JOLANDA HESSELS

International Entrepreneurship:

Value Creation Across National Borders

International Entrepreneurship:

Value Creation Across National Borders

International Entrepreneurship:

Value Creation Across National Borders

Internationaal ondernemerschap: waardecreatie over nationale grenzen

Proefschrift

ter verkrijging van de graad van doctor
aan de Erasmus Universiteit Rotterdam
op gezag van de Rector Magnificus
Prof.dr. S.W.J. Lamberts
en volgens besluit van het College voor Promoties.

De openbare verdediging zal plaatsvinden op
donderdag 13 november 2008 om 16.00 uur

door

Stieneke Jolanda Annemarie Hessels
Geboren te Apeldoorn

Promotiecommissie

Promotor:	Prof.dr. A.R. Thurik
Overige leden:	Prof.dr. W. Hulsink Prof.dr. J.G.M. van Marrewijk Prof.dr. L.I.E. Sleuwaegen

Erasmus Research Institute of Management (ERIM)
RSM Erasmus University / Erasmus School of Economics
Erasmus University Rotterdam

Internet: http://www.erim.eur.nl

ERIM Electronic Series Portal: http://hdl.handle.net/1765/1

ERIM PhD Series in Research in Management, 144

ISBN 978-90-5892-181-9

Design: B&T Ontwerp en advies www.b-en-t.nl / Print: Haveka www.haveka.nl

This research was funded partly by EIM's research program on small and medium-sized enterprises (SMEs) and entrepreneurship, which is being financed by the Dutch Ministry of Economic Affairs.

Table of Contents

1 International Entrepreneurship: An Introduction

1.1 Introduction

This book investigates antecedents and outcomes of international entrepreneurship. International entrepreneurship as a field of research involves research into *entrepreneurship in multiple countries* (cross-country comparisons of the nature and extent of entrepreneurial activity) and research into *cross-border entrepreneurship* (international activity of small and medium-sized enterprises (SMEs) and new ventures) (Lu and Beamish, 2001; Oviatt and McDougall, 2005). Entrepreneurship or "the creation of new economic activity" (Davidsson, Delmar and Wiklund, 2006, p. 27) includes new venture creation activity and new economic activity of established firms. It is often assumed that entrepreneurship, and cross-border entrepreneurship in particular, contributes to value or wealth creation both at the firm-level and at the economy-wide level.

Entrepreneurship, as measured by various indicators such as start-up activity rates or the increase in business ownership, plays an important role in national economies (van Stel, 2006). Entrepreneurship is considered to be an important mechanism for *national* economic development e.g. through its contribution to the generation of employment and innovation (Acs and Audretsch, 2003; Autio, 1994; Baumol, 2002; Carree and Thurik, 2003; Wennekers and Thurik, 1999; Schumpeter, 1934). However, considerable differences exist between countries in the extent to which entrepreneurship is growth- or innovation-oriented (Autio, 2007; Hessels, van Gelderen and Thurik, 2008a), and consequently in the extent to which entrepreneurship contributes positively to national economic development. Therefore, it is essential for scientists, policy makers and entrepreneurs, to gain insight into the factors that affect the emergence of (various types of) entrepreneurship and into the economic outcomes of (various types of) entrepreneurship. A substantial part of this book is devoted to exploring such issues. One particular type of entrepreneurship that receives considerable attention in this book is cross-border entrepreneurship.

To understand the significance of entrepreneurship for national economies it is important to consider cross-border entrepreneurship or the involvement of SMEs and new ventures in the *international* economy. Cross-border activities, such as exports, are an important means through which small and new ventures are able to create value, to generate growth and to access new knowledge and technologies abroad (Yeoh, 2004). Governments support cross-border entrepreneurship and in particular exports with the aim to increase national wealth and to improve international competitiveness of the national economy (OECD, 1997).

Cross-border entrepreneurship has become a more widespread phenomenon in the past decades. Traditionally, multinational enterprises (MNEs) were mainly responsible for flows of international trade and foreign direct investment (FDI), which are the prime driving forces of globalization. However, the recent increase in international trade and investment flows stems mainly from firms that used to focus primarily on domestic markets and not from firms that already are global players (Muller, 2004). One feature of today's globalizing economy is that a growing number of firms are undertaking international activities and this includes not only large firms, but also (and increasingly) small and new ventures (Moen and Servais, 2002; Oviatt and McDougall, 1994; Rennie, 1993; Reynolds, 1997). Another feature of the current globalizing economy is that firms, even small and new ventures, are internationalizing at a faster pace (Oviatt and McDougall, 1999). Firms were traditionally mainly internationalizing incrementally, starting with activities that involve low levels of risk and low levels of commitment of resources, such as indirect export (i.e. export with the help of an intermediating firm), before making a more substantial commitment in foreign markets e.g. through producing abroad (Johanson and Vahlne 1977, 1990). Nowadays the internationalization of SMEs and new ventures is both expanding and accelerating, which is likely to further contribute to a greater number of economic actors pursuing foreign markets (Hessels, 2007b).

The expansion and acceleration of cross-border entrepreneurship should be considered in the light of substantial changes that took place in the past decades and that resulted in a reduction of transaction costs for undertaking international business. Firms are operating in an economy that is becoming increasingly global. The worldwide reduction of trade and investment barriers through the World Trade Organization and the establishment of regional economic cooperation agreements such as the European Union have diminished barriers for SMEs and new ventures to become internationally active. Also, technological advancements (including the widespread use of internet and e-mail) and falling transportation costs have resulted in enhanced information flows between countries which facilitate small and new venture internationalization (Autio, 2005; Reynolds, 1997). It has, for example, become easier for small and new ventures to find information about foreign markets and about clients abroad, to communicate with foreign partners and to coordinate various activities across borders. An increasingly global economy presents firms with both opportunities and threats (Greenaway, Gullstrand and Kneller, 2008). Substantial opportunities arise for small and new ventures, such as to expand sales or business activities abroad, to target specific international niches or to access advanced technologies abroad. Threats may result from increased foreign competition (Acs, Dana and Jones, 2003), which may provide a greater necessity for small and new firms to look beyond national borders to survive or grow (McDougall and Oviatt, 2000; Root, 1994).

Before turning to the research background and the research questions in Section 1.3, the next section will provide a definition of international entrepreneurship and of associated key concepts.

1.2 International entrepreneurship: defining the key concepts

International entrepreneurship

This book follows Oviatt and McDougall (2005) in defining international entrepreneurship as:

"(…) the discovery, enactment, evaluation, and exploitation of opportunities—across national borders—to create future goods and services." (Oviatt and McDougall, 2005, p. 540).

To gain a better understanding of what international entrepreneurship is about it is important to clarify the two notions of which it is composed: 'international' and 'entrepreneurship'.

Entrepreneurship

There is no universally accepted definition of entrepreneurship. There seems to be agreement however that entrepreneurship involves the creation of something new (Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia and Chin, 2005). Some authors have argued that entrepreneurship is in essence about "the creation of new organizations" (Gartner, 1988, p.18). The definition of international entrepreneurship that is provided above focuses upon entrepreneurship in terms of opportunity recognition and exploitation. The view that entrepreneurship is about pursuing opportunities has its roots in Kirzner (1979) and has also been highlighted in more recent entrepreneurship research (Shane and Venkataraman, 2000). Davidsson, Delmar and Wiklund (2006) summarize the view that entrepreneurship is about the recognition and exploitation of opportunities into the definition of entrepreneurship as:

"The creation of new economic activity" (Davidsson, Delmar and Wiklund, 2006, p. 27).

The definition of entrepreneurship as the creation of new economic activity includes new venture creation activity, but also new economic activity of established firms. New economic activity that constitutes entrepreneurship may involve the conversion of a new idea into a successful innovation (Schumpeter, 1950) as well as imitative behavior that is new to a firm. The creation of new economic activity is not only associated with innovation, but also with other "entrepreneurial" features such as risk-taking and proactiveness (Covin and Slevin, 1989; Lumpkin and Dess, 1996).

International: across national borders

The notion 'across national borders' in the definition of international entrepreneurship refers to either *cross-country comparisons* or *organizational behavior across borders*, i.e. cross-border entrepreneurship (Oviatt and McDougall, 2005). Cross-border entrepreneurship includes new venture internationalization (McDougall, 1989) and SME internationalization (Lu and Beamish, 2001). With regard to SME internationalization it is important to note that there are many different definitions for SMEs. SMEs are most commonly defined by their size in terms of number of employees. In the European Union, for example, SMEs are defined as firms with up to 250 employees and in the United States SMEs include firms with up to 500 employees. With regard to new venture internationalization firms with international operating domains from at or near inception are commonly labeled 'international new ventures' (INVs) (Oviatt and McDougall, 1994) or 'born globals' (Rennie, 1993). An INV is defined as ".. a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries" (Oviatt and McDougall, 1994, p. 49). Those new ventures that engage in significant international activity are classified as born globals (Knight and Cavusgil, 1996). Knight and Cavusgil (2004, p. 124) define born globals as "business organizations that, from or near their founding, seek superior international business performance from the application of knowledge-based resources to the sale of outputs in multiple countries." There is evidence of widespread emergence of INVs and born globals in different countries around the world (McDougall, Covin, Robinson and Herron, 1994; Moen and Servais, 2002; Oviatt and McDougall, 1994; Rennie, 1993). A distinguishing feature of both INVs and born globals is that they are international at or near inception (Knight and Cavusgil, 2004; Oviatt and McDougall, 1994). The period from domestic establishment to initial foreign market entry is often three years or less (Autio, Sapienza and Almeida, 2000; McDougall and Oviatt, 2000; OECD, 1997; Rennie, 1993).

Initially, internationalization theories were developed to explain why nations trade, as was the theory of absolute advantage (Smith, 1776), the theory of comparative advantage (Ricardo, 1817) and the Hekscher-Ohlin model (Ohlin, 1933). Since the 1960s various theories have emerged to explain why firms are internationalizing. Influential theories in this respect are the theory of monopolistic advantage (Caves, 1971; Hymer, 1976), the product life-cycle theory (Vernon, 1966), economic theory of transaction costs (Williamson, 1975) and the eclectic paradigm for international production (Dunning, 1981). These theories were mainly developed to explain large firm internationalization. More recently, theory development has paid attention to explaining the process through which firms internationalize such as the process theory of internationalization or stage theory (Johanson and Vahlne, 1977, 1990) and to explaining the formation of international new ventures (Oviatt and McDougall, 1994).

There is no single universally accepted definition of internationalization. Internationalization is difficult to define since it encompasses various aspects. First, internationalization may involve various modes or activities. While research on internationalization of SMEs and new ventures tends to focus primarily on exports (Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996), internationalization may involve various other modes or activities. These may include other *outward modes* than (direct) exports, such as indirect export (i.e. export through intermediaries such as agents or distributors), foreign production and joint ventures abroad, *inward modes*, such as indirect imports (i.e. imports through intermediaries such as agents or distributors) and direct imports, and *linked modes* such as licensing agreements and international strategic alliances (Welch and Luostarinen, 1988; Fletcher, 2001).

Second, internationalization is often viewed as a process-based activity that is dynamic and evolutionary. The process theory of internationalization or stage theory (Johanson and Vahlne, 1977, 1990) states that firms first establish themselves in domestic markets and after that internationalize in small steps, typically emerging from indirect export to the establishment of a sales subsidiary abroad and, finally, to producing abroad. Previous research defined internationalization as a "process of increasing involvement in international operations" (Luostarinen and Welch, 1990, p. 249). However, internationalization is not always an ongoing process as it may also encompass de-internationalization (Fletcher, 2001; Welch and Luostarinen, 1988).

Third, internationalization is considered to offer potential for organizational learning. This may involve learning about foreign markets (including consumer/customer preferences) and also technological learning and learning about new ways of doing things.

Many of the existing definitions cover only one of these aspects of internationalization. A definition that is commonly used in recent contributions (Coviello and McAuley, 1999) is a definition developed by Beamish (1990). This definition has the advantage that it provides the possibility to incorperate the various aspects of internationalization that are highlighted above. Beamish defines internationalization as:

"…the process by which firms both increase their awareness of the direct and indirect influence of international transactions on their future, and establish and conduct transactions with other countries." (Beamish 1990, p. 77).

Yet another aspect of internationalization emphasized in recent research is that internationalization is "entrepreneurial" (Lu and Beamish, 2001). Internationalization is entrepreneurial as it involves risk-taking: firms face higher levels of risk when operating in foreign markets, compared to domestic markets (Leiblein and Reuer, 2004; Lu and Beamish, 2001). Internationalization is entrepreneurial

as it is associated with innovativeness: international market entry often requires innovative products or products that have been adapted to foreign market preferences (Leiblein and Reuer, 2004; Zahra, Hayton, Marcel and O'Neill, 2001). Finally, internationalization is entrepreneurial as it is pro-active: internationalization is a strategy for achieving firm growth and for generating wealth by means of expansion into new, foreign markets (Lumpkin and Dess, 1996; Zahra, Kuratko and Jennings, 1999).

1.3 Research background and research questions

The chapters included in this book address various research themes that are of interest to economists, such as the relationship between international trade and innovation, the extent to which foreign direct investment and international trade are sources of knowledge spillovers, the study of economic growth and the impact of social welfare schemes on economic activity. In investigating these research issues both micro-economic and macro-economic analyses are used. A common denominator throughout this book is that the various research themes are linked to the role of international entrepreneurship. As such, the book aims to contribute to literature on both antecedents and outcomes of international entrepreneurship.

International entrepreneurship emerged as a separate field of research in the past two decades and began with an interest in cross-border entrepreneurship, in particular in internationalizing new ventures (McDougall, 1989), but also includes SME internationalization (Lu and Beamish, 2001). In addition to cross-border entrepreneurship international entrepreneurship also includes the study of entrepreneurship in multiple countries (Coviello and Jones, 2004; Oviatt and McDougall, 2005).

International entrepreneurship is an interdisciplinairy field that draws upon the theoretical foundations of international business and entrepreneurship. International business research, which focuses upon the internationalization of the firm, used to be dominated by research on large multinational enterprises, but now also pays substantial attention to SME and new venture internationalization. Entrepreneurship research, which concentrates on small firms and entrepreneurship, has tended to pay limited attention to cross-border activities (Acs and Yeung, 1999). The field of international entrepreneurship has been studied from various disciplines including economics, psychology and sociology and business sub-disciplines such as marketing, finance and strategic management (Oviatt and McDougall, 2005). Economic research that deals with entrepreneurship focuses mainly on the economic importance and value of entrepreneurship and on explaining the decision of individuals to enter into entrepreneurship (Parker, 2004; van Stel, 2006; Wennekers, 2006). This type of research generally does not consider cross-border activities. International economic research primarily concentrates on studying the flow of goods, services and capital at the macro-level

and also pays attention to internationalization at the micro-level (business economics), mainly with a focus on multinational enterprises (Brakman, Garretsen, van Marrewijk and van Witteloostuijn, 2006). Cross-border entrepreneurship could be of interest to economic researchers interested in entrepreneurship because of its potentially important value-creating role within national economies and could be of specific importance for international economic research given the increased participation of small and new ventures in the international economy.

Table 1.1 illustrates the research domain of international entrepreneurship, which covers area I, II and III. Most extant international entrepreneurship research addresses either quadrant I or quadrant III of Table 1.1. Studies in quadrant I typically involve investigations into the determinants and economic consequences of levels of entrepreneurship measured across countries (e.g. van Stel, 2006; Wennekers, 2006) and tend to overlook cross-border activities. Studies in quadrant III typically involve investigations into determinants of international activities at the micro-level, generally focusing on only one, or at most a few, countries (Coviello and Jones, 2004). Consequently, in the current international entrepreneurship literature a clear distinction exists between research on entrepreneurship in multiple countries and research on cross-border entrepreneurship (Kuemmerle, 2002).

Table 1.1: The research domain of international entrepreneurship

	TOPIC	
	Entrepreneurship (in general)	Cross-border entrepreneurship (SME / new venture internationalization)
SCOPE		
Multiple-country	**I**	**II**
Single-country	**IV**	**III**

This book aims to make various contributions to literature on antecedents and outcomes of international entrepreneurship. First, several of the chapters included in this book provide a multiple-country perspective on cross-border entrepreneurship and fit into quadrant II of Table 1.1 which is not commonly addressed by existing international entrepreneurship research. This contributes to existing research on entrepreneurship in multiple countries by adding a perspective on cross-border activities and to existing research on cross-border entrepreneurship by adding a multiple-country dimension. Second, a contribution is made to literature on antecedents of international entrepreneurship by identifying and investigating the role of various potential antecedents of

international entrepreneurship that have received limited or no attention in previous research. In particular, studies in this book pay specific attention to the macro-environment. In the case of cross-border entrepreneurship existing empirical literature concentrates on individual-specific and firm-specific antecedents and explores limited sets of environmental factors in SME internationalization research (Axinn, 1988; Thirkell and Dau, 1998; Westhead, Wright and Ucbasaran, 2004; Wilkinson, 2006) and tends to overlook the role of institutions and the macro-environment in new venture internationalization research (Zahra, 2005). However, this book also contributes to the antecedents-literature by exploring a number of individual-specific and firm-specific factors of cross-border entrepreneurship that have not been addressed (extensively) in previous research. Third, a contribution is made to literature on antecedents and outcomes of cross-border entrepreneurship by taking into account other modes of internationalization than exports only (e.g. imports) and by distinguishing between direct and and indirect exports. Fourth, this book makes a substantial contribution by investigating both macro-level and micro-level outcomes of international entrepreneurship. Various studies have investigated outcome effects of entrepreneurship in multiple countries (Audretsch and Thurik, 2001; Carree and Thurik, 2003; van Stel, 2006; Thurik, Carree, van Stel and Audretsch, 2008). However, such studies do not usually take into account cross-border activities. Furthermore, research on cross-border entrepreneurship is strongly focused on determinants of new venture and SME internationalization and pays little attention to outcomes (Lu and Beamish, 2006) and those studies that do address outcomes typically focus on firm-level outcomes such as sales growth and profits. This book is among the first to investigate macro-level outcomes of cross-border entrepreneurship.

Overall, the various chapters included in this book intend to contribute to research on antecedents and outcomes of international entrepreneurship and to answer one or both of the following two research questions:

1) What are the antecedents of international entrepreneurship (i.e. cross-border entrepreneurship and entrepreneurship in multiple countries)?
2) What are the outcomes of international entrepreneurship (i.e. cross-border entrepreneurship and entrepreneurship in multiple countries)?

The next section provides a description of the various potential antecedents and outcomes of international entrepreneurship that are investigated in this book and explains in more detail how this book contributes to existing international entrepreneurship research.

1.4 Antecedents and outcomes of international entrepreneurship

Antecedents and outcomes of cross-border entrepreneurship (SME and new venture internationalization)

Cross-border entrepreneurship research includes both research into SME internationalization (Lu and Beamish, 2001) and research into new venture internationalization (McDougall, 1989). Research into *SME internationalization* emerged in the 1970s and expanded considerably in the past 35 years (Buckley, 1989; Coviello and McAuley, 1999; Fujita, 1995; Hollenstein, 2005; Preston and Heller, 1997). Specific interest in *new venture internationalization* began to emerge in the late 1980s and was spurred by the observation that an increasing number of new ventures in different countries around the world perceived their operating domain to be international at or near inception (McDougall, 1989). There are several reasons for why SME and new venture internationalization deserve specific research attention, separately from large firm internationalization. For example, SMEs and new ventures are typically more resource-constrained than larger firms e.g. in terms of financial and human capital resources, and therefore internationalization is perceived to be more difficult for such types of firms (Coviello and McAuley, 1999). Also, SMEs and new ventures are more likely to suffer from liabilities of newness (meaning that young or new firms face particular difficulties and have a greater risk of failure) and liabilities of foreignness (meaning that firms normally have a disadvantage relative to local firms when operating in foreign markets) as compared to larger firms. Another rationale for studying internationalization of small and new firms separately from large firm internationalization relates to the key role of the owner/manager in SME and new venture internationalization (Coviello and McAuley, 1999; Miesenbock, 1988). Such differences between large and smaller firms mean that SME and new venture internationalization is not easily explained by traditional internationalization theories that were developed mainly to explain internationalization among large firms (McDougall, Covin, Robinson and Herron, 1994). Also, in a world in which firms are internationalizing earlier and at a faster pace, the relevance of the stage theory (Johanson and Vahlne, 1977, 1990), which posits that internationalization is a gradual process that occurs after firms have established themselves in the domestic market and which has been very influential in explaining internationalization of small firms, is diminishing.

