing countries have to try to imitate and learn from 'backward engineering', FDI involves the explicit transfer of technology (Saggi, 2000). This may be especially beneficial for countries with underdeveloped local capabilities. The typical features of a MNE, for example, scale economies, capital reserves, or marketing and sales experience, can contribute significantly to exploiting the technology in a profitable manner. Secondly, by their mere entry and presence, MNEs disturb the existing equilibrium in the market, forcing domestic firms to innovate in order to protect their market shares and profits. This alone is likely to lead to productivity increases in local firms (WTO, 1998). Thirdly, many technologies and other know-how used by MNE affiliates are not always available in the market. Especially newer or higher-tech knowledge is often only available through the MNE itself, as MNEs prefer to avoid the dissipation of the value of the technology to competitors (Ethier and Markusen, 1991; Markusen, 1995; Saggi, 1996, 1999). For example, Smarzynska (1999) found that a firm's R&D expenditure is negatively related to the probability of a joint venture (where possibilities for 'leakage' are large) and positively related to greenfield entry. And new technologies tend to be introduced more quickly into host countries when MNEs have the option of introducing the technology through their affiliates rather than through joint ventures or licensing agreements (Mansfield and Romeo, 1980; McFetridge, 1987).

## Active effects

In addition to the passive effects of investments – those effects that occur through ‘normal business practice’, the active, or corporate social responsibility (CSR) effects of MNEs have received increasing attention (Ullman, 1985; Moore, 2001). Driven by regulatory and stakeholder pressures, MNEs are increasingly taking action in order to contribute to sustainable development (KPMG, 2005).

The 1960s and 1970s saw the rise of the concept of corporate social responsibility (Wood, 1991), a term originally coined by Bowen (1953). While it remains an elusive concept that is difficult to define (Clarkson, 1995; Windsor, 2001; Wood, 1991), CSR is commonly considered to encompass those activities of firms that merge with the interests of society and that firms voluntarily (i.e., without legal requirements) engage in. The notion of CSR is founded in legitimacy theory, stakeholder theory and institutional theory. These suggest that a firm’s actions should be congruent or isomorphic with the norms and expectations of the society in which they operate (Brown and Deegan, 1998; Neu *et al.*, 1998; Kostova and Zaheer, 1999; Christmann and Taylor, 2001; Dimaggio and Powell, 1989; Oliver, 1991), since their long-term survival and financial success depends on the support of its stakeholders (Cormier *et al.*, 2004; Roberts, 1992; Brammer *et al.*, 2006; Hillman and Keim, 2001; Van der Laan Smith *et al.*, 2005).

Several classifications of what constitutes CSR activities have been proposed (e.g. Wartick and Cochran, 1985; Carroll, 1979, for some of the early prominent contributions). In an often-cited contribution, Wood (1991) suggested three core components in CSR activity: principles, processes, and outcomes (also corporate social performance). The principles of CSR refer to e.g. the ethical standards against which a firm is held accountable. The processes refer to the way in which these ethical standards are implemented at the firm level, e.g. via stakeholder management, internal (environmental or social) management systems, reporting practices or other activities, whereas the outcomes reflect the measurable effect of the previous two steps (Wood, 1991).

The majority of research on CSR is aggregated at the corporate level. Much research is aimed at distinguishing the more from the less socially responsible firms, and with the determinants and performance effects of such a distinction (Orlitzky *et al.*, 2003; Moore, 2001). At the same time, while the outcomes (e.g. a reduction of environmental pollution; better treatment of employees) are an important component of CSR, it is very difficult to measure, let alone link to macro-level effects, in for example that sectors or countries with more responsible firms are less polluting. While it is therefore difficult to speak of outcomes of CSR, we can analyze the activities of firms that impact sustainable development, either directly or indirectly.

These CSR activities of MNEs could have important implications for the development effects of FDI. As with the passive effects of investments, the active role of MNEs in fostering development can be divided into direct effects – that occur at the facilities of the MNE themselves – and indirect effects – that occur externally.

The direct active effects encompass an MNE’s 1) policies, 2) practices and 3) outcomes with respect their environmental, health and safety, and employment activities within the

boundaries of their own firm. With respect to the policy or principles, an increasing number of large firms is formulating and reformulating individual codes of conduct, thereby actively creating new international institutions, that create in many respects new rules of the game – also with regard to issues relevant to sustainable development such as child labour, environmental degradation and the rights of indigenous peoples (Kolk and Van Tulder, 2005). While concern has sometimes been expressed that firms use their CSR activities as a form of mere ‘window-dressing’, some studies (e.g. Rugman and Verbeke, 1998; Christmann and Taylor, 2001) also stress that MNEs indeed implement all kinds of organizational systems and practices to improve their social and environmental impact (as well as their bottom line).

Firms are also increasingly transparent about what they do. A development can be observed in the direction of more sophisticated environmental reports that not only describe some general phenomena or policies, but increasingly also include more far-reaching and detailed information (performance data) that is even externally verified (cf. GRI, 2002; Kolk, 2005). KPMG (2005) and Fortanier and Kolk (2007) show that approximately 70 percent of the largest 250 firms worldwide are actively promoting workforce diversity and equal opportunity, good working conditions, and training. A similar number of firms addresses climate change issues and direct greenhouse gas emissions, areas in which firms become increasingly active (Kolk and Pinkse, 2005). Labour rights such as collective bargaining and freedom of association are mentioned by one third of all firms. Chapter 8 provides further examples of what MNEs disclose themselves on their direct and indirect contribution to (economic) development.

The impact of these CSR activities is however yet unknown. There are also concerns about the social and environmental behaviour of in particular firms that operate across borders (MNEs). Critics argue that such firms can internationalize (partly) to avoid stringent environmental (or social) legislation in the home country. This so-called ‘industrial flight’ hypothesis suggests that firms evade home government regulation and move towards company-friendly regulatory environments. Other studies have in contrast emphasized that MNEs can also play a leading-edge role in developing more environmentally (and socially) friendly products and processes (Christmann and Taylor, 2001; Gentry, 1999; Kahn, 2000; Low, 1982; Mani and Wheeler, 1998; OECD, 1997; Tsai and Child, 1997; UNCTAD, 1999: 289-312; Zarsky, 1999). Most studies (although not all, see Dasgupta *et al.* (2000)) find a positive relationship between internationalization and environmental performance. This is often explained from a resource-based perspective (Barney 1991; Hart, 1995; Wernerfelt, 1984) by focusing on how international harmonization and standardization of environmental practices within an MNE can lead to green firm-specific advantages (Porter and Van der Linde, 1995; Rugman and Verbeke, 1998) as such harmonization helps to build knowledge capabilities and skills in transferring best practices across borders (Christmann, 2004; Strike *et al.*, 2006). It may simply be more efficient – due to scale economies – to develop and implement a single, centralized environmental strategy as the most appropriate response to the higher social pressures that MNEs tend to face in their worldwide operations (Christmann and Taylor, 2001). Finally, high environmental standards and practices can

help attract and retain highly skilled employees (McWilliams and Siegel, 2001). These forces make the pressures towards global integration stronger than those towards local adaptation and exploitation of low-standard countries (Bartlett and Ghoshal, 1989; Sharfman *et al.*, 2004). Despite these findings, more research remains necessary to see if such relationships hold true in all contexts, for all dimensions of development, and for all dimensions of companies' principles, policies and practices. Chapters 8 and 9 develop this issue further.

In addition to engaging in CSR activities within a firm's boundaries, MNEs have also started to contribute to society in a more indirect way (i.e. outside their own facilities) through philanthropy and community investments, or through requiring their suppliers to adhere to social and environmental standards as well. The KPMG (2005) study showed that 75 percent of the largest 250 firms worldwide say to be involved in philanthropic activities; and almost 50 percent has an own corporate charitable Foundation. Schooling and educational projects are most popular (66 percent), followed by health programmes including HIV/AIDS relief efforts (40 percent) (Fortanier and Kolk, 2007). These corporate philanthropy activities signal the growing acknowledgement of the importance of 'social capital' and of civil society for the correct and profitable operation of business (Cf. Wood *et al.* 2006). Philanthropy is increasingly thereby represented as a vital aspect of (global) corporate citizenship (Saiia *et al.*, 2003). According to Zadek (2003), MNEs are entering the phase of 'third generation corporate citizenship' which represents a far more active and open approach to civil society than before.

### **2.3 ECONOMIC, SOCIAL AND ENVIRONMENTAL IMPACTS OF FDI**

While theory-building on how to enhance development has taken place mainly in development economics, empirical tests on the impact of FDI on development have mainly been undertaken in macro-economics and especially in industrial economics. Most empirical studies on the relationship between FDI and development have focused on the economic dimensions of development. Social and environmental dimensions are far less often addressed or elaborated. This section reviews the evidence found until now on each of the relationships identified in Table 2.2. This table forms a matrix that displays examples of how each of the mechanisms discussed above (passive, active, direct, indirect) affect the three dimensions of sustainable development. As will be further discussed below, theoretical and also empirical findings on each of the 'cells' have been both positive as well as negative. The table gives examples of each.

**Table 2.2 Classification of positive and negative consequences of FDI: examples**

	Economic (growth)		Social (employment)		Environment (resources)	
	Positive	Negative	Positive	Negative	Positive	Negative
<i>Passive direct</i>	Increase capital and tax base	Repatriate profits, manipulate transfer prices	Establishing new plants increases employment	Dismiss workers for efficiency reasons	Environment-friendly products, substitution	Pollution due to increased industrial activity
	Increased competition (decrease inefficiencies)	Crowding out local firms	Demonstration of HRM practices and training	Relocation to low(er)-labour cost countries	Demonstration effects lead to more efficient local production methods	Pollution due to increased industrial activity (by incumbents)
<i>Passive indirect</i>	Increase demand for local suppliers, marketing channel	Increase imports	Increase employment in firms supplying the MNE	Substitute demand for local suppliers by foreign ones	Provide buyers with more energy efficient products/components	Pollution due to increased industrial activity (by suppliers)
<i>Technology</i>	Higher productivity due to improved technologies	Technologies inappropriate for local needs	Train workers, new managerial skills	Capital instead of labour intensive production	More resource efficient technologies	New technologies may intensify farming and mining
<i>Active direct</i>	Pay tax	pressuring for tax holidays	Labour conditions	strict child labour rules may force children to worse alternatives	Environmental management systems	‘Brent Spar’ scenario (too much public pressure)
<i>Active indirect</i>	Active policy to use local suppliers	Donations of e.g. food spoils market for local producers	Donations to social charities	Too strict application of labour conditions excludes small suppliers	Donations to environmental charities	Helping development may harm the environment

**FDI impact on the economic dimensions of sustainable development**

Empirical studies focusing on the impact of FDI on the economic dimensions of development have almost always directly related FDI to a specific outcome variable. They do not address the specific mechanism through which FDI may impact development (as also noted by Alfaro and Rodriguez-Clare, 2004), but rather perceive the change in the outcome variable as evidence that the mechanism under study – e.g. technology transfer – has taken place. Especially when more macro-economic outcome

variables were used, the individual mechanisms have proven difficult to distinguish. The studies on the economic effects of FDI can be classified into two sets based on their prime dependent variables: economic or productivity growth, and domestic investment. Each will be discussed in turn.

#### *Economic and productivity growth*

By far the most studies on the effect of inward investment on host countries have explored its effects on productivity growth. Economic growth is both vital for increasing living standards overall, but differences in differences in country economic growth rates also practically explain all the increase in world inequality (Bourguignon and Morrisson, 2002). Most of the initial studies that looked for local productivity effects of the entry of foreign MNEs in developed countries established positive effects, such as for example Caves (1974) for Australia and Globerman (1979) for Canada. And also in more recent studies, positive effects are frequently obtained for investment in developed countries, such as the study by Imbriani and Reganati (1997) for Italy, or the work by Nadiri (1993) on the productivity effect of US MNEs in manufacturing sectors in several European countries (France, Germany and the UK) and Japan between 1968 and 1988. Yet not all have come to such positive conclusions. For example, Barrios (2000) could not discover significant spillovers for FDI in Spain, whereas the debate on productivity spillovers in the UK appears yet undecided, as Liu *et al.* (2000) concluded that FDI has been beneficial for the productivity of UK-owned firms in the same industry (for the 1991-1995 period), while almost simultaneously, Girma *et al.* (2001) did not find aggregate evidence of productivity spillovers, and in fact concluded that the productivity gap between foreign and domestic firms was widening, not closing. Cantwell (1989) detected important variation in the productivity impact of FDI across different industries. His study of the market shares of US versus domestic firms in Europe between 1955 and 1975 revealed that in sectors where local firms had some traditional technological strength, the entry of American MNEs provided 'a highly beneficial competitive spur' (WTO, 1998), whereas in other industries, local firms with small markets were crowded out by the US entrants.

For developing countries, the results of existing research provide a similarly mixed and inconclusive picture. Some studies find indeed positive results of FDI on productivity, such as those by Sjöholm (1997a), Anderson (2001) and Blomström and Sjöholm (1998) for the Indonesian manufacturing industry, and by Blomström and Persson (1983), Kokko (1994), Blomström and Wolff (1994) and Ramírez (2000) for Mexico. These studies indicated that foreign establishments have a relatively higher level of labour productivity, but that domestic firms benefit from spill-over effects (also in terms of labour productivity). Positive results are also found by Kokko *et al.* (1996) for the Uruguayan manufacturing industry, by Liu *et al.* (2001) for China, and by De Mello (1999), Soto (2000) and Xu (2000) in cross-country comparisons of productivity increases. Foreign direct investment may have a larger impact on economic growth than investment by domestic firms (Borensztein *et al.*, 1998; OECD, 1998).

On the other hand, another group of studies suggests that FDI may negatively affect the productivity of local firms. In Venezuela, productivity in local firms decreased after foreign entry, whereas productivity in foreign firms and firms with significant foreign participation increased (Aitken and Harrison, 1999). Studies by Haddad and Harrison (1993) for Morocco, and Aitken *et al.* (1996) for Venezuela and Mexico could not establish also showed no positive spillovers in terms of higher productivity or wages. With the exception of Singapore, Taiwan, Indonesia, the Philippines and Peru, the majority of the set of Asian and Latin American countries studied by Kawai (1994) showed that an increase in FDI had a general negative effect on productivity. In Central Eastern European countries in general, the impact of FDI on productivity has been negative as well (cf. UNECE, 2001; Konings, 2000, Djankov and Hoekman, 1999; Mencinger 2003). Carkovic and Levine (2000) found negative results in their study for 72 countries of the impact of FDI on income and productivity growth, correcting for simultaneity bias and country specific effects. Aitken and Harrison (1991) conclude that the positive correlation between foreign presence and productivity growth should not be interpreted as a positive effect of FDI, if MNEs are attracted to the more productive sectors in the first place.

It should be taken into account that the above evidence only applies to the effect of productivity of domestic firms, and not to the productivity impact of MNEs on the entire sector. Especially if MNEs take a large share in a sector, their higher productivity (Hooley *et al.*, 1996) may compensate for the loss of productivity of the domestic firms, and in such a way contribute to economic growth at the aggregate level.

#### *Domestic Investment*

An important question that must be addressed in empirical analyses of the impact of FDI is the extent to which it substitutes for, or contributes to, domestic investment. Reisen and Soto (2000) have emphasised that FDI can make an important contribution to a host country's economy by adding to investment in physical and human capital. The level of domestic investment can also be used as a measurement to assess the effect of FDI on competition: if domestic investment decreases, this means that local firms have not been able to deal with the additional competition brought about by the foreign firms and have been crowded out, whereas if domestic investment grows, skills and technology transferred to local firms in either the same industry as the foreign affiliate or in supplier/buyer industries necessitate (or enable) additional capital investments. The level and growth of domestic investment and capital accumulation (or the extent to which FDI complements or substitutes domestic investment) determines the extent to which FDI is growth-enhancing (De Mello, 1997). Agosin and Mayer (2000) stated that if FDI leads to diminishing domestic investment, the total impact of MNEs on development should be seriously doubted.

Agosin and Mayer (2000) investigated the role of FDI in domestic investment empirically for the 1970-1996 period for 32 developing countries, and discovered that in Asia, FDI seems to stimulate domestic investment, whereas in Latin America substitution effects predominate. The overall effect for Africa is neutral. As explanation for these



national and regional differences Agosin and Mayer mainly identify national policies regarding international investment and trade. They conclude that the countries that have been most restrictive in trade and FDI, have seen the most beneficial effects from FDI.

Other studies have also led to divergent results regarding the impact of FDI on domestic investment. A regression analysis by Borensztein *et al.* (1998) showed a positive but weak impact of FDI on domestic investment, and Toutain (1998) revealed a similar, small, unstable positive impact on domestic investment. While Alfaro *et al.* (2001) found that FDI increased total investment more than one-for-one, reinforcing the claim that FDI affects growth through domestic investment, Bosworth and Collins (1999) uncovered that domestic investment rose by only 81 percent of FDI in the sample of 58 developing economies in the 1978-1995 period. De Mello (1999) and Agrawal (2000) both concluded that that FDI is often a catalyst for domestic investment and technological progress, although Agrawal (2000) notes that for South Asian countries, a part of this effect appears to be driven by the government policies requiring FDI to share some equity with national investors. The study by Carkovic and Levine (2000) uncovered positive effects on domestic capital accumulation by FDI for 72 countries over the 1960-1995 period.

### **FDI impact on the social dimensions of sustainable development**

Whereas the effects of FDI on economic growth have received considerable attention in empirical research, the effects of FDI on social issues have largely remained unstudied. This is at least partly due to the difficulties in quantifying such effects and finding enough reliable and comparable data. The social effects associated with FDI and the liberalisation of FDI rules are mainly found in two areas: employment and income inequality.

Foreign firms are generally shown to create direct and especially also indirect employment (Görg, 2000), although it has been argued that their use of relatively (to local standards) capital intensive technology reduces their possible effect on employment. Furthermore, MNE affiliates pay on average higher wages than local firms in developing countries (Caves, 1996). For example, even correcting for the relatively higher skilled workers that are hired by foreign firms, foreign firms paid higher wages in Indonesia than local firms (Lipsey and Sjöholm, 2004). Higher wages may be simply triggered by the fact that foreign firms are more productive (Caves, 1996). Another reason has been to keep employees from switching jobs to domestically owned competitors or to set up their own businesses (Globerman *et al.*, 1994).

A recent line of research has emerged that takes the role of FDI in changing the 'relative wage' into account. The relative wage is the ratio of skilled versus non-skilled wage, and may serve as a proxy for overall income inequality (and thus also relates to studies on inequality reviewed below). While Das (2002) built a theoretical model that predicts that FDI can decrease the relative wage (and hence wage inequality), most other models (e.g. Wu, 2000) assume that foreign firms hire relatively high skilled labour, making it scarcer and therefore increase wage inequality. The Mexican maquiladoras provide strong empirical evidence for this phenomenon, as FDI increased the relative wage of high

skilled workers (and thus wage inequality), especially in relatively skill-intensive industries (Feenstra and Hanson, 1997). In East Asia, evidence that FDI reduced wage inequality in the 1985-1998 is weak (Te Velde and Morrissay, 2002), while in Africa, foreign ownership is associated with wage increases that are stronger for more skilled workers (thereby increasing inequality) (Te Velde and Morrissay, 2001). Other evidence also showed that although MNEs pay higher wages, skilled employees benefit more (ODI, 2002; Lipsey and Sjöholm, 2004; Aitken *et al.*, 1996).

While the evidence on wages would indicate mainly positive effects (especially for the people that are actually employed by MNEs), the quality of the employment created is more often questioned. Especially where governments compete to attract FDI, some may be tempted to be less vigilant in enforcing their national laws that promote core labour standards. In some cases, less stringent legislation is in place in Export Processing Zones – specific geographical areas set up by governments to increase local employment, where labour-intensive, low value-added work is undertaken, mostly by MNEs interested in exploiting low-cost labour for assembly type operations in for example clothes and electronics (McIntyre *et al.*, 1996). However, there is little evidence to suggest that there is a ‘race to the bottom’, whereby developing countries lower their labour standards to attract FDI. Especially the absence of core labour standards does not change the location decisions of OECD investors in favour of less strictly regulated countries. In the majority of cases, core labour standards are not considered as important determinants for investment location decisions (OECD, 1998).

Poverty and income inequality constitute the second area of concern regarding the social impact of FDI. Perhaps the most hoped-for effect of FDI in developing countries is the alleviation of poverty and the diminution of income inequality. These are generally not considered to be a direct effect of FDI, but rather as a result of (FDI induced) growth and the creation of jobs. Systematic evidence on the effects of FDI on income distribution and poverty in developing countries is lacking (ODI, 2002). Only a very limited and mostly dated number of studies exists that directly relate FDI and income inequality. Among the most recent is Tsai (1995), who studied the effect of FDI on Gini-coefficients in the 1970s. The results of this study contested those of earlier studies that FDI and inequality are positively related. Instead it argued that these results might be caused by geographical differences in both inequality and FDI (see also chapter 1). A review of the literature by Bigsten and Levin (2000) concluded that recent literature failed to establish any systematic pattern of change in income distribution during recent decades. Neither did it find any systematic link from fast growth to increasing inequality, or other evidence that might support the traditional Kuznets hypothesis that as per capita income increases, inequality first increases and then decreases in an inverted-U curve. While the incidence of poverty can be reduced in case of sufficient economic growth (see e.g. also evidence by Dollar and Kraay, 2000), this is not necessarily the case for income inequality.

### **FDI impact on the environmental dimensions of sustainable development**

Similar to research on the social effects of FDI, studies on the environmental impact of FDI can only with difficulty be classified into how the various passive, active, direct and indirect effects affect the environmental dimensions of development. Theoretically, foreign investment may lead to increased production and consumption of polluting goods or to an expansion in industrial activity, leading to growing pressures on the environment. But FDI can also make new investments in environmental protection possible. If FDI leads to enhanced competition and a better allocation of resources, the environmental impacts of production will be (relatively) reduced. Similar positive effects can be expected from the use of better technologies, and from active steps to reduce emissions (Pinkse, 2007). However, even if industrial production plants use advanced technologies, FDI can increase the total environmental burden on a country if no such plants existed before that investment.

The debate on multinationals and the environment has rather revolved around the role of environmental policies by home and host governments in determining FDI flows, instead of around the impact of FDI on e.g. overall pollution. Long term environmental impacts of international investment will depend in large part on how government environmental policies respond to their pressures and opportunities (see Rugman and Verbeke (1998) for an overview of corporate strategy and – international – environmental policy). The so-called ‘pollution haven’ hypothesis suggests that firms may be sensitive to the costs of complying with more stringent environmental standards, which would induce host countries to relaxing environmental standards or refraining from upgrading low standards (‘regulatory chill’) in competing to attract investments. Empirical research shows that such a risk of redeployment of productive resources towards low standard countries is rather small, and mixed (Lucas *et al.*, 1992; Smarzynska and Wei, 2001; Wheeler, 2001). Xing and Kolstad (2002) for example found for US investment that the laxity of environmental regulations in a host country is a significant determinant of FDI for heavily polluting industries, yet insignificant for less polluting industries. Some evidence exists however that competitiveness concerns have dampened governments’ enthusiasm to raise environmental standards (see Mabey and McNally, 1999; Nordstrom and Vaughan, 1999).

Environmental costs are only one of a broad number of factors, including quality of infrastructure, access to inputs, wage costs, labour productivity, political risk, the size and growth potential of markets, that investors take into account in location decisions. The costs of adhering to environmental regulations are also typically a small part (on average 2 to 3 percent) of total production costs for most firms (OECD, 1998; Adams, 1997; UNEP, 2000). Instead, multinational enterprises generally seek consistent enforcement of environmental legislation, rather than lax enforcement (OECD, 1997). With the increase in use and sophistication of codes of conduct, and environmental (or sustainability) reports (Kolk, 2005; 2003; Van Tulder and Kolk, 2001, Kolk and Van Tulder, 2005), it is likely that the environmental impact of production locations owned by foreign MNEs are less environmentally polluting than locally owned production locations. In one of the few existing empirical studies that relates FDI to environmental

outcomes, Talukdar and Meisner (2003) analysed data on carbon dioxide emissions for 44 developing countries in the 1987-1995 period, and found that environmental degradation is reduced by increased shares of foreign direct investment vis-à-vis domestic investment. This would imply that foreign firms are less polluting than domestic firms. Still, due to industrial factors, the overall size of the production, and through the role of FDI in growth, FDI may still not reduce environmental pollution in developing countries.

## **2.4 THE ROLE OF FIRM AND COUNTRY CHARACTERISTICS**

The review of studies on the effects of FDI on development showed that in particular in the area of its social and environmental effects, considerably more research is needed. But even though the effects of FDI on the economic dimensions have been studied more elaborately, no conclusive evidence has yet been found. The diverging empirical results have triggered several researchers to look for explanations for these differences. For example, a particularly interesting result was obtained by Görg and Strobl (2001), who conducted a meta-analysis of studies on productivity spillovers due to FDI, and concluded that the research design of the study crucially affected whether or not significant positive spillovers were found. Studies based on cross-sectional data generally established a positive relationship, while studies using panel data (which are generally considered superior), found insignificant or negative spillovers. Others have focused on more substantive explanations. In particular, two sets of factors have been identified that (potentially) moderate the FDI-economic growth relationship. These groups of variables include (1) host country characteristics and (2) foreign affiliate attributes.

### **Host country characteristics**

The first set of factors that has already received some attention in the recent empirical literature as moderator of the FDI-development relationship involves host country characteristics. Host country characteristics (including government policy) determine the so-called 'absorptive capacity' of a host country – the ability to actually reap the potential benefits of FDI. Developing countries need to have reached a certain threshold of development (e.g. education or infrastructure) before being able to capture the benefits associated with FDI (Saggi, 2000). This means that a particular foreign investment could have a beneficial impact in one country, while the same investment may have detrimental effects in another. Several examples of such host characteristics have already been studied, including the quality of institutions, openness to trade, and level of technological capabilities of local firms.

The quality of host country institutions (North 1991; Rodrik, 1999; Alfaro *et al.*, 2001), and in particular the presence and protection of property rights (De Soto, 2000) are often-named examples of host country characteristics. Good quality institutions facilitate the start-up of new local ventures that can exploit knowledge spilt over from the foreign MNE. In addition, institutions make contracts – in particular in relation to supplier relationships – more easily enforceable and thus lower the transaction costs for MNEs of

local sourcing. High-quality institutions hereby particularly enlarge the potential for positive indirect effects of FDI (technology transfer and linkages). An example of such an institution is the capital market. The impact of financial market development on growth has been widely studied by inter alia Acemoglu and Zilibotti (1997), Beck *et al.* (2000), Leahy *et al.* (2001), and Maher and Andersson (2001). Recent studies indicated that FDI contributes positively to growth in countries where financial market are sufficiently developed (cf. Alfaro *et al.*, 2001) and that imperfect and underdeveloped financial markets are likely to penalize domestic firms in favour of MNEs.

Also a host country's openness to trade has been found to positively influence the extent to which FDI contributes to growth (Balasubramanyam *et al.*, 1996). Trade openness is a measure of the existing level of competition (and strength of competitive forces) in a local economy: in more open countries, market distortions are less, and efficiency and competition is higher. This would induce MNEs to invest more in human capital, but also enhance spillovers as local competitors would be 'forced' to learn (Görg and Strobl 2001; Blomström *et al.* 1999; Sjöholm (1997b). In closed economies, there are many incentives for rent-seeking behaviour (Hirschey, 1982). The lack of competition would allow MNEs (and local firms) to sustain X-inefficiencies; therefore resource allocation would be sub-optimal, with detrimental results for growth.

Finally, the extent to which FDI contributes to growth also depends on the level of technological sophistication, or the stock of human capital available in the host economy. FDI raises growth only in those countries where the labour force has achieved a minimum threshold of education (Borensztein *et al.*, 1998). The growth impact of international investment tends to be limited in technological laggards (De Mello, 1997; Blomström *et al.*, 1994; Keller, 1996; Xu, 2000). This conclusion also holds true between different industries in the same country: spillovers are easier to identify empirically when the technological attributes of local firms match those of the MNE affiliates (Kokko, 1994). De Mello (1999) also finds that a recipient country's technological capabilities determine the scope for spillovers from foreign to domestic firms. A high technology gap (Kokko *et al.*, 1996; Haddad and Harrison, 1993) combined with low competition (Sjöholm, 1997a; Görg and Strobl, 2000; Lall, 2000) prevents spillovers from occurring. Taking into account this evidence on the interaction effects of these host country characteristics on the relationship between FDI and development, Nair-Reichert and Weinhold (2001) suggested that existing econometric studies, including the ones using panel data, do not adequately estimate this relation, as they are based on the assumption that the relationship is homogenous across countries (i.e. panel models are estimated with fixed effects). Nair-Reichert and Weinhold explicitly include the possibility that the relationship between FDI and growth may differ across countries. In an analysis for 24 developing countries in the 1971-1995 period, they found that the strength of causality between FDI and growth varies from country to country, even after correcting for human capital and export openness (but not institutions). They concluded that future research should focus on the firm level mechanisms through which FDI is related to growth in order to identify some of the factors that determine how strong the relationship is in a particular country.

### **Firm characteristics**

The characteristics of FDI have hitherto received very little empirical attention as moderators of the FDI-growth relationship in the area of Economics (Nunnenkamp and Spatz, 2004). However, as emphasized by many researchers in the field of International Business (Dunning, 2004), FDI is not a uniform flow of capital across borders, and should therefore not be treated as such. Instead, FDI differs by the size and mode of entry; the nature of the (production) techniques chosen; the trade orientation of the parent company; the place of the affiliate in the global production network; the type of activity that takes place; and the aim with which the investment is made (Lall 1995; Dunning 1993; Jones 2005), to name just some aspects. Narula and Marin (2005) argue that the assets (including knowledge) that MNEs bring into a country, may not always be those that domestic firms seek or are able to acquire. Knowledge that is of a strongly firm-specific nature and that is highly tacit and uncodified (in particular assets related to the efficiency of conducting cross-border transactions) may not be of much value to local firms.

Some initial research results support this perspective. For example, Mencinger (2003) suggested that the negative relationship between FDI and growth in transition economies can be explained by the form of FDI, which had been implemented predominantly through acquisitions (of which the proceeds were spent on consumption), rather than greenfield investments. In Ireland, the scale of R&D activity of foreign affiliates has been positively related to job creation rates (Kearns and Ruane, 2001), while in Italy, positive spillovers from FDI have also been associated with R&D intensity, and with the amount of time a subsidiary is established (Castellani and Zanfei, 2006). Egelhoff *et al.* (2000) related FDI characteristics to trade patterns, and concluded that industry, subsidiary size, and parent country all significantly influence the size and patterns of trade.

The 'development impact question' of International Business has not received the same amount of attention as questions related to the 'how' and 'why' of firms' internationalization. But there is a large amount of research in the field of International Business, Management and Strategy that may help in understanding the relationship between FDI and development, since they highlight the important attributes of affiliates, the mechanisms through which organisations interact, and the consequences of these two elements for firm performance. While firm performance may not translate one-on-one to 'sustainable development', a well-functioning (and profitable) local private sector is an important prerequisite for development, as it strongly influences (if not determines) innovation, economic growth, job creation rates, and the impact of business activity on the natural environment. A discussion of this literature in a comprehensive manner is outside the scope of this dissertation. However, the subsequent chapters will deal with it where relevant. But just for illustration purposes, a few findings from studies on the 'prerequisites' of knowledge and technology transfers between organizations are reviewed that shed some further light on the technology spillovers from foreign subsidiaries to local firms.

For example, Kogut and Zander (1993) stressed that knowledge is at least partially tacit, meaning that geographical proximity is an important determinant in technology transfer

and spillovers. In addition, both the ability (absorptive capacity) as well as the motivation of the recipient firm are important in determining (intra-firm) knowledge transfers (Minbaeva *et al.*, 2003; Szulanski, 1996). Gupta and Govindarajan (2000) established that the motivation of the knowledge source subsidiary does not matter in transferring knowledge – implying that there may be possibilities for unintended spillovers from MNEs to local firms. In two related studies on International Joint Ventures (IJVs) in Hungary, Lane *et al.* (2001) and Lyles and Salk (1996) found that the ‘relatedness’ of the two firms businesses, and in particular the level of training and the provision of technological and managerial assistance was important in transferring knowledge from the foreign parent to the IJV (including the local firm). In addition, Lane and Lubatkin (1998) found that the similarity of 1) knowledge bases; 2) organisational structure & compensation policies and 3) dominant organizational logics, had a higher explanatory power as regards knowledge transfers (in alliances in this case) than absolute measures. This finding further specifies what the ‘technology gap’ identified above exactly contains, and suggests that the smaller the gap, the higher the potential for knowledge spillovers.

## **2.5 CONCLUSIONS**

This chapter showed that the presence of a foreign affiliate may induce a wide range of passive and active, direct and indirect effects. Whether the social, environmental and economic benefits outweigh the total costs for host countries has not yet been firmly established. Empirical evidence – if it exists in the first place – is mixed on literally all the issues discussed here. The estimation method used, as well as host country characteristics and FDI characteristics, appear to influence whether FDI contributes to sustainable development. This overview of studies shows that it is highly unlikely that wide-sweeping generalising statements on the relation between FDI and development can ever be made. Instead, it is more in the line of expectation that studies will establish that a particular type of FDI is beneficial for development under certain host country conditions. This means that research on the impact of FDI and MNEs for host countries should preferably take these issues into account.

In addition, several other elements may also contribute to enhance our understanding of the consequences of globalization through FDI for sustainable development. First of all, an important reason for the lack of attention of firm-specific moderators in the debate on FDI impact is that this debate has taken place mainly in (macro) economics, where taking business strategy into account is rather uncommon. As a result, business strategy, affiliate characteristics and their relationship with development are issues on which research has been most scarce. Insights from International Business seem to be vital to further our understanding of the relationship between FDI and development. Empirical research on the differences that exist in development impact across subsidiaries with different characteristics and in diverging host country settings is bound to give more satisfactory explanations for observed differences across the macro-studies for the relationship of FDI and development. Lall and Narula (2004) note that although the mechanisms underlying

FDI and development have not changed, the intricacies of these mechanisms need to be better understood if they are to be made beneficial.

Secondly, rather than a simple causal relation between FDI and development, multiple causal relations exist that form 'feedback loops' between FDI and development, making it difficult to identify the ultimate causes and consequences (see e.g. Rodrik, 1999). Longitudinal studies with sufficient panel data should facilitate statements on the direction of the causality, but gathering these data is difficult, in particular for the least developed countries that have no systematic, detailed, or reliable registration of MNE investment over time.

Thirdly, research should further analyse the specific active contribution of MNEs. The central question here is whether the extent and depth of the social and environmental commitments (e.g. on equal opportunity, training, labour conditions) made by MNEs in their codes and non-financial reports, correspond with the real practices of MNEs regarding pollution, emissions, wages and labour conditions. Which firms (and which kinds of firms) are most likely to really 'walk the talk', and which ones seem merely involved in 'window-dressing' activities?

The set of empirical papers presented in this dissertation aims to shed more light on these issues.





## 3 INTRODUCTION TO THE EMPIRICAL PAPERS

### 3.1 INTRODUCTION

The two preceding introductory chapters explained the importance of FDI in today's globalizing economy, and highlighted that much additional research is still required in order to fully understand the effects of FDI on the nations and peoples affected by it. The main theme therefore of this dissertation concerns the consequences of FDI for sustainable development. This is not the first study in this area, nor will it likely be the last. Globalization is as of yet 'a poorly understood phenomenon' (Rugman and Verbeke, 2004:3), and more research is vital if we want to come to policy recommendations on how to deal with globalization, on predicting how the future of globalization looks like, and on the exact role of MNEs in that process.

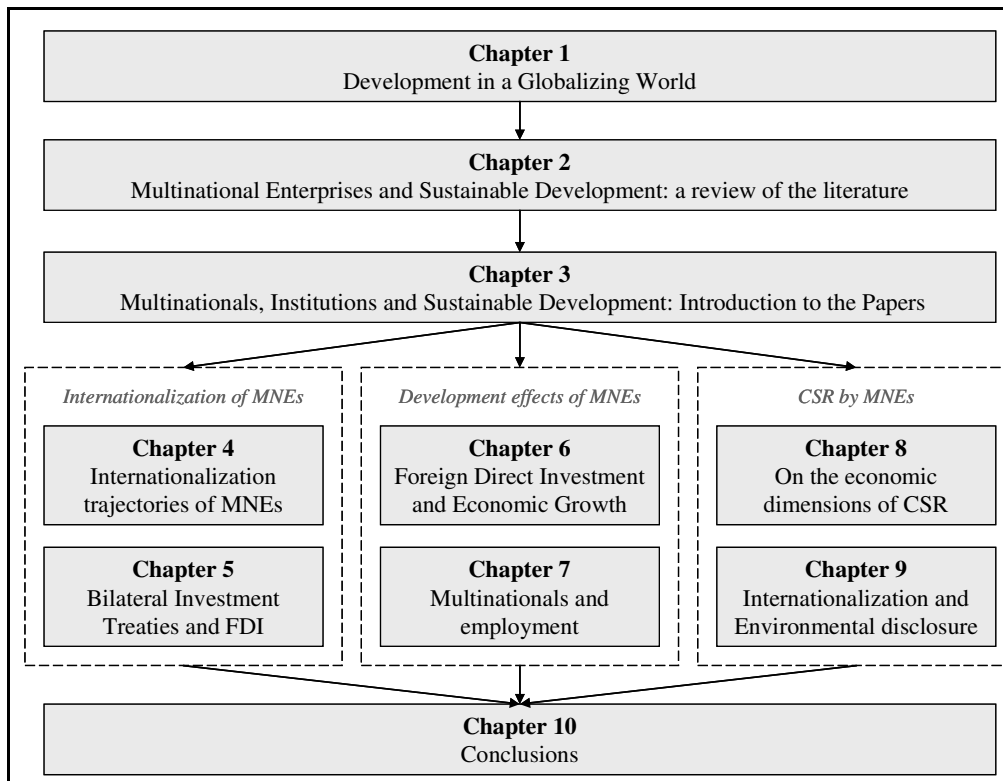
Globalization in itself is an extremely multifaceted concept, and even if it is narrowed down to FDI as in the present study, many themes and issues related to both the determinants, nature and effect of FDI require further analysis. This thesis analyzes several of these issues, embedded within the framework of the most recent insights from development theory (or what has been called 'the New Development Paradigm'). These insights suggest that future research should include a wide range of development indicators measuring all kinds of dimensions of sustainable development, and focus on the (active) roles that the various actors can and do play in the development process. Within this process, also the role of institutions – as shapers and determinants of MNE strategy and as moderator of the FDI-development relationship – takes centre stage. These considerations have led to three main research questions (see chapter 1):

1. *To what extent and in what way do home, host, and international institutions, and firm-specific factors, influence FDI and the internationalization of MNEs?*
2. *To what extent is the effect of FDI for sustainable development dependent upon the characteristics of that MNE, in particular its home country institutional context?*
3. *What do MNEs actively do themselves to enhance their sustainability impact, and how are these activities influenced by firm characteristics and the institutional contexts in which they operate?*

### 3.2 THE EMPIRICAL PAPERS

These three main research questions are addressed in this dissertation in a series of six empirical papers, where each research question is taken up by two papers (see figure 3.1). The first of each of the sets is more explorative (chapters 4 and 8) or general (chapter 6) in nature, whereas the second is more strongly focused on testing theoretically-derived hypotheses (chapters 5 and 9) or examining issues in more detail (chapter 7).

**Figure 3.1 Overview of the dissertation**



The first two papers analyze how economic globalization (through FDI) comes about. In particular, attention is paid to how the institutional context in which MNEs operate affects their internationalization strategies. The first paper (chapter 4) starts at the firm level. In an explorative study, the paper identifies the various different internationalization trajectories that MNEs have followed since 1990. Despite the substantial amount of IB research, it remains remarkably unclear how, at the corporate level, firms expand and withdraw their international activities over time, primarily due to notorious difficulties in gathering and comparing reliable longitudinal internationalization data. Chapter 4 addresses this issue and presents a unique longitudinal dataset (1990-2004) on internationalization strategies of more than 300 of the largest MNEs worldwide. Data for this paper have been manually collected directly from company sources (annual reports). This method made it possible to gather a dataset that is substantially more complete and accurate than any other secondary data source available, and allows for a more detailed treatment of different measurement methods. In addition to identifying a wide variety of internationalization trajectories, the home country and sector determinants of such patterns are explored in this chapter.

The second paper (chapter 5) further explores the determinants of internationalization, using data at the macro-level of analysis. It explains the amount of bilateral FDI stock between 1990 and 2004 among over 3000 country dyads, paying particular attention to the effect of Bilateral Investment Treaties (BITs) in influencing these capital flows. In

absence of any multilateral agreements, BITs are the only international institution specifically designed to regulate FDI. As yet, there are still only very few papers on this topic and the present study contributes to the debate on the effects of BITs on FDI by 1) analyzing not only developed-developed, or developed-developing country data, but especially also developing-developing country data, the object of more than half of the BITs, and 2) examining how the effect of BITs may be different in different home and host country context (including e.g. institutional quality and natural resource endowments).

The second set of empirical papers focuses on the second research question, analyzing the sustainable development effects of inward (and to a lesser extent, also outward) investment for host countries. Chapter 6 starts by exploring the effect of FDI on host country economic growth – one of the more traditional research questions in the debate on the sustainable development effects of FDI. As chapter 2 indicated, although recent studies examined a variety of host country factors that moderate this relationship, few have yet extensively addressed the moderating role of the characteristics of FDI, and how they interact with host country conditions. Chapter 6 addresses this issue by analyzing the different growth consequences of FDI from various countries of origin, hereby addressing the role of home country institutions in explaining the development impact of FDI. The paper uses a dataset on bilateral investment stocks from six major outward investors towards 71 countries for the 1989-2002 period.

Whereas chapter 6 focuses on the economic impacts of FDI at the macro-level, chapter 7 uses micro-level evidence in an in-depth study of the effect of both inward and outward investment on employment in the Dutch economy. The Netherlands provides a very interesting context as one of the few countries where both substantial inward and outward investment (and both large domestic and foreign MNEs) is present. Using a set of detailed data on over 60,000 employees, comparisons are made on a range of wage and labour condition indicators that are unavailable in other household or establishment surveys that previously supplied data for such analyses. Both the direct effects on wages and labour conditions of working for an MNE are addressed, as are the indirect effects (linkages, competition).

The third and final set of empirical papers deals with what MNEs themselves have to say about their potential impact on sustainable development, and about the ways in which they try enhance it. Chapter 8 analyses in detail the statements that MNEs make in their non-financial reports on their potential economic impact on host countries through technology transfer, linkage creation, and sheer size effects. An in-depth analysis of the contents of the non-financial reports by the Fortune Global 250 (2004) firms explores to what extent disclosure on economic impact differs by firm characteristics such as size, sector or country of origin.

The sixth and final empirical paper (chapter 9) also analyzes the extent of voluntary disclosure by the Fortune 250 firms (2001), but now focuses on environmental reporting. In addition to relating various dimensions of internationalization to occurrence and level of detail of reporting, the chapter gives substantial theoretical and empirical attention as

to how institutional pressures both at home and abroad combine and interact to influence the likelihood and extent of disclosure.

Together, these papers address a wide variety of issues ranging from questions like how globalization via FDI comes about, what determines the effects of MNEs on sustainable development, to how MNEs respond themselves to their increased (imposed) responsibility in the development process. A broad range of data and research methods is used: from primary data (annual reports, questionnaires), to use of secondary data (FDI), and to detailed content analysis (sustainability reports). In addition, the papers address a variety of dimensions of sustainable development, dealing alternately with the economic, social or environmental dimensions of development.

The conclusions of these papers may therefore appear to be difficult to unite. However, the combined value of the papers in drawing conclusions on the consequences of FDI for sustainable development is more than the sum of its parts, as shown in the concluding chapter of this dissertation (chapter 10). One element that contributes to the coalescence of the papers is that for all the papers that deal with firm level data (chapters 4, 8 and 9) the sets of firms that is analyzed largely overlap: many of the firms that are in the Fortune 250 firms of the final two papers are also included in the list of the largest firms that is analyzed in the first paper (chapter 4), as all involve the largest firms worldwide. Many of the employees that are studied in chapter 7 that work at international firms (either Dutch or foreign) also often work for one of these large firms. Even with respect to papers that analyzed FDI at the macro-level (chapters 5 and 6), it is important to realize that as the largest 500 MNEs are responsible for the overall majority of FDI flows – estimates are at 80 percent (Rugman, 2000) – many of the conclusions of these papers can also be linked to the micro-papers. Hence, while addressing a range of issues and topics, the key harmonizing theme in this dissertation is that each of the papers deals with the same relatively small set of large MNEs that are the major drivers of globalization through FDI.

## 4 INTERNATIONALIZATION TRAJECTORIES OF MNEs: 1990-2004

Co-authored with Rob van Tulder.

CIBS Conference, Reading, April 16-17, 2007 (received Best Paper award).

### 4.1 INTRODUCTION

Understanding the nature, characteristics and determinants of the internationalization strategies of multinational enterprises (MNEs) is one of the key research foci within the International Business domain. Various theoretical models have been developed to explain how and why internationalization comes about, such as Dunning's eclectic paradigm that in itself encompasses several theories of international business (Dunning, 1988, 2000, 2001b), and the more process-oriented learning models of the Uppsala school on the stages of foreign involvement (Johanson and Vahlne, 1977; Johanson and Wiedersheim-Paul, 1975; Vermeulen and Barkema, 2002). These theoretical contributions have been tested in a large amount of empirical work on for example the determinants of FDI (Loree and Guisinger, 1995; Blonigen, 2005) or on entry mode choice (Makino and Neupert, 2000; Brouthers, 2002; Kogut and Singh, 1988).

Such studies take the individual investment decision – either aggregated at the national level in the investigation of the determinants of FDI, or at micro-level in entry mode research – as their key research object. However, internationalization is more than a series of 'one-off' decisions made separately for each country (Fletcher, 2001). In order to measure internationalization at the MNE level, a range of indicators has been developed including for example the Network Spread Index (Ietto-Gillies, 1998), or entropy measures of international diversification (Hitt *et al.*, 1997). The most important (and often-used) indicator remains however the degree of internationalization (DOI). The DOI measures foreign activities as a proportion of a firm's total activities, where activities may constitute sales or assets (most commonly), but also the number of employees or subsidiaries. These may be either combined in a composite index (Sullivan, 1994; 1996; and UNCTAD's TransNationality Index), or used as separate dimensions (Ramaswamy *et al.*, 1996).

The degree of internationalization has been used to explore both the determinants (for example, Autio *et al.*, 2000; Tihanyi *et al.*, 2000) and performance outcomes (see e.g. Lu and Beamish, 2004; Contractor *et al.*, 2003) of international expansion at the firm level. So far however, only limited attention has been paid to the dynamic change in a firm's degree of internationalization. Most studies have used the degree of internationalization in a relatively static way, focusing on cross-sectional comparisons rather than changes over time within a framework of long-term corporate strategy. Only a few recent studies

have explicitly and empirically addressed how, at the corporate level, firms expand (and withdraw, see Benito and Welch, 1997) their international activities over time, and to what extent different patterns or clusters of strategies can be distinguished among such processes. Or, as Maitland *et al.* (2005: 436) noted, there is still ‘limited understanding of how the MNE is created as an integrated system of strategically allocated resources, rather than a simple aggregation of discrete affiliate or country level decisions.’ This is an important omission, as there are indications that differences in the internationalization process affect the extent to which firms are able to reap the benefits from international expansion. In addition, a longitudinal analysis of growth across borders can shed light on the growth of the firm in general, and allows for a study of the various strategies that firms have used in driving economic globalization, hereby furthering our understanding of this prominent process.

The reason for the absence of longitudinal studies has not been the lack of recognition of the importance of such analyses. Rather, data have been notoriously difficult to gather and to compare reliably over time. This paper aims to address this empirical issue by presenting a dataset on the internationalization of sales, assets and employment between 1990 and 2004 of a sample of 233 of the largest firms worldwide, from the US, Europe and Asia. These data were manually collected from corporate sources in order to document in detail the reporting methodologies used. This enabled within-time-series corrections for a wide range of methodological problems that otherwise would have resulted in large biases and discontinued time-series. Using hierarchical and non-hierarchical clustering techniques, we explore to what extent the way in which firms expand internationally can be analyzed and clustered into different ‘types’, or trajectories. A trajectory is defined as a distinct pattern over time with respect to the level, pace, variability, and temporal concentration of international expansion. Identifying typologies (here: trajectories) is an important academic tool to enhance our understanding of these firms, to guide further research and theory development, and to provide anchors for policy makers and managers. It has therefore often been used in international business research, primarily with respect to organizational structure (from Chandler’s (1962) M and U-forms, to Bartlett and Ghoshal’s (1989) transnational firm, and Birkinshaw’s (2001) typology of subsidiary roles). No such typologies are yet available for internationalization strategies as a whole. In developing such a characterization of internationalization trajectories, we pay not only attention to the level, pace and temporal concentration of international expansion, but also to the difference between the relative (DOI) and absolute growth (in US\$ or number of employees) of international activities.

Due to our method of sample selection in which we take 1995 as our benchmark year, we do not only include the present-day ‘winners’ of globalization, but also a set of firms that were large in the mid-1990s but at present do not make the Fortune 500 list anymore. This reduces the survivors-bias in our sample. In addition, we add to existing research on the degree of internationalization by paying extensive attention to the methodological complexities that are associated with comparisons between firms and over time. The degree of internationalization appears to be a relatively simple indicator, but is in fact

quite difficult to measure. We show that failing to account and correct for a range of methodological problems results in severe biases in the measures of internationalization, and results in changes over time that are solely due to methodological discrepancies instead of changes in firm strategy.

By taking this particular empirical approach, our paper also complements the two recent studies that have explored dynamic changes in internationalization via the establishment of foreign subsidiaries instead of the DOI: those by Maitland *et al.* (2005), and by Vermeulen and Barkema (2002). Maitland *et al.* (2005) examined the clustered versus non-clustered growth (in time) of firms in the 1900-1975 period using a sample of 181 US-based multinationals from the HBS Multinational Enterprise database. Vermeulen and Barkema (2002) analyzed the pace, rhythm and scope of international expansion of 22 Dutch firms between 1967 and 1992. While our time period is shorter than that of Vermeulen and Barkema (2002) and substantially shorter than that of Maitland *et al.* (2005), our study covers a more recent period that is particularly interesting given the large increases in internationalization and globalization since the fall of the Berlin Wall in 1989. In addition, our sample includes a larger number of firms that are also distributed across multiple home bases. This enables more general conclusions than samples based on the US (or Dutch) context alone. Thirdly, by focusing on the degree or internationalization of sales, assets and employment, instead of on the number of individual investments, we are able to more precisely document not only the size, but also the nature (e.g. labour versus capital intensive) of the international involvement.

The remainder of this chapter is organized as follows. First in section 4.2, the various theoretical approaches to explaining internationalization are briefly reviewed, as well as a selection of the wide range of empirical studies on the causes and effects of internationalization. Section 4.3 starts the empirical part of this paper with a discussion on measuring the degree of internationalization and a detailed explanation of our own data collection method. Section 4.4 details the methodology, including the sample and empirical estimation approach. The results of the analyses are presented in section 4.5, while section 4.6 concludes and discusses.

## **4.2 THE INTERNATIONALIZATION OF MULTINATIONAL ENTERPRISES**

How the internationalization of firms comes about, and for what reasons, is a question that is central in the area of International Business. Contributions answering this question are dominated by three theoretical perspectives that highlight the role of firm-specific advantages, of factor endowments and of transaction costs, respectively. The eclectic paradigm by John Dunning (1988, 2000, 2001b) combines these three approaches as Ownership advantages, Location advantages and Internalization advantages.

Ownership advantages constitute of those (intangible) assets or characteristics that allow firms to compete effectively with local entities in foreign countries. Hymer (1960, published 1976) was first to point out that since firms operating across borders faced intrinsic disadvantages in the competition against local firms due to communication costs, language and cultural differences, lack of knowledge of the local market, exchange



rate risks and (potentially) a less favourable treatment by host governments, they needed to have some specific advantage to offset these disadvantages (see also Caves, 1971; Lall and Streeten, 1977). Examples of ownership advantages – also often called a firm's resources (Ghoshal and Nohria, 1989; Wernerfelt, 1984; Barney, 1991), firm-specific advantages (Rugman and Verbeke, 1992), or competitive advantages (Porter, 1985, Birkinshaw, 2001) – include the ownership of property rights, economies of scale, privileged access to product or factor markets, and technological and managerial knowledge and know-how. In particular the intangible ownership advantages are related to the firm's home market (Caves, 1971), where the institutional context, such as the education system, may strongly influence firms.

Locational advantages refer to the characteristics of foreign locations that motivate firms to produce abroad, instead of serving foreign markets through exports. An early contribution that pointed at the importance of these advantages for international production was Ray Vernon's product cycle model (1966) that suggested that some cost structures and market characteristics would be best suited for newly developed products (e.g. in the US), and others would favour more standardized or unskilled-labour intensive production (in developing countries). Generally, four main clusters of locational advantages attracting FDI are identified: markets; natural resources; factors contributing to the efficiency of production (particularly low labour costs); and strategic assets (resources that have specific strategic, synergic (complementary) value for the firm) (Dunning, 2000, 1993).

Finally, Internalization advantages arise from market failures and determine why international activities are internalized within a single firm, and not conducted at arm's length. The main concept here is transaction costs – the negotiating, monitoring and enforcement costs that have to be borne to allow exchange between two parties (Jones and Hill, 1988). Building on the work of Coase (1937), both Buckley and Casson (1976: 33) and Hennart (1977) argued that profit maximising firms operating in a world of market imperfections, face incentives to circumvent imperfections by internalizing these markets. Internalization occurs when the costs of organizing and transacting is lower within firms than via the market (Teece, 1986). Especially in markets for knowledge and intermediate product markets transaction costs due to uncertainty and complexity, or information asymmetry, may be high. Bounded rationality and opportunism also discourage market transactions and stimulate internalization (Dunning, 1993).

While the internalization theory has remained dominant in the past two decades in explaining the existence and growth of the MNE (Dunning, 2001b), critics have emphasized that transaction cost approaches pay little attention to how domestic firms internationalize (Yeung, 1998, Morgan and Katsikeas, 1997), or to the internationalization process itself. This question regarding the process of internationalization was first addressed by a group of Swedish scholars, in what has become known as the Uppsala model of internationalization (Johanson and Vahlne, 1977; Johanson and Wiedersheim-Paul, 1975). They distinguished four stages of internationalization, in which firms start by irregular exports to a host market, consequently export through an agent, in the third stage establish a sales subsidiary and

finally, locate production in the host country. Experience with host country supply and demand conditions is a key variable in explaining the degree (and success) of internationalization (see also Ruigrok and Wagner, 2003). As experience grows, the 'psychic distance' decreases and firms commit greater levels of resources to the host market (Hadley and Wilson, 2003; Whitelock, 2002).

These theoretical propositions have been empirically tested in a range of papers studying international expansion at a variety of levels of aggregation, including for example FDI at the national (macro) level, the entry mode choice at the micro-level (i.e., the way in which international expansion occurs), and the degree of internationalization at the firm level. As regards the determinants of FDI at the macro-level, a distinction is generally made between traditional determinants related to factor endowments, labour and capital costs, and demand conditions, and the non-traditional locational advantages that have recently received more attention, including policy variables such as investment incentives, performance requirements and taxes (Loree and Guisinger, 1995; Blonigen, 2005), institutional factors such as property rights and government quality (Loungani *et al.*, 2002; Biswas, 2002), and agglomeration effects (Porter, 1998). Traditional determinants of FDI appear however not to have lost their relevance in explaining investment in the age of globalization (Nunnenkamp and Spatz, 2002). Finally, also the distance – geographical, cultural, administrative (i.e. institutions) and economic – between the home and host country remains an important deterrent of FDI (Ghemawat, 2001; Van Tulder and Van der Zwart, 2006; Xu and Shenkar, 2002).

With respect to the determinants of the entry mode decision – and hence of whether internationalization occurs via increased foreign ownership, or via e.g. exports or licensing – many scholars have used (and confirmed) transaction cost theory – with particular attention to the role of cultural distance - to explain when joint ventures, and when wholly owned (acquisition or greenfield) subsidiaries (Makino and Neupert, 2000; Brouthers, 2002; Kogut and Singh, 1988) are used to enter a country. Also location factors such as markets and investment risk, as well as firm strategic factors and ownership advantages (size, experience) determine the mode of international expansion (Kim and Hwang, 1992; Agarwal and Ramaswami, 1992). In case of a weak fit between the organization and its host country context firms can also adopt disinvestment strategies (see for example Van Everdingen *et al.*, 1997). Others explored the performance implications of various entry modes, concluding that those effects are dependent upon host country context or firm-specific factors such as resources and organizational control (Woodcock *et al.*, 1994; Slangen, 2006; Siripaisalpipat and Hoshino, 2000;), firm strategy (Busija *et al.*, 1997) or entry sequence (Pan *et al.*, 1999). In more longitudinal settings, Chang (1995) studied sequential foreign market entry.

Finally, the determinants of internationalization have not only been studied at the national levels of analysis or for individual investment decision, but also at the corporate level for the degree of internationalization of a firm. In these studies, country, industry, and firm specific variables such as size, R&D intensity, and experience (age) have been found to affect the degree of internationalization of the firm (see for example Autio *et al.*, 2000; Peng and Delios, 2006; Tihanyi *et al.*, 2000; Hitt *et al.*, 2006). But especially the

effect of the degree of internationalization on performance remains a much researched and fervently debated issue (Lu and Beamish, 2004; Contractor *et al.*, 2003). Over the past three decades, theoretical explanations have proposed different balances between the costs and benefits of internationalization. The S-curve hypothesis has received significant recent attention (Contractor *et al.*, 2003, Lu and Beamish, 2004) as an attempt to integrate the negative performance effects of the ‘liability of foreignness’ in the early stages of internationalization (Zaheer, 1995) with learning effects, economies of scale and scope and transaction cost internalization in the second stage (positive performance effects) (Ruigrok and Wagner, 2003; Caves, 1996; Teece, 1986), and finally the internationalization threshold based on the prohibitive coordination costs of ‘overstretch’ in the final stage (Geringer *et al.*, 1989, Gomes and Ramaswamy, 1999). In addition, recent studies addressed the role of moderating factors in the internationalization-performance relationship, such as the ownership of intangible assets (Lu and Beamish, 2004; Kotabe *et al.*, 2002); the (geographic) dispersion of international activities (Vachani, 1991, Goerzen and Beamish, 2003); and the organizational structure of international activities (Fortanier *et al.*, 2007). Vermeulen and Barkema (2002) found that the internationalization process (the pace and rhythm of expansion) could very well explain the circumstances under which internationalization is beneficial.

Reviewing the evidence cited above, it appears that most of the studies on how internationalization comes about have focused on one-off decisions (Fletcher, 2001). Though empirical studies often refer to the larger overarching paradigms (OLI, or the stages models) that dictate the determinants and steps of internationalization, empirically, the analysis focuses on individual investment decisions (e.g. their entry modes), or analyzes the determinants of internationalization using investment aggregated at the national level (FDI) rather than at the organizational level. In the evaluation of the performance impact of international expansion, internationalization is measured as a firm-wide construct – often as the degree of foreign-to-total sales, or foreign-to-total assets – but the analysis focuses primarily on the levels of internationalization, and on the cross-sectional dimension, whereas only limited attention is paid to the time dimension and dynamic change (a notable exception is Vermeulen and Barkema, 2002). An overall picture on the extent and way in which the largest firms worldwide have expanded their international operations in the past 15 years is hence still absent.

This is an important lacuna in the literature for several reasons. First of all, there are important indications that different internationalization processes also lead to different performance outcomes (Vermeulen and Barkema, 2002). Secondly, a longitudinal analysis of growth across borders can shed light on the growth of the firm in general, a process in which path-dependencies and firm resources and capabilities are closely intertwined (Jones and Khanna, 2004; Penrose, 1959). Finally, a study of the various strategies that firms have used in driving economic globalization can further our – yet limited (Rugman and Verbeke, 2004) – understanding of this prominent process. This may have important consequences for the theoretical and empirical studies into both the determinants of globalization and its broader societal implications.

It is important to note that this relative lack of longitudinal studies is not caused by an absence of interest in or appreciation of such studies, but rather by the difficulties in collecting reliable data over a longer period of time (see Vernon, 1999). This paper aims to address this issue by documenting the differences in internationalization and international expansion over time for a substantive period (1990-2004) that covers the most recent surge in international activity by MNEs. This period basically represents the take-off of the modern era of globalization, with global FDI inflows booming from a level of around US\$ 200 billion in 1990 – after decades of only limited growth - to a peak of US\$ 1,400 billion in 2000 (UNCTAD, 2006). The main research question of this paper is to what extent the way in which firms expand internationally can be analyzed and clustered into different types, or trajectories. We ask: if internationalization is path-dependent (as it is often considered to be), do all MNEs follow different individual paths, or can we identify clusters of different paths (trajectories) over time? A derivative question that this paper addresses is to what extent these trajectories are influenced by country and sector dynamics.

Identifying typologies is an important academic tool to enhance our understanding of these firms, to guide further research and theory development, and to provide anchors for policy makers and managers. It has therefore often been used in international business research, primarily with respect to organizational structure. One of the first typologies of organizational structure was proposed by Chandler (1962) who introduced (amongst others) the functional organization (Unitary or U-form) and the diversified product organization (Multidivisional or M-form). Other examples include Perlmutter's (1969) distinction of ethnocentric (home-country oriented), poly-centric (host-country oriented) or geo-centric (world-oriented) organizations; and the typology of Prahalad and Doz (1987) based on their Integration-Responsiveness grid. Porter (1986) identified several strategy configurations based on dispersion and coordination of international activities (see also Ruigrok and Van Tulder, 1995). One of the most well-known typologies of the organization for international firms was developed by Bartlett and Ghoshal (1989). In particular their 'transnational firm' that was argued to be best positioned to simultaneously achieve the contradicting competitive objectives of global efficiency and national responsiveness gained followers as others proposed similar organizational forms such as the heterarchy (Hedlund and Rolander, 1990) and the horizontal organization (White and Poynter, 1990). Often these organizational structures were combined with, or further substantiated by, typologies of the various roles that subsidiaries could have within such structures (see e.g. Birkinshaw and Morrison, 1995; Birkinshaw, 2001). However, since the focus of these typologies is on the organization, and not on the spread and extension, of international activities, they would be unfit for the purposes of this paper. Since no such typologies are yet available for internationalization strategies as a whole, we develop our own typology in the empirical sections below.

### 4.3 MEASURING INTERNATIONALIZATION

The analysis of firms' internationalization strategies requires the appropriate measurement of the internationalization concept. A wide range of variables have been suggested to measure internationalization, including the Network Spread index (Ietto Gillies, 1998; Muller, 2004), or entropy indices of diversification (Kim *et al.*, 1989, Hitt *et al.*, 1997). Empirically, the use of the degree of internationalization – the ratio of foreign to total assets, sales or – less often used – employment or subsidiaries – is most common (see the review of the internationalization literature by Hitt *et al.*, 2006). Sullivan (1994, 1996) has argued that several of these measures could and should be combined into a multi-item construct, consisting of the degree of internationalization of sales, assets, and several other variables. However, Ramaswamy *et al.* (1996) found little evidence that these variables indeed comprised items of a single construct, and also Hassel *et al.* (2003) stressed that internationalization is a multidimensional concept, pointing out that also theoretically (e.g. Vernon's product cycle, and the Uppsala stages model), foreign sales and foreign assets should be treated as dissimilar dimensions of internationalization.

To deal with these considerations, we measure the degree of internationalization in three ways: as the foreign-to-total ratio of Assets, Sales, and Employment. These are similar to the components of UNCTAD's Transnationality Index, although we will not combine them in this paper. We collected data for each of these three variables for the 1990-2004 period for a sample of 233 of the world's largest firms (as explained in more detail below), making use of annual reports and SEC filings. The use of manually collected annual report data allowed us to pay particular attention to documenting the exact methodologies used in those reports. As explained in more detail below, this was vital to ensure reliable and longitudinally comparable data on internationalization.

While debate continues on whether the DOI variables capture the concept of internationalization appropriately, little to no debate exists on how exactly these ratios should be measured. But even such apparently simple and often-used indicators as the ratio of foreign-to-total sales (FSTS), foreign-to-total assets (FATA) and foreign-to-total employment (FETE) are much more complex than the easy downloads from archival electronic data sources such as Thomson Financial (included in Datastream and comprising the WorldScope database) or CompuStat seem to suggest. One only has to open an annual report of a random MNE to see that classifying assets, sales or employment as 'foreign' or 'domestic' is slightly more complex. See for example the illustration of the geographical segment reporting by Sharp in figure 4.1. In this table, Sharp breaks down its total sales from various regions including intersegment (i.e., intrafirm) sales, which are subsequently eliminated from the total sales. It is not immediately clear which elements should be included in the 'foreign' and which in the 'total' component to calculate the foreign-to-total ratio of sales.

Many important methodological issues need to be addressed in measuring the degree of internationalization of sales, assets and employment, that are different for all three variables. As explained in more detail below, for sales data, these methodological issues

**Figure 4.1 Illustration of geographical segment reporting: Sharp**

	Yen (millions)		U.S. Dollars (thousands)
	2005	2006	2006
Net Sales:			
Japan:			
Customers.....	¥ 1,626,944	¥ 1,742,349	\$ 15,020,250
Intersegment .....	629,484	708,691	6,109,405
Total.....	2,256,428	2,451,040	21,129,655
The Americas:			
Customers.....	338,342	409,105	3,526,767
Intersegment .....	7,858	7,715	66,509
Total .....	346,200	416,820	3,593,276
Asia:			
Customers .....	110,658	116,690	1,005,948
Intersegment .....	158,828	178,556	1,539,276
Total .....	269,486	295,246	2,545,224
Europe:			
Customers .....	353,198	425,371	3,666,992
Intersegment .....	2,975	3,662	31,569
Total .....	356,173	429,033	3,698,561
Other:			
Customers.....	110,717	103,594	893,052
Intersegment .....	167,929	290,868	2,507,482
Total .....	278,646	394,462	3,400,534
Elimination.....	(967,074)	(1,189,492)	(10,254,241)
Consolidated.....	¥ 2,539,859	¥ 2,797,109	\$ 24,113,009

Source: Sharp Annual Report 2006, p.52.

include a) the difference between sales by destination and by origin; and b) the importance of intra-firm sales. For asset internationalization, they involve a) the definition of assets used, and b) the role of corporate or non-geographically specified assets. For employment data, the problems are caused by differences in a) whether the number of employees or the number of full-time equivalent jobs are reported, and b) if the numbers are based on the staff numbers at the end of a fiscal year, or on the average number of employees in a particular year. For all firms, the exact definition of the home country is important (as firms sometimes report data using their home region – e.g. Europe – as base), as well as the designation of the year of observation and the use of exchange rates for conversions to US\$, as fiscal year-ends may not always be similar to the calendar year end. Finally, the comparison of internationalization over time is additionally hampered by mergers and acquisitions among firms.

Not appropriately dealing with these methodological problems creates severe problems in drawing conclusions from internationalization data. Both in time-series as in cross-sectional data, different definitions lead to biases that – as the examples below show - are often not unsubstantial. This results in faulty comparisons among firms, and in the recordings of growth or decline in internationalization over time that are due to methodological instead of firm strategic changes. In the data we gathered for this paper, we aimed to avoid and control for these problems as much as possible, focusing particularly on the time dimension. We will detail each of the problems and our solutions for sales data, assets data, employment data, regional homes, and M&As, in turn. We will also address how the rather ‘labour-intensive’ way of collecting data compares to the

more readily available information from electronic data sources, in particular the Thomson Financial and WorldScope databases.

### **Sales data**

For sales data, the key problem in measuring internationalization relates to using data on 'sales by destination' (i.e., export sales, by destination of the final customer of a product, which may very well come from the home country) or 'sales by origin', sales that are recorded as foreign only if they are indeed sold by a foreign subsidiary. The difference between these two is substantial. Although very few firms record both, the example of Siemens provides a good illustration: in 2004, their FSTS ratio for sales by destination was nearly 90 percent, whereas for sales by origin, this was 56 percent, representing a difference of more than 30 percent points. For Volkswagen, similar differences were recorded in the mid-1990s: 70 percent of foreign sales by destination, 35 percent by origin. Also the comparison over time within the same firm show substantial changes in internationalization if firms start to use different ways of reporting. We choose to use sales by origin as often as possible, as this best captures the international expansion through investment of MNE activity. In the case of methodological changes within the time series, an adjustment was made for part of the series to remove biases due to methodology. This adjustment was always made so as to affect as few observations as possible. In order to distinguish between what share of a year-on-year change was due to methodological changes, and what part due to 'normal' changes in strategy, we calculated the average of four observations before and after the change in both the partial series, and correct one of the partial series by adding or subtracting the average difference between these two means. These corrections were made for a total of 28 out of the 231 firms that had a time-series of FSTS data available. The corrections involved an average of 4.2 changes per time-series, with an average absolute mean difference of 20 percent.

A second problem is that the total of geographically specified sales may not always equal the total sales of a firm. This is almost always due to eliminations of intra-firm sales: the sales of one affiliate to another. Not considering eliminations may result in over or underestimation of the real value of FSTS, as the numerator and denominator are not reflecting the same concept. As a general rule, we calculate the FSTS based solely on the geographically specified sales to external customers. In the example of Sharp above, only the sales to customers (hence excluding intersegment sales) are used to calculate the share of sales outside Japan (the total adds up to the consolidated total as the intersegment sales are eliminated).

### **Asset data**

For asset data, one of the key problems in collecting comparable data relates to the type of assets that is geographically specified in the annual report. We found a total of 10 different definitions that have been used in addition to total assets: fixed assets; identifiable assets; long-lived assets; net assets; operating assets; property, plant and equipment; segment assets; tangible and intangible assets; tangible fixed assets; and

capital investment. The amount of assets that is specified may be much less than a firm's total amount of assets. In such cases, directly linking the 'foreign' component to the total amount of assets on the balance sheet creates important measurement deficiencies. In addition, among the type of assets that is specified, a common component includes 'corporate', i.e., non-geographically specified assets. As with sales, we only use the amount of clearly geographically specified data to calculate the FATA variable. This means that assets that are not geographically specified either due to the definition or due to the 'corporate' component are not considered in calculating either the nominator or denominator of the foreign-to-total asset ratio.

Differences in methodology and definition create similar problems in the data over time for assets, as the difference between sales by destination or origin did for sales. For example, the degree of internationalization of Apple decreased from 39 percent in 1998 to 17 percent in 1999, as the definition changed from total assets into long-lived assets. For British American Tobacco, the FATA ratio increased from 27 percent in 1997 to nearly 80 percent in 1998 when instead of total assets, the operating assets were specified, and then dropped in 1999 to 62 percent as from that year onwards the dispersion of operating assets including unamortized goodwill was reported. Finally, Johnson & Johnson recorded a drop from 49 percent to 37 percent in 1998 in the share of foreign assets, as instead of identifiable, long-lived assets were reported. To correct for the effect of changes over time in asset measurement methodology on the total FATA ratio, we used the same approach as for sales data (i.e., by taking the mean difference between 4 observations before and after the break and correcting the shortest time series with this difference). These corrections were made for a total of 45 out of the 148 firms that had a time-series of FATA data available. The corrections involved an average of 4.8 changes per time-series, with an average mean difference of 14 percent points.

### **Employment data**

Employment data are slightly less problematic than the geographical segmentation of sales and assets. The geographical location of a particular employee is generally easily established, as even the most mobile managers or expatriates tend to have a home base (even if that may change during the years), so problems related to part of the workforce not being geographically specified are virtually absent. Firms do differ, however, in whether they report the total number of employees (people) or number of jobs (full time equivalent, or FTE), and whether year-end or year-average numbers of employment are reported. This may affect the degree of internationalization of employment of a firm. For example, part-time work is quite common for women in the Netherlands, meaning that Dutch firms that would change from reporting on the number of individual employees to reporting on FTE may see a drop in internationalization. Similarly, a high use of seasonal work in foreign countries by for example agricultural firms (and in the food, beverages and tobacco sectors) may create differences in the FETE ratio at the year-end, and on average.

For the 20 changes in reporting on employees however (out of the total of 114 series), the average absolute difference before and after the change in methodology was only 2.2



percent point. This is well within the normal annual fluctuations in the data. The highest difference (5 percent point) was recorded by Alcoa between 1994 and 1995, changing from year average to year-end reporting. This difference was not exceptional given the quite substantive increase in internationalization of the firm: an increase of 4 percent was recorded between 1992 and 1993, and an increase of 7 percent between 1995 and 1996. Hence, it appears that in the case of the FETE ratio, the method of reporting has no substantial effect on the degree of internationalization. Therefore, no corrections were made in the employment time series.

### **Control for regions**

In addition to controlling for changes in the accounting methodology that was used to report the distribution of assets and sales by geographical segments, we also controlled for changes in definitions of the home country (or region) for all three variables (as in this case, differences for the FETE were substantial). Quite a number of firms – in particular European firms – reported at some point in time on their extent of internationalization without mentioning the share of their home country in their total sales, assets, and employees, but use the entire EU (or even broader, ‘Europe, Middle East and Africa’) instead. For example, Valeo started to report for the European region since 2002, causing a drop in the internationalization of employees from 67 percent to 23 percent. Michelin made a similar change in 2002, explaining a decrease in the FSTS ratio from 86 percent to 53 percent, and a change in FATA from 77 percent to 51 percent. A US example is Ford, which started to report its employees ‘outside North America’ as foreign in 2003, causing a decline of 54 percent to 45 percent in the FETE ratio. We corrected for this problem in the same way as we did for assets and sales. This resulted in corrections for 22 time-series of FSTS, 6 time series of FATA, and 10 time-series of FETE.

### **Exchange rates and fiscal year-ends**

All sales and asset data used were converted into US\$ using year average exchange rates for sales, and year end exchange rates for US\$. These exchange rates were taken as for the same date as the fiscal year end of the firm (for example, for many Japanese firms this is at the end of March). Fiscal years were assigned to the years in the dataset based on the maximum overlap of months. Hence, fiscal years ending between the 1st of January and 30 June were seen as giving the data for the preceding year, and fiscal years ending between the 1st of July and the 31st of December, as the data for that same year.

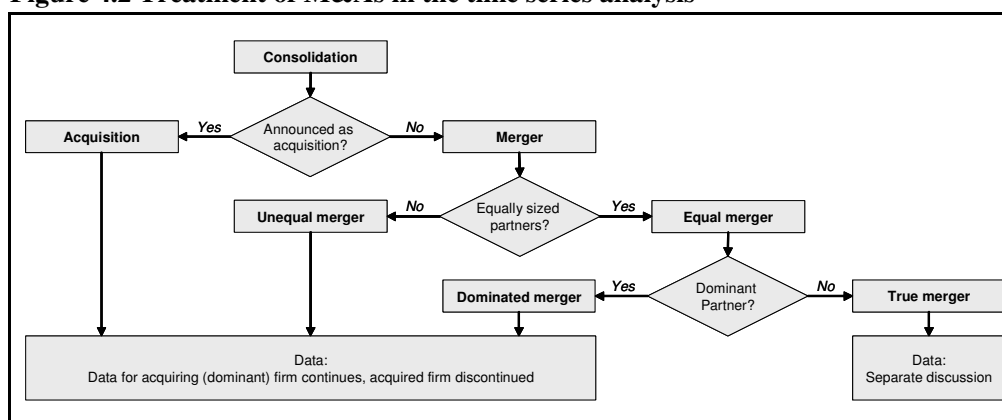
### **Mergers and acquisitions**

Mergers and Acquisitions (M&As) have been a dominant mode of internationalization in the 1990s and (again) since 2003/2004. This creates problems in longitudinal analysis, as a merger (or takeover) of two independent firms into one new firm creates a discontinued time series. For example, if two firms in the sample merge in 1998, there will be data for the two independent firms up until 1997, and data for the single merged firm from 1998 onwards. If these series are treated as independent (i.e., as three separate entities in the

dataset), the analysis denies that M&As are a key part of the expansion strategy of certain firms, and it creates a relatively artificial distinction between takeovers within the sample, and takeovers outside the sample: why should a takeover by a large MNE of one of the smallest firms in the sample result in a separate time series and an acquisition of a large firm outside the sample, not? However, simply adding the data on the combined firm to one of the two preceding firms may also not be appropriate, if the two firms combine their activities on a relatively equal footing (i.e., the merger is a strategy of both firms).

In order to deal with this problem, we use a hierarchical set of decisions following the diagram in figure 4.2. First, we distinguish between acquisitions and mergers. In their simplest form, acquisitions occur if one firm buys another firm, and announces this acquisition as such. In this case, we treat the acquiring firm as the surviving entity; the acquired firm – if it is in the sample – is covered until the acquisition. The treatment of mergers is more difficult. Often, firms prefer to present the combination of their businesses as a ‘mergers of equals’, whereas in fact an acquisition has occurred or the merger is dominated by one partner. An example is here the combination of Hoogovens and the twice as large British Steel into Corus, which was presented as a merger but has primarily been dictated by the interests of British Steel (Hendriks, 2006). We therefore choose to distinguish between mergers ‘of equals’, and ‘of unequals’, dependent upon the size of the involved firms. We define size on the basis of sales in the year preceding the merger. Mergers where the difference between the partners is larger than 10 percent of the sum of the combined sales<sup>1</sup>, are considered as unequal, the others as equal. The data for firms involved in mergers of unequals are treated similarly as acquisitions.

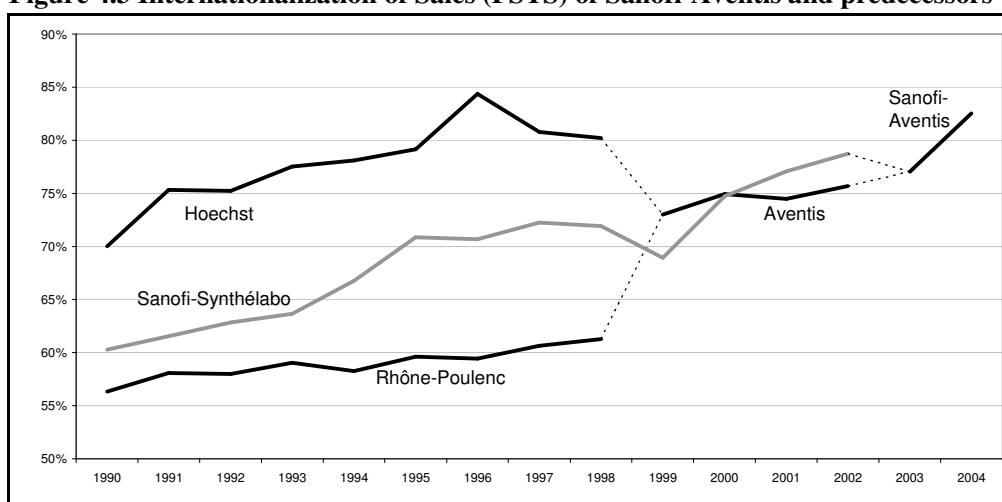
**Figure 4.2 Treatment of M&As in the time series analysis**



<sup>1</sup> While this is a rather arbitrary figure, we do believe that firms that are below this threshold, are clearly not equally sized: a difference of 10% or more of the combined sales is similar to the largest firm having at least one quarter more sales than the smaller firm of the two. But it may be that also firms above this threshold could still not be considered equally sized (e.g., in the case of a 9% difference). However, given that they are relatively few in number, and are furthermore submitted to an additional test (of dominance), a potential mis-classification at this stage should not affect the results of our analysis substantially.

For mergers between partners of equal size, a further study is made of whether there is a dominant partner. This is based on the developments after the merger, new headquarter location, and board membership. For example, the merger of Chevron and Texaco to ChevronTexaco in 2001 involved two partners of almost exactly equal size, but the name change to Chevron in 2004, the location of headquarters, and the domination of former Chevron employees in the Board of Directors and Executive Committee indicate that Chevron has been the dominant partner in this deal. Data for firms involved in mergers of partners that are equal in size, but that are still dominated by one firm, are also treated in the same way as acquisitions data.

**Figure 4.3 Internationalization of Sales (FSTS) of Sanofi-Aventis and predecessors**



Following this line of reasoning, very few true mergers exist in the group of the world's largest corporations. Most of the high-profile mergers of the past 15 years, such as the merger between Chevron and Texaco, but also the combination of VIAG and VEBA into E.on, Thyssen and Fried.Krupp into ThyssenKrupp, and Chrysler and DaimlerBenz to DaimlerChrysler, can be characterized as 'dominated mergers' (in these examples, by VEBA, Thyssen and DaimlerBenz, respectively), and have been included in the sample accordingly. One example of a true merger is displayed in figure 4.3, which shows the combination of Rhône-Poulenc and Hoechst to Aventis (which later on merged with Sanofi-Synthelabo). Next to Aventis, only two additional firms in our sample of firms with (combined) more than 10 years of data could be identified as 'true' mergers (GlaxoSmithKline, and ConocoPhillips). These have been excluded from the sample, as they represent such a very small set of firms.

#### Comparison with other datasets

An important question that comes to mind after all these changes and adjustments, is to what extent this manual collection and adjustment of the data is worthwhile, particularly in the light of the availability of similar DOI data from electronic archival databases. To

a large extent, the added value of making the methodological adjustments becomes already apparent in the overview above, where the size and number of changes are reported, and individual examples show that many of the adjustments are far from unsubstantial, and also indicate that not making a correction (for e.g. a change from reporting by home country to home region) would lead to knowingly including errors in the data.

But there are also other reasons why we believe the dataset we compile here is superior over the data that stems from electronic archival data sources (such as Thomson Financial (which includes Amadeus and WorldScope), or Compustat). One of these was that the internationalization of employment is not available in these databases, and hence would require manual data collection anyhow. But perhaps the most important reason to embark on this effort was a lack of transparency with respect to the exact source and potential treatment or adjustments of the data in existing electronic databases (we focus our comparison primarily on Thomson Financial/Thomson Banker). As elaborated in more detail below, there often appeared to be substantial but inexplicable differences between what Thomson Financial reported and what firms' annual reports or SEC filings indicated, or there were data missing for well-renowned firms (Shell, Ford, General Motors, Siemens, to name just a few) although these firms published extensive geographically specified data in their annual reports.

To illustrate these points, we compared the internationalization data for sales and assets for a subset of our sample (120 firms for the 1998-2002 period) with the data from Thomson Financial database. We choose to compare this sub-sample because these include the firms that were not affected by major mergers or acquisitions (or liquidations) that could affect data coverage, included only publicly listed firms, and were covered a substantial number of data points in Thomson for at least one of the two variables. The time period was limited to the selected five years to reflect the fact that internationalization data are only relatively recently becoming available (hence the start in 1998), and to take into account that there may be delays in electronically recording the data published in annual reports (hence the final date of 2002). This subset hence should represent those firm-years for which data are most readily available and that are actively covered by Thomson. Yet, the number of missing values in the Thomson database is substantially higher: 18 percent of the Thomson data versus 4 percent for our data are missing for sales, and 37 percent versus 12 percent respectively for assets. In addition, the Thomson data contained a considerable number of obvious mistakes in the form of one-year 'spikes' in the data that could not be explained by a merger or acquisition and could also not be found in the annual reports. This resulted in an average absolute difference between Thomson and our data of 4.1 percent for sales ( $\sigma$  7.8 percent), and 10.8 percent for assets ( $\sigma$  11.8 percent). The correlation coefficient between the two datasets was 0.93 for sales, and 0.73 for assets. In a simple regression analysis, this translated into an explained variance ( $R^2$ ) of 0.87 and 0.54 respectively. This means that for assets, our data could only explain for 54 percent of the variance in the Thomson indicator. This seems particularly low for an indicator that should measure the exact same value. As a conclusion, the data problem seems particularly important in the case of

assets (though also for sales, 1 in 7 cases had a difference of more than 10 percent). Table 4.1 illustrates a few examples that compare the FATA ratio that is used in this paper and the one reported by Thomson Financial.

**Table 4.1 Internationalization of assets: a comparison with Thomson Data**

	Data in present paper					Thomson Financial Data				
	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
Coca-Cola	57%	64%	56%	60%	64%	76%	62%	50%	30%	60%
Dow Chemical	59%	55%	55%	50%	52%	18%	16%	16%	17%	17%
Ford Motor	42%	44%	43%	53%	56%	..	8%	7%	7%	7%
General Motors	39%	38%	36%	31%	29%	7%	5%	4%	4%	6%
ICI	75%	77%	79%	80%	78%	48%	45%	44%	47%	47%
Johnson & Johnson	52%	48%	48%	43%	46%	..	68%	15%	12%	15%
Nestlé	53%	55%	57%	59%	57%	30%	43%	40%	19%	28%
United Technologies	39%	29%	26%	27%	29%	..	13%	12%	12%	..
Xerox	52%	52%	54%	58%	56%	4%	5%	5%	5%	5%

It is important to note that this does not necessarily mean that all previous research on the determinants and performance effects of the DOI has come to wrong conclusions. The great majority of these studies is based on cross-sectional data, or analyzed panel data with a strong emphasis on the cross-sectional dimension, i.e., they compare differences between more and less internationalized firms. As we have seen, there is a positive correlation between the Thomson dataset and our dataset, which means that on average, firms that are highly internationalized according to Thomson, are also more internationalized according to our measures. Although future research should further investigate this issue of potentially biased results in substantive research settings, for now we can only conclude that in a cross-sectional research design, the use of Thomson data means that measurement error is (substantively) increased (as witnessed from the relatively low  $R^2$ -value of the regression equation), meaning that in studies with DOI as dependent variable, the results are simply just less efficient (though some researchers (Cheng and Van Ness, 1999) point out that more severe problems (biases) created by measurement error in the independent variables, which is the case for example in studies on the performance effects of DOI).

In contrast with studies with a cross-sectional focus, research with a distinct longitudinal design that aims to compare and analyze internationalization data over time, however, extreme care must be taken to use a unified methodology. Since this is exactly the purpose of this paper, we believe that our efforts in compiling this dataset are further justified.

## 4.4 METHODOLOGY

### Sample selection

The basis of our selection of firms has been a combination of the 300 largest non-financial firms worldwide in 1995 (based on sales, from the Fortune Global 500 list of 1995), plus the top 50 largest firms from a selection of the most important investor countries worldwide: the US and Japan (both Top 50s already included in the 300 from Fortune), and the UK, France, Germany, and the Netherlands. These Top50s ensured a wider coverage of in particular European firms that would otherwise have been underrepresented in the sample. This resulted in a sample that in 1995 consisted of 444 firms (or entities). These firms were followed over time: backwards until 1990, and forwards until 2004 (the latest data available). In case of intra-sample mergers or acquisitions, data were attributed to the 'dominant' party as explained above, and the old series discontinued. In gathering data on the internationalization of sales, assets and employment, we were able to find such data for 233 firms for which at least one of the three variables (FATA, FETE, FSTS) was available for 10 or more years in the 1990-2004 period. These long periods are necessary in order to be able to study patterns over time.

This 10-year criterion meant that for 85 firms (in addition to the 233, our total set consisted of 318 firms), data were found but were not used. For 35 out of the 85 firms, this lack of data was because geographically broken down data were not reported until the late 1990s. This category included quite a number of utilities and formerly state-owned companies, such as Telefónica, Electricité de France and Deutsche Post. For the other firms, mergers or takeovers were an important reason for the lack of sufficient time series. For 26 firms, data collection ceased as they became part of another firm (either as takeovers, or in mergers of unequals or with a dominant partner), such as Comptoirs Modernes (part of Carrefour). A total of 13 firms was not used as they resulted from a merger but without sufficient data on their predecessors to create a 10-year time series. This included sometimes painful exclusions (as firms are both quite large in their industry, and nearly hit the 10-year mark), for example Novartis and Suez (Suez Lyonnaise), both with nine years of data available for all three variables until 2004. The exclusion of the 'true' mergers accounted for the removal of 9 entities, while two firms were liquidated in the course of the 1990s (Agiv and Deutsche Babcock). In sum, the exclusion of these 85 entities meant that 85 series of FSTS, 59 series of FATA, and 47 series of FETE data were not analyzed. These series had an average number of observations of 5 (6 for sales).

The data that were used in the analysis are summarized in the Annex. This table shows for each firm in the sample, whether or not a series of FSTS, FATA, or FETE data is available, how many observations are in the series, according to what method the data are measured, and if the series have been adjusted for either methodological changes, or differences in the definition of the home country (region). Finally, the country of origin is reported, and if applicable, information on M&As in which the firm has been involved and that affected the coverage of the data. In sum, our dataset consists of 3495 (15\*233)

firm-year observations as a maximum, of which 3252 (93 percent) are available for FSTS, 2023 (58 percent) are available for FATA, and 1593 (46 percent) for FETE. These data are summarized within time-series per firm, leading to a total of 231 (out of 233) time series for FSTS, 148 for FATA, and 114 for FETE. The average number of observations per time series is 14.1; 13.7; and 14.0 respectively, out of a maximum of 15.

### **Variable measurement**

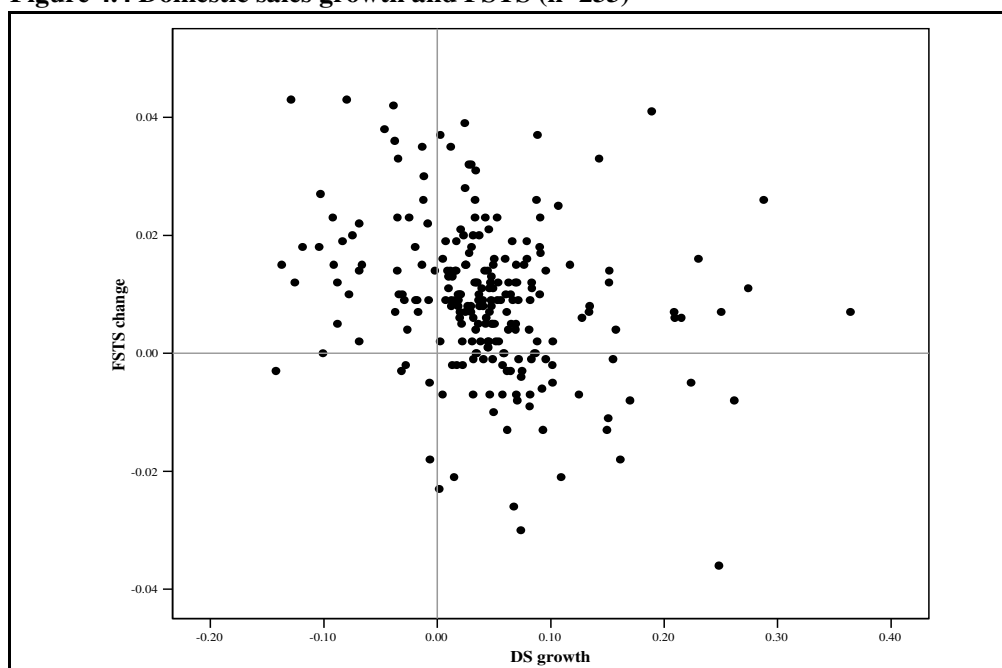
Based on these time-series data, we defined a range of variables in order to measure the level and process of internationalization for the 1990-2004 period for each firm. These variables cover a total of five dimensions of internationalization. In addition to measuring the level of internationalization (1), we follow Vermeulen and Barkema's (2002) suggestions and include pace, or average growth rates (2) and rhythm or variation in growth (3). We also include the measure proposed by Maitland *et al.* (2005) of clustering of investment over time (4).

As a final dimension, we also address not just the relative importance of international activity (as in the various DOI measures), but also the absolute level of international expansion (5). This acknowledges that the DOI is not only influenced by the extension or retreat of foreign operations, but also of domestic operations. A decrease in the TNI is usually interpreted as a sign of failure by those expecting a positive relationship between internationalization and performance. But it may equally reflect home country growth – that potentially has even been made possible because of profitable international activities – rather than a decline of foreign competitiveness. Similarly, the selling of domestic activities increases the TNI, without the firm investing in new foreign activities at all. In analyzing the internationalization strategies of firms, hence both the degree and absolute level should be considered for a comprehensive overview of international expansion. Although comparisons for levels of size are inherently influenced by overall company size, it is interesting to compare the growth of domestic operations with the growth in DOI. That this is not just a merely academic question is illustrated by figure 4.4, that shows the growth in domestic sales related to changes in the FSTS ratio. For all firms in the upper-left quadrant, an increase in internationalization is paired with a decrease in domestic sales, meaning that at least a part of the increase in DOI is explained by domestic decline rather than foreign expansion. Similarly, the firms in the bottom-right quadrant have seen decreases in their FSTS ratio, but this change is at least partially explained by the increase in domestic sales. For roughly a third of the sample, an increase or a decrease in the FSTS ratio is not necessarily equal to an increase or decrease in foreign activities as a whole.

Based on these five dimensions, we calculated for sales, assets and employment 1) the average DOI between 1990 and 2004 (MEAN); 2) the maximum value (MAX) and 3) the minimum value (MIN) of DOI in that period in order to measure the level of internationalization. The pace or change in internationalization was measured by 4) the average change in DOI (GROWTH), whereas the rhythm or variability of internationalization was measured by 5) the average absolute change in DOI (ABS GROWTH) and 6) the standard deviation of growth (GROWTH SD). The temporal

clustering was assessed using 7) the clustering index by Maitland *et al.*, (2005) (CLUSTER, explained below); and the absolute importance of international activities by 8) the growth in domestic sales, assets, and employment, respectively (D GROWTH).

**Figure 4.4 Domestic sales growth and FSTS (n=233)**



Of these variables in particular the variable CLUSTER requires some further explanation. In our paper, we use the Clustering Index proposed by Maitland *et al.* (2005), but apply it to the DOI of firms, instead of to the number of international investments. The Clustering Index is based on the number of 'clustering points' divided by the number of observations in the time-series (in our sample, max 15). Clustering points are annually attributed to a firm for above or below average (within the time-series) changes in internationalization. Standardizing the FATA, FSTS, and FETE variables per firm, absolute z-values below 1 are awarded no points, z-values between 1 and 2 are worth 2 points, those between 2 and 3, 4 points, if an increase or decrease in internationalization is more than 3 standard deviations away from the mean growth of internationalization of a particular firm, 8 points are assigned. Additional points are awarded for serial exceptional internationalization: if in the preceding year internationalization occurred in the same direction (i.e., increase or decrease), the points of the previous year are also added to the present year in an accumulative way. The resulting measure indicates for each firm, whether its internationalization in the 1990s has occurred relatively clustered in time, or dispersed over the entire period. Higher values indicate stronger clustering.



### **Analytical approach**

The empirical analysis consists of several steps. First, a factor analysis is performed on the 8 variables of internationalization to reduce the number of variables and explore if the five dimensions of internationalization that we identified are indeed present in the data. Subsequently, the thus-derived factors are used to cluster MNEs into distinct groups of firms that are relatively similar in their internationalization strategies, using hierarchical and non-hierarchical clustering techniques. These clusters represent what we dubbed ‘trajectories’: a distinct pattern over time with respect to the level, pace, variability and temporal concentration of international expansion. As a final step in the analyses, we compare the various sales, assets, and employment trajectories of firms, and asses to what extent such trajectories may be dependent upon country and sector classifications. Given the nature of the variables, these analyses are based on simple cross-tabulations and  $\chi^2$ -tests.

### **4.5 RESULTS: INTERNATIONALIZATION TRAJECTORIES 1990-2004**

The descriptive statistics and correlations of each of the internationalization variables are displayed in tables 4.2 to 4.4. These tables show that many of the variables that were expected to be highly correlated – such as the three variables for the level of DOI, and the two variables measuring variability of international expansion (abs\_growth and growth\_sd) – are indeed associated with each other. In addition, the structure of correlations is relatively similar across tables, indicating that the dimensions we are looking for are present in all three measures of the degree of internationalization: FSTS, FATA, and FETE. Table 4.5 explores this issue further and reports the correlation coefficients among the sales, assets and employment variables that seek to measure the same concept. The table shows very high correlations for the level of internationalization: firms that have a relatively large share of their assets abroad, also have a relatively (to other firms) large share of their sales and employment outside their home country. There are no significant correlations for the extent of clustering over time among sales, assets and employment growth. Especially the dynamic link between international assets and employment is weak: an increase in the internationalization of assets does not necessarily lead to more internationalization of employment (nor does that happen in the domestic market). It appears that whereas for some firms assets and employment go hand in hand, for others, there may be tradeoffs internationalizing assets and employment.

**Table 4.2 Correlations among FSTS variables (n=231)**

FSTS variable	m	sd	S1	S2	S3	S4	S5	S6	S7
S1 Mean	0.45	0.25	1.00						
S2 Min	0.34	0.24	0.96***	1.00					
S3 Max	0.56	0.25	0.96***	0.87***	1.00				
S4 Growth	0.01	0.01	0.05	-0.04	0.21***	1.00			
S5 Abs growth	0.03	0.02	0.11*	-0.09	0.34***	0.22***	1.00		
S6 Growth sd	0.04	0.03	0.06	-0.11	0.28***	0.14**	0.93***	1.00	
S7 Cluster	1.08	0.50	-0.05	-0.05	-0.06	0.06	-0.13*	-0.20***	1.00
S8 D Growth	0.04	0.08	-0.01	-0.01	-0.02	-0.27***	0.15**	0.12*	0.07

\*\*\* p<0.01; \*\* p< 0.05; \* p<0.10

**Table 4.3 Correlations among FATA variables (n=148)**

FATA variable	m	sd	A1	A2	A3	A4	A5	A6	A7
A1 Mean	0.39	0.22	1.00						
A2 Min	0.29	0.21	0.96***	1.00					
A3 Max	0.50	0.23	0.96***	0.85***	1.00				
A4 Growth	0.01	0.01	0.05	-0.02	0.17**	1.00			
A5 Abs growth	0.03	0.02	0.20**	-0.02	0.42***	0.01	1.00		
A6 Growth sd	0.04	0.03	0.14*	-0.07	0.35***	-0.05	0.95***	1.00	
A7 Cluster	1.08	0.47	-0.03	-0.03	-0.04	0.07	-0.14*	-0.21***	1.00
A8 D Growth	0.08	0.21	0.15*	0.17**	0.13	-0.17**	0.01	0.01	-0.07

\*\*\* p<0.01; \*\* p< 0.05; \* p<0.10

**Table 4.4 Correlations among FETE variables (n=114)**

FETE variable	m	sd	E1	E2	E3	E4	E5	E6	E7
E1 Mean	0.48	0.24	1.00						
E2 Min	0.37	0.25	0.96***	1.00					
E3 Max	0.59	0.24	0.94***	0.83***	1.00				
E4 Growth	0.01	0.01	-0.06	-0.28***	0.20**	1.00			
E5 Abs growth	0.03	0.02	-0.10	-0.30***	0.17*	0.50***	1.00		
E6 Growth sd	0.04	0.03	-0.15	-0.29***	0.11	0.43***	0.89***	1.00	
E7 Cluster	0.99	0.48	-0.10	-0.10	-0.11	-0.03	-0.09	-0.20**	1.00
E8 D Growth	-0.03	0.08	-0.01	0.04	0.01	-0.24**	0.11	0.01	0.03

\*\*\* p<0.01; \*\* p< 0.05; \* p<0.10

**Table 4.5 Correlations among FSTS, FATA and FETE variables**

	Sales-Assets	Sales-Employ	Asset-Employ
Mean	0.89***	0.79***	0.84***
Min	0.87***	0.78***	0.79***
Max	0.86***	0.80***	0.80***
Growth	0.39***	0.51***	0.57***
Abs growth	0.47***	0.42***	0.20*
Growth sd	0.40***	0.29***	0.03
Cluster	0.12	0.17*	0.09
Domestic growth	0.22***	0.59***	0.12
N	148	112	67

\*\*\* p<0.01; \*\* p< 0.05; \* p<0.10

## Factor analysis

For each of the different variables, we performed a factor analysis (varimax rotation) to reduce the number of variables and to see if the five dimensions we identified were indeed present in our data. The results indicated that for each set of variables (assets, sales, and employment) 4 factors could be identified. These factors were very similar in nature, as could be concluded from the factor loadings. The results of the factor analyses are presented in table 4.6. The four factors extracted explain for a total of 91 percent of the variance in the sales variables, and for 89 percent and 92 percent respectively, of the variance in the assets and employment variables. Factor 1 represents the level of internationalization, and is named 'Level'. Factor 2 represents the variability in expansion, and is called 'Volatility'. Factor 3 represents a combination of DOI growth and domestic decline, and is called 'International expansion'. The factor loadings for this factor for employment have opposite signs compared to the loadings on the same factor in the sales and assets analyses; we therefore reversed the resulting factor-scores in the subsequent analyses. Finally, factor 4 solely represents the temporal clustering of internationalization, and is called 'Cluster'.

**Table 4.6 Factor analysis results (rotated)**

	Sales				Assets				Employment			
	F1	F2	F3	F4	F1	F2	F3	F4	F1	F2	F3	F4
Mean	0.99				0.99				0.99			
Min	0.98				0.97				0.94			
Max	0.95				0.94				0.97			
Growth			0.78				0.81				-0.49	
Abs growth		0.98				0.98				0.96		
Growth sd		0.96				0.98				0.91		
Cluster				0.95				0.99				0.98
D growth			-0.81				-0.72				0.94	
% Expl.var	35.67	26.51	16.08	13.06	35.88	25.79	14.78	12.50	35.2	29.6	14.35	12.8
Eigenvalue	2.85	2.12	1.29	1.05	2.87	2.06	1.18	1.00	2.82	2.37	1.15	1.02

## Cluster analysis

Using the factor scores generated in the factor analysis as input variables, we aimed to establish clusters of firms that scored in similar ways on the four factor scores. We first applied a hierarchical clustering procedure in order to determine the number of clusters in the dataset, using the squared Euclidean distance as a distance measure. Based on a scree-plot of the agglomeration coefficients, 6 clusters were found for sales, assets, and for employment. The cluster centres of the hierarchical clustering procedure were used as seeds in the k-means cluster analysis. Such a non-hierarchical cluster analysis avoids that individual cases continue to be part of a cluster due to early combinations with other cases, whereas they would fit better with other groups of firms.

The results of the cluster analysis are displayed in tables 4.7 to 4.9. Each of the tables shows the averages for each cluster of the variables (the factor scores) on which the

cluster analysis is based. These values have been used to develop names for the various clusters.

**Table 4.7 Cluster analysis results: the internationalization of sales**

	Home-oriented	Strong expansion	Home re-orientation	Clustered	Stable-volatile	Comprehensive
Level	-1.000	-0.258	0.469	-0.006	0.008	0.983
Volatility	-0.478	0.727	0.268	-0.311	2.560	-0.391
Int'l expansion	-0.227	1.459	-1.958	0.116	-0.583	0.093
Cluster	-0.464	-0.085	0.479	1.359	-0.295	-0.571
N	60	32	18	45	15	61

For sales, six different strategies or trajectories could be distinguished, as displayed in table 4.7. First of all, 60 firms were characterized as 'home oriented'. These firms scored very low in terms of the overall level of internationalization of sales, and also over time, only expanded their international sales very gradually (hence low volatility and cluster scores), and only to a very limited extent (as indicated by the relatively low value for international expansion). A typical example of a firm in this cluster is the American retail chain Safeway. With an average 17 percent of their sales outside the USA, Safeway's international turnover actually decreased over the 1990s, in a very gradual way with on average 1 percent per year.

The second category involves firms that have seen a 'strong expansion' of their foreign sales in the 1990-2004 period. Although their average level of internationalization is relatively low, these 32 firms have greatly expanded their international activities, as shown by the high score on that factor. This expansion occurred relatively gradually and not clustered in time, although the speedy changes did increase overall volatility. A key example of a firm that has rapidly expanded its international sales is France Télécom. From having no international sales in the early 1990s, the firm strongly expanded the share of its international revenues to a total of 40 percent in the early 2000s. With the exception of a relatively large increase in 1999, this increase was quite gradual.

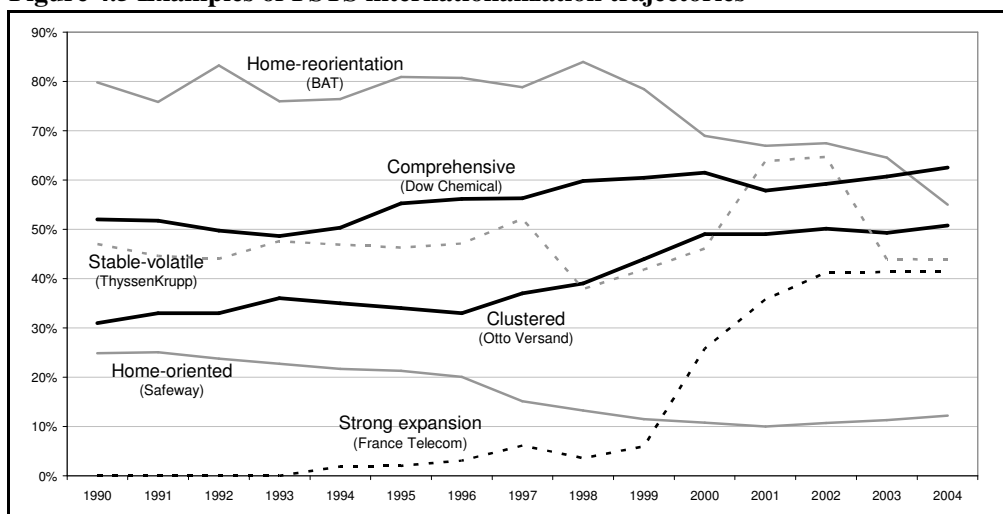
A total of 18 firms in our sample showed clear 'home reorientation' strategies away from international markets, as indicated by the very low value on the international expansion factor. These firms had quite substantial degrees of international sales, but reduced the foreign component of their sales in one or more relatively large steps (see the high value for 'cluster'). British American Tobacco is one of these firms. After a period in the 1990s where between 70 percent and 80 percent of BAT's sales came from non-British countries, the FSTS ratio was reduced in only a few years to 55 percent in 2004. This decline was associated with an increase in domestic sales, not a reduction in foreign sales, however.

The 45 firms that were named 'clustered' are primarily characterized by the high values for the associated factor. Scoring more or less on average with respect to the overall level of internationalization; slightly higher for expansion and lower for volatility, many of these firms increased their international presence with a 'bang'. An example of this

category of firms is Otto Versand, which increased its foreign share of sales from around a stable 30 percent in the early 1990s, to 50 percent in the four-year period between 1997 and 2001, after which the FSTS ratio remained stable again.

A slightly paradoxical name is proposed for the 15 'Stable-volatile' firms. These firms are characterized by their high volatility in growth rates of international sales, although these changes occur around a relatively stable mean, as shown by the relatively low scores on expansion and cluster. These firms have average degrees of internationalization. ThyssenKrupp provides a good illustration of these firms: comparing the FSTS ratio at the beginning and end of the 1990-2004 period, the difference is minimal: 47 percent versus 44 percent. But the time in between is characterized by rapid sequence of highs and lows, as the FSTS ratio oscillated from 47 percent in 1990 to a peak of 52 percent 1997, then declined to 38 percent in 1999, jumped back again to 60 percent in 2001, to end at 44 percent in 2004.

**Figure 4.5 Examples of FSTS internationalization trajectories**



The final set of firms has 'comprehensive' international sales. This group of 61 firms has the highest levels of international sales among all firms, and has seen a slow but steady increase in the FSTS ratio in the 15 years under investigation, as indicated by the relatively low values for volatility and cluster for these firms, and the slightly above average score on international expansion. Dow Chemical is a typical example of this category of firms: it gradually increased its (already above average) 52 percent of foreign sales in 1990 to 62 percent in 2004. Figure 4.5 graphically displays the archetypical examples of the six internationalization trajectories throughout the 1990s.

Similar to the six different internationalization trajectories for sales, six trajectories can be identified that characterize the expansion and retreat of firms with respect to their international assets, see table 4.8. Where the sales dimensions is primarily market related, the asset dimension reflects the internationalization of production. Some of the trajectories that have been identified for the internationalization of sales, have parallels

with the trajectories of asset internationalization (although this by no means implies that these involve also the same firms), others are slightly different.

As with the sales trajectories, a first set of 35 firms has been dubbed as having followed a ‘home-based’ trajectory between 1990 and 2004. These firms are characterized by very low levels of asset internationalization, and score also low on volatility, expansion, and cluster. The Japanese construction and engineering firm Kajima exemplifies this trajectory, with the FATA ratio hovering around 10 percent throughout the period under investigation.

**Table 4.8 Cluster analysis results: the internationalization of assets**

	Home-based	Strong Expansion	Clustered	Comprehensive	Dynamic Volatile	Contraction
Level	-0.941	0.360	-0.236	1.139	-0.248	-1.213
Volatility	-0.481	-0.007	-0.329	-0.149	2.217	3.059
Int'l expansion	-0.228	0.724	-0.018	-0.307	0.576	-1.913
Cluster	-0.616	-0.716	1.330	-0.144	0.125	-0.229
N	35	32	36	31	12	2

The second cluster of firms has followed a trajectory of asset internationalization that can be called ‘strong expansion’. These 32 firms pair substantial levels of internationalization with a large increase in the share of foreign assets throughout the 1990s, as witnessed by the high value on international expansion for these firms. This expansion occurs relatively gradually, without major clusters over time. An example is Asahi Glass, the Japanese glass manufacturer, which expanded its international production from 36 to 56 percent between 1995 and 2004 in large but relatively equally sized steps.

The 36 firms that followed a ‘clustered’ internationalization trajectory with respect to assets have expanded their international production in either one or several large steps, with periods of relative stability in between. An illustration of this trajectory is Associated British Foods, which increased its FATA ratio from just over 10 percent in the early 1990s, to 44 percent in 2004, with a particular strong increase in the late 1990s.

Similar to the sales trajectories, there is also a cluster of firms that follows a comprehensive asset internationalization trajectory. A total of 31 firms can be characterized as being already very international, with relatively few changes throughout the period under investigation (as indicated by the relative low scores for the volatility, expansion, and cluster factors). A good example of this fourth group of firms is Akzo Nobel, the Dutch chemicals company, which had an average of around 70 percent of its assets outside the Netherlands, growing only slightly throughout the 1990s and 2000s.

In comparison with the previous clusters, a slightly smaller set of firms can be characterized as ‘dynamic-volatile’. These 12 firms are very volatile, but also characterized by strong expansion, hence they are dynamic rather than static as was the case for the sales trajectory. The internationalization of Rolls-Royce is illustrative for this trajectory. Increasing its share of foreign assets from 11 to 33 percent between 1990 and 2004, it did so in a very changeable path. Its FATA ratio moved from 11 percent to `16

percent in 1993, was reduced to 4 percent in 1997 to increase in two years time to 40 percent, and in 2002, to 55 percent, to rapidly decline again in the two years to 2004 (33 percent).

The final set of firms, which we called ‘contraction’ includes only 2 MNEs; Bull, the French electronics firm, and Booker, the British retailer. Bull’s is a story of restructuring, debt, government support, little if any profit, and a strong retreat from international markets since the year 2000. Booker, prior to its acquisition by the Big Food Group in 2002, also experienced several major restructuring operations in the late 1990s, and was characterized by large debt and sluggish sales. These troubles are reflected in an extremely volatile international presence – Bull’s ranged between 0 percent and 56 percent in the period under investigation, Booker’s between 0 percent and 42 percent. Both firms also stand out from the other firms because of their low scores on average levels of internationalization and for international expansion. Indeed, both firms have (nearly) completely retreated from foreign production, Booker between 1997 and 1999; and Bull between 2001 and 2004.

The final set of clusters we created is based on the internationalization of employment, and is displayed in table 4.9. Given the smaller number of observations that was available for the internationalization of employment, some groups are slightly smaller. Three main strategies can be distinguished: comprehensive, clustered, and home centred. Fewer firms follow strong expansion or dynamic-volatile strategies.

**Table 4.9 Cluster analysis results: the internationalization of assets**

	Compre- hensive	Strong Expansion	Clustered	Dynamic Volatile	Home- centered	Retreat
Level	0.795	0.613	-0.451	-0.460	-1.197	0.534
Volatility	-0.396	0.956	-0.170	1.691	-0.538	2.145
Int’l expansion	-0.135	1.751	0.005	0.125	-0.193	-3.020
Cluster	-0.304	0.096	1.344	-0.560	-0.820	-0.443
N	43	10	27	10	21	3

The largest group of firms is characterized by a ‘comprehensive’ international employment trajectory: high levels of foreign employment, with relatively few changes in the FETE ratio over time, as shown by the low values for volatility, expansion and cluster. Heineken is a prime example here. Already very international with 78 percent of its employees outside the Netherlands in 1990, the firm gradually increased its international presence to a FETE ratio of 92 percent by 2004.

Again, as with sales and assets, we find a set of firms of which the strategy can be characterized as ‘strong expansion’, although it is a relatively small group consisting of only 10 firms. Already with a large share of foreign employees (see the high score on the level factor), these firms strongly increased their FETE ratio in the course of the 1990s. It should be noted that this is ‘real’ expansion, and not a displacement of domestic with foreign employees. Delhaize Le Lion for example increased its FETE ratio from 80 to 88 percent between 1990 and 2004, while more than doubling its total number of employees.

A set of 27 firms is characterized by a clustered trajectory, where expansion and reduction of the FETE ratio occur in relatively short time-periods, after which the share of foreign employment remained stable again. These firms do not have high FETE ratios, and expand their international employment only at an average pace. General Electric for example increased its share of foreign employees in its total workforce from 21 to 46 percent between 1990 and 2004, but the majority of this increase took place between 1993 and 1997.

Similar to the previous clusters for sales and assets, a relatively small set of 10 firms can be characterized as 'dynamic-volatile'. These firms show very volatile trajectories, but are also characterized by above-average international expansion, hence the dynamic instead of the static characterization. Franz Haniel for example expanded its foreign employment from 57 percent to 77 percent in the period under investigation, but did so in several 'waves' after each of which, a period of reduction followed (temporary highs could be recorded in 1993; 1997; and 2001).

As with the sales and assets trajectories, a substantial number of firms have used home-centred internationalization trajectories in the course of the 1990s and early 2000s. These firms are characterized by very low levels of employment internationalization, and score also low on volatility, expansion, and cluster. The American retail chains are key examples of such firms, but also German-based KarstadtQuelle has very few international employees, with an average of 5 percent FETE.

The final group consists of 3 firms that have been characterized as having followed 'retreat' trajectories. The firms in this category include Getronics, Canon and BOC: all relatively international firms (at some point), but very volatile: the FETE ratio of Getronics ranged between 17 percent and 75 percent; for Canon, between 13 percent and 88 percent; and for BOC, between 8 percent and 94 percent. Also each of these three firms is characterized by a serious reduction of the share of international employment and by a reorientation to the domestic market, with strong domestic employment growth over the 1990s and early 2000s.

#### *Combining sales, asset and employment trajectories*

A key question after reviewing the various different sales, asset and employees trajectories is to what extent and in what way, firms combine various trajectories. Cross-tabulating the sales trajectories with those for assets and employment (assets and employment could not be linked due to the few firms that reported both for a sufficient period of time), table 4.10 points at some interesting results. The upper half of the table links sales and assets trajectories. It shows that firms with a home oriented sales trajectory are also often characterized by home-oriented asset trajectories. Still, there is also a substantial set of home-market oriented firms that takes a clustered approach to the internationalization of assets, expanding international production while maintaining a focus on domestic clients. A similar overlap can be found for firms that show a strong expansion for sales, and for assets. Clustered sales trajectories, in which international sales are strongly increased in relatively short periods of time are often combined with comprehensive asset trajectories. Such firms appear to use their international production



base as a means to target and enter new markets. However, the majority of firms that followed a comprehensive asset trajectory also followed a comprehensive sales trajectory. The lower half of table 4.10 links sales with employment trajectories. Here too we see groups of firms that are distinct in their home orientation for sales and employees (a total of 13) and that combine comprehensive strategies for both dimensions (a total of 21 firms). But also other types of sales trajectories are associated with a domestic employment trajectory; in particular the clustered and home-reorienting firms.

**Table 4.10 Linking sales with asset and employment trajectories**

Sales trajectory	Asset trajectory <sup>1</sup> (# of firms)						Total	Asset trajectory <sup>1</sup> (% within Sales trajectory)					
	1	2	3	4	5	6		1	2	3	4	5	6
Home-oriented	23	6	16	1	1	1	48	48%	13%	33%	2%	2%	2%
Strong expansion	3	7	4	1	5	1	21	14%	33%	19%	5%	24%	5%
Home-reorient.	2	4	3	4			13	15%	31%	23%	31%		
Clustered	4	3	6	9	2		24	17%	13%	25%	38%	8%	
Stable-volatile	1	3	3		2		9	11%	33%	33%		22%	
Comprehensive	2	9	4	16	2		33	6%	27%	12%	49%	6%	
TOTAL	35	32	36	31	12	2	148	24%	22%	24%	21%	8%	1%

Sales trajectory	Employ trajectory <sup>2</sup> (# of firms)						Total	Employ trajectory <sup>2</sup> (% within Sales trajectory)					
	1	2	3	4	5	6		1	2	3	4	5	6
Home-oriented	2		6	2	13		23	9%		26%	9%	57%	
Strong expansion	2	5	5	1	1	1	15	13%	33%	33%	7%	7%	7%
Home-reorient.	6			1	1		8	75%			13%	13%	
Clustered	9		4	2	2		17	53%		24%	12%	12%	
Stable-volatile	3		3		2		8	38%		38%		25%	
Comprehensive	21	5	7	4	2	2	41	51%	12%	17%	10%	5%	5%
TOTAL	43	10	25	10	21	3	112	38%	9%	22%	9%	19%	3%

Interpretation of the table: the upper left number in the table indicates that 23 out of the total of 48 firms that followed a home-oriented sales trajectory, followed a home-oriented asset trajectory. This is equal to 48% of those 48 firms.

1 Asset trajectory: 1=home-based; 2=strong expansion; 3=clustered; 4=comprehensive; 5=dyn.volatile; 6=contraction.

2 Employ trajectory: 1=comprehensive; 2=strong expansion; 3=clustered; 4=dyn.volatile; 5=home-centered; 6=retreat.

A main conclusion from this table is not so much that firms display similar strategies with respect to the internationalization of sales, assets, and employment, but that those strategies are quite different for many firms. Firms choose to focus on the domestic market while greatly expanding foreign production, or couple comprehensive sales trajectories with a clustered trajectory of international employment. This begs the question what determines the trajectories that firms follow.

### Internationalization trajectories by sector of activity and country of origin

Using  $\chi^2$ -tests, we established that there is a relationship between the country of origin of a firm and its internationalization trajectory with respect to sales ( $\chi^2_{30} = 83.2$ ;  $p < 0.01$ ) and assets ( $\chi^2_{30} = 65.4$ ;  $p < 0.01$ ). Table 4.11 below reports the results of these tests, displaying the different sales and asset internationalization trajectories for the various countries in the sample.

**Table 4.11 Sales and asset internationalization trajectories by country**

Sales trajectory <sup>1</sup>	Number of firms						Total	% within country					
	1	2	3	4	5	6		1	2	3	4	5	6
Germany	2	4	2	9	2	10	29	7%	14%	7%	31%	7%	35%
France	1	5	1	9	5	8	29	3%	17%	3%	31%	17%	28%
UK	6	10	5	2	1	11	35	17%	29%	14%	6%	3%	31%
Netherlands	2	3	3	5	1	9	23	9%	13%	13%	22%	4%	39%
Japan	16	5		5	2	4	32	50%	16%		16%	6%	13%
USA	30	3	6	13	1	8	61	49%	5%	10%	21%	2%	13%
Other	3	2	1	2	3	11	22	14%	9%	5%	9%	14%	50%
TOTAL	60	32	18	45	15	61	231	26%	14%	8%	20%	7%	26%

Asset trajectory <sup>2</sup>	Number of firms						Total	% within country					
	1	2	3	4	5	6		1	2	3	4	5	6
Germany		1		3			4		25		75%		
France		4	5	5	3	1	18		22%	28%	28%	17%	6%
UK	5	5	4	7	6	1	28	18%	18%	14%	25%	21%	4%
Netherlands		1		4			5		20%		80%		
Japan	15	5	6	1			27	56%	19%	22%	4%		
USA	13	13	19	7	1		53	25%	25%	36%	13%	2%	
Other	2	3	2	4	2		13	15%	23%	15%	31%	15%	
TOTAL	35	32	36	31	12	2	148	24%	22%	24%	21%	8%	1%

Interpretation of the table: the upper left number in the table indicates that 2 out of the total of 29 firms from Germany followed a home-oriented sales trajectory. This is equal to 7% of all 29 German firms.

1 Sales trajectory: 1=home-oriented; 2=strong expansion; 3=home-reorient; 4=clustered; 5=stab.volatility; 6=comprehensive.

2 Asset trajectory: 1=home-based; 2=strong expansion; 3=clustered; 4=comprehensive; 5=dyn.volatility; 6=contraction.

A first rather technical element that becomes apparent from table 4.11 is that in particular German and Dutch firms fail to report on the geographical segmentation of their assets, given the small number of observations for assets for these countries compared to e.g. the availability of sales data. Hence, we will not draw conclusions regarding the asset internationalization trajectories of firms from these countries. Starting from the sales strategy of German firms, these are clearly dominated by a clustered approach. French firms are similarly characterized by a focus on clustered internationalization of sales. With respect to the internationalization trajectories of assets, the majority of French firms followed either a clustered or comprehensive trajectory in the 1990s. British firms are characterized by either their comprehensive and strong expansion trajectory with respect

to sales, and comprehensive and dynamic volatile for assets. The internationalization trajectories of sales by Dutch firms are dominated by comprehensive trajectories. Japanese and American firms are both strongly typified by their home market orientation. But while Japanese firms are similarly homogeneously home-based in their production, US firms are much more dispersed in their approaches of the internationalization of assets, taking not only a home based but also often a strong expansion or clustered trajectory.

**Table 4.12 Sales and asset internationalization trajectories by selected sectors**

Sales trajectory <sup>1</sup>	Number of firms						Total	% within sector					
	1	2	3	4	5	6		1	2	3	4	5	6
Chemicals & pharma.	3	3	1	3	1	11	22	14%	14%	5%	14%	5%	50%
Computers & electr.	4	3	1	4	1	10	23	17%	13%	4%	17%	4%	43%
Food, bev. & tobacco	5	4	2	6		7	24	21%	17%	8%	25%		29%
Motor vehicles & parts	4	2	1	2	1	7	17	24%	12%	6%	12%	6%	41%
Telecom & utilities	7	2	1	4	1		15	47%	13%	7%	27%	7%	
Wholesale and retail	14	1	1	8	1	1	26	54%	4%	4%	31%	4%	4%
TOTAL	60	32	18	45	15	61	231	26%	14%	8%	19%	6%	26%

Asset trajectory <sup>2</sup>	Number of firms						Total	% within sector					
	1	2	3	4	5	6		1	2	3	4	5	6
Chemicals & pharma.	2	4		9	1		16	13%	25%		56%	6%	
Computers & electr.	6	3	5	4		1	19	32%	16%	26%	21%		5%
Food, bev. & tobacco	3	2	3	4	1		13	23%	15%	23%	31%	8%	
Motor vehicles & parts	2	5	2	4			13	15%	39%	15%	31%		
Telecom & utilities	3		2	2	3		10	30%		20%	20%	30%	
Wholesale and retail	10	1	3	1	2	1	18	56%	6%	17%	6%	11%	6%
TOTAL	35	32	36	31	12	2	148	24%	22%	24%	21%	8%	1%

Interpretation of the table: the upper left number in the table indicates that 3 out of the total of 22 firms in the chemicals and pharmaceuticals sector followed a home-oriented sales trajectory. This is equal to 13.9% of all firms in that sector.

1 Sales trajectory: 1=home-oriented; 2=strong expansion; 3=home-reorient; 4=clustered; 5=stab.volatile; 6=comprehensive.

2 Asset trajectory: 1=home-based; 2=strong expansion; 3=clustered; 4=comprehensive; 5=dyn.volatile; 6=contraction.

Similarly to the relationship between internationalization trajectories and country of origin, we used  $\chi^2$ -tests to establish whether there is a relationship between the sector of activity and a firm's internationalization strategy with respect to sales. The tests confirmed that this was the case (sales  $\chi^2_{70} = 94.4$ ;  $p < 0.05$ ; assets  $\chi^2_{70} = 95.0$ ;  $p < 0.05$ ). Both these tests should however be interpreted with caution in light of the relatively small number of observations in our sample in relation to the quite extensive 6x15 cluster-sector matrix. Table 4.12 below reports the different sales and asset internationalization trajectories for a selected number of sectors (those with most observations). These results for the sales and assets internationalization trajectories across sectors and countries should however be interpreted with caution, especially as the

number of firms that has been characterized with respect to their asset strategy is smaller than that of sales, meaning that differences in number of observations could partly account for the emphasis on various strategies within a sector or country.

Table 4.12 shows that in the chemicals and pharmaceuticals sectors, most firms can be characterized as following a comprehensive trajectory, both with respect to sales and assets. Computer and electronics firms are however more inclined to follow a home oriented sales and asset trajectory, although a substantial number of firms also can be characterized as stable-volatile with respect to sales and clustered with respect to assets. The food, beverages and tobacco industry more or less mirrors the overall distribution of internationalization strategies, although firms in this sector seem to have a slight preference for comprehensive trajectories as regards assets. Automotive firms have shown a distinct comprehensive international sales trajectory, and a similar comprehensive, or else strongly expanding, trajectory of international production. Telecom and utilities can be characterized as home market oriented, while assets are also often home-based, or else follow a dynamic volatile international trajectory. Wholesale and retail have also been strongly home-based in the 1990s.

## **4.6 CONCLUSIONS**

The debate on why and how firms invest abroad is central to international business studies, and has generated a wide range of theoretical and empirical contributions. The literature review in this chapter showed that the theoretical paradigms are often broad and encompassing, while the empirical analysis of internationalization predominantly focuses on either one-off investment decisions (as in mode of entry research), on national aggregates (e.g. in analysing the determinants of FDI), or on the static levels of internationalization only (as in most estimations of the internationalization-performance relationship). While each of these strands of research has yielded important insights, it remains remarkably unclear how, at the corporate level, firms expand and withdraw their international activities over time, and to what extent different patterns or clusters of strategies can be distinguished among such processes. An important reason for this deficiency has been the difficulty in obtaining reliable and comparable time series of internationalization strategies at the corporate level. To the best of our knowledge, since the Harvard Multinational Enterprise project in the 1960s and 1970s (Vernon, 1971), no major research has been done with the aim to follow the internationalisation strategies of a substantial number of firms over a longer period of time. In 1999, Vernon (1999: 48) still observed that the kind of data needed for longitudinal studies at the firm level are difficult to obtain. In this paper, we aimed to address this issue by exploring to what extent the internationalization of sales, assets and employment between 1990 and 2004 of a sample of 233 of the largest firms worldwide could be classified into distinct trajectories - patterns over time with respect to the level, pace, variability, and temporal concentration of international expansion. The prime ambition of the paper, therefore, has been descriptive - and getting the data right in order to facilitate further research.

In order to measure internationalization, we used one of the most commonly used indicators, the degree of internationalization or the ratio of foreign-to-total activities, for sales, assets, and employment. However, despite its widespread use in empirical studies, and its availability in electronic databases such as Thomson Financial, WorldScope or CompuStat, we find that the degree of internationalization is a far more difficult indicator to measure. It is ridden with methodological problems that need to be addressed in order to avoid what was shown to be large biases or discontinued time-series. We aimed to deal very carefully with methodological issues including for example the exact definition of sales, assets and employment that are geographically specified, the role of eliminations and non-geographically specified parts of sales and assets, changes in the methodology of reporting by firms over time, the use of home country or home region as a base to calculate the foreign share, and the occurrence of mergers and acquisitions. In order to be able to do so, we manually collected the data from corporate annual reports, so that the exact methodology could be recorded. An additional benefit was that in comparison with electronically available data, the number of missing values and mistakes was significantly decreased in our dataset, and that the internationalization of employment could be monitored as well (this indicator is often not available in archival sources).

In the end, we were able to collect - and if necessary methodologically correct and adjust - internationalization data for a set of 318 of the largest non-financial firms worldwide. As we aimed to characterize the internationalization process over time from 1990 onwards, we only included those time-series for foreign sales, assets and employment (FSTS, FATA and FETE) for which at least 10 years of consecutive data were available. This resulted in a dataset of 233 firms. For 231 of these firms, FSTS data was available for 10 years or more (a total of 3252 firm-year observations), the same was the case for FATA data for 148 firms (2023 firm-year observations), and FETE data for 114 firms (1593 firm-year observations). These data were used to calculate eight variables describing the internationalization of firms over time, such as the mean, growth, and Maitland *et al.*'s (2005) cluster variable. These variables were subsequently factor analyzed to result in four key factors that describe international expansion of firms over time, including the level, growth, volatility, and temporal clustering, of international activities. Hierarchical and non-hierarchical clustering techniques then resulted in 6 trajectories each for the internationalization of sales, assets, and employment.

With respect to sales, we could identify firms that were characterized by 1) a home market oriented trajectory; 2) a strong expansion international expansion trajectory; 3) a home re-orientation trajectory; 4) a clustered trajectory (in which international expansion and retreat was strongly clustered over time); 5) a stable-volatile trajectory (in which the share of international sales varied strongly, but around a certain constant value), and 6) a comprehensive trajectory (large and slowly growing international sales).

With respect to assets, we identified relatively similar firm trajectories that could be typified as 1) home-based, 2) strong expansion; 3) (temporally) clustered; 4) comprehensive; 5) dynamic-volatile (in which the share of international assets varied strongly, but did increase or decrease as over time), and 6) contraction. For the internationalization of employment, the trajectories 1) comprehensive; 2) strong

expansion; 3) clustered; 4) dynamic volatile; 5) home-centred and 6) retreat were obtained from the cluster analysis.

Although these six strategies for sales, assets and employment overlap in terminology and main characteristics, this does not necessarily mean that they also overlap within a single firm. Linking the sales trajectories to those of assets and employment, some firms indeed showed similar strategies (notably the home oriented, and comprehensive strategies were often combined within a single firm), but in many more cases, one firm combines two or three different strategies for sales, assets and employment internationalization. Firms choose for example to focus on the domestic market while greatly expanding foreign production, or couple comprehensive sales trajectories with a clustered trajectory of international employment.

These results show that the average global trends that point in the direction of more foreign activities, more internationalization, and hence in the end, more globalization, obscure the fact that the exact form and pace of insertion in the world economy differs strongly across firms and across different types of activities within firms. Globalization, often presented as a homogeneous or at least homogenizing process, has in fact many faces, and follows many different paths. This finding alone is already an important result, as it calls for substantial nuances to the sometimes wide-sweeping statements and conclusions that are often made regarding 'globalization'. Other authors in International Business have made similar arguments for further disentangling the globalization concept, for example with respect to the strong regional dimension of globalization (Rugman, 2000; Van den Bulcke, 1995), or regarding the historical predecessors of the current phase of international connectivity (Jones, 2005). Such distinctions contribute to an increased comprehension of what is as of yet 'a poorly understood phenomenon' (Rugman and Verbeke, 2004:3), and are vital if we want to come to policy recommendations on how to deal with globalization, on predicting how the future of globalization looks like, and on the exact role of MNEs in that process. However, such recommendations can be only further specified if more research has been done into the exact determinants of the various trajectories, and into their performance implications – for both the firms themselves, and for the countries from which these firms originate and in which they invest. While an in-depth analysis of such determinants and performance implications is beyond the scope of this paper, we did explore to what extent internationalization trajectories differed across sectors and countries. We found that even though there appear to be 'dominant' strategies of internationalization in most countries and sectors, examples of nearly each approach could be found in each country or sector. This means that although country and sector influence a firm's internationalization strategy and trajectory, they do not determine to what extent and in what way firms expand (or retreat from) their activities abroad. Important firm-specific variation exists; any sign of global sectoral or geographical convergence in internationalization strategies is absent.

The findings of this study – a typology of the internationalization trajectories of firms since the early 1990s – form a basis for further research on the determinants and effects of firm specific trajectories, that may have important managerial and policy implications.

For example, exploring differences in internationalization trajectories between firms with different characteristics (for example R&D intensity, size, but perhaps also top management team composition and international orientation) can yield information on the role of ownership or firm-specific advantages that influence firm strategy. Such an understanding (of for example the factors that determine asset-intensive versus employment-intensive internationalization) is of particular relevance for policy makers, for example in developing countries, that want to attract a particular kind of FDI. Furthermore, by analysing profitability differences – or any other type of performance measure – among firms that started internationalization relatively early, we can derive recommendations for managers that find themselves in a similar situation at present. Another line of research could be to consider a number of important institutional changes that appeared over the 1990s and consider to what extent they impacted upon the internationalization trajectories of (certain groups of) firms. The creation of the World Trade Organization in 1995 is an example of such a change, or the steps in the regional integration process in the EU. For a selection of firms and sectors, privatization and deregulation will also very likely have influenced the internationalization trajectories. As a final example, an in-depth understanding of internationalization trajectories and past path dependencies could also help predict the direction of future internationalization. All such studies would help our understanding of the international strategies of the largest firms worldwide, and hence of the nature and direction of globalization in general.

## **ANNEX: DESCRIPTION OF FIRMS IN THE SAMPLE**



Name	Ctry	Years		n			Method corrections			Method corrections			Home is region?			Home corrections			Merger info			
		S	A	E	S	A	E	S	A	E	S	A	E	S	A	E	S	A		E		
		[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]	[90-04]		[90-04]	[90-04]	
3M	USA	[90-04]	[90-04]	-	15	15	-	0	6	-	-	-	-	-	-	-	-	-	-	-		
ABB	CHE	[90-04]	-	[90-04]	15	-	15	d	-	EP	-	-	-	-	-	-	-	-	-	-	Y	
Accor	FRA	[90-04]	-	[93-04]	15	-	12	o	-	AF	-	-	-	-	-	-	-	-	-	-	-	
ÆON (Jusco)	JAP	[95-04]	[95-04]	-	10	10	-	0	3	-	-	-	-	-	-	-	-	-	-	-	-	
Akzo Nobel	NLD	[90-04]	[90-04]	[90-04]	15	15	15	o	2	AF	-	-	-	-	-	-	-	-	-	-	-	
Alcan	CAN	[92-04]	[92-04]	[92-04]	13	13	13	o	11	AP	-	-	-	-	-	-	-	-	-	-	-	
Alcatel	FRA	[90-04]	[90-04]	[90-04]	15	15	15	o	11	AF	-	-	-	-	-	-	-	-	-	-	-	
Alcoa	USA	[90-04]	[90-04]	[90-04]	15	15	15	o	2	EP	-	-	-	-	-	-	-	-	-	-	-	
Allied Domecq	GBR	[90-02]	[90-02]	[90-02]	13	13	13	o	11	EP	-	-	-	-	-	-	-	-	-	-	-	
Altria (Philip Morris)	USA	[90-04]	[90-04]	-	15	15	-	d	2	-	Y	Y	-	-	-	-	-	-	-	-	-	
American Home Products	USA	[90-04]	[90-04]	[93-04]	15	15	12	d	3	EP	-	-	-	-	-	-	-	-	-	-	-	
AMR Corporation	USA	[90-04]	-	-	15	-	-	o	-	-	-	-	-	-	-	-	-	-	-	-	-	
Anheuser Busch	USA	[95-04]	[95-04]	-	10	10	-	d	11	-	-	-	-	-	-	-	-	-	-	-	-	
Apple	USA	[90-04]	[90-04]	-	15	15	-	d	11	-	-	-	-	-	-	-	-	-	-	-	-	
Arcelor (Usinor)	FRA	[90-04]	[90-04]	[90-04]	15	15	15	o	11	AP	Y	Y	-	-	-	-	-	-	-	-	-	Y
Archer Daniels Midland	USA	[90-04]	[90-04]	-	15	15	-	o	3	-	-	-	-	-	-	-	-	-	-	-	-	-
ARCO	USA	[90-99]	[90-99]	-	10	10	-	o	11	-	-	-	-	-	-	-	-	-	-	-	-	-
Areva (CEA Industrie)	FRA	[95-04]	-	-	10	-	-	d	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asahi Chemical	JAP	[91-04]	[91-04]	-	14	14	-	d	11	-	-	-	-	-	-	-	-	-	-	-	-	-
Asahi Glass	JAP	[91-04]	[95-04]	-	14	10	-	o	11	-	-	-	-	-	-	-	-	-	-	-	-	-
Ashland	USA	[95-04]	[95-04]	-	10	10	-	o	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Associated British Foods	GBR	[90-04]	[90-04]	[90-04]	15	15	15	o	4	AP	Y	Y	-	-	-	-	-	-	-	-	-	-
AstraZeneca	GBR	[90-04]	[90-04]	[90-04]	15	15	15	o	6	AP	-	Y	-	-	-	-	-	-	-	-	-	-
AT&T	USA	[90-03]	[90-03]	[93-03]	14	14	11	o	11	EP	-	-	-	-	-	-	-	-	-	-	-	-
BAE Systems	GBR	[90-04]	-	-	15	-	-	o	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balfour Beatty (BICC)	GBR	[90-04]	-	-	15	-	-	o	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ballast Nedam	NLD	[90-04]	-	-	15	-	-	o	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BAM	NLD	[92-04]	-	-	13	-	-	o	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BASF	DEU	[90-04]	-	[90-04]	15	-	15	o	-	EP	-	-	-	-	-	-	-	-	-	-	-	-

Acquired by BP

Includes Zeneca  
Acquired by SBC

Name	Ctry	Years		n			Method corrections			Home is region?			Home corrections			Merger info	
		S	A	E	S	A	E	S	A	E	S	A	E	S	A		E
		[90-04]	[94-04]	[90-04]	15	11	15	0	11	EP	-	-	-	Y	Y		Y
Bayer	DEU	[90-04]	[94-04]	[90-04]	15	11	15	0	11	EP	-	-	-	Y	Y	Y	-
BCE Inc.	CAN	[90-04]	[90-04]	-	15	15	-	0	2	-	-	Y	-	-	-	-	-
Beiersdorf	DEU	[90-04]	-	-	15	-	-	0	-	-	Y	-	-	-	-	-	-
BellSouth	USA	[94-04]	[94-04]	-	11	11	-	0	3	-	-	-	-	-	-	-	-
Bertelsmann	DEU	[94-04]	-	[90-04]	11	-	15	0	-	EP	-	-	-	-	-	-	-
BMW	DEU	[90-04]	[95-04]	[90-04]	15	10	15	0	11	EP	Y	-	-	-	-	-	-
BOC	GBR	[90-04]	[90-04]	[90-04]	15	15	15	0	6	EP	-	-	-	Y	Y	-	-
Boeing Company	USA	[90-04]	-	-	15	-	-	0	-	-	-	-	-	-	-	-	-
Booker	GBR	[90-99]	[90-99]	-	10	10	-	0	5	-	-	-	-	-	-	-	-
Boots	GBR	[90-04]	[90-04]	-	15	15	-	0	5	-	-	-	-	-	-	-	-
Bouygues	FRA	[90-04]	-	[90-04]	15	-	15	0	-	EP	-	-	-	-	-	-	-
BP	GBR	[90-04]	[90-04]	[90-04]	15	15	15	0	10	AP	-	Y	-	-	-	-	-
Bridgestone	JAP	[90-04]	-	-	15	-	-	0	-	-	-	-	-	-	-	-	-
Bristol-Myers Squibb	USA	[90-04]	[90-04]	-	15	15	-	0	2	-	-	Y	-	-	-	-	-
British Airways	GBR	[90-04]	-	[90-04]	15	-	15	d	-	AP	Y	-	-	-	-	-	-
British American Tobacco	GBR	[90-04]	[90-04]	[90-04]	15	15	15	0	11	AP	-	Y	-	-	-	-	Y
British Telecom	GBR	-	-	[90-04]	-	-	15	-	-	AP	-	-	-	-	-	-	-
Buhrmann (KNP BT)	NLD	[94-04]	-	[94-04]	11	-	11	d	-	EP	-	-	-	-	-	-	-
Bull	FRA	[94-04]	[94-04]	-	11	11	-	0	3	-	-	-	Y	-	-	-	-
Burmah Castrol	GBR	[90-99]	[90-99]	-	10	10	-	0	4	-	-	-	-	-	-	-	-
Cable & Wireless	GBR	[90-04]	[90-00]	[90-04]	15	11	15	0	5	AP	-	-	-	-	-	Y	-
Cadbury-Schweppes	GBR	[90-04]	[90-04]	[90-04]	15	15	15	0	5	AP	-	Y	-	-	-	-	-
Campina Melkunie	NLD	[90-04]	-	[90-04]	15	-	15	0	-	AF	-	-	-	-	-	-	-
Canon Inc.	JAP	[90-04]	[90-04]	[90-04]	15	15	15	0	11	EP	Y	-	-	-	-	-	-
Carrefour	FRA	[90-04]	[90-04]	[90-04]	15	15	15	0	11	AP	-	Y	-	-	-	-	-
Casino	FRA	[90-04]	-	[90-04]	15	-	15	0	-	AP	-	-	-	-	-	-	-
Caterpillar	USA	[90-04]	[90-04]	[90-04]	15	15	15	0	11	EP	Y	-	-	-	-	-	-
Cebeco-Handelstraad	NLD	[90-04]	-	-	15	-	-	0	-	-	-	-	-	-	-	-	-
ChevronTexaco	USA	[90-04]	[90-04]	-	15	15	-	0	11	-	-	-	-	-	-	-	-

Name	Ctry	Years		n			Method corrections			Home is region?			Home corrections			Merger info	
		S	A	E	S	A	E	S	A	E	S	A	E	S	A		E
Christian Dior	FRA	[90-04]	[90-04]	-	15	15	-	0	11	-	-	-	-	-	-	-	-
Coca-Cola Company	USA	[90-04]	[90-04]	-	15	15	-	0	2	-	-	-	-	-	-	-	-
Coles Myer	USA	[93-04]	[93-04]	-	12	12	-	0	11	-	-	-	-	-	-	-	-
Compaq	USA	[90-01]	[90-01]	-	12	12	-	0	11	-	Y	-	-	-	-	-	Acquired by HP
Continental	DEU	[90-04]	-	[90-04]	15	-	15	0	-	EP	-	-	-	-	-	-	-
Corus	GBR	[90-04]	[90-04]	[90-04]	15	15	15	d	11	AP	Y	-	-	-	-	-	Includes British Steel
CostCo	USA	[90-04]	[90-04]	-	15	15	-	0	11	-	-	-	-	-	-	-	-
Cosun	NLD	[90-04]	-	-	15	-	-	0	-	-	-	-	-	-	-	-	-
GSM	NLD	[90-04]	-	[90-04]	15	-	15	0	-	AP	-	-	-	-	-	-	-
DaimlerChrysler	DEU	[90-04]	[92-04]	[90-04]	15	13	15	d	3	EP	Y	Y	-	-	-	-	Includes DaimlerBenz
Dalgety	GBR	[90-02]	-	[90-02]	13	-	13	0	-	AP	-	-	Y	-	-	-	-
Danone	FRA	[90-04]	[90-04]	[90-04]	15	15	15	0	11	EP	-	-	-	-	-	-	-
Degussa	DEU	[90-04]	-	[90-04]	15	-	15	0	-	EP	Y	-	-	-	-	-	-
Delhaize Le Lion	BEL	-	-	[90-04]	-	-	15	-	-	AP	-	-	-	-	-	-	-
Delta Airlines	USA	[90-04]	-	-	15	-	-	0	-	-	-	-	-	-	-	-	-
Denso	JAP	[90-04]	[95-04]	-	15	10	-	0	11	-	-	-	-	-	-	-	-
Deutsche Telekom	DEU	[93-04]	-	-	12	-	-	0	-	-	-	-	-	-	-	-	-
Dow Chemical	USA	[90-04]	[90-04]	-	15	15	-	0	3	-	-	Y	-	-	-	-	-
Du Pont	USA	[90-04]	[90-04]	-	15	15	-	0	6	-	-	Y	-	-	-	-	-
E.On	DEU	[90-04]	[94-04]	[95-04]	15	11	10	0	3	EP	Y	-	-	-	-	-	Includes VEBA
Eastman Kodak	USA	[90-04]	[90-04]	[90-04]	15	15	15	0	6	EP	-	Y	-	-	-	-	-
Eiffage	FRA	[93-04]	-	-	12	-	-	0	-	-	-	-	-	-	-	-	-
Electrolux	SWE	[90-04]	-	[90-04]	15	-	15	0	-	AP	-	-	-	-	-	-	-
Elf Aquitaine	FRA	[90-99]	[90-99]	[90-99]	10	10	10	0	3	EP	-	-	-	-	-	-	Acquired by Total
ENI	ITA	[90-04]	[90-04]	[90-04]	15	15	15	d	2	EP	Y	-	-	-	-	-	-
Ericsson	SWE	[90-04]	-	-	15	-	-	d	-	-	-	-	-	-	-	-	-
ExxonMobil	USA	[90-04]	[90-04]	[90-04]	15	15	-	0	3	-	-	-	-	-	-	-	Includes Exxon
Fiat	ITA	[90-04]	[90-04]	[90-04]	15	15	15	0	11	EP	-	-	-	-	-	-	-
Ford Motor	USA	[90-04]	[90-04]	[90-04]	15	15	15	0	6	AP	-	-	-	-	-	-	Y

Name	Ctry	Years			n			Method corrections			Home is region?			Home corrections			Merger info
		S	A	E	S	A	E	S	A	E	S	A	E	S	A	E	
Fortum	FIN	[90-04]	-	[90-04]	15	-	15	0	-	EP	Y	-	-	-	-	-	
France Télécom	FRA	[94-04]	-	[94-04]	11	-	11	0	-	AF	-	-	-	-	-	-	
Franz Haniel	DEU	[90-04]	-	[90-04]	15	-	15	0	-	EP	-	-	-	-	Y	-	
Fuji Heavy Industries	JAP	[95-04]	[95-04]	-	10	10	-	0	11	-	-	-	-	-	-	-	
Fuji Photo Film	JAP	[90-04]	-	-	15	-	d	-	-	Y	-	-	-	-	-	-	
Fujitsu	JAP	[90-04]	[95-04]	-	15	10	-	0	11	-	-	-	-	-	-	-	
Gaz De France	FRA	[90-04]	-	-	15	-	0	-	-	-	-	-	-	-	-	-	
GEC (Marconi)	GBR	[90-02]	[90-02]	[90-02]	13	13	13	0	6	EP	-	-	-	-	-	-	
General Electric	USA	[90-04]	[90-04]	[90-04]	15	15	15	0	11	EP	-	-	-	-	-	-	
General Motors	USA	[90-04]	[90-04]	[90-04]	15	15	15	0	6	EP	-	Y	-	-	-	-	
George Weston	CAN	[90-04]	[90-04]	-	15	15	-	0	1	-	-	Y	-	-	-	-	
Georgia-Pacific	USA	[90-04]	-	-	15	-	d	-	-	-	-	-	-	-	-	-	
Getronics	NLD	[90-04]	-	[90-04]	15	-	15	0	-	EF	-	-	-	-	Y	-	
GIB	BEL	[90-99]	-	[90-99]	10	-	10	0	-	EP	-	-	-	-	-	-	
Goodyear Tire & Rubber	USA	[91-04]	[91-04]	[93-04]	14	14	12	0	3	EP	-	-	-	-	-	-	
GTE	USA	[90-99]	[90-99]	[90-99]	10	10	10	0	11	EP	-	-	-	-	-	-	
Hagemeyer	NLD	[90-04]	-	-	15	-	0	-	-	Y	-	-	Y	-	-	-	
Hanson	GBR	[95-04]	[95-04]	[95-04]	10	10	10	0	11	AP	-	-	-	-	-	-	
HBG	NLD	[90-01]	-	[90-01]	12	-	12	0	-	AP	-	-	-	-	-	-	
Heineken	NLD	[90-04]	-	[90-04]	15	-	15	0	-	AP	-	-	-	-	Y	-	
Henkel	DEU	[90-04]	-	[90-04]	15	-	15	0	-	EP	-	-	-	-	Y	-	
Hewlett-Packard	USA	[90-04]	[90-04]	[90-04]	15	15	-	0	6	-	-	-	-	-	-	-	
Hitachi	JAP	[90-04]	[95-04]	[95-04]	15	10	-	0	11	-	-	-	-	-	-	-	
Hochtief	DEU	[90-04]	-	[90-04]	15	-	15	0	-	AF	-	-	-	-	-	-	
Honda Motor	JAP	[90-04]	[90-04]	[90-04]	15	15	-	0	11	-	-	-	-	-	-	-	
Honeywell	USA	[90-04]	[90-04]	[90-04]	15	15	-	0	3	-	-	-	-	-	-	-	
Hunter Douglas	NLD	[90-04]	-	-	15	-	0	-	-	-	-	-	-	Y	-	-	
IBM	USA	[90-04]	[90-04]	[90-04]	15	15	-	0	3	-	-	-	-	-	-	-	
ICI	GBR	[90-04]	[90-04]	[90-04]	15	15	15	0	11	AP	-	Y	-	-	-	-	