Existing research on cross-border entrepreneurship is concentrated on investigating antecedents of internationalization at the micro-level and pays only limited attention to outcomes of internationalization. Antecedents of cross-border entrepreneurship include both facilitating and inhibiting forces and can be divided into three broad subcategories: individual-/entrepreneur-specific factors, firm-specific factors and environment-specific factors (Antoncic and Hisrich, 2000; Ford and Leonidou, 1991; Ibeh, 2006). Individual-specific factors mainly relate to characteristics of the entrepreneur. Examples of factors that have been found to

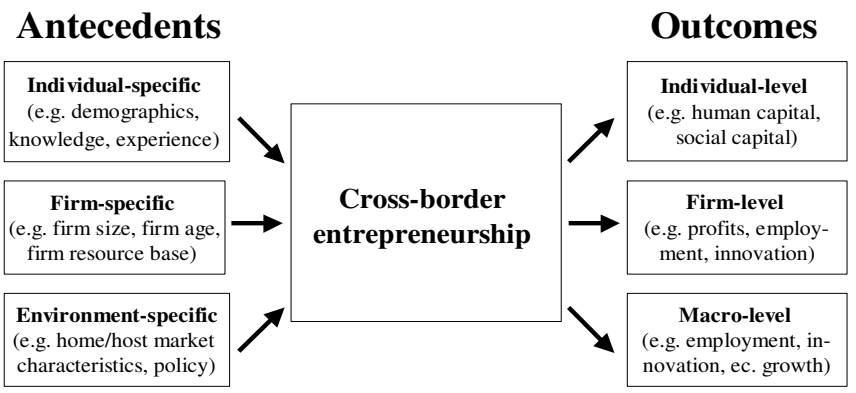
positively affect internationalization are demographic factors, such as age (Westhead, 1995) and the level of education (Simpson and Kujawa, 1974), and factors relating to individual's knowledge and experience such as the entrepreneurs' or top-managements' international business experience and knowledge of foreign institutions (such as knowledge of foreign laws, norms, standards and languages) (Bloodgood, Sapienza and Almeida, 1996; Eriksson, Johanson, Majkgard and Sharma, 1997; Oviatt and McDougall, 1995; Reuber and Fischer, 1997). Examples of firm-specific factors that have been found to positively affect internationalization are basic firm characteristics such as firm size in terms of employment and sales (Chetty and Hamilton, 1993; Lefebvre and Lefebvre, 2002; Westhead, 1995) and a firm's resource base, such as the possession of a unique product (Akoorie and Enderwick, 1992; Cavusgil and Nevin, 1981), the possession of a proprietary technology and the possession of specific management capabilities (Autio, Sapienza and Almeida, 2000; Cavusgil and Nevin, 1981; Keeble, Lawson, Smith, Moore and Wilkinson, 1998; Roberts and Senturia, 1996). Environment-specific factors that may have an impact on internationalization include both domestic market and foreign market conditions. Some examples of environment-specific factors that have been found to relate positively to internationalization are a fall in production costs in the home market (Axinn, 1988) and the small size of the home market (Rasmussan, Madsen and Evangelista, 2001).

Literature on antecedents of SME internationalization is extensive and it would be too far-reaching to provide a complete overview here. A number of authors have attempted to provide an overview of key findings of the empirical literature on antecedents of SME internationalization (See for instance Aaby and Slater, 1989; Bilkey, 1978; Fletcher, 2001). It is important to note that previous research generated few consistent findings, which may relate to the fact that studies have used different operationalizations for internationalization (e.g. export probability, export intensity), and did not usually offer a cross-country perspective. The empirical research base on factors that drive the early internationalization of new ventures and born globals is still limited and largely based on case studies involving one, or at most a few, countries (See Johnson (2004) for a review of key literature on drivers of early-internationalization). The limited empirical research base on antecedents of new venture internationalization, and the fact that previous research on antecedents of SME internationalization generated few consistent findings leave it unclear whether, and to what extent, the determinants for new venture internationalization differ from those of SME internationalization.

Literature on outcomes of SME and new venture internationalization is much more limited than literature on antecedents (Lu and Beamish, 2006; Zahra, 2005). Cross-border entrepreneurship may generate outcomes at the individual-level (e.g. in terms of human capital and social capital development) at the firm-level (e.g. in terms of profits, employment growth and innovation) and at the macro-level (e.g.

in terms of employment growth, innovation and economic growth). Though the potential value-creating role of internationalization is often highlighted, it is also possible that internationalization leads to (temporary) negative outcomes. Figure 1.1 provides an illustration of the various categories of antecedents and outcomes of cross-border entrepreneurship.[1]

Figure 1.1: Antecedents and outcomes of cross-border entrepreneurship



Source: Based on Antoncic and Hisrich (2000); Ruzzier, Hisrich and Antoncic (2006).

Chapters 2-7 of this book, in particular, aim to contribute to literature on antecedents and/or outcomes of cross-border entrepreneurship. In Chapters 2-4 the main focus is on SME internationalization, whereas Chapters 5-7 focus mainly on new venture internationalization. In addition, Chapter 9 also contributes to providing insights into the antecedents of cross-border entrepreneurship as it focuses partly on export-oriented entrepreneurship, although the core interest of this chapter is to contribute to cross-country research on entrepreneurship (in general).

With respect to individual-/entrepreneur-specific antecedents of cross-border entrepreneurship, this book investigates the role of a number of potentially relevant drivers of new venture export that received limited attention in previous research: entrepreneurial human capital (individual's possession of entrepreneurship-specific experience, knowledge and skills) and entrepreneurial social capital (individual's possession of entrepreneurial networks) (Chapter 5) and the incidence of various start-up motives (motives for starting an own business) (Chapter 9).

[1] Note that this model does not specify the various interrelationships that may exist among the various types of antecedents and among the various types of outcomes.

Potential firm-specific antecedents of cross-border entrepreneurship that are explored in this book are innovation and (perceived) resource scarcity. It is investigated whether innovation is a driver of SME export and import (Chapter 2) and of new venture export (Chapter 5). Whereas previous research concentrated on the link between innovation and export, this book also explores the relationship between innovation and import (Chapter 2). Furthermore, previous case study evidence describes how new ventures that possess new products or services and a strong technology base are more likely to enter foreign markets (Keeble, Lawson, Smith, Moore and Wilkinson, 1998; McDougall, 1989; McDougall, Covin, Robinson and Herron, 1994; Oviatt and McDougall, 1995). This book contributes to this literature by investigating the role of innovation in enabling new venture export for a large sample of new venture entrepreneurs from a large number of countries (Chapter 5). Also, whereas literature tends to concentrate on the enabling forces of a firm's resource base for internationalization, this book investigates how (perceived) resource constraints can affect SME involvement in foreign markets, in particular their resource-seeking internationalization behavior (Chapter 4).

In contrast to earlier studies on SME internationalization that explored limited sets of environment-specific factors (Axinn, 1988; Thirkell and Dau, 1998; Westhead, Wright and Ucbasaran, 2004; Wilkinson, 2006), this book develops and tests how an extensive set of environment-specific factors that relate to perceived favorability of home market conditions and perceived internationalization of the organization field affects SME export involvement and mode of export (direct versus indirect export) (Chapter 3). Furthermore, this book also explores a number of potential environment-specific antecedents of new venture internationalization: a country's level of FDI and international trade (Chapter 7) and a country's level of social security arrangements (Chapter 9). Previous research on new venture internationalization has tended to overlook the environment, including the role of institutions (Zahra, 2005).

Empirical studies on the outcomes of SME and new venture internationalization are still limited (Lu and Beamish, 2006; Zahra, 2005) and studies that do investigate outcome effects tend to focus on firm-level outcomes (Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996; Zahra, Ireland and Hitt, 2000). This book is among the first to study macro-level outcomes of cross-border entrepreneurship. More specifically, it empirically investigates whether export-oriented new ventures make a significant contribution to national economic growth (Chapter 6). Furthermore, it is also investigated whether export-oriented new ventures may act as role models that positively affect the supply of entrepreneurial activity at the country level (Chapter 7). Finally, a contribution is made to research on outcomes of cross-border entrepreneurship by investigating at the micro-level whether export and import activity leads to investments in innovation among SMEs (Chapter 2).

Studies on SME and new venture internationalization tend to have a strong focus on the export activity and export performance of firms (in terms of the antecedents and the process) (Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996). Although firms can choose between a variety of entry modes, export is a common mode of a firm's international expansion (Young, 1987; Young, Hood and Dunlop, 1988) and most of the chapters included in this book that deal with cross-border entrepreneurship also focus on exports. However, Chapter 2 also considers imports and Chapter 3 distinguishes between direct and indirect exports. Thus, this book also contributes to literature on antecedents and outcomes of cross-border entrepreneurship by not focusing exclusively on exports.

Antecedents and outcomes of entrepreneurship in multiple countries

Determinants of entrepreneurship across countries include economic as well as technological, demographic, social and cultural factors. With regard to antecedents, previous research highlights the role of demand-side factors (the stock of opportunities) and supply-side factors (the distribution of skills and preferences) in creating the opportunities for start-up activity and in shaping entrepreneurs' willingness or ability to act on new business opportunities (Noorderhaven, Thurik, Wennekers and van Stel, 2004; van Stel, Carree and Thurik, 2005; Verheul, Wennekers, Audretsch and Thurik, 2002). National conditions, such as the state of technology, the level of economic development, demographic factors, national institutions and culture may impact both demand-side and supply-side factors and consequently (entry into) entrepreneurship (Wennekers, 2006).

Research into the outcomes of entrepreneurship in multiple countries has paid considerable attention to the impact of entrepreneurship on employment creation, innovation and economic growth (Audretsch and Thurik, 2001; Carree and Thurik, 2003; van Stel, 2006; Thurik, Carree, van Stel and Audretsch, 2008). This type of research does generally not make a distinction between different types of entrepreneurship[2], and has failed to pay attention to cross-border entrepreneurship.

Some of the chapters included in this book aim to contribute to literature on antecedents and outcomes of entrepreneurship in multiple countries (Chapters 8 and 9 in particular, but Chapters 5, 6 and 7 also have some relevance here, although the main focus in these latter chapters is on new venture internationalization). First, regarding antecedents, the impact of social security on entrepreneurship is investigated. Social security is a potentially relevant factor when explaining entrepreneurship that did not receive much attention in previous studies. In particular, whether or not social security affects a country's supply of

[2] One exception to this is a study by Wong, Ho and Autio (2005).

entrepreneurship in general (in terms of new venture creation activity) (Chapter 8) is investigated, as is its impact on the supply of ambitious (innovative, job-growth-oriented and export-oriented) entrepreneurship (Chapter 9). Second, how the incidence of various start-up motives (the independence motive, the necessity motive and the increase-wealth motive) relates to a country's supply of ambitious entrepreneurship is also examined (Chapter 9). Third, it is also investigated whether export-oriented new ventures serve as a catalyst for entrepreneurship (new venture creation) (Chapter 7).

Regarding literature on outcomes of entrepreneurship in multiple countries this book intends to contribute to literature on new venture creation and economic growth by making a distinction between different types of new ventures (export-oriented new ventures and domestic new ventures) (Chapter 6). Furthermore, a contribution is made to literature on outcomes of entrepreneurship in multiple countries by investigating at the micro-level whether entrepreneurs' possession of entrepreneurship-related skills, knowledge, experience and networks, have an impact on new venture export (Chapter 5).

1.5 Data considerations: international entrepreneurship measures

Availability of international comparative entrepreneurship data is still limited. Also, whereas various national institutions as well as international organizations, such as Eurostat, the OECD, UNCTAD and the World Bank, publish statistics on international trade and foreign direct investments, these statistics usually do not have a breakdown according to firm size or firm age. Therefore, these data do not provide insight into international activities of SMEs and new ventures. Consequently, research on international entrepreneurship relies strongly on survey data. It is particularly challenging to collect international comparative survey data, since this requires unification in, for instance, sampling and data collection procedures across countries (Coviello and Jones, 2004).

A major effort to collect harmonized cross-country data on entrepreneurship (in terms of new venture creation) has been made by the Global Entrepreneurship Monitor (GEM), a worldwide research project aimed at describing and analyzing entrepreneurial activity across countries. Currently more than 40 countries participate in the GEM. A key GEM indicator for entrepreneurship across countries is the Total early-stage Entrepreneurial Activity rate (TEA). TEA is defined as the percentage of the adult population (18-64 years) that is involved in setting up a business (nascent entrepreneurship) or that owns-manages a new business (up to 3.5 years old) (young business ownership). Involvement in TEA varies strongly across countries. High-income European countries, for example, tend to have relatively low TEA rates, whereas the U.S. and in particular lower-income countries have relatively high TEA rates (see Chapter 6 and Chapter 8 for an overview of TEA rates per country). GEM also provides a mechanism for

determining export orientation of early-stage ventures, measured as the average percentage of customers that live outside a country's borders as assessed by early-stage entrepreneurs (see Chapters 6, 7 and 9 for an overview of the GEM export orienation measure per country or groups of countries). In several of the chapters included in this book the TEA is used as a proxy for entrepreneurial activity and the GEM export orientation measure is used as a proxy for new venture export. Both micro-level GEM data (Chapter 5) and country- or macro-level GEM data are used combined with data from other sources such as the World Bank and the United Nations (Chapter 6, 7, 8 and 9).

Furthermore, the ENSR Enterprise Survey, held as part of the Observatory of European SMEs for the European Commission attempted to collect harmonized data, including data on SME internationalization in European countries. Chapter 4 of this book relies on this data source and analyzes micro-level data for 18 European countries from the ENSR Enterprise Survey 2003. The results of the ENSR Enterprise Survey 2003 provide a picture of the prevalence of different types of internationalization among European SMEs. The results for 2003 indicate that on average 18 per cent of European SMEs are involved in exports, 30 per cent undertake imports and three per cent have established foreign subsidiaries or branches (note that one SME may undertake more than one of these activities). Overall, about 40 per cent of European SMEs were internationally active in 2003 according to this survey (European Commission, 2004a).

In addition to these data sources two chapters that deal with SME internationalization draw on single-country firm-level samples. Both these chapters use a sample of SMEs located in the Netherlands, taken from a SME survey carried out by EIM Business and Policy Research in the Netherlands in 2004 (Chapter 2) and 2006 (Chapter 3).

In all of the chapters hypotheses are empirically tested using various regression techniques such as linear regression, binomial logistic regression and multinomial logistic regression. Almost all chapters are based on secondary data originally collected for other purposes. The only exception is Chapter 3 that uses data collected specifically for investigating the proposed research question of that chapter.

The next section provides a more detailed description of the various chapters as well as an overview table (Table 1.2) in which specific characteristics of the different chapters (e.g. in terms of sample characteristics, level of analysis) are summarized.

1.6 Outline of the book

As explained previously this book devotes considerable attention to cross-border entrepreneurship in terms of SME and new venture internationalization and also aims to contribute to cross-country research on entrepreneurship (in general). The book is divided into three parts. Part I (Chapters 2-4) focuses on various issues relating to SME internationalization. In Part II (Chapters 5-7) the main focus is on new venture internationalization, although this part also addresses issues that are of interest for cross-country research on entrepreneurship (in general). The core interest of Part III (Chapters 8 and 9) is to contribute to cross-country research on entrepreneurship (in general), but Chapter 9 also pays explicit attention to export-oriented entrepreneurship.

Part I Cross-Border Entrepreneurship: SME Internationalization (Chapters 2, 3 and 4)

Chapter 2 investigates the relationship between innovation and the involvement in export and import of SMEs. Studies on the internationalization of SMEs used to be focused primarily on export activities. Firms can however choose between a variety of entry modes and in recent years research has paid more attention to import and other so called "inward" modes of internationalization. Furthermore, most firm-level studies on the association between innovation and international trade take only export activities into account and not a firm's involvement in imports, due mainly to a lack of data on imports at the firm-level. This chapter explores not only whether innovative SMEs are more likely to be involved in exports and imports than non-innovative firms, but also pays specific attention to the potential of both export and import to lead to innovation, a research area that has received limited attention thus far. The empirical analysis uses a sample of about 1,800 SMEs located in the Netherlands.

Chapter 3 focuses on explaining two choices facing SME owner/managers: the decision whether to export or not, and, if the decision is to export the choice between direct and indirect export modes. Most extant international entrepreneurship research focuses on small firms' direct (e.g. exporting) means to internationalization. An emerging strand of research explores how small and new firms pursue an indirect path to internationalization (e.g. Acs, Morck, Shaver and Yeung, 1997; Peng and York, 2001), using local and foreign intermediaries to sell their goods and services across national borders. This work is mostly of an exploratory nature, based on case studies. In this chapter theoretical arguments are developed and empirically tested as to why SMEs are involved in export and choose an indirect export path based on two theories: resource dependency theory and institutional theory. Based on resource dependency theory it is argued that SME owner/managers' perception of factors relating to the economic environment in the home market influences SME export involvement and mode of export.

Institutional theory guides the contention that SME owner/managers' perception of the international orientation of the organization field in which the firm operates is likely to affect both export involvement and export mode. The resource dependency and institutional theory arguments are tested using binominal logistic regression analyses for a sample of 871 SMEs located in the Netherlands.

Chapter 4 investigates whether resource-constrained SMEs are likely to pursue and use internationalization as a strategy for accessing the resources they lack. Internationalization can be a means for firms to gain access to and to build up resources. For example, firms may use internationalization as a means for generating financial resources e.g. through export sales and as a means for accessing knowledge and technology. This chapter seeks to explain what drives SMEs to pursue and use internationalization as a strategy for accessing resources. In particular, this chapter investigates whether a firm's desire to access specific resources through internationalization (i.e. labor, capital and know how/technology) is driven by the scarcity of a firm's internal resources, since internationalization as a strategy for accessing resources is likely to be especially interesting or even necessary for firms that lack specific resources. Arguments are derived from resource dependency theory. The empirical analysis is based on a large firm-level sample of European SMEs.

Part II Cross-Border Entrepreneurship: New Venture Internationalization (Chapters 5,6 and 7)

Similar to Chapter 2, Chapter 5 also focuses on the relationship between innovation and export. In particular this chapter investigates the role of innovation in facilitating export orientation among *newly emerging firms*. It investigates whether new ventures' export orientation can be explained by the ventures' innovativeness in terms of new product/service introductions and use of new technology. In addition, this chapter also investigates whether new ventures with founders who (believe they) possess entrepreneurship-specific skills and experience (which is labeled entrepreneurial human capital) and entrepreneurial networks (entrepreneurial social capital) are likely to be export-oriented. The argument here, among others, is that entrepreneurial human and social capital provide the skills required to recognize promising opportunities and increase efficiency when running the business. Consequently, entrepreneurs possessing entrepreneurial human and/or social capital may have more time left for, and may be more capable of, developing an international orientation with their new firm. In addition this chapter explores whether innovation has a mediating role in the relation between entrepreneurial human capital and entrepreneurial social capital on the one hand and new venture export on the other hand. In the analysis a distinction is made between new ventures with a moderate or medium export orientation (i.e. new ventures with 1-25% customers that live abroad) and new ventures with a high export orientation (i.e. new ventures with more than a quarter of customers that live abroad). Such a distinction is made since it can be expected

that new ventures that are innovative and that have entrepreneurs who possess entrepreneurial human and social capital are more likely to have a high than a moderate orientation on exports. In addition to aiming to provide insight into dynamic linkages between entrepreneurial human capital, social capital, innovation and new venture export, this chapter also aims to contribute to existing literature on international new ventures – that is mainly based on case-studies or single/few country samples - by using a large sample of 9,342 early-stage venture entrepreneurs from 36 different countries. This sample is derived from the Global Entrepreneurship Monitor for the years 2002 and 2003.

In Chapter 6 the relationship between new venture creation and economic growth is investigated. It is argued in this chapter that when investigating this relationship it is relevant to distinguish between new ventures that focus on serving customers abroad (*export-oriented new ventures*) and new ventures that focus exclusively on serving customers in the domestic market (*domestic new ventures*). New ventures make a positive contribution to economic growth through three mechanisms: the supply of diversity, the generation of positive knowledge spillovers, and the intensification of competition. There is indeed empirical evidence that entrepreneurship in terms of new venture creation is an important determinant of economic growth (van Stel, 2006). However, what is often lacking in previous studies is a distinction between different types of entrepreneurship. Specific types of entrepreneurship may be of particular importance for achieving economic growth and this chapter posits that export-driven new ventures, and in particular those with a high or substantial orientation on foreign markets, are especially likely to contribute to the generation of positive spillovers, to increased diversity and to intensified competition, and consequently to economic growth. The reason for this is that exporting firms tend to be "better" firms than non-exporting firms, for example because they are more innovative, more productive and have higher human capital levels. Furthermore, based on previous research it is argued in this chapter that the relationship between (export-oriented/domestic) new ventures and economic growth is likely to differ for different groups of countries according to their level of economic development (van Stel, Carree and Thurik, 2005). Therefore, in the analysis a distinction is made between three groups of countries: higher-income countries, transition countries and lower-income countries. Macro-level data from various secondary data sources are used for 36 countries that participated in the Global Entrepreneurship Monitor in 2002.