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		S	A	E	S	A	E	S*	A*	E*	S	A	E	S	A	E	S	A	E	M	Merger info
Marks & Spencer	GBR	[94-04]	[94-04]	[94-04]	11	11	11	d	5	AP	Y	-	-	-	-	-	-	-	-	-	-
Matsushita Electric Ind.	JAP	[90-04]	[95-04]	[90-04]	15	10	15	o	11	EP	-	-	-	-	-	-	-	-	-	-	-
MCI / WorldCom	USA	[90-04]	[90-04]	[90-04]	15	15	15	o	3	EP	-	Y	-	-	-	-	-	-	-	-	-
McKesson	USA	[94-04]	[94-04]	-	11	11	-	o	3	-	-	-	-	-	-	-	-	-	-	-	-
Michelin	FRA	[90-04]	[90-04]	-	15	15	-	o	9	-	Y	-	-	-	-	-	-	-	-	Y	Y
Mitsubishi Corporation	JAP	[90-04]	[90-04]	[90-00]	15	15	11	o	2	EP	-	Y	-	-	-	-	-	-	-	-	-
Mitsubishi Materials	JAP	[93-04]	[95-04]	-	12	10	-	o	11	-	-	-	-	-	-	-	-	-	-	-	-
Mitsui & Co.	JAP	[90-04]	[90-04]	-	15	15	-	o	2	-	Y	-	-	-	-	-	-	-	-	-	-
Motorola	USA	[90-04]	[90-04]	-	15	15	-	o	11	-	-	-	-	-	-	-	-	-	-	-	-
Nederlandse Gasunie	NLD	[91-04]	-	-	14	-	-	o	-	-	-	-	-	-	-	-	-	-	-	-	-
Nestlé	CHE	[90-04]	-	[90-04]	15	-	15	o	-	EP	-	-	-	-	-	Y	-	-	-	-	-
Nokia	FIN	[90-04]	-	[90-04]	15	-	15	o	-	AP	-	-	-	-	-	-	-	-	-	-	-
Noranda	CAN	[90-04]	[90-04]	-	15	15	-	o	10	-	-	-	-	-	-	-	-	-	-	-	-
Norsk Hydro	NOR	[91-04]	[91-04]	-	14	14	-	o	3	-	Y	Y	-	-	-	Y	-	-	-	-	-
Nortel Networks	CAN	[91-04]	[91-04]	-	14	14	-	o	3	-	Y	-	-	-	-	-	-	-	-	-	-
Nutreco	NLD	[94-04]	-	[94-04]	11	-	11	o	-	AF	-	-	-	-	-	-	-	-	-	-	-
OPG	NLD	[95-04]	-	-	10	-	-	d	-	-	-	-	-	-	-	-	-	-	-	-	-
Otto Versand	DEU	[90-04]	-	-	15	-	-	d	-	-	-	-	-	-	-	-	-	-	-	-	-
P&O Steam Navigation	GBR	[90-02]	[90-02]	[90-02]	13	13	13	o	5	AP	-	Y	-	-	-	-	-	-	-	-	Acquired by DP World
Pechiney	FRA	[90-02]	[90-02]	[90-02]	13	13	13	o	3	EP	-	-	-	-	-	-	-	-	-	-	Acquired by Alcan
PepsiCo	USA	[90-04]	[90-04]	[93-04]	15	15	12	o	3	EP	-	-	-	-	-	-	-	-	-	-	-
Philipp Holzmann	DEU	[90-00]	-	[90-00]	11	-	11	o	-	AP	-	-	-	-	-	-	-	-	-	-	Insolvent
Philips Electronics	NLD	[90-04]	[94-04]	[93-04]	15	11	12	o	11	EP	-	-	-	-	-	-	-	-	-	-	-
PPR	FRA	[92-04]	[92-04]	[92-04]	13	13	13	o	1	AP	-	-	-	-	-	-	-	-	-	-	-
Procter & Gamble	USA	[90-04]	[90-04]	-	15	15	-	o	11	-	-	-	-	-	-	-	-	-	-	-	-
Raab Karcher	DEU	[90-99]	-	-	10	-	-	o	-	-	-	-	-	-	-	-	-	-	-	-	Acquired by Saint Gobain
RAG	DEU	[94-04]	-	-	11	-	-	d	-	-	-	-	-	-	-	-	-	-	-	-	-
Randstad	NLD	[90-04]	-	-	15	-	-	o	-	-	-	-	-	-	-	-	-	-	-	-	-
Raytheon	USA	[90-04]	[90-04]	-	15	15	-	d	3	-	-	-	-	-	-	-	-	-	-	-	-

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		S	A	E	S	A	E	S	A	E	S	A	E	S	A	E	
		[92-04]	[90-04]	[92-04]	[92-04]	[90-04]	[92-04]	[92-04]	[90-04]	[92-04]	[90-04]	[92-04]	[90-04]	[92-04]	[90-04]	[92-04]	
Reed Elsevier	GBR	[92-04]	-	[92-04]	13	-	13	0	-	EP	-	-	-	-	-	-	-
Renault	FRA	[90-04]	[90-04]	[90-04]	15	15	15	0	6	EP	-	-	-	-	-	-	-
Ricoh	JAP	[90-04]	[90-04]	-	15	15	-	0	3	-	-	-	-	-	-	-	-
Rio Tinto (RTZ CRA)	AUS	[90-04]	[90-04]	[90-04]	15	15	15	0	5	AF	-	-	Y	Y	Y	Y	Y
RMC	GBR	[90-04]	[90-04]	[90-04]	15	15	15	0	5	AP	-	-	-	-	-	-	-
Robert Bosch	DEU	[90-04]	-	[90-04]	15	-	15	0	-	AP	-	-	Y	-	Y	-	-
Roche	CHE	[90-04]	[90-04]	[90-04]	15	15	15	0	7	EP	-	-	-	-	-	-	-
Rockwell International	USA	[91-04]	[91-04]	[94-04]	14	14	11	0	2	EP	-	Y	-	-	-	-	-
Rolls-Royce	GBR	[90-04]	[90-04]	[90-04]	15	15	15	0	4	AP	-	-	-	-	-	-	-
Royal Ahold	NLD	[90-04]	[90-04]	[90-04]	15	15	15	0	11	EP	-	-	-	-	-	-	Y
Royal Dutch/Shell Group	NLD	[90-04]	[90-04]	[90-04]	15	15	15	0	1	AP	-	-	Y	Y	Y	-	-
RWE	DEU	[90-04]	-	[90-04]	15	-	15	0	-	EF	-	-	-	-	-	-	-
Safeway	USA	[90-04]	[90-04]	[90-04]	15	15	-	0	11	-	-	-	-	-	-	-	-
Saint Gobain	FRA	[90-04]	[90-04]	[90-04]	15	15	15	0	11	EP	-	Y	-	-	-	-	-
Sanyo Electric	JAP	[92-04]	[92-04]	[92-04]	-	13	13	-	0	11	-	-	-	-	-	-	-
Sara Lee	USA	[90-04]	[90-04]	[90-04]	-	15	15	-	0	3	-	-	-	-	-	-	-
SCA	SWE	[90-04]	-	[90-04]	15	-	15	0	-	AP	-	-	-	-	-	-	-
Schneider Electric	FRA	[95-04]	-	[95-04]	10	-	10	0	-	AP	-	-	-	-	Y	-	Y
Sears Roebuck & Co.	USA	[90-04]	[90-04]	[94-04]	15	15	11	0	11	EP	-	-	-	-	-	-	-
Sharp	JAP	[92-04]	[92-04]	[92-04]	-	13	13	-	0	11	-	-	-	-	-	-	-
Siemens	DEU	[90-04]	-	[90-04]	15	-	15	0	-	EP	-	-	-	-	-	-	-
Six Continents (Bass)	GBR	[90-04]	[90-04]	[90-04]	-	15	15	-	0	11	-	-	-	-	-	-	-
Solvay	BEL	[90-04]	-	[90-99]	15	-	10	d	-	EP	Y	-	-	-	Y	-	-
Sony	JAP	[90-04]	[90-04]	[90-04]	15	15	15	0	3	EP	-	-	-	-	-	-	-
Statoil	NOR	[94-04]	[94-04]	[94-04]	-	11	11	-	0	1	-	-	-	-	-	-	-
Suedzucker	DEU	[90-04]	-	[90-04]	15	-	15	0	-	-	-	-	-	-	-	-	-
Sumitomo	JAP	[90-04]	[95-04]	[95-04]	-	15	10	-	0	3	-	-	-	-	-	-	-
Sumitomo Metal Industries	JAP	[91-04]	-	[91-04]	-	14	-	d	-	-	-	-	-	-	-	-	-
Suzuki Motor	JAP	[93-04]	[94-04]	[94-04]	-	12	11	-	0	2	-	-	-	-	-	-	-

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		S	A	E	S	A	E	S	A	E	S	A	E		
Tate & Lyle	GBR	[90-04]	-	[90-04]	15	-	15	d	-	AP	Y	-	-	-	-
Telstra	AUS	[90-04]	[90-04]	[90-04]	15	15	15	d	11	EP	-	-	-	-	-
Tesco	GBR	[90-04]	[90-04]	[90-04]	15	15	15	o	11	AF	-	-	-	-	-
Texaco	USA	[90-00]	[90-00]	-	11	11	-	o	11	-	Y	-	-	-	Acquired by Chevron
Texas Instruments	USA	[90-04]	[90-04]	-	15	15	-	o	6	-	Y	-	-	-	-
Thales (Thomson CSF)	FRA	[94-04]	-	[94-04]	11	-	11	o	-	EP	-	-	-	-	-
ThyssenKrupp	DEU	[90-04]	-	[90-04]	15	-	15	o	-	EP	-	-	-	-	Includes Thyssen AG
Tomen	JAP	[90-04]	[95-04]	-	15	10	-	o	11	-	-	-	-	-	-
Tomkins	GBR	[90-04]	[90-04]	-	15	15	-	o	2	-	Y	-	-	-	-
Toshiba	JAP	[90-04]	[95-04]	-	15	10	-	o	11	-	Y	-	-	-	-
Total	FRA	[90-04]	[90-04]	[90-04]	15	15	15	o	8	AP	-	-	-	-	-
Toyota Motor	JAP	[90-04]	95-04]	-	15	10	-	o	3	-	-	-	-	-	-
Unilever	NLD	[90-04]	[90-04]	[90-04]	15	15	15	o	5	AP	-	Y	Y	Y	-
United Airlines	USA	[95-04]	-	-	10	-	-	o	-	-	-	-	-	-	-
United Technologies Corp.	USA	[90-04]	[90-04]	-	15	15	-	o	3	-	-	-	-	-	-
UPS of America	USA	[95-04]	-	-	10	-	-	o	-	-	-	-	-	-	-
Valeo	FRA	[90-04]	[90-04]	[90-04]	15	15	15	o	6	EP	-	Y	-	Y	Y
Viacom	USA	[90-04]	[90-04]	[90-04]	15	15	15	o	11	-	Y	-	-	-	-
VIAG	DEU	[90-99]	-	-	10	-	-	o	-	-	-	-	-	-	-
Volker Wessels	NLD	[90-04]	-	[90-04]	15	-	15	o	-	AP	-	-	-	-	Incl. Volker W. Stevin
Volkswagen	DEU	[90-04]	-	-	15	-	-	d	-	-	Y	-	-	-	-
Volvo	SWE	[90-04]	[90-04]	[90-04]	15	15	15	o	11	EP	Y	-	-	-	-
Wal-Mart Stores	USA	[90-04]	[90-04]	[90-04]	15	15	15	o	11	EP	-	-	-	-	-
Walt Disney	USA	[90-04]	[90-04]	-	15	15	-	o	11	-	-	-	-	-	-
Waste Management	USA	[90-04]	[90-04]	-	15	15	-	o	11	-	Y	-	-	-	-
Weyerhaeuser	USA	[90-04]	-	-	15	-	-	o	-	-	-	-	-	-	-
Wolseley	GBR	[90-04]	-	-	15	-	-	o	-	-	-	-	-	-	-
Wolters Kluwer	NLD	[90-04]	-	[90-04]	15	-	15	o	-	AF	-	-	-	Y	Y
Worms & Cie	FRA	[90-04]	[90-99]	-	15	10	-	o	5	-	-	-	-	-	Includes Arjo W. Appleton



Name	Ctry	Years			n			Method corrections			Home is region? corrections			Home merger info					
		S	A	E	S	A	E	S	A	E	S	A	E	S	A	E			
Xerox	USA	[90-04]	[90-04]		-	15	15	-	0	11	-	-	Y	-	-	-	-	-	-

1 Explanatory notes:

S, A, and E denote FSTS, FATA, and FETE variables, respectively.

The columns 'years' identify the period for which data are available for that firm and variable.

The columns 'n' indicate how many observations are in a single series.

The columns 'method' denote the measurement methodology of the various variables with codes as specified below.

The columns 'method corrections' indicate if methodological changes had occurred in the time series that required data adjustment as specified in the text.

The columns 'home is region' indicate if for a particular firm, the foreign-to-total ratios are based on extra-home region (e.g., EU) instead country data.

The columns 'home corrections' indicate if the data have been adjusted to control for changes in the home country (region) definition in the time series.

The column 'merger info' gives specifics for time-series that are incomplete due to mergers or takeovers.

S\* Sales methodology defined as follows: o - Sales by origin (default); d - Sales by destination

A\* Asset methodology defined as follows: 1 - Fixed assets; 2 - Identifiable Assets; 3 - Long Lived Assets; 4 - Net Assets; 5 - Operating Assets; 6 - Property, Plant and Equipment; 7 - Segment Assets; 8 - Tangible and Intangible Assets; 9 - Tangible Fixed Assets; 10 - Capital Investment; 11 - Total Assets

E\* Employment methodology defined as follows: AF - Year average, full-time equivalent; AP - Year average, number of people; EF - Year end, full-time equivalent; EP - Year end, number of people

## 5 BILATERAL INVESTMENT TREATIES AND FOREIGN DIRECT INVESTMENT

Co-authored with Rob van Tulder.

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### 5.1 INTRODUCTION

The increased international integration of countries and economies at the end of the 20th century has been driven primarily by growing international investment flows. Foreign Direct Investment (FDI) has come to form a fundamental linking pin between national economies, with the total world ratio of inward FDI stock to gross domestic product (GDP) reaching almost 25 percent in 2005 (UNCTAD, 2006). The remarkable increase in FDI has been hailed by many as a felicitous process. In particular for developing countries, inward FDI is considered to be an important means to complement domestic savings (Bosworth and Collins, 1999), to transfer technology (Baldwin *et al.*, 1999), to raise productivity (Markusen and Venables, 1999), to increase the quantity and quality of employment (Aitken *et al.*, 1996), to stimulate competition (Kokko, 1996), to assist enterprise restructuring (Ros, 1999) and to promote exports (UNCTAD, 2002). These processes in turn would lead to increased economic growth (De Mello, 1997; Borenzstein *et al.*, 1998) and decreases in absolute and relative poverty levels (Tsai, 1994).

The majority of developing countries appear to acknowledge the potential benefits of FDI and have devised policies to attract FDI. The wave of regulatory changes to facilitate FDI is well-documented (UNCTAD, 2003). Developing countries have also actively sought to attract FDI through the creation of international regulatory frameworks, most directly by engaging in so-called Bilateral Investment Treaties (BITs). BITs are agreements between two states aimed at the promotion and protection of FDI by investors of one party in the territory of the other. BITs have been the dominant mechanism of international investment regulation since the end of the 1950s, and are hence a prominent example of how international institutions may influence and direct international investment. Multilateral negotiations – such as the OECD effort on the Multilateral Agreement on Investment (MAI) – have failed to establish an agreement regarding FDI. Since the first BIT was signed in 1959 between Germany and Pakistan, the number of BITs has increased to 2389 at the end of 2004, the most recently available figure (UNCTAD, 2006). The growth in BITs was especially explosive during the 1990s, when the overall number of treaties more than quadrupled.

As BITs contain provisions aimed at reducing especially the political risk (and the associated transaction costs) of investing in the partner country, the presence of a BIT between two countries is believed to enhance (mutual) FDI flows (Vandeveldt, 1998a; Gúzman 1997). However, in spite of the remarks of prominent observers regarding the

importance of the subject (e.g. Wells, 1998), the impact of BITs on FDI has been the subject of only limited academic inquiry. And those studies that have addressed this question have not led to unanimous results (compare e.g. Neumayer and Spess (2005) with Yackee (2006)). This also implies that the effectiveness of the strategy of developing countries to engage in large numbers of BITs is still largely unknown.

This article aims to contribute to filling this gap in the literature and the policy debate in several ways, both theoretically and empirically. As regard theory development, we explicitly consider that the effect of BITs may not be similar in all circumstances, but may differ a) according to the host country institutional context, which includes a host country's legal system, level of political risk, and quality of legislation and enforcement (specifically with respect to property rights); and b) according to a host country's bargaining position relative to MNEs and other countries in what some observers have named the global competition for capital (Elkins *et al.*, 2006). Empirically, our main addition to the existing literature stems from the much larger dataset of bilateral FDI stocks that we have compiled. In particular, we extended the commonly used bilateral OECD FDI data to include a much larger set of home and host countries, carefully combining data from official national sources in a manner that is qualitatively similar to the way in which the OECD compiles its statistics. This is hence the first bilateral dataset that also contains substantial information on intra-developing country FDI. The effect of BITs on these investments is particularly relevant. Firstly, because nearly half of the total number of BITs has been signed among developing countries. Disregarding these treaties in the empirical analysis on the effect of BITs would almost by definition lead to biased results. Secondly, because developing countries are increasingly important outward investors as well. Currently 17 percent of total world FDI outflows and 13 percent of total world outward FDI stock is from developing countries, and this trend is expected to continue (UNCTAD, 2006).

The chapter is organized as follows. First, the emergence of BITs and their characteristics are documented in section 5.2. Subsequently, section 5.3 reviews the existing theoretical and empirical literature with respect to BITs and FDI, and develops hypotheses regarding several interaction effects. Section 5.4 explains the methodology used and the data collected in more detail, while the results of the analysis are discussed in 5.5. The final section considers the theoretical and policy implications of these findings, and gives suggestions for further research.

## **5.2 BILATERAL INVESTMENT TREATIES: HISTORY AND CONTENTS**

BITs have been the successor of the so-called 'Treaties of Friendship, Commerce and Navigation' (FCNs), which were lastly concluded in the 1960s (WTO, 1998). FCNs contained a wide range of provisions regarding economic, cultural and political co-operation, and included also some stipulations regarding the treatment by host states of foreign investments. If FCNs were absent, foreign investment was regulated and protected by customary law. Contrary to FCNs, BITs focus exclusively on investment issues, and are characterised by more detailed provisions regarding the protection of a

foreign investment against host country government policies. This degree of detail had become necessary in the 1960s and 1970s, when developing countries started to challenge one of the main rules of customary international law, the so-called 'Hull-formula'. This formula required 'prompt, adequate and effective' compensation in case of expropriation of foreign goods or assets. Developing countries claimed on the basis of their often newly obtained right of sovereignty that they were entitled to determine themselves how to treat investors and how to deal with compensation in the case of harmful treatment (Guzmán, 1997). In this period, cases of expropriation of foreign investments by national governments were quite common (see Kennedy (1992) for an overview). BITs aimed to fill the gap that hence existed in international law.

Western, capital-exporting countries drove the conclusion of BITs in the earlier decades (1960s and 1970s). Especially European governments have been important initiators and signatories. Germany, having lost all its foreign investments after the Second World War, took the lead and remains the leading BIT signatory with a total of 130 BITs by 2004. Switzerland, France, the UK and the Netherlands have been also very active with 109, 98, 95 and 89 BITs respectively. By contrast, the US government started a BIT program in 1977, needed four years to develop a prototype treaty and concluded its first treaty only in 1982 (with Panama). The divergent use of BIT between the American and European governments is partly due to the special relation of Europe with its former colonies (Salacuse, 1990). Additionally, European countries have been less demanding than the US regarding the strictness of the treaty provisions, thus making it easier to come to an agreement (Vandeveld, 1993). Table 5.1 gives an overview of the cumulative number of BITs signed by the largest countries in the 1990s. Not all these BITs that have been signed have indeed entered into force; the latest data available (year 2004) indicate that worldwide approximately 70 percent of the treaties have entered into force.

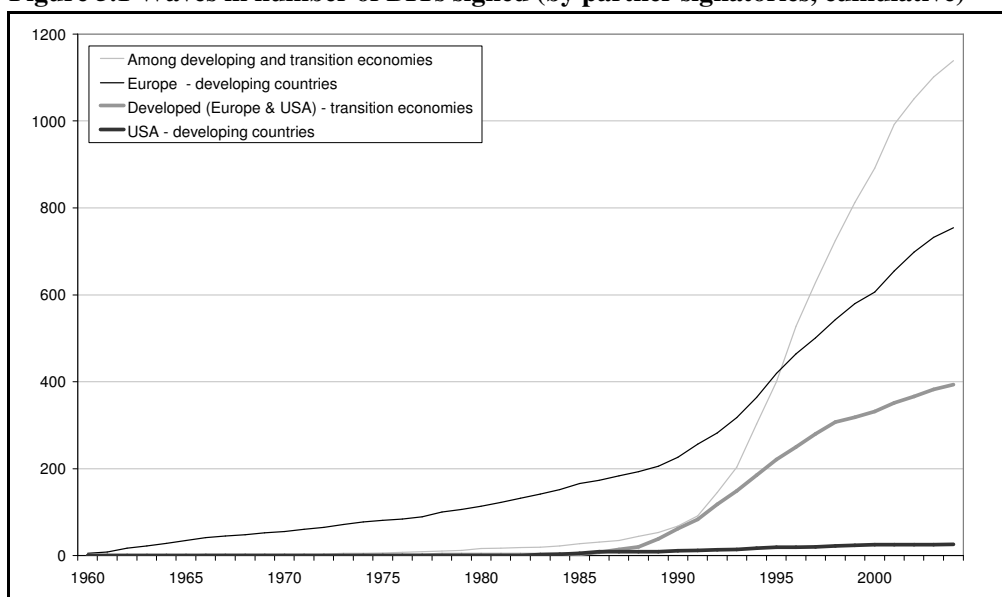
Prior to 1990, most treaties were concluded by either the US or Europe with a developing country partner. The 1990s saw two new 'waves' of BITs. Firstly, the fall of the Berlin Wall, the consequent opening up of Central and Eastern Europe (CEE) and China, as well as the dissolution of the former Soviet Union, induced US and Western European governments to sign BITs with many of these transition economies. Whereas in earlier phases, a clear distinction could be observed between the attitude of the US and US and European countries towards BITs, both were equally interested in signing BITs with CEE countries. The treaties were seen both as a symbol of the adoption, and as a means to lock-in, pro market policies (Vandeveld, 1993). Secondly, in more recent years, many BITs have been concluded among developing and transition economies themselves. BITs with two developing country partners currently make up roughly half of all the BITs signed world-wide. In sum, four waves of BITs can be distinguished since 1959: first European countries with developing countries, followed by the US with developing countries, then Europe and the US with transition economies, and finally developing countries and transition economies among themselves. Figure 5.1 displays these waves for the whole (1960-2004) period.

**Table 5.1 BITs (cumulative) by the top 20 largest (by total GDP) countries worldwide, 1990-2004**

	Signed				Percentage of which entered into force			
	1990	1995	2000	2004	1990	1995	2000	2004
Australia	2	14	18	21	50%	79%	89%	90%
Austria	8	18	36	58	50%	78%	75%	86%
Belgium	22	30	57	76	50%	70%	51%	68%
Brazil	0	11	14	14	-	0%	0%	0%
Canada	4	11	24	25	50%	73%	88%	92%
China	22	67	92	112	82%	85%	84%	77%
France	41	68	89	98	63%	63%	78%	74%
Germany	58	87	116	130	88%	69%	84%	85%
India	0	9	40	56	-	11%	63%	79%
Italy	22	44	72	85	36%	57%	74%	75%
Japan	3	4	8	12	100%	100%	88%	100%
Korea, Rep.	18	38	62	77	83%	82%	81%	88%
Mexico	0	2	15	17	-	0%	33%	71%
Netherlands	20	45	68	89	85%	82%	79%	70%
Russia	12	31	48	52	0%	39%	65%	65%
Spain	4	33	46	59	0%	52%	91%	92%
Sweden	16	32	51	65	75%	78%	76%	82%
Switzerland	40	70	93	109	83%	86%	91%	88%
United Kingdom	43	81	95	100	79%	80%	89%	88%
United States	11	29	37	47	64%	52%	62%	77%
World	388	1097	1917	2389	68%	64%	71%	72%

Source: compiled from UNCTAD BIT database

**Figure 5.1 Waves in number of BITs signed (by partner signatories, cumulative)**



Source: compiled from UNCTAD BIT database

Not all BITs are exactly alike – minor differences may exist in their specific provisions. But they do strongly resemble one another, partly due to the use of ‘prototype treaties’ by many developed and some developing country BIT signatories (Dolzer and Stevens, 1995; Gúzman, 1997; Muchlinski, 1995). All BITs contain similar provisions regarding the protection and promotion of FDI. Each BIT in principle contains four main clauses, including 1) the general standards of treatment; 2) clauses regarding expropriation, 3) rules regarding the transfer of payments and 4) dispute settlement procedures (see e.g. UNCTAD (1998) or Dolzer and Stevens (1995) for a much more detailed treatment of the exact contents of all the provisions in BITs).

The general standards of treatment refer to the overall treatment of foreign investment by the host country. Most BITs require this treatment to be ‘fair and equitable’, and may add provisions for ‘full protection and security’, or a similar clause. The general standards of treatment also include relative standards: most-favoured-nation (MFN) treatment or national treatment (NT); sometimes both. Especially MFN treatment has important generalising effects, since a specific favourable treatment of one investor consequently applies to all investors with which treaties including MFN-clauses have been concluded. The clause on expropriation also refers to measures that are similar or equivalent to expropriation, and implies that all actions of governments that significantly impair the value of a foreign investment are forbidden. Only expropriation for public purposes, and under certain conditions (such as non-discrimination, and due process of law) is allowed. In that case – and this is the core of the expropriation clause – the investor should be compensated for the loss endured. Most BITs still refer to the Hull-formula (‘prompt, adequate and effective’ compensation), but several developing countries proposed standards such as ‘appropriate’. Other BITs use different terminology such as ‘full value’ or ‘just compensation’.

Provisions regarding the transfer of payments refer to three types of funds: the repatriation of capital invested, repatriation of rents and dividends, and the current payments made in relation to the investment. In some instances, host countries allowed the transfer of payments only under certain conditions, as large and sudden financial transfers could lead to serious balance of payments problems. BITs usually ensure that either all transfers are free (usually complemented with an illustrative and non-exhaustive list of examples); or that transfers on a positive list attached to the treaty, are free. These provisions are generally complemented with statements on the type of currency to be used for the transfer, and the exchange rate allowed.

The dispute settlement clauses, finally, give the BITs their ‘teeth’. They specify the process that investors and countries must follow in the case of a dispute (BITs deal both with state-to-state as well as investor-to-state disputes). Under customary law, these disputes would be settled by the arbitration bodies of the host country. However, as most claims are made against the host nation-state, investors might not entirely trust the independence of these arbitration bodies, or fear the length of the procedure. Therefore, BITs often include clauses that allow investors to turn to an international body, most commonly the ICSID (the World Bank International Centre for Settlement of Investment Disputes), either immediately or after a limited period of time has elapsed in which

national courts can try to settle the dispute. BITs hereby overrule the principle in international law of exhaustion of local remedies (Peters, 1997).

These four clauses combined imply that BITs mainly impose obligations or restrictions on the host governments. BITs are mostly concerned with the protection of FDI, rather than its promotion, the other official motive for bilateral investment treaties. The capital-exporting states have continued to refuse any obligation to encourage FDI or to induce their investors to invest in a particular foreign state (Salacuse, 1990). The investment 'promotion' part of the BIT is theorised to come mainly indirectly, from the enhanced protection that should reduce uncertainty and risk, and hence transaction costs for investors. In a recent paper, Salacuse (2003) identified this as the 'grand bargain' that underlies the BITs between on the one hand the mainly developed, capital exporting states and on the other hand mainly developing, capital importing states: a promise of protection of capital in return for the prospect of more capital in the future. This article examines whether this prospect has become reality.

### **5.3 THEORY AND HYPOTHESES**

The prominence of BITs, whether measured by their sheer number or by their importance as main international regulator of investment flows, has not been paired with an equally prominent treatment of these treaties and their effects in the academic literature. Empirical studies are still virtually absent – only six have been identified, all of them very recently published and several of them still in working paper status (they are discussed in more detail below). An important reason for this lack of studies is that for a long time, the debate on BITs remained concentrated in the literature on International Law. Hence, academic discourse has mainly been concerned with the juridical development and phrasing of certain specific treaty provisions rather than with the impact of these treaties on international business strategy and investment decisions (Comeaux and Kinsella 1994; Dolzer and Stevens, 1995; Gúzman 1997; Peters 1997; Salacuse 1990; Vandeveld 1993, 1998a, 1998b, 2000). In this research area, Salacuse (1990) was one of the first to attempt and assess the impact of BITs on foreign investment in developing countries. Lack of comparative empirical data forced him to build on anecdotal evidence and interviews with individual BIT negotiators, from which he concluded that in diplomatic and bureaucratic practice, it is generally believed that BITs gives rise to increased investor protection, and therefore, positively affect FDI.

The six more recent empirical studies (Hallward-Driemeyer, 2003; Tobin and Rose-Ackerman, 2004; Yackee 2006; Egger and Pfaffermayr, 2004; Salacuse and Sullivan, 2005; and Neumayer and Spess, 2005) do have the benefit of increased data availability. They take advantage of the much improved dataset that have been published in the past years by UNCTAD in its World Investment Report (WIR) series (data at a national level for all countries worldwide), by the OECD in its International Investment Yearbook (data at the bilateral level, among OECD countries and to a selection of developing countries), and by national statistical bureaus, of which the US Bureau of Economic Analysis (BEA) is the most prominent example.

The six papers and their research design and conclusions are summarized in table 5.2. This table shows that even though all papers essentially deal with the same question, there are many differences between them with respect to the samples used, the measurement of the relevant variables, and the econometric modelling approach. For example, Hallward-Driemeyer (2003) and Egger and Pfaffermayr (2004) analyze OECD outward investment at the bilateral level, whereas the other four studies primarily focus on country level data. Most studies use FDI flow data, but Egger and Pfaffermayr (2004) prefer FDI stock. Some studies take the date of signature of a treaty as the point from which an effect on FDI can be expected (Tobin and Rose-Ackerman, 2004; Salacuse and Sullivan, 2005; Neumeyer and Spess, 2005), others say that BITs only provide protection if they have been ratified and entered into force (an important difference given that nearly 30 percent of BITs has not yet entered into force, see table 5.1) (Hallward-Driemeyer, 2003; Egger and Pfaffermayr, 2004; Yackee, 2006). While studies using bilateral data can easily and directly link each individual BIT to a particular flow or stock of FDI and control for all kinds of host and home characteristics, the studies that use national data in comparing the total number of BITs of a country with its total amount of inward FDI had to follow a more indirect approach to account for the fact that a BIT with e.g. the US should lead to more FDI than a BIT with e.g. Ghana. The solution has first been sought in splitting up the total number of BITs in those signed with particular country groups (for example, Tobin and Rose-Ackerman (2004) distinguished between BITs with high and low income countries, and Salacuse and Sullivan (2005) between the US, OECD countries, and all other countries). A second approach has been to attribute a weight to each BIT depending on the source country's share in total global outward FDI (Neumeyer and Spess, 2005; Yackee, 2006). Most studies used quite sophisticated econometric modelling techniques for handling their panel data, except for Salacuse and Sullivan (2005) who performed a cross-sectional analysis (also the only paper on the effect of FDI published in a law journal and not in economics).

These methodological differences may in part account for the very different conclusions of the papers. Whereas Hallward-Driemeyer (2003), Tobin and Rose-Ackerman (2004), and Yackee (2006) concluded that there is either no, or at most a small and weak, effect from BITs on FDI, while Egger and Pfaffermayr (2004) and Neumeyer and Spess (2005) found strong positive effects. Several of the papers nuance their findings by interacting the presence of a BIT (or total number of BITs) with the quality of the host country institutional setting (Hallward-Driemeyer, 2003; Tobin and Rose-Ackerman, 2004; and Neumeyer and Spess, 2005). The results are mixed however. Some concluded that BITs are more effective in attracting FDI in high-quality environments, thereby acting as complements to domestic institutions (Hallward-Driemeyer, 2003); others (Tobin and Rose-Ackerman, 2004) found that BITs can act as substitutes for the quality of domestic institutions, and again others (Neumeyer and Spess, 2005) that the evidence on the interaction is very limited in general.



**Table 5.2 Empirical Studies on the effect of BITs on FDI**

	Salacuse and Sullivan, 2005	Neumeyer and Spess, 2005	Yackee, 2006
<i>Level</i>	Hallward-Driemeyer, 2003	Tobin and Rose-Ackerman, 2004	Egger and Pfaffermayr, 2004
<i>Sample</i>	Bilateral	National and bilateral	Bilateral
<i>Time Period</i>	20 OECD source countries and 31 developing host countries. N(max)=4261; 434 dyads.	National data: 46 host countries; Bilateral: 54 countries. Five time periods.	19 OECD source countries and 54 host countries. N=4235.
<i>FDI</i>	1980-2000	1980-2000	1982-1997
<i>BITs</i>	Flows (levels, ratio of GDP, share in source country)	Inflows (5 year averages, share in world inward, share in US outward)	Stocks (log of levels)
<i>Econometric modelling</i>	Ratified BITs	Signed BITs, split in signed with high and low income	Signed and Ratified BITs
<i>Conclusion</i>	Pooled data with fixed effects. Controls for endogeneity by instrumenting BIT by total BITs.	Pooled data with fixed effects. Use lags to control for endogeneity.	Pooled data with fixed effects. Lot of robustness checks (variable measurement, different sub-samples, endogeneity)
<i>Critique</i>	No evidence that BITs promote FDI. BITs act as complements, instead of substitutes of existing institutions.	A weak relationship between BITs and FDI. Risky countries attract somewhat more FDI by signing BITs. For US, no significant relationship was established.	Ratified BITs enhance FDI. 54 hosts included OECD and non-OECD hosts, but no difference between them.

**Table 5.2 Empirical Studies on the effect of BITs on FDI (ctd.)**

	Salacuse and Sullivan, 2005	Neumeyer and Spess, 2005	Yackee, 2006
<i>Level</i>	National and bilateral	National	National
<i>Sample</i>	National: n=99 countries; Bilateral: 31 developing countries (n=297)	'Up to' 119 countries. N(max)=2767	108-130 countries, N (max)=2431
<i>Time Period</i>	1991-2000	1971-2001	1976/1985-2001
<i>FDI</i>	Annual inflows	Inflows (levels, and 5-year average)	Inflows (log levels, share in source country, ratio of GDP)
<i>BITs</i>	Signed BITs, split in signed with the US, all OECD, all others.	Signed BITs, weighted by source country share in world FDI outflows	Ratified BITs, weighted by source country share in world FDI outflows
<i>Econometric modelling</i>	National level: three cross- section regressions for 1998- 1999 and 2000. Bilateral level: fixed effects.	Pooled data with fixed effects and robust s.e.. Sensitivity analysis (5 year averages, different variable measurements, sub-samples, outliers)	Pooled data with fixed effects and robust s.e.. Primarily a critique of the lack of robustness of the Neumeyer and Spess study
<i>Conclusion</i>	The 'grand bargain' is realized. US BITs enhance FDI, but OECD or developing country BITs do not.	BITs positively and substantially important affect on FDI. BITs have both a commitment and signalling function. Limited evidence that FDI can substitute for domestic institutions	Only strong BITs increase the FDI/GDP ratio. Interactions with institutions do not show effects. Interaction with # BITs worldwide shows decreasing marginal competitive effect of BITs
<i>Critique</i>	In the cross-sections, no control for increase in FDI over time, results may be spurious. In the bilateral data, only for US and for very limited sample	Distinction OECD/non- OECD	No distinction between developed/developing hosts. No theoretical model underpinning control variables. National data.

The combination of a lack of empirical studies on the topic of BITs and FDI, and the inconsistent evidence that is presented by the studies that have been done, form the main motivation for the present study. We develop a set of hypotheses in which we explicitly consider that the effect of BITs may not be similar under all circumstances. First of all, the effect of BITs may differ depending on the host country institutional context, which includes a host country's legal system, level of political risk, and quality of legislation and enforcement (specifically with respect to property rights). This follows and extends the arguments made in some of the empirical papers reviewed above. Secondly, we identify how the effect of BITs may depend on a host country's bargaining position relative to MNEs and other countries in what some observers have named the global competition for capital (Elkins *et al.*, 2006). It has been suggested that some countries have such strong locational advantages – in particular with respect to natural resources – that they do not need BITs to attract FDI. At the same time, as more and more countries engage into BITs, the additional value of each individual treaty in redirecting FDI away from other countries diminishes.

### **BITs and Foreign Direct Investment**

BITs are generally seen to promote FDI. BITs reduce the potential of host countries' governments to use their sovereign rights to create barriers for an unhindered flow of foreign capital (Egger and Pfaffermayr, 2004). A BIT protects a foreign investor against expropriation or unjust treatment vis-à-vis local firms, and may even grant foreign firms rights that go beyond national or most favoured nation treatment (Ginsburg, 2005). This is further ensured because BITs raise investment protection from relatively easy modifiable national law (that could also guarantee foreign investors to be treated equally) to the level of international law, which is more difficult to modify and has international (more likely impartial) dispute settlement procedures and enforcement mechanisms (Neumeyer and, 2005; Hallward-Driemeyer, 2003) Finally, BITs may also enhance FDI through more indirect means, e.g. when they are signed to ensure the host country's participation in the host country's foreign investors' insurance program. In sum, BITs would generally enhance property right protection and improve the overall investment climate in a country, which would reduce risk and transaction costs and therefore induce foreign investments.

Following this line of reasoning - even though the empirical evidence reviewed above seems to suggest that there may be more to this relationship - we start our analysis by testing the hypothesis that formed the main rationale behind the surge of BITs in the past decades:

*H1. The presence of a BIT positively affects FDI between two countries.*

### **BITs as complements or substitutes of domestic institutions?**

One of the key questions concerning Bilateral Investment Treaties is if they serve as complements or substitutes for local domestic institutions. On the one hand, some authors have suggested that only countries that already have good quality institutional

contexts are able to benefit from the additional protection offered by BITs, and to attract additional FDI. Hallward-Driemeyer (2003) for example found evidence supporting this argument. Yet, evidence on the relationship between BITs and institutional quality is yet unclear (Ginsberg, 2005). Most authors seem to view BITs as (potential) substitutes for low quality local institutions. The main arguments for such a perspective is that if a country's domestic institutions are too weak to make a credible commitment to protect an investor's property rights at present and in the future, BITs may serve as a commitment device and instruments to lock-in certain policies (Elkins *et al.*, 2006, Hallward-Driemeyer, 2003), especially through their provision for international dispute settlement. BITs may hereby contribute to the emergence of a two-tiered legal system, in which sophisticated international dispute settlement mechanisms and objective reliable courts are available for foreign investors whereas local firms have to deal with lower quality local courts (Ginsburg, 2005). Yet, for foreign investors, BITs can substantially reduce the political risk of government intervention and policy change in countries with unstable regimes or in places where property rights are not assured (Comeaux and Kinsella, 1994). In low-quality institutional contexts, BITs may give a crucial form of protection for multinational enterprises. In contrast, if institutional quality is better, such treaties will be considered less necessary to provide protection to investors, and may therefore be less important as a means to attract FDI.

Institutional quality refers to many dimensions. In addition to institutional quality and the quality of policy formulation and law enforcement in general (e.g. Hallward-Driemeyer, 2003), two dimensions are mentioned in particular with respect to the substitution effect of BITs. First of all, BITs enhance the commitment credibility of a government (Elkins *et al.*, 2006) and thereby reduce the risk of policy changes due to regime shifts that may annihilate existing investment agreements and modify legislation (Comeaux and Kinsella, 1994). This effect will be more important in countries with high political risk (Neumeyer and Spess, 2005; Tobin and Rose-Ackerman, 2004). Therefore it can be expected that BITs have a more favourable effect on FDI in countries with high political risks.

Secondly, a host country's legal environment and legislation with respect to investment protection can be an important moderating variable. Elkins *et al.* (2006) focus primarily on this dimension. They explore the factors that induce countries to sign BITs, and argue that in comparison to civil law countries, common law is superior in providing investment protection, as for example the independence of the judicial system tends to be higher in such countries. In contrast, in civil law countries, regulatory changes to appease potential social conflicts occur more often (Elkins *et al.*, 2006). Therefore, especially civil law countries 'need' a BIT to enhance their commitment credibility, whereas common law countries can easily do without such treaties. It can be deduced that BITs may have a less favourable effect on FDI in countries that have common law systems.

The above discussion leads to the following set of hypotheses:

*H2a. The lower the institutional quality of the host country, the stronger the (positive) effect of a BIT on FDI*

*H2b. The higher the level of political risk of the host country, the stronger the (positive) effect of a BIT on FDI*

*H2c. The effect of a BIT on FDI is weaker (less positive) for host countries of which the legal system is based on common law.*

### **BITs and bargaining: locational competition**

In addition to the role of the institutional context as moderator of the effect of FDI on investment, studies have also pointed at the role of investor-host country bargaining relationships (1) as a determinant of whether countries would be willing to sign BITs and surrender part of their sovereignty in order to attract FDI (Salacuse and Sullivan, 2005), and (2) as a determinant of the effect of an individual BIT on FDI in the 'global quest for capital' (Yackee, 2006).

In the area of MNE-government relations in International Business many models take a bargaining perspective (see overviews by Brewer, 1992; Brewer and Young, 1998; and Rugman and Verbeke, 1998). The most renowned of these models is Vernon's (1971) obsolescing bargaining model. In these bargaining models, MNE-government relations are generally treated as adversarial by definition, and the relative bargaining strength of both parties involved determines the distribution of the benefits and profits created by the investment (see Vachani, 1995 for an empirical test). In this perspective, it appears very rational for MNEs and their home governments to have their investments protected by BITs. BITs both limit the bargaining possibilities for host governments, thus enhancing the possible gain for the MNE; and reduce the overall political risk of expropriation and the lack of compensation after the investment is made (i.e. a BIT helps preventing the bargain from obsolescing).

However, some host countries may have such strong bargaining positions that they are not willing to enter into BITs at all. Tobin and Rose-Ackerman (2004) expect that primarily resource rich countries have an advantage in bargaining with foreign investors, and could therefore be expected to abstain from signing BITs, while still attracting FDI. Yackee (2006) also notes that investments that are more asset specific (and facilities exploiting natural resource are key examples of such investments) are more vulnerable to the problem of the obsolescing bargain than investments in ultra-competitive export sectors like light manufacturing. Therefore we hypothesize:

*H3a. The effect of BITs on FDI is reduced (less positive) for resource rich host countries.*

### **Global competition for FDI**

The second element with respect to the bargaining power of investors vis-à-vis host countries relates to the global competition for FDI. Several authors have pointed at the inherent competitive nature of signing BITs (Elkins *et al.*, 2006; Yackee, 2006; Gúzman, 1997). BITs attract capital by redirecting it from high transaction cost venues to lower cost ones (Elkins *et al.*, 2006), and hereby primarily divert existing, rather than stimulate additional, capital investments. Many developing countries are convinced of the benefits

of FDI – as can be seen in the annual analysis of changes in investment regulations by UNCTAD in its World Investment Report, which shows that regulatory changes are virtually all (>90 percent) aimed at making the investment climate more attractive. As a result, the spread of BITs is driven by international competition among potential host countries for foreign direct investment (Elkins *et al.*, 2006). The global competition for FDI can be seen as a problem of individual defection in a collective action/prisoners dilemma game-theoretical setting (Ginsburg, 2005). As Gúzman (1997) explains, while a bilateral treaty with a developed country generally gives a developing country an advantage over other countries in the competition to attract investment, this comparative benefit disappears when more developing countries sign such a treaty. As a group, all developing countries have then lost part of their freedom to regulate foreign investment. Part of this problem is conducted at the policy level within the framework of potential multilateral investment agreements (e.g., Ramaiah, 1997; World Bank, 2003; Kline and Ludema, 1997), yet efforts so far have proven fruitless due to the heterogeneity of interests between and among developed and developing countries (Salacuse and Sullivan, 2005). But the global competition for capital via BITs has not only implications for the host country's freedom to legislate FDI, it also – at least potentially – influences the effect of BITs on foreign direct investment. Yackee (2006) indicated that the more states sign BITs, the less effective BITs become in attracting FDI, as they lose their value in helping a country to distinguish itself as an attractive investment location relative to other, similar, countries. Therefore we hypothesize:

*H3b. The effect of BITs on FDI is reduced (less positive) if a partner country (home or host) has signed a high total number of BITs.*

## **5.4 DATA AND METHODOLOGY**

### **Sample**

In order to test the hypotheses, we collected data on as many country pairs as possible. The composition of our final sample was strongly influenced by the availability of FDI data (explained below). In sum, we accumulated a total of 8163 observations for 3286 dyads, for four years that cover the 1990-2002 period: 1990, 1995, 2000, and 2002 – the latest year for which bilateral FDI stock data are widely available. For a substantial number of these dyads (891), we have complete (i.e. for all four years) FDI data. This represents 27 percent of our dyad sample, and 44 percent of the total number of observations. For an additional 748, three out of four years were available (NT=2244). Many of these involved countries that were not yet in existence in 1990 (and could hence not have data for that year) due to the fact that they were part of the former USSR, Czechoslovakia, or Yugoslavia. Hence, 70 percent (5732 out of 8163) of the data points are part of a complete or nearly complete time series.

These dyads are country pairs in which a total of 156 home country and 162 host countries are involved. The dyads can be divided into four groups: 1) dyads between two developed countries; 2) dyads with the FDI flowing from the developed country to the

developing country; 3) dyads among developing (and transition) countries, and 4) dyads with FDI flowing from developing to developed countries. The four groups include 1637 (20 percent), 2947 (36 percent), 2027 (25 percent) and 1522 (19 percent) observations (and share of sample) respectively. The latter two groups of intra-developing country and developing-developed country FDI includes a substantial number of observations from all major emerging markets in Latin America (e.g., Brazil, Argentina, Chile), Asia (e.g., China, India, Taiwan, Malaysia), and Central and Eastern Europe (e.g., Russia, Slovenia, Poland, Czech Republic), as well as observations from a broad range of smaller developing countries. Hence, our sample constitutes a much better representation of the variety of countries involved in BITs and in international investment than previous studies that focused primarily on just one of these four groups: between developed and developing countries. In the analysis, we consequently pay particular attention to potential differences in the findings across these groups.

### **Measuring bilateral Foreign Direct Investment**

To measure bilateral Foreign Direct Investment, we used the natural log of bilateral stock data (similar to e.g. Egger and Pfaffermayr, 2004), in order to minimize the effect of ‘incidental’ high FDI inflows or a large number of treaties signed in a particular year, and make it possible to take the historical accumulation of FDI (and BITs) into account. Other studies using these data have only turned to OECD data, using the outward FDI stocks to other OECD countries and the approximately 30 developing countries that are covered by the OECD database. But as more than half of the BITs are signed among developing countries, analyzing only the effect of BITs between developed and developing countries misses much of the recent wave in BITs and gives thus only a partial – and potentially even biased - view on whether or not BITs attract investment.

In order to mitigate these concerns, we departed from the OECD database, but also collected the data published in UNCTAD’s World Investment Directory for all countries available in that directory. This is the only source that publishes data on FDI between developing countries. As a third step in the collection of data, we also went back to the original national sources (mostly Central Banks and National Statistics Agencies) that supplied their data to OECD and UNCTAD, in order to obtain both the most recent data available and – in the case of the OECD database – a much wider range of partner countries than were available by these two sources. We excluded extremely small island states, financial centres (tax havens), and geographical areas that were part of other nations. This selection process implied that countries such as Tuvalu, The Bahamas, Gibraltar, and the Channel Islands were left out of the dataset.

Combining such a variety of data sources raises of course the question of comparability of data across countries and over time. Indeed, many countries, especially in the early 1990s, differ in for example the inclusion of all components of FDI (capital investment, reinvested earnings, loans), in the threshold of foreign share above which ‘managerial control’ can be assumed (usually 10 percent, but some use higher standards), the valuation of the assets (historical vs. book value); the method of data collection (Balance of Payments versus Census data); the publication of approved versus realized FDI, and

the way in which investments are attributed to either immediate source or ultimate source countries. Making corrections for this wide range of problems is often difficult, if not impossible. Even the professional agencies that collect and publish FDI data for different countries, the OECD and UNCTAD, make no changes to the data reported by national sources. We followed this methodology and combined FDI stock data from a variety of sources without adjustments except converting all figures to constant 2000 US\$.

The wide range of sources (national, OECD, and UNCTAD) implies that for many data points, values were given by at least two or three different sources (home country outward, host country inward, the OECD). But as OECD and UNCTAD merely combined national sources, the differences were often only present between the outward and inward reporters. In order to come to a dataset where each dyad is measured by only one FDI figure, we examined each data point individually to decide from what source to use the data. As a whole, we had 8163 unique dyad-year observations. For 1156 of these dyad-year observations, we had two sources of data (home and host). The ‘doubles’ were removed according to the following principles: first, developed country sources were preferred over developing country sources, as the former have on average better statistical bureaus and hence likely more reliable data. Second, if two countries were either both developed, or both developing or transition economies, inward sources were preferred over outward sources, as countries are presumably better at recording what is invested in their own economy and jurisdiction than what is invested outside it. Third, and finally, a key exception to the first two principles was made when it was possible to obtain a complete series over time from one single source (i.e., data for 1990-1995-2000-2002). This was preferred at all times over a mix of sources, since especially in the longitudinal context, when FDI changes over time are analysed, the use of different sources can lead to radically different conclusions (increases may become decreases and vice versa). While differences in sources is also problematic in the cross-sectional context for similar reasons, the only option here is to acknowledge that this is a problem inherent in analyzing FDI data (even if using national level data), and to assume that it (very likely) does not differ systematically across BIT vs. non BIT countries so that the relationship between BITs and FDI is not likely to be biased either in favour or against a positive effect of BITs on FDI. The 1156 removals of double data were caused in more than half the cases by the latter reason – i.e. data consistency over time (616). An additional 374 double values were removed in favour of the inward (instead of outward) source, and 166 were removed in favour of a developed (instead of developing) country source.

## **Independent variables**

### *BITs*

The presence of a BIT is indicated by two binary variables, measuring if a BIT was signed (BIT\_s), and if it was ratified (BIT\_r), at the end of each year in the sample, using the lists of BITs published by UNCTAD. In principle, only a ratified treaty should give investors protection and enhance FDI. But some (e.g., Elkins *et al.*, 2006) have suggested



that signing BITs may already serve as a signal that a country is committed to protecting foreign investors, hence, we take both dimensions into consideration.

### *Institutions*

The quality of local institutions involves a wide range of different dimensions. They have therefore been operationalized in various different ways in the existing literature. Three measures in particular have been used: First, the World Bank's dataset of governance indicators, secondly, the ICRG political risk rating; and third, Henisz' (2002) measure of political constraints. As a final measure of institutional context (though not necessarily of quality) that has been identified as influencing whether countries would be likely to engage in BITs (and which may hence affect the extent to which BITs affect FDI) is whether a country's legal system is based on common law. We take each of these measures into consideration.

The World Bank Governance Indicators (see Kaufman *et al.*, 2006) involve country scores based on a combination of survey data, expert opinions, and secondary data sources on a total of six dimensions of governance. These compound indicators include 1) Voice and accountability (INST\_VA) which is a measure of democratic rights and freedom of expression, 2) Political stability (INST\_PS) which measure the likelihood of (unconstitutional or violent) policy change; 3) Government effectiveness (INST\_GE) which includes the quality of public and civil service and the quality of policy formulation; 4) Regulatory quality (INST\_RQ) or the presence of regulations aimed at promoting private sector development; 5) Rule of law (RL), which refers to the quality of contract enforcement, the police and the courts; and 6) Control of corruption (INST\_CC), or the absence of the corruption of public power and the state. The World Bank governance indicators are relative (to other countries) measures of governance quality on a scale between -2.5 and +2.5. Higher values indicate higher quality.

The ICRG political risk indicator is the most commonly used measure of political risk of countries. It aims to measure the extent of political stability, and is based on various component scores on e.g. the ability of the government to stay in office, the presence of internal or external conflict, and socioeconomic indicators that may stimulate social unrest, such as unemployment. The ICRG is measured on a scale of 0 to 100, where higher values indicate lower risks.

Henisz' (2002) indicator of policy constraints (POLCON) is a measure of the feasibility of government policy change, based on both the number of government branches with veto power over policy change, and the extent of political party alignment across these branches. Higher values indicate more constraints, and less likelihood of policy change.

Finally, a dummy (LEGCOMMON) was created to identify common law countries (1) from countries with other legal traditions (0), based on the list published by the University of Ottawa Faculty of Law .

### *Natural Resources*

The share of fuels, ores and metals in total exports reported in the World Bank Development indicators was used to assess to what extent a country could be characterized as being resource rich.

### *Marginal effects*

In order to assess the 'marginal' value of an individual BIT, two variables were created that measure the total number of BITs signed (or ratified) by either the home or host country. The variables were compiled from the lists of BITs published by UNCTAD. If a home country already has signed a large number of BITs, the gains in making a host country more attractive for FDI are small. At the same time, hosts that already have a large number of BITs can be presumed to care about investment protection in general, and will hence not very likely exploit the 'missing treaty' with one country. Signing that particular treaty will then also not create much additional FDI.

### *Control variables*

A range of papers examining FDI at the bilateral level have used some form of gravity models, usually including measures of host market size and growth and a range of other variables to capture the variety of reasons firms may have to invest abroad (e.g., Hallward-Driemeyer; 2003). We use a set of control variables that is more strongly embedded in theory: those suggested by the Knowledge-Capital (KC) model (Carr *et al.*, 2001; 2003; Bloningen *et al.*, 2003; Braconier *et al.*, 2005). The KC model combines a set of variables that explain both horizontal FDI (FDI motivated by market access) and vertical FDI (motivated by labour endowment differences), and include measures of the countries' size, skill endowments and trade and investment costs, and the interactions among them. The variables include first of all the sum of the two countries' GDP (GDPSUM) and the squared difference in GDP between the two countries (GDPDIFSQ). Both variables capture horizontal FDI, where it is expected that markets that are larger and more similar allow firms to share the higher fixed costs of operating across borders (Egger and Pfaffermayr, 2004). In addition, the model includes a measure of differences in skill abundance (SKILLDIFF), which would favour vertical FDI. The KC model asserts that vertical FDI is particularly prone to come from small and skilled-labour-abundant countries, and is discouraged by large size differences between countries. Hence an interactive term between skill abundance and GDP differences is introduced (SKDGDPD). High costs of investment or trade discourage FDI, hence two variables are included that measure these costs (INVCOST and TRADECOST). A final interactive term between trade cost and squared skill differences is introduced (SKDSQTRADE), as the KC model expects trade costs stimulate horizontal FDI ('tariff jumping') and to discourage vertical FDI. The GDP data are measured in million constant (2000) US\$. The level of skill endowment is measured by the gross secondary school enrolment ratio. Investment cost and trade cost are proxied (inversely) by the ratio of respectively FDI stock, and exports and imports, as percentages of GDP. All these data stem from the

World Bank Development Indicators, with the exception of FDI data which are drawn from UNCTAD's World Investment Report.

Finally, we also controlled for geographic distance (measured as the great circle distance in kilometres between countries' capital cities), and for the presence of two other international treaties which are not BITs in a technical sense but that have similar provisions: the North American Free Trade Agreement (NAFTA), between the US, Canada and Mexico, and the European Union

### Estimation

Selecting the appropriate regression model is crucial in analyzing panel data. Not controlling for potential problems such as autocorrelation, heteroskedasticity or potential endogeneity can not only lead to inefficient but also potentially biased coefficient estimates. In our analysis, we use regressions that include home, host and time fixed effects. While some have used random effects models, a Hausman test showed that this was not appropriate for our sample ( $\chi^2_9 = 137.2$ ;  $p < 0.001$ ). We also report heteroskedasticity-corrected standard errors, as the Breuch-Pagan showed that this was a substantial problem in our dataset ( $\chi^2_1 = 2672.38$ ;  $p < 0.001$ ). Tests for autocorrelation using the panel-adjusted Durbin Watson statistic revealed that this problem was absent, which is to be expected with only four years of data. A final potential problem concerns multicollinearity, which could result in difficulties in distinguishing the individual effect of the independent variables. Examinations of VIF statistics showed that there was no multicollinearity among the variables (all VIF statistics below 2), with the exception of GDPSUM and GDPDIFF (both a VIF of 10). The latter was to be expected given that both variables are based on GDP data. But since both variables are very significant, and because they are both grounded in theory, we have kept both variables in the model.

Many of the hypotheses we developed concerning the effect of BITs on FDI indicated that this effect may be dependent on other variables, including institutional context, the presence of natural resources, and the total number of BITs signed by home and host countries. We test these hypotheses by including interaction effects between these variables and the presence of a BIT. The following models were estimated:

$$\begin{aligned} \text{LogFDI}_{ijt} = & \alpha_i + \alpha_j + \alpha_t + \beta_1 \text{GDPSUM}_{ijt} + \beta_2 \text{GDPDIFSQ}_{ijt} + \beta_3 \text{SKILLDIFF}_{ijt} + \\ & \beta_4 \text{SKDGDPD}_{ijt} + \beta_5 \text{INVCOST}_{ijt} + \beta_6 \text{TRADECOST}_{jt} + \\ & \beta_7 \text{SKDSQTRADE}_{ijt} + \beta_8 \text{DISTANCE}_{ij} + \beta_9 \text{EU}_{ij} + \beta_{10} \text{NAFTA}_{ij} + \\ & \beta_{11} \text{BIT}_{ijt} + \varepsilon_{ijt} \end{aligned} \quad [1]$$

$$\begin{aligned} \text{LogFDI}_{ijt} = & \alpha_i + \alpha_j + \alpha_t + \beta_1 \text{GDPSUM}_{ijt} + \beta_2 \text{GDPDIFSQ}_{ijt} + \beta_3 \text{SKILLDIFF}_{ijt} + \\ & \beta_4 \text{SKDGDPD}_{ijt} + \beta_5 \text{INVCOST}_{ijt} + \beta_6 \text{TRADECOST}_{jt} + \\ & \beta_7 \text{SKDSQTRADE}_{ijt} + \beta_8 \text{DISTANCE}_{ij} + \beta_9 \text{EU}_{ij} + \beta_{10} \text{NAFTA}_{ij} + \\ & \beta_{11} \text{BIT}_{ijt} + \beta_{12} \text{INST}_{ijt} + \beta_{13} \text{BIT}_{ijt} \times \text{INST}_{ijt} + \varepsilon_{ijt} \end{aligned} \quad [2]$$

$$\begin{aligned}
\text{LogFDI}_{ijt} = & \alpha_i + \alpha_j + \alpha_t + \beta_1 \text{GDPSUM}_{ijt} + \beta_2 \text{GDPDIFSQ}_{ijt} + \beta_3 \text{SKILLDIFF}_{ijt} + \\
& \beta_4 \text{SKDGDPD}_{ijt} + \beta_5 \text{INVCOST}_{ijt} + \beta_6 \text{TRADECOST}_{jt} + \\
& \beta_7 \text{SKDSQTRADE}_{ijt} + \beta_8 \text{DISTANCE}_{ij} + \beta_9 \text{EU}_{ij} + \beta_{10} \text{NAFTA}_{ij} + \\
& \beta_{11} \text{BIT}_{ijt} + \beta_{14} \text{NATR}_{ijt} + \beta_{15} \text{BIT}_{ijt} \times \text{NATR}_{ijt} + \varepsilon_{ijt}
\end{aligned} \tag{3}$$

$$\begin{aligned}
\text{LogFDI}_{ijt} = & \alpha_i + \alpha_j + \alpha_t + \beta_1 \text{GDPSUM}_{ijt} + \beta_2 \text{GDPDIFSQ}_{ijt} + \beta_3 \text{SKILLDIFF}_{ijt} + \\
& \beta_4 \text{SKDGDPD}_{ijt} + \beta_5 \text{INVCOST}_{ijt} + \beta_6 \text{TRADECOST}_{jt} + \\
& \beta_7 \text{SKDSQTRADE}_{ijt} + \beta_8 \text{DISTANCE}_{ij} + \beta_9 \text{EU}_{ij} + \beta_{10} \text{NAFTA}_{ij} + \\
& \beta_{11} \text{BIT}_{ijt} + \beta_{16} \text{BITS}_{ijt} + \beta_{17} \text{BIT}_{ijt} \times \text{BITS}_{ijt} + \varepsilon_{ijt}
\end{aligned} \tag{4}$$

In these models,  $i$  and  $j$  refer to the home and host country of FDI, and  $t$  to the year of observation. The variable BIT may be measured either as signed or ratified. The variable INST designates institutional quality, and is measured by either the ICRG indicator, the binary variable indicating the presence of a common law based legal system, and any of the six Kaufman variables of governance quality.

As a final test in our model and to explore to what extent endogeneity may be a problem – either due to reversed causality or due to omitted variables that affect both the dependent and independent variable – we estimate the various models that address this issue. We report results on models with time lags and changes (instead of absolute values) in the independent variables, and instrumental variables regression, where the presence of a BIT is instrumented with the total number of BITs signed by the host country (following Hallward-Driemeyer, 2003).

## 5.5 RESULTS

The descriptive statistics and correlations for all variables for each of the focal years are displayed in tables 5.3 and 5.4. For most variables, complete data was available – the key exceptions are the institutional variables. Table 5.4 shows that nearly all independent variables correlate significantly with FDI. The correlation coefficient for the overall relationship between FDI and BITs (either signed or ratified) is negative, indicating that on average, the stock of FDI between two countries that have signed a BIT is lower than among countries that have not. Important differences in this relationship exist however across the four different groups that have been identified in the description of our sample above. For FDI between two developed countries (group 1), the relationship was indeed negative ( $r=-0.08$ ,  $p<0.01$ ). But for investment from developed to developing (group 2), or among developing countries (group 3), a positive correlation was established ( $r=0.11$ ,  $p<0.01$ ; and  $r=0.04$ ,  $p<0.05$ , respectively). For FDI from a developing to a developed country (group 4) a negative relationship was established again ( $r=-0.04$ ,  $p<0.05$ ). The various measures of institutional quality are positively related to FDI. The relationship between BITs and institutions is negative, indicating that substitution effects may occur.

**Table 5.3 Descriptive statistics**

Variable	n	m	sd	Variable	n	m	sd
Logfdi	8163	13.43	1.01	bits_r_host	8163	22.74	22.29
Gdpsum	8163	1748353	2765494	inst_va	6678	0.52	0.92
Gdpdifsq (x10 <sup>12</sup> )	8163	9.50	25.40	inst_ps	6675	0.32	0.84
Skilldif	8163	8.14	36.87	inst_ge	6674	0.64	1.07
Skdgdpd (x10 <sup>7</sup> )	8163	3.37	12.10	inst_rq	6677	0.55	0.87
Logfdigdp	8163	2.85	0.94	inst_rl	6676	0.55	1.05
Tradegdphost	8163	78.28	49.62	inst_cc	6664	0.60	1.14
Skdsqtrade	8163	104430	183326	icrg	7642	73.28	11.19
Distance	8163	6143	4572	natres	7877	19.33	23.51
bit_s	8163	0.34	0.47	legcommon	8163	0.21	0.41
bit_r	8163	0.27	0.44	polcon	8163	0.38	0.19
bits_s_host	8163	30.51	26.46				

Table 5.5 gives an overview of the first regression results. The models all include fixed effects and heteroskedasticity corrected standard errors are reported. The models explain the variance in investment well: the  $R^2$ -values are approximately .64 and most control variables are significant and have the expected signs. Also the EU and NAFTA dummies have the expected positive effects on FDI. The coefficient for the variables measuring the presence of a signed or ratified BIT are significantly negative, which is in contrast with expectations. The second half of table 5.5 shows the results broken down by the four different country groups. One of the key findings here is that the KC model explains FDI among developed countries very well, but is less able to account for FDI among other countries. However, this may exactly be because of the sample break-up into separate groups, as this reduces intra-group variation in the crucial variables (GDP size and Skill endowments). Still, the F-statistics indicate that all models are significant in explaining the variance in FDI. The breakdown in groups shows that BITs have a negative effect on FDI if the partners of the treaty are 'equal' (i.e., groups 1 and 3), and not significant if groups are unequal (2 and 4). The effects are stronger for signing BITs than for ratifying them. This indicates that country pairs with low FDI sign BITs, but that such a relationship cannot be established for ratified BITs.

**Table 5.4 Correlation coefficients**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) logfli	1.00											
(2) gdpsum	0.30 †	1.00										
(3) gdpdifsq	0.17 †	0.94 †	1.00									
(4) skilldif	0.01	-0.03 †	0.03 †	1.00								
(5) skdgdpd	-0.13 †	0.51 †	0.53 †	0.08 †	1.00							
(6) logfdigd	0.13 †	-0.14 †	-0.07 †	-0.08 †	-0.08 †	1.00						
(7) tradegdphost	0.02	-0.21 †	-0.15 †	0.05 †	-0.11 †	0.49 †	1.00					
(8) skdsqrade	-0.07 †	-0.06 †	-0.04 †	0.31 †	0.16 †	0.20 †	0.32 †	1.00				
(9) tradegdphome	-0.06 †	-0.25 †	-0.19 †	-0.11 †	-0.15 †	0.10 †	0.03 †	-0.06 †	1.00			
(10) distance	-0.09 †	0.22 †	0.19 †	0.08 †	0.17 †	-0.01	-0.12 †	0.13 †	-0.08 †	1.00		
(11) bit_s	-0.12 †	-0.11 †	-0.09 †	0.01	-0.02 *	0.12 †	0.11 †	0.00	0.06 †	-0.18 †	1.00	
(12) bit_r	-0.10 †	-0.12 †	-0.10 †	0.00	-0.04 †	0.14 †	0.13 †	0.01 *	0.09 †	-0.16 †	0.84 †	1.00
(13) bits_s_host	0.21 †	0.01	-0.04 †	-0.24 †	-0.13 †	0.20 †	0.03 †	-0.13 †	0.12 †	-0.22 †	0.30 †	0.31 †
(14) bits_r_host	0.21 †	-0.02	-0.06 †	-0.24 †	-0.14 †	0.23 †	0.07 †	-0.12 †	0.12 †	-0.22 †	0.30 †	0.32 †
(15) inst_va	0.18 †	0.04 †	0.00	-0.56 †	-0.16 †	0.04 †	-0.03 *	-0.21 †	0.06 †	-0.07 †	-0.04 †	0.00
(16) inst_ps	0.16 †	-0.01	-0.04 †	-0.52 †	-0.19 †	0.14 †	0.23 †	-0.15 †	0.08 †	-0.09 †	-0.04 †	0.01
(17) inst_ge	0.28 †	0.13 †	0.06 †	-0.51 †	-0.12 †	0.12 †	0.06 †	-0.12 †	0.05 †	0.00	-0.08 †	-0.03 †
(18) inst_rq	0.25 †	0.09 †	0.04 †	-0.48 †	-0.13 †	0.21 †	0.13 †	-0.11 †	0.05 †	0.01	-0.05 †	0.00
(19) inst_rl	0.25 †	0.14 †	0.07 †	-0.51 †	-0.12 †	0.07 †	0.06 †	-0.13 †	0.04 †	-0.01	-0.09 †	-0.04 †
(20) inst_cc	0.25 †	0.12 †	0.06 †	-0.51 †	-0.11 †	0.09 †	0.05 †	-0.12 †	0.04 †	0.00	-0.11 †	-0.07 †
(21) lerg	0.23 †	0.07 †	0.02	-0.51 †	-0.16 †	0.15 †	0.15 †	-0.11 †	0.09 †	-0.10 †	-0.02	0.01
(22) natres	-0.13 †	-0.11 †	-0.07 †	0.20 †	0.01	0.04 †	-0.05 †	0.06 †	-0.04 †	0.07 †	-0.03 †	-0.05 †
(23) legal	0.13 †	0.31 †	0.30 †	-0.03 †	0.20 †	0.16 †	0.03 †	0.10 †	0.00	0.23 †	-0.13 †	-0.10 †
(24) polcon	0.11 †	-0.04 †	-0.07 †	-0.32 †	-0.15 †	0.02	-0.13 †	-0.12 †	0.05 †	-0.04 †	0.00	0.01

† p<0.01 \* p<0.05

**Table 5.4 Correlation coefficients (ctd.)**

	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(13) bits_s_host	1.00										
(14) bits_r_host	0.98 †	1.00									
(15) inst_va	0.31 †	0.34 †	1.00								
(16) inst_ps	0.31 †	0.35 †	0.78 †	1.00							
(17) inst_ge	0.35 †	0.37 †	0.83 †	0.79 †	1.00						
(18) inst_rq	0.30 †	0.33 †	0.83 †	0.78 †	0.91 †	1.00					
(19) inst_rl	0.31 †	0.33 †	0.84 †	0.83 †	0.97 †	0.89 †	1.00				
(20) inst_cc	0.27 †	0.29 †	0.83 †	0.80 †	0.96 †	0.87 †	0.97 †	1.00			
(21) lcrq	0.34 †	0.36 †	0.73 †	0.82 †	0.88 †	0.83 †	0.88 †	0.85 †	1.00		
(22) natres	-0.26 †	-0.25 †	-0.52 †	-0.39 †	-0.48 †	-0.52 †	-0.44 †	-0.43 †	-0.33 †	1.00	
(23) legal	-0.16 †	-0.14 †	0.06 †	0.05 †	0.27 †	0.22 †	0.26 †	0.27 †	0.16 †	-0.06 †	1.00
(24) polcon	0.16 †	0.15 †	0.63 †	0.34 †	0.41 †	0.49 †	0.40 †	0.39 †	0.38 †	-0.43 †	-0.12 †

† p&lt;0.01 \* p&lt;0.05

**Table 5.5 Regression results for LogFDI, total and by group**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
gdpsum	7.70 ***	7.49 ***	7.51 ***	7.47 ***	5.83 ***	6.67 ***	5.83 **	2.62 ***
( $\times 10^{-7}$ )	13.78	14.14	14.06	14.15	11.65	6.99	2.22	3.04
gdpdifsq	-4.92 ***	-4.82 ***	-4.83 ***	-4.81 ***	-3.97 ***	-3.98 ***	-35.80 **	-1.59 ***
( $\times 10^{-14}$ )	-14.27	-14.78	-14.69	-14.80	-11.15	-7.01	-2.25	-3.14
sklldif	6.77	6.72	6.28	6.56	-3.62	1.46	10.10 *	-10.01
( $\times 10^{-4}$ )	1.09	1.09	1.02	1.06	-0.25	0.11	1.70	-1.03
skdgdpd	-2.12 ***	-2.00 ***	-2.02 ***	-2.00 ***	-1.81 ***	-0.85 ***	1.44	-0.09
( $\times 10^{-9}$ )	-17.25	-16.39	-16.49	-16.32	-4.68	-4.91	1.22	-0.37
logfdigd	0.10 ***	0.11 ***	0.12 ***	0.12 ***	0.22 **	0.10 ***	0.04	-0.06
	4.88	5.49	5.66	5.62	2.45	4.17	1.46	-1.52
tradegdphost	8.22	5.77	7.87	6.23	81.00 ***	6.83	-4.79	4.13
( $\times 10^{-4}$ )	1.17	0.83	1.13	0.89	2.95	0.82	-0.73	0.27
skdsqtrade	-5.29 ***	-4.99 ***	-4.98 ***	-4.95 ***	-1.85	-0.96	-1.57 *	-1.94
( $\times 10^{-7}$ )	-7.74	-7.28	-7.28	-7.22	-0.50	-0.81	-1.82	-1.46
distance	-4.95 ***	-5.31 ***	-5.22 ***	-5.32 ***	-9.97 ***	-4.38 ***	-3.23 ***	-2.63 ***
( $\times 10^{-5}$ )	-19.00	-20.21	-19.91	-20.24	-13.77	-9.92	-8.81	-5.68
Eu	0.60 ***	0.47 ***	0.50 ***	0.46 ***	0.08			
	12.86	9.82	10.60	9.75	1.04			
Nafta	1.18 ***	1.16 ***	1.18 ***	1.16 ***	1.33 ***	0.91 **		0.69 **
	5.32	5.23	5.34	5.26	9.51	2.49		1.98
bit_s		-0.24 ***		-0.18 ***	-0.88 ***	0.06	-0.05 **	0.01
		-12.91		-7.03	-6.36	1.39	-2.14	0.07
bit_r			-0.22 ***	-0.08 ***	0.24 *	-0.05	0.01	-0.03
			-11.85	-3.02	1.85	-1.14	0.02	-0.74
Sample	All	All	All	All	Gr.1	Gr.2	Gr.3	Gr.4
N	8163	8163	8163	8163	1637	2947	2027	1552
F	40.96 ***	42.12 ***	41.85 ***	42.05 ***	85.65 ***	17.53 ***	5.96 ***	6.49 ***
R <sup>2</sup>	0.633	0.640	0.641	0.643	0.774	0.522	0.426	0.419
Adj. R <sup>2</sup>	0.618	0.625	0.624	0.631	0.765	0.493	0.354	0.354

\*\*\* p< 0.01; \*\* p<0.05; \* p< 0.10.

Regressions including home, host and time fixed effects (not reported)

T values based on heteroskedasticity corrected standard errors below the coefficient estimates.

Sample explanation: Group 1: among developed countries; Group 2: from developed to developing countries; Group 3: among developing countries; Group 4: from developing to developed countries.

Table 5.6 displays the results of the interactions with the various variables measuring the quality of institutions. We focus on ratified BITs (the results for signed BITs are virtually similar). Most interactions with institutions are significant, and negative, indicating that the effect of BITs is more positive in low-quality institutional environments than in high-quality institutional environments. This is the case whether institutional quality is measured through the ICRG index, via the POLCON indicator, or the six governance measures of the World Bank. But if the coefficients for BIT\_r are taken into consideration, it becomes clear that this does not mean that FDI in low institution



**Table 5.6 Effect of BITs on LogFDI: Interactions with institutional quality (IQ)**

	(1)	(2)	(3)	(4)	(5)	(6)
gdpsum ( $\times 10^{-7}$ )	7.52 ***	7.51 ***	7.51 ***	7.51 ***	7.46 ***	7.46 ***
	14.05	14.04	14.06	14.11	13.55	13.55
gdpdifsq ( $\times 10^{-14}$ )	-4.83 ***	-4.84 ***	-4.83 ***	-4.82 ***	-4.84 ***	-4.84 ***
	-14.68	-14.68	-14.69	-14.70	-14.28	-14.29
sklldif ( $\times 10^{-4}$ )	6.11	6.01	6.28	6.19	7.59	8.31
	0.99	0.97	1.02	1.00	1.19	1.30
skdgdpd ( $\times 10^{-9}$ )	-2.02 ***	-2.02 ***	-2.02 ***	-2.03 ***	-2.03 ***	-2.02 ***
	-16.48	-16.45	-16.49	-16.58	-16.23	-16.15
logfdigdp	0.11 ***	0.11 ***	0.12 ***	0.11 ***	0.12 ***	0.12 ***
	5.46	5.26	5.66	5.50	4.83	4.69
tradegdphost ( $\times 10^{-4}$ )	7.07	7.30	7.87	7.80	3.87	3.58
	1.02	1.05	1.13	1.12	0.46	0.42
skdsqtrade ( $\times 10^{-7}$ )	-5.00 ***	-4.97 ***	-4.98 ***	-4.89 ***	-5.14 ***	-5.06 ***
	-7.32	-7.29	-7.28	-7.16	-6.52	-6.40
distance ( $\times 10^{-5}$ )	-5.22 ***	-5.23 ***	-5.22 ***	-5.22 ***	-5.47 ***	-5.47 ***
	-19.89	-19.93	-19.91	-19.90	-19.84	-19.85
Eu	0.50 ***	0.50 ***	0.50 ***	0.51 ***	0.46 ***	0.44 ***
	10.58	10.48	10.60	10.71	9.58	9.26
Nafta	1.18 ***	1.18 ***	1.18 ***	1.17 ***	1.12 ***	1.12 ***
	5.34	5.33	5.34	5.32	5.19	5.18
bit_r	-0.22 ***	-0.15 ***	-0.22 ***	-0.20 ***	-0.24 ***	0.32 **
	-11.87	-3.41	-11.85	-10.38	-12.08	2.35
IQ	0.12	0.17	1.20 ***	1.18 ***	0.00	0.00
	1.23	1.61	13.01	12.96	0.76	1.49
BIT*IQ		-0.20 **		-0.13 **		-0.01 ***
		-2.06		-2.52		-4.07
IQ measure	Polcon	Polcon	Legal	Legal	ICRG	ICRG
N	8163	8163	8163	8163	7642	7642
F	41.74 ***	41.65 ***	41.85 ***	41.78 ***	43.95 ***	43.95 ***
R <sup>2</sup>	0.64	0.64	0.64	0.64	0.65	0.65
Adj. R <sup>2</sup>	0.62	0.62	0.62	0.62	0.63	0.63

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10.