In Chapter 7 it is proposed that a country's proportion of export-oriented new ventures represents both an *outcome* of knowledge spillovers stemming from a country's level of FDI and international trade (export spillovers), and a *source* of knowledge spillovers that positively affect a country's rate of entrepreneurship (entrepreneurship spillovers). Research suggests that FDI and international trade offer likely sources of export spillovers (Aitken, Hanson and Harrison, 1997; Banga, 2003; Greenaway, Sousa and Wakelin, 2004; Kneller and Pisu, 2007), that

take place when knowledge about foreign markets or other knowledge that is useful for operating in foreign markets (e.g. technological knowledge) transfers from one economic actor to another or when competition forces actors to become more productive through exporting. Building on the literature on export spillovers, it is posited in this chapter that a country's level of inward FDI, outward FDI, export and import positively relates to the share of new ventures that focus on serving customers abroad. Furthermore, it is also speculated in this chapter that export spillover effects may depend on the country's capacity to absorb such spillovers and, therefore, that higher-income countries may benefit more from such spillovers than lower-income countries. In addition, it is argued in this chapter that export-oriented new ventures within a country may generate spillovers that encourage the set up of (more) new businesses within the country's borders (entrepreneurship spillovers). Export-driven new ventures may be an important source of such knowledge spillovers because these ventures tend to be innovative and to have high human capital levels and as a consequence can serve as role models for aspiring entrepreneurs. Thus, while the focus is on the role of export-driven new ventures in economic growth in Chapter 6, Chapter 7 investigates another potential macro-economic outcome of export-driven new ventures, i.e. whether such ventures act as a catalyst for entrepreneurship (new venture creation) in general. In the empirical part of the chapter macro-level data are used from 34 countries for the period 1995–2005. Data are derived from the Global Entrepreneurship Monitor and other sources such as the World Bank and United Nations Conference on Trade and Development (UNCTAD).

Part III Cross-Country Studies of Entrepreneurship (Chapters 8 and 9)

Chapter 8 focuses on social security as a potential antecedent of entrepreneurship. A number of propositions are developed regarding the relationship between social security arrangements and early-stage entrepreneurial activity. Institutional arrangements for social security in the case of illness or unemployment may in various ways influence decisions of individuals when choosing between wage employment and self-employment. A generous social security system may lead to fewer but also to more self-employed. There may be a negative impact on self-employment in so far as generous social security benefits for employees increase the opportunity costs of entrepreneurship. Social security in general may have a positive effect on entrepreneurial activity by creating a safety net in case of business failure. Only few studies have empirically explored social security as a determinant of entrepreneurship (e.g. Parker and Robson, 2004; Steinberger, 2005; Wennekers, van Stel, Thurik and Reynolds, 2005). These studies report evidence of a negative effect of social security on the level of entrepreneurship, suggesting that social security increases opportunity costs of entrepreneurship. This chapter further explores this relationship. The propositions developed in this chapter relate to how aggregate social security contributions as well as micro-level based replacement rates impact on various measures of early-stage

entrepreneurial activity. Also, a proposition is developed to explore the additional influence on entrepreneurial activity of the relative social security entitlements of self-employed as compared with those of employees. The propositions are empirically tested using data on entrepreneurship from the Global Entrepreneurship Monitor for the year 2002, whereas data on social security premiums are used from the World Competitiveness Yearbook and data on social security benefits are taken from the OECD or based upon information in MISSOC (Mutual Information System on Social Protection from the European Commission).

Chapter 9 investigates the drivers of aspiring entrepreneurship at the country level, with a special focus on start-up motivations and social security arrangements. Hypotheses are developed to explain how various start-up motivations (i.e. the necessity motive, the independence motive and the increase wealth motive) relate to aspiring entrepreneurship in terms of innovativeness, job-growth expectations and export orientation. Furthermore, specific attention is devoted to the role of social security in explaining aspiring entrepreneurship. Whereas literature suggests that a country's welfare state institutions are likely to affect both the rate of entrepreneurship and its allocation across productive and unproductive activities (Henrekson, 2005), empirical efforts that explore such links are limited. This chapter tries to contribute to the empirical literature by examining whether social security arrangements affect a country's rate of aspiring entrepreneurship. The empirical analysis uses country level data for aspiring entrepreneurship and start-up motivations from the Global Entrepreneurship Monitor (GEM) for the year 2005. Data on social security arrangements are taken from the World Competitiveness Yearbook.

Finally, Chapter 10 presents the main conclusions and implications.

The chapters included in this book can be read independently of each other. Chapters 2-9 are based upon published articles, book chapters in edited volumes and/or working papers. Chapter 2 is an adapted version of an article published in *International Journal of Entrepreneurship and Small Business* (Hessels, 2007a). An earlier version of Chapter 3 appeared as a RePEc Research Paper (Hessels and Terjesen, 2007). Chapters 4 (Hessels, 2008b) and 5 (Hessels and Terjesen, 2008) appeared as EIM Research Reports. Chapter 6 is based upon a book chapter (Hessels and van Stel, 2008) as well as on an ERIM Report Series (Hessels and van Stel, 2007). Chapter 7 has been accepted for publication in *Small Business Economics* (De Clercq, Hessels and van Stel, 2008). Chapter 8 has been published in *Comparative Labor Law and Policy Journal* (Hessels, van Stel, Brouwer and Wennekers, 2007). Chapter 9 is based upon a paper that has been accepted for publication in *International Entrepreneurship and Management Journal* (Hessels, van Gelderen and Thurik, 2008a).

The following table summarizes some of the key features of Chapters 2-9.

Table 1.2: Key features of Chapters 2-9

	Single- / Multiple-country	*Level of analysis and final sample*	*Source of international entrepreneur-ship data used*	*Time span*
Part I Cross-Border Entrepreneurship: SME Internationalization				
Chapter 2	Single-country	Micro, 1,846 SME owner/managers from the Netherlands	EIM SME-Survey	2004
Chapter 3	Single-country	Micro, 402/118 SME owner/managers from the Netherlands	EIM SME-Survey	2006
Chapter 4	Multiple-country	Micro, 7,673 SME owner/managers from 18 European countries	ENSR Enterprise Survey	2003
Part II Cross-Border Entrepreneurship: New Venture Internationalization				
Chapter 5	Multiple-country	Micro, 9,342 early-stage venture entrepreneurs from 36 countries	GEM	2002-2003
Chapter 6	Multiple-country	Macro, 36 countries	GEM	2001-2005
Chapter 7	Multiple-country	Macro, 34 countries	GEM	1995-2005
Part III Cross-Country Studies of Entrepreneurship				
Chapter 8	Multiple-country	Macro, 15-38 countries	GEM	2001-2002
Chapter 9	Multiple-country	Macro, 29 countries	GEM	2004-2005

Part I Cross-Border Entrepreneurship: SME Internationalization

2 The Link between Innovation and Export and Import: Evidence from Dutch SMEs

Abstract
This chapter explores the two-way relationship between innovation and the involvement of small and medium-sized enterprises (SMEs) in export and import. While previous firm-level research on the link between innovation and international trade tended to focus on export activity, this chapter also considers import activity. Data of a sample of more than 1,800 SMEs located in the Netherlands are used. It is found that innovative SMEs are more likely to export and import than non-innovative SMEs. Furthermore, the results suggest that there is a positive feedback loop between innovation and international activity, in particular between product/service innovations on the one hand and export and import on the other hand. The results also provide some indications of the existence of a positive feedback loop between business process innovations and import.

This chapter is based upon:

Hessels, J. 2007a. Innovation and International Involvement of Dutch SMEs, *International Journal of Entrepreneurship and Small Business*, 4(3), 234-255.

2.1 Introduction

Because of developments such as globalization and technological advancements small and medium-sized enterprises (SMEs) are increasingly involved in international markets (Reynolds, 1997; Rugman and Wright, 1999; OECD, 2000). Research into the internationalization of SMEs used to be focused primarily on exports (Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996). Exports are a common mode of a firm's international expansion (Young, Hood and Dunlop, 1988; Young, 1987) and are important for expanding firm sales, for achieving business growth and for improving financial performance (Edmunds and Khoury, 1986; Daniels and Bracker, 1989; Zahra, Neubaum and Huse, 1997). Import activities are gaining increased attention in internationalization research (Korhonen, 1999; Korhonen, Luostarinen and Welch, 1996; Liang and Parkhe, 1997; Luostarinen and Welch, 1990). The internationalization of a firm often starts with inward operations, such as imports (Korhonen, Luostarinen and Welch, 1996; Luostarinen and Welch, 1990) and it has been argued that foreign purchasing may stimulate enterprises to start exporting (Korhonen, 1999; Korhonen, Luostarinen and Welch, 1996; Lefebvre and Lefebvre, 2002; Welch and Luostarinen, 1993). This study investigates the relationship between innovation, which involves the renewal of products, services and work processes (Schumpeter, 1934), and SME involvement in export and import activity.

A number of previous studies explored the relationship between innovation and export at the firm-level (Karagozoglu and Lindell, 1998; Roper and Love, 2002; Sterlacchini, 1999; Wakelin, 1998). These studies generally argue in favor of a positive effect of innovation on a firm's probability to export because, for example because innovation contributes positively to a firm's international competitiveness. The empirical evidence tends to support such a positive relationship. However, it can also be argued that export activity increases a firm's probability to innovate. To remain competitive on international markets exporters continually have to improve their products and processes (Lachenmaier and Wößmann, 2006). Through exporting firms also gain access to new knowledge and technologies and may learn to upgrade their products, services and production processes - this is commonly labeled as "learning-by-exporting" in economics literature (Blalock and Gertler, 2004; Branstetter, 2006; Chuang, 1998).

And also, although previous firm-level studies on the relationship between innovation and international trade typically focused on export activity (Roper and Love, 2002), this chapter also considers the relationship between innovation and import activity. It can be argued that innovation may have a positive effect on the propensity of enterprises to import goods or services from abroad. For example, innovative firms may be stimulated to purchase foreign inputs or technologies so that they are able to remain innovative and to realize the desired product and/or process innovations. Furthermore, as a result of "learning-by-importing" effects

foreign purchasing may positively affect a firm's probability to innovate. The idea of learning-by-importing is that firms gain access to foreign knowledge-bases and technologies through importing and consequently may learn to improve their own products, services and processes (Chuang, 1998; OECD, 2006). Importers tend to deliberately use foreign purchasing as a means of enhancing innovative advantage (Hessels, Overweel and Prince, 2005; Liang and Parkhe, 1997; Frear, Metcalf and Alguire, 1992). There is a lack of empirical studies that address the relationship between innovation and import activity.

In this study a firm's innovativeness is assessed by a number of indicators, including measures of the inputs into the innovative process (expenditure on, or investments in, innovation) and measures of innovative output (product/service innovations and business process innovations). While investigating the relationship between innovation and export/import both directions of causality are considered. First, whether innovative SMEs are more likely to export and import than non-innovators is examined. Second, it is also investigated whether export and import activity affects the SME's future (expected) innovative investments. Hypotheses are tested using a data sample of SMEs located in the Netherlands.

The chapter is organized as follows. Section 2.2 provides a discussion of relevant literature and states the hypotheses. Section 2.3 elaborates on the data base used to test the hypotheses. Next, the results of the regression analyses are described in Section 2.4 and finally the conclusions are presented in Section 2.5.

2.2 Literature background

2.2.1 Innovation in SMEs

Innovation involves the renewal of products, services and work processes (Schumpeter, 1934). Innovation may serve various purposes for businesses, for example, firms innovate to meet customer demands, to improve firm competitiveness or to achieve better financial results. In an increasingly global and knowledge-based economy innovation is becoming ever more important as a means of developing and maintaining competitive advantage (Bettis and Hitt, 1995; Audretsch and Thurik, 2000).

A growing body of literature states that small firms are important for generating innovations and for shaping a country's innovativeness (Acs, 1996; Audretsch, 2002; Audretsch and Thurik, 2000; Rothwell, 1988). From the 1970s onwards the importance of small businesses has increased in most European countries and North America, marking the shift from a managed economy to an entrepreneurial economy (Audretsch and Thurik, 2001, 2004). This shift can, among others, be explained by ICT developments decreasing the importance of scale and globalization, and resulting in an increased specialization in knowledge-based

activities in developed countries (Audretsch and Thurik, 2000, 2001). Technological advancements and globalization require entrepreneurial actions by individuals in knowledge-based ventures and innovative advantage, at least in certain industries, has shifted in favor of smaller enterprises (Acs and Audretsch, 2003, 2005). Small firms have a number of innovative advantages compared to larger firms. Smaller firms, for example, tend to be less bureaucratic and the decision to introduce a new product or service is made by fewer people and does not have to deal with so many bureaucratic layers (Scherer, 1991). Consequently, smaller firms are more flexible and can respond more quickly to changes in the market than larger firms (Rothwell, 1988). Furthermore, whereas narrow or detailed advancements may be viewed as too modest for larger firms, such improvements may be of high interest to individual entrepreneurs (Scherer, 1991). For such reasons SMEs are often successful in developing new product-market combinations and in adapting products to the demands of niche markets or individual customers (Bernardt, Borger and Braaksma, 2001).

There are several differences with regard to how innovation takes place in SMEs and larger firms (Hadjimanolis, 2000; Rothwell, 1991; Rothwell and Dodgson, 1994). SMEs have more limited resources for conducting formal R&D than larger firms. Furthermore, innovation is often less formalized in smaller enterprises. In many small firms product innovations are not the result of a structured process or formal strategy (Acs and Audretsch, 1990). These differences have consequences when measuring innovation in SMEs.

The most common indicator for measuring innovation is expenditure on R&D (Cohen and Klepper, 1992), but this indicator is not very useful for measuring innovation in SMEs (Wakelin, 1998). Although expenditure on formal R&D is often low or absent in smaller firms, this does not mean that these firms are not investing in innovative activity (Acs and Audretsch, 2005; Pavitt, Robson and Townsend, 1987). Various studies (Kleinknecht, 1987; Kleinknecht and Verspagen, 1989) demonstrate that there is considerable informal R&D in smaller firms. Furthermore, expenditure on R&D is an *input* measure and does not indicate the actual amount of innovation that is generated (Acs and Audretsch, 2005). This has motivated researchers to develop measures for innovative *output*. Based on such direct measures for innovative output Acs and Audretsch (1990) find, comparing four data bases involving firms from various industrialized countries active in manufacturing industries, that small firms contribute more than twice as much to innovation per employee than larger firms. The current study uses a number of measures for innovative input and output developed specifically for measuring innovation in SMEs (Vermeulen, O'Shaughnessy and de Jong, 2003).

2.2.2 SME export and import activity

International trade transactions involve both exports and imports. Traditionally, studies on the internationalization of SMEs focused mainly on export activities (Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996). A firm's ability to export is considered to be important for a firm's competitiveness and for the generation of income (Roper and Love, 2002). Researchers have been interested mainly in exports, and not so much in imports, since exports contribute to a country's balance of payment position and government policies around the world have developed a variety of measures to facilitate exports (Korhonen, Luostarinen and Welch, 1996; Welch and Luostarinen, 1993). However, import activities are gaining increased attention in internationalization research (Korhonen, 1999; Korhonen, Luostarinen and Welch, 1996; Liang and Parkhe, 1997; Luostarinen and Welch, 1990).

There are several reasons for taking import activities into account when studying the internationalization of firms. First, imports can play an important role in improving a firm's competitiveness as foreign purchasing may contribute to the upgrading of products or services and to improving the production process e.g. through the import of innovative intermediates, new machinery or advanced technology (Ethier, 1982; van de Graaff and Overweel, 2002; Luostarinen and Welch, 1990).

Second, there is evidence that exports are often triggered by fortuitous orders (Bilkey, 1978; Leonidou, 1995; Welch, 1990), that suggests that importing firms are important in driving international trade by choosing foreign exporters and export countries and by specifying the products or services to be exported (Welch and Luostarinen, 1993).

Third, the internationalization of the firm often starts with inward operations, such as imports (Korhonen, Luostarinen and Welch, 1996; Luostarinen and Welch, 1990) and at the firm-level export and import activities are often connected (Fletcher, 2001; Korhonen, 1999; Korhonen, Luostarinen and Welch, 1996; Welch and Luostarinen, 1993). In this respect earlier economic research suggests that importing activities may act as a catalyst for outward international activities such as exporting and producing abroad in the country from which products or services are imported (Vernon, 1966). The logic involved is that the step to start exporting will be smaller for firms that are involved in importing, since foreign purchasing contributes to the development of contact networks in foreign markets and to the generation of foreign market knowledge. Furthermore, foreign suppliers may have knowledge about potential customers and suitable market entry strategies that is relevant for the importing firm. And, to be able to produce products that are competitive when sold on foreign markets firms may need to import specific foreign inputs. However, it is also possible that a firm's export activity opens up possibilities for foreign purchasing or that firms develop import

and export activities at the same time (Luostarinen and Welch, 1990; Welch and Luostarinen, 1993).

2.2.3 Linking innovation and export and import activity

The link between innovation and international trade has gained considerable attention from researchers. A number of previous studies (Baldwin, 1971; Gruber, Mehta and Vernon, 1967; Hughes, 1986; Lowinger, 1975; Stern and Maskus, 1981; Vestal, 1989) focusing on the US, the UK and Japan reported a significant positive influence of R&D efforts on international trade at the macro-level. A firm-level perspective may be particularly useful when exploring the relationship between innovation and international trade since decisions to innovate and to internationalize are typically taken at the level of the individual firm (Roper and Love, 2002; Wakelin, 1998).[3] The innovativeness of enterprises is likely to affect the probability or propensity of enterprises to internationalize, for example because innovation may improve the international competitiveness of an enterprise (Karagozoglu and Lindell, 1998; Roper and Love, 2002; Sterlacchini, 1999; Wakelin, 1998). And also, prospects in international markets are often more promising for innovative enterprises as compared to prospects in domestic markets (Karagozoglu and Lindell, 1998) and expansion into foreign markets helps to achieve higher returns on innovative investments (Caves, 1982). In addition, innovative firms often have to anticipate competitive responses, which may encourage them to make international commitment (Franko, 1989). Therefore, innovation is likely to result in (more) international involvement.

Firm-level studies on the relationship between innovation and international trade do not commonly focus on smaller firms. Furthermore, these studies generally use innovation *input* measures and in particular *expenditure on R&D* as a proxy for innovation (Wakelin, 1998). These studies tend to provide support for a positive relationship between innovative input and exports (Basile, 2001; Braunerhjelm, 1996; Hirsch and Bijaoui, 1985; Kleinknecht and Oostendorp, 2002; Kumar and Siddhartan, 1994).[4] For example, Hirsch and Bijaoui (1985), who use the share of employees active in R&D as a measure for innovative input, found for a sample of 111 Israeli firms that firms with higher shares of employees active in R&D are more likely to be exporters compared to other firms in the same industry. Kumar and Siddhartan (1994) found for a sample of 640 Indian firms that expenditure on R&D positively influences exports in medium and low technology sectors, but they found no evidence for such an impact in high technology industries. A study by Kleinknecht and Oostendorp (2002) showed for a sample of 1773 firms having

[3] Note that according to the innovation-related models (or the so called I-models) of internationalization a firm's process of internationalization itself constitutes an innovation or a series of innovations for the firm (Andersen, 1993; Bilkey and Tesar, 1977; Cavusgil, 1980).

[4] One exception is a study by Willmore (1992) that found no indications for a significant effect of R&D expenditure on exports using a sample of Brazilian manufacturing firms.

five or more employees and operating in the Netherlands that a firm's R&D intensity positively relates to a firm's probability to export. As argued above, innovation input measures with a focus on R&D are not very useful for measuring innovation in smaller firms. Therefore, this chapter uses innovation input measures that are broader than expenditure on R&D.