Regressions including home, host and time fixed effects (not reported). t-values based on heteroskedasticity corrected standard errors below the coefficient estimates.

**Table 5.6 Effect of BITs on LogFDI: Interactions with institutional quality (ctd.)**

	(7)	(8)	(9)	(10)	(11)	(12)
gdpsum ( $\times 10^{-7}$ )	8.64 ***	8.63 ***	8.64 ***	8.64 ***	8.70 ***	8.64
	11.90	11.92	11.91	11.91	11.70	11.75
gdpdifsq ( $\times 10^{-14}$ )	-5.47 ***	-5.46 ***	-5.47 ***	-5.46 ***	-5.53 ***	-5.50 ***
	-12.81	-12.84	-12.80	-12.81	-12.63	-12.70
sklldif ( $\times 10^{-4}$ )	3.02	4.38	2.53	4.10	1.71	3.90
	0.35	0.51	0.30	0.48	0.20	0.46
skdgdpd ( $\times 10^{-9}$ )	-1.94 ***	-1.91 ***	-1.94 ***	-1.92 ***	-1.93 ***	-1.90 ***
	-15.96	-15.64	-15.98	-15.72	-15.87	-15.63
logfdigdp	0.04	0.04	0.05 *	0.04	0.05 *	0.04
	1.56	1.32	1.66	1.60	1.75	1.34
tradegdphost ( $\times 10^{-4}$ )	7.17	1.29	8.20	7.58	-1.15	-0.94
	0.08	0.14	0.09	0.08	-0.12	-0.10
skdsqtrade ( $\times 10^{-7}$ )	-5.88 ***	-5.74 ***	-5.88 ***	-5.81 ***	-5.83 ***	-5.62 ***
	-7.54	-7.37	-7.53	-7.45	-7.47	-7.21
distance ( $\times 10^{-5}$ )	-5.83 ***	-5.85 ***	-5.83 ***	-5.86 ***	-5.83 ***	-5.81 ***
	-19.27	-19.36	-19.27	-19.37	-19.26	-19.22
Eu	0.53 ***	0.51 ***	0.53 ***	0.51 ***	0.53 ***	0.50 ***
	9.63	9.19	9.63	9.23	9.64	9.04
Nafta	1.20 ***	1.19 ***	1.20 ***	1.19 ***	1.20 ***	1.20 ***
	5.01	4.98	5.02	4.99	5.03	5.01
bit_r	-0.25 ***	-0.20 ***	-0.25 ***	-0.22 ***	-0.25 ***	-0.18 ***
	-11.95	-8.30	-11.91	-10.10	-11.89	-8.13
IQ	0.04	0.06	0.01	0.04	-0.06	-0.04
	0.65	1.10	0.14	0.90	-1.23	-0.77
BIT*IQ		-0.09 ***		-0.09 ***		-0.11 ***
		-3.98		-4.19		-6.24
IQ measure	Inst_VA	Inst_VA	Inst_PS	Inst_PS	Inst_GE	Inst_GE
N	6678	6678	6675	6675	6674	6674
F	39.68 ***	39.69 ***	39.69 ***	39.7 ***	39.73 ***	39.91 ***
R <sup>2</sup>	0.6714	0.6722	0.6716	0.6724	0.6718	0.6735
Adj. R <sup>2</sup>	0.6545	0.5975	0.6547	0.6554	0.6549	0.6567

\*\*\* p< 0.01; \*\* p<0.05; \* p< 0.10.

Regressions including home, host and time fixed effects (not reported). t-values based on heteroskedasticity corrected standard errors below the coefficient estimates.

**Table 5.6 Effect of BITs on LogFDI: Interactions with institutional quality (ctd.)**

	(13)	(14)	(15)	(16)	(17)	(18)
gdpsum ( $\times 10^{-7}$ )	8.64 ***	8.63 ***	8.68 ***	8.62 ***	8.66 ***	8.62 ***
	11.91	11.95	11.83	11.85	11.67	11.70
gdpdifsq ( $\times 10^{-14}$ )	-5.47 ***	-5.46 ***	-5.50 ***	-5.47 ***	-5.52 ***	-5.50 ***
	-12.84	-12.88	-12.78	-12.82	-12.68	-12.73
sklldif ( $\times 10^{-4}$ )	1.68	3.41	1.84	4.09	3.10	5.31
	0.20	0.40	0.22	0.48	0.37	0.63
skdgdpd ( $\times 10^{-9}$ )	-1.94 ***	-1.91 ***	-1.94 ***	-1.91 ***	-1.92 ***	-1.90 ***
	-15.96	-15.73	-15.97	-15.71	-15.82	-15.59
logfdigdp	0.04	0.04	0.05 *	0.04	0.05	0.04
	1.61	1.29	1.76	1.36	1.60	1.28
tradegdphost ( $\times 10^{-4}$ )	0.21	-0.21	1.73	2.21	1.68	1.65
	0.02	-0.02	0.18	0.23	0.17	0.17
skdsqtrade ( $\times 10^{-7}$ )	-5.88 ***	-5.78 ***	-5.77 ***	-5.54 ***	-5.86 ***	-5.65 ***
	-7.54	-7.41	-7.41	-7.13	-7.51	-7.26
distance ( $\times 10^{-5}$ )	-5.82 ***	-5.81 ***	-5.83 ***	-5.82 ***	-5.84 ***	-5.82 ***
	-19.25	-19.27	-19.25	-19.23	-19.30	-19.25
Eu	0.53 ***	0.50 ***	0.53 ***	0.50 ***	0.53 ***	0.50 ***
	9.64	9.11	9.66	9.10	9.62	9.07
Nafta	1.20 ***	1.20 ***	1.19 ***	1.20 ***	1.19 ***	1.19 ***
	5.02	5.01	5.01	5.01	5.00	5.00
bit_r	-0.25 ***	-0.18 ***	-0.25 ***	-0.19 ***	-0.25 ***	-0.20 ***
	-11.92	-7.99	-11.90	-8.72	-11.92	-9.19
IQ	0.04	0.09 ***	-0.09	-0.05	0.02	0.05
	1.26	2.60	-1.47	-0.82	0.44	0.96
BIT*IQ		-0.12 ***		-0.11 ***		-0.09 ***
		-5.26		-6.06		-5.49
IQ measure	Inst_RQ	Inst_RQ	Inst_RL	Inst_RL	Inst_CC	Inst_CC
N	6677	6677	6676	6676	6664	6664
F	39.68 ***	39.79	39.74 ***	39.9 ***	39.76 ***	39.87 ***
R <sup>2</sup>	0.67	0.67	0.67	0.67	0.67	0.67
Adj. R <sup>2</sup>	0.65	0.66	0.65	0.66	0.66	0.66

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10.

Regressions including home, host and time fixed effects (not reported). t-values based on heteroskedasticity corrected standard errors below the coefficient estimates.

**Table 5.7 Interactions with natural resources and competition for FDI**

	Natural resources		Total BITs			
	(1)	(2)	(3)	(4)	(5)	(6)
gdpsum ( $\times 10^{-7}$ )	7.51***	7.52***	7.57***	7.59***	7.50***	7.42***
	13.80	13.81	14.37	14.65	14.23	14.42
gdpdifsq ( $\times 10^{-14}$ )	-4.85***	-4.85***	-4.80***	-4.83***	-4.80***	-4.76***
	-14.46	-14.47	-14.79	-15.10	-14.75	-15.00
skilldif ( $\times 10^{-4}$ )	6.25	6.65	8.86	8.93	1.84	0.69
	1.00	1.06	1.43	1.46	0.29	0.11
skdgdpd ( $\times 10^{-9}$ )	-2.04***	-2.039***	-2.02***	-2.04***	-2.019***	-1.98***
	-15.92	-15.93	-16.46	-16.59	-16.24	-15.96
Logfdigd	0.12***	0.12***	0.12***	0.13***	0.11***	0.10***
	5.64	5.46	5.77	6.14	5.12	4.67
tradegdphost ( $\times 10^{-4}$ )	8.24	9.84	7.02	7.86	6.35	8.42
	1.13	1.33	1.01	1.13	0.90	1.19
skdsqtrade ( $\times 10^{-7}$ )	-5.03***	-5.07***	-4.90***	-5.39***	-4.82***	-4.94***
	-7.20	-7.26	-7.16	-7.80	-7.04	-7.25
distance ( $\times 10^{-5}$ )	-5.29***	-5.28***	-5.19***	-5.09***	-5.25***	-5.25***
	-19.48	-19.49	-19.83	-19.50	-20.01	-20.00
Eu	0.49***	0.48***	0.50***	0.48***	0.50***	0.46***
	10.39	10.16	10.50	10.27	10.57	9.94
Nafta	1.17***	1.17***	1.19***	1.22***	1.18***	1.20***
	5.32	5.32	5.36	5.49	5.35	5.43
bit_r	-0.23***	-0.28***	-0.24***	0.01	-0.23***	-0.03
	-12.15	-10.95	-12.35	0.43	-12.08	-0.95
natres ( $\times 10^{-3}$ )	1.15	0.69				
	0.74	0.45				
BITrNatRes ( $\times 10^{-3}$ )		2.47***				
		2.92				
bits_r_home ( $\times 10^{-3}$ )			4.98***	8.79***		
			4.82	7.49		
BITrTothome ( $\times 10^{-3}$ )				-6.97***		
				-9.04		
bits_r_host ( $\times 10^{-3}$ )					3.78***	7.01***
					3.06	5.16
BITrTothost ( $\times 10^{-3}$ )						-6.80***
						-7.93
N	7877	7877	8163	8163	8163	8163
F	43.62***	43.56***	41.93***	42.62***	41.83***	42.3***
R <sup>2</sup>	0.643	0.643	0.640	0.645	0.639	0.643
Adj. R <sup>2</sup>	0.628	0.628	0.625	0.629	0.624	0.628

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10.

Regressions including home, host and time fixed effects (not reported)

T values based on heteroskedasticity corrected standard errors below the coefficient estimates.

environments is attracted by FDI (in which case the coefficient would be positive), but just that the effect of a BIT is less negative for FDI in such countries (we find a negative coefficient). Only for ICRG we were able to establish a strong positive effect of BITs on FDI in high risk countries as predicted by theory.

Table 5.7 displays the results for the second set of interactive variables related to the bargaining relationships between host states and foreign investors. Models 1 and 2 in this table show that BITs have a negative effect on investment in general, but a positive effect on investment in natural resource rich countries. This is in contrast with what we hypothesized: we would expect that natural resource rich countries would abstain from signing BITs and still attract FDI, thereby creating a negative interaction effect. Yet, it seems that once signed and ratified, BITs in resource-rich countries truly have an added value for investors – not unlikely given the obsolescing bargaining position of MNEs vs. host countries in such capital intensive and asset-specific investment projects. The interaction effect differs substantially across various groups of countries (tables not reported). For both groups 1 (intra-developed countries) and 3 (intra-developing countries) the results mirrored the general findings. But for investments from developed to developing (group 2), or from developing to developed countries (group 4), no interaction effects could be established – whereas they would be expected particularly for the investments from developed to developing countries.

The second part of table 5.7 shows that the total number of BITs signed by a home or host country stimulates FDI. This confirms the presence of ‘spillover’ effects identified by Neumeyer and Spess (2005). However, as we hypothesized, the marginal effect of a BIT declines in such situations. This is the case both if the home country or the host country has signed large numbers of BITs. Most of these interaction effects disappear however if the sample is split in the four groups (tables not reported). Only for FDI among developing countries can we establish such a negative interaction effect.

The results presented above provide a rather confusing picture, with the dominant overall negative relationship between BITs and FDI. And although it is moderated by institutions in ways similar as predicted by theory, the effect remains negative. The breakdown of the results across different groups further complicates matters, as the results are also very different for various types of home and host country dyads. A key reason for this negative relationship could be self-selection: countries that have the least FDI will be most active in attracting FDI through BITs. We assessed this potential relationship in various ways. First, we explored whether lagging the independent variables with one period would affect our findings. They did not: we still found that countries dyads that had a BIT in period  $t-1$  were characterized by lower FDI in period  $t$  than country pairs that did not have such a treaty (results not reported but available on request).

Secondly, we explored whether signing a new BIT would stimulate FDI. It may be that a BIT only leads to a one-time increase in FDI, and that hence BITs signed in the 1970s or 1980s do not have much effect on the stock of FDI between two countries in the 1990s. In addition, it has been suggested that the treaties that are signed in the 1990s are also much more strict in their provisions for investment protection (Yackee, 2006), and would therefore be much better able to stimulate the entry of foreign capital than earlier treaties.

In order to test for this effect, we included an additional dummy variable (*new\_r*) in our model based on the elapsed time between the date of ratification of the BIT and the date of observations. Only treaties that were less than five years old were scored as (1), the other treaties as (0). The results are presented in table 5.8.

Table 5.8 does provide evidence that the new BITs that are ratified are associated with higher FDI. This effect is primarily driven by the effect of BITs on FDI from developing countries towards developed countries (group 4). The outward investors from developing countries that invest in other developing countries (the majority of developing country FDI is of this nature, see UNCTAD, 2006), attach less value to the presence of a BIT. Neither developed nor developing country MNEs that invest in developing countries are concerned about new BITs. This contradicts expectations, as developing countries in particular may lack other means in addition to international dispute settlement procedures to ensure that their property rights are protected. Developed countries may retaliate the disrespect for property rights via trade boycotts, the reduction of development assistance, or by being uncompromising in international negotiations on other issues, which may all impose great costs on a developing country host. Developing countries cannot impose (or credibly threaten to impose) such measures.

A final check for self-selection was made by estimating the models while instrumenting the main independent variable – the ratification of a BIT – with the total number of BITs signed by a host country minus one (the BIT with the relevant source country), similar to Hallward-Driemeyer (2003). Ideal instruments should be selected to be correlated with the variable to be instrumented, but uncorrelated with the dependent variable. But the identification of such instruments is notoriously difficult. The rationale for selecting the total number of ratified BITs as instrument is that the variable can be expected to correlate with the likelihood of a BIT (countries with many BITs have a greater likelihood to have a BIT with an individual source country), but not affect FDI from that particular source country: with the exception of potential spillover effects (Neumeier and Spess, 2005), the bilateral nature of BITs implies that a treaty with one country should not affect FDI from other countries.

The results for the IV estimations are displayed in table 5.9. The first stage regressions explaining *bit\_r* had  $R^2$ -values between 0.48 and 0.52, and the instrument was strongly significant in each of these regressions (t-values between 6 and 9). Only for group 1 the instrumentation did not work well, likely due to the very small number of BITs signed among these groups, and reflected in the relatively poor results of the second-stage model reported in table 5.9. The main effect of controlling for self-selection is that the effect of BITs on FDI becomes distinctly positive, especially for investments from developed countries towards developing countries. Hence, although BITs are usually signed between country pairs that have relatively little investment, BITs do have a positive effect on these investments.

Re-estimating some of the results regarding the interaction effects with institutional quality, natural resource richness and the competitive nature of BITs (the latter, given the instruments used, only for the number of BITs from the home country) also changed the results importantly from those reported earlier that do not control for self-selection.

Using IV estimations, all interaction effects are as hypothesized (with the exception of ICRG and Polcon, for which no IV models could be estimated), as reported in table 5.10 for a selection of models (including several institutional variables, natural resources and total number of BITs). BITs have a positive effect on investments, but this effect is moderated by institutional quality and bargaining power of host countries, implying that the positive effect of BITs on investment is particularly strong for countries that are characterized by weak domestic institutions. In addition, the effect of BITs on FDI is weaker for host countries whose legal system is based on common law, and for resource rich countries.

**Table 5.8 The effect of a newly ratified BITs on FDI**

	(1)	(2)	(3)	(4)	(5)
gdpsum ( $\times 10^{-7}$ )	7.53***	5.85***	6.57***	5.77**	2.63***
	14.07	11.52	6.84	2.20	3.05
gdpdifsq ( $\times 10^{-14}$ )	-4.84***	-3.98***	-3.92***	-35.20**	-1.60***
	-14.69	-11.04	-6.85	-2.24	-3.15
sklldif ( $\times 10^{-4}$ )	6.23	-3.73	1.54	9.97*	-10.09
	1.01	-0.26	0.11	1.67	-1.07
skdgdpd ( $\times 10^{-9}$ )	-2.02***	-1.81***	-0.86***	1.53	-0.01
	-16.44	-4.67	-4.96	1.30	-0.37
logfdigdp	0.12***	0.22**	0.09***	0.04	-0.05
	5.77	2.43	3.98	1.47	-1.38
tradegdphost ( $\times 10^{-4}$ )	8.48	80.00***	5.34	-4.53	4.71
	1.22	2.90	0.64	-0.69	0.31
skdsqtrade ( $\times 10^{-7}$ )	-4.94***	-1.51	-1.05	-1.56*	-1.90
	-7.22	-0.41	-0.88	-1.81	-1.46
distance ( $\times 10^{-5}$ )	-5.22***	-9.87***	-5.46***	-3.17***	-2.62***
	-19.92	-13.60	-10.02	-8.86	-5.67
eu	0.50***	0.10			
	10.57	1.30			
nafta	1.18***	1.32***	0.89**		0.70**
	5.36	9.44	2.44		2.01
bit_r	-0.26***	-0.58***	0.04	-0.04	-0.06*
	-11.16	-7.01	1.07	-0.84	-1.81
new_r	0.08***	-0.01	-0.09**	-0.01	0.06**
	3.32	-0.07	-2.51	-0.06	2.06
Sample	All	Group 1	Group 2	Group 3	Group 4
N	8163	1637	2947	2027	1552
F	41.79***	84.96***	17.57***	5.93***	6.54***
R <sup>2</sup>	0.64	0.77	0.52	0.43	0.42
Adj. R <sup>2</sup>	0.62	0.76	0.49	0.35	0.36

\*\*\* p< 0.01; \*\* p<0.05; \* p< 0.10. Regressions including home, host and time fixed effects (not reported).

T values based on heteroskedasticity corrected standard errors below the coefficient estimates.

**Table 5.9 IV estimations**

	(1)	(2)	(3)	(4)	(5)
gdpsum ( $\times 10^{-7}$ )	8.02***	7.18***	7.55***	5.67**	2.99***
	13.11	4.18	7.58	2.19	3.30
gdpdifsq ( $\times 10^{-14}$ )	-5.07***	-5.29***	-4.35***	-35.80**	-1.77***
	-13.41	-3.01	-7.26	-2.24	-3.42
skilldif ( $\times 10^{-4}$ )	7.64	-10.54	-6.96	9.49	-8.58
	1.19	-0.28	-0.48	1.57	-0.85
skdgdpd ( $\times 10^{-9}$ )	-2.29***	-1.54	-1.00***	1.48	-0.14
	-17.34	-1.40	-5.73	1.25	-0.58
logfdigdp	0.07***	0.33	0.04*	0.04	-0.07*
	3.10	1.14	1.64	1.40	-1.75
tradegdphost ( $\times 10^{-4}$ )	8.85	30.43	6.68	-4.68	5.03
	1.21	0.27	0.76	-0.71	0.32
skdsqtrade ( $\times 10^{-7}$ )	-5.85***	1.22	-0.37	-1.49*	-2.33
	-8.05	0.08	-0.32	-1.70	-1.64
distance ( $\times 10^{-5}$ )	-4.45***	-6.39	-4.45***	-3.09***	-2.48***
	-14.40	-1.48	-7.10	-8.57	-5.03
eu	0.79***	0.28			
	10.32	0.79			
nafta	1.18***	0.70	0.94**		0.69**
	5.29	0.92	2.56		1.99
bit_r	0.40***	24.53	0.60***	0.01	0.10
	3.35	0.81	4.30	0.13	0.91
sample	All	Group 1	Group 2	Group 3	Group 4
N	8163	1637	2947	2027	1552
F	31.29***	18.59***	14.18***	5.63***	6.01***
R <sup>2</sup>	0.59	0.07	0.46	0.42	0.41
Adj. R <sup>2</sup>	0.58	0.03	0.42	0.35	0.34

\*\*\* p< 0.01; \*\* p<0.05; \* p< 0.10. Regressions including home, host and time fixed effects (not reported).

T values based on heteroskedasticity corrected standard errors below the coefficient estimates.

Sample explanation: Group 1: among developed countries; Group 2: from developed to developing countries; Group 3: among developing countries; Group 4: from developing to developed countries.



**Table 5.10 IV regression results: interaction effects**

	(1)	(2)	(3)	(4)	(5)	(6)
gdpsum ( $\times 10^{-7}$ )	7.93***	7.88***	8.13***	9.51***	9.36***	9.16***
	13.37	12.93	13.50	9.20	9.77	10.39
gdpdifsq ( $\times 10^{-14}$ )	-4.98***	-5.04***	-5.19***	-5.92***	-5.83***	-5.72***
	-13.62	-13.30	-13.54	-9.86	-10.41	-11.13
sklldif ( $\times 10^{-4}$ )	6.94	5.50	8.08	10.90	10.48	13.11
	1.10	0.86	1.21	1.57	1.41	1.30
skdgdpd ( $\times 10^{-9}$ )	-2.25***	-2.29***	-2.37***	-2.19***	-2.24***	-2.11***
	-16.57	-15.86	-13.88	-11.71	-11.65	-13.65
logfdigdp	0.06**	0.10***	0.11***	-0.07	-0.01	-0.04
	2.26	4.32	4.56	-1.10	-0.30	-0.80
tradegdphost ( $\times 10^{-4}$ )	8.34	0.48	10.30	9.43	3.46	0.25
	1.15	0.06	1.55	0.77	0.32	0.02
skdsqtrade ( $\times 10^{-7}$ )	-5.24***	-5.55***	-8.28***	-6.42***	-6.92***	-6.42***
	-7.38	-7.49	-5.98	-6.78	-7.23	-7.52
distance ( $\times 10^{-5}$ )	-4.66***	-4.72***	-3.90***	-4.36***	-4.61***	-4.72***
	-13.13	-13.58	-7.57	-5.23	-6.98	-7.91
eu	0.75***	0.76***	0.69***	0.95***	0.92***	0.77***
	7.36	7.22	7.19	4.30	4.68	5.47
nafta	1.15***	1.16***	1.33***	1.17***	1.18***	1.20***
	5.19	5.26	5.81	4.75	4.83	4.93
bit_r	0.39*	0.48*	1.64***	1.25*	0.82*	0.76*
	1.88	1.92	2.67	1.84	1.77	1.75
legcommon	-0.50***					
	-5.03					
BITrLegC	-0.61***					
	-3.40					
natres ( $\times 10^{-5}$ )		2.86*				
		1.66				
BITrNatRes		-0.01**				
		-2.40				
bits_r_home			0.02***			
			4.73			
BITrTothome			-0.03***			
			-3.32			
inst_va				0.21**		
				2.12		
BITrVA				-0.73**		
				-2.41		
inst_ps					0.15**	
					2.19	
BITrPS					-0.48***	
					-2.71	
inst_rq						0.29***
						2.84
BITrRQ						-0.57***
						-2.69

**Table 5.10 IV regression results: interaction effects (ctd.)**

	(1)	(2)	(3)	(4)	(5)	(6)
N	8163	7877	8163	6678	6675	6677
F	32.16***	32.71***	27.46***	21.12***	24.95***	27.20***
R <sup>2</sup>	0.60	0.59	0.53	0.4	0.56	0.60
Adj. R <sup>2</sup>	0.59	0.59	0.51	0.45	0.54	0.58

\*\*\* p< 0.01; \*\* p<0.05; \* p< 0.10. Regressions including home, host and time fixed effects (not reported).

T values based on heteroskedasticity corrected standard errors below the coefficient estimates.

## 5.6 CONCLUSION AND DISCUSSION

This article examined the role of BITs in enhancing FDI. Developing countries in particular received attention, as these countries seem to be the most eager to attract FDI to supplement their local capital base. Across various academic disciplines that address the issue of BITs, and investment regulation in general, the presence of BITs is generally believed to be an important means for attracting FDI. BITs give foreign investors protection against expropriation of their property, as well as against all kinds of host government measures that have a similar (partial) effect. Focusing in particular on the period of the 1990s, as it was then that the surge in FDI became paired with similar big increases in the overall number of BITs signed, this study explored to what extent the presence of a BITs increases FDI, and if that effect differed according to various host country conditions, including institutional quality and the relative bargaining power of host countries versus foreign investors. In addition, particular attention was paid to how these relationships differed across FDI between different country pairs. We distinguished between 1) FDI among developed countries; 2) FDI from developed to developing countries; 3) FDI among developing countries and 4) FDI from developing to developed countries.

Empirical research on the effect of BITs on FDI is still scarce – only six previous empirical papers have been identified, with widely varying conclusions. A prime reason for the relative absence of studies would likely be to be the lack of sufficient and relevant data. Lists of BITs have only very recently become (digitally) available and bilateral FDI data were only available for selected developed countries. Existing studies on BITs and FDI are very recent, and have primarily focused on explaining FDI from developed countries towards developing countries. But both the rise in BITs among developing countries that characterized the 1990s, and the increases in FDI from developing countries, poses the question how BITs affect FDI from those countries. This paper analysed the effect of BITs on FDI using a unique panel dataset with bilateral FDI stock data that covers the 1990-2002 period. With a much wider range of home and host countries covered than previous studies, including a substantial share of intra-developing country observations, the findings of our study are arguably more representative of the entire population of BITs and FDI stocks between countries.

One of our main conclusions is that endogeneity – in particular due to self-selection effects, where countries with limited FDI are more prone to sign BITs in order to attract

FDI – greatly influences the empirical findings. In general, we established a negative correlation between the presence of a BIT and the amount of FDI stock between two countries. However, correcting for self-selection, the effect of BITs on FDI is positive. This self-selection effect also became apparent when we tested the hypothesized interaction effects. Based on previous literature in primarily political science and international law, we expected that BITs could serve as substitutes for domestic institutions. In this way, countries that do not have the institutions to credibly commit themselves to agreements with investors, can use BITs and the international dispute settlement procedures associated with them to show investors their commitment to protecting their property rights, and to lock in policy changes so that sudden regime changes will not negatively affect foreign investors. Without a correction for self-selection, we could merely establish that for most of the institutional quality indicators, this effect seemed to play a role, but only to the extent that the negative effect of BITs on FDI was reduced in low-quality institutional context, but it did not become positive. But correcting for self-selection, the findings support the hypothesis that the effect of BITs is stronger for countries with low quality institutions, and may therefore serve as substitutes for local institutions.

Also with respect to the role of the relative bargaining position of host countries and foreign investors, the empirical findings supported the hypothesized relationships. BITs are less necessary to stimulate FDI to countries that have unique and scarce locational advantages – notably in natural resources – and to which investors are attracted regardless of the presence of a BIT. Bargaining positions of host countries are also influenced by what some observers have called the global competition for capital. Strong competition among countries to attract FDI has created a surge in BITs during the 1990s. This situation has been compared to a traditional prisoner's dilemma. It is in each individual country's best interest to sign as many BITs as possible, but since other countries face the same pressure and act in their own best interest, none of them gains a sustainable advantage vis-à-vis the others. Yet, all are worse off as in signing BITs, countries lose a substantial part of their sovereignty in regulating foreign investment in their countries. Empirically, this translates into a reduction in the marginal impact of a BIT if more and more BITs are signed. Our analysis confirmed that this was both the case for the stock of home and host country BITs. A key policy recommendation would therefore be for countries that want to attract FDI, to sign BITs with potential source countries, but to consider the decreasing marginal contribution of every additional BIT to total inward FDI in engaging new potentially costly negotiations.

A final contribution of our paper is the explicit analysis of these general relationships across four groups of country-dyads. Many of the relationships we established for the complete sample, were importantly modified in the sub-samples, and often difficult to explain. Part of this may be due to the fact that such a split in the sample reduces the variation on exactly the key variables on which the hypotheses are based. In addition, for the investments among developed countries, only very few BITs are signed at all which may influence the findings. But further research is needed to explore the reasons behind these heterogeneous effects of BITs. Such studies may further distinguish among the

effect of BITs on different types of FDI (e.g. by sector, or type of activity – sales or production for example) that may be affected differently by the conclusion of a BIT. The inclusion of other non-bilateral treaties that have ‘BIT’-like clauses in addition to NAFTA and EU could further enhance our understanding regarding the role of international investment treaties and regulation in stimulating FDI. In addition, case studies and other more qualitative research shed more light on how BITs affect FDI. For example, interviews with BITs negotiators could reveal their motives for signing BITs; discussion with representatives of MNEs might make their perception of the role of BITs and its interaction with the MNEs FDI decisions more clear. Such findings could yield important insights on how BITs – the key international institution regulating FDI – truly affects corporate investment behaviour.



## 6 FDI AND ECONOMIC GROWTH: COUNTRY OF ORIGIN EFFECTS

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### 6.1 INTRODUCTION

In the past two decades, Foreign Direct Investment (FDI) by multinational enterprises (MNEs) has become the prime source of external financing for developing countries. Yet, evidence on the consequences of the influx of MNE investment for host country economic growth is still far from conclusive (see reviews by e.g. Caves (1996), Rodrik (1999), Fortanier (2004) and Meyer (2004)). Recent research has indicated that part of the divergence in empirical findings can be attributed to methodological issues such as research design (Görg and Strobl, 2001), and to host country characteristics such as institutions (Rodrik, 1999; Alfaro *et al.*, 2004), openness to trade (Balasubramanyam *et al.*, 1996), and technological development (Borensztein *et al.*, 1998).

However, one set of factors that influences the FDI-economic growth relationship has yet received little systematic empirical attention: the heterogeneous characteristics of the foreign investments themselves (Nunnenkamp and Spatz, 2004; Lall, 1995; Jones, 2005). In the field of Economics, where most studies on FDI and growth can be found, FDI generally continues to be perceived as a homogeneous flow of capital. In the field of International Business, the differences in types of investors and investments are recognized, but the organizational, technological, managerial, and strategic firm characteristics are mostly related to firm performance, rather than 'host country performance'. This paper examines whether taking into account the differences in FDI characteristics in future empirical research may help our understanding of whether, to what extent, and under what conditions the entry of MNEs enhances economic growth in host economies.

We do so by focusing on the moderating role of one particular FDI characteristic: the country of origin of the MNE. The market conditions, business systems and institutions in the MNE's country of origin (cf. North, 1991; DiMaggio and Powell, 1983; Whitley, 1998) continue to influence a large range of strategic and organizational characteristics of MNEs, including e.g. the degree of intra-company sales and trade (Harzing and Sorge, 2003); sector specialization (Moen and Lilja, 2001); and human resource management practices (Bae *et al.*, 1998). It is therefore hypothesized that foreign investments from different countries should also have different consequences for host country economic growth. In addition, it is expected that such effects also differ across host country contexts. To test these hypotheses, a dataset was constructed from various official sources for a sample of 71 countries covering a 14-year period (1989-2002), including information on both total inward investment as well as inward investments from the

world's six major investor countries (US, Japan, Germany, UK, France and the Netherlands).

Before moving to the empirical analyses, the paper first reviews the literature on the role of FDI on economic growth in more detail (section 6.2). Both the (theoretical) mechanisms through which MNEs influence host economies, and the (empirical) outcomes of these processes are discussed. Subsequently, the roles that the characteristics of both the host country and FDI play in the FDI-economic growth relationship are elaborated, and hypotheses are developed. The data collection, methodology and estimation techniques are explained in section 6.3, while the results of the analysis are presented in section 6.4. Section 6.5 discusses the findings and offers potential explanations that may guide further research, while section 6.6 concludes.

## **6.2 LITERATURE AND HYPOTHESES**

### **FDI and economic growth**

FDI and MNEs affect economic growth (and other dimensions of development) through three key mechanisms: Size effects, Skill and technology effects, and Structural effects. Size effects refer to the net contribution of FDI to the host country's savings and investments, thus affecting the growth rate of the production base (Bosworth and Collins, 1999). Most of the potential costs and benefits of foreign capital are caused however by the more indirect effects of FDI; either the transfer of skills and technologies (Baldwin *et al.*, 1999), or structural change in markets (competition and linkages) (Kokko, 1996).

MNEs are among the most important sources of skills and technology transfer across borders. Multinationals are generally concentrated in technology intensive industries (Markusen, 1995; Baldwin *et al.*, 1999). The technology brought in by MNEs through FDI can 'spill over' to local firms through demonstration effects, labour migration, or linkages with buyers and suppliers (Blomström *et al.*, 1999). Local firms use the new technologies to increase their productivity, and thus contribute to economic growth. However, MNEs' technologies are often designed for industrialised country wages and capital costs, and may not always match the factor prices prevailing in developing countries (Caves, 1996). In such instances, skill and technology transfer may be small.

Structural effects brought about by the entry of an MNE include both horizontal (competition) as well as vertical (linkages with buyers and suppliers) changes. An investment of an MNE in a local economy can stimulate competition and improve the allocation of resources, especially in those industries where high entry barriers reduced the degree of domestic competition (e.g. utilities). In this way, the entry of an MNE may contribute to the dynamics and innovation in the local market (Lall, 2000), and thus to economic growth. However, MNEs with their superior technology, greater possibilities for utilising economies of scale and access to larger financial resources may also out-compete local, often much smaller firms ('crowding out') (Agosin and Mayer, 2000). In a strict economic sense, crowding out does not have to be problematic, as long as local firms are replaced by more efficient firms. Yet, if crowding out leads to increased market

concentration, the risk of monopoly rents and deterioration of resource allocation (and thus reduced economic growth) increases. These potential effects need not be limited to product market competition alone, but can also extend to e.g. capital markets (credit) (Harrison and McMillan, 2003).

Linkages between the MNE affiliate with local suppliers (and buyers, see Aitken and Harrison, 1999) form the final main channel through which spillovers from FDI to local firms occur (Javorcik, 2004). Linkages, or sourcing relations with suppliers (Alfaro and Rodríguez-Clare, 2004), can raise the overall output of local supplier firms, and – especially if paired with training – their productivity and product quality as well (McIntyre *et al.*, 1996). However, MNEs only improve welfare if they generate linkages beyond those that are generated by the local firms they displace. This is not always the case, since MNEs often source their inputs through their own international production networks, which in addition could also have potentially negative trade balance effects (De Mello and Fukasaku, 2000).

It is through these size, skill and technology, and structural effects that multinationals can affect the economic growth of host countries. Whether this effect is on the whole positive or negative is a fervently debated research question. On the one hand, De Mello (1999), Sjöholm (1997b) and Xu (2000) found that foreign investors increase growth in host countries. Baldwin *et al.* (1999) established that domestic technological progress is aided by foreign technological progress, and Borensztein *et al.* (1998) and OECD (1998) concluded that FDI had a larger impact on economic growth than investment by domestic firms. On the other hand, a study by Kawai (1994), using a set of Asian and Latin-American countries, indicated that an increase in FDI generally had a negative effect on growth (with the exception of Singapore, Taiwan, Indonesia, the Philippines and Peru). Also in Central Eastern European countries, the impact of FDI on growth has been negative (cf. Djankov and Hoekman, 1999; Mencinger, 2003). Finally, Carkovic and Levine (2000) came to negative results in their study for 72 countries of the impact of FDI on income and productivity growth.

Also studies that used enterprise or industry-level data rather than macro-economic figures did not yield consistent results. Some studies found indeed positive results of FDI on productivity, such as those by Sjöholm (1997a) and Anderson (2001) for the Indonesian manufacturing industry, or studies for Mexico (Kokko, 1994; Ramírez, 2000), Uruguay (Kokko *et al.*, 1996), and China (Liu *et al.*, 2001). On the other hand, another group of studies has established negative effects of FDI on the productivity of local firms. Aitken and Harrison (1999) used data for Venezuela, and concluded that productivity in local firms decreased, whereas productivity in foreign firms and firms with significant foreign participation increased. And Haddad and Harrison (1993) and Aitken *et al.* (1996) also did not find positive productivity spillovers in Morocco, Venezuela or Mexico.

### **FDI characteristics and host country context**

The diverging empirical results have triggered several researchers to look for explanations for these differences. In addition to methodological issues related to



research design (Görg and Strobl, 2001), two sets of factors have been identified that (potentially) moderate the FDI-economic growth relationship: the characteristics of the investments made; and the host country context.

It is especially the explicit consideration of the first set of factors that constitutes the main contribution of this paper to the FDI-economic growth debate. The characteristics of FDI have hitherto received very little empirical attention as moderators of the FDI-growth relationship. However, FDI is not a uniform flow of capital across borders, and should therefore not be treated as such. Instead, FDI differs by size and mode of entry; the nature of the (production) techniques chosen; the trade orientation of the parent company; the place of the affiliate in the global production network; the type of activity that takes place; and the aim with which the investment is made (Lall, 1995; Dunning, 1993; Jones, 2005). Some initial research results support this perspective. For example, Mencinger (2003) suggested that the negative relationship between FDI and growth in transition economies can be explained by the form of FDI, which has had been predominantly through acquisitions (of which the proceeds were spent on consumption) rather than greenfield investments. Kearns and Ruane (2001) found that in Ireland, the scale of R&D activity of foreign affiliates is positively related to job creation rates. Egelhoff *et al.* (2000) related FDI characteristics to trade patterns, and established that industry, subsidiary size, and parent country all significantly influence the size and patterns of trade.

This study focuses on the moderating role of one particular FDI characteristic: its country of origin. The effects of the Country of Origin on MNEs have been extensively documented especially from an institutional theory perspective. The nature of the domestic market and business system, and institutional backgrounds influence a large range of strategic and organizational characteristics of MNEs (cf. North, 1991; Ruigrok and Van Tulder, 1995; DiMaggio and Powell, 1983; Whitley, 1998; Pauly and Reich, 1997). The combination of national production factors and institutions determine the opportunity set of firms, and because these sets differ across countries, firms' optimal actions diverge, and hence also firm behaviour and strategy (North, 1991; Wan and Hoskisson, 2003). Examples of these characteristics that are influenced by COO effects include intra-company sales and trade, and the extent of local manufacturing and R&D (Harzing and Sorge, 2003); sector specialization, forms of ownership, and ways of internationalization (Moen and Lilja, 2001); capital intensity of production and technology use (Schroath *et al.*, 1993); the use of global (vs. multidomestic) strategies (Yip *et al.*, 1997); and human resource management practices (Bae *et al.*, 1998). Each of these factors critically influences one or more of the Skill, Structure and Skill and technology effects outlined above, and hence the impact of FDI on economic growth. For example, sector specialization and R&D have an important impact on the level of technology of FDI and hence its potential for knowledge spillovers (Kokko *et al.*, 1996; Haddad and Harrison, 1993). The mode of entry (greenfield versus acquisition) influences the market structure changes from FDI (Maioli *et al.*, 2005). And the way in which international production is organized determines amongst others the extent of local linkages creation (Pauly and Reich, 1997). Therefore we hypothesize:

*H1. The growth impact of FDI differs by the country of origin of FDI.*

The impact of FDI on growth also differs across host country contexts, related to the so-called ‘absorptive capacity’ of a host country – the ability to actually reap the potential benefits of FDI. The quality of host country institutions, in particular the rule of law and the protection of property rights (North, 1991; Rodrik, 1999), is an often-named example of a host country characteristic that determines the growth-enhancing effect of FDI. Good quality institutions facilitate the start-up of new local ventures that can exploit knowledge spilled over from the foreign MNE. In addition, institutions make contracts – in particular in relation to supplier relationships – more easily enforceable and thus lower the transaction costs for MNEs of local sourcing. High-quality institutions hereby particularly enlarge the potential for positive indirect effects of FDI (technology transfer and linkages).

Also a host country’s openness to trade has been found to positively influence the extent to which FDI contributes to growth (Balasubramanyam *et al.*, 1996). Trade openness is a measure of existing level of competition (and strength of competitive forces) in a local economy: in more trade-open countries, market distortions are less, and efficiency and competition is higher. This would induce MNEs to invest more in human capital, but also enhance spillovers as local competitors would be ‘forced’ to learn (Görg and Strobl, 2001; Blomström *et al.*, 1999). In closed economies, there are many incentives for rent-seeking (Hirschey, 1982). The lack of competition would allow MNEs (and local firms) to sustain X-inefficiencies; therefore resource allocation would be sub-optimal, with detrimental results for growth.

Thirdly, the extent to which FDI contributes to growth also depends on the level of technological sophistication, or the stock of human capital available in the host economy. FDI has been found to only raise growth in those countries that have reached a minimum threshold of technological sophistication or stock of human capital (Borensztein *et al.*, 1998; Xu, 2000), so local firms had the capacity to learn from foreign MNEs.

Extending this line of research, this paper explores to what extent such thresholds are fixed for all kinds of investment, or whether some types of investment contribute to growth ‘earlier’ in the growth process than others. Suggestions that this could be the case can be found in evidence regarding technology gaps (Kokko *et al.*, 1996; Haddad and Harrison, 1993), where it is the relative difference (in e.g., productivity) between local and foreign firms that determines spillovers, which are thereby dependent on the absolute level of sophistication of both domestic and foreign firms. Hence, to the extent that FDI differs across countries of origin, we can also expect that:

*H2. The impact on economic growth of FDI from various countries of origin differs across host country contexts, including the quality of institutions, the extent of trade openness, and the stock of human capital.*

## 6.3 DATA AND METHODOLOGY

### Sample and Variables

To test the two hypotheses, data was collected on the annual changes in total inward FDI in host economies. Similar data was collected for the six major investor countries worldwide (the US, Japan, Germany, the UK, France and the Netherlands, creating the variables USFDI, JPFDI, GEFDI, UKFDI, FRFDI and NLFDI) towards each country in the sample. These six investor countries account for 63 percent of global outward FDI stock. FDI was measured as changes in stocks, rather than flows. While this differs from other studies, it better captures (changes in) the role of FDI and foreign MNEs in a host economy, and also better mirrors the growth in capital stock in the production function (Balarusalamanyam *et al.*, 1996).

Data are taken from UNCTAD (for total inward FDI), and from the National Statistics Offices or Central Banks of the six outward investors. For Japan, which has very detailed geographically broken down data available for flows but not for stocks, estimates were made for stock breakdown by applying the percentages of individual country shares in the accumulated outflows to the outward stock totals. The comparison of these estimates with the real values for the geographically broken down stock data that were available for a small group of country-periods (1997-2003, for 25 countries), resulted in a Pearson Correlation of 0.89 ( $p < 0.001$ ), indicating that the estimates are good approximations of the real values. All inward stock data, both the total value and the values for the individual investors, were calculated as shares of the host country GDP.

Data on investment stock by country of origin was available since 1989 for all outward investors, while 2002 was the latest year for which all six countries reported the geographical breakdown of their outward stock. Since not all investor countries include the same host countries in their outward investment statistics, only those host countries were included in the sample for which data was available for at least three of the six investors for the entire period. This resulted in a sample of 71 countries (of which 49 developing), and a total of 994 observations ( $NT = 71 * 14$ ). Table 6.1 gives an overview of the countries (and regions) included in the sample.

**Table 6.1 Countries included in the sample**

Region	Countries included
Developed (n=22)	Australia, Austria, Belgium/Lux, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States
Africa & Middle East (n=15)	Cote d'Ivoire, Egypt, Ghana, Iran, Israel, Kenya, Mauritius, Morocco, Nigeria, Saudi Arabia, South Africa, Tanzania, Turkey, United Arab Emirates, Zimbabwe
Asia (n=11)	China, Hong Kong, India, Indonesia, Korea, Malaysia, Pakistan, Philippines, Singapore, Sri Lanka, Thailand
Eastern Europe (n=9)	Bulgaria, Czech Republic, Hungary, Poland, Romania, Russia, Slovak Republic, Slovenia, Ukraine
Latin America (n=14)	Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Panama, Paraguay, Peru, Uruguay, Venezuela

While combining investment data in this way has some important limitations since the methodologies of data collection are not the same across countries, this dataset still represents the best data available to date. With the exception of Japan, the dataset has exactly the same methodology, data quality (and as far as samples overlap, also the same data) as the OECD Direct Investment Yearbook. This only known official source of bilateral FDI data is also compiled from national official data. Yet, going back to the original sources of the data ensured a wider developing country coverage (49 vs. 25) and in some instances, less missing values (as national data seems more regularly updated), than the OECD dataset.

The relationship between FDI and economic growth was controlled for other factors that are generally included in growth equations. Both the augmented Solow model and endogenous growth models include initial levels of GDP per capita, total investment, and human capital (education) as a minimal set of explanatory variables in cross-country growth regressions (compare e.g. Mankiw *et al.*, 1992 and Romer, 1993). The key difference lies in the role of externalities or spillovers from knowledge goods that endogenous growth theory proposes. In fact, the study of FDI as a driver of economic growth in host countries via technology transfer, diffusion and spillover effects is based on endogenous growth reasoning (Nair-Reichert and Weinhold, 2001). Hence, following Borensztein *et al.* (1998) and Alfaro *et al.* (2004), the direct effect of FDI on economic growth is estimated using a model in which growth is dependent upon initial GDP per capita, total investment, and human capital, as well as FDI.

**Table 6.2 Variable definitions**

Variable	Measurement	Source
gGDP	Percentage growth of GDP	World Bank WDI
GDPC0(log)	Level of initial GDP per capita (1990)	World Bank WDI
GCF	Gross Capital Formation as percentage of GDP	World Bank WDI
FDI	Change in total inward FDI stock / host GDP	UNCTAD
School	Percentage of secondary school enrollment 1990	World Bank WDI
Tradeop	Sum of exports and imports as percentage of GDP	World Bank WDI
Institut	RG 'Rule of Law' indicator (1990-1999)	Dollar-Kraay
USFDI	Change in US FDI stock in host country / host GDP	BEA
JPFDI	Change in Japanese FDI stock in host country / host GDP	Ministry of Finance
GEFDI	Change in German FDI stock in host country / host GDP	Deutsche Bundesbank
UKFDI	Change in UK FDI stock in host country / host GDP	Nat. Office of Statistics
FRFDI	Change in French FDI stock in host country / host GDP	Banque de France
NLFDI	Change in Dutch FDI stock in host country / host GDP	Netherlands Central Bank

Here, economic growth (gGDP) is measured as the annual percentage growth of GDP, the extent of domestic investment (GCF) is measured as Gross Capital Formation as percentage of GDP (expected sign is positive), and the level of initial GDP per capita (GDP0), which serves as a 'catch-up' variable and captures diminishing returns to capital (expected sign negative), as the GDP per capita in 1990 (PPP). The stock of human capital was measured as the percentage of secondary school enrolment in 1990. Trade

openness was measured as the sum of exports and imports as percentage of GDP, while institutional quality was proxied with the ICRG ‘Rule of Law’ indicator, averaged over the 1990-1999 period. All data were taken from the World Development Indicators (from the World Bank), with the exception of the ICRG Rule of Law indicator, that was drawn from the Dollar-Kraay (2002) dataset. Finally, a set of regional dummies (as distinguished in table 1) was included. Table 6.2 summarizes the variable definitions and sources used.

### Estimation

The data are analyzed in several consecutive steps. As explained above, the analysis starts with a basic growth model that includes the rate of investment, the initial GDP per capita, FDI, regional dummies, and indicators for human capital, trade openness, and institutional quality.

$$gGDP_{it} = \beta_0 + \beta_1 GCF_{it} + \beta_2 GPD0_i + \beta_3 FDI_{it} + \beta_4^{1-4} R_i^{1-4} + \beta_5 School_i + \beta_6 Tradeop_{it} + \beta_7 Instit_i + \varepsilon_{it} \quad [1]$$

This basic model is then extended in order to test whether the effect of FDI differs across host countries, distinguishing between level of human capital development, institutions and trade openness: (where HOSTCC is either School, TradeOp or Instit):

$$gGDP_{it} = \beta_0 + \beta_1 GCF_{it} + \beta_2 GPD0_i + \beta_3 FDI_{it} + \beta_4^{1-4} R_i^{1-4} + \beta_5 School_i + \beta_6 Tradeop_{it} + \beta_7 Instit_i + \beta_8 FDI \times HOSTCC_{it} + \varepsilon_{it} \quad [2]$$

Consequently, the role of different shares of national firms in FDI is addressed, and the FDI variable is replaced by six FDI variables (XXFDI) according to their country of origin:

$$gGDP_{it} = \beta_0 + \beta_1 GCF_{it} + \beta_2 GPD0_i + \beta_3^{1-6} XXFDI_{it} + \beta_4^{1-4} R_i^{1-4} + \beta_5 School_i + \beta_6 Tradeop_{it} + \beta_7 Instit_i + \varepsilon_{it} \quad [3]$$

Finally, the interactions between FDI by country of origin and host country context is explored: does FDI from a certain origin lead to different development impact in countries with different characteristics?

$$gGDP_{it} = \beta_0 + \beta_1 GCF_{it} + \beta_2 GPD0_i + \beta_3^{1-6} XXFDI_{it} + \beta_4^{1-4} R_i^{1-4} + \beta_5 School_i + \beta_6 Tradeop_{it} + \beta_7 Instit_i + \beta_8^{1-6} XXFDI_{it}^{1-6} \times HOSTCC_{it} + \varepsilon_{it} \quad [4]$$

These equations are estimated using all information available in the dataset by using techniques specifically designed to handle panel data. Using data for all 994 country-year units enables us not only to take full advantage of the benefits of pooling data (larger sample), but also to take into consideration the time dimension in the relationship between FDI and growth. However, it is exactly the combination of data across units and

over time that may create additional difficulties in the estimation. In addition to issues related to the structure of error term (heteroskedasticity, autocorrelation), especially the potential endogeneity of FDI and growth, caused by unobserved (omitted) variables that influence both, is a major potential concern in economic growth research.

Endogeneity would make OLS estimations inconsistent. In particular certain host country characteristics such as trade openness or the quality of institutions, are known not only to cause growth, but also to attract FDI. Our equation includes three important host country characteristics (quality of institutions, trade openness, and level of human capital), which would mean that there may be less reason to suspect any additional unobserved variable that greatly influences FDI and growth and that causes a correlation between FDI and the error term. However, we still test for potential endogeneity using both the Durbin-Wu-Hausman (DWH) test and the Hausman specification test. Essentially, both compare coefficients obtained from OLS (potentially inconsistent) with those obtained via IV regressions (consistent but inefficient), and test whether they differ significantly.

With IV estimations, the selection of instruments for FDI is the main problem. We follow Xu (2000), Borensztein *et al.* (1998), Alfaro *et al.* (2004) and De Mello (1999) and select the lagged values of FDI as instruments. Some researchers include other instruments as well, in addition to lagged FDI values. However, our system of equations already includes most of those variables in the primary equation. Therefore, and similar to Xu (2000), we include only the lagged FDI values.

The DWH test indicated that there may be some weak endogeneity ( $F_{1,914}=3.66$ ,  $p<0.10$ ). However, the F-statistic is only significant at the 10 percent level and evidence for endogeneity is thus not particularly strong. In addition, the Hausman specification test further indicates that it is unlikely that endogeneity is present ( $\chi^2_{11}=13.77$ ,  $p=0.25$ ). Moreover, other studies (e.g. Borensztein *et al.*, 1998; Alfaro *et al.*, 2001), though not formally testing for endogeneity, concluded that the results they obtained with or without IV estimators are qualitatively similar, implying that OLS is not inconsistent and that IV estimation is therefore unnecessary. Finally, estimating the models below using dynamic (Arellano-Bond) GMM estimators led to virtually similar results. Given these arguments, and considering that using IV implies a loss of efficiency in comparison with OLS, the models will be estimated and reported without instrumental variables.

Since the Panel-adjusted Durbin Watson test (for model 2 specified above) indicated the presence of autocorrelation ( $DW=1.01$ ,  $\rho=0.43$ ), and modified Wald tests ( $\chi^2_{71}=8235$ ,  $p<0.001$ ) the presence of heteroskedasticity, the equations are estimated using AR(1) GLS with heteroskedasticity-corrected standard errors and time fixed effects.

## 6.4 RESULTS

The descriptive statistics of the continuous variables and their correlation coefficients are displayed in tables 6.3 and 6.4. It shows that the main independent variables are significantly correlated with the dependent variable gGDP, with the exception of institutions. Table 6.4 also indicates that substantial correlations exist between the independent variables, notably between schooling, institutions and initial GDP. In order

to test for potential multicollinearity, VIF statistics (for model 1) were calculated, which resulted in an average VIF of 2.38 and a maximum value of 3.28. Although there are no formal criteria for assessing the value of VIFs, most authors suggest that multicollinearity becomes a problem with VIFs over 10 (Stevens, 2002; Myers, 1990; Dewberry, 2004), far above the values found in our analyses.

**Table 6.3 Descriptive statistics**

	n	m	sd	min	max		n	m	sd	min	max
1 gGDP	994	2.88	4.16	-22.90	17.50	8 USFDI	910	0.33	1.64	-21.47	21.56
2 FDI	994	1.29	6.63	-42.80	116.10	9 JPFDI	897	0.02	0.38	-3.79	5.17
3 GDPC0(log)	994	3.55	0.62	2.22	4.53	10 GEFDI	896	0.13	0.55	-2.81	7.55
4 GCF	994	22.47	5.97	6.15	43.64	11 NLFDI	689	0.11	0.39	-1.50	4.28
5 School	994	69.79	25.93	6.00	124.00	12 FRFDI	646	0.16	0.78	-2.80	9.17
6 Tradeop	994	76.98	62.61	0.00	425.99	13 UKFDI	704	0.20	2.21	-19.65	31.05
7 Institut	994	4.31	1.18	1.62	6.00						

As could be expected, the FDI values for the individual investors are correlated with the total FDI variable, and to a lesser extent, with each other as well. Still, coefficients are rather low, and there also seems to be considerable variation in the value of the correlation coefficients between the individual investors and the other variables in the model. These are first hints at the differences in FDI by country of origin. The descriptive statistics do not point at the presence of influential outliers, although the maximum values for trade openness and all FDI variables are quite high. This is primarily caused by the inclusion of Hong Kong and Singapore in the sample. While these observations did not significantly influence the outcomes of the estimation in most instances, these two countries were problematic in examining the interaction between trade openness and FDI. Therefore, both countries were excluded from consequent analyses.

The results of the regression analyses are presented in table 6.5. The first model that was estimated represents the growth equation in its most restricted form, while models 2-5 added the interaction effects between FDI and host country characteristics. Results confirm previous findings. Looking at the values and significance of both the main effects of FDI and the interactive terms, it can be concluded that FDI has a negative effect on growth in countries with low stock of human capital, are relatively closed to trade, or are characterized by low quality institutions, but has a positive effect on growth in countries that score high on these dimensions.

The final two models in table 6.5 – models 5 and 6 – present the results when including FDI by different countries of origin. The findings support H1: considerable differences exist between the impact on growth of FDI from different countries of origin. Additional F-tests on the coefficients (not reported) indicated that particularly Japanese FDI has a negative impact on growth in comparison with all other types of FDI. US and German FDI also affect growth negatively, though significantly less so than Japanese FDI. British FDI in contrast has a positive effect on growth. French and Dutch FDI, finally, seem to take the ‘middle ground’, as their impact is neither generally negative nor positive.

**Table 6.4 Pearson correlations coefficients**

	1	2	3	4	5	6	7	8	9	10	11	12
1 gGDP	1.00											
2 FDI	-0.07 **	1.00										
3 GDPC0(log)	-0.08 **	0.03	1.00									
4 GCF	0.26 ***	-0.01	0.03	1.00								
5 School	-0.14 ***	0.05	0.75 ***	0.11 ***	1.00							
6 Tradeop	0.12 ***	0.02	0.21 ***	0.31 ***	0.12 ***	1.00						
7 Institut	-0.05	0.07 **	0.74 ***	0.18 ***	0.65 ***	0.23 ***	1.00					
8 USFDI	-0.04	0.34 ***	0.12 ***	0.01	0.09 ***	0.27 ***	0.14 ***	1.00				
9 JPFDI	-0.18 ***	0.38 ***	-0.04	-0.08 **	0.00	-0.13 ***	-0.01	0.18 ***	1.00			
10 GEFDI	-0.09 ***	0.17 ***	0.09 ***	0.04	0.15 ***	0.10 ***	0.19 ***	0.04	0.08 **	1.00		
11 NLFDI	0.00	0.33 ***	0.07 *	-0.05	0.11 ***	0.11 ***	0.14 ***	0.27 ***	0.14 ***	0.09 **	1.00	
12 FRFDI	-0.03	0.21 ***	0.08 **	-0.04	0.10 **	0.09 **	0.11 ***	0.13 ***	0.11 ***	0.22 ***	0.27 ***	1.00
13 UKFDI	0.02	0.11 ***	0.06	-0.02	0.07 *	0.05	0.06	0.13 ***	0.04	0.08 **	0.33 ***	0.27 ***

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10



**Table 6.5 GLS AR1 Regression results, host country characteristics**

	1	2	3	4	5	6
GDPC0(log)	-0.92 **	-0.88 *	-0.91 *	-0.86 *	-1.71***	-0.64
	-1.97	-1.84	-1.92	-1.80	-3.07	-1.39
GCF	0.22 ***	0.24 ***	0.22 ***	0.23 ***	0.30***	0.25***
	9.83	10.84	9.89	10.53	10.40	10.49
FDI	-0.06 ***	-0.39 ***	-0.12 ***	-0.42 ***		
	-3.70	-8.41	-3.18	-6.52		
School	0.00	0.00	0.00	0.00	0.02	0.00
	0.47	-0.62	0.52	0.20	1.53	0.50
Tradeop	0.01 *	0.00	0.01	0.01	0.00	0.01*
	1.67	1.34	1.51	1.56	0.45	1.94
Institut	0.06	0.00	0.04	-0.08	0.27	-0.17
	0.26	-0.02	0.18	-0.38	1.03	-0.81
FDI x School (x10 <sup>-3</sup> )		3.94 ***				
		7.13				
FDI x Tradeop			0.00 *			
			1.71			
FDI x Institut				0.07 ***		
				5.55		
R1 (Developed)	-0.64	-0.32	-0.60	-0.43	-0.46	-0.49
	-0.92	-0.46	-0.87	-0.61	-0.53	-0.71
R2 (Africa)	-0.10	0.09	-0.07	0.04	0.98	0.09
	-0.23	0.21	-0.17	0.08	1.46	0.22
R3 (Asia)	0.21	0.26	0.18	0.21	-0.49	-0.05
	0.37	0.47	0.32	0.37	-0.64	-0.09
R4 (Eastern Europe)	-3.95 ***	-3.64 ***	-3.94 ***	-3.79 ***	-2.82***	-2.52***
	-4.92	-4.54	-4.93	-4.74	-3.28	-3.44
USFDI					-0.10	-0.09*
					-1.15	-1.72
JPFDI					-1.81***	-1.50***
					-6.37	-6.41
GEFDI					-0.40**	-0.18
					-2.35	-1.14
UKFDI					0.08**	
					2.16	
FRFDI					-0.03	
					-0.24	
NLFDI					-0.07	
					-0.28	
Rho	0.45	0.46	0.44	0.45	0.40	0.44
N	966	966	966	966	483	831
Wald $\chi^2$	352 ***	444 ***	353 ***	413 ***	396***	355***
LogLikelihood	-2169	-2150	-2172	-2158	-1034	-1838

GLS AR(1) regressions, dependent is gGDP, time dummies not reported.

T-values based on heteroskedasticity-corrected s.e. below coefficient estimates.

\*\*\*p<0.01; \*\* p<0.05; \* p<0.10

The coefficients for FR and NL are not significantly different from those for either the UK or the US and Germany. The results are confirmed in model 6, in which only US, Japanese and German FDI were included. This model was estimated because even though care was taken in selecting the sample of countries, the combination of missing data for especially the UK, France and the Netherlands reduced the sample considerably. We therefore tested the model (and those in table 5 below) twice: once with all the FDI variables for a sample of  $n=483$ ; and once for a larger sample ( $n=831$ ) but with only the US, Japan and German FDI variables. In particular the smaller and least developed countries were eliminated from the sample due to data availability. The results across these two estimations did not differ considerably (even though the t-statistics for the coefficient for Germany indicate it is not significantly different from zero, additional F-tests indicate that there is also no significant difference between the US and Germany, but that the difference of these two with Japan is significant).

Table 6.6 presents the results of the country of origin effects in interaction with the host country contexts: do different kinds of investment also have different effects in different environments? The results strongly confirm hypothesis 2 and even exceed the expectation that the differences in interaction effects could only influence the threshold after which FDI positively affects development. Instead, we also find negative interaction effects. Table 6.6 presents 3 panels, each of which explores the interaction between the COO effects and one of the context variables.

Panel (a) displays the interaction effects for trade openness. The results indicate that the positive interaction effect between FDI and trade openness is particularly strong for US FDI. In contrast, the already negative effect of Japanese FDI on growth is exacerbated in countries that are more open to trade. German FDI has a positive (yet not very significant) effect on growth in countries closed to trade, and a negative effect on trade open countries. For French and Dutch FDI, the signs of the coefficients confirm the positive interaction between FDI and trade openness, though the coefficients are not significant. The positive effect of UK FDI on growth is not moderated by trade openness. Panel (b) represents the interaction effects for education. Again, the effect that was found for the total sum of FDI appears to be caused primarily by US FDI. Both the negative impact at low levels of Schooling, and the positive impact at high levels of schooling, is significantly lower for German and French FDI. For Dutch FDI, the relationship between FDI, education and growth appears weakly inverted: Dutch FDI promotes growth in low-education countries, and reduces it in high-human capital societies. Similar results (though not significant) are found for the UK. Finally, Japanese FDI continues to be negative throughout, independent of the level of education in the host country.

Panel (c) reports the results of the interactions between FDI by country of origin, and institutional quality of the host country. Again, US FDI seems to be responsible for the overall finding of a positive interaction effect between FDI and institutional quality for growth. Similar (though less significant) results of a positive interaction effect are also found for German and French FDI. The effect of Japanese FDI is again negative, and significantly more so in institutionally strong countries, while Dutch FDI interacts negatively (though insignificantly) with institutional quality.

**Table 6.6 Regression results, COO-host country interaction effects**

	Panel a:		Panel b:		Panel c:	
	HOSTCC = TradeOp		HOSTCC = School		HOSTCC = Institut	
	(1)	(2)	(3)	(4)	(5)	(6)
GDPC0(log)	-1.83 ***	-0.65	-1.81 ***	-0.48	-1.80 ***	-0.60
	-3.28	-1.41	-3.42	-1.04	-3.09	-1.29
GCF	0.30 ***	0.25 ***	0.28 ***	0.25 ***	0.29 ***	0.25 ***
	10.85	10.64	9.86	10.77	10.05	10.62
School	0.02 *	0.00	0.01	0.00	0.02 *	0.00
	1.76	0.46	1.03	-0.25	1.82	0.47
Tradeop	0.00	0.01 **	0.00	0.01 *	0.00	0.01 **
	0.73	2.00	0.96	1.69	0.87	2.03
Institut	0.35	-0.16	0.39	-0.18	0.30	-0.22
	1.40	-0.79	1.55	-0.85	1.16	-1.07
USFDI	-0.54 ***	-0.31 **	-3.00 ***	-0.50 ***	-3.12 ***	-0.57 ***
	-2.77	-2.35	-5.76	-3.31	-5.18	-3.03
JPFDI	-0.08	-0.33	-0.43	-2.73 ***	1.45	-1.06
	-0.12	-0.59	-0.45	-4.76	1.06	-1.14
GEFDI	1.00 *	0.19	-0.89	-1.69 **	-0.42	-2.79 **
	1.67	0.31	-0.70	-2.13	-0.25	-2.27
UKFDI	0.22 **		0.51 **		0.41 **	
	2.38		2.13		2.12	
FRFDI	-0.07		0.23		-0.34	
	-0.17		0.20		-0.27	
NLFDI	-0.86		2.02		1.87	
	-1.06		1.49		0.91	
USFDI x HOSTCC	0.00 **	0.00 *	0.03 ***	0.00 ***	0.56 ***	0.10 ***
	2.11	1.73	5.63	2.88	5.07	2.60
JPFDI x HOSTCC	-0.02 ***	-0.01 **	-0.01	0.02	-0.64 **	-0.11
	-2.88	-2.33	-0.71	0.66	-2.01	-0.50
GEFDI x HOSTCC	-0.01 **	0.00	0.01	0.02 **	0.01	0.48 **
	-2.47	-0.55	0.44	1.99	0.02	2.13
UKFDI x HOSTCC	0.00		-0.02		0.05	
	-1.33		-1.43		0.25	
FRFDI x HOSTCC	0.00		0.00		-0.06	
	-0.04		-0.23		-1.70	
NLFDI x HOSTCC	0.01		0.00 *		-0.33	
	1.03		-1.73		-0.89	
Rho	0.38	0.43	0.39	0.44	0.38	0.43
N	483	831	483	831	483	831
Wald $\chi^2$	501 ***	382 ***	445 ***	386 ***	439 ***	381 ***
LogLikelihood	-1029	-1836	-1022	-1824	-1030	-1836

GLS AR(1) regressions, dependent is gGDP. Region and time dummies are included, not reported

T-values based on heteroskedasticity-corrected s.e. below coefficient estimates.

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10

Some of the coefficients in table 6.6 that describe the main and interactive effects of FDI may appear to be unstable. However, the three panels in table 6.6 reflect the interactions of FDI with different variables with different measurement scales. In addition, within each panel, the samples for the two models differ importantly in size; the smaller sample contains a disproportionate number of developed countries. In this context, it is not surprising that variation in indicators that address differences in income (GDP0) or schooling (school) decreases to such an extent that they do not distinguish between high and low growth countries, and hence lose significance.

Table 6.7 summarizes all the empirical results. It shows that first of all, the overall or general effect of FDI on growth is negative, though the extent to which that is the case differs by home country. For some countries (notably France), it was even impossible to establish a significant effect at all (which provides further support for the hypothesis that not all FDI affects host country growth in the same way (or at all). Only British FDI has a positive effect on host country growth. In addition, as far as the interaction effects are concerned, only US FDI behaves entirely as generally hypothesized (i.e., with positive interaction effects with all three host country variables). It appears that findings of previous studies on the positive interaction effect with trade openness, schooling and institutions are very much driven by how US FDI interacts with local environments, and disregards the different behaviour of FDI from other countries.

**Table 6.7 Summary of the findings**

	Main effect	Interaction effects		
		With Trade Openness	With Schooling	With Institutions
US FDI	Moderate negative	Positive interaction	Positive interaction	Positive interaction
JP FDI	Most negative	Increased negative	n.s.	Increased negative
GE FDI	Moderate negative	Negative interaction	Positive interaction	Positive interaction
UK FDI	Positive	n.s.	n.s.	n.s.
FR FDI	n.s.	n.s.	n.s.	n.s.
NL FDI	n.s.	n.s.	Negative interaction	n.s.

n.s. = not significant

The differences are clearest for Japanese FDI, which tends to be negatively related to growth, an effect which is increased in countries that are open to trade and characterized by high quality institutions. In contrast, British FDI is generally good for economic growth, regardless of the characteristics of the host country environment. The findings for French FDI are most ambiguous – generally according to what is expected, just not significantly different from zero. Finally, German and Dutch FDI seem each others opposite: where the effect of German FDI is positively influenced by the level of education and institutions in the host country, and negatively by trade openness, this is the other way around (though not always significant) for Dutch FDI.

## 6.5 DISCUSSION AND POTENTIAL EXPLANATIONS

The results reported in the previous section clearly support both hypotheses: the impact of FDI differs by country of origin, and FDI from different national backgrounds also differs in its interaction with host country contexts. Differences in home country factor endowments and institutional backgrounds have created MNEs with considerably different effects for host country development. But these findings immediately raise questions about the underlying attributes that cause these differences. Given the multitude of (home-country influenced) dimensions on which MNEs can differ from each other, which ones could be causing the differences in the effects that we found in the empirical analysis of this paper? This section explores two likely candidates: first, different sector specializations (and thus level of knowledge and technology, and potential technology gaps) across home countries. And second, differences in organizational structure, in particular related to the role of subsidiaries in relation to the total organization and its external network (centralization or integration, versus decentralization or local responsiveness).

These explorations are mainly qualitative, not quantitative: first, because of the relatively small set of home countries (which reduces cross-sectional variation) involved; and second, due to the difficulties associated with measuring these variables (organizational structure), or with including these variables in the analysis (sector). The three-way interaction of inward FDI, home country share, and sector distribution would not only be complex as such, but also impose quite a rigid assumption on the data (that the sectoral pattern of FDI is the same for all host countries) which might be acceptable in a first exploration of potential explanations for empirical findings, but less suitable for a more sophisticated quantitative analysis.

### **Sector specialization**

Table 6.8 gives an overview of the sector distribution of the investments made by the six outward investors in the course of the 1990s. Numbers in bold fonts indicate that FDI from a particular country is, relatively, most specialized in that sector, while figures in italics indicate a relative disadvantage. Table 6.8 shows that all countries have a rather distinct set of sectors in which their FDI is (relatively) concentrated, with the exception of American FDI. This is an important indication that sector specialization could potentially account for (part of) the established country of origin effects. While FDI overall (i.e., without relative concentration on particular sectors, hence most similar to US FDI) shows positive interaction effects with the host country characteristics identified in this paper, the negative or absent interaction effects for the other countries could be due to the particularities of certain sectors. The question is whether for certain sets of sectors, arguments can be found that explain the negative, instead of positive, interaction of FDI with trade openness, institutional quality and level of education.

For trade openness, the general argument has been that high degrees of trade to GDP ratios imply high levels of competition in the local economy, in which case foreign MNEs would be forced to produce efficiently and local firms are induced to learn from

MNEs (Görg and Strobl 2001; Blomström *et al.* 1999). However, it has been suggested that because of the oligopolistic character on a global scale in many sectors, the entry of one MNE is often followed by others, with important (short-term) positive consequences for competition (Newfarmer 1985; Liang 2005). The potential competition-enhancing effect of sequential MNE entry could be higher in non-competitive – i.e., closed – countries. In contrast, highly competitive (trade-open) local markets may experience a reduction in total competition (and allocative efficiency) if an MNE from a globally oligopolistic sector replaces exports to that market by taking over a local independent firm. It may therefore be that sector specialization in highly concentrated sectors can result in negative interactions with trade openness in relation to economic growth.

**Table 6.8 Average FDI flows (1989-2002) by sector as percentage of total flows**

	USA	Japan	Germany	UK	France	Netherl.
<i>Primary Sector</i>	5.04	2.65	1.33	<b>12.30</b>	3.07	<i>0.70</i>
Agriculture and fishing	0.03	<b>0.39</b>	<i>-0.28</i>	-0.08	0.04	0.09
Mining and quarrying	1.25	n.a.	<i>0.30</i>	<b>1.66</b>	0.95	0.36
Petroleum and gas	3.76	n.a.	1.29	<b>10.73</b>	2.08	<i>-0.01</i>
<i>Manufacturing</i>	32.26	35.11	36.70	34.46	21.82	<b>40.14</b>
Food products	5.18	3.24	<i>0.60</i>	8.95	3.04	<b>12.76</b>
Textile and wood	4.92	1.96	2.06	2.39	<i>1.23</i>	<b>6.05</b>
Petroleum, chemical, rubber, plastic prod.	9.88	<i>4.72</i>	10.73	9.76	6.52	<b>11.53</b>
Metal and mechanical products	3.98	<b>14.33</b>	6.81	3.32	2.66	<i>1.56</i>
Machinery, computers, RTV, com equip.	5.03	<b>7.43</b>	3.20	<i>-0.09</i>	3.29	5.98
Vehicles and transport equip.	3.58	6.98	<b>12.54</b>	3.95	2.16	<i>0.80</i>
<i>Services</i>	61.76	61.17	<b>67.64</b>	<i>51.27</i>	55.81	57.07
Electricity, gas and water	2.66	n.a.	<b>7.17</b>	1.38	3.80	<i>0.38</i>
Construction	<i>0.25</i>	0.69	0.69	0.61	<b>1.29</b>	0.46
Trade and repairs	10.29	9.60	3.88	8.02	7.45	<b>11.68</b>
Hotels and restaurants	0.72	n.a.	<i>0.04</i>	<b>2.98</b>	1.02	0.18
Transports and communication	1.48	n.a.	<i>0.16</i>	<b>1.93</b>	0.71	1.32
Telecommunications	2.10	n.a.	<i>0.99</i>	<b>15.57</b>	2.54	3.21
Financial intermediation	29.81	20.47	<b>38.22</b>	15.91	<i>15.53</i>	34.83
Real estate and business activities	16.82	7.66	16.70	8.14	<b>20.57</b>	<i>6.01</i>
Other services	1.33	<b>17.89</b>	4.71	7.24	2.89	<i>0.75</i>
<i>Unallocated</i>	1.32	1.07	<i>-5.68</i>	2.51	19.30	2.08
<i>Total</i>	100.00	100.00	100.00	100.00	100.00	100.00

Note: Bold figures represent the highest relative share in a particular industry (and hence a relative specialization or advantage of a particular country in that sector). *Italics* represent the lowest relative share (and hence a relative disadvantage of a particular country in that sector). Source: OECD.

Sectors traditionally considered as oligopolistic include motor vehicles; petroleum & gas; chemicals, and food, beverages & tobacco. In contrast, trade, financial intermediation and computers and electronics are far less concentrated (Pryor 2001; Davies and Lyons 1996). Japan and Germany – the two countries that showed negative interactions between

trade-openness and FDI – are most active in less-concentrated sectors such as financial intermediation, construction, and utilities, sector specialization. Therefore, sector specialization, and particularly sector levels of concentration, may therefore not be so good in explaining for the interaction of FDI with trade-openness.

The second host country characteristic, schooling or level of education, has generally been used as proxy for the technology gap: the (technological) difference between foreign and domestic firms. FDI is generally considered to be (far) superior to local firms, and hence local firms should have reached a considerable threshold of human capital before being able to benefit from FDI. Negative interaction effects instead imply that FDI has a beneficial impact in countries with low levels of human capital, and negative in countries with high school enrolment rates. From a technology gap perspective, this could be possible if FDI is concentrated in ‘low to medium tech’ sectors: the gap is then small enough for countries with low levels of human capital to benefit, while too small (or even negative) for countries with high enrolment ratios. This can explain the negative interaction effect of Dutch FDI with the level of schooling. Table 6.6 shows that Dutch FDI is very strong (in comparison with others) in low to medium tech manufacturing. Positive interactions would then primarily be found for medium to high tech FDI. This is the case for German (and also US) FDI, which are strong in medium to high tech sectors. Finally, the overall negative effect (and lack of interaction) for Japanese FDI might be explained by its (relatively) very strong focus on high-tech sectors, making the gap even for countries with relatively high levels of schooling too large for spillovers. In conclusion, sector specialization, and in particular a sector’s level of technology, can very well explain the interaction of FDI from different countries of origin with host country levels of human capital.