A more limited number of studies focus on *output* measures or realization of innovations, typically considering the *realization of R&D-activities*. For example, Lefebvre and Lefebvre (2002) focusing on a sample of Canadian manufacturing SMEs (defined as firms with up to 500 employees) found that the presence of R&D-activities is an important determinant of the probability to export. However, innovation output measures, other than the presence of R&D-activities, such as the introduction of product/service innovations, may be more appropriate when measuring innovation in smaller firms (Acs and Audretsch, 1990) and for explaining the export probability of smaller firms. Product/service innovations may, for example, increase the probability of exporting because new or modified products/services tend to have wider markets than non-innovative products/services and may give enterprises a (temporary) competitive advantage in foreign markets (Autio, Sapienza and Almeida, 2000; van Dijken and Prince, 1990). There is, indeed, empirical evidence that the introduction of new products increases the probability of exporting (Becker and Egger, 2007; Bernard and Jensen, 1999; Roper and Love, 2002).

To account for the potential heterogeneity in innovative output it is important to distinguish product/service innovations from process innovations (Cohen and Levin, 1989). Both product/service and process innovations may be important for building a competitive advantage in foreign markets (Franko, 1989; Hitt, Hoskisson and Kim, 1997; Porter, 1990) and researchers have argued that it is relevant to incorporate process innovations in addition to product/service innovations when studying the relationship between innovation and internationalization (Becker and Egger, 2007; Kleinknecht and Oostendorp, 2002). Improved or renewed business processes may make it possible for firms to adapt or renew products, to increase the speed of the production process, to improve productivity and to reduce production costs (van Dijken and Prince, 1997) and may motivate enterprises to review or revise their strategic direction and market focus (Bell, Crick and Young, 2004). Consequently, process innovations are likely to increase a firm's output both in domestic and foreign markets and may stimulate enterprises to undertake or increase exports (Becker and Egger, 2007). A distinction between product and process innovations tends to be absent in firm-level studies on the relation between export and innovation. Recently empirical studies have started to take into account process innovations. Such studies have provided mixed results. For example, Becker and Egger (2007) find, in their analysis of a sample of German firms, support for a positive relationship between process innovations and a firm's probability to export.

However, Cassiman and Martínez-Ros (2007) find that, for a sample of Spanish manufacturing firms, process innovations have no impact on the decision to start exporting.

Firm-level studies on the relationship between international trade and innovation typically focus on exports and do not consider the role of imports, mainly because of a lack of firm-level data on imports (Roper and Love, 2002). Innovation can be expected to have a positive effect on the propensity of enterprises to import goods or services from abroad. To remain innovative, to anticipate competitive responses and to realize the desired product and/or process innovations innovative enterprises may need to purchase foreign inputs, such as advanced foreign technologies or innovative intermediates (Ethier, 1982; van de Graaff and Overweel, 2002). One previous firm-level study that did take into account imports using a sample of Brazilian manufacturing firms found a small negative effect of R&D expenditure on imports suggesting that innovative effort reduces reliance on foreign purchasing (Willmore, 1992). However, in today's globalizing economy where supplier markets are increasingly world-wide it seems likely that import will become increasingly important as a strategy for innovating firms to generate innovative advantage through accessing advanced knowledge, inputs and technologies (Liang and Parkhe, 1997). In sum, a positive relationship between innovation (innovative input as well as innovative output) and the probability for a SME to export and import is expected and the following hypotheses are formulated:

Hypothesis 1A: Innovative investments relate positively to the probability for a SME to export.

Hypothesis 1B: Innovative investments relate positively to the probability for a SME to import.

Hypothesis 2A: Product/service innovations relate positively to the probability for a SME to export.

Hypothesis 2B: Product/service innovations relate positively to the probability for a SME to import.

Hypothesis 3A: Process innovations relate positively to the probability for a SME to export.

Hypothesis 3B: Process innovations relate positively to the probability for a SME to import.

Note that hypotheses 1A and 1B relate to innovative input, while hypotheses 2A, 2B, 3A and 3B relate to innovative output.

It can also be argued that export activity increases a firm's probability to innovate. First, in order to remain competitive and to survive on international markets, exporters continually have to improve their products and processes (Blalock and Gertler, 2004; Lachenmaier and Wößmann, 2006). Second, through exporting firms gain access to new knowledge and technologies and may learn to upgrade their products or production processes, which is referred to as "learning-by-exporting" in economic literature (Blalock and Gertler, 2004; Branstetter, 2006; Chuang, 1998). An example of a mechanism that facilitates learning-by-exporting is contact with experts that are sent by foreign buyers to review the exporting firm's production process and to suggest improvements for reducing costs or for expanding production capacity (Blalock and Gertler, 2004).

Furthermore, imports could also induce innovative activity. An enhanced competitive position is an important motive for firms to undertake imports, e.g. by deliberately trying to access knowledge and technologies in foreign markets (Hessels, Overweel and Prince, 2005; Liang and Parkhe, 1997; Frear, Metcalf and Alguire, 1992). Furthermore, "learning-by-importing" effects can also result from exposure to foreign goods, services and practices (Chuang, 1998; OECD, 2006). Through importing firms become familiar with knowledge and technologies abroad and this may stimulate firms to improve their products, services and processes or to introduce new products and services e.g. by means of imitation.

The basic idea of both learning-by-exporting and learning-by-importing is that when firms operate in foreign markets they are exposed to a wider range of organizations, to new ideas and practices, and to different consumer needs (Barkema and Vermeulen, 1998; Hitt, Hoskisson and Kim, 1997), and this is likely to foster innovations (Abrahamson and Fombrun, 1994).

Firm-level studies tended to focus on the reversed impact of export on innovation and did not include imports in the analysis. Previous research provides empirical support for a reversed positive influence of export on innovation. Hughes (1986) and Zhao and Li (1997) for example found evidence of a mutual or reciprocal relationship between R&D and exports. Dahlman and Westphal (1982) demonstrated, focusing on firms from Korea, that export activity enables firms to gain improvements in product quality. Kleinknecht and Oostendorp (2002) found that export intensity has a positive impact on the probability of firms to engage in R&D and on a firm's R&D intensity. Based on the above it is anticipated that a positive relationship exists between export/import activity and a SME's probability to invest in both product and process innovations and the following hypotheses are proposed:

Hypothesis 4A: SME export activity relates positively to the probability of future (expected) investments in product/service innovations.

Hypothesis 4B: SME import activity relates positively to the probability of future (expected) investments in product/service innovations.

Hypothesis 5A: SME export activity relates positively to the probability of future (expected) investments in process innovations.

Hypothesis 5B: SME import activity relates positively to the probability of future (expected) investments in process innovations.

2.3 Data

2.3.1 Sample

The hypotheses are tested using binomial and multinomial logistic regression analysis. The analysis is based on a random sample of 1,846 SMEs (firms with up to 100 employees) located in the Netherlands. Information was collected from the SME business owners through a telephone survey held by EIM Business and Policy Research in the Netherlands in July 2004. This survey provided information on innovativeness and on export and import involvement by Dutch SMEs.

2.3.2 Dependent and independent variables

Export and import activity

The analysis uses one indicator for export activity and one indicator for import activity. These indicators were identified by asking the owner/manager whether his/her business was currently (i.e. at the moment of the survey) undertaking exporting/importing activities. Enterprises are categorized as follows:

- Export (2004); This variable has the value 1 for enterprises that are involved in exporting activities, and the value 0 for all other enterprises.

- Import (2004); This variable has the value 1 for enterprises that are involved in importing activities, and 0 for all other enterprises.

Innovation

Innovation is measured by several dichotomous (0/1) variables developed specifically for measuring innovation in SMEs. In accordance with previous research a distinction is made between innovation measures that reflect innovative input (innovation expenditure) and measures that reflect innovative output (Lachenmaier and Wößmann, 2006).

The following measure on innovative input that refers to a firm's past investments in innovation is included:

- Past expenditure on innovation (2003). If the firm spent money on innovation in 2003 this variable is coded 1 and if this was not the case it is coded 0.

Two measures for innovative output are used to indicate the realization of innovations within the firm:

- Recent product/service innovations (past 3 years). This variable reflects product/service introductions or renewals of products/services that a firm offered to the market in the past three years. The variable is coded 1 when the firm introduced at least one product new to the market 'during the last 3 years'; otherwise it is coded 0.

- Recent business process innovations (past 3 years). This variable is a proxy for renewals or improvements of a firm's working methods. The variable is coded 1 when the firm introduced changes or innovations in internal business processes 'during the last three years', and coded 0 otherwise.

The following measures refer to a firm's plans for future investments in innovation (these are also innovative input measures):

- Future (expected) investments in product/service innovations (next 12 months). When business owners indicate that the firm will probably invest in new products/services or improve existing products/services in the next 12 months this variable is coded 1, when the business owners indicate that they will certainly make such investments this variable is coded 2 and when the business owners indicate not having any plans to make such investments it is coded 0.

- Future (expected) investments in business process innovations (next 12 months). When business owners indicate that the firm will probably invest in business process renewals in the next 12 months this variable is coded 1, when the business owners indicate that they will certainly make such investments this variable is coded 2 and when the business owners indicate not having any such plans it is coded 0.

Some descriptive statistics for the dependent/independent variables used in this chapter are presented in Table 2.1.

Table 2.1: Number of observations, mean and standard deviation for key variables

	Number of observations	Mean	Standard deviation
Export and import activity			
Export (2004) (0=no, 1=yes)	1,824	0.21	0.41
Import (2004) (0=no, 1=yes)	1,822	0.26	0.44
Innovation			
Past expenditure on innovation (2003) (0=no, 1=yes)	1,843	0.58	0.49
Recent product /service innovations (past 3 years) (0=no, 1=yes)	1,844	0.39	0.49
Recent business process innovations (past 3 years) (0=no, 1=yes)	1,843	0.68	0.46
Future (expected) investments in product/service innovations (next 12 months) (0=no, 1=probably, 2=certainly)	1,775	0.74	0.88
Future (expected) investments in business process innovations (next 12 months) (0=no, 1=probably, 2=certainly)	1,813	1.02	0.93

2.3.3 Control variables

The following control variables are included in the analysis:

- Sector of industry: The firms are assigned to one of the following eight industries: (1) manufacturing, (2) construction, (3) trade, (4) lodgings, (5) transport, (6) financial services (7) business services, and (8) other services. Sector dummies are created and 'other services' is used as the reference category in the regression analysis.

- Firm size (log): Firm size reflects size of the firm in number of employees.

- Firm age (log): Age of the firm is measured in number of years.

2.4 Empirical analysis

2.4.1 Innovation and the probability of SME export and import activity

Given the dichotomous nature of both export and import decisions, binomial logistic regression analysis is used to relate the likelihood of exporting/importing to innovation and control variables. A number of equations have been developed to estimate the logg odds ratios (the natural log of the odds of the dependent occuring or not). Equation 1a and 1b estimate the log odds ratio for the likelihood of exporting and importing using innovative input as the independent variable. These equations are used to test Hypotheses 1A and 1B. Since these equations are intended to estimate the impact of innovation on export/import (and not vice versa), it is important to note that the independent variable refers to a period prior to the dependent variable. In particular, the independent variable (past expenditure on innovation) refers to the year 2003, whereas the dependent variables (export and import) refer to the year 2004.

Log (probability of exporting/probability of not exporting) = β_0 + $\beta_1 Investinnov + \sum_{i=2}^{I} \beta_{2i} Industry_i + \beta_3 Firmsize + \beta_4 Firmage + \varepsilon$. (1a)

Log (probability of importing/probability of not importing) = β_0 + $\beta_1 Investinnov + \sum_{i=2}^{I} \beta_{2i} Industry_i + \beta_3 Firmsize + \beta_4 Firmage + \varepsilon$. (1b)

where:

Investinnov = past expenditure on innovation

Industry = set of industry dummies for manufacturing, construction, trade, lodgings, transport, financial services and business services (other services is reference category)

Firmsize = size of the firm in number of employees

Firmage = age of the firm in number of years

ε = disturbance term

Equations 2a and 2b are formulated to test Hypothesis 2A, 2B, 3A and 3B. These equations estimate the log odds ratio for the likelihood of exporting and importing using innovative output measures (recent product/service innovations and recent business process innovations) as the independent variables. The independent

variables refer to a firm's product/service innovations and business process innovations in the past three years (at the moment of the survey).

$$\text{Log (probability of exporting/probability of not exporting)} = \beta_0 + \beta_1 Prodinnov + \beta_2 Procinnov + \sum_{i=2}^{I} \beta_{3i} Industry_i + \beta_4 Firmsize + \beta_5 Firmage + \varepsilon . \quad (2a)$$

$$\text{Log (probability of importing/probability of not importing)} = \beta_0 + \beta_1 Prodinnov + \beta_2 Procinnov + \sum_{i=2}^{I} \beta_{3i} Industry_i + \beta_4 Firmsize + \beta_5 Firmage + \varepsilon . \quad (2b)$$

where:

Prodinnov = Recent product/service innovations

Procinnov = Recent business process innovations

The binomial logistic regression results, with the probability of exporting/importing as the dependent variables and with the innovative input measure as the independent variable, are presented in Table 2.2 and with innovative output measures as the independent variables in Table 2.3. For each of the models the model fit is significant at $p<0.01$. The tables present both the log odds ratios and the odds ratios. The odds ratios should be interpreted as follows: when a coefficient is above unity (corresponding to a log odds ratio above zero) this implies that the corresponding variable increases the odds of belonging to the category in question relative to the reference category, i.e. "not exporting"/"not importing". A coefficient below unity implies that the variable decreases the odds of belonging to the category in question relative to "not exporting"/ "not importing".

2.4.1.1 Innovative input and the probability of SME export and import activity

Table 2.2 shows the binomial logistic regression results for the regressions with the innovative input measure (past expenditure on innovation) as the independent variable and export and import as the dependent variables. The variance inflation factors (VIFs) are used to test for multi-collinearity. No VIF above 10 is observed for either the analysis with export as the dependent variable (the highest VIF is 4.9) or import as the dependent variable (the highest VIF is 4.8), indicating that multi-collinearity is not a concern. It follows from the table that the odds ratios for past expenditure on innovations are greater than one, indicating positive associations with both the probability to export ($p<0.01$) and the probability to import ($p<0.01$), providing support for both Hypothesis 1A and 1B.

Table 2.2: Innovative investments and the probability of SME export and import activity (binomial logistic regression estimates)

	EXPORT (2004)		IMPORT (2004)	
	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio
Innovative input				
Past expenditure on innovation (2003)	0.841***	2.318	0.699***	2.011
Controls				
Industry: manufacturing[1]	2.181***	8.859	1.452***	4.271
Industry: construction	0.200	1.222	0.222	1.249
Industry: trade	1.136***	3.114	1.432***	4.186
Industry: lodgings	-1.072**	0.342	-0.582*	0.559
Industry: transport	1.268***	3.553	-0.069	0.933
Industry: financial services	0.352	1.421	-0.611*	0.543
Industry: business services	0.851***	2.343	-0.263	0.769
Firm size (log)	0.217***	1.242	0.213***	1.237
Firm age (log)	-0.085	0.918	-0.048	0.953
Constant	-2.962***	0.052	-2.178***	0.113
Pseudo-R^2	0.199		0.204	
Observations	1,809		1,807	

*** Indicates p<0.01; **: p<0.05; *: p<0.10.

[1] Industry category "other services" used as reference category.

2.4.1.2 Innovative output and the probability of SME export and import activity

Table 2.3 demonstrates the binomial logistic regression results with the innovative output measures (recent product/service innovations and recent business process innovations) as the explanatory variables and export and import as the dependent variables. Again, multi-collinearity tests using VIFs indicate that multi-collinearity is not a concern since no VIF above 10 is observed for either the analysis with export as the dependent variable (the highest VIF is 4.8) or import as the dependent variable (the highest VIF is 4.8). Table 2.3 indicates that product innovations (p<0.01) and business process innovations (p<0.10) are significantly positively related to SME export activity. Furthermore, both product innovations (p<0.01) and process innovations (p<0.01) also display a significant positive association with SME import activity. These results support Hypotheses 2A, 2B, 3A and 3B.[5]

[5] To allow for a possible interaction between product/service innovations and process innovations these models were also tested with the inclusion of a multiplicative term for product/service

Table 2.3: Innovative realizations and the probability of SME export and import activity (binomial logistic regression estimates)

	EXPORT (2004)		IMPORT (2004)	
	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio
Innovative output				
Recent product /service innovations (past 3 years)	1.187***	3.277	0.733***	2.081
Recent business process innovations (past 3 years)	0.272*	1.313	0.417***	1.518
Controls				
Industry: manufacturing[1]	2.024***	7.566	1.315***	3.725
Industry: construction	0.214	1.238	0.208	1.232
Industry: trade	0.983***	2.672	1.324***	3.760
Industry: lodgings	-1.210**	0.298	-0.670**	0.512
Industry: transport	1.228***	3.415	-0.138	0.871
Industry: financial services	0.156	1.168	-0.764**	0.466
Industry: business services	0.681**	1.975	-0.384	0.681
Firm size (log)	0.196***	1.217	0.192***	1.212
Firm age (log)	-0.091	0.913	-0.044	0.957
Constant	-3.002***	0.050	-2.239***	0.107
Pseudo-R^2	0.243		0.219	
Observations	1,808		1,806	

*** Indicates p<0.01; **: p<0.05; *: p<0.10.

[1] Industry category "other services" used as reference category.

2.4.2 SME export and import activity and the probability of innovative investments

In this section the other direction of causality is investigated i.e. the impact of SME export and import activity on future (expected) innovative investments. A number of indicators for innovative investments that refer to future (expected) plans to innovate are used. Multinomial logistic regression analysis is used given that the number of categories of the dependent variables is three instead of two.[6] The log odds ratios for the likelihood of innovative investments in new products/services and for the likelihood of innovative investments in business process innovations (estimated by separate multinomial logistic regressions) are

innovations and process innovations. The results provide no indications for an interaction effect of product/service innovations and process innovations on export and import.

[6] A key assumption of multinomial logistic regression is the Independence of Irrelevant Alternatives (IIA). Tests indicate that the assumption of IIA is not violated in the models presented in this chapter.

estimated using equations 3a and 3b. To explain future innovative investments it is desirable to control for a firm's innovativeness as innovation tends to be path dependent, in the sense that the past pattern of innovation is considered to be central for determining future innovation (Arthur, 1994; David, 1975; Dosi, 1988; Redding, 2002; Rosenberg, 1994).[7] Equation 3a uses a measure for innovative input (past expenditure on innovation) as control for a firm's past innovation, whereas equation 3b uses measures for innovative output (recent product/service innovations and recent business process innovations) as controls.

$$\text{Log } (\pi_j/\ \pi_1) = \beta_0 + \beta_1 Export + \beta_2 Import + \beta_3 Investinnov + \sum_{i=2}^{I} \beta_{4i} Industry_i + \beta_5 Firmsize + \beta_6 Firmage + \varepsilon . \quad (3a)$$

$$\text{Log } (\pi_j/\ \pi_1) = \beta_0 + \beta_1 Export + \beta_2 Import + \beta_3 Prodinnov + \beta_4 Procinnov + \sum_{i=2}^{I} \beta_{5i} Industry_i + \beta_6 Firmsize + \beta_7 Firmage + \varepsilon . \quad (3b)$$

where:

π_1 =	probability of not investing in product/service innovations (business process innovations) in the next 12 months
π_2 =	probability of probably investing in product/service innovations (business process innovations) in the next 12 months
π_3 =	probability of certainly investing in product/service innovations (business process innovations) in the next 12 months
Export =	involved in exports in 2004
Import =	involved in imports in 2004

Tests using VIFs indicate for all the analyses that multi-collinearity is not a problem. No VIF higher than 10 is observed (the highest VIF observed with new product investment as the dependent variable is 5.0 and with investments in business process innovations as the dependent variable the highest VIF is 4.9). For all models the model fits are significant at $p<0.01$.

2.4.2.1 SME export and import activity and the probability of investing in product/service innovations

Table 2.4 shows the result for the explanatory variables 'export' and 'import' on 'future (expected) investments in new product/service innovations'. 'No plans to invest in new products or services' is used as the reference category. Model 1 of Table 2.4 diplays the result for when the innovative input measure (past expenditure on innovation) is used to control for a firm's past pattern of

[7] It was not possible to control for path dependency in the analysis in section 2.4.1 as the data used does not contain information on past export and import behavior.

innovation and model 2 presents the result with the innovative output measures (recent product/service innovations and recent business process renewals) as controls. Table 2.4 indicates that when using past expenditure on innovation as a control both export ($p<0.01$) and import ($p<0.05$) significantly increase the odds for a SME to certainly invest in new products or services in the next twelve months (relative to no plans to invest), whereas no significant impact is found on the odds for a SME to probably undertake new product/service investments (relative to no plans to invest). When the indicators for innovative output are used as controls (model 2) the results again indicate that export ($p<0.05$) and import ($p<0.05$) significantly increase the probability of certainly investing in new product/service renewals (relative to no plans to invest).[8] Again no significant association is found between export/import and the likelihood of probably investing in product/service innovations. Overall these results provide support for Hypothesis 4A and 4B.