As for the third host country characteristic, the quality of institutions, the main argument focused on the potential of direct versus indirect spillovers. High-quality institutions particularly encourage positive indirect effects of FDI (technology transfer, linkages). In the absence of high quality institutions, only the direct effects of FDI remain (related to sheer size of the investment in terms of employment and capital). From this perspective, reverse interaction effects (i.e., a positive impact on growth in low-institutional quality environments) might be derived from firms in sectors that are primarily engaged in large-scale, labour intensive production, where direct (size) effects might dominate. Dutch FDI (which shows this impact) is primarily focused in such industries, with relatively much FDI in food, textiles, and petroleum products. Also in the more high-tech computer and radio and television (RTV) industry in which the Dutch are relatively active, parts of the production process involve high-volume production, with limited local (instead international) backward linkages. This is also the case for Japanese FDI, what could possibly account for its increasingly negative impact. Sector specialization, in particular differences in production methods, might hence (partly) explain differences in the interaction of FDI with the quality of institutions.

## **Organizational structure**

The second factor that could potentially explain the different findings for the impact of FDI from different countries is the way in which firms organize and coordinate their overseas subsidiaries and international production network. MNEs face opposite pressures to, on the one hand, optimally exploit relative factor endowments and achieve economies of scale, and on the other hand, adapt products and production methods to local market conditions, government policies and business environments. Different balances between these pressures lead to organizational forms that range from globally integrated and centrally coordinated MNEs, to multi-domestic, locally embedded and decentralized MNEs (Doz and Prahalad, 1984; Bartlett and Ghoshal, 1989; Ruigrok and Van Tulder, 1995). Firms that are locally embedded are – by definition – more connected with local firms (thus increasing linkage potential), more inclined to adapt technologies and marketing practices to local circumstances (thus diminishing the technology gap), and conduct more of the R&D and product manufacturing in the products sold in the host country (hereby increasing the size effects) than integrated subsidiaries (Harzing and Sorge, 2003).

Pressures to organize as a multi-domestic or integrated firm are partly influenced by sector characteristics (Kobrin, 1991). Still, even within sectors, strong differences are observed in the organizational structures of MNEs from different countries of origin (Thomas III and Waring, 1999). The following general conclusions regarding the organizational characteristics of Japanese, European and US firms can be extracted from the literature.

Japanese are among the most integrated firms, where there is little or no decentralization of decision making (Ruigrok and Van Tulder, 1995), and where strong life-time relationships with domestic suppliers and distributors hamper the creation of linkages with local suppliers in host countries (Thomas III and Waring, 1999). As indicated above, this might explain the negative interaction of Japanese FDI with institutions. The increased negative impact of Japanese FDI in trade-open countries might also be explained along these lines: the more open to trade, or competitive, a local market is, the larger could be the potential costs of using the traditionally preferred, rather than the most competitive supplier.

German FDI resembles Japanese FDI most closely (Harzing *et al.*, 2002; Thomas III and Waring, 1999) in that it is very much oriented towards headquarters (HQ) in Germany, (subsidiaries as ‘pipelines of headquarters’, Harzing *et al.*, 2002), with many imports from the home country (Yip *et al.*, 1997) instead of local linkages. This could account for the negative interaction with trade openness. But where Japanese firms are strongly (regionally) integrated across borders, German FDI tends to copy home country (medium-high tech) production methods, which would justify the positive interaction with schooling.

US (and UK) firms make much less use of an integrated and centralized strategy than Japanese (Yip *et al.*, 1997). Decision making centres can be decentralized; the division of labour is worldwide. There is considerable intra-subsidiary trade, but also substantial local manufacturing, R&D and product adaptation. US (and UK) firms rely far less on



HQ-subsidary trade than their Japanese or German counterparts (Yip *et al.*, 1997; Harzing *et al.*, 2002). This can account for the positive interaction with institutional quality.

French FDI tended to be relatively multi-domestic (as heritage of colonization), but has become more integrated over time. Its main distinguishing characteristic in comparison with US and British FDI is the higher centralization of decision making authority (Calori *et al.*, 1997). French firms are therefore less likely to be locally embedded and to adapt product or process to local circumstances. This may be the reason for the generally positive, but insignificant interactions of French FDI with host country context variables. Finally, Dutch firms – with the exception of the few largest (often bi-national) firms including Shell, Unilever and Philips Electronics – can be characterized as multi-domestic and seeking local player status (Ruigrok and Van Tulder, 1995). This implies high levels of local embeddedness and local linkages, which, given the negative interaction with schooling, are also created in countries with low levels of human capital. Both sector and organizational structure appear to account for a substantial part of the variation in impact of FDI from different countries of origin on growth in host countries. However, many uncertainties remain, making these two variables more interesting options for further research than definite explanations.

## 6.6 CONCLUSIONS

This paper set out to explore different consequences for economic growth of FDI from various countries of origin. Existing research that studies the effect of FDI on growth has already acknowledged the role of host country factors such as institutions or openness to trade in determining whether FDI is beneficial for development. In contrast, a distinction in the development impact of different types of FDI is hardly ever made, given that the majority of contributions to the debate on FDI and development comes from the field of economics, where FDI is generally treated as a homogeneous flow of capital.

In the field of International Business however, it has long been established that MNEs and their investments are not homogenous at all, and can differ in many dimensions. The country of origin of an MNE is one such dimension, and one that has been found to explain differences across many other elements of MNE strategy, organization and behaviour. It was therefore hypothesized that the effect of FDI – and its interaction with host country characteristics like level of human capital – should differ by its country of origin. The empirical results confirmed the hypotheses.

In particular, we found that many of the conclusions that previous studies have drawn on the effect of total FDI, are in fact only entirely applicable for – and given its share in total worldwide FDI, also probably mainly driven by – US FDI. The effect on growth of investments from other countries – notably Japan and the UK, but also France, Germany and the Netherlands – is considerably different from US FDI. These findings have important implications for host countries. Taking into consideration the level of institutional development, trade openness and educational attainment of the host country,

the results provide suggestions regarding the developed countries on which investment promotion efforts could best be focused.

However, to some extent, the result of this study that FDI impact differs by country of origin raises more questions than answers. As was elaborated in the discussion of the findings, the present paper constitutes a very feasible first step at exploring the influence of FDI characteristics, but the country of origin of FDI may not be a very specific indicator of the exact kind of attributes of FDI that play a role. Follow-up studies should aim to use less coarse-grained measures of FDI characteristics, shifting towards more micro levels of analysis while striving to maintain a cross-country comparative perspective. This paper suggested that an analysis of sector specific patterns – where technology levels seem more important explanations than competition effects – and of the organizational characteristics of FDI could be fruitful avenues for further research to explain in more detail why the impact of e.g. Japanese investments is so different from US FDI.

Such studies have hitherto been hampered by data constraints. Much of the more detailed data that is necessary for such analyses is often only available for the operations of MNEs from a single country (the US BEA's financial and operating statistics for US MNEs are a prime example). However, the results of this study provide actually some hope in this area. First of all, the results of this study can serve as a background against which to assess the generalizeability of the conclusions of future studies based on the operations of MNEs of one particular nationality.

A second argument is primarily related to the US MNE operating statistics. On the one hand, the results of this study that US FDI behaves very similarly to total FDI can indeed imply that the 'total' effect of FDI is in fact a 'US' effect, and that therefore an analysis of the impact of MNEs for individual investor countries is more appropriate. However, it could also imply that US FDI can serve as a good proxy for total FDI. Along this line of argument, when cross-national variation is partly determined by sector specialization, it could also be tested using within-US sector peculiarities. In this way, further exploration of the available US statistics could shed further light on the impact of FDI. In terms of future research strategies, probably both approaches have their merits and could be pursued concurrently. Such research becomes all the more relevant given large and increasing role of MNEs in developing countries.



# 7 MULTINATIONALS AND EMPLOYMENT: INWARD AND OUTWARD EFFECTS IN THE NETHERLANDS<sup>2</sup>

## 7.1 INTRODUCTION

The role of FDI in fostering development in host countries – both developed and developing – has already received considerable research attention (see reviews by Caves, 1996; Meyer, 2004). Especially the economic effects of MNE activity – their contribution to productivity and economic growth – have been studied extensively (see for some recent contributions e.g. Javorcik (2004) and Alfaro and Rodríguez-Clare (2004)). However, also the social consequences of MNE investments and the effects of FDI on employment are increasingly recognized as important and are consequently addressed (Görg, 2000; Lipsey and Sjöholm, 2004). At first sight, MNEs do not play a large role in absolute employment. The latest UNCTAD World Investment Report (2006) estimates suggest that worldwide only 62 million workers (or 2 percent of a total global workforce of 3.75 billion, see ILO, 2007) are directly employed by foreign affiliates. However, MNEs do have the possibility to create ‘high quality’ jobs, given their size (and associated need for managerial capacity) and level of technology. In addition, their indirect (multiplier) employment effects may be substantial, due to linkages with local suppliers and buyers (Bloom, 1992; Pack, 1997; UNCTAD, 1999). For example, British Telecom (2004: 22) calculated its direct and indirect contribution to British employment and concluded that it supported ‘almost 1.7 percent of all employment in the UK’. And Coca-Cola (2004: 16) claims that ‘the Coca-Cola system’ is ‘Africa’s largest private sector employer’, with ‘nearly 60.000 employees’ (see also chapter 8).

In particular the wages paid by MNEs to their employees are considered to be an important way in which they may contribute to the social dimensions of what is called sustainable development – meeting the needs of the present generation without compromising the ability of the future generations to meet their needs (WCED, 1987:43). Indeed, most empirical studies have now established that MNEs pay higher wages than domestic firms, not only in developing but also in developed countries (Görg, 2000; Lipsey and Sjöholm, 2004; Caves, 1996), although the distributional effects of such premiums – that are often substantially higher for high-skilled-labour – are sometimes questioned (ODI, 2002; Lipsey and Sjöholm, 2004; Aitken *et al.*, 1996). But the potential impact of MNE activity on other dimensions of employment has caused greater debate. For example, issues including labour rights (unionization), health and safety, and other labour conditions (equal opportunity, training) that are important for both developed and developing countries may be either positively or negatively affected by FDI. In addition,

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<sup>2</sup> With many thanks to Kea Tijdens for making available the Wage Indicator dataset.

a great concern in many developed countries has been the export of jobs to low-wage countries (offshoring), thereby increasing unemployment for in particular lower-skilled employees (Agarwal, 1997).

Even though several studies have addressed the employment consequences of either outward FDI (Harrison and McMillan, 2006; Mariotti *et al.*, 2003) or inward FDI (Radosevic *et al.*, 2003; Neumeyer and De Soysa, 2005), much room for additional research exists. While substantial research exists that deal with the effect of inward FDI on wages, evidence on its consequences for labour conditions is still only limitedly available and far from conclusive – partly also due to the multitude of dimensions of labour conditions and employment practices. And with respect to the employment effects of outward investment, research has been dominated by the US context, while studies on the larger European countries have only recently emerged. Finally, very few papers have addressed the consequences of inward and outward FDI simultaneously.

This paper contributes to the literature on the employment effects of MNEs by studying the consequences of both inward and outward investment for a wide range of indicators related to wages and labour conditions in a small, open and developed country that is home as well as host to a large number of MNEs: the Netherlands. The Netherlands provides a unique context given its substantial share in worldwide FDI (as 7th largest recipient of FDI and 5th largest outward foreign investor), and the importance of both inward and outward FDI for the Dutch economy (respectively, 74 percent and 102 percent of GDP (UNCTAD, 2006)). This open character makes the Netherlands a unique context to test the domestic effects of (further) globalization. Other countries that move toward increased openness may learn from the experiences of successful ‘small’ and open economies like the Netherlands (other examples are Belgium, Canada, Sweden and Switzerland). Being both home and host to a large number of MNEs has important implications for industrial relations and policy making (cf. Van Tulder, 1998; Van den Bulcke and Verbeke, 2001).

A further contribution of this paper lies in the use of a unique employee level dataset that includes detailed information on more than 60,000 Dutch employees in the private sector between 2004 and 2006. It is possible to explore to what extent the wages and employment conditions of an employee are influenced by working for a foreign or a Dutch multinational vis-à-vis a domestic firm, while controlling for a wide range of personal (such as education and experience), firm (such as size, and country of origin), and industry characteristics (such as the extent of foreign ownership in the industry and in related industries). This dataset allows for a study of both the direct effects of MNEs (broken down by country of origin of the MNE), as well as the horizontal and vertical spillovers from FDI, for a large set of dependent variables that cover virtually all elements of ‘good’ employment: wages, but also the nature of employment contracts and hours, the provision of training, equal opportunity for women, perceived job stress, health and safety on the work floor, industrial relations, and overall job satisfaction.

This chapter is organized as follows. First, in section 7.2, the existing literature regarding the employment effects of inward and outward the FDI is reviewed. This literature review results in a set of research questions that will guide the empirical analysis. Section

7.3 describes in detail the nature of the dataset and the variables used to answer these questions, and outlines the approach to estimating the various regression equations. The result of the analyses is presented in section 7.4, while section 7.5 concludes.

## **7.2 THEORY: CONSEQUENCES OF INWARD AND OUTWARD FDI FOR EMPLOYEES**

The literature on the effects of inward and outward FDI for employment, labour conditions and wages can be divided into two main research streams: studies on the wage and employment effects of inward investment, and studies on the wage and employment effects of outward investment. The first can again be sub-divided into the direct effects of working for an MNE, and the indirect effects of inward investment on wages and labour conditions. As reviewed below, a substantial amount of literature has emerged that addresses these issues. But as much uncertainty still remains with respect to the multifaceted employment effects of FDI, and since some dimensions have only received scant attention, the present review of the literature results in open-ended research questions rather than strict hypotheses on the presence or absence of certain relationships. These research questions will be addressed in the empirical section of this chapter.

### **Inward investment**

Inward investment may affect employment in host countries in a variety of ways. First of all, in setting up affiliates in host countries and hiring workers, MNEs directly affect employment, wages, and the labour conditions of their employees in these countries. Empirically, the studies on the effects of inward investment have generally indicated that foreign firms indeed create direct employment (see for some recent contributions e.g. Driffield, 1999; Fu and Balasubramanyam, 2005; Görg, 2000; Radosevic *et al.*, 2003). However, it has also been argued that their use of relatively (to local standards) capital intensive technology reduces their possible effect on employment (Lall, 1995), and that greenfield investments have more positive effects than acquisitions (Williams, 2003). MNE affiliates pay on average higher wages than local firms in developing countries (Caves, 1996). For example, even correcting for the relatively higher skilled workers that are hired by foreign firms, foreign firms paid higher wages in Indonesia than local firms (Lipsev and Sjöholm, 2004). Inward FDI has been found to also positively affect wages in developed countries including the UK (Taylor and Driffield, 2005), Ireland (Barry *et al.*, 2005) and the US (e.g. Figlio and Blonigen (2000) for South Carolina). Higher wages may be simply triggered by the fact that foreign firms are more productive due to their firm specific ownership advantages (Caves, 1996; Dunning, 1988). Another reason has been to keep employees from switching jobs to domestically owned competitors or to set up their own businesses (Globerman *et al.*, 1994). This 'labour migration' is an important channel through which technology transfer from MNEs to local firms may occur, especially if workers also receive extensive training (Bloom, 1992; Pack, 1997; UNCTAD, 1999; Fosfuri *et al.*, 2001).

A recent line of research has emerged into the role of FDI in changing the 'relative wage'. The relative wage is the ratio of skilled versus non-skilled wage, and may serve as a proxy for overall income inequality. While Das (2002) built a theoretical model that predicts that FDI can decrease the relative wage (and hence wage inequality), most other models (e.g. Wu, 2000) assume that foreign firms hire relatively high skilled labour, making it scarcer and therefore increase wage inequality. Feenstra and Hanson (1997) found strong empirical evidence for the Mexican maquiladoras that FDI increased the relative wage of high skilled workers (and thus wage inequality), especially in relatively skill-intensive industries. Te Velde and Morrissay (2002) reported only weak evidence that FDI reduced wage inequality in five East Asian countries over the 1985-1998 period, while in Thailand, wage inequality increased. Furthermore, in a different paper for African countries, Te Velde and Morrissay (2001) established that foreign ownership is associated with increases in wages and that there is a tendency for more skilled workers to benefit more from FDI (thereby increasing inequality). There is other evidence as well that although MNEs pay higher wages overall, skilled employees benefit more (ODI, 2002; Lipsey and Sjöholm, 2004; Aitken *et al.* 1996).

In addition to introducing higher wages, MNEs can also be important international diffusers of other employment practices, which are often distinctly home-country specific, due to embeddedness of MNEs in the business system of their country of origin (Ferner, 1997). MNEs may hence differ importantly in their employment practices and may challenge national systems of labour relations in host countries (Muller-Camen *et al.*, 2001). For example, US firms have been less inclined to participate in the European collective labour bargaining practices, while Japanese firms have often implemented 'lean production' and associated employment practices in their subsidiaries (Edwards, 2000). It could be expected that while working for a foreign firm has certain advantages over domestic firms, this effect may differ as to the country of origin of a firm. However, to what extent foreign ownership, and the country of origin of such foreign firms, affects the broad range of labour conditions (in addition to wages) is unknown. Hence we ask:

*RQ1: Do wages and employment conditions differ between employees of domestic firms and employees of foreign firms, and do these differences vary by the level of education of an employee?*

*RQ2: Do wages and employment conditions of employees of foreign firms vary according to the country of origin of an MNE?*

But besides these direct effects for employment by MNEs, it is particularly the indirect effects, or spillovers towards local firms, that constitute the prime means through which FDI may contribute to employment. Such indirect effects occur vertically, via linkages with local suppliers and buyers (Javorcik, 2004), as higher demand may increase employment at suppliers, while better intermediate products may allow buyers to grow as well. Indirect effects also occur horizontally, within the same industry in the form of changes in local market structure and competition (Kokko, 1996). On the one hand, FDI may out-compete local firms, with (at least in the short term) negative effects for employment. On the other hand, FDI is a reflection of corporate ownership advantages

with respect to capital, technology and skills that allow firms to overcome the liability of foreignness and to combine their advantages with those specific to the host country to create added value (Braconier and Ekholm, 2001; Rugman and Verbeke, 1992). Part of those technological and knowledge advantages may transfer – intended or unintended – to local firms (Baldwin *et al.*, 1999) which allows these firms to become more productive and competitive. Empirically, the studies on the effects of inward investment have generally indicated that foreign firms have indeed important indirect employment effects (see for some recent contributions e.g. Driffield, 1999; Fu and Balasubramanyam, 2005; Görg, 2000; Radosevic *et al.*, 2003).

While the indirect effect of FDI on employment and wages has received substantial attention, relatively little information is available on the indirect effects of FDI on employment conditions and labour conditions. For developing countries, the debate on labour conditions has centred on policy competition for FDI, which would tempt governments to be less vigilant in enforcing their national laws that promote (core) labour standards. In some cases, less stringent legislation is in place in export processing zones – specific geographical areas set up by governments to increase local employment, where labour-intensive, low value-added work is undertaken, mostly by MNEs interested in exploiting low-cost labour for assembly type operations in for example clothes and electronics (McIntyre *et al.* 1996). Overall, there is little evidence to suggest that there is a ‘race to the bottom’, whereby developing countries lower their labour standards to attract FDI (OECD, 1998), and MNEs themselves also do not generally appear to be strongly attracted to countries for low labour costs or conditions alone (Neumeyer and de Soysa, 2005; Kucera, 2002). But how FDI may indirectly affect the employment conditions and wages of employees at domestic firms in developed countries remains an empirical question. The following research question is therefore identified:

*RQ3: Do the wages and employment condition of employees of domestic firms vary by the extent of inward FDI in their industry and in related (upstream and downstream) industries, and do these differences vary by the level of education of an employee?*

### **Outward investment**

Studies of the effects of outward investment from developed towards developing countries on the domestic labour market often address the issue of offshoring: jobs are relocated from developed country factories to plants in a developing country, which given the relative immobility of labour results in increased unemployment in the developed country, primarily among those with lower skill-levels. This outsourcing effect for home country labour markets has generated widespread concerns, even though labour cost are often not considered to be an important determinant of FDI in general (Kucera, 2002). For example, Zimmerman (1991) indicated that these concerns have even ensured that OPIC (the US investment guarantee scheme) is prohibited from supporting investors in countries that fail to take steps to adopt and implement internationally recognized worker rights.



Most research that addresses the effect of international outsourcing on home country employment builds on traditional trade models, with relatively little attention for the impact of FDI (as noted by e.g. Egger (2002) and Zhao (1998)). Yet, arguments both in favour of a 'substitution' and a 'complementation' effect (of home and host country employment) have been made (Agarwal, 1997; Baldwin, 1995). On the one hand, outward FDI may decrease employment if it substitutes for exports (i.e., if goods that were previously produced in the home country for foreign markets are produced in the foreign markets) or if intra-firm imports increase (products are imported from abroad instead of domestically manufactured). On the other hand, outward FDI may increase domestic employment if it is paired with increased domestically produced exports of intermediate products and capital goods (machinery) to the new foreign ventures. Similarly, outward FDI may result in greater demand for managerial capacity and other high-skilled functions to coordinate the new foreign venture from headquarters. Bruno and Falzoni (2003) suggest that the complementarity and substitutability effect of outward vertical FDI for home country employment may also change over time: after initial substitution effects, corporate growth creates additional employment.

A range of studies has empirically addressed the question whether or not outward FDI has detrimental effects for domestic employment and wages. Many studies focus on a single home country, often the US (Egger and Egger, 2003). For example, Feenstra and Hanson (1995) established that the outsourcing of production activities was an important contributing factor to the reduction in the relative employment and wages of unskilled workers in the US during the 1980s. More recently, Harrison and McMillan (2006) also found that the claim of the globalizations critics that MNEs shift employment abroad is generally substantiated. They do, however, highlight that this effect depends on the country of destination of outward investment: investments in low income countries are substitutes, in high income countries complements to US investment.

Others have focused on European countries, such as the UK (Heise *et al.*, 2000); Italy (Mariotti *et al.*, 2003); Sweden (Blomström *et al.*, 1997) and Austria (Egger and Egger, 2003), or Asian countries like South Korea (Debaere *et al.*, 2006). These studies reported very similar results as those for the US: labour intensity, employment and employment growth in the home country are negatively affected by outward FDI, particularly and predominantly in case of vertical investments to less developed countries, and for low-skilled labour. The effect also holds in cross-national studies: Gopinath and Chen (2003) found that international investments result in a convergence of wages across countries, implying a reduction in developed country wages. Braconier and Ekholm (2001), analysing Swedish FDI into Eastern Europe, suggest that this outsourcing effect may not only affect home country employment, but may have even stronger repercussions for other relatively low wage countries (like Portugal and Spain) that are replaced by new locations.

Outward FDI may not only result in lower wages and unemployment. Increased pressure on home country employees – either through intra-firm imports or by export substitution – to match the labour costs of foreign employees may also negatively affect labour conditions, including appropriate health and safety provisions, training, equal opportunity

for men and women, and industrial relations. These issues have received less attention in the traditional economic (trade) models of employment and wages. Yet, they have received (some) attention in the literature on industrial relations (Edwards, 2000; Muller-Camen *et al.*, 2001; Ruigrok and Van Tulder, 1995), and (international) human resource management (e.g. Ferner, 1997; Muller, 1998). These studies generally confirm that outward investment reduces labour conditions, especially for low-skilled labour. The research questions that follows from this overview is:

*RQ4. Do the wages and employment conditions of employees vary by the extent of outward investment in their industry and in related (upstream or downstream) industries, and do these differences vary by the level of education of an employee?*

### **7.3 DATA AND METHODOLOGY**

#### **Sample selection**

The main source of data for this study is the dataset generated by the Wage Indicator Project (see Box 7.1). This dataset contains 102,373 questionnaires that were filled out (online) in the Netherlands between 1 September 2004 and 31 August 2006, and that addressed a variety of employment-related issues such as employment terms and conditions (including pay), contracts, work-life balance, employee demographics, organizational characteristics, and perceived job quality and satisfaction.

#### **Box 7.1 The Wage Indicator Project**

The Wage Indicator is an online instrument that consists of 1) a ‘Salary Checker’ that enables employees to compare their salary with the average salary of their professional peer group, and 2) an extensive wage and working conditions survey, the results of which are used as input for the Salary Checker and for research purposes, e.g. this paper. The questionnaire includes questions on occupation, education place of work, employment history, working hours, contract, salary, and personal characteristics.

The Wage Indicator is essentially an online research system that was first launched in the Netherlands in 2001, and it is currently online in 10 other EU member states, the US, and six developing countries (Brazil, India, South Africa, Korea, Argentina and Mexico). The Wage indicator has proven to be a viable concept that attracts large numbers of web visitors and completed questionnaires. In addition to being a research tool, the Wage Indicator is also an instrument that aims to empower individual workers and trade unions by increasing the transparency of the labour market and by providing insights into how wages, terms of employment and working conditions are structured across occupations, industries, regions and companies.

The project is managed by the Wage Indicator Foundation, which is a non-profit coalition of researchers (mainly from AIAS, the University of Amsterdam Institute for Labour Studies), trade unions, and web journalists. Each participating country has a similar foundation that brings these three groups together.

See also Tjildens (2004) and [www.wageindicator.org](http://www.wageindicator.org).

For the analysis in this paper, we first removed respondents that were not in the private sector, but instead worked in public healthcare, education, for the government, or for foundations and non-profit organizations. This reduced the sample with 28,487 respondents to 73,886 remaining observations. Of this set, we removed those that were not employed (which included in addition to the 'real' unemployed, also people in apprenticeships or internships, full time university students with small jobs, and self-employed persons). Finally, removing all people younger than 18 years left us with a sample of 62,670 employees, on which the subsequent analysis is based. This set of employees represents 0.76 percent of the total Dutch work force (of 8.2 million) and 1.02 percent of the total Dutch work force excluding government and non-profit workers. The distribution of the sample across sectors of activity matches that of the total number of Dutch employees (see Annex), indicating that the sample is representative for the entire Dutch population. More men than women completed the survey (59 percent of respondents is male); the average respondent was 35 years old ( $\sigma = 10$  years).

### **Independent Variables**

Three main sets of independent variables are identified: personal characteristics (as control variables), firm characteristics, and industry characteristics.

#### *Personal Characteristics*

Four different variables are defined to measure individual differences in working conditions and pay: education, managerial position, experience, and gender. We expect that a higher education, a managerial position, extensive experience, and being male positively influence wages. The effect of these variables on other dimensions of employment conditions is less certain.

An employee's level of education is measured by his or her ISCED education level (ISCED). Having a managerial position is measured with two variables, that indicate whether someone holds a supervisory position (Supervisor), and how many people are supervised (nrSup). The variable experience (Experience) combines three variables: total work experience (excluding longer periods of unemployment), work experience at the current employer, and age. The variable is measured by the factor scores resulting from a factor analysis that indicated that the three variables loaded on a single factor (Eigenvalue = 2.52; 84 percent of variance explained, Cronbach's alpha = 0.87). Finally, gender (Gender) is measured by a dummy variable indicating if the respondent is male (0) or female (1).

#### *Firm characteristics*

Wages and labour conditions may also be dependent upon the type of firm for which an employee works. Larger firms are generally more productive due to economies of scale. In addition they have relatively more supervisory personnel. Both would suggest that larger firms pay more, and may also have more favourable other working conditions. Firm size (Size) is measured by the number of employees of firm within the Netherlands

(i.e., including all branches). For those companies with only one branch, the number of employees at the locality is taken.

In addition, whether or not a firm is active internationally may have important effects for its pay and employment practices, as discussed in detail in the theoretical section above. To assess this effect, a categorical variable (Type) is created that measures if a firm is 1) entirely domestic, 2) a Dutch MNE 3) a foreign MNE, or 4) partly Dutch, partly foreign owned. This categorization was based on a question inquiring after the presence of foreign branches, and another one regarding on the nationality of ownership of the firm. The frequencies for this categorical variable Type are displayed in table 6.1. A slightly modified variable (TypeCOO) is also created where the fully foreign owned establishments are further specified according to their country of origin, with a focus on the major investing countries in the Netherlands (the US, the UK, France, Germany, and Japan) that each employed a substantial number of employees. Of the nearly 11,000 employees in our sample that worked for a foreign MNE, 3,000 worked for American firms, and nearly 1,500 each for German, British and French firms. A final 400 people worked for Japanese firms. Although that is substantially less than for the other selected countries (and also less than firms from Belgium, which employ 650 employees in our sample but was not indicated as a separate category), employees working for Japanese firms still constitute a substantial group of workers, and given the important institutional and cultural differences with Japan, it may be expected that differences between Japanese and other firms may be substantial and enlightening. The remaining employees of foreign MNEs (3,000 in our sample) were grouped as ‘other’.

**Table 7.1 Number of observations in sample by firm type**

Type	# employees	% of sample
Purely Domestic	37006	59.0
Dutch MNE	9580	15.3
Foreign MNE	10819	17.3
Partial Foreign	3295	5.3
Missing	1970	3.1
Total	62670	100.0

#### *Industry characteristics*

The questionnaire included questions regarding the sector of activity of the firm for which an employee was working. The sector codes used match those used by the EU and the Netherlands statistics office (all report NACE, aggregation level 2), which makes it possible to link the individual wage data with the overall extent of foreign ownership of a sector and of related sectors using data published by Eurostat on foreign direct investment, and Statistics Netherlands on GDP and input-output tables. The latest available data were used, for the year 2003, creating a 1 to 3 year time-lag between our independent industry level FDI variables and our dependent variables. The following variables were defined: inward FDI/GDP ratio per sector ( $FDI_{in}$ ); outward FDI/GDP ratio per sector ( $FDI_{out}$ ); the weighted average of inward foreign ownership of upstream sectors ( $FDI_{up_{in}}$ ); the weighted average of outward foreign ownership of upstream sectors

(FDI<sub>up<sub>out</sub></sub>); the weighted average of inward foreign ownership of downstream sectors (FDI<sub>down<sub>in</sub></sub>) and the weighted average of outward foreign ownership of downstream sectors (FDI<sub>down<sub>out</sub></sub>). The latter four variables aim to measure the indirect effects of MNEs via forward and backward linkages for employment. Although estimating the indirect effects of MNE activities via linkages is difficult (see Görg, 2000), the approach we take is commonly used in the literature (see also Javorcik, 2004).

The four latter indicators of upstream (downstream) inward (outward) FDI are calculated as a weighted average of FDI in all upstream (downstream) sectors from which firms in a particular sector source their inputs (sell outputs), where the weights are based on the shares of the inputs (outputs) of a particular upstream (downstream) sector in the total inputs (outputs) of a particular sector:

$$FDI(up)_i = \sum \frac{FDI_j * Input_{ij}}{Input_i}$$

Where FDI in the upstream (downstream) sectors for sector *i* is measured by multiplying the FDI/GDP ratio (FDI) for upstream (downstream) sector *j* with the input (output) from sector *j* used by sector *i*, divided by the total amount of input (output) used by sector *i*.

The descriptive statistics for these personal, firm level and industry level variables, including their measurement scales, are summarized in table 7.2.

**Table 7.2 Descriptive statistics**

Variable	Measurement	n	m	sd.
ISCED	ISCED level of education: 0 (none) – 6 (upper-tertiary)	62451	3.79	1.20
Supervisor	Supervisor: 0 (no), 1 (yes)	56303	.49	.50
nrSup	Number of people supervised	56303	7.24	88.42
Experience	Factor scores of three Experience variables	62599	.00	1.00
Gender	0 (male), 1 (female)	62600	.41	.49
Size	Firm size: 1(1-10) – 10(5000 or more) employees	62549	4.71	2.88
FDI <sub>in</sub>	Inward FDI stock/GDP per sector	60620	101.35	87.57
FDI <sub>out</sub>	Outward FDI stock/GDP per sector	60620	99.28	110.09
FDI <sub>up<sub>in</sub></sub>	Weighted average Inward FDI in upstream sectors	60620	65.66	30.01
FDI <sub>up<sub>out</sub></sub>	Weighted average Outward FDI in upstream sectors	60620	96.52	40.21
FDI <sub>down<sub>in</sub></sub>	Weighted average Inward FDI in downstream sectors	60620	38.43	40.45
FDI <sub>down<sub>out</sub></sub>	Weighted average Outward FDI in downstream sectors	60620	50.16	49.60

### Dependent variables

In addition to the three sets of independent variables, also several sets of dependent variables are selected: wages, job quality, job satisfaction, and as a final and slightly different group of variables, organizational change.

#### *Wages*

One of the key dependent variables in analysing the effect of investments by MNEs – either inward or outward – is wages. We defined two separate variables for wages: first

of all, hourly gross wages in Euros (Wages), and secondly, the extent of overtime compensation (OverPay), which is measured by an ordinal variable that indicates that overtime is either uncompensated (0), compensated as normal hours or by free time (1), or extra compensated (2).

### *Job quality*

In addition to the effect of inward and outward FDI for wages, their effect on the quality of jobs is also important. A total of seven different quality measures are identified: health and safety; working hours; training; equal opportunity; industrial relations; and underemployment. The majority of the job quality indicators (health and safety, working hours, equal opportunity and industrial relations) are based on the core labour standards identified by the ILO. Training and underemployment are important indicators of investments (or not) in human capital.

Health and safety (Safety) is measured by asking the respondents how often they work in a) dangerous, and b) unhealthy conditions; subsequently taking the highest value of these two strongly correlated variables ( $r = 0.45$ ,  $p < 0.000$ ). Working hours are measured by the number of working hours of a regular work week (Hours); and by two binary variables indicating if overtime is normal at the workplace (Overtime), and if an employee had to work irregular working hours or in shifts (Irreg\_hours). The variable training (Training) measured the amount (i.e., time) of training received from the employer in the year preceding the filling out of the questionnaire, whereas another question explores whether or not there is equal opportunity in the workplace (EqualOpp).

Several variables measure the nature of industrial relations: 1), whether employees feel that they are informed about what is going on in the work place (Informed); 2) whether there is a collective employment agreement in the organization (CAO); 3) whether the organization has a works council (WorksCouncil), and 4) if the employee is a member of a trade union (TUmember).

The final variable that is included involves underemployment (Underemploy), which measures if a job matches the level of education (i.e., an employee can be over- or under-qualified). With a dataset focusing on measures that relate to employed people only, this is probably the best proxy to assess the effects of MNE investment on total employment (and unemployment). Unemployment or the threat of unemployment may provide strong incentives for people to take jobs below their level of education (and hence result in overqualification).

### *Job satisfaction*

Three perceptual measures of job quality are included, exploring to what extent employees consider their job stressful, challenging, and satisfying in general. Job stress (Stress) was calculated by six variables that measured on 1-5 point scales if a job was perceived stressful, how often there was no lunch break, how often there was unexpected overtime, how often an employee had to work at very high speed, had to work to tight deadlines, and the sufficiency of staffing levels. Factor analysis indicated all six load on one factor, that explains 46.2 percent of total variance (Eigenvalue=2.8, Cronbach's

alpha = 0.76). The simple average of the six variables was taken for those observations for which data on at least 4 out of 6 values was available.

Whether a job was considered as challenging and diverse (Challenging), was calculated by four variables that on a 1-5 point scale indicated if a job is sufficiently varied; monotonous; boring; or had become more interesting over the past year. The four variables (boring and monotonous on reversed scales) load on a single factor (54.0 percent of variance explained, Eigen-value 2.2, Cronbach's alpha = 0.71). The simple average of the six variables was taken for those observations for which data on at least 2 out of 4 values was available.

Finally, overall job satisfaction (Satisfaction) was based on 6 items that inquired into the satisfaction of the respondent with the support of their supervisor, the organization of work in their organization, their job in general, wages, leisure time, and life in general. All variables were measured on a 1-5 point scale (except satisfaction with life in general, which was measured on a 10-point scale and hence first divided by two). All variables loaded on one factor (41.0 percent of variance explained, Eigen-value 2.45, Cronbach's alpha = 0.70). The average of the variables was taken, for those observations for which data on at least 4 out of 6 values was available.

**Table 7.3 Descriptive statistics**

Variable	Measurement	n	m	sd
Wage	Hourly gross wage in €	60518	15.48	10.62
OverPay	Overtime compensation: 0 (none) – 1 (normal) – 2 (extra)	47002	0.81	0.59
Safety	Works in unhealthy/dangerous conditions: 1 (never) – 5 (daily)	57584	2.57	1.29
Hours	Regular number of working hours per week	62040	38.46	7.46
Overtime	Overtime is quite normal at workplace: 0 (no) – 1 (yes)	56571	0.57	0.50
Irreg_hours	works shifts or irregular hours: 0 (no) – 1 (yes)	53717	0.22	0.42
Training	Training from employer last year: 0 (none) – 6 (more than 2 months )	57470	1.35	1.56
EqualOpp	Equal opportunity in workplace: 1 (wholly disagree) – 5 (wholly agree)	51772	3.57	1.29
Informed	Informed on what's going on: 1 (wholly disagree) – 5 (wholly agree)	55784	3.37	1.21
CAO	Is in organisation collective agreement: 0 (no) – 1 (yes)	56652	0.73	0.45
WorksCouncil	In workplace works council: 0 (no) – 1 (yes)	55116	0.52	0.50
Tumember	Member of a trade union: 0 (no) – 1 (yes)	49507	0.24	0.43
Underemploy	Job matches education: 0 (under qualified) – 2 (overqualified)	54286	1.05	0.58
Stress	1 (low) – 5 (high)	55023	3.10	0.80
Challenging	1 (low) – 5 (high)	56714	3.66	0.89
Satisfaction	1 (low) – 5 (high)	59867	3.35	0.72
Merger	Organization faced merger: 0 (no) – 1 (yes)	54324	0.16	0.36
Bankruptcy	Organisation faced bankruptcy: 0 (no) – 1 (yes)	53155	0.09	0.29
dWorkforce	Last year workforce change: 1 (strong decrease) – 5 (strong increase)	55192	3.16	1.16

### Organizational Change

As final set of variables, three indicators of organizational change were included. These variables were included as they could yield important information on the indirect, competitive effect of MNE entry on employment. Respondents were asked whether the organization they work for, has recently faced a merger (Merger) or were threatened with bankruptcy (Bankruptcy). Mergers may be a way for domestic firms to deal with the entry of larger foreign firms, whereas the threat of bankruptcy is a clear indication that the domestic firms are not performing well, potentially due to competition from foreign entrants. An additional variable measures whether the organization has experienced workforce change (dWorkforce), either an increase or decline.

The descriptive statistics for these four sets of dependent variables, including their measurement scales, may be found in table 7.3.

### Estimation

The empirical findings consist of several parts. First of all, the direct effects of working for an MNE are explored, by assessing to what extent pay and job quality in foreign MNEs, Dutch MNE, and partly foreign owned ventures differ from domestic firms. A distinction is further made with respect to the country of origin of the MNE. Second, the indirect inward effects of FDI for employment are explored, by examining the effect of horizontal spillovers and vertical linkages that result from inward investment. These indirect effects are measured by comparing employees that work for domestic firms in sectors that are highly penetrated by foreign firms and sectors that receive relatively little FDI. As a third and final step, we explore similar indirect effects for outward investors. The literature review showed that the effects of inward and outward FDI may be particularly different for low versus high skilled labour. We explore this effect by incorporating an interaction effect between inward (outward) FDI and the level of education. Hence, the following regression models were estimated:

$$Employ = \alpha_i + \beta_1 ISCED + \beta_2 Supervisor + \beta_3 nrSup + \beta_4 Experience + \beta_5 Gender + \beta_6 Size + \beta_7^{1-3} Type + \beta_8^{1-3} Type \times ISCED + \varepsilon \quad [1]$$

$$Employ = \alpha_i + \beta_1 ISCED + \beta_2 Supervisor + \beta_3 nrSup + \beta_4 Experience + \beta_5 Gender + \beta_6 Size + \beta_9^{1-8} TypeCOO + \beta_{10}^{1-8} TypeCOO \times ISCED + \varepsilon \quad [2]$$

$$Employ = \alpha_i + \beta_1 ISCED + \beta_2 Supervisor + \beta_3 nrSup + \beta_4 Experience + \beta_5 Gender + \beta_6 Size + \beta_{11} FDI_m + \beta_{12} FDI\_up_m + \beta_{13} FDI\_down_m + \beta_{14} FDI_m \times ISCED + \beta_{15} FDI\_up_m \times ISCED + \beta_{16} FDI\_down_m \times ISCED + \varepsilon \quad [3]$$

Where ‘Employ’ could be any of the dependent variables specified above (wages, quality, satisfaction, and for equation (3), also organizational change), and the subscript i designates sector specific intercepts (a total of 51 sectors are distinguished at NACE level 2). The subscript m for the FDI variables can be either inward (in) or outward (out) FDI.



Given the binary nature of some of the dependent variables, this linear model was replaced by a probit regression model when appropriate.

Heteroskedasticity tests (Breusch-Pagan, wages as dependent variable) showed that heteroskedasticity was a problem ( $\chi^2_{6618}$ ,  $p < 0.001$ ), hence we report robust standard errors. A second potential issue is endogeneity due to reversed causality: FDI is more likely to be attracted by high productivity (and hence high-wage) sectors. We generated a variable of average wages per sector (at NACE 3 level) and used it as instrument for inward FDI. Hausman tests of endogeneity showed that there was indeed endogeneity ( $\chi^2_{17} = 456$ ,  $p < 0.001$ ). The instrument had a t-value of 145 in the first stage regression. We kept this instrument also in the regressions with other dependent variables, as high wages and good labour conditions likely go hand in hand. Despite the statistical evidence of endogeneity, correcting for it does not qualitatively change the results; hence the uncorrected models (that are more efficient) are reported. As illustration, we report the IV regressions for wages (the dependent variable for which endogeneity due to reverse causality is most likely to occur).

## **7.4 RESULTS**

As a first exploration of the data, table 7.4 below gives the correlation coefficients of all dependent and dependent variables. Due to the high number of observations, even relatively small correlations become significant. In absolute terms, most correlations are not very high, with the exception of the industry level FDI variables: both inward and outward FDI are highly correlated, and due to the same sector structure, inward and outward backward FDI, and inward and outward forward FDI, are even higher correlated. Including both dimensions in the same regression equation resulted in high multicollinearity (VIFs above 50), making it difficult to disentangle individual effects. We therefore choose to split the analysis into two groups: first for inward, and then for outward FDI. This solved the collinearity problem: in all regression models reported below, VIF statistics are well below the thresholds (below 5) above which interpretation difficulties may start to occur.

**Table 7.4 Correlation coefficients**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) ISCED	1.00									
(2) Supervisor	0.06†	1.00								
(3) nrSup	0.03†	0.08†	1.00							
(4) Experience	-0.23†	0.18†	0.05†	1.00						
(5) Gender	0.03†	-0.20†	-0.03†	-0.22†	1.00					
(6) Size	0.15†	0.01	0.05†	0.11†	-0.05†	1.00				
(7) FDI <sub>in</sub>	0.17†	-0.06†	0.00	0.03†	0.01	0.23†	1.00			
(8) FDI <sub>out</sub>	0.11†	-0.05†	0.00	0.06†	0.02†	0.22†	0.86†	1.00		
(9) FDI <sub>up<sub>in</sub></sub>	-0.02†	-0.04†	0.00	0.02†	0.09†	0.09†	0.22†	0.42†	1.00	
(10) FDI <sub>up<sub>out</sub></sub>	0.00	-0.05†	-0.01	0.02†	0.06†	0.09†	0.16†	0.37†	0.91†	1.00
(11) FDI <sub>down<sub>in</sub></sub>	0.00	-0.05†	-0.01	0.08†	-0.05†	0.04†	0.14†	0.18†	0.23†	0.19†
(12) FDI <sub>down<sub>out</sub></sub>	0.01†	-0.06†	-0.01	0.07†	-0.04†	0.05†	0.15†	0.19†	0.23†	0.21†
(13) Wage	0.19†	0.19†	0.10†	0.25†	-0.19†	0.17†	0.13†	0.12†	0.02†	0.03†
(14) OverPay	-0.25†	-0.10†	-0.02†	0.04†	0.00	0.03†	-0.03†	-0.01†	0.01	0.00
(15) Healt_danger	-0.16†	0.03†	-0.01	0.04†	-0.13†	-0.03†	-0.07†	-0.05†	-0.02†	-0.03†
(16) Hours	0.06†	0.10†	0.03†	0.01	-0.19†	-0.01	-0.02†	-0.03†	-0.06†	-0.04†
(17) Overtime	0.03†	0.12†	0.01†	-0.02†	-0.11†	0.01	-0.04†	-0.04†	-0.05†	-0.07†
(18) Irreg_hours	-0.21†	0.03†	0.00	0.02†	0.03†	0.10†	-0.06†	-0.02†	0.07†	-0.02†
(19) Training	0.15†	0.08†	0.03†	0.00	-0.11†	0.24†	0.12†	0.11†	0.06†	0.07†
(20) EqualOpp	0.06†	0.03†	0.01†	-0.08†	-0.04†	0.01	0.02†	0.01	0.02†	0.01
(21) Informed	0.04†	0.08†	0.04†	0.01	0.00	0.03†	0.02†	0.03†	0.03†	0.03†
(22) CAO	-0.18†	0.02†	0.00	0.11†	-0.06†	0.21†	-0.07†	0.01	0.09†	0.08†
(23) WorksCouncil	0.11†	-0.03†	0.03†	0.13†	-0.04†	0.62†	0.19†	0.19†	0.08†	0.09†
(24) Tumember	-0.16†	0.01	0.00	0.26†	-0.13†	0.04†	-0.04†	-0.02†	-0.01†	-0.01
(25) Underemploy	0.24†	-0.14†	-0.02†	-0.14†	0.09†	0.00	-0.02†	-0.01	0.01†	0.00
(26) Stress	0.09†	0.18†	0.02†	0.01	-0.08†	0.04†	-0.01†	-0.01	-0.03†	-0.04†
(27) Challenging	0.06†	0.17†	0.04†	0.09†	-0.08†	0.00	0.00	0.00	-0.01†	0.00
(28) Satisfaction	0.06†	0.06†	0.03†	0.03†	-0.02†	0.06†	0.05†	0.05†	0.04†	0.04†
(29) Merger	0.04†	-0.01	0.02†	0.05†	-0.02†	0.22†	0.08†	0.07†	0.04†	0.05†
(30) dWorkforce	0.06†	0.05†	0.01†	-0.11†	-0.06†	-0.05†	0.00	-0.02†	-0.03†	-0.01
(31) Bankruptcy	-0.02†	0.03†	0.00	0.03†	0.00	-0.09†	-0.03†	-0.03†	-0.05†	-0.06†

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(11) FDI <sub>down<sub>in</sub></sub>	1.00									
(12) FDI <sub>down<sub>out</sub></sub>	0.99†	1.00								
(13) Wage	0.05†	0.05†	1.00							
(14) OverPay	0.06†	0.06†	-0.18†	1.00						
(15) Healt_danger	0.03†	0.02†	-0.05†	0.11†	1.00					
(16) Hours	0.01	0.00	-0.05†	-0.08†	0.05†	1.00				
(17) Overtime	0.02†	0.01†	0.06†	-0.10†	0.12†	0.13†	1.00			
(18) Irreg_hours	-0.07†	-0.08†	-0.10†	0.22†	0.15†	-0.08†	0.03†	1.00		
(19) Training	0.05†	0.05†	0.13†	-0.03†	-0.03†	0.06†	0.04†	0.01	1.00	
(20) EqualOpp	-0.04†	-0.03†	0.02†	0.00	-0.16†	-0.02†	-0.03†	0.06†	0.06†	1.00
(21) Informed	-0.01	-0.01	0.08†	0.01	-0.18†	0.00	-0.03†	0.01	0.11†	0.32†
(22) CAO	0.05†	0.04†	-0.04†	0.18†	0.09†	-0.06†	-0.03†	0.20†	0.01	0.00

**Table 7.4 Correlation coefficients (ctd.)**

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(23) WorksCouncil	0.06†	0.06†	0.13†	0.07†	-0.04†	-0.03†	-0.03†	0.09†	0.23†	0.03†
(24) Tumember	0.03†	0.02†	0.02†	0.14†	0.13†	0.01	0.00	0.13†	0.00	-0.05†
(25) Underemploy	-0.02†	-0.02†	-0.10†	0.06†	0.06†	-0.05†	-0.04†	0.09†	-0.09†	-0.05†
(26) Stress	-0.02†	-0.02†	0.08†	-0.16†	0.24†	0.12†	0.37†	0.00	0.06†	-0.12†
(27) Challenging	0.00	0.00	0.13†	-0.04†	-0.18†	0.07†	0.07†	-0.09†	0.15†	0.18†
(28) Satisfaction	0.02†	0.02†	0.13†	0.04†	-0.25†	0.00	-0.08†	-0.02†	0.12†	0.31†
(29) Merger	0.03†	0.03†	0.06†	0.02†	0.01	0.00	0.00	0.01	0.10†	0.00
(30) dWorkforce	0.01†	0.01†	0.03†	0.00	-0.03†	0.06†	0.08†	-0.05†	0.05†	0.10†
(31) Bankruptcy	0.00	0.00	-0.02†	-0.03†	0.08†	0.00	0.03†	0.01	-0.07†	-0.05†

	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
(21) Informed	1.00									
(22) CAO	0.02†	1.00								
(23) WorksCouncil	0.08†	0.25†	1.00							
(24) Tumember	-0.04†	0.17†	0.09†	1.00						
(25) Underemploy	-0.10†	0.04†	-0.01†	0.00	1.00					
(26) Stress	-0.16†	-0.04†	0.01	0.03†	-0.07†	1.00				
(27) Challenging	0.31†	-0.02†	0.03†	-0.03†	-0.28†	-0.01	1.00			
(28) Satisfaction	0.52†	0.04†	0.10†	-0.04†	-0.14†	-0.29†	0.50†	1.00		
(29) Merger	-0.02†	0.05†	0.22†	0.04†	-0.02†	0.04†	-0.01	-0.01†	1.00	
(30) dWorkforce	0.13†	-0.10†	-0.08†	-0.07†	-0.05†	0.03†	0.16†	0.16†	-0.05†	1.00
(31) Bankruptcy	-0.12†	0.00	-0.05†	0.04†	0.00	0.08†	-0.07†	-0.15†	0.06†	-0.22†

† p&lt;0.01

**Direct effects of MNEs**

Table 7.5 and 7.6 report the first regression results, respectively for those models with an ordinal or continuous variable as dependent (OLS with heteroskedasticity corrected standard errors), and for those with a binary variable as dependent (probit regressions, also with heteroskedasticity corrected standard errors). The tables show to what extent working for an MNE is associated with higher wages and different employment conditions (Research Question 1), correcting for an employee's level of education, experience, managerial position, and gender, and the size of the firm for which an employee is active.

The tables show that working for an MNE is positively associated with wages and training, but is also paired with less compensation for overtime, more stress, longer working hours and greater perceived gender inequality, compared to fully domestically owned firms. Foreign MNEs are less likely to hire overqualified employees than domestic firms. The probit regressions further show that working for a foreign MNE is coupled with more overtime and shift work. The likelihood of a CAO is reduced at foreign MNEs, but the likelihood of the presence of a Works Council increases. Many of these effects can also be observed for Dutch MNEs – although often slightly smaller – and hence seem to be ‘MNE’ effects rather than ‘foreignness’ effects. But there are a few key differences. Employees working for a Dutch MNE see themselves as better informed

about what is going on in the organization (which may have to do with headquarter functions), find their jobs more challenging and are overall more satisfied than employees for purely domestic or foreign firms. Working for partially foreign firms has similar effects to those for foreign or Dutch MNEs, though they are often less strong. But joint ventures stand out because employees feel that there is more equal opportunity, and are more often member of a trade union.

The tables 7.5 and 7.6 also report the results of the interaction effects of the type of firm with the level of education of the employee. This allows a differentiation between high and low skilled labour with respect to the relationship between working for a foreign firm and labour. Confirming existing literature, we find that working for a foreign firm is paired with higher wages especially for high skilled workers. With respect to overtime compensation, its overall negative association with working for an MNE is particularly strong for high-skilled employees, whereas lower skilled employees get equally, if not more, overtime compensation compared to their colleagues working for domestic firms. Health and safety, stress, and working long working hours are however particularly problematic for unskilled workers at MNEs: higher educated employees work in safer conditions, do not experience more stress or work longer hours at MNEs than at domestic firms, whereas lower educated employees do. The greater extent of overtime work is however predominantly concentrated with high-skilled employees, whereas shift work is more common among lower-skilled employees at MNEs.

The tables also report several interesting findings with respect to the other independent variables. For example, highly educated people have higher wages but get less (extra) compensation for overtime. They tend to have jobs that are safer, but also more stressful. They make longer hours, but receive more training, enjoy greater equal opportunity, and are better informed about what is going on in the organization. Having a managerial/supervisory position has the expected effects of higher pay, more stress, longer working hours, and better information about what is going on in the organization. But the number of people supervised (i.e., the position on the corporate ladder) is less important: it has a positive effect on pay, working hours and information, but it does not affect the other variables. Despite continuing efforts to reduce the gap between male and female pay, women still earn lower wages on average. But they also have less dangerous or unhealthy jobs and experience less stress. Yet they also receive less training, perceive the equality of opportunity as less favourable than men do, and report to be less informed about what is going on at the workplace.

Table 7.5 Regression results

	Wage	OverPay	Health_danger	Stress	Hours	Training				
ISCED	1.61 ***	1.29 ***	-0.12 ***	-0.09 ***	-0.13 ***	0.04 ***	0.32 ***	0.30 ***	0.09 ***	0.08 ***
	37.65	26.13	-44.02	-30.57	-26.59	13.25	10.68	10.04	7.84	14.07
Supervisor	2.91 ***	2.91 ***	-0.10 ***	-0.10 ***	0.02 **	0.27 ***	0.27 ***	1.03 ***	1.03 ***	0.26 ***
	32.11	32.15	-16.95	-16.96	2.09	37.18	37.17	15.98	15.96	19.39
msSup (x 10 <sup>-4</sup> )	86.61 ***	86.43 ***	-0.56	-0.53	-1.06	0.03	0.03	15.31 ***	15.31 ***	1.97 **
	2.98	2.98	-1.24	-1.19	-1.32	0.06	0.05	2.64	2.64	2.15
Experience	2.10 ***	2.11 ***	-0.01 *	-0.01 **	-0.06 ***	-0.04 ***	-0.04 ***	-0.31 ***	-0.31 ***	-0.09 ***
	35.28	35.55	-1.91	-2.21	-8.53	-8.70	-8.69	-8.24	-8.23	-11.71
Gender	-2.74 ***	-2.72 ***	0.01 **	0.01 *	-0.26 ***	-0.10 ***	-0.10 ***	-2.44 ***	-2.44 ***	-0.33 ***
	-30.90	-30.73	2.14	1.91	-20.51	-20.57	-12.55	-35.49	-35.53	-22.69
Size	0.23 ***	0.23 ***	0.02 ***	0.02 ***	0.00 *	0.00	0.00	-0.10 ***	-0.10 ***	0.10 ***
	12.48	12.64	15.13	14.90	1.71	1.68	1.42	-7.95	-7.88	35.12
Dutch MNE	0.84 ***	-2.37 ***	-0.07 ***	0.16 ***	-0.04 **	0.16 ***	0.08 ***	0.10 ***	0.68 ***	1.50 ***
	6.18	-4.84	-8.44	5.76	-2.29	2.72	7.86	7.16	4.31	5.36
Foreign MNE	2.18 ***	-1.52 ***	-0.11 ***	0.13 ***	0.00	0.12 **	0.13 ***	0.11 ***	0.03	0.28 ***
	15.69	-3.37	-12.21	4.73	0.00	2.08	12.60	3.24	0.10	14.04
PartForeign	0.65 ***	-2.57 ***	-0.05 ***	0.04	0.02	-0.02	0.12 ***	0.08	-1.06 *	0.22 ***
	3.38	-3.96	-3.38	0.87	0.87	-0.27	7.53	1.51	2.66	6.94
ISCED_Dutch	0.83 ***	-0.06 ***	-0.05 ***	-0.06 ***	-0.05 ***	-0.05 ***	0.00	0.00	-0.21 **	0.04 **
	7.03	-8.77	-3.65	-3.65	-3.65	-3.65	-0.39	-0.39	-2.53	2.38
ISCED_Foreign	0.95 ***	-0.06 ***	-0.03 **	-0.06 ***	-0.03 **	-0.03 **	0.00	0.00	0.17 **	0.03
	8.50	-9.06	-2.27	-9.06	-2.27	-2.27	0.46	0.46	2.15	1.62
ISCED_PartFor	0.84 ***	-0.02 **	0.01	-0.02 **	0.01	0.01	0.01	0.01	0.37 ***	-0.01
	4.80	-2.05	0.52	-2.05	0.52	0.52	0.72	0.72	2.60	-0.28

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below the coefficients.

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.10

**Table 7.5 Regression results (ctd.)**

	EqualOpp	Informed	Challenging	Satisfaction	Underemploy
ISCED	0.03 ***	0.03 ***	0.04 ***	0.03 ***	0.03 ***
	5.72	4.87	11.52	8.38	7.49
Supervisor	0.04 ***	0.17 ***	0.28 ***	0.07 ***	0.07 ***
	3.35	15.23	34.98	35.00	11.14
nrSup (x 10 <sup>4</sup> )	1.62 *	4.70 ***	3.09 ***	3.07 ***	1.42 **
	1.67	2.86	3.59	3.59	1.96
Experience	-0.06 ***	0.03 ***	0.06 ***	0.04 ***	0.04 ***
	-8.74	5.09	14.59	14.63	10.05
Gender	-0.29 ***	-0.01	-0.06 ***	-0.01	-0.01
	-22.18	-1.18	-6.34	-1.27	-1.23
Size	0.00	0.00 **	0.00 ***	0.01 ***	0.01 ***
	-1.24	2.17	-2.77	4.97	4.96
Dutch MNE	-0.03	0.04 ***	0.02 **	0.03 ***	-0.03
	-1.44	2.75	2.02	3.24	-0.89
Foreign MNE	-0.03 *	-0.04	0.02	0.01	0.00
	-1.92	0.64	1.35	1.23	-0.01
PartForeign	0.08 ***	0.18 **	-0.03 *	0.01	0.03
	3.00	3.05	-1.80	0.58	0.60
ISCED_Dutch	-0.01	0.02	0.02 *	0.02 *	0.02 *
	-0.56	1.39	1.90	1.95	1.95
ISCED_Foreign	0.00	0.01	0.02 *	0.00	0.01
	-0.25	1.05	1.85	0.41	1.01
ISCED_PartFor	0.00	-0.03	-0.01	-0.01	-0.01
	0.03	-1.25	-0.46	-0.45	-1.99

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below the coefficients.

\*\*\* p<0.01, \*\* p<0.05; \* p<0.10

**Table 7.5 Regression results (ctd.)**

	Wage	OverPay	Health-danger	Stress	Hours	Training
N	52494	40347	51439	50433	53717	51288
F	135.3 ***	78.56 ***	63.11 ***	55.78 ***	51.59 ***	125.1 ***
R-squared	0.175	0.096	0.07	0.061	0.082	0.116
F interactions	38.71 ***	44.82 ***	5.72 ***	0.32	6.97 ***	2.54 *

	EqualOpp	Informed	Challenging	Satisfaction	Underemploy
N	47416	51093	51520	52172	46922
F	40.05 ***	14.55 ***	42.8 ***	17.05 ***	99.55 ***
R-squared	0.047	0.016	0.046	0.019	0.115
F interactions	0.11	1.63	2.19 *	1.42	1.67

\*\*\* p<0.01, \*\* p<0.05; \* p<0.10

**Table 7.6 Probit Regressions**

	Overtime	Irreg_hours	CAO	WorksCouncil	TUmember
ISCED	0.03 ***	-0.22 ***	-0.12 ***	0.06 ***	-0.10 ***
	5.57	-33.94	-18.24	8.77	-16.86
Supervisor	0.25 ***	0.02	-0.05 ***	-0.09 ***	-0.08 ***
	20.87	1.49	-3.38	-6.44	-5.48
nrSup (x 10 <sup>-4</sup> )	0.44	-0.66	-2.12 ***	-1.87 *	-1.48
	0.56	-0.79	-2.79	-1.91	-1.31
Experience	-0.08 ***	-0.01	0.11 ***	0.13 ***	0.25 ***
	-11.20	-0.83	13.32	16.28	33.01
Gender	-0.27 ***	-0.04 **	-0.01	-0.01	-0.22 ***
	-20.92	-2.47	-0.80	-0.66	-13.70
Size	0.00 *	0.08 ***	0.17 ***	0.33 ***	0.02 ***
	-1.75	25.96	55.34	89.71	6.90
Dutch MNE	0.11 ***	-0.03	-0.16 ***	0.42 ***	-0.01
	6.22	-1.32	-6.81	18.71	-0.49
Foreign MNE	0.21 ***	0.06 ***	-0.44 ***	0.47 ***	-0.02
	12.19	2.82	-21.09	22.74	-1.15
PartForeign	0.07 ***	0.24 ***	-0.10 ***	0.78 ***	0.17 ***
	2.73	7.79	-2.89	21.12	5.37
ISCED_Dutch	-0.01	-0.13 ***	0.11 ***	-0.01	-0.04 ***
	-0.55	-7.67	5.70	-0.73	-2.59
ISCED_Foreign	0.04 ***	-0.14 ***	-0.01	-0.07 ***	-0.05 ***
	3.13	-9.03	-0.48	-3.82	-2.99
ISCED_PartFor	0.09 ***	-0.13 ***	-0.05	-0.09 ***	0.01
	3.74	-5.12	-1.57	-2.74	0.24
N	49336	46639	49381	49412	42257
Wald chi2(58)	2927 ***	7797 ***	14292 ***	12642 ***	3923 ***
Log pseudoLL	-32155	-20049	-21565	-21633	-21810
Pseudo R2	0.05	0.19	0.25	0.37	0.08
Chi2 interactions	23.56 ***	126.53 ***	39.26 ***	20.46 ***	13.74 ***

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below the coefficients. \*\*\*p<0.01; \*\*p<0.05; \*p<0.10



**Table 7.7 Effects of MNE by country of origin, compared to domestic firms**

	Health /				Equal			
	Wage	OverPay	Danger	Stress	Hours	Training	Opp	Informed
Dutch MNE	0.85 ***	-0.07 ***	-0.04 **	0.08 ***	0.67 ***	0.11 ***	-0.03	0.04 ***
	6.25	-8.47	-2.30	7.83	7.14	5.42	-1.43	2.71
US_MNE	3.02 ***	-0.17 ***	-0.05 *	0.17 ***	1.01 ***	0.40 ***	0.02	0.01
	13.04	-11.77	-1.80	10.22	7.64	11.57	0.67	0.38
JP_MNE	2.63 ***	0.03	-0.16 **	0.08 *	-0.33	0.35 ***	-0.21 ***	-0.04
	4.36	0.67	-2.41	1.71	-0.81	3.58	-2.75	-0.60
UK_MNE	2.14 ***	-0.11 ***	-0.01	0.07 ***	0.56 ***	0.19 ***	0.05	0.04
	5.45	-5.17	-0.33	2.90	2.77	3.98	1.30	1.12
FR_MNE	2.14 ***	-0.06 ***	0.05	0.05 **	0.13	0.30 ***	-0.10 **	-0.07 *
	5.72	-3.03	1.34	2.05	0.60	5.91	-2.44	-1.93
GER_MNE	1.66 ***	-0.10 ***	-0.08 **	0.08 ***	0.07	0.24 ***	-0.10 **	0.06
	5.30	-4.76	-2.09	3.48	0.33	5.27	-2.51	1.63
REST_MNE	1.85 ***	-0.09 ***	0.05 **	0.15 ***	0.94 ***	0.24 ***	-0.03	0.01
	10.11	-8.12	2.26	11.61	7.24	9.35	-1.55	0.55
PartForeign	0.52 ***	-0.04 ***	0.05 *	0.14 ***	0.55 ***	0.21 ***	0.08 ***	0.07 ***
	2.62	-2.87	1.71	8.28	3.49	6.30	2.87	2.92

	Challenging	Satis- faction	Under- employ	Overtime	Irreg. Hours	CAO	Works Council	TU member
	1.99	3.21	-6.60	6.23	-1.43	-7.01	18.68	-0.54
US_MNE	0.04 **	0.03 *	-0.07 ***	0.35 ***	-0.05	-0.67 ***	0.39 ***	-0.13 ***
	1.99	1.89	-6.15	11.91	-1.50	-20.20	10.76	-3.63
JP_MNE	-0.04	0.03	-0.14 ***	-0.01	0.03	-0.69 ***	0.51 ***	-0.14
	-0.75	0.85	-4.01	-0.17	0.35	-7.46	5.92	-1.52
UK_MNE	-0.01	0.00	-0.07 ***	0.17 ***	0.03	-0.50 ***	0.58 ***	-0.03
	-0.41	-0.16	-4.06	4.15	0.67	-10.87	10.43	-0.53
FR_MNE	-0.04	-0.04 *	-0.07 ***	0.07	-0.11 **	-0.32 ***	0.77 ***	0.01
	-1.49	-1.85	-3.61	1.55	-2.09	-5.95	11.21	0.30
GER_MNE	0.05 *	0.03	-0.07 ***	0.14 ***	0.13 ***	-0.30 ***	0.44 ***	0.00
	1.70	1.40	-3.66	3.61	2.82	-6.14	9.12	-0.07
REST_MNE	0.02	0.01	-0.09 ***	0.21 ***	0.13 ***	-0.32 ***	0.45 ***	0.02
	1.20	0.83	-9.10	9.44	5.09	-11.89	16.53	0.78
PartForeign	-0.03	0.01	-0.05 ***	0.08 ***	0.28 ***	-0.05	0.75 ***	0.19 ***
	-1.59	0.62	-3.93	2.93	8.70	-1.34	19.63	5.71

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below the coefficients.  
 \*\*\* p<0.01, \*\* p<0.05; \* p<0.10

The regression analyses in table 7.7 further disentangle the findings regarding the different working conditions at MNEs by country of origin, hereby addressing Research Question 2. The table shows to what extent the wages and employment conditions of employees in the Netherlands may differ between MNEs from different home countries. The exact same regressions as reported in tables 7.5 and 7.6 were run, but now replacing

the 'foreign MNE' dummy with a set of variables indicating the country of origin of the MNE. Significance of the findings should be interpreted as the significance of difference from the reference category, in this case purely domestic firms. The results in table 7.7 only report the findings for the different types of MNEs and the country of origin of firms. The parameter estimates for the other variables are very similar to those presented in tables 7.5 and 7.6.

The results show important differences across the various countries of origin of MNEs, but also for the various dimensions of employment conditions. With respect to gross wages, all international firms pay higher wages than non-international firms. The highest wages are paid by US firms, followed by Japanese firms. The other firms also pay higher wages than domestic Dutch firms, but substantially less than these two groups. Foreign MNEs in the Netherlands are also similar with respect to the presence of a works council (most often in UK and French firms), and lack of CAO agreements (especially in Japanese and US firms). Also, international firms tend to abstain from hiring overqualified staff. For the other variables however, substantial differences exist across firms. All firms but the Japanese are less inclined to compensate overtime than domestic firms, with the US and UK firms scoring most extreme. Employees from MNEs from 'other' (including developing) countries are substantially more likely to work in dangerous or unhealthy working conditions, whereas the health and safety situation is best in German and Japanese firms. Stress is also highest for firms from 'other' countries, closely followed by US firms. Employees for US and 'other' firms also report the longest working hours, and score highest on overtime. Unionization is significantly lower for US firms.

US and Japanese firms give most training to their employees, but differ with respect to their attitude towards equal opportunity: whereas US firms do not differ from Dutch domestic firms, Japanese firms (and to a lesser extent also German and French firms) score lower than local firms with respect to ensuring equal opportunity for women. Employees' job satisfaction and perception of whether their work is challenging does not differ across countries of origin (with the exception of employees of US firms, who score slightly higher on both), nor are the differences with entirely domestic firms significant. Employees for German and 'other' MNEs are more likely to work in shifts or have irregular hours than domestic firms, whereas this is significantly less for employees of French firms.

In summary, especially the US, Japanese and 'other' firms seem to have a quite different (and to some extent also stereotypical) style of dealing with employees than Dutch domestic firms, and appear to be transferring their home country practices to the host country in which they do business. The differences with European firms (UK, France, and Germany) are much smaller. The most explicit differences are that the British and French are the most likely to have a works council, whereas the French also score highest in the absence of irregular working hours. Employees for German firms do work relatively more often in shifts or irregular hours, but have very safe working conditions. US firms seem to expect their employees to 'work hard and play hard' (and don't complain): with the highest working hours, overtime (with relatively little

compensation), and stress levels, but also the highest wages, substantive training, and the most challenging work. But they are least likely to have a collective labour agreement and unionization rates are lowest. In contrast, Japanese firms appear to offer high quality employment: high wages, much training, very little dangerous or unhealthy work, very few overqualified workers, but this is coupled with much less equal opportunity than in domestic (and many other international) firms, and an absence of collective labour agreements.

### **Indirect effects of inward investment**

In addition to the direct effects of working for an MNE, the entry of multinationals (and also their investments abroad) can have important effects for other firms operating in the same sector (horizontal spillovers) or in related sectors in the value chain (vertical spillovers), as specified in Research Question 3.

Starting with the spillovers from inward investments, tables 7.8 and 7.9 display the results for the models with either an ordinal or continuous variable as dependent (OLS with heteroskedasticity corrected standard errors) or a binary variable as dependent (probit regressions, also with heteroskedasticity corrected standard errors). Each model includes the three inward FDI variables as independents (in addition to the control variables). Only the employees that work for domestic firms are selected, in order to best capture the effect of inward FDI on incumbents. While Dutch MNEs may be the firms that are most 'capable' to capture the knowledge spillovers from FDI, they may also be more productive (and hence pay higher wages, and provide better employment conditions) for other reasons in addition to inward FDI, for example their own competitive advantages including their international exposure. Since it is not possible to control for these factors, including Dutch MNEs in the sample for this question of spillovers could lead to biased results. (It should be noted however that the differences between the results including and excluding employees that work for Dutch MNEs do not differ substantially).