[8] It could be argued that the hypothesized positive relationship between export and future (expected) innovative investments is expected to be stronger when the firm is also importing and that the positive relationship between import and future innovative investments is stronger when the firm is also exporting. Furthermore, it could also be argued that the positive relationship between export/import and future (expected) innovative investments is stronger when the firm has made past investments in innovation or past innovative efforts, which is likely to increase a firm's absorptive capacity (Cohen and Levinthal, 1990). Therefore the models were also tested with the inclusion of an interaction term for export and import and with the inclusion of interaction terms for export/import and recent innovative investments/realizations. Since no evidence is found of a combined effect for export and import activities or of a combined effect for export/import and recent innovative investments/realizations on future (expected) innovative investments it was decided not to report these results. The same applies to the models with future (expected) investments in business process renewals as the dependent variable.

Table 2.4: SME export and import activity and the probability of investing in product/service innovations (multinomial logistic regression estimates)

	Model 1				Model 2			
	DV: FUTURE (EXPECTED) INVESTMENTS IN PRODUCT/SERVICE INNOVATIONS (next 12 months)				DV: FUTURE (EXPECTED) INVESTMENTS IN PRODUCT/SERVICE INNOVATIONS (next 12 months)			
	Will certainly invest in new products/services (no plans to invest = reference category)		Will probably invest in new products/services (no plans to invest = reference category)		Will certainly invest in new products/services (no plans to invest = reference category)		Will probably invest in new products/services (no plans to invest = reference category)	
	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio
Export (2004)	0.555***	1.741	0.245	1.278	0.350**	1.419	0.096	1.101
Import (2004)	0.355**	1.426	0.196	1.217	0.332**	1.394	0.172	1.187
Controls								
Past expenditure on innovation (2003)	1.389***	4.010	0.738***	2.092				
Recent product/service innovations (past 3 years)					1.485***	4.416	0.988***	2.685
Recent business process innovations (past 3 years)					0.594***	1.182	0.559***	1.749
Industry: manufacturing[1]	-0.317	0.729	0.173	1.189	-0.531*	0.588	0.035	1.035
Industry: construction	-0.682**	0.506	-0.084	0.919	-0.753***	0.471	-0.099	0.905
Industry: trade	-0.522**	0.593	-0.379	0.684	-0.747***	0.474	-0.504*	0.604
Industry: lodgings	-0.578***	0.561	-0.797	0.451	-0.775***	0.461	-0.851**	0.427
Industry: transport	-0.923	0.397	-0.279**	0.757	-1.038***	0.354	-0.343	0.709
Industry: financial services	-0.362	0.696	-0.062	0.940	-0.613**	0.542	-0.222	0.801
Industry: business services	0.116	1.123	-0.142	0.868	-0.106	0.899	-0.254	0.776
Firm size	0.208***	1.232	0.099*	1.104	0.192***	1.211	0.060	1.062
Firm age	-0.130**	0.878	-0.110	0.895	-0.135**	0.874	-0.118	0.889
Constant	-1.478***		-1.444***		-1.352***		-1.539***	
Pseudo-R^2	0.175				0.215			
Observations	1,738				1,737			

*** Indicates p<0.01; **: p<0.05; *: p<0.10.

[1] Industry category "other services" used as reference category.

2.4.2.2 SME export and import activity and the probability of investing in business process innovations

Next, it is investigated whether export and import increase the probability of investments in business process innovations. The results are displayed in Table 2.5. Again, in model 3 past expenditure on innovation is used as a proxy to control for past innovation, while model 4 uses the two innovative output measures. Model 3 provides indications that import significantly increases the probability of a SME to certainly invest in business process renewals, but no such indications are found in model 4. In both models no significant relationship is found between export and future (expected) investments in business process renewals. Thus, Hypothesis 5A is not supported, but the results do provide some support for Hypothesis 5B.

Table 2.5: SME export and import activity and the probability of investing in business process innovations (multinomial logistic regression estimates)

	Model 3				Model 4			
	DV: FUTURE (EXPECTED) INVESTMENTS IN BUSINESS PROCESS INNOVATIONS (next 12 months)				DV: FUTURE (EXPECTED) INVESTMENTS IN BUSINESS PROCESS INNOVATIONS (next 12 months)			
	Will certainly invest in business process renewals (no plans to invest = reference category)		Will probably invest in business process renewals (no plans to invest = reference category)		Will certainly invest in business process renewals (no plans to invest = reference category)		Will probably invest in business process renewals (no plans to invest = reference category)	
	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio
Export (2004)	0.162	1.176	0.177	1.194	0.085	1.089	0.190	1.209
Import (2004)	0.316**	1.372	-0.243	0.784	0.252	1.286	-0.328	0.721
Controls								
Past expenditure on innovation (2003)	1.240***	3.455	0.419***	1.520				
Recent product /service innovations (past 3 years)					0.678***	1.9703	0.053	1.055
Recent business process innovations (past 3 years)					1.623***	5.069	1.230***	3.422
Industry: manufacturing[1]	0.270	1.310	0.769	2.157	0.181	1.199	0.730	2.075
Industry: construction	-0.158	0.854	0.174	1.189	-0.209	0.812	0.175	1.191
Industry: trade	0.040	1.041	0.505	1.656	-0.057	0.945	0.503	1.654
Industry: lodgings	-0.055	0.947	0.027	1.028	-0.162	0.851	0.039	1.040
Industry: transport	0.131	1.140	0.314	1.369	0.002	1.002	0.215	1.240
Industry: financial services	0.586**	1.796	0.519	1.680	0.428	1.534	0.450	1.568
Industry: business services	0.290	1.337	-0.068	0.935	0.191	1.211	-0.066	0.936
Firm size	0.581***	1.788	0.214	1.239	0.514***	1.673	0.138	1.148
Firm age	-0.148**	0.862	-0.102	0.903	-0.173***	0.841	-0.121	0.886
Constant	-1.629***		-1.647***		-1.977***		-2.035***	
Pseudo-R^2	0.269				0.321			
Observations	1,776				1,775			

*** Indicates p<0.01; **: p<0.05; *: p<0.10. [1] Industry category "other services" used as reference category.

2.5 Discussion and Conclusion

This chapter investigates the two-way relationship between innovation and involvement in export and import activity by SMEs. While existing literature on the internationalization of SMEs is focused strongly on export behavior, this chapter also incorporates imports. Studies on the firm-level relationship between innovation and international trade (both studies on the impact of innovation on international trade and studies on the impact of international trade on innovation) commonly do not focus on smaller firms and have thus far concentrated mainly on the relationship between innovation and export activity and have rarely included imports. Furthermore, most previous studies considered only the impact of innovation on international trade. The current study looks at both directions of causality.

The results reveal that when a SME invested money in innovation in 2003 this relates positively to the probability that this firm will export and/or import in 2004. Looking more specifically at innovative realizations, the results suggest that a SME that has recently realized product/service innovations is more likely to be an exporter than a SME that has not introduced such innovations. The finding that product innovations are positively related to export behavior is in accordance with findings from previous studies (Bernard and Jensen, 1999; Roper and Love, 2002). It is also found that SME exporters are more likely to plan to make future investments in new products or services than non-exporters. This finding supports the idea that there is a need for exporters to continually improve their products/services and that firms may (seek to) learn how to improve their products and/or services through exporting. Overall, these results support the existence of a positive feedback loop between product/service innovations and export.

Most previous studies on the firm-level relationship between innovation and international trade did not consider process innovations. This study adds to recent empirical studies that have started to take into account process innovations (Becker and Egger, 2007; Cassiman and Martínez-Ros, 2007). In line with initial expectations and with the results from Becker and Egger (2007) this study finds that the presence of process innovations increases the likelihood for a SME to export.

This study is among the first to consider the relationship between innovation and import at the firm-level and, based on the analysis, it may be concluded that it is relevant to include imports when studying the relationship between innovation and international trade. According to the results of this study, recent product/service innovations and recent innovations in business processes increase the probability of a SME to import. The results confirm the expectation that foreign purchasing is commonly used by innovative firms to remain innovative for example or to further enhance innovativeness. Furthermore, it is found that

import activity has a positive impact on future plans to invest in new products or services. This supports the idea that through importing firms gain access to new ideas, knowledge and technologies which help to improve existing products or services or to introduce new products or services. There are also some indications that current import activity relates positively to future plans to invest in business process renewals, whereas no such impact is found for current export activity. Research has indicated that cost minimization tends to be an essential ingredient of foreign purchasing strategies (Liang and Parkhe, 1997). This may imply that importing firms are receptive to learning about means of reducing costs, such as business process innovations, through their exposure to foreign markets. Overall, this study's findings on the two-way relationship between innovation and import provide clear support for the existence of a positive feedback loop between product/service innovations and import and also some support for the existence of a positive feedback loop between business process innovations and import.

The findings of this study lead to a number of policy implications. The results indicate a clear link between innovation and imports, which may encourage national policy makers to incorporate import activity in their internationalization policies, that tend to concentrate on stimulating domestic firms' export activities (Korhonen, Luostarinen and Welch, 1996; Welch and Luostarinen, 1993). Furthermore, the clear link between innovation and export/import may provide a rationale for national policy makers to (more closely) integrate innovation and internationalization policies. Policy measures to stimulate product/service innovations among SMEs, for example, could incorporate a module to help firms to develop an international business plan for their new products/services, while SME export support measures could pay specific attention to firms with innovative products/services. In addition, policy makers could enhance awareness among SMEs of the possibilities for organizational learning through exporting and importing.

More research is needed to assess the complex relationship between internationalization and innovation at the firm-level and this study suggests various avenues for future research. Despite the cross-sectional nature of the database used in this study, it does allow the provision of insight into the two-way relationship between innovation and international trade, since it contains information on past, current and future (expected) firm behavior. Nevertheless, in future research the use of longitudinal data and the associated panel data techniques could help to provide more detailed insight into the relationships and directions of causality between innovation on the one hand and export and import on the other hand (see for instance Lachenmaier and Wößmann, 2006). Because of the cross-sectional nature of the database used in this chapter it is not possible to assess whether firms planning to invest in innovations will actually do so. Collecting longitudinal data could help in assessing actual firm behavior. In addition, the nature or characteristics and, in particular, the skill content of

internationally traded goods and services affect the degree to which export and import augment learning and innovation (An and Iyigun, 2004; Chuang, 1998), and future research could seek to take into account the skill content of both export and import. The data used in this chapter do not allow for a distinction between imports of finished goods and imports of intermediate inputs (Biscourp and Kramarz, 2007), although such a distinction could be relevant when considering the link between innovation and import. A recent study has indicated that innovation positively affects the probability of exporting permanently as opposed to exporting sporadically (Alvarez, 2004), suggesting that it could be appropriate to distinguish between sporadic international traders and permanent international traders in any future studies that investigate the link between innovation and international trade. Furthermore, the analysis presented above includes only international trading activities (import and export) and future research could take into account other modes of internationalization such as foreign direct investments and international co-operation. Finally, this study focuses exclusively on SMEs located in the Netherlands. The results could also be tested for SMEs located in other countries.

3 SME Choice of Direct and Indirect Export Modes: Resource Dependency and Institutional Theory Perspectives

Abstract
This chapter develops and tests resource dependency and institutional theory arguments to explain two choices facing owner/managers of small and medium-sized entreprises (SMEs): (1) the decision whether to export or not and (2) if the firm exports, the choice between a direct (to customers abroad) and an indirect (using another firm as intermediary) export mode. Binominal logistic regressions on our sample of 871 Dutch SMEs suggest that institutional theory perspectives (SME owner/managers' perception of the increased international presence of their domestic competitors, customers and suppliers and perception of increased use of foreign suppliers) explain the decision to export, while resource dependency theory arguments (SME owner/managers' perception of the favorability of access to knowledge and technology, of production costs and of access to capital in the home market) guide the choice between direct and indirect export modes.

This chapter is based upon:

Hessels, J. and Terjesen, S. 2007. SME Choice of Direct and Indirect Export Modes: Resource Dependency and Institutional Theory Perspectives, RePEc (Research Papers in Economics), Research Report H200712, EIM, Zoetermeer.

3.1 Introduction

In comparison to large multinational enterprises (MNEs), small and medium-sized enterprises (SMEs) are typically regarded as resource-constrained, lacking market power, knowledge and resources to operate viably in international markets (Coviello and McAuley, 1999; Fujita, 1995; Hollenstein, 2005; Knight, 2000). Despite liabilities of small size and foreignness, an increasing number of SMEs pursue international markets to sell their goods and services (OECD, 2000; Reynolds, 1997; Rugman and Wright, 1999). New and small firms' transaction costs of doing business abroad (e.g. costs associated with delivering goods or services to international customers) are particularly cumbersome (Zacharakis, 1998), however these costs have been reduced due to technological advances in telecommunication, transportation and information technology (OECD, 2000; Reynolds, 1997). Although there is a growing body of research on new and small firms' internationalization (Coviello and McAuley, 1999; Rialp, Rialp and Knight, 2005), extant research is largely confined to direct (e.g. exporting) means of internationalization (e.g. Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996).

An emerging strand of research explores how new and small firms pursue an indirect path to internationalization (e.g. Acs, Morck, Shaver and Yeung, 1997; Acs and Terjesen, 2006; Peng and York, 2001; Terjesen, O'Gorman and Acs, 2008) using local and foreign intermediaries to sell their goods and services across national borders. New and small ventures use intermediaries to overcome knowledge gaps, find customers and reduce the uncertainties and other risks associated with operating in foreign markets (Terjesen, O'Gorman and Acs, 2008). Most intermediated internationalization studies are based on cases in a variety of country environments. Examples of indirect forms employed include local and foreign export intermediaries (Bello and Lohtia, 1995; Peng, 2005) and subsidiaries of multinational firms (Acs, Morck, Shaver and Yeung, 1997; Terjesen, O'Gorman and Acs, 2008). An example of local firm intermediation is Dublin-based Cylon, a building control systems manufacturer that supplies products to a local subsidiary of ABB which then sells the product around the world. A case of a foreign firm intermediary role is Delhi-based software firm Softcell which sells to the European headquarters of a Fortune 100 energy company which then distributes the product globally across the firm (Terjesen, O'Gorman and Acs, 2008). In some countries, such as Japan and Korea, export intermediaries handle about half of total exports (Peng and Illinitch, 1998).

Extant research on new and small firm export activity explores the role of owner- and firm-specific factors such as learning (De Clercq, Sapienza and Crijns, 2005), social capital (Yli-Renko, Autio, and Tontti, 2002) and ownership (George, Wiklund and Zahra, 2005), mostly ignoring the role of the external environment (e.g. home market, organizational field). In the present exploratory study, we pose the following question: Does a SME owner/managers' perception of home market

conditions and of the organizational field impact the decision to export and the mode of export? We build on two complementary frameworks: resource dependency theory and institutional theory. Based on resource dependency theory, we argue that factors relating to the perceptions of the home market environment may be relevant in explaining SME export activity and export mode. Institutional theory guides our contention that SME owner/managers' perception of the degree of internationalization of the organization field affects the decision to export and the mode of export. We focus on explaining two choices facing SMEs: the decision whether to export or not, and the choice between direct and indirect export modes. We test resource dependency and institutional theory arguments using binominal logistic regression analyses for a sample of 871 SMEs headquartered in the Netherlands.

The chapter is structured as follows. Section 3.2 provides a brief overview of the literature on direct and indirect export modes. Section 3.3 presents and develops resource dependency and institutional theory arguments and puts forward four hypotheses predicting SME involvement in export activity and SME choice of export mode. Data and methodology are described in Section 3.4 and results are presented in Section 3.5. We frame a discussion in section 3.6 and suggest implications for theory, practice, policy, and future research in Section 3.7.

3.2 Direct and indirect export modes

Firms have imperfect access to information, rendering foreign market entry a particularly risky and uncertain endeavor (Johanson and Vahnle, 1977). Furthermore, extra costs, such associated with collecting foreign market information and seeking and evaluating local partners can be burdensome, especially for resource-constrained SMEs. SMEs can pursue a variety of foreign market entry modes such as exporting, licensing, joint venture, wholly-owned subsidiary and greenfield investment. Entry modes vary significantly with respect to benefits and costs (Sharma and Erramilli, 2004) and required resources (Blomstermo, Sharma and Sallis, 2006; Eriksson, Johanson, Maijkgard & Sharma, 1997). In the case of exporting, firms face two channel options: (1) export directly to customers abroad or (2) export indirectly with the help of an intermediary (Peng and York, 2001). As direct exporting is the most common path to SME internationalization and well-addressed in the extant literature, we focus on indirect means to internationalize.

Indirect paths to internationalization are those "whereby small firms are involved in exporting, sourcing or distribution agreements with intermediary companies who manage, on their behalf, the transaction, sale or service with overseas companies" (Fletcher, 2004, p. 290). Export intermediaries play an important "middleman" role in international trade, "linking individuals and organizations that would otherwise not have been connected" (Peng and York, 2001, p. 328).

Intermediaries link buyers and sellers in geographically distinct markets. Such indirect matching may be required to allow transactions to take place or to be successful (Trabold, 2002). Intermediaries include agents and distributors located either at home or abroad (Peng and York, 2001) and the local subsidiaries of MNEs.

Export intermediaries often help their clients to identify customers, financing and distribution infrastructure providers (Balabanis, 2000). Export intermediaries also play a role in reducing knowledge gaps, uncertainties and other risks associated with operating in foreign markets. For example, export intermediaries can help to negotiate with foreign customers and to reduce commercial risks associated with a buyer's ability to pay. In addition, cost savings-related issues may also play a role. Firms may hire export intermediaries because they perform certain functions related to exporting better or at a lower cost than the firm itself could do, for example because they possess country-specific knowledge that the firm lacks (Li, 2004). Due to high export-related search and negotiation costs in distant markets, firms may be more likely to use export intermediaries (Peng and Illinitch, 1998). However, intermediaries also add to the cost of exporting, in particular transaction costs and rent extraction (Acs and Terjesen, 2006). There could also be a loss of control when a firm uses an intermediary (Blomstermo, Sharma and Sallis, 2006). Compared to direct export, indirect modes involve lower levels of risk, control and resource commitment (Johanson and Wiedersheim-Paul, 1975). In sum, using an intermediary is associated with both benefits (resulting from a reduction of risk, uncertainty and certain costs associated with operating abroad) and risks (following costs and lack of control that are associated with export intermediation). Export intermediaries may be particularly helpful for SMEs that lack resources and foreign market knowledge and thus face a more risky and uncertain path to internationalization (Peng and Ilinitch, 1998). In contrast, SMEs that have clear competitive advantages (e.g. derived from their home market) may be less likely to need to rely on intermediaries.

Extant SME export research is mostly concerned with the direct mode and centers on firm-specific and owner-specific variables, including product uniqueness (Cavusgil and Nevin, 1981), R&D activity (Lefebvre and Lefebvre, 2002), founder age (Westhead, 1995) and top management team (TMT) experience in doing business abroad (Eriksson, Johanson, Majkgård and Sharma, 1997). A more limited body of research pursues the role of external factors such as government support for internationalization (Wilkinson, 2006), environmental turbulence (Westhead, Wright and Ucbasaran, 2004) and the characteristics of foreign markets (e.g. the level of competition abroad) (Thirkell and Dau, 1998) and domestic markets (e.g. production costs in the home market) (Axinn, 1988). In contrast to earlier studies that involved limited sets of environmental factors, the present exploratory research develops and tests the perception of various aspects

of the external environment based on two theoretical arguments: resource dependency and institutional theory.

3.3 Theoretical Background

Resource dependency theory and institutional theory are both concerned with the relationship between an organization and a set of actors in the environment. Both theories assume organizational choice is constrained by multiple external pressures and that organizations are concerned with building legitimacy and acceptance vis-à-vis external stakeholders. The two theories have greater predictive power when used together (Sherer and Lee, 2002). Resource dependency theory focuses on a firm's need to access resources from other actors in the environment and describes how resource scarcities force organizations to pursue new innovations that use alternative resources (Pfeffer and Salancik, 1978; Sherer and Lee, 2002). Institutional theory describes how an organization adopts practices which are considered acceptable and legitimate within its organizational field (Scott, 1995). Thus, both theories describe how organizations face competitive pressures and may depend on, or be impacted by, other actors in the environment. However, the two theories differ in the explanations offered as to why organizations may be impacted by other actors. While resource dependency theory argues that dependence on other actors is related to need for resources, institutional theory predicts that organizations are inclined to imitate the behavioral norms of other actors in the organization field.