The results for spillovers from inward FDI are displayed in table 7.8 and 7.9. These tables show that the coefficient for the variable measuring inward investment in a sector is often significant in explaining the wages and labour conditions for employees in domestic firms, especially if the level of education is taken into consideration. This points at the presence of spillovers (positive or negative) from FDI. Exploring the effects in more detail, it can be seen that inward FDI in a sector is positively associated with wages, a relationship that becomes stronger if employees are higher educated. At the same time, inward FDI reduces job stress for these highly skilled employees, and is positively associated with the extent to which such employees feel informed. However, inward FDI is also paired with underemployment among high skilled employees at domestic firms. Inward FDI is coupled with higher degrees of training and equal opportunity for all employees in domestic firms. The relationship with job satisfaction is negative for low-skilled, but positive for high-skilled employees, and low-skilled workers have to work more shift or irregular hours (whereas high-skilled do not). With respect to labour relations, inward FDI is associated with higher unionization rates among low-

**Table 7.8 Spillovers to employees at domestic firms from inward FDI**

	Wage	OverPay	Health_danger	Stress	Hours	Training
ISCED	1.22 ***	-0.09 ***	-0.12 ***	0.05 ***	0.38 ***	0.07 ***
Supervisor	23.77	-27.80	-18.61	10.58	9.35	8.70
nrSup (x 10 <sup>-4</sup> )	2.33 ***	-0.08 ***	0.01	0.28 ***	1.16 ***	0.25 ***
Experience	20.34	-11.25	0.85	29.55	13.87	14.39
Gender	109.1 *	-4.24 **	-0.85	-1.43 **	0.27 *	2.27
Size	1.70	-2.43	-0.38	-2.01	1.89	1.17
FDI <sub>in</sub> <sup>1</sup>	1.88 ***	-0.01	-0.06 ***	-0.04 ***	-0.32 ***	-0.09 ***
FDI <sub>up</sub> <sup>1</sup>	26.49	-1.34	-7.05	-7.50	-6.62	-9.39
FDI <sub>down</sub> <sup>1</sup>	-2.48 ***	0.01 **	-0.28 ***	-0.11 ***	-2.67 ***	-0.33 ***
ISCED_FDI <sub>in</sub> <sup>1</sup>	-22.72	1.97	-17.37	-10.72	-29.73	-18.10
ISCED_FDI <sub>up</sub> <sup>1</sup>	0.27 ***	0.01 ***	0.00	0.01 ***	-0.07 ***	0.11 ***
ISCED_FDI <sub>down</sub> <sup>1</sup>	11.91	9.40	-0.43	3.78	-3.66	29.59
F interactions	2.71	0.02	0.05	-0.52	8.90	1.89 **
N	0.29	0.06	0.06	-0.78	1.07	2.41
F	31.12	-2.72	9.45	5.11	130.2	-1.99
R <sup>2</sup>	0.34	-1.49	1.14	0.88	1.60	-0.33
	2.92	-0.40	4.48 **	1.52	58.52 **	1.48
	0.13	-0.48	2.09	1.04	2.33	0.73
	3.83 ***	-0.02	0.09	-0.16 ***	-0.48	0.10
	6.19	-0.58	1.01	-3.06	-0.88	1.02
	-4.68 ***	0.43 ***	1.26 ***	0.00	1.98	-0.05
	-2.63	3.88	5.28	0.24	1.39	-0.20
	-0.27	-0.11	-0.39 **	0.00	0.18	0.05
	-0.26	-1.45	-2.51	1.01	0.21	0.29
	14.57 ***	5.29 ***	10.71 ***	3.28 **	0.86	0.4
N	31437	23783	31014	30379	32109	30856
F	73.88 ***	38.74 ***	45.99 ***	35.25 ***	35.88 ***	67.6 ***
R <sup>2</sup>	0.138	0.080	0.074	0.060	0.078	0.101

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below coefficients. \*\*\* p<0.01, \*\* p<0.05; \* p<0.10.  
<sup>1</sup> (x 10<sup>-3</sup>)

**Table 7.8 Spillovers to employees at domestic firms from inward FDI (ctd.)**

	EqualOpp	Informed	Challenging	Satisfaction	Underemploy	dWorkforce
ISCED	0.04 ***	0.10 ***	0.03 ***	0.05 ***	0.03 ***	0.13 ***
Supervisor	4.82	3.71	7.31	3.90	2.89	42.86
nrSup (x 10 <sup>-4</sup> )	0.05 ***	0.18 ***	0.27 ***	0.27 ***	0.07 ***	-0.16 ***
Experience	3.07	11.69	25.77	25.78	7.56	-22.32
Gender	2.37	4.26	4.26 **	4.29 **	1.77	-1.65
Size	0.91	1.31	2.35	2.36	0.94	-1.09
FDI <sub>in</sub> <sup>1</sup>	-0.05 ***	0.02 **	0.06 ***	0.06 ***	0.04 ***	-0.01 ***
FDI <sub>up<sub>in</sub></sub> <sup>1</sup>	-5.67	2.04	10.93	10.92	7.09	-3.11
FDI <sub>down<sub>in</sub></sub> <sup>1</sup>	-0.21 ***	0.01	-0.05 ***	-0.05 ***	0.00	0.04 ***
ISCED_FDI <sub>in</sub> <sup>1</sup>	-12.43	0.68	-4.18	-4.23	1.00	5.92
ISCED_FDI <sub>up<sub>in</sub></sub> <sup>1</sup>	-0.01 ***	0.00	0.00 **	0.00 **	0.01 ***	0.00
ISCED_FDI <sub>down<sub>in</sub></sub> <sup>1</sup>	-2.66	0.24	-2.09	-2.07	4.00	-0.44
F interactions	2.44 ***	1.62	0.34	0.23	-0.39 **	-0.44 ***
N	2.62	1.60	0.64	0.41	1.26	-2.06
F	-24.28 ***	-2.11	-4.69	-3.52	-3.61	1.23 **
R <sup>2</sup>	-3.01	-0.25	-1.19	-0.89	-1.38	2.18
	-3.07	0.05	-0.57	-1.34	-1.56	-0.40
	-1.57	0.04	-0.42	-0.95	-1.23	-1.32
	-0.05	0.20 **	0.03	0.03	0.12 ***	0.14 ***
	-0.58	2.36	0.58	0.58	2.60	3.52
	-0.94 ***	-0.26	-0.36 **	-0.36 **	-0.17	0.74 ***
	-3.70	-1.11	-2.24	-2.24	-1.29	6.66
	-0.06	0.18	0.24 **	0.24 **	0.13	-0.17 **
	-0.36	1.20	2.24	2.24	1.49	-2.41
	5.26 ***	2.65 **	2.95 **	2.95 **	3.47 **	21.85 ***
	28037	30816	31084	31084	31152	27709
	26.63 ***	8.07 ***	26.54 ***	25.28 ***	8.68 ***	306.7 ***
	0.049	0.014	0.044	0.044	0.015	0.091

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below coefficients. \*\*\* p<0.01, \*\* p<0.05; \* p<0.10.  
<sup>1</sup>(x 10<sup>-3</sup>)

**Table 7.9 Spillovers to employees at domestic firms from inward FDI: probit models**

	Overtime			Irreg. hours			CAO			WorksCouncil		
ISCED	0.03 ***	0.05 ***	-0.18 ***	-0.23 ***	-0.12 ***	-0.20 ***	0.06 ***	0.07 ***	0.06 ***	0.07 ***	0.07 ***	0.07 ***
Supervisor	4.48	2.58	-20.73	-9.58	-13.58	-8.77	7.19	3.39	7.19	3.39	7.19	3.39
nrSup (x 10 <sup>-4</sup> )	0.26 ***	0.26 ***	0.00	0.00	-0.01	-0.01	-0.10 ***	-0.10 ***	-0.10 ***	-0.10 ***	-0.10 ***	-0.10 ***
Experience	16.20	16.19	-0.07	-0.11	-0.73	-0.74	-5.48	-5.48	-5.48	-5.48	-5.48	-5.48
Gender	2.60	2.59	-1.81	-1.89	-2.37	-2.47	-2.61	-2.57	-2.61	-2.57	-2.61	-2.57
Size	1.41	1.41	-0.95	-0.98	-1.01	-1.04	-1.53	-1.50	-1.53	-1.50	-1.53	-1.50
FDI <sub>in</sub> <sup>1</sup>	-0.09 ***	-0.09 ***	-0.03 **	-0.03 **	0.11 ***	0.11 ***	0.11 ***	0.11 ***	0.11 ***	0.11 ***	0.11 ***	0.11 ***
FDI <sub>up</sub> <sup>1</sup>	-9.25	-9.28	-2.49	-2.48	9.16	9.25	10.00	9.99	10.00	9.99	10.00	9.99
FDI <sub>down</sub> <sup>1</sup>	-0.28 ***	-0.28 ***	-0.02	-0.02	-0.05 **	-0.04 **	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
ISCED_FDI <sub>in</sub> <sup>1</sup>	-16.25	-16.23	-0.93	-0.98	-2.27	-2.20	-0.98	-0.92	-0.98	-0.92	-0.98	-0.92
ISCED_FDI <sub>up</sub> <sup>1</sup>	0.00	0.00	0.09 ***	0.09 ***	0.19 ***	0.19 ***	0.39 ***	0.39 ***	0.39 ***	0.39 ***	0.39 ***	0.39 ***
ISCED_FDI <sub>down</sub> <sup>1</sup>	-1.31	-1.31	21.64	21.65	41.03	41.01	74.12	74.10	74.12	74.10	74.12	74.10
N	0.28	0.29	0.46	2.31 **	-8.48 ***	-8.25 ***	1.01	0.38	1.01	0.38	1.01	0.38
Wald $\chi^2_{54}$	0.30	0.29	0.54	2.43	-8.84	-7.85	0.87	0.31	0.87	0.31	0.87	0.31
Log pseudoLL	9.14	9.39	-12.42 **	-17.95 ***	-50.32 ***	-55.28 ***	-5.42	-4.45	-5.42	-4.45	-5.42	-4.45
Pseudo R2	1.50	1.53	-2.34	-3.31	-9.05	-9.79	-0.54	-0.44	-0.54	-0.44	-0.54	-0.44
F Interactions	4.78	5.80 *	-5.59 **	-4.55 *	-23.24 ***	-22.19 ***	-1.98	-1.24	-1.98	-1.24	-1.98	-1.24
N	1.60	1.91	-2.24	-1.77	-8.71	-7.85	-0.65	-0.40	-0.65	-0.40	-0.65	-0.40
Wald $\chi^2_{54}$	0.00	0.00	-0.60 ***	-0.60 ***	-0.08	-0.08	0.18	0.18	0.18	0.18	0.18	0.18
Log pseudoLL	-0.02	-0.02	-5.40	-5.40	-0.69	-0.69	1.63	1.63	1.63	1.63	1.63	1.63
Pseudo R2	-0.06	-0.06	1.76 ***	1.76 ***	1.48 ***	1.48 ***	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30
F Interactions	-0.26	-0.26	5.20	5.20	5.08	5.08	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22
N	-0.31 *	-0.31 *	-0.38 *	-0.38 *	-0.34	-0.34	-1.24	-1.24	-1.24	-1.24	-1.24	-1.24
Wald $\chi^2_{54}$	-1.95	-1.95	-1.77	-1.77	-1.29	-1.29	5.16	5.16	5.16	5.16	5.16	5.16
Log pseudoLL	4.21	4.21	51.71 ***	51.71 ***	25.98 ***	25.98 ***	29325	29325	29325	29325	29325	29325
Pseudo R2	29132	29132	27371	27371	29389	29389	6934 ***	6923 ***	6934 ***	6923 ***	6934 ***	6923 ***
F Interactions	1763 ***	1767 ***	5119 ***	5240 ***	10172 ***	10193 ***	-12728	-12726	-12728	-12726	-12728	-12726
N	-19195	-19193	-10985	-10958	-12068	-12055	0.344	0.344	0.344	0.344	0.344	0.344
Wald $\chi^2_{54}$	0.046	0.046	0.218	0.22	0.297	0.297	0.344	0.344	0.344	0.344	0.344	0.344
Log pseudoLL	0.046	0.046	0.218	0.22	0.297	0.297	0.344	0.344	0.344	0.344	0.344	0.344
Pseudo R2	0.046	0.046	0.218	0.22	0.297	0.297	0.344	0.344	0.344	0.344	0.344	0.344

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below coefficients. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.  
<sup>1</sup> (x 10<sup>-5</sup>)

**Table 7.9 Spillovers to employees at domestic firms from inward FDI: probit models (ctd.)**

	TUMember		Merger		Bankrupt	
ISCED	-0.10 ***	-0.16 ***	-0.01	-0.01	0.01	0.05 *
Supervisor	-12.08	-7.50	-0.64	-0.66	1.26	1.79
	-0.07 ***	-0.07 ***	0.02	0.02	0.10 ***	0.10 ***
nrSup (x 10 <sup>-4</sup> )	-3.45	-3.44	0.97	0.96	4.82	4.81
	0.41	0.36	-2.27	-2.28	-1.41	-1.40
	0.27	0.24	-1.40	-1.40	-0.64	-0.63
Experience	0.23 ***	0.23 ***	0.05 ***	0.05 ***	0.05 ***	0.05 ***
	22.56	22.59	4.11	4.12	3.75	3.73
Gender	-0.24 ***	-0.24 ***	-0.02	-0.01	0.05 *	0.04 *
	-11.58	-11.37	-0.70	-0.64	1.95	1.88
Size	0.02 ***	0.02 ***	0.13 ***	0.13 ***	-0.05 ***	-0.05 ***
	6.12	6.12	32.24	32.24	-10.37	-10.37
FDI <sub>in</sub> <sup>1</sup>	6.00 ***	5.47 ***	2.87 **	2.58 **	3.71 **	4.21 ***
	6.32	5.32	2.37	1.99	2.48	2.68
FDI <sub>up</sub> <sup>1</sup>	52.78 ***	50.02 ***	66.32 ***	65.81 ***	51.15 ***	52.32 ***
	11.95	11.11	7.10	7.03	8.99	9.00
FDI <sub>down</sub> <sup>1</sup>	26.69 ***	27.05 ***	23.73 ***	24.80 ***	24.58 ***	24.95 ***
	12.97	12.68	9.30	9.37	8.70	8.59
ISCED_FDI <sub>in</sub> <sup>1</sup>		0.17		0.09		-0.16
		1.60		0.78		-1.22
ISCED_FDI <sub>up</sub> <sup>1</sup>		0.86 ***		0.20		-0.32
		2.88		0.67		-0.86
ISCED_FDI <sub>down</sub> <sup>1</sup>		-0.13		-0.31		-0.10
		-0.75		-1.36		-0.49
F Interactions		12.24 ***		2.49		2.73
N	24990	24990	29330	29330	28373	28373
Wald $\chi^2_{54}$	2189 ***	2191 ***	1957 ***	1960 ***	459 ***	465 ***
Log pseudoLL	-12782	-12776	-9835	-9834	-9126	-9125
Pseudo R <sup>2</sup>	0.079	0.079	0.086	0.086	0.024	0.025

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below coefficients. \*\*\* p<0.01, \*\* p<0.05; \* p<0.10.  
<sup>1</sup> (x 10<sup>-3</sup>)

skilled workers in domestic firms, and lower rates of coverage by collective labour agreements. Inward FDI appears to be linked with a higher extent of mergers and bankruptcies among domestic firms (as reported by employees), but also leads to increases in workforce in domestic firms, both of high and low-skilled labour.

The conclusion that could be drawn from these findings is that inward FDI in a particular sector is matched with a competitive reaction by Dutch firms, that try to make better use of human resources by investing in training and improving the equality of opportunity. Firms also improve communication particularly among their high-skilled workers, and engage in mergers to increase the scale of their activities (but are also more likely to go bankrupt). This increased competition due to FDI is paired with increased labour market competition especially for high skilled workers, which benefit through higher wages and less stressful jobs, although they may also face underemployment (over-qualification for their job). Lower skilled labour however seems to benefit less from inward FDI. They do not receive higher wages, but have to work more often in shifts or irregular hours, and are less often covered by collective labour agreements. Higher unionization rates do not seem to change these effects (but may have prevented worse). In all however, the effect of inward FDI for domestic firms seem to be net positive, given the increase in jobs that are recorded both for high-skilled and low-skilled workers.

Spillovers from inward FDI do not only occur horizontally, but also vertically. By creating backward linkages, MNEs may increase output and employment at suppliers and promote technology transfer and training, but with their large size, MNEs may also have a strong bargaining position towards supplying firms to deliver for low prices and according to tightly specified standards. The 'backward linkages' effect of FDI is captured by the investments in the downstream sector (from the point of view of the responding employee). Sectors in the dataset that are characterized by high foreign investments in their downstream sectors are agriculture, mining and petroleum extraction, and basic and fabricated metals. Here we see that a higher extent of backward linkages is positively associated to the extent to which especially lower-skilled employees are engaged in dangerous and unhealthy work, and also increases working hours (for both high and low-skilled). Backward linkages are positively associated to challenging work for high-skilled employees, which is paired with the negative relationship between backward linkages and underemployment for high skilled staff (but this effect is smaller for low skilled employees). Backward linkages are associated with higher workforce growth, more so for low-skilled than higher skilled employees. Shift work and irregular hours are reduced, although there is a small effect that indicates that low-skilled workers may have to work more overtime. Backward linkages are also associated with fewer collective labour agreements, more unionization, and more organizational change (mergers, but also bankruptcies).

In sum, backward linkages from inward FDI seem to increase employment in the Netherlands. Increased demand results both in more workers, especially lower skilled. But it also increases work pressure, as witnessed by the longer working hours per employee and slightly more overtime for lower-skilled workers, and increased work in unhealthy or dangerous conditions. Most additional work due to increased demand



appears to be planned however, so the extent to which employees have to work irregular hours is reduced. Taking into consideration the reduced use of collective labour agreements and the higher rates of unionization associated with inward FDI, it may be that while backward linkages increase demand and employment, the quality of such employment is not always very high. This could potentially be explained by MNEs using strict price standards that increase pressures on firms to reduce inefficiencies. Such an argument could also explain the positive association between the extent of backward linkages in an industry, and the rate of mergers (scale enlargement to cut costs) and bankruptcies (those firms that did not make it).

Finally, inward FDI can also create spillovers to their buyers, by providing (higher quality or lower cost) goods and services that can help in the competitiveness of a firm and benefit its employees. Put differently, forward linkages imply studying the effect of having foreign-owned suppliers. Such foreign-owned suppliers may help their customers with for example marketing and distribution. Such assistance may however also become more compulsory and binding, in the form of e.g. fixed sales prices. As in the case of backward linkages, large MNEs may also use their bargaining power in the relationship with clients, particularly smaller distributors. The 'forward linkages' effect of FDI is captured by the investments in the upstream sector (from the point of view of the responding employee). Sectors in the dataset that are characterized by high foreign investments in their upstream sectors are chemicals, rubber and non-metallic minerals manufacturing, utilities (gas, electricity) and finance. The results in tables 7.8 and 7.9 indicate that a high extent of forward linkages is related to lower wages for high-skilled employees in entirely domestic firms, and a higher frequency of work in unhealthy or dangerous circumstances, but also of over-time compensation (unlike for low-skilled labour). Equality of opportunity is reduced for both high and low skilled workers. Forward linkages are associated with less challenging work for high-skilled employees, that are also more frequently underemployed, but lower-skilled employees are more satisfied in the presence of forward linkages. Irregular hours become more frequent for high than for low-skilled employees, but they are also more often covered by collective labour agreements. Forward linkages are associated with high unionization rates, and the occurrence of mergers, and the threat of bankruptcies.

Hence, the effects of forward linkages of FDI for employment are not particularly beneficial. They are not associated with increases in employment, but do seem to be linked to lower quality jobs, especially for high-skilled workers. It appears that foreign-owned suppliers dictate the terms to the domestically owned users and distributors of their products, which makes working for domestic firms in sectors characterized by large shares of foreign-owned suppliers a less challenging and less attractive option for high-skilled employees.

### **Indirect effects of outward investment**

One of the main concerns in developed countries regarding MNEs (and globalization in general) is the loss of jobs to low-wage countries (Research Question 4). From that view, the effect of outward investment may be particularly harmful for employment quantity

and quality in the home country. At the same time, taking advantage of the international division of labour may also contribute to firm and employment growth. Tables 7.10 and 7.11 display the regression results for the effect of outward FDI on wages and labour conditions in the Netherlands for the models with an ordinal or continuous variable as dependent (OLS with heteroskedasticity corrected standard errors), and with a binary variable as dependent (probit regressions, also with heteroskedasticity corrected standard errors). The entire sample of Dutch and international firms is considered, as outward investments can be expected to be made primarily by Dutch MNEs, and hence also to affect not only domestic firms (as suppliers of the MNEs) but also employees at international firms.

Starting with the horizontal spillovers from outward investments, table 7.10 and 7.11 show that outward investment is associated with higher wages, mostly for high-skilled employees. The wages of lower skilled employees are not negatively affected. All employees however get less compensation for overtime, have to work longer hours, and experience less equal opportunity in sectors with substantial outward investment. The higher the level of education of an employee, the more outward investment is associated with being well-informed about what is happening within the firm, and with having a challenging and satisfying job. Working in shifts or irregular hours occurs less frequent for high-skilled employees in the presence of outward investment. For all employees, coverage by collective labour agreements is reduced, whereas union membership, mergers and also bankruptcies occur more often.

On the basis of these findings, it is possible to conclude that concerns of large scale job relocation due to outward investment are generally unsubstantiated (although sector differences could remain). However, the positive effects of outward FDI in terms of higher wages, more challenging and satisfying jobs, and less irregular working hours, are concentrated among high-skilled employees, whereas the costs – a deterioration of overtime compensation, longer hours, less equal opportunity, are equally distributed across high and low skilled labour. Outward investment is also associated with changes in labour relations, as seen in the reduction of CAO coverage and increased union membership, and with organizational change in an industry (in particular mergers and bankruptcies).

Outward investment may not only have effects for work in the industry from which these investments originate, but also for related industries, both suppliers and buyers. Starting with the effect of outward investment on suppliers, if outward investment increases intra-firm trade or the use of local suppliers in the countries of foreign investment, domestic (Dutch) sourcing and backward linkages are reduced, hence employees in domestic suppliers suffer. On the other hand, outward investment that is aimed at serving foreign markets tends to be accompanied with exports from the home country of e.g. machinery and a range of other inputs. Suppliers of those products may hence benefit from the increased demand due to the outward investment of their clients. The net effect remains an empirical question.

**Table 7.10 Effects for employees of outward FDI**

	Wage	OverPay	Health_danger	Stress	Hours	Training
ISCED	1.65 ***	-0.12 ***	-0.14 ***	0.05 ***	0.41 ***	0.09 ***
Supervisor	38.85	13.99	-45.51	-11.18	-26.69	-10.64
nrSup	2.93 ***	2.94 ***	-0.10 ***	-0.08 ***	0.02 *	0.02 *
Experience	32.64	32.69	-16.61	-11.24	1.95	1.92
Gender	0.01 ***	0.01 ***	0.00	0.00	0.00	0.00
Size	3.02	3.02	-1.23	-2.43	-1.21	-1.21
FDI <sub>out</sub>	2.14 ***	2.15 ***	-0.01 **	-0.01	-0.06 ***	-0.06 ***
FDI <sub>up<sub>out</sub></sub>	35.71	35.88	-2.23	-1.34	-8.56	-8.56
FDI <sub>down<sub>out</sub></sub>	-2.77 ***	-2.75 ***	0.02 ***	0.02 **	-0.25 ***	-0.25 ***
ISCED_FDI <sub>out</sub>	-31.23	-31.04	3.12	2.00	-20.52	-20.47
ISCED_FDI <sub>up<sub>out</sub></sub>	0.29 ***	0.29 ***	0.01 ***	0.01 ***	0.00	0.00
ISCED_FDI <sub>down<sub>out</sub></sub>	17.85	17.84	12.19	9.38	1.01	1.02
F Interaction	0.01	-0.01	0.00 ***	0.00	0.00	0.00
N	1.30	-0.88	-3.99	-0.96	0.18	0.43
F	0.03	0.05	0.00 **	0.00 **	0.00	0.00
R <sup>2</sup>	0.75	1.16	-2.25	-2.45	0.71	0.36
	0.01	0.01	0.00	0.00	0.00 **	0.01 **
	0.46	0.28	-1.17	-0.46	1.98	2.36
	0.00 ***	0.00 ***	0.00	0.00	0.00	0.00
	7.96	-0.40	-0.78	-0.50	0.00	-0.50
	0.00 ***	0.00 ***	0.00 **	0.00 **	0.00	0.00
	-3.48	1.72	2.13	1.54	1.32	1.32
	0.00	0.00	0.00 ***	0.00	0.00 *	0.00
	1.49	-1.07	-2.66	0.72	-1.76	-1.76
F Interaction	23.00 ***	1.29	3.60 **	1.05	1.68	1.68
N	52205	40040	23783	51104	49768	53443
F	142.8 ***	137.8 ***	77.37 ***	36.86 ***	54.5 ***	51.71 ***
R <sup>2</sup>	0.17	0.09	0.08	0.07	0.06	0.06

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below coefficients.

\*\*\* p&lt;0.01, \*\* p&lt;0.05; \* p&lt;0.10.

**Table 7.10 Effects for employees of outward FDI (ctd.)**

	EqualOpp	Informed	Challenging	Satisfaction	Underemploy	dWorkforce
ISCED	0.03 ***	0.08 ***	0.03 ***	0.04 ***	0.05 ***	0.03 ***
Supervisor	5.60	5.27	6.55	3.13	11.86	5.41
nrSup	0.03 ***	0.04 ***	0.17 ***	0.28 ***	0.28 ***	0.07 ***
Experience	2.82	2.83	15.04	15.07	35.28	35.32
Gender	0.00 *	0.00 *	0.00 ***	0.00 ***	0.00 *	0.00 *
Size	1.73	1.74	2.84	2.85	3.59	3.59
FDI <sub>out</sub>	-0.06 ***	-0.06 ***	0.04 ***	0.06 ***	0.06 ***	0.04 ***
FDI <sub>up<sub>out</sub></sub>	-8.59	-8.67	5.67	5.69	14.74	14.77
FDI <sub>down<sub>out</sub></sub>	-0.29 ***	-0.29 ***	-0.01	-0.06 ***	-0.06 ***	-0.01
ISCED_FDI <sub>out</sub>	-21.96	-22.04	-1.05	-1.05	-6.31	-6.30
ISCED_FDI <sub>up<sub>out</sub></sub>	-0.01 **	0.00 **	0.01 ***	0.00 ***	0.00 ***	0.01 ***
ISCED_FDI <sub>down<sub>out</sub></sub>	-2.28	-2.26	3.11	3.10	-2.69	-2.70
F Interaction	0.00 ***	0.00 ***	0.00	0.00	0.00 **	0.00
N	-3.20	-2.83	-0.15	-0.89	-1.25	-2.00
F	0.00	0.00	0.00	0.00	0.00	0.00
R <sup>2</sup>	-1.23	-0.73	1.10	1.64	-0.07	0.47
	0.00 **	0.00 **	0.00	0.00	0.00	0.00
	-2.21	-2.01	0.36	-0.09	-0.55	-0.97
	0.00	0.00	0.00 **	0.00 ***	0.00 ***	0.00 ***
	-0.86	-0.86	2.30	2.30	2.81	2.81
	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00 ***
	-2.61	-2.61	-2.15	-2.15	-3.01	-3.01
	0.00	0.00	0.00 *	0.00 ***	0.00 ***	0.00 ***
	-0.93	-0.93	1.77	1.77	2.58	2.58
	4.29 ***	4.29 ***	3.61 **	3.61 **	6.70 ***	6.70 ***
	46836	46836	50413	50413	51200	51603
	42.05 ***	40.13 ***	14.75 ***	14.23 ***	46.53 ***	44.39 ***
	0.047	0.047	0.016	0.016	0.047	0.048
	0.015	0.015	0.090	0.090	0.015	0.015
	2.94 **	2.94 **	51729	51729	51729	51603
	46710	46710	46826	46826	46710	46826
	102 ***	102 ***	509.9 ***	509.9 ***	102 ***	102 ***
	0.116	0.116	0.036	0.036	0.116	0.116
	16.50 ***	16.50 ***	5.62 ***	5.62 ***	16.50 ***	16.50 ***
	48623	48623	48623	48623	48623	48623
	33.33 ***	33.33 ***	31.94 ***	31.94 ***	33.33 ***	33.33 ***
	0.036	0.036	0.036	0.036	0.036	0.036

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below coefficients.  
 \*\*\* p<0.01, \*\* p<0.05; \* p<0.10.

Table 7.11 Effects for employees of outward FDI – probit regressions

	Overtime	Inreg_hours	CAO	WorksCouncil
ISCED	0.03 ***	-0.18 ***	-0.12 ***	0.06 ***
Supervisor	4.48	2.58	-13.58	7.19
	0.26 ***	0.00	-0.01	-0.10 ***
nrSup	16.20	16.19	-0.73	-5.48
	2.60	2.59	-2.37	-2.61
	1.41	1.41	-1.01	-1.53
Experience	-0.09 ***	-0.03 **	0.11 ***	0.11 ***
	-9.25	-9.28	9.16	10.00
Gender	-0.28 ***	-0.02	-0.05 **	-0.02
	-16.25	-16.23	-2.27	-0.98
Size	0.00	0.09 ***	0.19 ***	0.39 ***
	-1.31	21.64	41.03	74.12
FDI <sub>out</sub>	0.28	0.29	-8.48 ***	1.01
	0.30	0.29	-8.84	0.87
FDI <sub>up<sub>out</sub></sub>	9.14	9.39	-50.32 ***	-5.42
	1.50	1.53	-9.05	-0.44
FDI <sub>down<sub>out</sub></sub>	4.78	5.80 *	-23.24 ***	-1.98
	1.60	1.91	-8.71	-0.40
ISCED_FDI <sub>out</sub>	0.00	-0.60 ***	-0.08	0.18
	-0.02	-5.40	-0.69	1.63
ISCED_FDI <sub>up<sub>out</sub></sub>	-0.06	1.76 ***	1.48 ***	-0.30
	-0.26	5.20	5.08	-1.02
ISCED_FDI <sub>down<sub>out</sub></sub>	-0.31 *	-0.38 *	-0.34	-0.22
	-1.95	-1.77	-1.29	-1.24
F Interactions	4.21	51.71 ***	25.98 ***	5.16
N	29132	27371	29389	29325
Wald $\chi^2_{54}$	1763 ***	5119 ***	10172 ***	6934 ***
Log pseudoLL	-19195	-10985	-12068	-12726
Pseudo R2	0.046	0.218	0.297	0.344

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below coefficients.

\*\*\* p&lt;0.01, \*\* p&lt;0.05; \* p&lt;0.10.

**Table 7.11 Effects for employees of outward FDI – probit regressions (ctd.)**

	TUmember	Merger	Bankrupt
ISCED	-0.10 ***	-0.16 ***	-0.01
Supervisor	-12.08	-7.50	-0.66
nrSup	-0.07 ***	-0.07 ***	0.02
Experience	-3.45	-3.44	0.96
Gender	0.41	0.36	-2.28
Size	0.27	0.24	-1.40
FDI <sub>out</sub>	0.23 ***	0.23 ***	0.05 ***
FDI <sub>up<sub>out</sub></sub>	22.56	22.59	4.12
FDI <sub>down<sub>out</sub></sub>	-0.24 ***	-0.24 ***	-0.01
ISCED_FDI <sub>out</sub>	-11.58	-11.37	-0.64
ISCED_FDI <sub>up<sub>out</sub></sub>	0.02 ***	0.02 ***	0.13 ***
ISCED_FDI <sub>down<sub>out</sub></sub>	6.12	6.12	32.24
F Interactions	6.00 ***	5.47 ***	2.87 **
N	6.32	5.32	1.99
Wald $\chi^2_{54}$	52.78 ***	50.02 ***	65.81 ***
Log pseudoLL	11.95	11.11	7.03
Pseudo R2	26.69 ***	27.05 ***	24.80 ***
	12.97	12.68	9.37
		0.17	0.09
		1.60	0.78
		0.86 ***	0.20
		2.88	0.67
		-0.13	-0.31
		-0.75	-1.36
	24990	12.24 ***	2.49
	2189 ***	24990	29330
	-12782	2191 ***	1957 ***
	0.079	-12776	-9835
		0.079	0.086
			0.024
			0.05 *
			1.26
			0.10 ***
			4.82
			-1.41
			-0.64
			0.05 ***
			3.75
			0.05 *
			1.95
			-0.05 ***
			-10.37
			3.71 **
			2.48
			51.15 ***
			8.99
			24.58 ***
			8.70
			8.59
			-0.16
			-1.22
			-0.32
			-0.86
			-0.10
			-0.49
			2.73
			28373
			459 ***
			-9126
			0.025

Sector dummies not reported; t-values based on heteroskedasticity corrected s.e. below coefficients.  
 \*\*\* p<0.01, \*\* p<0.05; \* p<0.10.

The results show that outward investment in downstream sectors has important effects on employees at supplying firms, but that many of these effects are different for high and low skilled workers. Safety is reduced for low-skilled workers, and increased for high-skilled employees. For all employees, working hours are increased and equal opportunity is reduced. For high skilled workers, jobs are more challenging, and they are slightly better informed in the case of outward FDI of their suppliers. Underemployment is higher (though slightly less so for high-skilled workers), but the workforce also increases (for low skilled more than high-skilled). Less skilled workers work more overtime, high-skilled workers less. Outward FDI in the downstream sector is associated with lower use of collective labour agreements, and higher degrees of unionization, and organizational change (mergers, bankruptcies).

In sum, the effect of outward investment for employees at the suppliers of those firms is rather mixed. For low skilled workers, although the total size of employment is positively affected and salaries are not adjusted downwards, outward investment in downstream industries does negatively affect the quality of their jobs. Safety and equal opportunity are reduced, while working hours and overtime increase. For high-skilled employees, workforce growth is negatively affected by outward investment, although the quality of their job increases: they have more challenging work and work less in unhealthy or dangerous conditions, and have to spend less overtime.

Finally, tables 7.10 and 7.11 also give insights into the employment effects of outward FDI in upstream industries. What are the effects of buying products from firms in sectors with much outward investment? Again, the effects may be twofold. On the one hand, one may expect that if outward FDI looking for lower labour costs results in cheaper inputs, the buyers of those products benefit. At the same time, outward FDI that is aimed at exploiting foreign markets may substitute domestic distributors that used to sell those products internationally with buyers in those foreign markets, or use outward investment as a means of forward integration, making domestic buyers obsolete.

The empirical results indicate that especially for high skilled workers, outward investments results in lower pay and also lower job quality, as safety, equal opportunity, information, satisfaction and the extent of challenging work decrease, while underemployment, overtime and irregular hours increase. The effects for low-skilled labour are less disadvantageous. This indicates that outward investment by firms in upstream sectors may indeed be coupled with an increased use of foreign market distributors or by forward integration, where more advanced tasks are being placed in other (not necessarily low labour cost) countries.

#### **Robustness checks: Instrumental variables estimations**

Many of the findings reported above are interpreted as the effect of investment for employment and wages. A final step in the analysis is to check for the robustness of these results, particularly in the light of endogeneity and reverse causality. The time lag between the sector-level FDI data and the various measures of wages and employment conditions should already partly mitigate such concerns. In addition, it is theoretically more likely for many variables that the direction of causality runs from FDI to the particular employment condition, rather than the other way around. It is highly unlikely, to say the least, that FDI is attracted to the Netherlands by the frequency of unhealthy or dangerous work, by stress levels, inequality between men and women, or the job satisfaction of employees.

For several other variables, such a reversed causality may be more likely: unionization rates may deter FDI, whereas a highly trained workforce may attract investment. Workforce growth, mergers (and even bankruptcies) may be signs of dynamic sectors, which in turn may also attract investors. But the most prominent example of potential reversed causality relates to wages. FDI may affect wages, but may also be attracted by them as signs of high quality and productive labour. In order to explore to what extent our findings are driven by reversed causality, and to what extent controlling for the fact

that FDI may be attracted by certain sectors would lead to false conclusions regarding the effect of FDI, we have re-estimated all models with instrumental variables regressions, where inward (outward) FDI was instrumented with the average wage per NACE sector (at 3-digit level). The results indicated that endogeneity was indeed present, but that it did not affect the results of our findings. Hence, although FDI was indeed attracted by the wage level in a particular sector, it in turn also greatly affected these wages. As example of these IV regressions, table 7.12 reports the results for the models with wages as a dependent variable. Comparing the findings of the IV regressions with the regression not controlling for endogeneity, there are no differences with respect to the effect of FDI on wages.

**Table 7.12 IV regressions for the effect of inward and outward FDI for gross wages**

Inward FDI			Outward FDI		
ISCED	1.22***	1.23***	ISCED	1.65***	1.40***
	23.77	9.06		38.85	12.72
Supervisor	2.33***	2.34***	Supervisor	2.93***	2.94***
	20.34	20.39		32.64	32.72
nrSup	0.01*	0.01*	nrSup	0.01***	0.01***
	1.70	1.71		3.02	3.01
Experience	1.88***	1.88***	Experience	2.14***	2.15***
	26.49	26.49		35.71	35.83
Gender	-2.48***	-2.46***	Gender	-2.77***	-2.74***
	-22.72	-22.63		-31.23	-30.92
Size	0.27***	0.27***	Size	0.29***	0.29***
	1.91	11.99		17.85	17.85
FDI <sub>in</sub> <sup>1</sup>	2.71	-9.69	FDI <sub>out</sub> <sup>1</sup>	8.44	-1.13
	0.29	-1.03		1.30	-0.17
FDI <sub>up<sub>in</sub></sub> <sup>2</sup>	3.11	4.49	FDI <sub>up<sub>out</sub></sub> <sup>2</sup>	2.86	3.17
	0.34	0.49		0.75	0.82
FDI <sub>down<sub>in</sub></sub> <sup>1</sup>	2.92	4.00	FDI <sub>down<sub>out</sub></sub> <sup>1</sup>	11.02	2.63
	0.13	0.17		0.46	0.11
ISCED_FDI <sub>in</sub> <sup>1</sup>		3.83***	ISCED_FDI <sub>out</sub> <sup>1</sup>		4.91***
		6.19			9.62
ISCED_FDI <sub>up<sub>in</sub></sub> <sup>1</sup>		-4.68***	ISCED_FDI <sub>up<sub>out</sub></sub> <sup>1</sup>		-4.06***
		-2.63			-2.77
ISCED_FDI <sub>down<sub>in</sub></sub> <sup>1</sup>		-0.27	ISCED_FDI <sub>down<sub>out</sub></sub> <sup>1</sup>		1.32
		-0.26			1.36
F interactions		14.57***	F interactions		32.6***
N	31437	31437	N	52205	52205
F	73.88***	70.32***	F	142.81***	138.14***
R <sup>2</sup>	0.1376	0.1389	R <sup>2</sup>	0.1727	0.1747

Sector dummies not reported; het.cor. s.e.; \*\*\* p<0.01, \*\* p<0.05; \* p<0.10. t values below coefficients

<sup>1</sup>(× 10<sup>-3</sup>)

<sup>2</sup>(× 10<sup>-2</sup>)



## 7.5 CONCLUSIONS

The debate on the effects of globalization addresses a number of different issues, but the social effects – in particular for the quantity and quality of employment – of globalization constitute one of the central themes. Both the effects of inward investment and outward investment have been questioned. On the one hand, positive effects have been identified: locating productive capacity in other countries can both contribute to wages and employment conditions in those host countries, and by enabling firms to grow through international investments, the demand for high quality jobs increases in the home country as well. But it has also been theorized that foreign investment exports jobs from high to low wage countries, and may negatively affect labour conditions in both countries (the ‘race to the bottom’). The tendency of MNEs to use similar employment practices in their subsidiaries as in their home countries, can both diffuse superior knowledge on organizing work, but may also challenge the existing system of industrial relations in a host country.

Despite an already substantial body of work on some of the labour dimensions of FDI, much uncertainty remains with respect to the employment impact of international investments. To what extent do inward and outward investments contribute to wages and employment conditions in home and host countries? This paper has addressed this issue for the Netherlands, structuring the analysis along four different research questions. Using a unique dataset of employee level data that includes not only wages but a wide range of other dimensions of labour conditions, the effect of both inward and outward investment for working hours and overtime, industrial relations, and several perceptual measures of for example job satisfaction or job stress was addressed. Both the direct and indirect effects of MNE investment were assessed, and a distinction was made among MNEs from various countries of origin, to explore if MNEs indeed are – as suggested in the literature – diffusers of organizational practices in host countries. At the same time, the assessment of the effects of outward investment is in particular for developed countries an important concern: to what extent are jobs exported, and to what extent does globalization benefit only the elite or an entire economy and work force?

The empirical analysis in this paper was organized along the four research questions, addressing first the direct effects of working for a foreign firm (RQ1 and 2), subsequently the indirect effects of inward investments (RQ3) , and finally the consequences of outward FDI (RQ4).

### **Direct effects of MNEs in the Netherlands**

With respect to the direct effects of MNEs in the Netherlands, the findings of this paper confirm existing literature in that working for a foreign firm is associated with higher wages. This effect is more prominent for high-skilled workers: the average low-skilled (education level is lower secondary) employee earns €12.75 per hour (gross) for a domestic firm; changing jobs to a foreign employer would increase his or her wage with 1.1 percent to €12.89. For high-skilled workers (tertiary education), the wage premium of working for a foreign firm is much higher at 15.2 percent, increasing average gross

wages from €17.26 to €19.89 per hour. These numbers are in line with previous research on the wage effect of foreign investment.

This wage differential is very likely due to productivity differences between domestic and foreign firms (for example, employees at MNEs receive more training), and may also aim to prevent labour migration. But it may also reflect the fact that working for an MNE is more demanding. Lower-skilled workers at MNEs report to work more often in dangerous or unhealthy conditions, work longer working hours as well as more irregular hours or shift work, and experience more job stress. High skilled employees at MNEs have more overtime work than employees for domestic firms.

Exploring differences between working for foreign firms from different countries of origin, we found that especially the US and Japanese firms seem to have a quite different (and to an extent also stereotypical) style of dealing with employees than Dutch domestic firms, and appear to be transferring their home country practices to the host country in which they do business. For example, the focus of Japanese firms on quality and process innovation (Ruigrok and Van Tulder, 1995) is reflected in the high degrees of training, and the absence of dangerous or unhealthy working conditions. The relatively masculine Japanese culture (see Hofstede, 1980) appears to have resulted in the very low scores on equal opportunity within Japanese firms. The adage 'work hard and play hard' seems to best describe labour conditions at US firms: with the highest working hours, overtime (with relatively little compensation), and stress levels, but also the highest wages, extensive training, and the most challenging work. Both US and Japanese firms appear to avoid the collective bargaining systems in the Netherlands, and are associated with very low unionization rates and collective labour agreements.

### **Indirect effects of FDI**

The findings with respect to the indirect or spillover effects of inward FDI suggest that the presence of foreign investment is followed by a competitive reaction by Dutch firms, which try to make better use of human resources by investing in training and improving equal opportunity, or engage in mergers to increase the scale of their activities (though exit via bankruptcies of domestic firms is also positively related to inward FDI). Overall, the effect of inward FDI appears to be positive, given the positive association between FDI and workforce growth for both high and low skilled employees, suggesting a transfer of knowledge and technology. But the benefits of spillovers from FDI are mainly concentrated at high-skilled workers (who earn higher wages due to increased labour market competition from FDI). Lower-skilled labour appears to bear the burden of increased competition and has to work more often in shifts or irregular hours, and are less often covered by collective labour agreements. This may explain for the increased unionization rates among domestic employees in the presence of FDI.

Inward FDI also affects employment via backward linkages. The increased demand for suppliers' products is positively associated with low-skilled work force growth. But it appears that the buying power of MNEs pressures suppliers to reduce inefficiencies, implying longer working hours per employee, (slightly) more overtime, and increased work in unhealthy or dangerous situations. This may also explain for the positive

association between the extent of backward linkages in an industry, and the rate of mergers (scale enlargement to cut costs) and bankruptcies (those firms that did not make it). Forward linkages on the other hand are also not very beneficial for employees working in those forward sectors. It appears that the foreign-owned suppliers dictate the terms to the domestically owned users and distributors of their products, which implies that working for domestic firms in sectors characterized by large shares of foreign-owned suppliers is a less challenging and less attractive option for high-skilled employees.

### **Effects of outward investment**

Finally, with respect to outward FDI, the findings suggest that concerns of large scale job relocation due to outward investment are generally unsubstantiated (although sector differences could remain). However, as with inward FDI, the positive effects of outward FDI in terms of higher wages, more challenging and satisfying jobs, and less irregular working hours, are concentrated among high-skilled employees, whereas the costs – a deterioration of overtime compensation, longer hours, less equal opportunity – are equally distributed across high and low skilled labour. Outward investment is also associated with changing labour relations, as seen in the reduction of CAO coverage and increased union membership, and with organizational change in an industry (mergers and bankruptcies).

The findings on the effect of outward investment for domestic suppliers (backward linkages) also do not suggest that a major replacement of domestic for foreign inputs occurs, although outward investment in downstream industries does negatively affect the quality of low-skilled jobs. Also for the effect of FDI on employment via forward linkages, the results are not entirely positive: outward investment by firms in upstream sectors may indeed be coupled with an increased use of foreign market distributors or by forward integration, where more advanced tasks are being placed in other (not necessarily low labour cost) countries. This is suggested by the lower pay and lower job quality for high skilled employees.

### **Implications and further research**

As overarching conclusion, both inward and outward FDI seem to have beneficial effects for Dutch employment, wages and labour conditions, but the benefits are much larger for high-skilled than for low-skilled employees. This means that globalization via FDI has positive overall effects but detrimental distributional effects for the Dutch workforce. These findings suggest important implications for policy makers, who in order to smooth the adjustment of the Dutch workforce to a global environment and dampen the negative distributional effects, need not only create and maintain social safety nets, but especially need to invest more in education and training. This will both increase the overall benefits of international investment and reduce negative distributional effects.

The findings of this paper have also important implications for trade unions bargaining with MNEs and domestic firms over wages and labour conditions. The relocation of employment from the Netherlands to low-wage countries is not a widespread phenomenon, but outward investment (and inward investment) does negatively affect

working conditions for low-skilled workers, the traditional union members. Unions may hence prefer to focus on the quality of employment in labour negotiations, as the quantity of jobs is less likely to be affected by globalization (though individual exceptions may exist). The positive effects of globalization are concentrated among higher-skilled workers. Therefore, in bargaining over labour conditions, trade unions may want to attach more importance to the training of employees, and less on wage increases (that will follow automatically with education).

These are still relatively general recommendations. For more detailed suggestions, further research into the effects of globalization on employment, wages and labour conditions in the Netherlands is warranted, as the present study suffers from some important limitations. First of all, this paper is based on cross-sectional data, making it very difficult to disentangle causes and effects. Within the limits of the cross-sectional data, all possibilities to ensure that the findings were not caused by reversed causality were explored. Endogeneity has been addressed by IV regressions, and for the sector level FDI data, a time lag between 1 to 3 years was included in the analysis, further reducing the chance that FDI was pulled towards, rather than influences, the labour characteristics of a particular sector. For some of the dependent variables, reversed causality was also theoretically rather unlikely. But although all these controls showed that the results were indeed influenced, but not qualitatively changed, by reversed causality, further research is necessary to explore this issue further before strong conclusions can be drawn. Especially the study of these phenomena over time should yield more certainty as to the direction of causality.

A second issue is that many of the results presented here generalize findings across sectors, whereas slope heterogeneity in the effect of FDI on employment could be expected among high-tech versus low tech sectors, or sectors that are open or closed to trade. Further studies should yield more insights into how the effect of FDI differs in various contexts. This does not only apply to the sector of activity, but to the characteristics of investments. This paper studied the role of the country of origin of FDI and suggested that home country institutions and culture play an important role in the employment practices of foreign subsidiaries. Further research could elaborate this point further and explore exactly what dimensions of home culture, and what kinds of home country institutions result in the most positive contribution of foreign subsidiaries to employment and employment conditions. Also other firm characteristics require further study. For example, Hamill (1992) theorized that the type of subsidiary (as defined by Bartlett and Ghoshal, 1989) would matter as well in determining the employment effect of inward FDI. And also the mode of entry – greenfield versus acquisitions – could be an important determinant of the net contribution of a foreign affiliate to employment. With respect to outward investment, in particular its geographical direction (developed versus developing countries) has been shown to distinguish between positive and negative effects for domestic employment (see Harrison and McMillan, 2006). While it was impossible to correct for this issue with the present dataset, further research should take this into account in order to shed more light on the employment effects of FDI in the Netherlands.

Finally, more research is necessary to differentiate between the employment consequences of the various motives for internationalization. This paper does not distinguish between strict relocation (closing down one factory in order to open up another in a more favourable location), broad relocation (relocating part of a factory to improve a firm's competitive position), offshoring (international in-sourcing of production mostly to low wage countries) and outsourcing (as part of a move back to core competencies) (see Mol *et al.*, 2005). It is acknowledged, however, that each motive can have different repercussions for labour content and labour conditions both at home and abroad (Cf. Van den Berghe, 2003). Further research is needed to investigate this distinction in more detail.

# 8 ON THE ECONOMIC DIMENSIONS OF CSR: EXPLORING FORTUNE GLOBAL 250 REPORTS

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## 8.1 INTRODUCTION

The economic impact of multinational enterprises (MNEs) on host countries receives growing attention from academics and policy makers alike. There is a long-standing, predominantly macro-economic debate on the role of foreign direct investment (FDI) in host-country growth, especially in relation to developing countries. Although important insights about the various mechanisms through which FDI can impact economic growth have emerged, the empirical evidence on its exact consequences for host countries' economies is still far from conclusive, as noted by for example Caves (1996), Rodrik (1999) and Meyer (2004). On the one hand, the rise in world-wide FDI since the 1980s has been hailed by many as an important means to complement domestic savings, to transfer skills, knowledge and technology, improve competition and increase the quantity and quality of employment; thus furthering economic growth and social development. On the other hand, however, MNEs have been accused of crowding out local firms, using technology that is not always appropriate for local circumstances, creating merely low-wage jobs, contributing to so-called 'McDonaldization' of lifestyles, manipulating transfer prices (and thus reducing the tax base), and (ab)using their powerful political and economic position in host countries (Kolk and Van Tulder, 2006).

As input into this unresolved debate, calls have been made recently to concentrate less on the macro level of analysis and more on micro-level, firm-specific behaviours, in order to yield insights into 'the role of MNEs in society' broadly defined, particularly using the expertise from the field of international business (Meyer 2004: 261). Such a focus on the impact of firms falls in line with recent policy attention to MNEs' potential contribution to alleviating poverty (e.g. in realising the Millennium Development Goals). It also links to attempts by firms themselves, particularly in the past decade, to account for their implications for society and the environment through corporate reporting. Such disclosure practices have traditionally focused more on the environmental and social aspects (see e.g. Chapple and Moon, 2005; Kolk, 2005, Line *et al.*, 2002, Maignan and Ralston 2002); only very recently are the economic dimensions receiving more attention as part of a trend towards corporate social responsibility or so-called 'triple bottom line' reporting (people, planet, profit), both by firms and academics (see De Bakker *et al.*, 2005). How firms report on these economic dimensions of CSR is very relevant, because it not only sheds light on their perceptions regarding impact, but also on how such impacts are being operationalized and measured, and differ across types of firms. Such

information should be helpful for further research regarding the economic impact of MNEs, also at the macro level (and not limited to developing countries only), and for managers and policy-makers interested in assessing and guiding MNE behaviour.

This paper thus aims to make a contribution to the debate on the role of FDI in development (and host economies in general) by exploring how MNEs currently report on the economic impact. The tendency that firms increasingly publish ‘triple bottom line’ reports (usually with titles such as corporate social responsibility or sustainability reports, see e.g. KPMG, 2005) offers the opportunity to assess this information as disclosed by firms themselves. Through an analysis of the reports published by the Fortune Global 250, we document the current situation regarding these firms’ self-reported economic impact and the mechanisms through which they contribute to host economies, illustrated with noteworthy examples. In addition, an assessment is made subsequently of which firms are most likely to report on the various aspects, looking at sector of activity and country of origin, as well as firm size and profitability. The implications of these findings are discussed in the final section of this paper, accompanied by recommendations for further fine tuning and application. Before moving to the empirical sections, however, we first briefly discuss the main impacts of MNEs on economic development as identified by the literature.

## **8.2 LITERATURE REVIEW: MNEs’ IMPACT ON ECONOMIC DEVELOPMENT**

There has been considerable academic attention for the impact of FDI and MNEs on economic development and economic growth. Much of this has focused on developing countries (or the smaller subset of so-called emerging economies in which most FDI takes place). In this section, we will first briefly discuss the divergent evidence that has been found so far (for more extensive overviews, see e.g. Meyer, 2004). Consequently, we will focus on the main mechanisms through which MNEs can impact host countries, such as technology transfer, or the creation of linkages with local firms. As these occur at the individual firm level and can, to a certain extent, also be influenced by the MNEs themselves, these mechanisms are most likely to be referred to corporate reporting on the economic dimensions of their CSR strategies.

If one should draw just a single conclusion from the large number of existing studies on the effect of FDI on economic development, it would be that the empirical evidence on this issue is extremely mixed. On the one hand, De Mello (1999), Sjöholm (1997b) and Xu (2000) found that foreign investors increase growth in host countries. Baldwin, Braconier and Forslid (1999) showed that domestic technological progress was aided by foreign technological progress, and studies by Borensztein, De Gregorio and Lee (1998) and OECD (1998) also came to the conclusion that FDI had a larger impact on economic growth than domestic firms’ investments. On the other hand, a study by Kawai (1994), using a set of Asian and Latin-American countries, indicated that an increase in FDI generally had a negative effect on growth (with the exception of Singapore, Taiwan, Indonesia, the Philippines and Peru). In Central Eastern European countries, the impact of FDI on growth proved to be negative as well (cf. Djankov and Hoekman 1999;

Konings, 2000; Mencinger, 2003; UNECE, 2001). Finally, in their study on 72 countries, Carkovic and Levine (2000) found a negative impact of FDI on income and productivity growth.

Studies that used industry-level rather than macro-economic data (often focusing on productivity growth as equivalent of economic growth) did not yield consistent results either. Some authors found indeed positive results of FDI on productivity, in a diverse range of countries. This included the manufacturing industry in Indonesia (Sjöholm, 1997a; Anderson, 2001), Mexico (Blomström and Wolff, 1994; Kokko, 1994; Ramírez, 2000), Uruguay (Kokko *et al.*, 1996) and China (Liu *et al.*, 2001). Others found negative effects of FDI on the productivity of local firms. Using Venezuelan data, Aitken and Harrison (1999) concluded that productivity in local firms decreased, whereas productivity in foreign firms and firms with significant foreign participation increased. Haddad and Harrison (1993) and Aitken, Harrison and Lipsey (1996) did not find positive productivity spillovers in Morocco, Venezuela or Mexico.

A good understanding of the impact of FDI on development seems to necessitate attention to the underlying processes (such as technology transfer and linkage creation) that shape this relationship, especially also from a policy perspective (Chung *et al.*, 2003). However, while empirical studies cited above indicate that there are several ways in which local firms may be affected by foreign subsidiaries, they fail to give explicit empirical attention to the specific mechanisms through which FDI may impact development, (Alfaro and Rodriguez-Clare, 2004). In this study, we focus exactly on those mechanisms, and on the roles that MNEs (try to) play in enhancing their potential positive effects.

The different ways through which these (either positive or negative) effects of MNEs and FDI for economic development can occur, can essentially be grouped into three main groups of mechanisms: Size effects, Structural effects, and Skills and technology effects. Size effects refer to the most direct or static contribution of FDI to host countries, and encompass the net contribution that a foreign subsidiary makes to e.g. capital formation or employment. By adding to the host country's savings and investments, FDI enlarges the production base at a higher growth rate than would have been possible if a host country had to rely on domestic sources of savings alone. In addition, an investment by a multinational firm may increase employment by hiring workers.

Yet, most of the anticipated gains of foreign capital are usually attributed to the more indirect effects of FDI (also named spillovers). These mechanisms include either structural change in markets (competition), multiplier effects (backward linkages with suppliers), or the transfer of skills and technologies.

Structural effects brought about by the entry of an MNE might occur both horizontally (competition) and vertically (linkages with buyers and suppliers). An investment of an MNE in a local economy can stimulate competition and improve the allocation of resources, especially in those industries where high entry barriers reduced the degree of domestic competition (e.g. utilities). However, fears are often expressed that MNEs, with their superior technology, greater possibilities for utilizing economies of scale and access to larger financial resources, may out-compete local, often much smaller firms



(‘crowding out’). In a strict economic sense, crowding out does not have to be problematic, as long as local firms are replaced by competing, more efficient firms. Yet, if crowding out leads to increased market concentration, the risk of monopoly rents and deterioration of resource allocation (and thus reduced economic growth) increases. These potential effects can also extend to e.g. capital markets. If FDI is financed by local borrowing, credit constraints for local firms may very well increase (Harrison and McMillan, 2003).

The linkages of the MNE affiliate with local buyers and suppliers form the main channel through which inter-industry spillovers can occur. Backward linkages are sourcing relations with suppliers, and are created when MNE affiliates buy their inputs from local firms (Alfaro and Rodríguez-Clare, 2004; Rasiah, 1994). This might not only raise the overall output of local supplier firms, but also their productivity and product quality, as MNEs provide technical and managerial assistance (McIntyre *et al.*, 1996). Forward linkages refer to relations with buyers – either consumers or other firms using the MNE’s intermediate products as part of their own production process (Aitken and Harrison, 1999). Buyers of MNE products could benefit from products with lower prices or better quality, and from the marketing knowledge of the MNE.

Transfer of knowledge and skills may also take place in other areas. Since MNEs are frequently key actors in creating and controlling technology (Markusen, 1995; Smarzynska, 1999), their affiliates can be important sources for spreading managerial skills, and expertise on products or production processes – either intentionally or unintentionally – to host-country firms (Blomström *et al.*, 1999). This may induce local firms to update their own production methods. Technology transfer and spillover effects can also result from labour migration of MNE-trained workers to local firms. However, if technological upgrading becomes too dependent on decisions by foreign MNEs, this might impair the development of a local innovative basis. Moreover, MNEs’ (capital-intensive) technologies may not always be appropriate for developing country (labour-intensive) contexts (Caves, 1996), with local firms facing difficulty in absorbing foreign technologies and skills.

This overview of the literature illustrates that at the macro level, there is considerable understanding of the mechanisms through which MNEs and FDI impact host countries. Conclusive evidence on the outcomes of these processes is lacking, however. Partly, this is due to the relative novelty of explicitly including MNEs and firm-specific behaviour in such analyses; partly also, because of persistent data availability problems at the macro but particularly the micro level. In this paper we venture to make a contribution to both aspects by examining what MNEs themselves report about their economic impact and the underlying mechanisms through which that impact occurs, and on how these reporting practices differ across firms. By doing so, this study not only provides information on how economic impacts and mechanisms could potentially be ‘measured’ at the firm level, but also on the current extent of MNE’s ‘awareness’ and the factors that influence this level of self-reporting.

### 8.3 SAMPLE AND DATA COLLECTION

The emergence of corporate non-financial (sustainability, corporate social responsibility) reporting has incited disclosure of not only social and environmental, but also a firm's economic impacts. We therefore collected and analysed the contents of these non-financial reports. The set of firms targeted was the Fortune Global 250 – the first half of the Fortune Global 500 list as published on 26 July 2004. In the period September 2004 – January 2005, all 250 firms were scrutinised for their most recent corporate report that dealt with environmental, social responsibility and/or sustainability issues. This could be either a separate report or, if not available, the annual financial report if it contained this kind of information. Websites were visited to actively search for reports, and if this did not yield results, the firms were contacted, several times if necessary, by letter, mail and/or phone, in order to have certainty about reporting by the whole set of 250 firms. Of the 250 firms, 161 published non-financial reports, while the remainder confirmed not to report (and hence were counted as non-reporters in consequent analysis).

The contents of the 161 reports thus collected were subsequently carefully analysed to see to what extent MNEs reported on or referred to their economic impacts. We included four key variables in this respect, based on the mechanisms that were identified above. First, whether firms mention and report on their economic impact at all (IMPACT); and then, whether they pay attention to each of the three main mechanisms distinguished in the literature: the overall size of their presence (SIZE), the structural changes brought about by their affiliates – focusing specifically on linkages with local firms (LINK), and finally, activities related to transferring technology to local firms (TECH).

Firms were scored on each of these variables in two ways: first, by indicating the absence or presence of this information (resulting in binary variables), but also, second, by collecting explicit statements and 'best practices' from the reports. Because of the exploratory nature of the study and the novelty of examining firms' information by these means, we felt that documenting and presenting interesting examples could be useful for a better understanding of the specifics of the impacts as well as be potentially helpful for managers and policymakers interested in pursuing the issue.

In the analysis of the reports, we also considered MNEs' impacts on competition, since this is in addition to linkages, the other key part of the Structural effects outlined in the literature review. However, this issue turned out to receive very little attention in the MNEs' non-financial reports. Less than 10 percent of the reports included statements on firms' approaches to competition, and even if so, usually in rather general terms. One of the most explicit statements originates from ABB (2004: 22), which notes that it 'is committed to fair and open competition in markets around the world and would take immediate steps under its 'zero tolerance' ruling to address any incidents of non-compliance among its employees or other actions which restrict or distort competition in violation of applicable anti-trust laws'. In addition, particularly for Japanese MNEs, 'fair competition' does not refer to their own behaviour but rather to fair competition among their suppliers (those that compete for an order with the MNE in question). Competition will therefore not be further included in the subsequent examination.

## 8.4 MNE REPORTING ON ECONOMIC IMPACT

Table 8.1 gives a general overview of the economic issues that MNEs include in their reports. It shows that about a quarter of the firms that publish a non-financial report addresses the topic of the impact of their activities on host economies, which corresponds to slightly more than 16 percent of the total Fortune Global 250. As will be more extensively discussed below, firms that report on their economic impact most often do so by referring to size effects, followed by linkage creation. Technology transfer is mentioned considerably less.

**Table 8.1 Economic issues included in Fortune Global 250 reports, 2004**

	% reports	% of sample
IMPACT	25.5	16.4
SIZE	18.6	12.0
LINK	14.3	9.2
TECH	6.8	4.4

The 'percentage of reports' column refers to the percentage of *reports* that include a reference to one of the economic issues (i.e., n=161); the 'percentage of sample' column refers to the percentage of *all Global Fortune 250 firms* that refer to a selected economic issue.

### Size Effects

A good example of an MNE reporting on size effects is Alcoa (2004:48), which mentions to strengthen 'local and national economies through well-paying jobs, taxes paid, and local purchases', e.g. through its subsidiary Suriname Aluminum Company (Suralco), which in 2002, 'accounted for roughly 15 percent of Suriname's gross domestic product – more if multiplier effects are taken into account.' Other firms also related their business to the size of local economies. RWE (2004:32, 68) states to be the 'world's third-largest water supplier', and 'the largest private water company in both Indonesia and Thailand, for example.' British Telecom (2004:22) calculated its direct and indirect contribution to British employment and GDP, and concluded that it supported 'almost 1.7 percent of all employment in the UK'. Similarly, Telefónica (2004:83) reports its revenues to account for 1 percent of GDP in Argentina, and up to 2.36 percent in Peru.

MNEs frequently refer to size effects by including numbers of jobs created. Examples include Vivendi Universal's (2004:14) subsidiary in sub-Saharan Africa ('600 direct jobs'), or Coca-Cola (2004:16), which claims that 'the Coca-Cola system' is 'Africa's largest private sector employer', with 'nearly 60.000 employees'. ExxonMobil (2004:20) is the only firm out of the entire Global Fortune 250 that relates its activities most directly to economic growth, by stating that in their Chad-Cameroon project, 'the annual growth rate of Chad's GDP has soared to nearly 11 percent since construction began, compared to a rate of just 1 percent in previous years. Economic growth is projected to rise even higher as project revenues being flowing to the two governments.'

A notable element of corporate reporting on size impacts is that particularly European and Japanese MNEs have started to report on their 'added value' to society and stakeholders, and include figures on (cash) value added to different (stakeholder) groups,

or on how expenses are distributed. A wide variety of ways to do this can be found, in the categories mentioned, in calculation methods, and in the presentation of figures or percentages, over just one or more years. Although the range of approaches hampers comparisons, the trend towards specification of contributions offers insight into different means of reporting about economic impacts on society, or as BASF (2004:57) puts it, 'Unlike the statement the statement of income, the value added statement is not from the shareholder's perspective, but explains BASF's contribution to private and public income'.

In its report, BASF explains that the value added created (6.3 percent lower in 2003 than in 2002) results from the business performance minus costs of materials, depreciation and amortization and other expenses. It was distributed over employees (68.1 percent, was 64.8 percent in 2002); creditors (4.2 percent, was 4.2 percent); dividends to shareholders (9.0 percent, was 8.6 percent); state (16.4 percent, was 13.8 percent); the firm itself (1.5 percent, was 7.6 percent) and minority interests (0.8 percent, was 1.0 percent). Another example is Unilever (2004:3), that includes a section entitled 'Creating value, sharing wealth' in which it pictures the development of total shareholder return (1999-2003), and gives the distribution of cash value added over employees (46.5 percent); invested in business for future growth (20.8 percent); providers of capital (21.6 percent); governments (only direct corporate taxation, 10.6 percent); and local communities (only voluntary contributions to charities and NGOs, 0.5 percent).

The notion of corporate social responsibility accounting ('CSR accounting: creation and allocation of added value') is introduced by Ito-Yokado (2004:3). This very clearly outlines that 84 percent of the firm's revenues goes to the business associates (for costs of goods sold, sales expense, etc), and that the other 16 percent consists of added value produced through Ito-Yokado's business activities. The report subsequently gives the division over the different categories, and has a separate table in which the components are explained. British Petroleum (2004:9) includes, in addition to quantified distribution over the different groups, also a graph in its sustainability reports with 'stakeholder and benefits', and mentions for example that it provides employment for 103,700 people, works with communities around more than 100 major sites, and with nearly 135,000 suppliers and contractors.

Tax issues are sometimes mentioned as part of this distribution of value added, but often addressed separately as well, as one of the size effects of MNEs. About one in six reports analysed tax issues to some extent, most often to just highlight the amount of taxes paid, or at best, with a geographical breakdown of taxes such as in the reports of Norsk Hydro and British Telecom. Alcoa (2004:49) mentioned its effective tax rate (33.5 percent), while ExxonMobil (2004:18) calculated that its operations generated 200 million US\$ in taxes per day. Pemex (2004:7) made a particularly interesting observation regarding its taxes, by stating that 'in spite of Pemex's efforts in 2003, the net return after taxes showed a deficit of 41.7 billion pesos, which reveals the need to modify the current fiscal regime to promote the company's health and growth.'

Overall, MNEs do not differentiate between their impact on home and host countries, let alone developing countries specifically, thus hampering an assessment of the impact of

FDI. In a few cases, however, some of this information is presented. Dow Chemical gives figures for salaries, taxes and purchasing per region (North America, Europe, Latin America, Pacific). Telefónica indicates, for six countries in South America, how it contributes to the economies and their development, by listing economic data (percent of revenue, in relation to GNP, number of employees, and local suppliers). Shell also pays attention to economic benefits to society, listing amounts paid on sales taxes and excise duties, corporate taxes, royalties, expenses on goods and services from locally owned firms in developing countries, and investments in social programmes.

### **Linkage creation**

Another dimension that we studied in the reports is linkage creation. While linkages can be both vertical and horizontal (the latter representing e.g. joint ventures), the vast majority of firms reports on vertical linkages when discussing their ties with local firms. Exceptions include RWE that reports on its 20-year-old Egyptian joint venture, and PepsiCo (2004:27) which highlighted that through its 40 Chinese joint ventures, it employs 'more than 10,000 Chinese people directly and an estimated 150,000 indirectly'. In most cases, however, firms mention vertical linkage creation, in particular with suppliers. Several firms report on the precise number of goods and services bought from suppliers, thus indicating their impact on local firms. Procter & Gamble (2004:50) for example 'purchased more than \$25 billion in materials and services to manufacture and market [their] products. [They] employ locally and purchase the majority of [their] raw materials within those regions where [they] manufacture [their] products.' Similarly, HBOS (2005:6) reports to have '20,000 suppliers' and to spend 'over £2 billion each year on procurement'. Telefónica (2004: 84) not only splits out its amount of purchases by the countries in which it operates, but also details the percentage of local suppliers in relation to their total purchases, which exceeded '90 percent on average', both by value and number of contracts. However, since in their list of top 10 suppliers large MNEs such as Ericsson, IBM, Alcatel and Nokia dominate, these local suppliers may likely be foreign owned as well.

### **Technology transfer**

Firms are least likely to report on the final aspect; activities related to technology transfer. In fact, of the total sample, only 11 referred to technology transfer, and this included some rather general statements. The few firms that reported in more detail on their activities usually discussed involvement in training of either own employees or those of local suppliers. ExxonMobil (2004:20) for example states to 'recognize its responsibility to support the development of local economic capacity by providing training and development opportunities for local business.' More concretely, BP (2004:35) 'has been active in programmes designed to strengthen small and medium enterprise (SME) sectors', for example in Azerbaijan, where '300 training courses' were ran and '100 companies' were helped 'by providing consultancy and business advice'. PepsiCo (2004:27) finds that due to their agricultural development programmes, crop yields have significantly improved. In China, for example, 'PepsiCo funded a \$20

million, comprehensive agro-technology program that introduced state-of-the-art seed development techniques and farming practices to China', 'benefiting 1,100 farming families'. Finally, Unilever (2004:12) reported that its Vietnamese subsidiary 'consciously sought to develop a range of sourcing and distribution partnerships with local companies that require the transfer of technology capabilities'.

## **8.5 EXPLORING DRIVERS OF MNE IMPACT REPORTING**

The preceding analysis shows that MNEs have started to report on economic impacts, particularly size effects, and that interesting and explicit examples and 'best cases' exist. While this is instructive to firms, policymakers and other stakeholders (including researchers) for different reasons, it is also notable that the overall percentage that currently provides information is still rather limited. This raises the question of which firms are most likely to report in general on economic impacts and on the various mechanisms. A better insight into the factors that play a role in this respect can also be helpful for those who, for example, want to encourage investment of particular firms (for example, the ones that are most explicit about impacts or seem to contribute most to one or more dimensions) and devise appropriate regulation and/or incentives, or aim to improve transparency of the non-disclosing firms. Below we examine to what extent reporting on the four key variables differs across firms originating from particular regions (countries) and sectors, and with different size and profitability characteristics. These are aspects that have often been included in existing studies on corporate non-financial (environmental and social) disclosure, that draw from institutional or legitimacy theory, or use stakeholder approaches (e.g. Adams *et al.*, 1998; Berthelot *et al.*, 2003; Kolk, 2005; Sharfman *et al.*, 2004).

First, differences in regulatory pressure (Davidson III and Worrell, 2001; Sharfman *et al.*, 2004) as well as public pressure more generally (Kolk, 2005) across countries have been shown to significantly influence the extent to which firms engage in social or environmental activities. While there is less strict regulation on firms regarding their economic contributions (on e.g. the extent of technology transfer), we expect that firms that are highly pressured to be transparent on the social and environmental dimensions of their CSR activities will experience similar pressures regarding the economic dimensions. Given our somewhat limited sample size, we clustered the countries together in four main regional groups (North America, Europe, Asia, and developing countries). While there is still noticeable variance in regulatory pressure within each group, differences across groups have been shown to be significantly larger (Kolk, 2005).

In addition to variation in regulatory pressures, differences have also been established in corporate CSR reporting across sectors, due to e.g. industry levels of diversification, global integration or local responsiveness (see Sharfman *et al.*, 2004). Since the main mechanisms through which MNEs economically affect the countries in which they operate differ in importance across industries (e.g., technology transfer is likely more central in technology-intensive industries, while local linkages are more often created in locally-responsive industries), we expect that also firm reporting on these issues will

differ across industries. We classified the 250 firms in our sample in eight different industry groupings, by aggregating Fortune sector classifications.

Studies on environmental disclosure have also shown that the size of firms is important for environmental accountability (Adams *et al.*, 1998; Gray *et al.*, 1995; Neu *et al.*, 1998). The logic behind these findings is that with increasing size, firms become more visible and so do their environmental impacts, thus exposing them to increased public pressure to report more extensively. We measure the variable LogSales as the logarithm of a firm's total sales.

Finally, it is often suggested that higher levels of environmental disclosure contribute to economic performance and profitability (Al-Tuwaijri *et al.*, 2004). Although the causal relation may also run the other way round, in our cross section data we expect a positive relationship between economic and environmental disclosure. Profitability (ROS) is measured as return on sales; both variables are taken from the Fortune Global list.

**Table 8.2 Reporting on economic issues, by sector and region, total and percentage**

	N				% of sample			
	IMPACT	SIZE	LINK	TECH	IMPACT	SIZE	LINK	TECH
<i>Total</i>	41	30	23	11	16%	12%	9%	4%
<i>By sector</i>								
Automotive	4	3	2	0	20%	15%	10%	0%
Chems&pharma	4	3	1	1	31%	23%	8%	8%
Electronics	3	2	2	0	13%	9%	9%	0%
Oil	7	4	4	4	35%	20%	20%	20%
Other manufacturing	7	5	5	4	25%	18%	18%	14%
Finance	4	3	3	0	6%	5%	5%	0%
Trade&retail	3	2	1	0	8%	6%	3%	0%
Other services	9	8	5	2	19%	17%	11%	4%
F	2.29**	1.40	1.25	3.83***				
<i>By region</i>								
Asia	5	4	2	1	11%	9%	5%	2%
Europe	26	17	14	7	28%	18%	15%	8%
North Am.	10	9	7	3	10%	9%	7%	3%
Developing	0	0	0	0	0%	0%	0%	0%
F	5.36***	2.14*	2.29*	1.22				

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10

Given that the number of firms that actually reported on their economic impact is relatively low, we first discuss the relationship between the dependent and independent variables based on simple correlation coefficients and analysis of variance, before testing the significance of each in a regression analysis. Table 8.2 explores to what extent reporting differs across firms from different sectors and countries of origin using ANOVA. Both the total number of firms and the percentage share in the sample that report on a particular dimension are reported. (e.g., 41 of the 250 Fortune Global Firms report on their economic impact, which equals 16 percent). Table 8.2 indicates that both

sector level pressures and regional (institutional) differences significantly influence the extent of reporting on economic impact. In particular, the attention for technology transfer seems to differ across sectors, while this effect is not significant for the creation of linkages and for size effects. Companies in the oil industry are most prone to report on their economic impact, followed by chemicals & pharmaceuticals, and other manufacturing. In contrast, firms active in finance, trade & retail, and electronics, are least likely to discuss activities related to their economic impact. While Sector effects can significantly explain the variation in reporting on technology transfer, region of origin influences the extent to which firms in report on the size of their impact and the extent of linkage creation. The descriptive statistics indicate that impact reporting predominantly occurs in Europe.

Table 8.3 gives descriptive statistics and correlation coefficients for the continuous variables in the models. Correlation coefficients between the four dependent variables – IMPACT, SIZE, LINK, and TECH – are all significant, as expected, though not all values are extremely high, indicating that they each still measure a different dimension of MNE impact. This is further illustrated by the correlations with LogSales, which is correlated with technology transfer and linkage creation, but not with size effects.

**Table 8.3 Descriptive statistics and correlation coefficients (n=250)**

	m	sd	(1)	(2)	(3)	(4)	(5)
(1) IMPACT	0.16	0.37	1.00				
(2) SIZE	0.12	0.33	0.83***	1.00			
(3) LINK	0.09	0.29	0.72***	0.65***	1.00		
(4) TECH	0.04	0.21	0.48***	0.28***	0.54***	1.00	
(5) ROS	5.61	8.40	-0.04	-0.03	-0.01	0.02	1.00
(6) LOGSALES	4.58	0.23	0.16**	0.04	0.20***	0.17***	-0.05

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10

Combining each of the four dependent variables (IMPACT, SIZE, LINK, and TECH) with all four independent variables (Sector, Region, ROS, LogSales) in regression analyses could shed more light on the relative importance of each of the individual drivers. In view of the dichotomous nature of the dependent variables, OLS regression could not be used. Instead, Logistic Regression (LR) was applied. The results of these LR analyses are displayed in tables 8.4 and 8.5. Table 8.4 gives the statistics of overall model fit, as well as the coefficients (and odds-ratios: exp(B)) for the individual variables (ROS and LogSales) and categories within variables (Sector and Region). For the categorical variables, the Wald statistics test the significance of the coefficients in relation to the reference category ('Other services' and 'North America', respectively), and not whether the variable 'sector' or 'region' as a whole significantly explain the variance in the dependent variable. Therefore, likelihood tests are conducted and reported in table 8.5. These statistics test the significance of the change of the -2LL value between the unrestricted model (all four independents included) and the restricted model (all but the variable in question included).



**Table 8.4 Logistic regressions (n=250)**

	IMPACT		SIZE		LINK		TECH	
	b	Exp(B)	b	Exp(B)	b	Exp(B)	b	Exp(B)
Constant	-9.31**	0.00	-2.56	0.08	-14.98***	0.00	-20.37**	0.00
	4.96		0.32		8.71		6.32	
ROS	0.66	1.93	-0.22	0.80	1.16	3.18	2.99	19.83
	0.07		0.01		0.16		0.64	
LogSales	1.56*	4.77	0.13	1.14	2.72**	15.13	3.56**	35.15
	2.98		0.02		6.20		4.27	
Automotive	-0.39	0.67	-0.27	0.76	-0.77	0.46	-10.16	0.00
	0.27		0.12		0.60		0.01	
Chemicals & pharma	0.65	1.92	0.32	1.37	-0.37	0.69	0.80	2.23
	0.72		0.16		0.10		0.36	
Trade & retail	-0.99	0.37	-1.25	0.29	-1.64	0.19	-9.15	0.00
	1.80		2.21		2.00		0.02	
Other manufacturing	0.56	1.76	0.09	1.09	0.84	2.31	1.75*	5.78
	0.84		0.02		1.35		3.27	
Electronics	-0.42	0.66	-0.68	0.51	-0.16	0.85	-9.46	0.00
	0.28		0.58		0.03		0.01	
Finance	-1.60**	0.20	-1.52**	0.22	-1.29	0.28	-9.54	0.00
	5.69		4.37		2.63		0.03	
Oil	1.13	3.10	0.64	1.90	0.23	1.26	1.03	2.80
	2.13		0.62		0.06		0.76	
Asia	0.46	1.59	0.15	1.16	-0.23	0.79	1.18	3.26
	0.49		0.04		0.06		0.80	
Developing countries	-6.72	0.00	-6.51	0.00	-5.74	0.00	-8.98	0.00
	0.17		0.15		0.12		0.01	
Europe	1.48***	4.40	0.89*	2.44	0.98*	2.67	1.32	3.72
	10.57		3.57		3.28		2.52	
$\chi^2$	41.40***		19.83*		25.54**		35.92***	
-2 LL	181.36		163.38		127.83		54.22	
Pseudo R <sup>2</sup> (Nagelkerke)	0.26		0.15		0.21		0.44	

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10

Wald Statistics below the coefficients

The results for the first model (with IMPACT as dependent variable) indicate that both region and sector effects most significantly explain the diversity in impact reporting, while the effect of firm size is only barely significant. The other models in the tables however indicate that these region, sector and size effects are not similar for all mechanisms through which FDI can contribute to development. Reporting on SIZE-effects differs by sector and region, but not by firm size – i.e., it is not the case that larger firms also report more on the size of their impacts. However, larger firms do report more on their extent of linkage creation and technology transfer. Finally, variation in reporting on technology transfer is mostly explained by sector effects, while linkage creation is dominated by home country (region) institutional environments.