We expect these theories to be particularly relevant in explaining SME export behavior. First, due to size constraints, SMEs are particularly dependent on other actors in the environment for obtaining resources. Second, as SMEs tend to have many business linkages and are more susceptible to knowledge from external actors than their larger counterparts (Acs, Audretsch and Feldman, 1994), we expect SMEs to be strongly influenced by the behavior, including the internationalization behavior, of surrounding actors. Table 3.1 provides an overview of the two theories and their relevance in explaining the phenomenon of direct and intermediated internationalization.[9]

[9] Thank you to an anonymous reviewer for the suggestion to incorporate a table comparing the two theories.

Table 3.1: Resource dependency and institutional theory

	Resource dependency theory	Institutional theory
Basic tenets	Firms need to access resources in their environments. Resource scarcities force organizations to pursue new innovations that use alternative resources	Organizations adopt practices which are considered acceptable and legitimate in their organizational field.
Seminal contributors	Pfeffer, Salancik	DiMaggio, Powell, Scott, Selznick
Definition	Resource: "tangible and intangible assets firms use to conceive of and implement their strategies" (Barney & Arikan, 2001, p. 138)	Institution: "Social structures that have attained a high degree of resilience" which are "composed of cultural-cognitive, normative and regulative elements that, together with associated activities and resources, provide stability and meaning to social life" (Scott, 1995, p. 33)
Assumptions	Organizations make active choices to achieve objectives. Organizations respond to demands made by other actors in the environment. Organizations try to minimize their dependence on resources on which they are heavily dependent.	Organizations operate within a social framework of norms, values and assumptions about what constitutes appropriate behaviour.
Our interpretation	Perceived favorability of resource access in the home market impacts firm strategy, including internationalization.	Socially constructed beliefs and role systems exert strong influence over organizations' structure and conduct, including internationalization.
Key findings regarding firm internationalization	In the presence of cost differences, resource availability and utilization explain entry mode choice (Chang, 1995; Tesfom, Lutz and Ghauri, 2004)	Strategic business units that export, joint venture or license have high levels of external isomorphism to host country and internal institutional environments (Davis, Desai and Francis, 2000).
Common assumptions	Organizational choice is constrained by multiple external pressures. Organizations face competitive pressures and may depend on/be impacted by other actors in the environment. Organizations are concerned with building legitimacy and acceptance vis-à-vis external stakeholders.	

3.3.1 Resource dependency theory

Consistent with the resource based view of firms as bundles of unique resources that lead to competitive advantage, resource dependency theory focuses on the firm's ability to establish relationships to access resources (van Witteloostuijn and Boone, 2006). Resource dependency theory assumes that the organization makes active choices to achieve objectives. A major tenet of resource dependency theory is resource scarcity, resulting in multiple organizations competing for the same or similar sets of scarce resources. We follow Barney and Arikan (2001, p. 138) in defining resources as the "tangible and intangible assets firms use to conceive of and implement their strategies." According to resource dependency theory, firms are dependent upon other actors in the immediate "task environment" to obtain resources. To survive, firms need to obtain resources from (actors in) the external environment. The focal organization will act to reduce or increase its level of reliance on those actors, through actions such as alliances or joint ventures. For example, as customers increasingly seek globally-coordinated sourcing (Kotabe, 1992), firms respond by creating alliances to strengthen relationships with key customers (Pfeffer and Salancik, 1978) and suppliers, including following these customers overseas. This is why many of Toyota's Japan-based parts suppliers set up operations in the proximity of Toyota's automobile manufacturing facility in Kentucky.

Resource dependency theory can also be applied to consider a firm's need to obtain resources required for exporting (Tesfom, Lutz and Ghauri, 2004). In this regard, resource dependency theory explains how a firm's location in a desirable home market can aid the accumulation of resources that are required to export. A large body of empirical research investigates how a SME's current resource base impacts export activity (e.g. Akoorie and Enderwick, 1992; Autio, Sapienza and Almeida, 2000; Cavusgil and Nevin, 1981; Chang, 1995; Keeble, Lawson, Smith, Moore and Wilkinson, 1998; Tesfom, Lutz and Ghauri, 2004; Westhead, 1995), however little is known about the relationship between availability of resources in the home market and firm export behavior. Building on resource dependency theory, we expect that SMEs are dependent upon the home market to obtain resources needed for exporting and may benefit when home environments are favorable and contain valued resources. We expect that as SMEs have limited firm resources, particularly when compared with large multinationals, they may be particularly reliant on the resources perceived to be available in their home country.

Porter (1990, 1998) describes how firms based in certain national markets may enjoy certain competitive advantages. Two key components are the presence of related and supporting activities (e.g. presence of customers and suppliers) and certain factor conditions (e.g. availability of capital, knowledge, technology, resources, level of production costs, legal protection of property rights and quality of government regulation for business). Based on Porter (1990, 1998), we expect

that the favorability of home market industry and factor conditions can enhance or constrain SMEs' ability to export. For example, SMEs often depend on their home market environments for obtaining the finance, technology, and raw material resources needed for exporting and SMEs will benefit when these resources are perceived to be widely available and easily accessible in the home market. Also, SMEs depend upon production costs in the home environment and when such costs are perceived to be favorable in the home market, propensity to export may increase since SMEs may be better able to develop internationally competitive products or services, at least as far as price is concerned. A firm's ability to export may also depend upon the extent of home market intellectual property (IP) protection: SMEs based in home markets with strong IP rights protection may have an adequate context for developing international competitive products or services. In contrast, SMEs based in home markets with poorly perceived industry and factor conditions may be unable to establish relationships necessary to secure the 'right' resource bundles to pursue international markets. These SMEs may then be unable or unwilling to take on the risks of foreign markets. Thus, we expect:

Hypothesis 1: A SME is more likely to export, directly or indirectly, when its home market conditions are perceived as favorable.

Furthermore, perceived home market favorability may impact the choice between direct and indirect export. Compared to the indirect mode, the direct mode of exporting requires firms possess a more full set of resources and capabilities (Acs and Terjesen, 2006) and a SME must thus establish relationships to secure these. For example, when home market factor conditions such as resource availability, production costs, intellectual property rights protection, government regulation and the presence of related and supporting industries are perceived as favorable, SMEs may be better able to access relationships to resources to develop products and competences that have competitive advantages vis-à-vis foreign firms and are exportable. Therefore, SMEs based in favorably perceived home markets may be more able and more willing to pursue foreign markets directly, rather than indirectly. Based on the above, we suspect:

Hypothesis 2: A SME is more likely to export directly when its home market conditions are perceived as favorable.

3.3.2 Institutional theory

According to institutional theory, organizations operate within a social framework of norms, values and assumptions about what constitutes appropriate behavior (Oliver, 1997; Scott, 1995). We follow Scott (1995, p. 33) in defining institutions as "social structures that have attained a high degree of resilience" which are "composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life." Institutional contexts "prescribe and proscribe organizational alternatives" (Hinings and Greenwood, 1988). Decisions are made not so much according to technical or economic criteria, but on the basis of what is acceptable and legitimate within a particular environment or "organization field" which typically moves toward common structures and processes due to coercive, imitative, and normative expectations (DiMaggio and Powell, 1983). Traditionally, institutional researchers explored external institutions such as rules, regulatory structures and agencies, however the field has been extended to include other firms in the same industry or units within the same firm. Strategic business units that export, joint venture or license have high levels of external isomorphism to host country and internal institutional environments (Davis, Desai and Francis, 2000).

Firms face competing isomorphic pulls from local and global organization fields (Gimeno, Hoskisson, Beal and Wan, 2005). Historically, a firm is identified with other actors in its local economy. Increasingly, as financial markets, competitors, and customers become more global in scope, the firm may be considered a member of a global organization field (Westney, 2003). The implication is that the greater the pull from the global organization field, the more likely that the firm will export overseas.

Based on institutional theory we suggest that to the extent a firm sees itself as part of a global (rather than local) organization field, the firm will progressively adopt the behaviors and processes that provide legitimacy within that field. Thus, firms may follow home country direct and substitute competitors, customers and suppliers overseas, and this process may include indirect paths. Also, an increased presence of foreign actors, such as foreign suppliers and foreign customers in the firm's direct task environment indicates an increasingly global organization field and may subsequently provide the firm with legitimacy to service markets abroad.

The idea that a firm may be more inclined to engage in export activities if it is exposed to other economic actors' international activities is also found in the emerging export spillovers literature on the impact of foreign multinational enterprises on domestic firms' export activity (e.g. Aitken, Hanson and Harrison, 1997; De Clercq, Hessels and van Stel, 2008; Greenaway, Sousa and Wakelin, 2004; Kneller and Pisu, 2007). The export spillover literature complements the institutional theory perspective by providing a broader perspective of the channels through which spillovers occur. More specifically, export spillover research

recognizes a demonstration or imitation effect (as is suggested by institutional theory) and suggests also that commercial linkages, training and increased competition from an international actor can increase a domestic firm's likelihood of exporting. We define the following hypothesis:

Hypothesis 3: A SME is more likely to export, directly or indirectly, when its organization field is perceived as increasingly global.

As described above, exporters can use intermediaries to reduce several sets of risks of foreign markets, such as a lack of information and ability to identify and communicate with customers. Building on the above expectation that operating in an increasingly global field may positively affect SME propensity to export, we anticipate that the perceived international orientation of the organization field may also affect the choice of direct or indirect export mode. A SME which operates in an increasingly global organization field may find it easier to directly access information on foreign markets and locate customers abroad. Consequently, the necessity of using intermediaries may be reduced and the odds for using the direct mode may increase. Thus, we expect:

Hypothesis 4: A SME is more likely to choose the direct mode when its organization field is perceived as increasingly global.

3.4 Data and Methodology

3.4.1 Data

We invited a random sample of 1665 Dutch SMEs (fewer than 250 employees) to participate in an internet survey. We received usable responses from 871 (52%). The Netherlands is a particularly interesting country to investigate internationalization due to the nature of its small, open economy. The Dutch business sector is strongly dependent on international trade and is among the world's largest international traders and foreign direct investors (UNCTAD, 2008). Compared to SMEs based in other European countries, Dutch SMEs are only slightly more likely to export and import and on average invest abroad (Hessels, 2005).

3.4.2 Sample Characteristics

Of the Dutch SMEs in our sample 9% export indirectly and 22% export directly. SMEs with larger numbers of employees are more likely to export indirectly than their smaller counterparts. The proportion of SMEs involved in indirect exports is 5% for firms with up to 9 employees; 12% for firms with 10-49 employees and 21% for firms with 50-250 employees. There is no significant difference in participation in indirect export between young and old firms. (Following

McDougall (1989), we define young firms as 8 or fewer years old.) In our sample, eight percent of young firms and 10% of more established firms export indirectly. Furthermore, our indirect exporters are more likely to use foreign intermediaries (81%) as compared to domestic intermediaries (42%). Twenty-seven percent of indirect exporters use both domestic and foreign intermediaries, while 17% indicate using *only* a domestic intermediary, and 56% report using *only* a foreign intermediary. The use of agents (62%) and wholesaler/distributor/dealer/reseller (58%) is most common, while only 12% use a(n) (office of a) multinational (see Table 3.2).

Table 3.2: SME choice of intermediary, percentage of indirect exporters

Type of Intermediary	Domestic (%)	Foreign (%)	Both domestic and foreign (%)	Total (%)
Agent	11	43	8	62
Wholesaler/distributor/dealer/ reseller	11	36	11	58
A(n) (office of a) multinational	5	4	3	12
Total	17	56	27	100

Note: n=74; more than one answer allowed

Table 3.3 reports SMEs' motivations for using an intermediary when exporting. The most frequently cited reason for using an intermediary is to find customers in foreign markets (mentioned by 54% of the indirect exporters in our sample). The use of intermediaries is also frequently reported to be a cost-saving measure, which includes saving costs for drawing up and enforcing contracts with clients abroad and saving costs for conducting market research (together these cost-saving motives add up to 44%). Other reasons for using intermediaries include diminishing the risk and uncertainty of operating overseas (42%) and to compensating for a lack of knowledge about foreign markets (38%).

Table 3.3: SME motivations for using an intermediary, percentage of indirect exporters

Motivation	%
To find customers abroad	54
To diminish risk and uncertainty of operating abroad	42
To compensate for a lack of knowledge of certain markets within our organization	38
To save costs for drawing up of contracts with clients abroad	20
To save costs for conducting market research	16
To save costs for enforcement of contracts with clients abroad	8
Other	19
Don't know	4

Note: n=74; more than one answer allowed

3.4.3 Empirical analysis

We test our hypotheses with binomial logistic regression analyses. The unit of analysis is the owner/manager reporting on his/her SME. For the purpose of our regression analysis, we omit "don't know" and missing values, resulting in a final sample of 402 valid observations.

3.4.3.1 Dependent variables

Export involvement: We construct a dummy variable for export involvement, composed of no export activities (0) and exports, both indirect and direct, (1).

Export mode: We construct a dummy variable for export mode with direct export (0) and indirect export (1). Direct exports include exports through a firm-owned foreign (sales) office abroad. The firms in our sample which use intermediaries as well as direct modes are classified as indirect exporters.

3.4.3.2 Independent variables

Perceived favorability of the home market: Perception of favorability of the home environment in terms of factor conditions and the presence of related and supporting industries (Porter, 1990, 1998) is assessed by asking respondents for their perceptions of the Netherlands business environment. We ask SME owners to assess the home market favorability for their firm in terms of the following items: presence of relevant customers, presence of relevant suppliers, presence of relevant resources and raw materials, access to investors and banks, access to knowledge and technology, cost of producing their goods or services, protection of intellectual property rights and quality of government regulation with respect to business. For each category, we construct a variable with "unfavorable" and "neither favorable, nor unfavorable" taken together (0) and favorable (1).

Perceived internationalization of the organization field: We construct a number of variables based on the respondents' assessment of the following question: "To what extent are the following statements applicable to your organization? Our competitors in the Netherlands operate to an increasing extent in foreign markets; Our customers in the Netherlands operate to an increasing extent in foreign markets; Our suppliers in the Netherlands operate to an increasing extent in foreign markets; Our organization/subsidiary increasingly has to deal with foreign competition in the Dutch market; Our organization / subsidiary makes to an increasing extent use of suppliers from abroad."[10] For each statement, a variable is constructed including "not applicable" (0) and "to some extent applicable" and "to a large extent applicable" taken together (1).

3.4.3.3 Control variables

Industry dummies are constructed for production industries (manufacturing and construction), trade (retail and wholesale), business services and other industries (including transportation, lodgings and financial services). "Other industries" is the reference group in the regression estimation. Various empirical studies report a positive association between firm size and export behavior (Chetty and Hamilton, 1993; Lefebvre and Lefebvre, 2002; Westhead, 1995). We include controls for the firm's size (natural log of number of employees), age (natural log of firm age) and resource base (business owner's level of education, TMT foreign experience, presence of foreign investors). As previous research indicates that decision-makers in exporting firms tend to have higher levels of education than do decision-makers in non-exporting firms (Simpson and Kujawa, 1974), we control for the business owner's level of education using dummy variables for low education (lower secondary degree or less), medium education (higher secondary degree or equivalent) and higher education (higher business education or university degree). We use 'low education' as the reference category in the regression estimation. A dummy for TMT foreign experience is constructed capturing "no" or "hardly any experience" (0) and "some" or "much experience"

[10] Since extant literature lacks established measures for our independent variables and since we were unable to use detailed scales for our items in the survey, we do not present results for the use of composite, factor analysis-based measures of perceived home market favorability and perceived organizational field internationalization (in the subsequent footnotes, however, we do give a description of the results we find when using such composite measures). Also, our use of unique individual measures provides insight into the specific influences of the separate variables on SME export, which is particularly useful given the exploratory nature of our study. For example, using a composite indicator for perceived internationalization of the organization field does not indicate that one of our individual variables, i.e. increased foreign competition in the home market, does not relate significantly to the probability to export, while the other individual measures do. Cronbach's alphas for perceived home market favorability and perceived internationalization of the organization field are 0.70 and 0.76 respectively, indicating good fit. Tests indicate that multi-collinearity is not a concern when we include all individual measures in our models. (See the results section for details.)

(1). Finally, presence of foreign investors is recorded as no (0) and yes (1). Table 3.4 provides some descriptives for our variables.

Table 3.4: Variable means and standard deviations

	Mean	SD
Dependent variables		
Export involvement (No Export, Export)	0.29	0.46
Export mode (Direct Export, Indirect Export)	0.12	0.33
Controls		
Production industries	0.22	0.41
Trade industries	0.19	0.39
Business services	0.23	0.42
Other industries	0.36	0.48
Log firm age	2.88	0.91
Log firm size	2.15	1.51
Business owner education (low)	0.12	0.33
Business owner education (medium)	0.29	0.46
Business owner education (high)	0.58	0.49
TMT foreign experience	0.28	0.45
Foreign investors	0.06	0.24
Home market: perceived favorability		
Presence of relevant customers	0.65	0.48
Presence of relevant suppliers	0.51	0.50
Presence of relevant resources and raw materials	0.22	0.42
Access to investors	0.36	0.48
Access to knowledge and technology	0.55	0.50
Production costs	0.08	0.27
Protection of intellectual property right	0.25	0.43
Quality of government regulation for business	0.15	0.36
Organization field: perceived internationalization		
Domestic competitors increasingly operate abroad	0.47	0.64
Domestic customers increasingly operate abroad	0.53	0.71
Domestic suppliers increasingly operate abroad	0.53	0.67
Foreign competitors increasingly operate in home market	0.65	0.75
Increased use of foreign suppliers	0.46	0.70

Note: n=402 for all variables with the exception of export mode (n=118)

3.5 Results

3.5.1 Logistic regression analysis

We perform logistic regression analyses in order to test our hypotheses. First, we use binomial logistic regression analysis, in which export involvement is the dependent variable, to investigate how our independent variables impact the odds of being involved in export as compared to not exporting and therefore take "no export" as the reference category (Hypotheses 1 and 3). Second, we apply binomial logistic regression analysis with export mode as the dependent variable in order to investigate whether the odds of being involved in indirect export relative to direct export are influenced by our explanatory variables (Hypotheses 2 and 4).

3.5.2 Export versus no export

Table 3.5 presents the estimation results of the binomial logistic regression with export involvement as the dependent variable. We tested for multi-collinearity using variance inflation factors (VIFs). No VIF above 10 is observed (the highest VIF is 2.628), indicating that multi-collinearity is not a concern. The tables present both the log odds ratios and the odds ratios. The coefficients in Table 3.5 indicate the effect of a corresponding variable on the odds (ratio of two probabilities) of indirect export and direct export relative to the "no export" base category. The odds ratios should be interpreted as follows. A coefficient above unity (corresponding to a log odds ratio above zero) implies that the corresponding variable increases the odds of belonging to the category in question relative to the "no export" group. A coefficient below unity implies that the variable decreases the odds of belonging to the category in question relative to "no export". In the table, we add the variable groups in incremental steps. In model 1 (the base model), we only include the control variables. In model 2 we add our variables for perceived favorability of the home market to the base model, while in model 3 we include our variables for perceived internationalization of the organization field (leaving out the variables for perceived favorability of the home market). Finally, in model 4 we add both groups of variables to the base model.

Table 3.5: Binomial logistic regression estimates for export involvement

	Model 1		Model 2		Model 3		Model 4	
	DV: Export involvement (No export = reference category)							
	Log odds	Odds	Log odds	Odds	Log odds	Odds	Log odds	Odds
Constant	-0.691	0.501	-0.844	0.430	-2.102***	0.122	-2.172**	0.114
Controls								
Production industries	1.497***	4.470	1.474***	4.368	1.293***	3.645	1.288***	3.627
Trade industries	0.844**	2.325	0.871**	2.390	0.502	1.652	0.538	1.712
Business services	0.668*	1.951	0.697*	2.007	0.790**	2.202	0.791*	2.206
Log firm age	-0.385**	0.680	-0.399**	0.671	-0.419**	0.657	-0.438**	0.646
Log firm size	0.187**	1.205	0.158*	1.171	0.029	1.029	0.008	1.008
Business owner educ. (med)	-0.041	0.959	-0.123	0.885	0.030	1.030	-0.037	0.964
Business owner educ. (high)	0.180	1.197	0.187	1.206	-0.038	0.963	-0.017	0.983
TMT foreign experience	1.463***	4.320	1.575***	4.833	1.045***	2.843	1.173***	3.233
Foreign investors	1.003**	2.728	1.018**	2.768	0.395	1.484	0.407	1.502
Home market: perceived favorability								
Customers			-0.283	0.753			-0.210	0.810
Suppliers			-0.88	0.916			-0.030	0.971
Resources and raw materials			0.136	1.146			0.152	1.164
Access to investors			0.430	1.537			0.282	1.325
Access to knowledge and technology			0.105	1.111			-0.007	0.993
Production costs			-0.257	0.773			-0.075	0.928
IP protection			-0.054	0.948			-0.022	0.979
Government regulation			0.652*	1.919			0.566	1.761
Organization field: perceived internationalization								
Domestic competitors increasingly operate abroad					0.736**	2.088	0.677**	1.969
Domestic customers increasingly operate abroad					1.060***	2.886	1.038***	2.823
Domestic suppliers increasingly operate abroad					0.656**	1.927	0.644**	1.905
Foreign competitors increasingly operate in home market					-0.037	0.964	-0.046	0.955
Increased use of foreign suppliers					0.840***	2.317	0.861***	2.365
Pseudo R^2	0.260		0.283		0.437		0.446	
-2 Log likelihood	405.569		397.576		339.544		335.690	

Note: n=402; * indicates significance at 10% ** indicates significance at 5%; *** indicates significance at 1%.

Results for the base model (model 1) show that firms belonging to production industries (manufacturing, construction), trade industries and business services are significantly more likely to export than those belonging to the reference category "other industry". Furthermore, firm age decreases the odds of being involved in exports relative to no exports, indicating that younger firms are more likely to export than older firms. Regarding the firm's resource base, our results indicate that firms with TMT members with experience of working and living abroad are more likely to export as well as firms having foreign investors.

Table 3.5 further reveals that when our variables for perceived favorability of the home market are added in model 2 the R^2 of the model only slightly increases compared to model 1 (from 0.260 to 0.283). However, the R^2 of the model increases to 0.437 in model 3 (as compared to 0.260 in model 1) when our variables for perceived internationalization of the organization field are added. Likelihood ratio tests show that the improvement of the model fit for model 3 relative to model 1 is significant when our variables for perceived internationalization of the organization field are added (tests statistics equal 66.03, while the critical value at the 1% level is 15.09 (5 degrees of freedom)), whereas the increase in model fit is not significant for model 2 in which our variables for perceived favorability of the home market are added to the base model. The increase in model fit for model 4 (as compared to model 1) is also significant, which is attributable to the inclusion of the variables for perception of the organization field.[11]

Coming back to our hypotheses, we find no significant relationship between export and any of the indicators for home market favorability in model 4.[12] Thus, we find no support for Hypothesis 1.

[11] We also did some exercises using a composite measure for perception of favorability of the home environment and a composite measure for perception of globalization of the organization field. These results reveal that the composite measure for perceived favorability of the home market displays no significant association with the probability to export, whereas the composite measure for perceived globalization of the organization field shows a significant positive association with export involvement. However, given the exploratory nature of our study, we feel that it is more interesting to show the results for the individual measures as this reveals that one of our measures (increased foreign competition) has no significant relationship to the probability to export. Since literature lacks established measures for our independent variables, we feel that showing individual results will help researchers in further developing and testing measures in future research. Therefore, it was decided to only show the results containing individual measures and we do not display results using composite measures. In addition, individual level results are also more informative for policymakers and business owners/practitioners. See also the previous footnote.

[12] Note that in model 2 perceived favorability of government regulation is significant at 10%. However, this variable is no longer significant in model 4 when the variables for perceived globalization of the organization field are added.

Regarding perceived globalness of the organizational field model 3 shows that firms whose owner/managers perceive having competitors, customers and suppliers that increasingly operate abroad, and firms that make increased use of foreign suppliers are more likely to export (as compared to no export activity). These results still hold when the variables for perceived favorability of the home market are added in model 4. Thus, we find some support for Hypothesis 3 suggesting that a more global organization field may positively impact SME involvement in export.

3.5.3 Indirect export versus direct export

Binomial logistic regression results of the choice between direct and indirect export are displayed in Table 3.6. The valid sample consists only of exporters and is 118. Again we employed multi-collinearity tests using variance inflation factors (VIFs). VIFs are below 10 (the highest VIF is 3.225), which indicates that multi-collinearity is not a concern. Again we add our group of variables in incremental steps. While model 5 (base model) only includes the control variables, in model 6 our variables for perceived favorability of the home market are added to this base model, in model 7 our variables for perception of the organization field are added to the base model (leaving out variables for perceived favorability of the home market), and in model 8 we include all groups of variables.

Table 3.6: Binomial logistic regression estimates for export mode

	Model 5		Model 6		Model 7		Model 8	
	DV: Export mode (Direct export = reference category)							
	Log odds	Odds	Log odds	Odds	Log odds	Odds	Log odds	Odds
Constant	-0.976	0.377	-1.068	0.344	-1.562	0.210	-1.419	0.242
Controls								
Production industries	-0.398	0.671	-0.371	0.690	-0.532	0.588	-0.444	0.641
Trade industries	-0.826	0.438	-0.870	0.419	-0.876	0.416	-0.885	0.413
Business services	-0.823	0.439	-0.765	0.465	-0.735	0.480	-0.739	0.478
Log firm age	0.312	1.366	0.252	1.286	0.343	1.410	0.274	1.315
Log firm size	0.210	1.233	0.222	1.249	0.211	1.235	0.223	1.250
Business owner educ. (med)	1.032	2.805	1.205	3.336	1.303	3.680	1.359	3.892
Business owner educ. (high)	0.548	1.729	0.798	2.220	0.741	2.097	0.800	2.225
TMT foreign experience	-0.020	0.980	0.129	1.138	-0.067	0.935	0.138	1.148
Foreign investors	0.516	1.675	0.324	1.382	0.537	1.712	0.259	1.296
Home market: perceived favorability								
Customers			0.068	1.070			0.146	1.157
Suppliers			0.295	1.344			0.308	1.360
Resources and raw materials			0.725	2.064			0.660	1.934
Access to investors			1.152**	3.166			1.107**	3.024
Access to knowledge and technology			-1.174**	0.309			-1.190**	0.304
Production costs			-1.900**	0.150			-1.884**	0.152
IP protection			-0.199	0.819			-0.186	0.830
Government regulation			0.111	1.118			0.075	1.077
Organization field: perceived internationalization								
Domestic competitors increasingly operate abroad					0.685	1.985	0.353	1.423
Domestic customers increasingly operate abroad					-0.299	0.742	0.024	1.024
Domestic suppliers increasingly operate abroad					0.052	1.053	-0.206	0.814
Foreign competitors increasingly operate in home market					0.156	1.169	0.200	1.221
Increased use of foreign suppliers					-0.054	0.948	0.017	1.017
Pseudo R^2	0.146		0.278		0.169		0.284	
-2 Log likelihood	146.589		132.906		144.397		132.229	

Note: n=118; * indicates significance at 10% ** indicates significance at 5%; *** indicates significance at 1%.

Model 5, which includes only the control variables, shows that none of the controls have a significant impact on the choice between direct and indirect export. The R^2 increases from 0.146 in model 5 to 0.278 in model 6 and likelihood ratio tests reveal that this increase in model fit is significant (tests statistics equal 13.68, while the critical value at the 10% level is 13.36 (8 degrees of freedom)). However, it can also be seen that only three of the eight variables for perceived home market favorability display a significant relationship with the dependent variable. In particular, we find that perceived favorability of access to investors and banks at home increases the probability for indirect export (relative to direct export), whereas perceived favorability to knowledge and technology and perceived favorability of production costs in the home market decrease the probability of indirect export (relative to direct export). These results uphold in model 8 when the variables for the organization field are also included.

Furthermore, the results show that the R^2 for model 7 is 0.169, which is a slight increase as compared to model 5 (R^2=0.146) and likelihood ratio tests reveal that the increase in model fit of model 7 relative to model 5 is not significant. Model 7 also shows that none of the variables for perception of the organization field have a significant relationship with the dependent variable, and this remains unchanged in model 8, which also includes the variables for perceived home market favorability.[13]

Thus, coming back to our hypotheses, overall, we find, contrary to Hypothesis 2, that SME likelihood of indirect rather than direct export modes increases with the perceived favorability of access to domestic investors and banks. On the other hand, in line with Hypothesis 2, we find that propensity to export, indirectly relative to directly, decreases when home market production costs and access to knowledge and technology are perceived as being favorable. Furthermore, although an increasingly global organization field affects export involvement, we find no effect on the choice between direct and indirect modes. In sum, these results provide partial support for Hypothesis 2, but no support for Hypothesis 4.

[13] Again, we also did some exercises using composite factor analysis-based measures for perception of favorability of the home environment and for perception of globalization of the organization field. These results reveal that the composite measures have no significant relationship with export mode. However, since literature lacks established measures for our independent variables, since empirical research on explaining export mode choice is limited, and since when using individual measures we do find a significant impact for three of our variables for perceived favorability of the home market, we feel that showing results for individual measures is more informative for researchers interested in explaining export mode choice. In addition, showing individual level results is also more informative for policy makers and business owners/practitioners.

3.6 Discussion

This study provides insight into SME participation in direct and indirect export modes. One of our main findings is that SMEs operating in an organization field that is perceived as being increasingly global are more likely to export. A firm operating in a field in which domestic customers and domestic competitors are perceived to be increasingly global, for example, is more likely to export. This finding may indicate that SMEs follow domestic customers and competitors to overseas markets. Having domestic suppliers that increasingly operate abroad is also positively related to export activity, which may indicate that suppliers share, for example, their knowledge of foreign markets and distribution channels with their contractor-firms. Our study indicates that firms that increasingly use foreign suppliers are more likely to export. This is in line with findings from past research that indicate that foreign purchasing may stimulate export (Korhonen, Luostarinen and Welch, 1996). Taken as a whole, these findings complement the limited existing literature on export spillovers that focuses primarily on the impact of foreign multinationals on domestic firm's export activity (e.g., Aitken, Hanson and Harrison, 1997; De Clercq, Hessels and van Stel, 2008; Greenaway, Sousa and Wakelin, 2004; Kneller and Pisu, 2007). Our findings suggest that export spillovers to SMEs originate from domestic competitors, customers and suppliers as well as from foreign suppliers and indicate that studies on export spillovers should consider the various actors that are active in the firm's immediate task environment. As national economies grow more interconnected, organizational fields will be increasingly globalized and SME involvement in international markets is likely to expand.

Surprisingly, although we find a positive impact on SME export when domestic competitors are perceived as being increasingly global, we have no evidence that amplified foreign competition in the home market increases the odds of SME export. Globalization implies that SMEs face greater foreign competition in the home market (Etemad, 2004). It was our expectation that a perception of increased foreign competition would stimulate firms to look beyond domestic markets and to adopt an international focus (Etemad, 2005), however our findings do not support this. Possibly a perception of increased foreign competition in the home market stimulates domestic SMEs to increase their performance in the domestic market (in which they are facing the foreign competition) to be able to effectively deal with the threats normally inherent in such competition, rather than to internationalize. It could also be the case that a perception of increased foreign competition is likely to be found among SME business owners that tend to be risk averse and pessimistic, and that this mitigates the effect of competition on exporting. We acknowledge that these explanations are somewhat speculative and encourage future researchers to shed more light on the impact of foreign competition on the operations of domestic SMEs, including on their internationalization behavior.

Contrary to our initial expectations, we find no evidence that perceived favorability of the home market (e.g. in terms of the presence of relevant customers and suppliers and resource access and availability) affects SME export involvement. This may suggest that in the current global economy SMEs are perhaps not longer as dependent upon their home environments for generating international competitive advantage.

Our study seeks explanations for both SME export involvement and for factors affecting the choice between direct and indirect export modes. Although we expected that operating in an increasingly global operation field would contribute to reducing risks and uncertainties associated with operating abroad (e.g. by making it easier for a SME exporter to find information about foreign markets and to locate customers abroad) and would therefore increase the probability of SMEs to use the direct rather than the indirect export mode, our results do not support that surrounding actors' internationalization behavior impacts SME export mode choice. Thus, our findings suggest that institutional theory has little relevance in explaining the choice for a specific internationalization mode. We do, however, find some support for resource dependency theory explanations of channel choice.

We find some support for our hypothesis that SMEs based in favorably perceived home markets are more likely to export directly. Specifically, our findings indicate that SMEs are more likely to export using the direct mode if they are located in home markets with favorably perceived production costs and access to knowledge and technology. Our finding that perceived favorability of production costs at home may be particularly relevant for the direct export mode suggests that lower production costs result in an immediate cost advantage for exporters which may help build a competitive advantage for the firm's product overseas. Direct exporting may therefore become easier and the need to use intermediaries to export may decrease. Also, markets in which exporters compete on production costs or prices may be more transparent, lessening the need to rely on intermediaries to export. The finding that perceived favorable access to knowledge and technology increases the odds for using the direct export mode suggests that SME exporters operating in such home markets may be more able to develop unique or new products or services that provide direct export opportunities and reduce reliance on intermediaries. The direct mode requires firms to possess a more full set of resources and capabilities (Acs and Terjesen, 2006) and the presence of favorable home market conditions likely helps firms to develop such resources and capabilities. Indeed, our results suggest that SME exporters are particularly dependent on favorable home market production costs and favorable home market access to knowledge and technology which enable them to export directly. In contrast, the presence of customers, suppliers, raw materials and favorable regulations do not favor the direct mode.

In contrast to our prior predictions, we find that perceived favorability of home market access to investors and banks increases SME odds of using indirect rather than direct channels. We expected that perceived favorable access to investors and banks would help SME exporters to access financial resources which they could use, for example, for developing products and competences and for collecting foreign market information and therefore would make it easier to export independently. However, our findings suggest that perceived favorable access to finance stimulates SME exporters to dedicate any financial resources that they may be able to access to hiring intermediaries or perhaps that such investors and banks provide connections to intermediaries. Although our data on motivations for using intermediaries indicate that intermediaries may have a function in reducing certain costs, the finding that SMEs prefer indirect rather than direct export when finance is perceived to be easily accessible at home may suggest that, overall, hiring intermediaries is perceived to be more costly than exporting directly, perhaps due to the extra resources required to coordinate and monitor this relationship.

Our findings point towards a number of policy implications. To promote SME export activity, governments could facilitate in setting up networks between non-internationally active SMEs and internationally active domestic firms (customers, competitors and suppliers) that operate within the same organization field. Furthermore, the promotion of SME import activity is likely to contribute to SME export. Both direct and indirect export activity are important for national economies. Our findings suggest that governments wishing to help SME exporters to export independently could devote efforts to improving SME access to knowledge and technology and to lowering production costs in the home market. Governments keen to promote the use of export intermediaries among domestic SME exporters (e.g. because this is important for helping SMEs to locate customers abroad, to reduce uncertainties and risks of foreign operations and to overcome knowledge barriers) should focus on facilitating favorable investor access in the home market.

3.7 Conclusion

This chapter develops and tests resource dependency and institutional theory arguments for explaining SME export involvement and export mode. Overall, the findings suggest that institutional theory perspectives (SME owner/managers' perception of the increased international presence of their domestic competitors, customers and suppliers and perception of increased use of foreign suppliers) explain the decision to export, while resource dependency theory arguments (SME owner/managers' perception of the favorability of access to knowledge and technology, of production costs and of access to capital in the home market) guide the choice between direct and indirect export modes.

Our study makes a number of contributions to existing research. First, by incorporating and integrating resource dependency and institutional theory perspectives to explain SME export involvement and channel choice, we build on existing literature by considering the role of external factors on SME internationalization. We have argued that SMEs may be particularly dependent on the external environment in order to overcome certain resource constraints. Also, SMEs are more likely to benefit from knowledge spillovers from external actors (Acs, Audretsch and Feldman, 1994). Whereas in large firms, external knowledge spillovers must compete with internal knowledge spillovers from prior and ongoing operations and may therefore be less important, the knowledge production function of smaller firms is likely to get influenced by input that is provided by external organizations (Acs, Audretsch and Feldman, 1994). As extant empirical work focuses on individual- and firm-level factors, our study contributes to the much neglected role of external factors.

Our study is subject to a number of limitations. First, we focus on SMEs in the Netherlands, a unique market and, therefore, our findings may not be generalizable to other environments. Second, due to the cross-sectional nature of our data, it is not possible to establish conclusively any causal relationships. Third, while we recognize that it is the perception of the entrepreneur that determines his behavior and have therefore mainly included perception variables in our dataset, future studies could also seek to collect and test more objective measures about factors relating to the favorability of the home market and the global nature of the organization field. It could also be worthwhile to study the origin of perceptual differences of the external environment. While varying perceptions are likely to stem from actual differences in firms' unique task environments, they may also be influenced by other factors such as the owner/managers' personal experiences. For example, owner/managers with successful experience in obtaining finance in the home market may perceive more favorable access to investors in the home market than do owner/managers who were unsuccessful or have little experience in acquiring finance. Furthermore, we do not take into account the targeted overseas market. Finally, as our measures were collected through a single questionnaire, the study is susceptible to common method bias.

Going forward, our study suggests a number of future research directions. Further investigations could focus more on the role of intermediaries in influencing SME export behavior. Intermediaries that are proactive in seeking clients may, for example, drive higher volumes of SME clients' exports. Also, some of the knowledge of intermediaries e.g. on a particular market may spill over to their SME clients and may consequently increase the odds for SMEs to export directly to this market. This study also explores the role of MNEs in facilitating SME internationalization. However, SMEs may not only use MNEs to internationalize, but they may be MNE targets for cross-border mergers and acquisitions (Acs,

Morck, Shaver and Yeung, 1997; OECD, 2004b). Future research should examine how MNE-SME internationalization linkages are developed. Furthermore, the choice of direct or indirect export mode could be examined with respect to firm performance and macro-economic outcomes (e.g. economic growth and innovation). In addition, resource dependency theory and institutional theory differ in terms of predicted outcomes on firm performance. Whereas resource dependency theory argues that to prosper or survive organizations need to obtain resources from external sources, institutional theory argues that actions leading to isomorphism are not necessarily efficient. Thus, while institutional theory predicts that a firm may be stimulated by its global organization field to undertake some activities to be seen as a global player, the implications on operational performance may actually be negative. Future research could seek to provide insight into the actual impact on firm performance of organizational behavior that follows the logic of resource dependency and institutional theory.

4 Overcoming Resource-Constraints through Internationalization? An Empirical Analysis of European SMEs

Abstract
Previous research has indicated that firms can use internationalization as a strategy to access and build up resources. Such a strategy may be of particular interest or even necessary (for example to survive or grow) for firms that lack specific resources. Based on resource dependency theory this chapter investigates whether resource scarcities in terms of labor, finance and technology increase the likelihood for small and medium-sized enterprises (SMEs) to aim to access or accumulate these specific resources through internationalization. A number of hypotheses are tested using firm-level data from the ENSR Enterprise Survey 2003 for 7,673 SMEs located in 18 European countries. The results indicate that perceived resource constraints in terms of labor and finance spur SMEs to undertake international activities with the aim to access or accumulate labor, respectively finance. It is also found that among *internationally active* SMEs perceived constraints in terms of labor, finance and new technology increase the probability of SMEs to use their international activities as a means for accessing or acquiring these scarce resources.

This chapter is based upon:

Hessels, J. 2008b. Overcoming Resource-Constraints through Internationalization? An Empirical Analysis of European SMEs, Research Report H200806, EIM, Zoetermeer.

4.1 Introduction

Firms can have various motives for engaging in foreign markets, such as market-seeking, efficiency-seeking, asset-seeking and resource-seeking motives (Dunning, 1993). This chapter tries to explain what drives small and medium-sized enterprises (SMEs) to pursue resource-seeking internationalization. Internationalization can be a means for firms to gain access to and to build up resources. Firms may, for example, use internationalization as a means for generating financial resources e.g. through export sales (Daniels and Bracker, 1989; Edmunds and Ghaury, 1986) and as a means for accessing knowledge and technology (Zahra, Ireland and Hitt, 2000; Zahra, Neubaum and Huse, 1997). This chapter investigates whether a firm's aspiration to access or acquire specific resources through internationalization is driven by a firm's internal resource scarcities, since internationalization as a strategy for accessing resources is likely to be of special interest or even a necessity for firms that lack specific resources to survive or grow.