**Table 8.5 Likelihood tests for logistic regressions:  $\chi^2$  statistics**

Variable (df)	IMPACT	SIZE	LINK	TECH
ROS (1)	0.07	0.01	0.14	0.49
LogSales (1)	2.95*	0.02	6.30**	4.56**
Sector (7)	20.80***	12.12*	10.91	26.45***
Region (3)	19.42***	8.77**	7.22*	4.59

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10

## 8.5 DISCUSSION AND CONCLUSION

This paper set out to explore how MNEs themselves account for their economic impact, thus linking the still unresolved macro-debates on the economic (and other) consequences of FDI for host countries, to micro-level, firm-specific behaviours, following recent suggestions in this direction (Meyer, 2004). Partly driven by institutional and stakeholder pressures, firms are increasingly disclosing information about the social, environmental and, very recently, also the economic implications of their activities, in non-financial, ‘triple bottom line’ reports. Focusing on the three main mechanisms through which MNEs can impact host countries – size effects, structural (linkages) effects and skill and technology transfer – we examined in detail what the 250 largest firms worldwide report on their economic impact. We also explored potential drivers of such reporting activities.

The detailed description of the contents of the reports showed that this is a new area not only for researchers, but also for firms. While more than a quarter of the Fortune Global 250 firms that disclosed non-financial information, reported in some way on their economic impact, the variety of the issues discussed and the methods of measurement differed enormously across firms. Still, some interesting results have been found.

Firstly, quotes from firms’ reports provided a rich illustration of the sheer size of the impact on host (but also home) economies of even one single firm. Examples such as BT, with direct and indirect employment effects of almost 2 percent of the workforce of a nation as large as the UK, or Alcoa accounting for 15 percent of a host country’s GDP, illustrate how much an individual firm – and hence firm strategy – can shape macro-economic outcomes. Secondly, the detailed description of projects aimed at technology transfer or the creation of linkages with suppliers – and sometimes both at the same time – gives not only insight into how such often rather abstract processes take place in practice, but also on how firms themselves (can) benefit from these activities.

In addition, the analysis shows that firms tend to highlight individual examples and projects rather than giving an overall insight into their impact (although some exceptions exist, such as Telefónica). This applies not only to size effects, but also to activities related to technology transfer and linkage creation. This may be due to the relative novelty of the subject, and the absence of information systems within firms to obtain and consequently disclose such data. Yet it also raises questions about the intentions of firms for including such information in their non-financial reports, which relate to suspicions about such reports as merely ‘greenwashing’ or ‘bluwashing’ (cf. Ramus and Montiel,

2005). It is noteworthy, for example, that the oil industry is most active in impact reporting, while its practices are often considered to be harmful for host-country development. In addition, it is likely that the examples presented in the reports are the 'best practices', or indeed 'showcases', and that the consequences of MNE behaviour are not always so beneficial in other circumstances. The entire lack of information on potentially negative impacts supports such concerns.

Finally, the exploration of drivers of reporting indicated that firms' domestic (regional) institutional context as well as sector dynamics explain reporting on impacts. Especially European firms seem active in reporting on their economic impact, from which firms in other regions can learn. The largest firms in the sample are also the ones most likely to give more specific information on the individual mechanisms that we distinguished (in particular technology transfer and linkage creation). Moreover, technology transfer is mentioned particularly by manufacturing firms, while variation in linkage creation is explained by region of origin rather than sector. If reporting is a reflection of actual impacts, then it might be suggested that policymakers in host countries should try to attract large European firms, which are more likely to create linkages with local firms. And, along these same lines, if policymakers are interested particularly in technology transfer, it seems better to focus on attracting firms to particular sectors, with manufacturing firms being more important potential sources of knowledge than for example service firms. However, since it is obviously doubtful whether self-reporting reflects actual behaviour, what can be said at least is that European firms are more open and transparent about their economic impact, which shows a greater awareness. It also gives policymakers and other stakeholders better opportunities to approach these firms to discuss the mechanisms through which they can contribute to economic development and growth. As part of this dialogue, firms can also be requested to explicitly report on particular aspects, to show and reflect on impacts on host countries, for example when policymakers want to involve MNEs in policy alleviation and other activities to further development.

Our findings have shown that a number of firms are reporting about economic impact and the various mechanisms, and we have given some interesting examples of how this is being done. This might inspire managers who want to increase their accountability on these aspects and adapt their measurement and reporting systems accordingly. For researchers, such increased levels of reporting will be interesting as well. This study has pointed at ways of assessing impacts at the micro level, although the data is still sparse and has several limitations, including the fact that it is self reported. However, in view of the increasing pressure on firms to report, also exemplified by the rise of reporting guidelines, it can be expected that more information will become available in the years to come. External verification of reported data, which is increasing, especially on the part of European and also Japanese firms (Kolk, 2005), may also mean that the reliability will improve. If so, there will be ample opportunities for interesting further research into the impact of MNEs on host countries, with larger data sets that also allow for investigations of determinants and patterns over time.

# 9 INTERNATIONALIZATION AND ENVIRONMENTAL DISCLOSURE

Co-authored with Ans Kolk

## 9.1 INTRODUCTION

From the 1990s onwards, non-governmental organizations (NGOs) have increasingly expressed their concerns about the negative environmental and social implications of globalization, and multinational enterprises (MNEs) in particular. This resulted in augmented pressure on MNEs to show their commitment and to report on the activities undertaken to prevent such ‘externalities’ of international trade and production. MNEs have indeed responded by disclosing information, increasingly in the form of special so-called environmental, sustainability or corporate social responsibility reports (KPMG, 2002; 2005). Environmental disclosure – also called environmental reporting – is defined here as a ‘publicly available publication in which a firm gives an account of its environmental or environmentally related activities and results in a specified period of time, usually a year’ (Kolk, 2000: 130). In most cases firms publish separate reports, but a section in an annual financial report with such environmental information also falls under the definition.

There has been considerable attention to the peculiarities of these non-financial disclosures, including trends, contents and determinants (for overviews see Berthelot *et al.*, 2003; Lee and Hutchison, 2005). Many studies highlighted the role of the domestic institutional context or the ‘country-of-origin effect’ (Sethi and Elango, 1999) as determinant of non-financial disclosure (Araya, 2006; Gray *et al.*, 1990; Hettige *et al.*, 1996; Kolk, 2005; Van der Laan Smith *et al.*, 2005), usually in a cross-national comparative perspective. However, so far very few empirical studies have focused on the extent to which exposure to foreign and international institutional contexts plays a role in the occurrence and contents of disclosure. This is an important omission, since if we want appreciate voluntary non-financial disclosure, accountability and the legitimacy of MNEs in the context of globalization, we need to understand whether internationalization of MNE activity leads to more, and more sophisticated, reporting or to less.

Critics might suggest that when firms internationalize, particularly from home countries with relatively strict standards and high public pressure, they may tend to become less specific or even ‘escape’ the public eye and stop their disclosure altogether. Although it would go too far to suppose that firms internationalize only to avoid stringent environmental (reporting) legislation and stakeholder pressure (for which there is hardly any evidence, cf. OECD, 1997; Zarsky, 1999), MNEs might nevertheless use their increasing presence abroad to diminish their environmental disclosure. This could save them the costs of an extensive environmental management system to generate detailed

data for their reports, or enable them to avoid reputation damage by not publishing information on negative environmental events.

On the other hand, a 'leading edge' argument (cf. Sharfman *et al.*, 2004; Tsai and Child, 1997) would hold that firms couple internationalization with (continued) detailed and externally verified reports on their environmental achievements. Taking again the case of firms that internationalize from relatively high-standard countries, there will be benefits to harmonizing 'good' practices internally. These do not only originate from positive reputation effects and/or the reduction of risks, but also more practically to a diminution of costs resulting from maintaining and coordinating diverse systems and standards. Furthermore, it has been argued that highly internationalized firms are much more vulnerable to stakeholder pressure due to increased visibility, and will therefore be likely to augment or start with disclosure.

In this article we aim to shed more light on these issues and will investigate whether internationalization leads to more, and more sophisticated, environmental reporting, or to less, by presenting evidence based on a sample consisting of the 250 largest firms worldwide (Fortune Global 250). In addition to relating various dimensions of internationalization to occurrence and level of detail of reporting, we will also explicitly consider the role of institutions in both home and host countries. This builds on the view that exposure to different institutional contexts affects firms' strategy, following Dunning (2006), who recently underlined that the role of institutionally related competitive advantages, including those linked to environmental and social issues, and stakeholder pressure, need more attention. This paper develops an indicator of the amount of international institutional pressure to which an MNE is subject due to its foreign operations, considering both the spread of firms' internationalization and the location of foreign activities.

Before moving to the empirical analysis, we first review the literature, and develop hypotheses on internationalization and environmental disclosure, and on how this relationship may be dependent upon the degree and dispersion of international activities of MNEs, upon the exposure to home and host country institutional pressures, and upon the environmental sensitivity of the sector in which a firm operates. Section 9.4 then elaborates on the data and methodology, while section 9.5 presents the results. In the final section of this paper we discuss the findings and suggest areas for further research.

## **9.2 THEORY**

### **Environmental disclosure and internationalization**

Environmental disclosure has received extensive scholarly interest, most notably in the accounting literature. In these studies, considerable attention has been paid to multinationals, but frequently in the form of case studies, or surveys confined to firms from one country (cf. Deegan and Gordon, 1996; Gray *et al.*, 2001; Neu *et al.*, 1998), or based on disclosures in annual reports rather than in environmental reports (e.g. Meek *et al.*, 1995). Some researchers have made a systematic analysis of sets of large firms, such

as the US Fortune 50 or 500 (Davis-Walling and Batterman, 1997; Lober *et al.*, 1997), or the global Fortune 100 or 250 (Kolk, 2003; KPMG, 2002, 2005; Krut and Moretz, 2000; Line *et al.*, 2002). In most cases, they have focused on the occurrence of environmental reporting, and on the contents (and sometimes the 'quality') of reports. On the basis of that work, a development can be observed in the direction of more sophisticated environmental reports that not only describe some general phenomena or policies, but increasingly also include more far-reaching and detailed information (performance data) that is even externally verified (cf. GRI, 2002; Kolk, 2005).

Although voluntary environmental reporting is an increasingly common phenomenon among large MNEs, the importance of internationalization – a key characteristic of MNEs – as an explanatory variable has received rather scant attention. Here, we define internationalization as both the degree of internationalization (the extent of foreign as opposed to domestic activities) and the spread of international activities (the extent to which the foreign activities are geographically dispersed). There are a few exceptions though, notably Meek *et al.* (1995); Levy (1995); Chapple and Moon (2005) and Araya (2006). All these studies focused on the determinants of voluntary disclosures, and included the degree of internationalization as one of the many explanatory variables; they thus do not give the relationship a central position. Their findings are mixed. The two older studies (Levy, 1995; Meek *et al.*, 1995) found a negative relationship; more recently, Araya (2006), for Latin America, and Chapple and Moon (2005), for Asia, found that firms with an international sales orientation (Araya, 2006) or foreign owners (Chapple and Moon, 2005) are more likely to report than firms that are not. Kolk and Van Tulder (2004), who focused on internationalization and environmental disclosure, only included some exploratory findings with a limited sample, which suggested that more international firms, mostly originating from smaller European countries, also had more proactive reporting strategies.

While these papers highlighted some interesting empirical results with respect to internationalization and disclosure, it was often parenthetically, and none of them has yet developed a comprehensive theory to understand the relative pressures of home country and host country in determining non-financial disclosure. With this study, we add to this work by 1) further elaborating theoretically on this relationship between internationalization and voluntary environmental disclosure – which is in essence a balancing act between pressures from home and host country institutions; and 2) explicitly testing the proposed theoretical relationships between both depth and breadth of internationalization on the one hand, and various measures of environmental disclosure on the other, in the process also exploring the moderating role of relative pressures of domestic and foreign institutions and sector peculiarities. In this way, we also aim to contribute to the overall IB literature more generally, by exploring the effect of home and host institutions on firm strategy, an area that has been mentioned to require further research (Dunning, 2006).

While the effect of internationalization on environmental disclosure has not been studied extensively, the relationship between internationalization and environmental performance has already received attention (Brammer *et al.*, 2006; Buysse and Verbeke, 2003;

Christmann, 2004; Christmann and Taylor, 2001; Dowell *et al.*, 2000; Kennelly and Lewis, 2002; Strike *et al.*, 2006). Most studies (although not all, see Dasgupta *et al.* (2000)) find a positive relationship between internationalization and environmental performance. This is often explained from a resource-based perspective (Barney 1991; Hart, 1995; Wernerfelt, 1984) by focusing on how international harmonization and standardization of environmental practices within an MNE can lead to green firm-specific advantages (Porter and Van der Linde, 1995; Rugman and Verbeke, 1998) as such harmonization helps to build knowledge capabilities and skills in transferring best practices across borders (Christmann, 2004; Strike *et al.*, 2006). It may simply be more efficient – due to scale economies – to develop and implement a single, centralized environmental strategy as the most appropriate response to the higher social pressures that MNEs tend to face in their worldwide operations (Christmann and Taylor, 2001). Finally, high environmental standards and practices can help attract and retain highly skilled employees (McWilliams and Siegel, 2001). These forces make the pressures towards global integration stronger than those towards local adaptation and exploitation of low-standard countries (Bartlett and Ghoshal, 1989; Sharfman *et al.*, 2004).

Much of this line of reasoning could not only be used for explaining environmental practices and performance, but also environmental disclosure. Indeed, disclosure has often been approached as a component of good environmental practices. For example, Henriques and Sardorsky (1999) see disclosure as a part of a firm's environmental strategy: firms that they classify as reactive do not report at all, while proactive firms report extensively both internally and externally. And Buysse and Verbeke (2003) see reports as a part of formal (routine based) management systems and procedures, one of Hart's (1995) resource domains. Brammer *et al.* (2006) also views reporting as a component of environmental performance, and the widely-used KLD indices includes non-financial reporting and communication as an element of environmental performance as well (see e.g. Cho *et al.*, 2006).

Still, there are a few differences between environmental performance and voluntary environmental disclosure that justify special theoretical attention for the relationship between disclosure and internationalization. Most importantly, disclosure is a 'public opinion management device': negative public exposure (due to bad performance) may increase disclosure (but not necessarily practice), as found by Patten (2002). Disclosures can be used to off-set potentially increased public policy pressure arising from poorer environmental performance (Cho *et al.*, 2006). Secondly, the debate on internationalization and environmental performance is dominated by an RBV perspective and a strong focus on the role of environmental regulation (see Porter and Van der Linde, 1995). In contrast, the current debate on non-financial disclosure is grounded in legitimacy and institutional approaches (Deegan and Gordon, 1996), and gives more attention to non-regulatory stakeholders. In the remainder of this paper, we will try to understand the relative role of home and host country institutional pressures that result from internationalization by using insights from legitimacy, stakeholder and institutional theory.

Perspectives on internationalization and disclosure: legitimacy, stakeholders and institutions

It can be suggested that the more international firms are, the more extensively they will report in view of their visibility, vulnerability to stakeholder pressure, fear for damage to their brands and image. Internationalization also increases demands for the development of standardized management and reporting systems to meet a variety of internal and external requirements. These arguments are drawn from several theoretical perspectives: legitimacy theory, stakeholder theory and institutional theory.

Legitimacy theory posits that a firm's actions should be congruent with the norms and expectations of the society in which they operate (Brown and Deegan, 1998; Neu *et al.*, 1998; Kostova and Zaheer, 1999). Firms that are perceived to break this so-called 'social contract' will lose legitimacy (Magness, 2006; Deegan, 2002). Without legitimacy, a firm's survival is threatened (Dowling and Pfeffer, 1975) as customers may reduce demand, the supply of labour and capital may become problematic, and community organizations may lobby governments for stricter regulation and fines (Brown and Deegan, 1998). On a more positive note, legitimacy is perceived as a resource, which may pre-empt boycotts or disruptive actions and gives managers a degree of autonomy in conducting business (Neu *et al.*, 1998). However, legitimacy is primarily perception (Magness, 2006). This means that it can be achieved not only through real action and change of operations, but also – and especially – through communication and disclosure of information. Action that is not published will not change perceptions (Cormier and Gordon, 2001; Deegan, 2002). Disclosures help to shape external perceptions and the corporate image (Neu *et al.*, 1998, Brown and Deegan, 1998), and are made as a reaction to environmental pressures (Gurthie and Parker, 1989) and to mitigate the negative effects associated with losing legitimacy.

Stakeholder theory is closely aligned with legitimacy theory. It emphasizes that the society whose norms and expectations a firm needs to take into account, actually consists of different groups (stakeholders) with different and sometimes contradictory interests (Cormier *et al.*, 2004; Roberts, 1992). Long-term survival and financial success of a firm thus depends on the support of its stakeholders (Brammer *et al.*, 2006; Hillman and Keim, 2001; Van der Laan Smith *et al.*, 2005). A stakeholder is any group (or individual) that can affect, or could be affected by, the firm's actions in achieving its objectives (Freeman, 1984). The degree to which managers give priority to competing stakeholder claims depends on their perception of a stakeholder's salience, which in turn is determined by a stakeholder's power, and the legitimacy and urgency of its claim (Mitchell *et al.*, 1997). From a resource dependency perspective, the more dependent a firm is on a stakeholder, the greater the power of that stakeholder (Kassinis and Vafeas, 2006). In a society concerned with environmental issues, stakeholder groups representing this interest will be more powerful.

Finally, institutional theory highlights that legitimacy is not a commodity to be possessed or exchanged, but a condition reflecting consonance with the relevant formal and informal rules and regulations, or so-called institutions (North, 1991; Scott, 1995). The institutional environment in a particular country pressures firms to legitimate their



behaviour and become isomorphic with social norms that are prevalent in that country (Christmann and Taylor, 2001; Dimaggio and Powell, 1983; Oliver, 1991). Like legitimacy theory and stakeholder theory, institutional theory deals with the role of external societal pressures in shaping firm behaviour, and with how firms conform to those pressures (Deegan, 2002; Neu *et al.*, 1998). In contrast to legitimacy theory, institutional theory focuses less on the active role of firms in changing societal perceptions (Deegan, 2002). Still, differences in the three theoretical approaches are very small, and their predictions regarding the effect of external pressures (whether phrased as stakeholder pressure, institutional pressure, or societal pressures) on firm behaviour are generally consistent.

Together, these three theories and the empirical research based on them have led to several main antecedents of non-financial disclosure, in the form of costs and benefits of disclosure. The costs of disclosure are firstly the physical costs of gathering and compiling the information and making it available to the public. These costs include the implementation of an environmental management (information) system, and printing and publication costs. Other costs related to disclosing information include public scrutiny – a firm becomes more visible by making public statements, which may make it a more attractive target for NGOs (the Nike and Shell cases are notorious in this respect), as well as make it vulnerable for litigation (especially in the US context, see e.g. Bagingski *et al.*, 2002; Kagan and Axelrad, 2000). Finally, information that is disclosed could be helpful for competitors.

The benefits of disclosure may be very tangible, such as lower capital ratios due to the risk minimizing effect of disclosure (Botosan, 1997; Henriques and Sardosky, 1999; Meek *et al.*, 1995), but more often also non-tangible, including of course legitimacy (the *conditio sine qua non*, according to legitimacy, institutional and stakeholder theory), but also a good (green) reputation, good relationships with customers, employees and other stakeholders, avoidance of fines and unwanted legislation (Bansal and Roth, 2000; McWilliams and Siegel, 2001).

The sum of these costs and benefits of disclosure are not of equal size for all firms, nor does the balance between them always point in the same direction (see e.g. Dasgupta *et al.*, 2000). Both the characteristics of the institutional environment and firms' organizational characteristics determine the size of the potential benefits and of the potential costs, and thus whether firms will disclose information (see also Kostova and Zaheer, 1999). Studies in the area of environmental and non-financial disclosure have highlighted many determining factors (see for example Lee and Hutchison, 2005 for an overview). For example, firm size has often been found to be positively related to disclosure, since on the one hand, large firms are more visible, and are more prone to reputation damage, making the benefits of disclosure higher, and on the other hand, the costs of compiling information is smaller due to economies of scale (Neu *et al.*, 1998, Magness, 2006; McWilliams and Siegel, 2001; Patten, 1991). In addition, the sector in which a firm operates is a key variable in determining environmental reporting among firms (Kolk, 2005). The more environmentally sensitive a firm's industry – which is related to an industry's contribution to environmental damages and the attention it

receives from environmental lobby groups (Deegan and Gordon, 1996) and thus its vulnerability to (future) legislation (Patten, 2002) – the greater the incentive for a firm to voluntarily disclose environmental information.

### 9.3 HYPOTHESES

#### **Internationalization and reporting**

A firm's country of operation – usually the country of origin – has long been shown to contribute to the extent of environmental reporting by firms (Berthelot *et al.*, 2003; Kolk, 2005; Lee and Hutchison, 2005), since the institutional pressures from regulators, governments and other stakeholders in society are often very country-specific. The key question is what happens to these pressures when firms operate in more than one country, i.e. when firms internationalize. The process of internationalization extends a firm's legitimating environment to include all of its home and host country institutional environments, as well as supranational institutions (Kostova and Zaheer, 1999), and increases the number and diversity of stakeholder pressures in the firm's external environment (Brammer *et al.*, 2006, Sharfman *et al.*, 2004). How this composition and relative importance of home and host country institutional pressures affect firm behaviour is the key question of our paper.

Commonly, internationalization is expected to force firms to adopt more stringent environmental strategies (Kennelly and Lewis, 2002; Strike *et al.*, 2006) and to disclose more information (Levy, 1995; Meek *et al.*, 1995), as multinationality may create many legitimacy problems. First of all, the more complex and diverse the institutional and stakeholder environment, the more difficult it is to satisfy all individual stakeholders (Sharfman *et al.*, 2004; Watson and Weaver, 2003; Christmann, 2004). Second, legitimacy problems in one location of activity of a multinational may spill over to other environments, as multinationals are visible for a large and widely dispersed public (Kostova and Zaheer, 1999; Sharfman *et al.*, 2004). Third, foreign firms are often expected to do more in building reputation and goodwill due to the liability of foreignness they face (Chapple and Moon, 2005; Holt *et al.*, 2004; King and Shaver, 2001). And finally, MNEs are easy targets for interest groups, since their wide presence can provide NGOs with the most publicity and visibility (Kostova and Zaheer, 1999). Following these arguments, multinational firms appear to face stronger and more diverse (potential) attacks on their legitimacy, and hence – as legitimacy theory posits – they are forced to voluntarily disclose more, and more detailed information, in order to manage and maintain legitimacy and prevent reputation damage (Brown and Deegan, 1998; Gurthie and Parker, 1989; King and Shaver, 2001; Neu *et al.*, 1998).

However, there are also important arguments for a negative effect of internationalization on environmental disclosure. Firstly, there are several reasons why a larger, more dispersed and more diverse set of stakeholders may not lead to more societal pressure. For example, we already established that public scrutiny is both country-specific (Hibbitt and Collision, 2004; Kolk, 2003) and related to firm size (Neu *et al.*, 1998; Magness,

2006). In such a case, a geographical break-up of firm activities may reduce the overall pressure on firms to report: while the firm as a whole is still large and important, it is relatively small in each of the individual countries in which it operates, reducing local stakeholder pressures. In addition, when there is a large group of external stakeholders, the importance of each individual stakeholder decreases, as stakeholder power depends on the extent to which it controls the 'resources' on which a firm depends for survival (Kassinis and Vafeas, 2006). Also, as Oliver (1991) notes, when the multiplicity of institutional contexts is high, strategies of what she calls 'resistance' (which includes non-reporting) are more likely than 'acquiescence' strategies (which include voluntary disclosure). Finally, a dispersed stakeholder environment may reduce stakeholder field cohesion – which encompasses the proximity and interconnectedness of key stakeholders – and thus also public scrutiny targeted at the firm (Bansal and Roth, 2000).

Secondly, being foreign could not only increase pressures (due to liability of foreignness) but also buffer a firm from local institutional pressure since a foreign subsidiary may not always be expected to comply with local standards, especially if it is relatively powerful or may threaten to relocate (Kostova and Roth, 2002). Being foreign may thus be a liberty, instead of a liability. Furthermore, publics in other countries – as for example many developing countries – may have less strict standards with respect to legitimacy (De Villers and Van Staden, 2006).

Thirdly, as stakeholder management theory notes, managerial decisions to respond to stakeholder pressure depends on their interpretation of such pressures (Cormier *et al.*, 2004; Henriques and Zardosky, 1999; Mitchell *et al.*, 1997; Sharma, 2000). It may be that the claim of far away stakeholders is not perceived as salient as those from stakeholders in the home country (Newson and Deegan, 2002), as the larger psychic distance impedes both knowledge flows (headquarter managers will not know about stakeholder pressures), and increases interpretation mistakes (headquarter managers will not correctly perceive stakeholder power) (Dow and Karunaratna, 2006).

Hence, from a theoretical perspective both a positive and a negative relationship between internationalization and disclosure may be expected, depending on how the costs and benefits of disclosure add up in an international context. But for our initial hypothesis on internationalization and disclosure, we choose to follow most empirical findings in the area of internationalization and environmental performance (which have been reviewed above) and argue for a positive effect of internationalization. Therefore we hypothesize:

*H1a. The degree of internationalization is positively related to environmental disclosure.*

Many of the arguments that are in favour of such a positive relationship are not only applicable to the degree of internationalization, but also to the sheer diversity of internationally dispersed stakeholder pressures and stakeholder demands for information has been expected to increase the extent of voluntary disclosure (Meek *et al.*, 1995). The diversity in regulatory requirements (see Sharfman *et al.*, 2004), as well as the array of cultures and employee values and interests (Watson and Weaver, 2003), would lead firms

to choose for the highest, rather than the lowest, common denominator (Christmann and Taylor, 2001; Sharfman *et al.*, 2004). Therefore we hypothesize:

*H1b. The spread of international activities is positively related to environmental disclosure.*

### **Internationalization and disclosure: the role of home and host institutions**

Although formally we hypothesized a positive relationship between internationalization and disclosure, we have seen in the discussion leading up to H1a and H1b that the effect of internationalization is yet undetermined. Internationalization has both been argued to increase as well as to decrease total stakeholder or institutional pressure on a firm. In this section, we explore in more detail how the characteristics of the complex institutional environment in home and host countries to which an MNE is exposed (Kostova and Zaheer, 1999) may influence whether either the costs or the benefits of disclosure are larger for a particular firm. We do so by addressing how the relationship between internationalization and disclosure may be moderated by the extent of home-country pressures, and the total extent of host-country pressures. In other words: does the relationship between internationalization and disclosure differ across firms from different home countries, and does the direction of internationalization – to low versus high standard countries – matter?

#### *Home institutions*

A firm's home-country institutional context (the country of origin, see Sethi and Elango, 1999) is an important determinant of the level and type of non-financial disclosure (Berthelot *et al.*, 2003; Kolk, 2005; Lee and Hutchison, 2005). Research has consistently shown that the higher the institutional and stakeholder pressure within the home country, the more likely firms are to report about their environmental and other non-financial activities (Araya, 2006; Gray *et al.*, 1990; Hettige *et al.*, 1996; Van der Laan Smith *et al.*, 2005). However, it has also been suggested that high domestic institutional pressure could induce firms to escape such home country regulations by locating activities elsewhere, to avoid public exposure (Walter, 1982). This would point at a negative relationship between internationalization and reporting in such countries. Yet, such arguments have suffered from a lack of empirical evidence (OECD, 1997; Zarsky, 1999). It has been argued that even for firms operating across borders, voluntary disclosures tend to be more closely aligned to the expectations of the home country rather than global society (Newson and Deegan, 2002) due to the greater salience of domestic stakeholders in the eyes of corporate managers (Cormier *et al.*, 2004).

For firms from countries with high institutional pressures, this means that many of the arguments that suggest that internationalization is coupled with lower disclosure do not hold. A resistance strategy (non-disclosure) will not be accepted in a home country where firms are expected to attain a high level of legitimacy (Oliver, 1991); geographical dispersion does not reduce but rather increases a firm's visibility in the home country as it is exposed to much larger set of potential legitimacy problems for which the risk of

legitimacy spillovers (Kostova and Zaheer, 1999; Sharfman *et al.*, 2004) is high. High institutional pressures will not only make a firm an interesting target for (international) NGOs (Kostova and Zaheer, 1999) but will also likely translate to managers that are more perceptive of the urgency, power, and legitimacy of the claims of foreign stakeholders (De Villiers and Van Staden, 2006; Newson and Deegan, 2002).

In contrast, for firms from countries characterized by low institutional pressures, many of the arguments that suggest a positive effect of internationalization on disclosure do not hold: the risk of legitimacy spillovers is much smaller as the home-country public not very concerned about such issues; the benefits in terms of legitimacy are much smaller and thus the use of a resistance strategy instead of one of acquiescence (and disclosure) is much more likely (Oliver, 1991); and managers used to a context with limited attention to environmental issues will also be less perceptive in assessing the salience of foreign stakeholders with respect to those themes. Therefore we hypothesize:

*H2a. Home-country institutional pressure positively affects the relationship between the degree of internationalization and disclosure.*

*H2b. Home-country institutional pressure positively affects the relationship between the spread of internationalization and disclosure.*

#### *Host institutions*

Not only the home country institutional context is important as a moderator of the effect of internationalization on reporting; the institutional context in the host countries in which a firm is active is also a key determinant of firm disclosure (Kostova and Roth, 2002). By locating in a particular country or by selling to a particular foreign market, a firm creates additional stakeholders towards which it needs to establish legitimacy. Rugman and Verbeke (1998) argue that the extent to which operations of a firm are located in the home or host country should influence managerial decision making with respect to what standards to follow: if a large share of a firm's activities is outside the home country, a firm should abide by the host, rather than home, country regulations and institutional pressures. Generalizing this argument, it implies that the larger a firm's presence in a host country, the more important this foreign institutional environment becomes for a firm's legitimacy, as this is positively related to both firm visibility and to firm dependence on the resources controlled by stakeholders in that particular country.

We expect that the effect of internationalization on disclosure is stronger if the international activities are located in countries where institutional pressure is high. If a firm internationalizes to such high-pressure countries, the cost of non-disclosure will become higher (damage to reputation, risk of reputation spillovers), whereas the benefits of disclosure will also become higher (legitimacy in the eyes of stakeholders). Empirically, several studies have tried to capture this aspect by for example including regional dummy variables indicating if a firm was active in a particular region or not (Kennelly and Lewis, 2002), or by the extent of exporting to developed versus developing countries (Christmann and Taylor, 2001). Therefore we hypothesize:

*H3a: Host-country institutional pressure positively affects the relationship between the degree of internationalization and disclosure.*

*H3b: Host-country institutional pressure positively affects the relationship between the spread of internationalization and disclosure.*

*Three way interaction effects: Country and sector effects*

The relationship between internationalization and environmental disclosure may not only be dependent on the country of origin of the firm and the direction of internationalization, but also on other factors. One of the most important factors that has been brought forward in the literature on both internationalization and on environmental behaviour is the effect of sector dynamics. Sector peculiarities are not just relevant for 'benchmarking' reports, but also explain frequencies of reporting. Firms from more polluting and visible sectors are more active in environmental management and also publish more reports (e.g. Adams *et al.*, 1998; Araya, 2006; Halme and Huse, 1997; Kolk, 2005; KPMG, 2002; Krut and Moretz, 2000; Magnass, 2006). Firms in such sectors are also the first to experience pressure from stakeholders and activists groups, as these firms are often seen as the main contributors to environmental problems. In addition, environmental legislation or guidelines for reporting are not always relevant to all sectors (for example, different rules may apply to industries with a high environmental impact) – the greatest impact is on firms whose activities are considered to be environmentally sensitive (Cho *et al.*, 2006).

Building on arguments similar as those mentioned above, Patten (1991, 2002) considers that in addition to size, the sector of activity is a useful proxy for the amount of public pressure. In all, this implies that public scrutiny by home and host institutions will be higher for firms in environmentally sensitive sectors, meaning that the relations that we hypothesized in H2 and H3, will be much more pronounced for sectors that are considered to have a high environmental impact and are hence more sensitive to public and regulatory pressures, and less important (or even absent) for firms from sectors that have only limited environmental consequence.

*H4a. The interaction effect between the degree of internationalization and domestic institutional pressure (H2a), is stronger for sectors with high environmental sensitivity*

*H4b. The interaction effect between the spread of internationalization and domestic institutional pressure (H2b), is stronger for sectors with high environmental sensitivity*

*H5a. The interaction effect between the degree of internationalization and foreign institutional pressure (H3a), is stronger for sectors with high environmental sensitivity*

*H5b. The interaction effect between the spread of internationalization and foreign institutional pressure (H3b), is stronger for sectors with high environmental sensitivity*

## 9.4 DATA AND METHODOLOGY

### Sample

In order to test the hypotheses, data has been collected for the 250 largest firms worldwide, using the first half of the 2001 Fortune Global 500 list. We excluded developing country firms, leaving us with a set of 233 firms. For these firms, information was collected on a range of variables, including various measures of environmental disclosure and internationalization, as well as measures of institutional quality with respect to environmental issues, and control variables. For a total of 231 firms, it was possible to gather complete data.

### Variable measurement

#### *Environmental disclosure*

In order to measure Environmental Disclosure by firms, we collected data on three separate but related dimensions of disclosure, since previous studies showed that the antecedents of disclosure may not be the same across different kinds of information (see e.g. Meek *et al.*, 1995). These three binary measures represent various levels of extent and sophistication of environmental information, in order to explore differences in the effect of internationalization and institutions on relatively shallow reporting versus more extensive reporting, which includes more far-reaching and detailed information, or may even be externally verified (GRI, 2002; Kolk, 2005).

The first of the three variables is REPORT, which measures if firms in our sample discloses information on their environmental activities at all. Those firms that had either a separate environmental (or CSR, or other non-financial) report or a separate section on environment in the annual financial report were scored positive on this variable.

The second variable is DATA, which measures if the firms in our sample disclosed extensive quantitative data on their environmental performance. We scored firms as positive on this variable if they either reported data that was set against quantitative targets, or that compared environmental performance over time, or that included indicators that linked environmental performance to product/service value (Verfaillie and Bidwell, 2000).

The third and final variable is VERIFY, which measures if the firms in our sample also had their environmental disclosures verified externally by an independent auditor.

#### *Degree of Internationalization*

The Degree of Internationalization of the firms is calculated firstly as the ratio of foreign assets to total assets (FA/TA), and secondly, as the ratio of foreign sales to total sales (FS/TS). While these measures are highly correlated (a value of 0.81, see table 8.2 below) – even to such an extent that other studies (Strike *et al.*, 2006; Kennelly and Lewis, 2002) combine them into a single factor internationalization – we recognize that each captures a different dimension of internationalization. An internationalization ratio

based on assets directly relates to the spread of (possibly) polluting activities. Environmental problems (and their solutions) relate in the first place to firms' production strategies, exemplified by the international distribution of assets and production sites. Being physically present in a particular location also exposes a firm directly to the local institutional context. In contrast, the internationalization of sales and hence markets could also be important in regulating a firm's environmental activities and disclosures, as it represents the spread of consumers – a major stakeholder for any firm. In addition, in studies on internationalization and (financial) performance, the DOI is usually based on sales data (see the overview by Sullivan, 1996), often because of their relatively good availability. An exploration of the gradual differences in importance of market versus production internationalization for disclosure may in the discussion shed further light on why firms disclose, and through what mechanism (market presence versus physical presence, or consumers versus other interest groups) firms are most affected.

The figures for the FA/TA and FS/TS ratios are derived from companies' annual reports or SEC filings. The data was collected for the fiscal year 2001 (for some companies that did not have fiscal year ends that match with calendar year ends, the 2000/2001 fiscal year was used), from individual firms' annual reports. For the FA/TA ratio, some firms published geographically specified data for only part of their assets. Examples that occurred often are data only for fixed assets, for plant, property and equipment, or for long lived assets. In these cases the FA/TA ratio was calculated only for that part of the assets for which data were broken down geographically. These FA/TA data were available for 203 of the 233 firms. For an additional 6 firms, the DOI was calculated on the basis of investment data in the list of consolidated subsidiaries that the firms published in their annual reports. For another 23 firms, the FA/TA ratio was (admittedly in a slightly subjective manner) estimated based on other information in the annual reports, which include internationalization ratios of sales, earnings, or employees, or descriptive statements. For 8 of these 23 firms, the FA/TA ratio was estimated to be 0, based on statements in the annual report. For 1 company, estimation proved impossible due to complete lack of data or additional information.

FS/TS data were generally reported for the total volume of sales, if that incidentally was not the case, we applied the same method as for the FA/TA ratio and calculated FS/TS based on that part of the sales of which data was broken down geographically. FS/TS data are generally much better available than assets data (see also Sullivan, 1996) and we were able to collect these data for the entire sample except 3. For these 3 firms, we estimated the FS/TS ratio in the same way as for those firms missing the FA/TA ratio.

#### *Spread of internationalization*

The spread of international activities of firms is measured by Ietto-Gillies's (1998) Network Spread Index (NSI). This index is calculated as the ratio of the number of countries in which a company has affiliates to the total number of countries in which the company could potentially have affiliates. We collected the total number of countries in which a firm has affiliates from Dun and Bradstreet's Who owns Whom Database (year 2001). This database also gave us the total number of potential countries (173).



### *Domestic environmental governance*

The variable Domestic Environmental Governance (DomGov) represents the extent of home country institutional pressure towards reporting that firms experience. While the extent of institutional pressure on firms is sometimes measured by media exposure and coverage (e.g. Brown and Deegan, 1998), it is difficult to use this measure in cross-country comparisons. We therefore use another measure, namely the Environmental Governance indicator that is calculated as part of the annual Environmental Sustainability Index (ESI), which has been developed by researchers at Columbia University, Yale University and the World Economic Forum. The Environmental Governance indicator is a composite index that measures the institutions, rules, and practices that shape responses to environmental challenges, and combines 8 variables that include for example the number of sectoral Environmental Impact Assessment Guidelines in a country, the percentage of FSC accredited forests, the environmental governance indicator from the Global Competitiveness Report, and the World Bank measure of corruption. The index ranges between 0 and 1.

### *Foreign environmental governance*

Parallel to measuring domestic environmental governance that measures the extent of pressure towards environmental reporting that an MNE experiences in its home country, we developed a measure to assess the amount of pressure that a firm experiences via its international activities. This indicator of Foreign environmental governance is calculated as a weighted average of all levels of environmental governance in the countries in which a firm has activities, where the weights are based on the number of subsidiaries of a firm in a particular country:

$$ForGov_i = \sum \frac{EG_j * N_{ij}}{N_i}$$

Where the ForGov for firm  $i$  is measured by multiplying the Environmental Governance (EG) for country  $j$  with the number of affiliates of firm  $i$  in country  $j$ , divided by the total number of foreign affiliates of firm  $i$ .

### *Sector*

To assess differences across sectors, we included a binary variable (SECTOR) that distinguishes firms active in sectors with high environmental sensitivity from those active in a sector with low environmental sensitivity, as is common in the environmental accounting literature (see e.g., Patten, 2002, or studies such as Cho *et al.*, (2006) or Deegan and Gordon (1996) who focus on the most sensitive sectors only). Firms from sectors such as Communication & Media, Finance and Securities, Insurance, and Trade and Retail were seen as having low environmental sensitivity, the other firms as high, similar to how sectors are labelled in other studies (Araya, 2006; Deegan and Gordon, 1996; Patten, 2002). Original sector classifications were taken from the Fortune 2001 list. Table 9.1 gives an overview of those sectors that were classified as high and low.

**Table 9.1 Classification of firms in sectors with high and low environmental sensitivity**

High sensitivity	n	Low sensitivity	n
Automotive	14	Comm. & Media	16
Chemicals & Pharmaceuticals	12	Finance & Securities	40
Electr. & Computers	23	Insurance	25
Food & Beverages	8	Other Services	14
Metals, Engineering, Heavy Industry	11	Trade & Retail	40
Oil & Gas	14		
Utilities	16		
Total high sensitivity	98	Total low sensitivity	135

### *Control Variables*

Finally, three control variables were included in the models that could also influence the internationalization-disclosure relationship. First of all, we included a binary variable that indicates if publishing (publicly available) environmental information is obligatory in a particular country. By 2002, of the countries in our sample this applied to Belgium, The Netherlands, Canada, Norway and Sweden (KPMG, 2002).

Second, since studies on environmental disclosure have shown that the size of firms is important for environmental accountability, we included a variable *SIZE* measured as the logarithm of a firm's total sales. The logic underpinning this inclusion is that with increasing size, firms become more visible and so do their environmental impacts, thus exposing them to increased public pressure to increase their disclosure.

Thirdly, we included a measure of home country size (log GDP) to control for the fact that firms from small countries are on average more international, and tend to experience higher pressures to disclose environmental information.

### **Estimation**

To test our hypotheses, we used logistic regression analysis (in view of our binary dependent variable) in order to estimate the regression equations as presented below. Model 1 includes the main effects of internationalization on the probability of firms to disclose information on their environmental activities (either *REPORT*, *DATA* or *VERIFY*) in order to test for H1a and H1b. *DOI* is measured either as *FA/TA* or *FS/TS*; the interaction effect between the degree and spread of internationalization is explored following Ietto-Gillies (1998). Subsequently, the two-way interaction effects with domestic environmental governance are estimated following as specified in model 2 in order to test Hypotheses H2a and H2b, and the interactions with foreign environmental governance (H3a and H3b) in model 3. In these and subsequent models, *INT* as in the interaction effect can be either *FA/TA*, *FS/TS*, or *NSI*. Models 4 and 5 represent the three-way interaction effects that include that are required to test for Hypotheses H4a and H4b, and H5a and H5b. The results of these regressions are presented in the next section, reporting heteroskedasticity corrected standard errors. In order to test for the significance

of the interaction effects, the results of  $\chi^2$ -tests that the significance of the change the explanatory value of the model are reported (similar to F-tests in OLS models).

$$\log\left(\frac{\text{prop}(\text{Disclose})}{\text{prop}(\text{not\_Disclose})}\right) = \alpha + \beta_1 \text{Sales} + \beta_2 \text{HomeCountrySize} + \beta_3 \text{Sector} + \beta_4 \text{HomeReg} + \beta_5 \text{DomGov} + \beta_6 \text{DOI} + \beta_7 \text{NSI} + \beta_8 \text{DOI} \times \text{NSI} \quad [1]$$

$$\log\left(\frac{\text{prop}(\text{Disclose})}{\text{prop}(\text{not\_Disclose})}\right) = \alpha + \beta_1 \text{Sales} + \beta_2 \text{HomeCountrySize} + \beta_3 \text{Sector} + \beta_4 \text{HomeReg} + \beta_5 \text{DomGov} + \beta_6 \text{DOI} + \beta_7 \text{NSI} + \beta_9 \text{ForGov} + \beta_{10} \text{INT} \times \text{ForGov} \quad [2]$$

$$\log\left(\frac{\text{prop}(\text{Disclose})}{\text{prop}(\text{not\_Disclose})}\right) = \alpha + \beta_1 \text{Sales} + \beta_2 \text{HomeCountrySize} + \beta_3 \text{Sector} + \beta_4 \text{HomeReg} + \beta_5 \text{DomGov} + \beta_6 \text{DOI} + \beta_7 \text{NSI} + \beta_{11} \text{INT} \times \text{DomGov} \quad [3]$$

$$\log\left(\frac{\text{prop}(\text{Disclose})}{\text{prop}(\text{not\_Disclose})}\right) = \alpha + \beta_1 \text{Sales} + \beta_2 \text{HomeCountrySize} + \beta_3 \text{Sector} + \beta_4 \text{HomeReg} + \beta_5 \text{DomGov} + \beta_6 \text{DOI} + \beta_7 \text{NSI} + \beta_{12} \text{ForGov} + \beta_{13} \text{ForGov} \times \text{Sector} + \beta_{14} \text{INT} \times \text{Sector} + \beta_{15} \text{ForGov} \times \text{INT} + \beta_{16} \text{ForGov} \times \text{INT} \times \text{Sector} \quad [4]$$

$$\log\left(\frac{\text{prop}(\text{Disclose})}{\text{prop}(\text{not\_Disclose})}\right) = \alpha + \beta_1 \text{Sales} + \beta_2 \text{HomeCountrySize} + \beta_3 \text{Sector} + \beta_4 \text{HomeReg} + \beta_5 \text{DomGov} + \beta_6 \text{DOI} + \beta_7 \text{NSI} + \beta_{13} \text{DomGov} \times \text{Sector} + \beta_{18} \text{INT} \times \text{Sector} + \beta_{19} \text{DomGov} \times \text{INT} + \beta_{16} \text{DomGov} \times \text{INT} \times \text{Sector} \quad [5]$$

## 9.5 RESULTS

The descriptive statistics of the continuous variables and their correlation coefficients are displayed in table 9.2. Table 9.2 shows that all explanatory variables that will be put in the model, are significantly correlated with the dependent variables REPORT, DATA and VERIFY, with the exception of the measures for domestic and foreign governance. In particular, the sensitivity of the sector (SECTOR) for environmental pressures, the sales (SIZE) of the firm, and the degree and spread of internationalization (FATA, FSTS, and NSI) are positively related to environmental disclosure. Although the independent variables are often related to each other as well, the correlation coefficients are not very high, indicating that multicollinearity among the variables is not likely to be an important problem. This was further confirmed by VIF statistics (all below 2) and the condition indices (all below 3), that are all well below the values above which multicollinearity may pose a problem. In the models including the interaction effects multicollinearity was often unavoidable, hence we used  $\chi^2$ -tests to test marginal change in explanatory power of the model.

**Table 9.2 Descriptive statistics and correlation coefficients**

	m	sd	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Report	0.44	0.50	1.00										
(2) Data	0.40	0.49	0.92 ***	1.00									
(3) Verify	0.13	0.34	0.44 ***	0.48 ***	1.00								
(4) Sales (log)	4.56	0.23	0.27 ***	0.25 ***	0.10	1.00							
(5) Home ctry size	6.57	0.48	-0.23 ***	-0.21 ***	-0.35 ***	-0.01	1.00						
(6) Sector	0.42	0.49	0.44 ***	0.46 ***	0.10	0.08	0.01	1.00					
(7) Home Reg.	0.49	0.50	-0.24 ***	-0.22 ***	-0.18 ***	-0.08	0.61 ***	0.00	1.00				
(8) Dom. Gov.	0.86	0.05	-0.02	-0.02	0.02	0.01	0.20 ***	-0.04	0.33 ***	1.00			
(9) For. Gov.	0.69	0.23	0.09	0.10	0.10	0.16 **	-0.20 ***	0.01	-0.17 ***	0.01	1.00		
(10) FA/TA	0.31	0.25	0.19 ***	0.21 ***	0.16 **	0.23 ***	-0.57 ***	0.27 ***	-0.33 ***	0.00	0.32 ***	1.00	
(11) FS/TS	0.33	0.26	0.25 ***	0.25 ***	0.18 ***	0.20 ***	-0.54 ***	0.37 ***	-0.32 ***	0.05	0.35 ***	0.81 ***	1.00
(12) NSI	0.13	0.11	0.30 ***	0.32 ***	0.18 ***	0.31 ***	-0.38 ***	0.33 ***	-0.27 ***	0.12 *	0.32 ***	0.60 ***	0.67 ***

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10

The results of the first regressions that assess the main effect of internationalization on environmental reporting are presented in table 9.3. For each of the three dependent variables, the results for the model without any measure of internationalization is reported (model 1 in table 9.3), as well as for those that include degree and spread of internationalization (models 2 and 4) and the interaction effects of those two variables (models 3 and 5). Table 9.3 shows that the degree of internationalization – either measured as FATA or FSTS – has a negative effect on environmental disclosure, particularly with respect to reporting in general (REPORT), and reporting more extensive data (DATA). There is no relationship however between internationalization and verification of the report. The spread of international activity has no consequences for the extent to which firms disclose environmental information, nor is the interaction effect between degree and spread of information. Only the degree of internationalization has an effect on reporting, not the spread of activities.

**Table 9.3 Linear effects of internationalization: Report**

	(1)	(2)	(3)	(4)	(5)
Constant	-12.09***	-9.58**	-9.51**	-10.37**	-10.46**
	-2.72	-2.14	-2.09	-2.33	-2.33
Sales (log)	2.89***	3.30***	3.33***	3.17***	3.20***
	4.06	4.16	4.16	3.87	3.89
Home Ctry Size	-0.90**	-1.66***	-1.62***	-1.54***	-1.50***
	-2.21	-3.18	-3.05	-3.06	-2.89
Sector (high-low)	2.27***	2.58***	2.56***	2.68***	2.65***
	6.44	6.28	6.21	6.41	6.28
Home Reg.	-0.91**	-0.86**	-0.86**	-0.92**	-0.93**
	-2.17	-2.11	-2.08	-2.25	-2.25
Dom. Gov.	4.61	5.95*	5.70*	6.47**	6.27*
	1.59	1.88	1.73	2.05	1.93
FA/TA		-2.75***	-3.81***		
		-2.70	-3.14		
FS/TS				-2.51**	-2.99**
				-2.49	-2.51
NSI		1.52	-0.64	2.12	0.82
		0.79	-0.24	1.05	0.26
FA/TA x NSI			7.77		
			1.19		
FS/TS x NSI					3.77
					0.62
$\chi^2$ for interaction			1.41		0.38
N	233	230	230	231	231
Wald $\chi^2$	55.66***	55.97***	58.38***	53.67***	54.47***
Log pseudoL.	-117	-113	-112	-113	-113
Pseudo R <sup>2</sup>	0.27	0.29	0.29	0.28	0.29

Logistic regressions; Wald statistics below the coefficients.

\*\*\*p<0.01; \*\*p<0.05; \*p<0.10

**Table 9.3 Linear effects of internationalization (ctd.)**

	DATA					VERIFY				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Constant	-10.96 **	-8.56 *	-8.45 *	-8.75 *	-8.75 *	1.53	1.82	1.62	2.06	2.09
Sales (log)	-2.44	-1.82	-1.74	-1.92	-1.94	0.30	0.34	0.29	0.40	0.41
Home ctry size	3.77	3.71	3.71	3.53	3.55	1.36	1.94 **	1.95 **	1.76 *	1.67 *
	-0.83 *	-1.32 **	-1.28 **	-1.40 **	-1.41 ***	1.59	2.03	2.04	1.92	1.83
	-1.83	-2.21	-2.10	-2.59	-2.60	-1.98 ***	-2.54 ***	-2.55 ***	-2.54 ***	-2.60 ***
Sector (high-low)	2.33 ***	2.48 ***	2.45 ***	2.68 ***	2.68 ***	-4.10	-3.86	-3.90	-3.95	-4.07
	6.55	5.98	5.90	6.37	6.30	0.65	0.88 **	0.91 **	1.00 **	1.11 **
Home Reg.	-0.84 *	-0.77 *	-0.76 *	-0.81 *	-0.81 *	1.51	2.04	2.06	2.15	2.23
	-1.94	-1.81	-1.78	-1.91	-1.91	-0.30	-0.35	-0.36	-0.37	-0.36
Dom. Gov.	4.04	4.56	4.24	5.56 *	5.56	-0.61	-0.69	-0.70	-0.73	-0.71
	1.40	1.46	1.29	1.68	1.62	3.33	4.81	4.96	5.42	5.90
FA/TA		-2.17 **	-3.23 **			0.84	1.14	1.18	1.29	1.40
		-2.02	-2.35				-1.86	-1.60		
FS/TS				-2.61 **	-2.60 *		-1.57	-0.90	-1.80	-0.92
				-2.53	-1.94				-1.50	-0.56
NSI		2.28	0.22	3.41	3.45		-0.45	0.18	-0.19	2.27
		1.18	0.08	1.60	1.02		-0.18	0.05	-0.07	0.51
FA/TA x NSI			7.46					-1.74		
			1.06					-0.23		
FS/TS x NSI					-0.13					-6.08
					-0.02					-0.71
$\chi^2$ for interaction			1.12		0			0.05		0.5
N	233	230	230	231	231	233	230	230	231	231
Wald $\chi^2$	51.17 ***	50.28 ***	51.27 ***	50.98 ***	51.12 ***	23.64 ***	21.36 ***	24.74 ***	21.9 ***	23.46 ***
Log pseudoL.	-116	-112	-112	-112	-112	-75	-73	-73	-74	-73
Pseudo R <sup>2</sup>	0.26	0.28	0.28	0.28	0.28	0.18	0.19	0.19	0.19	0.20

Logistic regressions; wald statistics in parentheses below coefficients.

\*\*\* p<0.01, \*\* p<0.05; \* p<0.10.

One of the key contributions of this paper is to study not only the extent of internationalization, but also the direction: does internationalization that is directed to high-standard countries lead to more disclosure than internationalization to low standard countries? Table 9.4 gives preliminary evidence that this is indeed the case, again for reporting in general and reporting extensive data, but not for verification. Both the significance of the beta coefficients as well as the  $\chi^2$ -test indicate that the interaction effects contribute significantly to explaining differences in environmental disclosure likelihood. This interaction effect between the extent and the direction of internationalization can only be found for assets, not for sales or for the spread of international activities.

**Table 9.4 Interaction effects: foreign environmental governance: Report**

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-9.65**	-8.28*	-9.33**	-10.43**	-10.02**	-10.43**
	-2.15	-1.79	-2.06	-2.34	-2.26	-2.30
Sales (log)	3.29***	3.15***	3.25***	3.16***	3.29***	3.16***
	4.12	3.91	4.02	3.83	3.98	3.78
Home Ctry Size	-1.66***	-1.64***	-1.66***	-1.54***	-1.71***	-1.54***
	-3.19	-3.23	-3.22	-3.07	-3.25	-3.08
Sector (high-low)	2.59***	2.63***	2.59***	2.69***	2.70***	2.69***
	6.27	6.29	6.28	6.41	6.31	6.42
Home Reg.	-0.85**	-0.81**	-0.84**	-0.91**	-0.88**	-0.91**
	-2.08	-1.99	-2.05	-2.22	-2.19	-2.23
Domestic Gov.	5.96*	5.25	5.82*	6.49**	6.58**	6.49**
	1.88	1.55	1.80	2.05	2.10	2.04
FA/TA	-2.79***	-10.34**	-2.87***			
	-2.74	-2.43	-2.85			
FS/TS				-2.57**	-1.83	-2.57**
				-2.52	-1.54	-2.52
NSI	1.43	1.92	-4.37	2.05	2.09	2.07
	0.73	0.94	-0.36	1.01	0.98	0.18
Foreign Gov.	0.20	-0.36	0.08	0.23	0.43	0.23
	0.27	-0.48	0.11	0.30	0.54	0.28
FA/TA x For.Gov.		10.01*				
		1.81				
FS/TS x For.Gov.					-1.74	
					-1.19	
NSI x For.Gov.			8.26			-0.02
			0.48			0.00
$\chi^2$ for interaction		3.27*	0.23		0.32	0.00
N	230	230	230	231	230	231
Wald $\chi^2$	56.48***	57.21***	56.4***	54.02***	54.46***	54.55***
Log pseudoL.	-113	-111	-112	-113	-113	-113
Pseudo R <sup>2</sup>	0.287	0.296	0.288	0.285	0.287	0.285

Logistic regressions; Wald statistics below coefficients.

\*\*\*p<0.01; \*\*p<0.05; \*p<0.10

**Table 9.4 Interaction effects: foreign environmental governance (ctd.)**

	DATA						VERIFY					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-8.66 *	-6.76	-7.90 *	-8.87 *	-8.81 *	-8.41 *	1.29	3.37	4.17	1.59	1.32	3.70
Sales (log)	-1.83	-1.43	-1.72	-1.93	-1.89	-1.85	0.24	0.57	0.73	0.30	0.25	0.65
Home ctry size	2.72 ***	2.55 ***	2.63 ***	2.67 ***	2.71 ***	2.61 ***	1.85 *	1.68 *	1.54	1.65 *	1.84 *	1.37
	3.68	3.30	3.45	3.49	3.52	3.34	1.94	1.70	1.59	1.81	1.90	1.45
	-1.32 **	-1.32 **	-1.33 **	-1.41 ***	-1.45 **	-1.40 ***	-2.51 ***	-2.57 ***	-2.62 ***	-2.52 ***	-2.61 ***	-2.53 ***
	-2.23	-2.38	-2.35	-2.62	-2.49	-2.61	-3.93	-4.13	-4.18	-4.00	-3.96	-4.07
Sector (high-low)	2.50 ***	2.54 ***	2.51 ***	2.72 ***	2.71 ***	2.71 ***	0.92 **	0.92 **	0.94 **	1.06 **	1.04 **	1.05 **
	5.97	6.10	6.02	6.39	6.33	6.37	2.07	2.08	2.08	2.15	2.15	2.10
Home Reg.	-0.76 *	-0.69 *	-0.72 *	-0.80 *	-0.78 *	-0.76 *	-0.33	-0.29	-0.24	-0.34	-0.34	-0.28
	-1.80	-1.65	-1.72	-1.88	-1.86	-1.81	-0.65	-0.57	-0.47	-0.69	-0.67	-0.55
Dom. Gov.	4.57	3.65	4.29	5.61 *	5.59 *	5.38	4.78	4.13	4.34	5.44	5.50	4.96
	1.46	1.04	1.29	1.68	1.70	1.57	1.13	0.89	0.95	1.29	1.30	1.11
FA/TA	-2.23 **	-12.54 **	-2.41 **				-1.98 *	-9.12	-2.31 *			
	-2.08	-2.37	-2.25	-2.73 ***	-2.48 **	-2.73 **	-1.70	-1.32	-1.91	-1.92	-1.36	-1.89
FS/TS				-2.61	-1.97	-2.58				-1.59	-0.96	-1.58
NSI	2.16	3.01	-10.14	3.28	3.27	-4.07	-0.56	0.22	-22.08	-0.32	-0.21	-16.47
	1.10	1.44	-0.76	1.53	1.51	-0.31	-0.23	0.09	-1.48	-0.12	-0.08	-1.13
Foreign Gov.	0.29	-0.45	0.03	0.43	0.50	0.25	1.17	0.55	0.36	1.13	1.32	0.49
	0.39	-0.60	0.03	0.55	0.63	0.32	0.65	0.34	0.24	0.65	0.73	0.32
FA/TA x For.Gov.		13.59 **						9.16				
		1.98						1.04				
FS/TS x For.Gov.					-0.53						-1.35	
					-0.32						-0.76	
NSI x For.Gov.			17.61			10.43			30.55			22.72
			0.93			0.57			1.52			1.17

Logistic regressions; wald statistics in parentheses below coefficients. \*\*\*p<0.01; \*\* p<0.05; \*p<0.10



**Table 9.4 Interaction effects: foreign environmental governance**

	DATA					
	(1)	(2)	(3)	(4)	(5)	(6)
X <sup>2</sup> for interaction		3.91**	0.86		1.20	0.32
N	230	230	230	231	230	231
Wald $\chi^2$	50.8***	53.81***	51.13***	51.9***	51.6***	51.8***
Log pseudoL.	-112	-110	-112	-112	-111	-111
Pseudo R <sup>2</sup>	0.28	0.29	0.28	0.28	0.28	0.29

	VERIFY					
	(1)	(2)	(3)	(4)	(5)	(6)
X <sup>2</sup> for interaction		1.08	2.30		0.72	1.37
N	230	230	230	231	230	231
Wald $\chi^2$	21.7***	29.2***	29.02***	22.1***	21.4***	27.25***
Log pseudoL.	-73	-73	-72	-73	-73	-73
Pseudo R <sup>2</sup>	0.20	0.20	0.21	0.20	0.20	0.20

\*\*\*p<0.01; \*\* p<0.05; \*p<0.10

The threshold of foreign environmental governance above which internationalization starts to have a positively effect on disclosure is however very high, at 1.033, which is even outside the range of this variable (which is between 0 and 1). This means that although the location of assets in countries with high institutional pressures stimulates firms to report on their environmental practices, this does not fully mitigate the overall negative relationship between internationalization and disclosure.

This finding may imply that it is in particular the domestic institutional context that (positively) influences reporting. This potential explanation is further explored in table 9.5, which gives the results of the interaction effects between domestic environmental governance and internationalization. Whereas the findings so far indicated significant results for primarily REPORT, followed by DATA, the domestic environmental context has important consequences of the more sophisticated dimensions of environmental reporting: DATA, and in particular, VERIFY. Also in contrast with the previous models is the finding that the interaction with domestic environmental governance is significant for the internationalization of sales, and not of assets. This means that while the domestic institutional context has no effect on the relationship between the internationalization of assets and disclosure (which remains negative), the negative relationship between the internationalization of sales is less severe among firms from countries with a high level of domestic pressures. As with the interaction effects with foreign environmental governance, we also find very high thresholds: even at very high levels of domestic pressure, internationalization has still a negative effect on performance. For DATA, the threshold is at 0.94, which is above the maximum value for domestic environmental governance (which is 0.92), and although for VERIFY the threshold of domestic institutional pressure above which we find a positive effect is lower (0.89), only Switzerland and the UK score higher than this value. Still, there is no strong support of firms evading domestic regulation: in that case we would find a negative interaction effect.

**Table 9.5 Interaction effects: domestic environmental governance**

	REPORT				DATA				VERIFY			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Constant	-7.01	-8.76	-8.77	-8.42	-3.27	-5.20	-0.06	-4.77	6.94	5.10	15.99 *	4.77
Sales (log)	-1.00	-1.41	-1.36	-1.36	-0.46	-0.86	-0.01	-0.77	0.82	0.63	1.93	0.59
	3.27 ***	3.31 ***	3.17 ***	3.20 ***	2.69 ***	2.78 ***	2.66 ***	2.77 ***	1.82 *	1.92 **	1.62 *	1.74 *
	4.10	4.18	3.81	3.93	3.66	3.74	3.47	3.59	1.89	2.01	1.84	1.90
Home ctry size	-1.66 ***	-1.65 ***	-1.33 ***	-1.53 ***	-1.32 **	-1.27 **	-1.14 **	-1.38 **	-2.48 ***	-2.48 ***	-2.16 ***	-2.47 ***
	-3.16	-3.08	-2.71	-3.00	-2.20	-2.05	-2.14	-2.50	-3.68	-3.71	-3.28	-3.80
Sector (high-low)	2.57 ***	2.57 ***	2.64 ***	2.67 ***	2.46 ***	2.46 ***	2.64 ***	2.67 ***	0.81 *	0.83 *	0.80 *	0.95 **
	6.16	6.17	6.12	6.32	5.80	5.82	5.99	6.26	1.84	1.95	1.76	2.05
Home Reg.	-0.82 *	-0.86 **	-1.01 **	-0.90 **	-0.69	-0.75 *	-0.81 *	-0.78 *	-0.29	-0.32	-0.21	-0.34
	-1.95	-2.09	-2.38	-2.21	-1.55	-1.75	-1.75	-1.84	-0.54	-0.63	-0.36	-0.67
Domestic Gov.	3.07	4.86	3.01	3.95	-1.44	0.06	-6.45	0.37	-1.08	0.62	-13.32	1.85
	0.43	0.73	0.44	0.60	-0.18	0.01	-0.75	0.05	-0.11	0.07	-1.31	0.22
FA/TA	-9.06	-2.71 **			-15.05	-2.03 *			-13.99	-1.74		
	-0.77	-2.59			-1.15	-1.78			-0.72	-1.43		
FS/TS			-9.66	-2.47 **			-28.91 **	-2.53 **			-40.56 **	-1.64
			-0.91	-2.40			-1.98	-2.36			-2.37	-1.34
NSI	1.57	-5.75	2.14	-15.0	2.41	-27.03	3.45	-30.8	-0.27	-26.09	0.52	-21.59
	0.82	-0.17	1.05	-0.44	1.27	-0.67	1.63	-0.79	-0.11	-0.51	0.19	-0.43
FA/TAxDomGov	7.35		14.99						14.17			
	0.53		0.97						0.63			
FS/TSxDomGov		8.48					30.77 *				45.37 **	
		0.68					1.80				2.28	
NSIxDomGov		8.34		19.66		33.65		39.29		29.35		24.44
		0.21		0.50		0.73		0.87		0.50		0.43
$\chi^2$ for interaction	0.28	0.04	0.46	0.25	0.94	0.53	3.23 *	0.76	0.39	0.25	5.19 **	0.18
N	230	230	228	231	230	230	228	231	230	230	228	231
Wald $\chi^2$	57.7 ***	57.3 ***	55.6 ***	55.3 ***	52.2 ***	54.4 ***	54.7 ***	54.4 ***	24.0 ***	22.1 ***	28.5 ***	22.1 ***
Log pseudoL.	-113	-113	-112	-113	-112	-112	-108	-111	-73	-73	-69	-73
Pseudo R <sup>2</sup>	0.29	0.29	0.29	0.29	0.28	0.28	0.30	0.29	0.20	0.20	0.22	0.19

Logistic regressions; wald statistics below the coefficients. \*\*\* p<0.01; \*\* p<0.05; \* p<0.10

The results have so far indicated that institutions – home and host - play a major role in stimulating firms to report (or not). These public pressures tend to be stronger for those firms that have the largest (potential) environmental impact: oil firms, car manufacturers, utilities. Hence we would expect the home and host institutional effects to be stronger for firms in those sectors, and maybe even absent for those firms that are not, such as financial services or trading firms. Table 9.6 gives an overview of the three-way interaction effects between internationalization, foreign institutional pressures, and sector. While the results confirm the bivariate interaction between internationalization of assets and foreign institutional pressure, we find no difference between sectors with high or low environmental sensitivity. Foreign institutional pressure minimizes the negative effect of internationalization on reporting for both types of sectors equally.

As table 9.7 shows, this is not the case for the domestic institutional context. The effects that we found in table 9.5 appear to be strongest for sectors with high environmental sensitivity. For less sensitive sectors, there is just a plain linear negative relationship between internationalization and disclosure. This relationship is not stronger or weaker for countries with more stringent legislation. For the high sensitivity sectors, we find that the internationalization of assets and sales is negatively related to environmental disclosure for firms from countries with low levels of environmental governance, and positive for firms from countries with high levels of environmental governance. The threshold of environmental governance for high impact sectors is at 0.86, which is equal to the mean of this variable. This means that for a substantial number of firms – those in high sensitivity sectors from high standard countries – internationalization is positively related to disclosure.

In contrast with the previous tables, the (three-way) interaction effects with the spread of internationalization (NSI) are also significant, as can be observed from the  $\chi^2$ -statistics. The signs of the coefficients are similar to those for the degrees of internationalization, and indicate that for high sensitivity firms from high standard countries, widespread internationalization is positively related to disclosure.

**Table 9.6 Three-way Interaction: Sector and foreign institutional quality**

	REPORT				DATA	
	(1)	(2)	(3)	(4)	(1)	(2)
Constant	-8.50 *	-8.87 *	-9.93 **	-9.64 **	-7.47	-8.18 *
	-1.70	-1.89	-2.11	-1.99	-1.45	-1.66
Sales (log)	3.27 ***	3.27 ***	3.17 ***	3.13 ***	2.62 ***	2.63 ***
	3.93	4.00	3.75	3.72	3.36	3.49
Home Country Size	-1.68 ***	-1.64 ***	-1.53 ***	-1.51 ***	-1.30 **	-1.28 **
	-3.24	-3.10	-3.00	-2.98	-2.37	-2.24
Sector (high-low)	3.05 ***	2.55 ***	2.40 **	2.38 **	3.92 ***	3.30 ***
	2.96	2.68	2.42	2.35	3.20	2.72
Home Regulation	-0.85 **	-0.91 **	-1.01 **	-0.98 **	-0.68	-0.74 *
	-2.00	-2.21	-2.41	-2.32	-1.59	-1.78
Domestic Governance	5.05	5.20	6.01 *	5.80	3.29	3.69
	1.33	1.48	1.72	1.58	0.87	1.04
FA/TA	-21.52 **	-3.09 ***			-19.84 **	-2.49 **
	-2.47	-3.00			-2.16	-2.33
FS/TS			-2.85 ***	-16.06 *		
			-2.68	-1.91		
NSI	2.00	-26.14	-19.36	2.42	3.10	-22.04
	0.95	-1.21	-0.97	1.17	1.46	-1.01
Foreign Governance	0.15	0.23	0.23	-0.05	0.67	0.81
	0.15	0.22	0.21	-0.05	0.54	0.56
For.Cap x Sector	-1.51	-0.63	-0.27	0.19	-2.68	-1.52
	-0.97	-0.42	-0.18	0.12	-1.51	-0.86
FA/TA x Sector	13.28				7.45	
	1.36				0.65	
FA/TA x For.Gov.	23.15 **				22.03 *	
	2.10				1.91	
For.Gov. x FA/TA x Sector	-14.58				-7.53	
	-1.13				-0.50	
FS/TS x Sector				15.25		
				1.52		
FS/TS x For.Gov.				17.12		
				1.58		
For.Gov. x FS/TS x Sector				-19.27		
				-1.44		
NSI x Sector		32.68	32.71			16.57
		1.09	1.15			0.57
NSI x For.Gov.		35.51	26.80			32.57
		1.20	0.98			1.09
For.Gov. x NSI x Sector		-38.65	-38.49			-19.53
		-0.94	-0.98			-0.49
$\chi^2$ for interaction	7.13	3.34	3.31	2.83	8.22 *	2.89
N	230	230	231	231	230	230
Wald $\chi^2$	60.78 ***	56.8 ***	56.37 ***	57.92 ***	60.19 ***	53.14 ***
Log pseudoL.	-109.66	-111.01	-111.99	-112.20	-108.72	-110.98
Pseudo R <sup>2</sup>	0.31	0.30	0.29	0.29	0.30	0.29

Logistic regressions; Wald statistics below the coefficients.

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10.

**Table 9.6 Three-way Interaction: Sector and foreign institutional quality (ctd)**

	DATA		VERIFY			
	(3)	(4)	(1)	(2)	(3)	(4)
Constant	-8.60 *	-8.07	5.00	5.09	4.44	3.98
	-1.77	-1.63	0.85	0.87	0.76	0.69
Sales (log)	2.60 ***	2.55 ***	1.68 *	1.57	1.43	1.49
	3.36	3.30	1.67	1.56	1.47	1.56
Home Country Size	-1.34 **	-1.32 **	-2.66 ***	-2.69 ***	-2.63 ***	-2.59 ***
	-2.50	-2.53	-4.13	-4.00	-4.01	-3.93
Sector (high-low)	3.23 **	3.27 ***	-4.50	-2.00	-1.96	-2.76
	2.53	2.67	-0.87	-1.28	-1.27	-1.15
Home Regulation	-0.80 *	-0.77 *	-0.30	-0.26	-0.31	-0.32
	-1.91	-1.82	-0.53	-0.49	-0.56	-0.57
Domestic Governance	4.85	4.46	4.06	4.71	5.67	5.52
	1.33	1.16	0.89	1.05	1.28	1.20
FA/TA			-9.47	-2.30 *		
			-1.16	-1.82		
FS/TS	-2.81 ***	-16.37 *			-1.95	-4.37
	-2.64	-1.81			-1.65	-0.58
NSI	-16.69	4.04 *	0.00	-18.69	-13.75	0.33
	-0.80	1.85	0.00	-0.89	-0.66	0.12
Foreign Governance	0.85	0.31	-0.43	-1.01	-1.15	-0.95
	0.56	0.22	-0.27	-0.62	-0.67	-0.53
For.Cap x Sector	-1.16	-0.44	6.34	4.22 *	4.61 **	5.54 *
	-0.63	-0.24	0.96	1.86	2.04	1.70
FA/TA x Sector			6.13			
			0.40			
FA/TA x For.Gov.			8.48			
			0.85			
For.Gov. x FA/TA x Sector			-5.78			
			-0.29			
FS/TS x Sector		10.87				0.96
		0.97				0.10
FS/TS x For.Gov.		18.47				3.77
		1.59				0.39
For.Gov. x FS/TS x Sector		-15.22				-2.27
		-1.03				-0.17
NSI x Sector	17.96			0.97	2.75	
	0.63			0.03	0.10	
NSI x For.Gov.	26.23			26.65	20.59	
	0.92			0.93	0.72	
For.Gov. x NSI x Sector	-21.12			-2.69	-6.68	
	-0.54			-0.07	-0.18	
$\chi^2$ for interaction	2.05	3.78	3.24	5.54	5.37	3.80
N	231	231	230	230	231	231
Wald $\chi^2$	53.52 ***	58.95 ***	29.61 ***	37.61 ***	36.57 ***	28.76 ***
Log pseudoL.	-110.59	-109.77	-71.25	-71.17	-71.63	-71.93
Pseudo R <sup>2</sup>	0.29	0.30	0.21	0.21	0.21	0.21

Logistic regressions; Wald statistics below the coefficients.

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10.

**Table 9.7 Three-way Interaction: Sector and domestic institutional quality**

	REPORT				DATA	
	(1)	(2)	(3)	(4)	(1)	(2)
Constant	-13.66	-16.65 *	-15.44	-19.27 *	-12.77	-16.03
	-1.27	-1.69	-1.56	-1.85	-1.09	-1.48
Sales (log)	3.22 ***	3.29 ***	3.22 ***	3.10 ***	2.66 ***	2.71 ***
	3.89	4.13	3.86	3.62	3.47	3.64
Home Country Size	-1.47 ***	-1.39 **	-1.31 **	-1.09 **	-1.08 *	-1.04 *
	-2.72	-2.40	-2.32	-2.12	-1.72	-1.65
Sector (high-low)	74.50 **	43.10 **	41.97 **	66.52 ***	57.23 ***	43.16 **
	2.46	2.28	2.20	2.94	2.87	2.18
Home Regulation	-0.38	-0.59	-0.65	-0.73	-0.31	-0.50
	-0.82	-1.24	-1.35	-1.51	-0.62	-1.02
Domestic Governance	9.36	12.12	10.40	13.52	7.63	10.93
	0.89	1.17	1.00	1.35	0.66	0.93
FA/TA	-9.31	-2.42 **			-7.03	-1.70
	-0.40	-2.17			-0.29	-1.47
FS/TS			-2.32 **	0.32		
			-2.03	0.02		
NSI	2.28	0.25	-17.55	2.63	3.02	9.32
	1.05	0.00	-0.27	1.20	1.43	0.14
Dom.Gov x Sector	-83.58 **	-47.71 **	-46.33 **	-74.06 ***	-63.78 ***	-47.49 **
	-2.41	-2.20	-2.11	-2.85	-2.78	-2.09
FA/TA x Sector	-103.36 *				-82.39 **	
	-1.93				-2.13	
FA/TA x Dom.Gov.	7.43				5.92	
	0.28				0.22	
Dom.Gov. x FA/TA x Sector	120.50 **				95.89 **	
	1.96				2.16	
FS/TS x Sector				-81.95 **		
				-2.45		
FS/TS x Dom.Gov.				-2.91		
				-0.15		
Dom.Gov. x FS/TS x Sector				95.03 **		
				2.47		
NSI x Sector		-111.08	-95.86			-155.59
		-1.20	-1.00			-1.52
NSI x Dom.Gov.		0.19	21.02			-8.16
		0.00	0.28			-0.10
Dom.Gov. x NSI x Sector		132.44	115.61			180.53
		1.25	1.05			1.55
$\chi^2$ for interaction	9.16 **	9.95 **	10.84 **	9.02 *	10.59 **	6.19
N	230	230	231	228	230	230
Wald $\chi^2$	57.57 ***	71.25 ***	66.67 ***	55.69 ***	60.39 ***	63.51 ***
Log pseudoL.	-106.06	-107.58	-108.29	-106.01	-107.13	-108.27
Pseudo R <sup>2</sup>	0.33	0.32	0.32	0.32	0.31	0.30

Logistic regressions; Wald statistics below the coefficients.

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10.

**Table 9.7 Three-way Interaction: Sector and domestic institutional quality (ctd.)**

	DATA		VERIFY			
	(3)	(4)	(1)	(2)	(3)	(4)
Constant	-14.42	-12.95	-2.83	-14.20	-13.72	-6.47
	-1.31	-1.17	-0.20	-0.86	-0.78	-0.38
Sales (log)	2.71 ***	2.54 ***	1.70	1.90*	1.66*	1.75*
	3.52	3.21	1.61	1.90	1.77	1.72
Home Country Size	-1.17 **	-0.92 *	-2.18 ***	-2.19 ***	-2.03 ***	-1.69 ***
	-2.00	-1.71	-3.21	-3.38	-3.30	-2.78
Sector (high-low)	41.34 **	74.88 ***	50.35 *	36.32 *	35.37 *	52.89 **
	2.08	3.31	1.89	1.93	1.79	2.52
Home Regulation	-0.53	-0.55	-0.02	-0.12	-0.14	-0.18
	-1.10	-1.09	-0.04	-0.22	-0.25	-0.29
Domestic Governance	10.16	7.00	8.80	20.38	19.70	8.44
	0.85	0.61	0.59	1.16	1.05	0.47
FA/TA			-16.40	-1.41		
			-0.48	-1.13		
FS/TS	-2.22 *	-8.21			-0.72	-16.06
	-1.91	-0.40			-0.60	-0.48
NSI	-1.17	3.79 *	0.51	53.21	46.49	1.90
	-0.02	1.68	0.20	0.56	0.45	0.77
Dom.Gov x Sector	-45.22 **	-83.14 ***	-60.32 *	-41.53 *	-40.32 *	-62.28 **
	-1.98	-3.21	-1.89	-1.92	-1.78	-2.53
FA/TA x Sector			-58.83			
			-1.12			
FA/TA x Dom.Gov.			15.77			
			0.41			
Dom.Gov. x FA/TA x Sector			73.68			
			1.20			
FS/TS x Sector		-111.74 ***				-77.45 *
		-2.87				-1.76
FS/TS x Dom.Gov.		7.91				16.89
		0.34				0.45
Dom.Gov. x FS/TS x Sector		127.76 ***				92.10 *
		2.85				1.82
NSI x Sector	-142.74			-141.28	-133.22	
	-1.36			-1.24	-1.10	
NSI x Dom.Gov.	4.66			-60.06	-52.41	
	0.06			-0.56	-0.45	
Dom.Gov. x NSI x Sector	166.46			163.12	153.28	
	1.39			1.25	1.12	
$\chi^2$ for interaction	6.38	13.57 ***	6.42	6.27	6.03	15.24 ***
N	231	228	230	230	231	228
Wald $\chi^2$	64.01 ***	58.44 ***	28.61 ***	28.28 ***	28.1 ***	32.76 ***
Log pseudoL.	-107.80	-102.10	-67.78	-70.03	-70.59	-64.39
Pseudo R <sup>2</sup>	0.31	0.34	0.26	0.23	0.23	0.28

Logistic regressions; Wald statistics below the coefficients.

\*\*\* p&lt;0.01; \*\* p&lt;0.05; \* p&lt;0.10.

## 9.6 DISCUSSION AND CONCLUSIONS

The growth of globalization has been paired with a similar increase in public concern about its effects. In particular the potential negative environmental and social consequences of the international activities of MNE are scrutinized. In response to these institutional pressures, MNEs have started to voluntarily disclose environmental and social information in order to increase transparency and ensure legitimacy. But in order to truly appreciate MNE accountability and legitimacy in the context of globalization, we need to understand more about the relationship between the internationalization of MNE activity and the occurrence and detail of non-financial disclosures. Our literature review showed that existing research has barely touched upon this topic. With this paper, we aimed to address this gap in the literature by theoretically developing and empirically testing a set of hypotheses on the relationship between degree and spread of internationalization and environmental disclosures, while giving special attention to the role of home and host institutional pressures and sector peculiarities.

Building on legitimacy, stakeholder and institutional theory, arguments supporting both a positive and a negative relationship between internationalization and reporting were identified. On the one hand, internationalization could be argued to lead to more disclosure and transparency by MNEs: internationalization leads to a more complex and heterogeneous institutional and stakeholder environment, an increased potential of legitimacy spillovers (both positive and negative), difficulties related to the liability of foreignness, and increased visibility, all of which increase the amount of stakeholder pressure on the firm, and – as legitimacy theory suggests – lead to more and more detailed disclosure of information, in order to shape external perceptions and improve the corporate image.

On the other hand, the same theories may lead to a different prediction: that internationalization is coupled with less environmental disclosure. A more diverse and larger set of stakeholders may not necessarily induce firms to disclose more: the geographical break-up of activities reduces the overall size of individual affiliates in each country, while the power of each individual stakeholder and the field cohesion among them decreases. Furthermore, foreignness may not always be a liability, but may be a ‘liberty’, in that firms may be less expected to fully comply with local regulations. And finally, large distances between foreign stakeholders and corporate management increases interpretation problems in assessing stakeholder salience.

We then suggested that whether or not internationalization would lead to increased disclosure is dependent on the institutional pressures in the home country, and in the host countries. We hypothesized that both home and host country institutional pressures positively moderate the relationship between internationalization and disclosure, since such high pressures make the arguments against a positive relationship much less likely. Exposure to high foreign institutional pressures increases the risk of legitimacy crises, while high domestic institutional pressures make escaping the public eye much more difficult. In both cases, the potential for legitimacy spillovers increases. Finally, we



argued that these interaction effects are more prominent in environmentally sensitive sectors, where public scrutiny in general is much higher.

We empirically tested these hypotheses using a sample consisting of the 250 largest firms worldwide (Fortune Global 250), using a series of logistic regression analyses with two-way and three-way interaction effects. The results partly confirmed, but also partly rejected our hypotheses. Table 9.8 below summarizes our findings with respect to the hypotheses, for each of the three dependent variables in our analysis.

**Table 9.8 Summary of the research findings**

	REPORT			DATA			VERIFY		
	Sales	Assets	NSI	Sales	Assets	NSI	Sales	Assets	NSI
H1. Main effect	-	-		-	-				
H2. Home interaction				+			+		
H3. Host interaction		+			+				
H4. Home/sector interaction	+	+	+	+	+		+		
H5. Host/sector interaction		+			+				

The '+' and '-' signs imply significant positive or negative effects; blank are non-significant effect.

Our results indicated that the main effect of internationalization on disclosure is negative, for both sales and assets. However, the spread of international activities does not affect disclosure (nor did the interaction effect between spread and degree of internationalization). These results primarily support the argument that a reduced exposure to home country stakeholders is translated into lower disclosure, regardless of the exact location of foreign activities (wide-spread or focused in one location). This would suggest that primarily home-country pressures influence disclosure. However, H2, which addresses the role of home country pressure, is only partly supported by empirical evidence: only for the more advanced forms of disclosure (detailed data and external verification), we find that high institutional pressures positively affect the impact of the internationalization of sales on disclosure. This implies that the more advanced types of disclosure are still strongly influenced by home-country pressures, in particular those from home-country customers.

Our third hypothesis addressed the role of the destination of foreign activities. The stronger the pressures in the host locations, the more likely firms are to report more rather than less. This hypothesis was supported for the degree of internationalization of assets, for the variables Report and Data. Hence, while the occurrence of more advanced forms of reporting is driven by home-customer pressures, the less advanced forms of reporting are more sensitive to foreign pressures that are related to asset internationalization.

Our final two hypotheses (H4 and H5) assessed differences in how internationalization affects disclosure between sectors with high versus low environmental sensitivity. Results confirmed our hypotheses: the effect of home and host country pressures in moderating the impact of internationalization on disclosure is stronger in high sensitivity sectors. This effect is so strong that for firms from high-standard countries and high-

sensitivity sectors, the main negative effect of internationalization on disclosure is reversed into a positive relationship: more internationalization leads to more disclosure. Hence, we can conclude that internationalization reduces the likelihood of firms disclosing environmental information. Environmental governance and institutional quality in both home and host countries do mitigate these effects, but not fully. Even from a high-pressure domestic environment, international firms are less likely to report than non-international firms. And even if firms internationalize towards high-standard countries, they will report less than those firms that stay at home, even though they are less likely to escape public scrutiny than firms that internationalize towards low-pressure countries. For the majority of firms, even if they face a highly diverse set of stakeholders, their total visibility (and hence institutional pressure) in foreign locations is always less than at home. The only exception to this conclusion is for high impact firms from high standard countries. This is the only subset of firms for which we find that 'out of sight' (i.e., abroad) is not 'out of mind' (of the (domestic) public). The latter seems however to be the case for most of the other firms – from less environmentally sensitive sectors or from countries without high standards.

If we compare our findings to the few studies that already included internationalization as an independent variable in their analysis of disclosure (those by Meek *et al.*, 1995; and Levy, 1995), we find essentially similar – negative – results. This conclusion is in stark contrast though with most studies that addressed the relationship between internationalization and environmental practices and performance, that established a positive association. A potential explanation for this discrepancy between the relationship between internationalization and practices or performance on the one hand, and internationalization and disclosure on the other hand, could be related to the differences between the so-called upstream and downstream (or front-end and back-end) activities of a firm. There could be important cost advantages of integrating and harmonizing production methods (upstream, back-end) and management systems across borders, while on the other hand, the legitimacy gaining effort (disclosure) is still very much a downstream or front-end activity where being locally responsive yields more value. In that case, if host-country publics do not perceive disclosure as improving legitimacy, it may be more beneficial to not disclose. Our findings could thus be interpreted as a further confirmation of the 'think globally – act locally' adage, or as an illustration of how in the field of environmental management and reporting, firms try – in a very transnational way – to be locally responsive and globally integrated at the same time.

### **Implications for policy and research**

Our study suggests policy implications for both home and host country governments. We have seen that firms from countries where mandatory reporting regulation is in place are less likely to report or verify their reports. This could partly be explained by the fact that such regulations usually target the site level, not the corporate level (on which we focused here). It may also be that firms are less inclined to publish their own reports when they already have to report to governments, as they may think that they have done enough. While more research is needed into the exact motives of firms regarding what to

report, in what way and to what stakeholders in the presence of mandatory reporting regulation, our findings so far would suggest that governments abstain from legally requiring firms to disclose. Instead, we have seen that overall institutional pressure, embodied in a good environmental governance system where clear and reliable environmental rules and regulations are in place generally across the board, is more important in increasing transparency about firms' environmental activities. This is the case for both domestic firms and international firms, both at home and abroad. Our results suggests that governments willing to increase the extent of reporting by firms should invest in building and maintaining such institutions.

As for the theoretical implications of our findings, they essentially confirm the central tenet of legitimacy theory (and stakeholder and institutional theory), which is that higher visibility and more public pressure induces firms to report more in order to achieve and maintain legitimacy. However, our findings do question the way in which legitimacy theory has been interpreted in the IB literature with respect to the effect of internationalization on the total extent of public pressure to which a firm is exposed. We find that only for firms where pressure is already very high because of their home country and sector of operation, the positive effect of internationalization on disclosure due to the increased number and variety of stakeholders is confirmed. Instead, for most other firms, it appears that the arguments for a reduced visibility as a result of internationalization better match the empirical results.

Future research can further assess the importance of the arguments in favour and against a positive relationship with internationalization. We suggested that for the majority of firms, internationalization leads to a decrease in disclosure for a variety of reasons, including a reduction in size of the firm in each individual country due to the geographical break-up of activities, the reduced importance of individual stakeholders and field cohesion among stakeholders, the potential 'liberty' (instead of liability) of foreignness, problems related to the interpretation of stakeholder salience across distances and thus the (perceived) costs of disclosure. Firm-level questionnaires and interviews that contain more specific questions with respect to these motives could assess whether they are indeed valid. Such studies could consider whether managers perceive more distant stakeholders as less salient, whether managers from more international firms perceive their stakeholder field as less cohesive, or whether managers from foreign firms feel less pressure to abide by local standards than those from local firms.

At a more general level, the extent to which a firm's degree and spread of internationalization results in a changing exposure to foreign and domestic institutions, and hence business strategy, is an area where much further research is required (Dunning, 2006). Our paper analyzed these questions in detail for firm strategies with respect to environmental disclosure. However, there is a range of other institutions to which a firm is exposed in different issue areas, for example labour relations, that future studies can address in a very similar manner as we have done here, in order to see if our results hold in other contexts as well. The weighted measure of exposure to foreign institutional pressure that we used here might be helpful for developing other (macro) measures of institutional pressure as well.

# 10 CONCLUSIONS

## 10.1 INTRODUCTION

The growth of globalization has been paired with a similar increase in public concern about its effects for sustainable development. In a lively and sometimes even heated debate, proponents and opponents of globalization continue to discuss the implications of globalization for (amongst others) income inequality, labour, the natural environment, risk and economic stability, and the power of the nation state versus other actors. However, it appears that a major part of the disagreements on whether globalization leads to increasing or decreasing sustainable development is caused by differences in definitions of both globalization and development, and by the tendency of the majority of participants in the debate to faultily generalize their research findings on the effects of a partial dimension of globalization to the entire concept.

This dissertation aims to contribute to debate on globalization and development by explicitly focusing on the development effects of economic globalization, and in particular of FDI by MNEs. Development is defined here as sustainable development, including its economic, social and environmental dimensions, following the most recent and increasingly inclusive views on what the concept of development means and implies. The focus on FDI and MNEs was motivated by several considerations. First, the international investments by MNEs constitute the key characterizing feature of present day globalization compared to previous phases of economic integration. Foreign Direct Investment forms a fundamental linking pin between national economies. In the past decades, FDI has grown faster than international trade and production, meaning that at present, total world FDI stock is equal to nearly a quarter of global GDP. Second, only a few MNEs are responsible for the vast majority of FDI, making MNE strategy an extremely relevant perspective in trying to understand how international investments come about and how they affect the recipient countries. Third, for many countries, specifically developing ones, FDI represents a very important, if not the most important, source of external capital. So the question if, and in what way, FDI contributes to sustainable development, seems to be extremely relevant.

Yet the effects of FDI for sustainable development are still very unclear. Existing empirical studies have resulted in diverging conclusions regarding the impact of FDI on a wide range of dimensions of sustainable development, including inter alia the impact of FDI on domestic investment and productivity of local firms, employment, inequality, and the natural environment. The development effects of FDI appear to depend on both host country characteristics (e.g. thresholds) and the type (e.g. sector) and strategy of the affiliate (and its parent) that enters a host economy.

The existing theories in the disciplines of Development Economics and Development Studies do not offer much solace in the attempt to understand how FDI and MNEs could

affect sustainable development. Although we there find a few hints as to how FDI might contribute to development, FDI and MNEs are generally not treated as key influencing variables and theory development on how they could contribute to development is hence rather scarce. But recent approaches to understand and support sustainable development appear to (start to) change this situation. In the late 1990s, the lack of results of development policies based on existing (in the 1980s: neoclassical) theories was paired with increasingly vocal protests by NGOs and activists against the lack of attention by policy makers and international organizations for other dimensions of development than economic growth, and against the disregard for the development process (notably, participation and representation of the people most affected by development policy). As these concerns are addressed, a new perspective on what development is and how it should come about has been brought forward. Dunning (2006, see also Dunning and Fortanier, 2007) described this as a New Development Paradigm (NDP), to reflect the emerging and relatively broad academic and political consensus that more attention needs to be paid to human development, institutions and the development process, as proposed by Nobel-prize winners Amartya Sen, Douglas North and Joseph Stiglitz. The NDP hence broadens the lens through which development problems are studied. This makes the investigation into the determinants of development more complex, but also more relevant and realistic. Three main innovative points are stressed by the New Development Paradigm (Dunning, 2006): firstly, development is seen as highly multifaceted and as encompassing many dimensions in addition to mere economic growth. Secondly, the NDP emphasizes the active role of a range of actors in the development process, including governments, NGOs, international organizations, trade unions, firms in general, and MNEs in particular. Third and finally, the NDP highlights the importance of the context of development, in particular the role of institutions, as shapers of globalization and its effects.

Based on these considerations, three main questions were outlined regarding the effects of the FDI dimension of globalization for sustainable development, that were addressed in this dissertation:

1. *To what extent do the relevant home, host, and international institutions and firm specific factors contribute to explaining FDI and the internationalization of MNEs?*
2. *To what extent does FDI by MNEs contribute to sustainable development, and how is this effect dependent upon the characteristics of FDI?*
3. *What do MNEs actively do themselves to enhance their sustainability impact, and how is this effect dependent upon firm specific characteristics and the institutional setting(s) in which MNEs operate?*

The first question reflects that in order to understand the effects of globalization through FDI and MNEs, one needs to comprehend how globalization can be characterized and how it comes about. The second and third questions address what has been identified in chapter 2 as the passive effects (through ‘business as usual’) and active effects (through CSR) of MNEs on sustainable development. These three questions formed the basis for

the theoretical and empirical work presented in this dissertation. They have been addressed via six empirical papers, preceded by a theoretical chapter reviewing existing evidence on the consequences of MNE activity for economic, social and environmental dimensions of sustainable development. This concluding chapter reviews, combines and integrates the findings of this rather diverse set of papers, and highlights synergies among them.

In section 2 of this chapter, the key findings of each of the empirical papers are briefly summarized, organized by research question. In section 10.3, the six papers are linked to each other via a 'conclusion matrix', so that the links among the findings in the papers are explicitly discussed. Section 10.4 addresses the conclusions with respect to one of the major underlying theme in this dissertation: the role of institutions in shaping economic processes and their effects for sustainable development. Section 10.5 discusses the managerial and policy implications of this dissertation, whereas section 10.6 addresses the limitations of the present study and offers suggestions for further research.

## **10.2 ADDRESSING THE RESEARCH QUESTIONS AND REVIEWING THE EMPIRICAL EVIDENCE**

Each of the three central research questions of this dissertation was addressed in two focused empirical papers. The first research question was dealt with in chapters 4 and 5, in the papers on the internationalization trajectories of the largest MNEs worldwide since the 1990s (micro level), and foreign direct investment between countries (macro level). The main focus here was how firm level factors and national and international institutional factors could help explain the internationalization strategies of firms. These two chapters effectively set the stage for the next four papers that dealt with the consequences of such international activity by MNEs for the countries in which they invested. Chapters 6 and 7 addressed the passive effects of MNEs, again both at the macro level (chapter 6) and at the micro level (chapter 7). Analyzing the impact of MNEs on respectively economic growth, and wages and labour conditions, both chapters paid attention to the moderating role of FDI characteristics, that are often shaped by the institutional context in the home countries of these MNEs. Finally, chapters 8 and 9 focused explicitly on the active effects of MNEs, by analyzing what MNEs themselves (say they) do to enhance their social, economic and environmental impact in the countries where they have operations. Chapter 8 addressed primarily what firms have to say about their contribution to the economic dimensions of development, whereas chapter 9 dealt with environmental disclosures. The findings of each of these chapters are reviewed in more detail below.

### **Research Question 1: Drivers of globalization**

The first research question of this dissertation was to what extent home, host, and international institutions and firm specific factors can explain FDI and the internationalization of MNEs. Chapter 4 addressed this question for a set of 233 firms from Europe, Asia and North America for the 1990-2004 period. So far, it remained

remarkably unclear how, at the corporate level, firms expand and withdraw their international activities over time, and to what extent different patterns or clusters of strategies can be distinguished among such processes. An important reason for this deficiency has been the difficulty in obtaining reliable and comparable time series of internationalization strategies at the corporate level. Chapter 4 adds to existing research by carefully addressing and correcting the methodological and measurement flaws in the most often-used corporate level indicator of internationalization: the degree of internationalization or foreign share of sales, assets, and employment (FSTS, FATA, and FETE, respectively). The resulting time-series data (at least 10 years of consecutive data had to be available for analysis) were used to calculate 8 variables describing the internationalization of firms over time, such as the mean, growth, and Maitland *et al.*'s (2005) cluster variable. These variables were subsequently factor analyzed to result in four key factors that describe international expansion of firms over time, including the level, growth, volatility, and temporal clustering, of international activities. Hierarchical and non-hierarchical clustering techniques then resulted in 6 trajectories each for the internationalization of sales, assets, and employment. Although these 6 strategies for sales, assets and employment overlap in terminology and main characteristics, this does not necessarily mean that they also overlap within a single firm. In many cases, a single firm combines two or three different internationalization trajectories. And even though there appear to be 'dominant' strategies of internationalization in most countries and sectors, different trajectories could be found in each individual country or sector. This means that although country (home institutions) and sector influence a firm's internationalization strategy and trajectory, they do not determine to what extent and in what way firms expand (or retreat from) their activities abroad.

Whereas chapter 4 focused on (amongst others) national institutions in the home country as drivers of internationalization, chapter 5 dealt primarily with the role of the single international institution that regulates the international investments of MNEs: Bilateral Investment Treaties, and the extent to which such international institutions may substitute for poor domestic institutions in host countries. Empirical research in this area is still very scarce. Analyzing bilateral FDI stock between more than 3000 country dyads for the 1990-2002 period, we found that self-selection effects are very important in explaining the occurrence of BITs and its relationship with FDI. BITs are primarily signed by country pairs that had relatively little FDI between them (obviously in the hope that the BIT would stimulate FDI), resulting in a negative correlation between FDI and BITs. But after controlling for this self-selection, the effects of BITs are distinctly positive. This effect is particularly strong for countries that lacked good quality domestic institutions that allow them to make credible commitments to foreign investors, so that MNEs do not have to fear that regime changes (or an obsolescing bargaining position) will negatively affect their property rights. BITs hereby substitute for domestic institutions. At the same time, BITs are less necessary to stimulate FDI to countries that have unique and scarce locational advantages – notably in natural resources. However, even though this would suggest that all countries should engage in signing BITs at a high rate, the paper also established that the marginal impact of a BIT is reduced if more and more BITs are

signed. In the global competition for capital, BITs no longer contribute to a country's locational advantage if all countries have signed similar treaties. This suggests that BITs are primarily an instrument to divert and redirect investment, rather than to increase the total sum of FDI.

In sum, when addressing the research question regarding the determinants of internationalization, it is first of all important to keep in mind that there is not one form of internationalization, but that firms can take very different trajectories with respect to the internationalization of their sales, assets and employment. Home country institutions play an important role in stimulating internationalization, but the wide variety of trajectories among firms from the same country implies that firm-specific factors, such as their sector of activity, also play an important role. The subsequent direction, or exact location, of international activities is affected by factors such as host country market size, resource endowments, trade-openness, distance from the country of origin of FDI, and host country institutions. International institutions – BITs – are however also an important determining factor in directing FDI, and play a particular important role in improving the attractiveness of countries that without such treaties, could not credibly commit to treating investors well.

### **Research Question 2: The impact of FDI**

The second research question of this dissertation was to what extent FDI by MNEs contributes to sustainable development, and how this effect is dependent upon the characteristics of FDI. Empirical evidence on this FDI-development relationship is still very inconclusive, arguably due to the lack of attention for moderating variables in the relationship, such as FDI characteristics or host country context. The two chapters addressing this question focused primarily on the role of the country of origin as an important characteristic of MNEs. Chapter 6 addressed this question by analyzing the different growth consequences of FDI from various countries of origin, using a dataset on bilateral investment stocks from 6 major outward investors towards 71 countries for the 1989-2002 period. Panel data analysis confirmed that the growth consequences of FDI differ by country of origin, and that these country-of-origin effects also vary across host country contexts (including trade openness, instructional quality, and educational attainment). Many of the conclusions that previous studies have drawn on the effect of total FDI, are in fact only entirely applicable for – and given its share in total worldwide FDI, also probably mainly driven by – US FDI. The effect on growth of investments from other countries – notably Japan and the UK, but also France, Germany and the Netherlands – is considerably different from US FDI.

Whereas chapter 6 dealt with the FDI impact issue at the macro or international level, and explored economic consequences, chapter 7 explored micro level evidence for one of the key social dimensions of sustainable development: wages and labour conditions. Analyzing the wages and labour conditions of more than 60,000 Dutch employees, chapter 7 studied both the direct and indirect effect of MNEs. The study is based on cross-sectional data, making it very difficult to disentangle causes and effects. But within



the limits of the cross-sectional data, all possibilities to ensure that the findings were not caused by reversed causality were explored.

As regards the direct effects, it was established that working for a foreign firm increases wages, but that effect is more prominent for high-skilled workers (+15 percent) than low-skilled (+1 percent). Although higher wages may reflect higher productivity or premiums or prevent labour migration, working for an MNE was found to be also more demanding: employees work longer working hours, experience more job stress, and especially higher-skilled employees have to work more overtime. Important differences among MNEs were found with respect to their country of origin. Especially the American and Japanese firms appear to transfer their home country practices (influenced by home culture and institutions) to the host country in which they do business. With respect to the indirect effects, the study showed that inward FDI stimulated Dutch firms in the same industry to make better use of their human resources by e.g. investing in training, and to engage in merger to increase the scale of their activities. Inward FDI is positively associated with workforce growth among Dutch firms in the same sector, suggesting technology spillovers, but the benefits of spillovers are mainly concentrated among highly skilled employees. The effect of backward linkages by MNEs is positively associated with low-skilled work force growth, although it also appears that suppliers are pressured to reduce inefficiencies. Forward linkages on the other hand are also not very beneficial. Finally, with respect to outward FDI, the findings indicate that concerns of large scale job relocation due to outward investment are generally unsubstantiated. However, again, the benefits of FDI are concentrated among high-skilled employees.

In sum, the results indicate that the effect of FDI on host countries – and on its home country – is very mixed. It appears that countries with reasonably developed institutions and a qualified workforce benefit most from FDI, even though the threshold above which the effect of FDI becomes positive differs across the various countries of origin of FDI. But also in more developed countries – such as the Netherlands – is the effect of inward FDI not always positive. Although FDI fosters growth, most of the benefits of investment – such as higher wages – appear to be concentrated among the higher educated part of the workforce.

### **Research Question 3: Active effects of MNEs**

The third and final research question of this dissertation was what MNEs do themselves to enhance their sustainability impact, and how such activities are dependent upon firm specific characteristics and the national and international institutional settings in which MNEs operate. Chapters 8 and 9 addressed this question. Partly driven by institutional and stakeholder pressures, firms are increasingly disclosing information about the social, environmental and, very recently, also the economic implications of their activities, in non-financial, ‘triple bottom line’ reports. In chapter 8, reporting of MNEs on their economic impact was explored. In the literature on CSR, which focuses primarily on social and environmental reporting, this is a hitherto under-addressed issue. Focusing on the three main mechanisms through which MNEs can impact host countries – sheer size, linkages, and skill and technology transfer – we examined in detail what the 250 largest

firms worldwide disclose on their economic impact, analyzing the contents of their non-financial reports. The potential drivers of such reporting activities were also explored. The results indicated that about a quarter of the firms that disclosed non-financial information also reported on their economic impact, although the way in which this was done – i.e., the topics addressed, and level of detail – differed importantly across firms. The overview showed that even single firms can have a tremendous impact on a particular host (or home) economy, especially when indirect effects are taken into consideration as well. Also, the firm level examples showed how something relatively abstract such as technology transfer may work in practice. However, most reporting activities on the economic impact of firms appear to be still on a rather ad hoc basis, focusing on positive examples, which suggests that PR considerations may at least partly explain these activities. The likelihood of reporting differs by region, sector and firm size.

Chapter 9 analyzed the determinants of environmental reporting, focusing in particular on the relationship between the degree and spread of internationalization and environmental disclosures, while giving special attention to the role of home and host institutional pressures and sector peculiarities. So far, the relationship between internationalization and environmental disclosure has received only limited attention. Chapter 9 combined legitimacy, stakeholder and institutional theory, and found that from these perspectives, both a positive and a negative relationship between internationalization and disclosure could be expected. On the one hand, the more complex, dispersed, and heterogeneous institutional and stakeholder context increases the potential of legitimacy spillovers, enhances firm visibility and creates difficulties related to the liability of foreignness, all factors that induce firms to disclose more. On the other hand, geographical break-up of activities reduces the overall size of individual affiliates in each country, and waters down the power of each individual stakeholder. Foreignness may not always be a liability, but also a ‘liberty’, while large distances between subsidiaries and headquarters can result in interpretation problems in assessing foreign stakeholder salience by management. This would result in lower institutional pressures and hence more limited disclosure of information by MNEs. The hypotheses in chapter 9 suggested that the extent of home and host country institutional pressure is key in deciding which effect dominates. Using a sample consisting of the 250 largest firms worldwide (Fortune Global 250), the paper finds a significantly negative relationship between MNEs’ degree of internationalization and environmental disclosure. Internationalization towards countries with high environmental standards only partly mitigates this negative effect. Only for firms in environmentally sensitive sectors from high-standard countries do the benefits of disclosure in terms of legitimacy and reputation seem to outweigh the costs of collecting and disseminating the information in an international context, and could the positive association between internationalization and disclosure as predicted by legitimacy, stakeholder and institutional theory be established. The findings are particularly strong for the degree of internationalization – the effect of the dispersion of international activity on disclosure is not significant.

In sum, and as answer to the research question (RQ3), it can be concluded that MNEs (say that they) do a lot to improve the economic, social and environmental impact of their activities. Environmental reporting has almost become a common practice, with more than half of the Fortune Global 250 disclosing information on their environmental activities. Economic impact reporting is a much more recent phenomenon, yet already a quarter of the firms we analyzed say something on the relative size of their activities in home economies, or disclose how they actively transfer technology and link up with local suppliers. The factors that drive these reporting strategies include sector and company size, but most importantly the extent of pressure in the home country of MNEs. All these factors contribute to the visibility of firms for stakeholders, and – as legitimacy theory suggests – would therefore induce firms to report.

This role of visibility as determinant of reporting, together with the in-depth results of chapter 8 that indicated that firms primarily report on ‘best practices’ and the results of chapter 9 that with the exception of only the most prominent MNEs, firms can escape the public eye if they invest abroad, suggests that the activities of MNEs to enhance their social, environmental and economic impact, are primarily Public Relations (PR), rather than CSR activities. Reporting does not necessarily also translates to good practice, and one may even expect a negative relationship between CSR practice and reporting, as those firms that face the highest institutional pressures may also have the strongest incentive to try to manage the public opinion. Still, CSR and PR need not be mutually exclusive categories. Stakeholders scrutinize firms for false promises, and pressure firms to report only correct information and to present a balanced picture. Being caught ‘lying’ can be more detrimental to a company’s reputation than not reporting at all. In addition, the information management system necessary to collect the reported data represents a significant investment that demonstrates a commitment to social and environmental responsible behaviour. Yet, the link between CSR practices and reporting requires further inquiry.

As a final conclusion, there is much overlap between the kinds of firms that engage in either economic or environmental reporting, for example by size, by region of origin, or by sector. Firms engaged in CSR reporting apparently often take a holistic view and address a variety of different dimensions of CSR. This would imply that for example the conclusions that were reached for the role of home and host institutional context as drivers for environmental reporting, would likely apply to economic impact reporting as well.

### **10.3 LINKING CONCLUSIONS: SYNERGY AMONG DISCREET FINDINGS**

The six empirical papers that formed the core of this dissertation discussed a wide range of different topics, which may appear difficult to link, let alone integrate. For example, to what extent can conclusions on Bilateral Investment Treaties contribute to our understanding the disclosure of environmental information by firms? Or how does a firm’s internationalization trajectory relate to its effect on wages and labour conditions in the Dutch economy? Though perhaps not for all the combinations of papers relevant joint

conclusions can be obtained, the findings of each paper in this dissertation links directly or indirectly to the others and could in combination at least suggests interesting additional research questions. As displayed in table 10.1, a total of 15 (5+4+3+2+1) different pairs of papers can be identified. Three of these pairs have already been addressed above in the conclusions for the individual research questions. The conclusions and ideas for further research that can be derived from the other 12 possible combinations of findings are elaborated below.

**Table 10.1 A matrix of conclusions**

	Ch.4	Ch.5	Ch.6	Ch.7	Ch.8
Ch.4 – Internationalization trajectories	-	-	-	-	-
Ch.5 – BITs	RQ1	-	-	-	-
Ch.6 – Economic effects (by origin)	A	E	-	-	-
Ch.7 – Wage and labour effects	B	F	RQ2	-	-
Ch.8 – Economic reporting	C	G	I	K	-
Ch.9 – Environmental disclosure	D	H	J	L	RQ3

### **Internationalization and economic effects (A)**

The first set of papers identified in table 10.1 is the combination of the internationalization trajectories of MNEs (chapter 4) and the economic effects of FDI (chapter 6). Chapter 6 tested to what extent the growth effects of FDI differ by country of origin, and explored if these different effects may have been caused by country-specific factors such as sector specialization and organizational structure. These two factors determine the potential for technology spillovers (sector) and linkage creation (organizational structure) between in the foreign subsidiaries created by FDI and local firms. The paper on internationalization trajectories suggests that there may be another reason to expect differences in the economic growth impact of firms from various countries of origin. Chapter 4 showed that important differences exist among firms from different countries in the way they internationalize their sales and assets – and hence in whether their internationalization is driven by market factors (i.e., the internationalization of sales by origin is high), or non-market factors such as labour, resources, or strategic assets (the internationalization of assets is high). Such motives for investment have been named as important potential contributors to explaining the development impact of FDI (e.g. Dunning, 1993, UNCTAD, 1999).

The data presented in chapter 4 indicated that Japanese firms tend to keep both their assets and sales concentrated within the home country; their limited international activities are much more sales than asset oriented. The other three sets of firms for which substantial data for sales and assets was available – US, French, and British – are much more balanced in their internationalization of sales and assets, (despite strong differences in levels of internationalization), where US and French firms are slightly more asset intensive, and British more sales intensive. Hence, as a very crude generalization, US and French firms produce abroad to sell to their domestic markets, whereas British firms produce abroad to sell to foreign markets. Chapter 6 indicated that the growth effect of

British FDI is positive overall (regardless of e.g. the level of trade-openness, schooling or institutional quality of the country). Japanese FDI in contrast is generally negative, whereas the effect of US (and to a lesser extent, French) investment is positive only after certain thresholds have been reached. The combination of these findings would suggest that the growth effect of FDI that is solely driven by market considerations (like Japanese investment) is lower than that of FDI driven by resource or asset-seeking motives, but that the impact on growth is most positive for FDI that combines these two motives. This proposition would require much further research, as it is based on rather crude generalizations of findings and does not account for differences in e.g. sector that will no doubt affect these results. Yet, such studies would yield important additional insights into the types of FDI that have most beneficial effects for economic growth.

### **Internationalization and wage effects (B)**

The chapters 4 on internationalization trajectories and 7 on the wage and employment effects of MNEs can be combined in a way that is very similar to the previous set of papers.. A substantial component of chapter 7 explored the differences in the wage and labour practices among (amongst others) Japanese, US, British, and French investors in the Netherlands. This chapter showed that each of these foreign investors had a very specific style in dealing with employees, which to a remarkable extent appeared to reflect their home country's institutional background and cultural values. For example, working for a US firm implied 'work hard, play hard', or long hours but high wages and other benefits. Japanese firms were characterized by a focus on quality, as reflected in the substantive training and the absence of dangerous or unhealthy work, but did not pay much attention to equal opportunity. French and British firms closely resembled Dutch MNEs, and are characterized by cooperative relationships with employees (via e.g. works councils), although overall job satisfaction is substantially lower among their employees than for those working for Dutch MNEs.

Matching these findings to the internationalization trajectories of firms identified in chapter 4 – which although not perfectly determined, are at least strongly influenced by their country of origin – it is possible to find associations between these trajectories and the social impact of investments. Yet explanations for such associations are more difficult. For example, the relatively highly internationalized French and British firms may be more used to adapting to local circumstances, which may explain their resemblance to Dutch MNEs. But an equally likely explanation is that these firms share the 'European' approach to labour relationships, so that it is not the type of internationalization trajectory that results in certain labour relationships, but rather the cultural or institutional origin of these firms that simultaneously determines both their internationalization trajectory and approach towards employment relationships. Similarly, the link between the American 'work hard play hard', and relatively asset-intensive internationalization strategies, or the Japanese focus on quality and the sales oriented internationalization trajectories, seem difficult to explain theoretically. While it may be very likely that there is a relationship between the employment impacts of MNE investment and the kind of internationalization (e.g. asset versus sales intensive), it will

require more research to establish in what way these two concepts are related. For example, the inclusion of more host countries than only the Netherlands should be considered, while also a more longitudinal approach (especially with respect to the labour effects of FDI) may contribute to enhancing our understanding of the determinants of the employment consequences of MNEs.

### **Internationalization and economic reporting (C)**

Internationalization and disclosure of non-financial information has been explicitly linked in the paper on environmental reporting (see below). While for the paper on the economic dimensions of CSR – reporting on e.g. technology transfer and linkages – internationalization was not taken into consideration as independent variable, using findings on country and industry differences may shed light on these issues. After all, the samples of the two studies (on internationalization, and economic reporting) strongly overlap. Chapter 8 showed that in comparison with Asian (primarily Japanese) and US firms, EU firms are much more likely to report on their impact, particularly with respect to the size of their activities, for example in relation to a host country's GDP, or total work force. It may be that because EU firms have a more substantial part of their activities abroad, that they are more sensitive to these issues. In this way, a relationship between internationalization and economic reporting could be established. But since EU firms are also much more prone to stakeholder pressures in their home countries than US or Japanese firms, this relationship is likely to be more complicated (as indicated also in chapter 9).

Chapter 8 showed that sector differences are primarily important in explaining differences in reporting on technology transfer (though the number of firms on which these findings are based is small). Especially manufacturing and chemicals and pharmaceuticals firms were active in reporting, whereas firms in electronics or trade and retail were not. To some extent, this may reflect differences in technology intensity of sectors. But chapter 4 suggests that the kind of internationalization may explain some of the variation in reporting on technology transfer as well: chemicals and pharmaceuticals firms are with respect to both sales and assets more often 'comprehensive' multinationals – firms with longstanding and substantial international activities. Electronics and trade and retail firms in contrast are firms with the overall majority of their assets at home, and primarily internationalize sales activities (with relatively fewer opportunities for technology transfer).

### **Internationalization and environmental disclosure (D)**

In the attempt to link the chapters 4 on internationalization strategies and 9 on environmental disclosure, the latter has already gone a long way to incorporate the effect of internationalization on CSR reporting. It was shown that the internationalization of assets is negatively related to disclosure, an effect that is only partly mitigated by higher home or host country pressures. Only for firms in environmentally sensitive sectors from high-standard countries could a positive relationship be established.

The simplest link with the internationalization trajectory paper would be to assume that the firms with the most comprehensive internationalization strategies would therefore be much less inclined to engage in environmental reporting than MNEs that are more home country oriented, assuming sectors, home country pressure and host country pressure to be equal. In reality, it is much more difficult as the most international firms are from Europe, where home country pressures are also strongest. The combination of these two papers does however pose a number of interesting questions for further research. Given the important link between internationalization and disclosure, how does this relationship evolve over time? To what extent is disclosure a stable practice within firms, particularly for those characterized by a more volatile internationalization trajectory? Rapidly changing international exposure may mean that environmental reporting may also be more incidental. But in ever changing stakeholder environments, reporting may also become a more common proactive. And how about firms that have strongly expanded their international activities in the mid 1990s? Have they engaged in internationalization, and then reduced their environmental reporting, or vice versa? And what are the consequences for CSR if firms reorient towards their home market? These may not only be interesting empirical questions but may also result in more theoretical knowledge on the link between MNEs, CSR, legitimacy, and internationalization. In particular the examination of reporting strategies over time, paired with internationalization, should result in such insights.

#### **BITs and COO effects (E)**

One of the elements that the paper on Country of Origin effects (chapter 6) established is that the effect of FDI on economic growth depends on host institutions: good institutions ensure a more positive impact. At the same time, the paper on Bilateral Investment Treaties (chapter 5) suggested that BITs may substitute for low quality host country institutions. Both papers measure institutions in the same way, using the World Bank Kaufman data. Combining these two findings, it can easily be concluded that BITs by effectively raising institutional quality in the host country could not only contribute to attracting FDI, but also to increasing the development impact of FDI. Yet, it is important to note that the reasoning behind the role of institutions in both contexts is slightly different. In the paper on the effects of FDI, institutional quality measures transaction costs and ease for local firms (employees) to exploit knowledge obtained from MNEs, as it is easy to establish a firm and contracts are easily enforced. But BITs only apply to foreign MNEs, and have been shown to sometimes create a two-tiered system in which local firms do not enjoy the benefits of better institutions. Hence, the 'substitution' effect of BITs for domestic institutions is very narrowly defined in a single area: the attraction of FDI.

Further direct comparisons between the two papers are difficult, primarily because the analysis of BITs does not split out the findings by individual source country. Other ways of comparing the two papers – for example by exploring the scores of the six individual investing countries so that they can be linked to effects of control variables in the analysis of BITs – are currently hampered by a lack of variation in the 6 outward

investors in for example GDP size (i.e., compared to developing countries). The combination of the two papers suggests an additional interesting avenue for further research, involving an analysis of the effect of BITs with individual countries on FDI. In this way, governments cannot only choose the most preferred investor country based on the findings in the COO paper, but also to actively try to attract FDI by BITs with that investor. Especially Japan (and the US) has relatively few BITs, so that the marginal effect of closing a BIT with these investors may more beneficial. However, the COO chapter indicates that due to the sector specialization of Japanese FDI, its effect is often negative, implying that developing countries may have been wise not to close BITs with Japan.

#### **BITs and employment effects (F)**

Chapter 5 on Bilateral Investment treaties concluded that once controlled for self-selection, BITs had a positive effect on FDI. It may be that the Netherlands could use this finding to attract those types of MNEs that chapter 7 indicated have the most positive effect on wages and employment standards. However, a direct link between these two chapters is difficult to make. The Netherlands already receives substantial FDI from the countries studied in the chapter on BITs (US, UK, Germany, France, Japan) without such treaties. In addition, the Netherlands does not generally have a problem of credible commitment to policy changes (in which case BITs may help), and finally, the Netherlands has already signed a substantial number of BITs, meaning that new treaties would have limited effects. For the Dutch government, using BITs as an instrument to facilitate inward investment would be inappropriate (though as means to protect outward investors it may be useful).

But in general, the combination of the conclusions of Chapter 7 that MNEs do transfer home country labour practices abroad, and that of Chapter 5 that BITs may positively affect investment, do indicate that (developing) countries that aim to attract FDI with good labour conditions, may sign BITs with countries where those conditions are common practice. To the extent that the findings for the Dutch context can be generalized, European FDI appears for example to be characterized by 'cooperative' labour relations, while US FDI is associated with low degrees of unionization, and Japanese firms appear rather female-unfriendly.

#### **BITs and economic reporting (G)**

BITs are means to attract FDI (chapter 5). Countries hope to attract FDI that has the highest benefits for their economy. One dimension of these benefits include the economic spillovers from FDI, in the form of technology transfer and training, the creation of local linkages, and the sheer size (e.g. in employment) of the foreign subsidiary. The paper on economic reporting (chapter 8) indicated that the extent to which firms engage in reporting on these economic spillovers is dependent upon a range of different variables, including the country of origin of the MNE. To the extent that reporting represents actual practice, countries may wish to sign BITs with those other countries from which MNEs are most likely to engage in CSR activities, including reporting. Such firms may be good



examples for local firms to follow, and may bring in particular management knowledge and techniques that may spill over to domestic firms.

The paper on BITs also indicated that sector effects may be important in determining the effectiveness in attracting FDI. In natural resources sectors, FDI was shown to be relatively inelastic to the presence of a BIT. Similarly, it has been argued that in light manufacturing (e.g., textiles, toys, electronics), where the risk of relocation of production is highest, BITs do not have a strong effect on FDI, as the bargaining power between foreign investor and host country is not likely to obsolesce after investments. Sunk costs are low and the threat of exit is credible. In such circumstances, MNEs may have less need for the protection of a BIT. In all of these sectors, signing BITs may therefore not be a good idea for a host country, concerning the costs in terms of sovereignty loss that are involved with BITs. Exploring sectoral differences in economic reporting, it is shown that the petroleum industry (natural resources) is slightly more active with respect to reporting, whereas electronics is slightly less involved. However, differences across industries are small. Considering in addition that BITs provide protection for all foreign investors and not only those in particular sectors, BITs represent a rather coarse way of focusing investment promotion activities.

### **BITs and environmental disclosure (H)**

The link between the papers on BITs and on environmental disclosure can be established in quite the similar way as the relationship among the papers on BITs and economic reporting (see 'G' above). However, since the paper on environmental disclosure is much more specific with respect to the role of home and host country institutions, additional conclusions can also be drawn. We have seen that environmental disclosure of firms decreases if they invest abroad, meaning that countries aiming to attract firms that are very transparent about their environmental impact may need to consider that this transparency will decrease as a result of MNEs investing in their country. However, this effect is less strong if firms are from countries with high institutional pressures, and also the absolute level of reporting is higher among firms from countries characterized by high public pressure to behave responsibly. Therefore, signing BITs with countries with high institutional pressures may attract more transparent firms.

Countries may wish to attract such transparent firms for several reasons. First, transparency allows host country governments to better assess the consequences of these firms with respect to pollution and other environmental effects. Second, as discussed above, environmental transparency may be coupled with better environmental performance, making these firms extra attractive. Third, since disclosure is a response to general public pressure primarily in the home country, home country stakeholders and consumers may be much more capable to reduce a firm's negative environmental impact than host country legislation, especially if the latter is relatively weak. Finally, since reporting is often coupled with a sophisticated management system to collect the data and monitor progress, firms that are more transparent may also have certain types of sophisticated knowledge and technology, meaning the potential for technology spillovers of such firms for the host economy may be greater.

It is important for policy makers to realize though that although BITs may substitute for institutions in the host country and so raise overall institutional quality, the treaties may not necessarily also contribute to additional pressure on firms with respect to their environmental performance and reporting. In fact, BITs may even significantly constrain government programmes in developing new environmental regulations and in increasing environmental standards, as they can be considered as ‘environmental expropriation’ under BIT clauses and may be costly to compensate (Verhoosel, 1998).

### **Country of Origin effects in FDI’s development impact and economic reporting (I)**

The combination of the papers on the country of origin (COO) effects in FDI impact and on reporting provides a key means to compare the active and passive effects of MNEs. The COO paper studied how FDI by the six main outward investors affects economic growth in host countries. These effects were shown to be dependent on host country contextual factors, as well as on the country of origin. Two explanations for these heterogeneous effects of FDI from different countries of origin were offered: the role of sector specialization and of organizational structure. The paper on economic reporting suggests a third alternative: the extent to which firms are engaged in CSR and CSR reporting. It could be argued that firms that are more active in creating linkages and transferring technology would not only be also more transparent about those effects, but also contribute more to development. The economic reporting paper showed that in particular European countries are involved in reporting, in contrast with Japan and the US where reporting on economic impact was much less common. These are the countries that according to the COO paper also have very different growth impacts. However, also among EU countries (Germany, France, UK) important differences could be observed in the impact of FDI on growth, making a direct link between economic impact and economic reporting difficult.

A second way of linking these two studies is by exploring the sector-level effects. The COO paper showed that countries specializing in certain sectors have different development impacts, whereas firms in various sectors also differ from each other in reporting. Companies in the oil industry are most prone to report on their economic impact, followed by chemicals & pharmaceuticals, and other manufacturing. These are very strongly represented by Dutch and British firms. These have been shown to have a positive impact on development, the Dutch primarily in less-developed countries. In contrast, firms active in finance, trade & retail, and electronics, are least likely to discuss activities related to their economic impact. Firms in these sectors mostly originate from Germany and Japan. The COO paper showed however that these two countries are rather different in their development impact. These findings suggest that the active and passive effects of MNEs do not need necessarily go hand in hand, and that the relationship among these effects requires more research.

### **Country of Origin effects in FDI's development impact and environmental reporting (J)**

Similar to the link between the COO and economic reporting paper, a link can be made between the COO paper and the study on environmental reporting. This is particularly interesting as this combines both the active and passive impact of FDI, and the economic and environmental dimensions of development. Is it possible to see similarities across firms considering this wide range of different mechanisms and impacts? The answer to this question is quite similar to the conclusions discussed above (I). Although there is some overlap between the sectors from which firms contributed most to economic growth and the countries and sectors where environmental reporting is most frequent, differences exist that require further study.

However, the paper on environmental reporting highlighted additional conclusions with respect to the role of the institutional context as determinant of non-financial disclosures. The stronger the institutional pressures (predominantly at home, but also abroad), the more transparent firms become, and the better they will (likely) behave with respect to their environmental activities. Since the various dimensions of institutional quality of countries are often strongly correlated, good institutions with respect to protecting the environment and good 'general' institutions will likely go hand in hand. This means that the conclusions for the COO paper on how the effect of FDI on development depends on host country institutional contexts could be linked to the findings of the paper on environmental disclosure. High quality institutions both promote economic spillovers from FDI and more knowledge (and hence possible control) of the environmental effects of MNEs.

### **Wages and economic reporting (K)**

The combination of chapter 7 on wages and employment in the Netherlands, and chapter 8 on reporting on the economic impact of MNEs is in fact an assessment of the combined active and passive, social and economic effects of MNEs. Several of the MNEs that were studied in chapter 8 were Dutch, and many of the non-Dutch firms in that chapter are inward investors in the Netherlands. The findings can hence be linked almost one-to-one. For example, a key common theme for both chapters is the role of forward and backward linkages. Chapter 8 addresses the extent to which firms report to actively create linkages – primarily backward linkages – with local firms in the countries where they invest. It was shown that especially large firms report to have such linkages. In chapter 7, firm size is also related to good practices: larger firms pay higher wages, provide more training, require less overtime work, and employees are generally more satisfied with their job than those that work for smaller firms. Economic (reporting) and social effects seem to go hand in hand. A potential reason might be however that large firms engage more in responsible behaviour because of their visibility. Another reason may be the availability of resources and manpower to implement good management practices. Further research may explore these issues.

### **Wages and environmental reporting (L)**

Like the combination of the chapters on wages and economic reporting, the link between the final two papers, on wages (chapter 7) and environmental reporting (chapter 9) involves a combination of active and passive effects, at two different levels of analysis (employees and firms). Chapter 9 on reporting showed how important institutional pressure in home and host countries is in influencing firm behaviour with respect to environmental reporting. In one of the suggestions for further research, this chapter indicated that the role of institutional pressures may also be explored for social or employment related behaviour and strategies of MNEs. Although chapter 7 tackles this topic in quite a different manner than chapter 9, several interesting observations can be made if the findings of chapter 7 are re-interpreted in the light of the framework of chapter 9.

Unlike in the case of environmental reporting, where firms often seem to escape domestic pressures, in the case of employment, firms do copy or export their home country practices. This happens both in the case of 'good' (higher wages, more job satisfaction, collaborative labour relations) and 'bad' practices (lack of equal opportunity for women). Part of this difference may be explained by (as suggested already in chapter 9) the possibility that practices are subject to a different dynamic than reporting. Global integration (i.e., applying the same standards everywhere) may be beneficial in the case of practices, while reporting responds more directly to public demands, and requires a more locally responsive approach. A swap of the topics and research outlines of these two chapters (i.e. an exploration of the environmental practices and social reporting) may further explore these differences between practices and reporting among social and environmental issues.

## **10.4 THE ROLE OF INSTITUTIONS**

In addition to these 'paper-by-paper' conclusions, several observations can be made concerning a theme that has been central in the chapters throughout this dissertation: the role of institutions. Chapter 1 already indicated in the discussion of the New Development Paradigm that institutions are central to understanding how globalization comes about and how globalization impacts home and host countries. Three particular roles of institutions were distinguished: a) as a moderating factor in the impact of MNEs on host countries; b) as determinant of the location and nature of activities of MNEs, and c) as a characterization of MNEs themselves (i.e., the MNE as an institution). Each of these three roles of institutions has been addressed in this dissertation, and several general conclusions can be drawn from the research findings.

With respect to the moderating role of institutions, it is generally considered that high quality host country institutions affect the extent to which FDI can have a beneficial effect on host country economic growth and development. High quality institutions reduce transaction costs and facilitate linkages and business relationships with local firms. Hence, it was often concluded that FDI only contributes to growth after a certain threshold of institutional quality. While most of this argument was supported by the

empirical evidence in for example chapter 6 (on the different effects of FDI by country of origin), and in a very different way also in chapter 9 (where the evidence suggested that host institutional pressures increase the likelihood of environmental reporting of MNEs), some nuances have been made. Chapter 6 in particular found that this effect could not be established for all FDI: notably Japanese FDI interacted very differently with the host country institutional environment. It was suggested that this may have to do with the sector specialization (in high-tech electronics, where international rather than local linkages are strong, and institutions hence do not have much to add to local linkage creation) and organizational structure (the combination of centralization and strong relationships with domestic suppliers) of Japanese FDI. An alternative explanation may be that not all managers judge an institutional environment in a host country in the same way, depending on their experience with institutions in their home country. Furthermore, the results in chapter 9 indicated that institutional pressures may be more prominent in some sectors than in others. These findings indicate that the role of host country institutions in determining the extent to which FDI is beneficial for host countries may be more complex, and dependent on a firm's home country (institutional distance) and sector of activity.

The second role of institutions is as a determinant of the location of investments and the nature of MNE activity. This point has returned in almost every paper in this dissertation: from the first set of papers on the determinants of internationalization trajectories and bilateral investment treaties, to the differences in economic and social impact of MNEs from various countries of origin, to the role of institutional pressures in determining the likelihood and extent of sustainability reporting.

With respect to the role of host country and international institutions, particularly the findings of the paper on bilateral investment treaties is helpful. Overall, institutional quality is not a main determinant of bilateral FDI flows, once controlled for a range of other variables including differences in development levels and trade openness (although regulatory quality and the presence of a common law judicial system do attract FDI). Yet in low-quality institutional environments, bilateral institutions – BITs – can provide an advantage *vis-à-vis* other countries in the global competition for FDI, and attract investment.

But it has been in particular the role of the home country institutional context that has been considered in the empirical papers as a determinant of MNE (international) strategy and consequently, its effects on development (with the exception of the paper on BITs). Table 10.2 summarizes the main conclusions of each paper regarding the firms or investments from each of the six countries of origin.

**Table 10.2 Home country effects in internationalization, and in passive and active impact**

	US	Japan	UK	Netherlands	Germany	France
<b>Ch.4</b> Internationalization trajectories	Sales: Home market oriented. Assets: strong expansion.	Sales: Home orientation. Assets: home orientation.	Sales: expansion, comprehensive. Assets: compreh. and dynamic-vol.	Sales: comprehensive. Assets: comprehensive.	Sales: clustered. Assets: comprehensive.	Sales: clustered, comprehensive. Assets: compreh. and dynamic-vol.
<b>Ch.6</b> Economic effects of FDI (by origin)	Impact: As hypothesized; positive after a threshold of trade, education, institutions. Sectors: equally distributed. Org. structure: decentralized decision-making.	Impact: Distinctly negative, especially in trade-open countries and in high quality institutional contexts. Sectors: metal and mechanical, machinery computers, RTV. Org. structure: strongly integrated.	Impact: Positive throughout. Sectors: petroleum and telecom. Org. structure: decentralized decision-making.	Impact: Generally not significant; but potential positive effects in low-education countries. Sectors: food, petroleum, rubber, chemicals and trade. Org. structure: multidomestic, local players.	Impact: Positive effects in countries closed to trade, with good schools and institutions. Sectors: finance, automobiles. Org. structure: HQ oriented, replicate home country practice.	Impact: Not significant overall. Sectors: real estate and business. Org. structure: multidomestic with highly centralized decision making.
<b>Ch.7</b> Wage and labour effects (direct)	'Work hard and play hard': long hours and stress, but high wages, training, and other benefits.	High quality jobs, little equality of opportunity.	Similar to US firms ('work hard, play hard'), though less extreme.	Lower wages, longer working hours than foreign investors, but challenging work and high job satisfaction.	Hours similar to Dutch domestic firms, but often irregular. Most likely to have CAO instead of works council.	Most likely to have a works council, few irregular hours, little overtime, lowest stress-levels.
<b>Ch.8</b> Economic Reporting	[North America] Limited reporting on economic impact.	[Asia] Very similar to US: limited reporting.	reporting on economic impact and all its identified dimensions. Strongest emphasis on non-financial reporting, including			
<b>Ch.9</b> Environmental disclosure	0.87 > threshold: International firms in high impact sector report more.	0.81 << threshold International firms in high impact sectors report less.	0.92 >> threshold International firms in high impact sector report more.	0.87 > threshold: International firms in high impact sector report more.	0.88 > threshold: International firms in high impact sector report more.	0.85 < threshold International firms in high impact sectors report less.

Table 10.2 shows the great variety of results for each of the six home countries that were central – either explicitly or implicitly – in the papers of this dissertation. It is remarkable how significantly the strategies and consequences of firms still differ by their home countries, and to what extent these strategies (continue to) represent the often archetypical or almost caricatural image of firms of various nationalities. US firms tend to focus on efficiency and economic profit, are oriented on their home market, give high rewards for hard work, and engage only to a limited (though not non-existent) extent in non-financial reporting. Japanese firms are strongly home market oriented, produce high quality, high tech products with high quality (male) employees with high quality jobs, but are less concerned about non-financial reporting, especially not when large shares of a firm are located abroad. European firms are among the most ‘social’ and hence not only have relatively comfortable working conditions, but they are also rather active with respect to non-financial reporting. They also tend to be much more international than their American or Japanese counterparts – though it should be noted that this is often still within Europe.

One potential contribution of such a ‘cross-section’ of results could be that it highlights potential relationships among variables – for example, employment practices and internationalization strategy – if across countries, certain employment practices are always combined with a certain internationalization strategy. In that case, the country of origin may even be a mere mediating variable that only obscures more fundamental relationships. But the complexity of the patterns that arises from Table 10.2 suggests that this is not applicable for the results presented in this dissertation. Location matters, also in an era of global integration, especially because it enables firms to build upon such important and unique sets of historically grown institutions. Simply having ‘high quality’ institutions (e.g., having protection of intellectual property rights, regulation of competitive practices) are not enough to explain the differences across firm strategies, practices and impact. Further analysis is necessary to see what exact dimensions of institutions, and their interactions, may be used to draw cross-countries conclusions.

The third and final point with respect to the role of institutions, is the conceptualization of the MNE as an institution itself: as a transaction cost reducing set of (company internal) rules, regulations and norms. This firm-level characterization of an MNE is probably most obvious in chapter 4 on different internationalization trajectories, that shows that although sector and institutional context do influence internationalization, firm specific factors are also very important. While this dissertation has not explored which firm factors that could be, the great diversity of internationalization trajectories even within a single sector or single country suggests that important firm-specific differences exist in the way firms coordinate international activities. Further research in this area is warranted.

## **10.5 RELEVANCE OF THE FINDINGS FOR POLICY MAKERS AND MNEs**

The understanding of the impact of FDI and MNEs for sustainable development is vital for policy makers that are confronted with managing an increasingly international

economy. Each of the individual papers has suggested several policy recommendations based on the empirical findings, and also the conclusions in this chapter provide important suggestions for policy makers. To summarize the main recommendations:

- The overall impact of MNE activity and FDI tends to be positive on the whole, but negative when it comes to the distribution of these benefits, both across countries and within countries. However, reversing the process of economic globalization on account of its negative distributional effects would also reverse much of the overall benefits, and hence does not appear to be a viable option. Yet these negative distributional effects do pose important legitimacy questions for both firms and governments. Firms have started to address these issues – however rudimentary in some cases – via various CSR activities and disclosure. For governments, an important role is to facilitate and stimulate successful participation of the people and firms within their jurisdiction as much as possible. This implies the creation (and maintenance) of high quality institutions and continued investment in education and schooling (chapters 5 and 6 indicated that in those circumstances the effects of FDI are most positive), as well as sound income distribution policies.
- In order to attract those kinds of investments that are most beneficial for their economy, countries should take into account the quality of their institutions, level of technological attainment, and extent of trade openness, and identify on the basis of those characteristics from which country FDI is likely to be most beneficial. Investment promotion efforts (including the signing of BITs) can then focus on those countries. The results of this dissertation indicated that, for example, in countries that score low on levels of education and institutional quality, Dutch investments may be most beneficial for economic growth, whereas countries that are closed to trade would for example benefit most from German investments.
- Countries that want to attract FDI are advised to sign BITs with countries from which they seek to increase investments, since after controlling for self-selection, BITs do have a favourable effect on investment. However, the costs in terms of loss of sovereignty over policy making should be considered, as well as the decreasing marginal contribution of every additional BIT to total inward FDI before engaging in new potentially costly negotiations.
- If reporting is a reflection of actual impacts, then it might be suggested that policymakers in host countries should try to attract large, European firms, which are more likely to create linkages with local firms. And along these same lines, if policymakers are interested particularly in technology transfer, it seems better to focus on attracting firms to particular sectors, with manufacturing firms being more important potential sources of knowledge than for example service firms, as far as the MNE's own attention for knowledge transfer is concerned.
- In order to promote the active contribution of firms to enhancing sustainable development, the findings in this dissertation also suggest that governments should abstain from merely legally requiring firms to disclose non-financial information and details on their CSR activities. Instead of such very focused and specific legislation, it is the overall institutional pressure, embodied in a good environmental governance



system where clear and reliable environmental rules and regulations are in place generally across the board, that is important in increasing transparency by firms about their environmental activities. This is the case for both domestic firms and international firms, both at home and abroad. Hence, all governments – home and host – willing to increase the extent of reporting by firms should invest in building and maintaining such institutions.

While the implications for policymakers of the studies in this dissertation are relatively straightforward, the results do not yield many concrete and directly applicable insights for managers, also because firm performance has not been among the core dependent variables in the papers. However, for firms it is increasingly important to understand their social, economic and environmental impact on the economies and societies in which they operate, as they are increasingly scrutinized for making positive contributions. The findings in this dissertation may help increase that understanding, and may allow firms to better develop their CSR priorities. Especially the detailed content analysis in chapter 8 may inspire managers who want to increase their accountability on these aspects and adapt their measurement and reporting systems accordingly.

## **10.6 LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH**

This dissertation has explored the effect of international investments by multinational enterprises on sustainable development. In doing so, it aimed to address the effects of the economic dimensions of globalization. In a set of two introductory and theoretical chapters and six empirical papers, three main research questions were addressed concerning the determinants of international investment, the effects of FDI on sustainable development and the active contributions MNEs have started to make to enhancing their overall contribution to economic growth, social justice and environmental preservation. Each of the empirical papers had its own specific contribution to existing research in the field, as identified in their respective introductions and conclusions. This final concluding chapter aimed to combine these diverse contributions, and showed that the overlap and synergies among the papers yielded additional insights and conclusions. At the same time, it became also apparent that much more research needs to be done in order to fully grasp if, how, and under what circumstances FDI contributes to sustainable development. Firstly, there remain considerable advances to be made with respect to measurement issues. FDI continues to be difficult to measure correctly, especially in internationally comparative and developing country settings. This was the case at the macro-level – particularly if for example breakdowns by source and destination countries are necessary, as in the chapter on BITs – but especially at the micro or firm-level, where the often used indicator of internationalization was shown to be particularly difficult to measure reliably and consistently. Other key variables that have been included in this dissertation – sustainable development, and CSR – are notoriously multifaceted, which alone creates important definition and measurement problems.

A second element that has not been addressed extensively in this study relates to dealing with the potential trade-offs between development aims: economic growth may not

always result in social equity, and often contributes to environmental degradation. Also the social and environmental goals of development may not always be congruent. Further research may either replicate studies from this dissertation with other dependent variables (e.g. the impact of FDI from different Countries of Origin on environmental preservation), or set up other studies that include multiple dependent variables in order to better understand the costs and benefits of certain strategies for the various dimensions of sustainability.

Yet another key issue for further inquiry concerns the relationship between the various passive and active, direct and indirect effects of MNEs for sustainable development. Two questions are relevant in this respect. First of all, how to evaluate the codes of conduct and sustainability reports of MNEs against their true social and environmental practices, or, to what extent do MNEs practice what they preach? And secondly, how to establish the net effect of positive and negative active and passive effects. For example, does a good environmental, health and safety system at a subsidiary of a multinational outweigh its negative competition effects? Or do substantive local linkages make up for a lack of pollution prevention?

Finally, further research should establish what specific components and dimensions of home country institutions determine the differences that were observed among US, Japanese, and the various European firms. It means that the categorical variable that merely identified the name of the country of origin may be changed into a range of cultural, institutional, developmental, geographical, or other more substantive variables that can both explain the cross-country differences in the data discussed in this dissertation, as well as result in more generalizable findings.

Answers to all these questions for further research are likely extremely difficult. Yet complexity should never be a reason for abstaining from studying a problem. Additional research may not only improve our understanding of the dynamics of the relationship between FDI and development, but also help to optimise FDI-related policies in and by home and host countries alike.



# SUMMARY

## MULTINATIONAL ENTERPRISES, INSTITUTIONS AND SUSTAINABLE DEVELOPMENT

Academics and policy makers have debated the implications of economic globalization for decades. Still, uncertainty remains with respect to the impact of the growing interconnectedness of nations and economies on many dimensions of sustainable development, including income inequality, productivity growth, employment, the natural environment, financial risk and economic stability, and the (receding) power of the state. This ambiguity is partly caused by definitional complexities and absence of data. But a more important reason is the relative lack of attention for the heterogeneous characteristics of the key drivers of globalization: multinational enterprises. This dissertation explicitly addresses these differences by examining how the nature and strategies of multinational enterprises moderate the effect of foreign investment on sustainable development, while taking into consideration the national and international institutions that shape and structure the cross-border activities of these firms.

Three main research questions were developed based on the emerging and relatively broad academic and political consensus what sustainable development is and how it should come about, which highlights the role of institutions and individual actors like MNEs (but also governments and NGOs):

1. To what extent do the relevant home, host, and international institutions and firm specific factors contribute to explaining FDI and the internationalization of MNEs?
2. To what extent does FDI by MNEs contribute to sustainable development, and how is this effect dependent upon the characteristics of FDI?
3. What do MNEs actively do themselves to enhance their sustainability impact, and how is this dependent upon firm specific characteristics and the institutional setting(s) in which MNEs operate?

The first research question was addressed in chapters 4 and 5. Chapter 4 used longitudinal corporate level data to identify a series of internationalization trajectories. It showed that there is not a single path of international expansion, but that firms can take very different trajectories with respect to the internationalization of their sales, assets and employees. Home country institutions play an important role in stimulating internationalization, but the wide variety of trajectories among firms from the same country implies that firm-specific factors, such as their sector of activity, are also important determinants.

Chapter 5 analyzed bilateral FDI stocks for more than 3000 country dyads in the 1990-2002 period, and found that the direction, or exact location, of international activities is affected by factors such as host country market size, resource endowments, trade-openness, distance from the country of origin of FDI, and host country institutions. International institutions – BITs – are however also an important determining factor in

directing FDI, and play a particular important role in improving the attractiveness of countries that without such treaties, could not credibly commit to treating investors well. The second research question of this dissertation was dealt with in chapters 6 and 7. These addressed the role of firm characteristics as moderator in the FDI-development relationship, focusing primarily on the country of origin as an important characteristic of MNEs. Chapter 6 addressed this issue by analyzing the different growth consequences of FDI from various countries of origin, using a dataset on bilateral investment stocks from 6 major outward investors towards 71 countries for the 1989-2002 period. Chapter 7 explored micro level evidence in the Netherlands for one of the key social dimensions of sustainable development: wages and labour conditions. The results confirmed that the growth and employment consequences of FDI differ by the country of origin of the firm. It also appeared that countries with reasonably developed institutions and a qualified workforce benefit most from FDI, even though the threshold above which the effect of FDI becomes positive differs across the various countries of origin of FDI. But also in more developed countries (such as the Netherlands), the effect of inward FDI are not always positive: most of the benefits of investment – such as higher wages – appear to be concentrated among the higher educated part of the workforce.

Chapters 8 and 9 analysed the non-financial reports of the Fortune Global 250 firms to address the third and final research question regarding the active contribution of MNEs to sustainable development. Partly driven by institutional and stakeholder pressures, firms are increasingly disclosing information about the social, environmental and, very recently, also the economic implications of their activities, in non-financial reports. In chapter 8, reporting of MNEs on their economic impact was explored. Chapter 9 analyzed the determinants of environmental reporting, focusing in particular on the relationship between the degree and spread of internationalization and environmental disclosures, while giving special attention to the role of home and host institutional pressures and sector peculiarities.

Both chapters show that MNEs (say that they) do a lot to improve the economic, social and environmental impact of their activities. Environmental reporting has almost become a common practice, with more than half of the Fortune Global 250 disclosing information on their environmental activities. Economic impact reporting is a much more recent phenomenon, yet already a quarter of the firms we analyzed say something on the relative size of their activities in home economies, or disclose how they actively transfer technology and link up with local suppliers. The factors that drive these reporting strategies include sector and company size, but most importantly the extent of pressure in the home country of MNEs. All these factors contribute to the visibility of firms for stakeholders, and – as legitimacy theory suggests – would therefore induce firms to report.

# SAMENVATTING

## MULTINATIONALE ONDERNEMINGEN, INSTITUTIES EN DUURZAME ONTWIKKELING

Academici en beleidsmakers debatteren al decennia over de implicaties van economische globalisering. Het blijft echter onduidelijk wat de gevolgen zijn van de toenemende samenhang van landen en economieën voor duurzame ontwikkeling, waaronder bijvoorbeeld productiviteitsgroei, het milieu, inkomensongelijkheid, financiële risico's en instabiliteit, en de macht van de overheid.

Deze ambiguïteit wordt deels veroorzaakt door de definitieproblemen en een gebrek aan data. Maar een belangrijker reden is het gebrek aan aandacht voor de heterogene karakteristieken van de belangrijkste drijvers van globalisering: multinationale ondernemingen (MNO's). Dit proefschrift neemt deze verschillen expliciet mee in de analyse van de manier waarop MNO's en BDI duurzame ontwikkeling beïnvloeden. Hierbij wordt tevens rekening gehouden met de nationale en internationale institutionele context die de grensoverschrijdende activiteiten van deze ondernemingen vormgeeft.

Drie onderzoeksvragen staan centraal in dit proefschrift. Deze werden afgeleid uit de opkomende academische en politieke consensus over wat duurzame ontwikkeling is en hoe het bereikt zou moeten worden. Hierin krijgen met name instituties en individuele actoren zoals multinationale ondernemingen (maar ook overheden en niet-gouvernementele organisaties) veel aandacht:

1. In welke mate verklaren instituties in thuis- en gastlanden, alsmede internationale instituties, de buitenlandse directe investeringen (BDI) en internationale activiteiten van MNO's?
2. In welke mate draagt BDI door MNO's bij aan duurzame ontwikkeling, en hoe hangt deze bijdrage af van de karakteristieken van de BDI?
3. Wat doen MNO's zelf, actief, om hun gevolgen voor duurzaamheid te vergroten, en hoe hangt dit af van de eigenschappen van MNO's?

De eerste onderzoeksvraag is behandeld in hoofdstukken 4 en 5. Hoofdstuk 4 gebruikte longitudinale data op ondernemingsniveau om een serie van internationaliseringstrajecten te identificeren. Er blijkt niet slechts één pad van internationale expansie te bestaan; ondernemingen kunnen zeer verschillende trajecten afleggen in het internationaliseren van hun verkopen, activa en werknemers. Instituties in het land van herkomst van de onderneming spelen een belangrijke rol in het bepalen van deze trajecten, maar de grote variatie in trajecten ook binnen ondernemingen uit één land impliceert dat bedrijfsspecifieke factoren, zoals de bedrijfstak, ook een belangrijke rol spelen.

Hoofdstuk 5 analyseerde data van bilaterale BDI standen voor meer dan 3000 dyaden van landen tussen 1990 en 2002. De resultaten gaven aan dat de locatie van internationale activiteiten wordt beïnvloed door o.a. marktomvang, openheid voor handel, afstand van het land van herkomst van de BDI, en de institutionele context van het gastland.

Daarnaast zijn ook zeker internationale instituties – in het bijzonder bilaterale investeringsverdragen – een belangrijke factor in het bepalen van de richting van de BDI. Deze verdragen vergroten in het bijzonder de aantrekkelijkheid als vestigingslocatie van landen die zelf niet geloofwaardig kunnen maken dat buitenlandse investeringen daar ook in de toekomst correct behandeld en beschermd worden.

De tweede onderzoeksvraag van dit proefschrift is behandeld in hoofdstukken 6 en 7, waarin de rol van ondernemingskarakteristieken als moderator in de relatie tussen BDI en ontwikkeling werd onderzocht. In het bijzonder is ingegaan op de rol van het land van herkomst van een MNO. Hoofdstuk 6 gaf vorm aan deze vraag door de verschillende consequenties voor economische groei te analyseren van BDI uit diverse landen van herkomst. Hoofdstuk 7 onderzocht op microniveau hoe BDI in Nederland gevolgen had voor lonen en arbeidsomstandigheden van meer dan 60.000 Nederlandse werknemers. De resultaten van beide hoofdstukken bevestigden dat de consequenties van BDI voor economische groei en werknemers verschillen naar gelang het land van herkomst van de investering. Ook werd aangetoond dat landen met redelijk ontwikkelde instituties en een hooggekwalificeerde beroepsbevolking over het algemeen voordeel behalen van BDI, hoewel de drempel waarboven het effect van BDI positief is verschilt naar land van herkomst. Maar ook in de meest ontwikkelde landen – zoals Nederland – is het effect van BDI niet altijd positief: het zijn vooral de hoger-opgeleiden die baat hebben bij BDI.

Hoofdstukken 8 en 9 analyseerden de niet-financiële jaarverslagen van de Fortune Global 250 ondernemingen om de derde en laatste onderzoeksvraag te beantwoorden over de actieve bijdrage van MNO's aan duurzame ontwikkeling. Deels gedreven door druk van overheden en andere stakeholders, publiceren ondernemingen steeds vaker over de sociale, milieu en – meest recentelijk – de economische implicaties van hun activiteiten. In hoofdstuk 8 werd vooral aandacht gegeven aan het rapporteren over de economische implicaties, terwijl in hoofdstuk 9 verslaglegging over milieu centraal stond. Beide hoofdstukken laten zien dat MNO's (zeggen dat ze) veel doen in het verbeteren van de economische en milieu consequenties van hun activiteiten. Milieurapportage is een geaccepteerde praktijk geworden bij meer dan de helft van de 250 ondernemingen. Waar verslaglegging over de economische gevolgen van bedrijfsactiviteiten een veel recenter fenomeen is, heeft toch al een kwart van de ondernemingen aandacht voor de omvang van hun activiteiten ten opzichte van de economieën waarin zij actief zijn, of geven zij aan hoe zij actief technologische kennis overbrengen aan bijvoorbeeld lokale toeleveranciers. De factoren die een rol spelen bij deze niet-financiële rapportage zijn bedrijfstak en bedrijfsomvang, maar vooral ook de hoeveelheid maatschappelijke druk in het thuisland van de MNO. Zichtbaarheid van ondernemingen voor stakeholders vergroot de kans dat ondernemingen verantwoording af leggen.

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