As compared to larger firms SMEs are typically regarded as resource-constrained (Fujita, 1995; Coviello and McAuley, 1999; Knight, 2000; Hollenstein, 2005) and the main rationale for studying SME internationalization separately from the internationalization of large firms is that SMEs are more likely to face resource scarcities, e.g. in terms of financial and human resources (Coviello and McAuley, 1999). The general belief is that such resource scarcities limit SMEs' possibilities to act upon identified opportunities abroad (e.g. because internationalization requires costly information and a need for planning) and also make SMEs more susceptible to risks or to the potential negative effects of internationalization (Alvarez, 2004; Bijmolt and Zwart, 1994; Jarillo, 1988; Lu and Beamish, 2001; Moen, 1999; Oviatt and McDougall, 1994; Westhead, Wright, Ucbasaran and Martin, 2001). Empirical findings indicate that resource scarcities may indeed in some instances prevent small firms from internationalizing (Westhead, Wright and Ucbasaran, 2002). However, research has also demonstrated that even small, resource-constrained firms can succeed in international markets (Knight and Cavusgil, 2004; Oviatt and McDougall, 1994) and are able to access valuable resources through cross-border activities (Kuemmerle, 2002). In the past decades, because of developments such as the liberalization of trade and investment and advancements in transport and information technology, the barriers to internationalize have been reduced for small resource-constrained firms (Acs, Dana and Jones, 2003). Also, such developments have meant that developed economies have undergone a shift away from a managed economy towards an entrepreneurial economy, which has resulted in a more important role for small and new firms in these economies (Audretsch and Thurik, 2000, 2004). While small firms used to be followers in the managed economy, in which large-scaled production industries were dominant, in the entrepreneurial economy they are engines of growth. In the managed economy small firms usually had to accept that resource constraints that followed e.g. the lack of availability of or access to

skilled labor or technology in the home market, could not easily be overcome while in the entrepreneurial economy it has become viable for SMEs to overcome such resource constraints through internationalization. In the current economy resources have become more mobile and more easily transferable between countries and information flows between countries have been enhanced (Autio, 2005; Sapienza, Autio, George and Zahra, 2006). Thus, because traditional barriers to internationalization have been reduced for SMEs and because resources have become more mobile across countries it has become feasible for resource-constrained firms to seek to overcome these constraints through internationalization. The current study investigates whether SMEs are acting accordingly by investigating whether resource-constrained SMEs are likely to pursue and use internationalization as a means for accessing and building up resources.

Traditional internationalization theories such as the theory of monopolistic advantage (Caves, 1971; Hymer, 1976) and the stage theory of internationalization (Johanson and Vahlne, 1977, 1990) emphasize that competitive advantage, stemming from firm advantages and resources, drives internationalization. The resource-based view (Barney, 1991; Wernerfelt, 1984) also argues that firm resources are of key importance to the firm's acquisition and maintenance of competitive advantage and this view is applied in previous studies to investigate how a firm's internal resource base enables SMEs to internationalize (Bloodgood, Sapienza and Almeida, 1996; Westhead, Wright and Ucbasaran, 2001; Zahra, Matherne and Carleton, 2003). The resource-based view recognizes that internationalization may provide a means for firms to build up internal resources (Barringer and Harrison, 2000), but it does not acknowledge that resource deficiencies may drive resource-seeking internationalization.

One of the central tenets of economics is that scarcity in terms of the limited availability of goods, services or factors of production (such as labor or capital) drives the economic behavior of individual economic agents. Resource dependency theory (Pfeffer and Salancik, 1978) builds upon this economic rationale and holds that resource scarcities provide a need for firms to acquire or gain access to resources from external sources (Barringer and Harrison, 2000). The model of entrepreneurial internationalization as proposed by Oviatt and McDougall (1994) acknowledges that for resource-constrained ventures internationalization may be a necessary strategy to access value-creating resources (Oviatt and McDougall, 1994; Kuemmerle, 2002). In today's global economy in which it has become easier to transfer resources between different countries (Autio, 2005; Sapienza, Autio, George and Zahra, 2006) it may be a (more) common or even necessary strategy for organizations, including resource-constrained SMEs, to use internationalization as a means to obtain resources from external sources. Based on resource dependency theory it is argued in this chapter

that SMEs that face particular resource scarcities may enter international markets or exploit their international activities to overcome a perceived resource scarcity.

The focus in this study is on three types of resource constraints: (perceived) lack of skilled labor, (perceived) lack of access to finance and (perceived) lack of new technology. The study considers three options for SMEs: the option not to internationalize; the option to internationalize with the motive to access one of the following resources: labor, finance or know how/technology; and the option to internationalize with (an)other motive(s). Two main predictions are made regarding the behavior of resource-constrained SMEs. First, it is predicted that SMEs that are resource-constrained in terms of labor, finance and new technology are more likely to opt for internationalization as a means of accessing or acquiring lacking resources than not to internationalize. Second, it is also predicted that resource-constrained SMEs that are internationally active are likely to use their international activities as a strategy to access or acquire lacking resources. The empirical part is based on a large dataset of European SMEs (ENSR Enterprise Survey). The data have been collected as part of the Observatory of European SMEs that was conducted for the European Commission in 2003. Comparative studies that draw on multiple-country samples are still limited in internationalization research (Dhanaraj and Beamish, 2003). Exceptions are, for example, Dichtl, Koeglmayr and Mueller (1990) and Adams and Hall (1993).

The chapter is organized as follows. First, the theoretical background is discussed and hypotheses are developed. The subsequent sections elaborate on the data and methodology that are used and present the empirical results. Finally, the findings are discussed and interpreted and some implications for research and policy are formulated.

4.2 Theoretical background and hypotheses

Firm resources are tangible and intangible factors (such as assets, capabilities and knowledge) that are owned and controlled by a firm (Barney, 1991; Ruzzier, Hisrich and Antoncic, 2006). Traditional internationalization theories, such as monopolistic advantage theory and the stage theory of internationalization emphasize the role of firm resources in enabling internationalization. Monopolistic advantage theory holds that firms can use their unique resources or the superior knowledge that they have developed in the home market at no or little additional cost abroad (Hymer, 1976; Caves, 1971). The stage or process theory of internationalization (Johanson and Vahlne, 1977, 1990) implicitly assumes that a firm's resource base enables firms to create goods and services that they can export (Autio, 2005). The belief that firm resources build competitive advantage is also central to the resource-based view of the firm (Barney, 1991; Penrose, 1959; Wernerfelt, 1984). The resource-based view seeks to explain how a firm's internal resources and capabilities help the firm to develop and maintain

competitive advantage (Wernerfelt, 1984). According to the resource-based view competitive advantage is generated by a firm's valuable, unique resources, that tend to be intangible and knowledge-based. Firms are viewed as being heterogeneous in terms of their resource endowments and such resource heterogeneity explains the differential performance of firms. The resource-based view has been used to explore how a firm's internal resource base enables SMEs to internationalize (Bloodgood, Sapienza and Almeida, 1996; Westhead, Wright and Ucbasaran, 2001; Zahra, Matherne and Carleton, 2003).

According to the views presented above internationalization is a consequence of competitive advantage. However, firms may also use internationalization as a strategy for building up resources and thus create competitive advantage through internationalization. Internationalization may, for example, enable firms to generate financial resources (e.g. through export sales) and to access know how and advanced technology (Edmunds and Khoury, 1986; Daniels and Bracker, 1989; Zahra, Neubaum and Huse, 1997; Zahra, Ireland and Hitt, 2000). The resource-based view acknowledges that a firm is able to access or develop resources and capabilities through interaction in business relationships (Barringer and Harrison, 2000). The focus in this view is on adapting the environment to the firm through resource accumulation and capability development as a means to sustain competitive advantage (Eng, 2005). From a resource-based perspective it could be argued that small firms seek international expansion to strengthen the firm's existing internal resource base. This view does not explicitly take into account the potential role of resource scarcities in stimulating resource-seeking firm behavior.

The idea that scarcity provides an incentive for resource-seeking organizational behavior is found in resource dependency theory. Resource dependency theory proposes that organizational survival depends on the firm's need to attain and acquire resources from other actors in the environment. The central tenet of resource dependency theory is resource scarcity. Resource dependency theory assumes that firms are not able to build all resources internally and therefore depend on exchanges with other organizations in their environment to obtain access to scarce resources (Pfeffer and Salancik, 1978). For organizations to survive or prosper, resources must be obtained from external sources (Barringer and Harrison, 2000). Resource dependency theory represents an economic explanation or rationale for why internationalization may be used as a means to access and build up resources. Firms facing scarcities of specific resources are likely to have a particular need or incentive to obtain resources from other actors. Based on this theory it could be argued that a firm may enter international markets to satisfy a need for resources since internationalization increases opportunities to acquire or access resources.

In the past decades developed economies have undergone a shift from a managed towards an entrepreneurial economy (Audretsch and Thurik, 2000, 2004). Because of developments such as globalization and advancements in information technology much of Europe has shifted away from traditional industries (such as automobile production, textile and machine tools) towards knowledge-based economic activity. Consumers increasingly demand tailor-made and personalized products instead of mass-produced goods, thus providing many opportunities for small firms to target specific niche markets. This has resulted in a more important role for small and new firms in developed economies. Small and new firms are no longer followers as was the case in the managed economy. In the managed economy, small firms usually had to accept that resource constraints, the consequence of, for instance, a lack of availability of or access to skilled labor or technology in the home market, could not be easily overcome. However, in the entrepreneurial economy, due to for instance globalization and advancements in information technology, it has become viable for SMEs to overcome such resource constraints through internationalization. Based on case study findings that indicated that resource needs may drive international entrepreneurial behavior (McDougall and Oviatt, 1991), the model for entrepreneurial internationalization as developed by Oviatt and McDougall (1994) recognizes that in the current global economy internationalization may be a necessary strategy to ensure opportunities for firm growth or to access value-creating resources for resource-constrained ventures (Oviatt and McDougall, 1994; Kuemmerle, 2002). Thus, according to this model even resource-constrained firms are able to internationalize as a means to build up resources (Autio, 2005; Kuemmerle, 2002) and it has been suggested that many resource-constrained entrepreneurial ventures do indeed internationalize to gain access to value-creating resources across national borders (Oviatt and McDougall, 1994; Kuemmerle, 2002). In the current economy traditional barriers to internationalization have been reduced for SMEs and resources have become more mobile and more easily transferable between countries (Autio, 2005; Sapienza, Autio, George and Zahra, 2006). Therefore, it has become feasible for resource-constrained firms to seek to overcome their resource constraints through internationalization. Following the rationale of resource dependency theory it is argued in this study that SMEs that face resource constraints are likely to use internationalization as a strategy for accessing or acquiring the lacking resources.

An emerging literature focuses on the enabling features of resource constraints (Katila and Shane, 2005). In this literature it is argued that firms that have fewer resources are likely to be more efficient in leveraging their resources (Baker and Nelson, 2005; Starr and MacMillan, 1990) and that resource constraints may enhance firm performance (George, 2005). The current study extends resource-constraint literature by arguing that resource constraints may induce resource-seeking internationalization.

SMEs are typically resource-constrained, both in terms of the quantity and the quality of their resource endowments (Fujita, 1995; Coviello and McAuley, 1999; Knight, 2000; Hollenstein, 2005). Previous research dealing with aspects of resource constraints and internationalization tended to highlight the assumption that resource constraints may put off internationalization. For example, an article studying small firms (firms with less than 50 employees) located in Great Britain indicates that resource constraints are among the reasons cited for why these firms are not exporting (Westhead, Wright and Ucbasaran, 2002). To give another example, Smallbone and Wyer (1995) state that the lack of availability of finance can be an important constraint for small firms in trying to develop an international orientation. They argue that lack of financial resources may impede the ability of small firms to identify international opportunities and to exploit the international opportunities that they do identify. However, such studies have not explicitly considered the possibility for resource-constrained firms to access and build up lacking resources through internationalization.

The focus in this chapter is on three types of constraints: (perceived) lack of skilled labor, (perceived) lack of access to finance and (perceived) lack of new technology. Through internationalization firms may be able to overcome labor constraints, e.g. by importing foreign labor, or by setting up subsidiaries abroad that employ local staff from the host country. Internationalization may also be used as a strategy to generate financial resources. Selling products or services abroad, for example, may be an important way to access capital. Furthermore, through foreign market exposure firms may gain access to new knowledge and technologies (Zahra, Ireland and Hitt, 2000). Based on the arguments provided above, it is expected that the type of resource a firm seeks through internationalization is directly related to the type of resource limitation a firm has to deal with. Two main predictions are made in this study. First, it is predicted that SMEs that are resource-constrained in terms of labor, finance and new technology are more likely to opt for internationalization as a strategy to access or acquire the lacking resource than not to internationalize. Second, it is also hypothesized that resource-constrained SMEs that are internationally active are more likely to aim to use their international activity for accessing or acquiring the lacking resource than to be internationally active pursuing other motives. This leads to the following hypotheses:

Hypothesis 1A: Perceived lack of skilled labor increases the likelihood of a SME to internationalize with the motive to access labor.

Hypothesis 1B: Perceived lack of skilled labor increases the likelihood of an internationally active SME to aim to access labor through its international activity.

Hypothesis 2A: Perceived lack of access to finance increases the likelihood of a SME to internationalize with the motive to access finance.

Hypothesis 2B: Perceived lack of access to finance increases the likelihood of an internationally active SME to aim to access finance through its international activity.

Hypothesis 3A: Perceived lack of new technology increases the likelihood of a SME to internationalize with the motive to access knowledge and technology.

Hypothesis 3B: Perceived lack of new technology increases the likelihood of an internationally active SME to aim to access knowledge and technology through its international activity.

4.3 Methodology and data

The hypotheses are tested by means of binomial logistic regression analysis. The analysis is based on a sample[14] of 7,673 SMEs from the following 18 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. Information was obtained from the SME owner/managers through a large-scale telephone survey (ENSR Enterprise Survey) held in 2003 as part of the Observatory of European SMEs for the European Commission.

[14] The survey used a disproportionate stratified sample by country, sector and size class and therefore does not (directly) reflect the structure of the European SME sector. However, this does not bias the regression estimates since control variables are included for country, sector and size class, i.e. the stratification dimensions.

4.3.1 Dependent variables

Dependent variables are constructed for internationalization for the following motives:

- access to labor
- access to finance
- access to knowledge and technology

In the survey the owner/managers were asked to indicate how important each of these motives was for the internationalization of their business.[15] When the owner/manager indicated that a motive was 'very important' or 'important' his firm was classified into the category "internationalization with the motive to access the specific resource". Note that the owner/managers were able to indicate for more than one motive whether this motive was important/not important for the internationalization of their business.

Each dependent variable contains three categories: no internationalization; internationalization with the motive to access the specific resource abroad (i.e. labor, capital or knowledge/technology); internationalization without the motive to access the specific resource (i.e. internationalization with other motives). Internationalization is defined as being involved in exports, imports and/or foreign direct investments (including joint ventures abroad). For each of the three internationalization motives two dummy variables are constructed, one with 'no internationalization' as the reference category, and one with 'internationalization without the motive to access the specific resource' as the reference category (see Table 4.1).

4.3.2 Independent variables

The following dummy variables are constructed as proxies for perceived business constraints:

Perceived lack of skilled labor

Coded 1 when an owner/manager indicates that lack of skilled labor has been a main constraint on the firm's performance over the past two years and otherwise coded 0.

[15] The respondents could also opt for other internationalization motives, these are: 'high production costs on the domestic market', 'access to new and larger markets for products/services', 'strict laws and regulations on the domestic market' and 'additional production capacity'.

Perceived lack of access to finance

Coded 1 when an owner/manager indicates that lack of access to finance has been a main constraint on the firm's performance over the past two years and otherwise coded 0.

Perceived lack of new technology

Coded 1 when an owner/manager indicates that lack of new technology has been a main constraint on the firm's performance over the past two years and otherwise coded 0.

Table 4.1 provides some descriptive statistics for the dependent and independent variables.

Table 4.1: Number of observations, mean and standard deviation for dependent and independent variables

	Number of observations	Mean	Standard deviation
Internationalization motives			
Internationalization with motive 'access to labor' (dummy variable, no internationalization is reference category)	5,071	0.20	0.40
Internationalization with motive 'access to labor' (dummy variable, internationalization without motive access to labor is reference category)	3,618	0.28	0.45
Internationalization with motive 'access to finance' (dummy variable, no internationalization is reference category)	5,119	0.20	0.40
Internationalization with motive 'access to finance' (dummy variable, internationalization without motive access to finance is reference category)	3,594	0.29	0.45
Internationalization with motive 'access to know how and technology' (dummy variable, no internationalization is reference category)	5,998	0.32	0.47
Internationalization with motive 'access to know how and technology' (dummy variable, internationalization without motive access to know how and technology is reference category)	3,608	0.54	0.50
Perceived business constraints			
Perceived lack of skilled labor (dummy variable, 0=no, 1=yes)	7,610	0.15	0.36
Perceived lack of access to finance (dummy variable, 0=no, 1=yes)	7,610	0.09	0.28
Perceived lack of new technology (dummy variable, 0=no, 1=yes)	7,610	0.03	0.17

4.3.3 Controls

The following control variables are included in the analysis:

Log firm size

This variable is expressed in terms of (natural log of) number of employees.

Log firm age

This variable pertains to the (natural log of) number of years that the firm has been in operation at the time of the survey.

Turnover increase

When the turnover of the enterprise increased in 2002 as compared to 2001 this variable is coded 1 and otherwise it is coded 0.

Industry dummies

Industry dummies are constructed for the following industries: manufacturing, construction, wholesale, retail, transport and communication, business services and personal services. In the regression estimations "personal services" is used as the reference category.

Country dummies for country of origin

Country dummies are constructed for the countries of origin of the SMEs in the sample: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK. The UK is used as the reference category in the regressions.

Host country dummies

Host country dummies are constructed for the following countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States, and one for other countries than the ones mentioned above.

4.4 Empirical analysis

Various binomial logistic regressions are carried out to test the hypotheses. Multicollinearity diagnostics using variance inflation factors (VIFs) indicate that multicollinearity is not a problem in the various models (VIFs are well below 10). The regression results are reported in Tables 4.2-4.4. The tables present log odds ratios and odds ratios. When the coefficient of the odds ratio is above unity (which corresponds to a log odds ratio above zero) this implies that the corresponding variable increases the odds of belonging to the category in question relative to the reference category.

Table 4.2 displays results for internationalization with the motive 'access to labor' as the dependent variable and perceived lack of labor as the explanatory variable. The results indicate that perceived lack of labor increases the odds for a SME to be internationally active with the motive to access labor (relative, both to not internationalizing and to internationalizing without the motive to access labor). Thus, Hypotheses 1A and 1B are supported.

Table 4.2: Binomial logistic regression estimates for internationalization with motive 'access to labor'

	Dependent variable: Internationalization with motive 'access to labor' (Reference category: no internationalization)		Dependent variable: Internationalization with motive 'access to labor' (Reference category: internationalization without motive 'access to labor')	
	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio
Perceived lack of skilled labor	*0.235***	*1.265*	*0.753***	*2.123*
Controls				
Log firm size	0.417***	1.517	0.138***	1.148
Log firm age	-0.014	0.986	-0.100**	0.905
Turnover increase	0.189**	1.209	0.037	1.038
Manufacturing	1.700***	5.474	-0.459***	0.632
Construction	-0.055	0.947	-0.236	0.790
Wholesale	1.858***	6.411	-0.536***	0.585
Retail	0.777***	2.176	-0.649***	0.523
Transport and communication	0.571***	1.770	-0.040	0.961
Business services	0.202	1.224	-0.442**	0.642
Constant	-3.821***	0.022	-1.241***	0.289
Home country dummies included	*Yes*		*Yes*	
Host country dummies included			*Yes*	
Pseudo-R^2	0.319		0.213	
-2 Log Likelihood	3,796.296		3,604.951	
Observations	4,868		3,521	

Note: Home/host country dummies not reported.* p<0.10; ** p<0.05; *** p<0.01.

The results for internationalization with the motive 'access to finance' as the dependent variable and perceived lack of finance as the explanatory variable are given in Table 4.3. It is evident from the table that perceived lack of finance positively relates to the probability for a SME to display international involvement with the motive to access finance (relative to not internationalizing and to internationalizing without the motive to access finance). These results provide support for Hypotheses 2A and 2B.

Table 4.3: Binomial logistic regression estimates for internationalization with motive 'access to finance'

	Dependent variable: Internationalization with motive 'access to finance' (Reference category: no internationalization)		Dependent variable: Internationalization with motive 'access to finance' (Reference category: internationalization without motive 'access to finance')	
	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio
Perceived lack of access to finance	*0.945***	*2.573*	*0.871***	*2.388*
Controls				
Log firm size	0.281***	1.324	-0.038	0.963
Log firm age	-0.003	0.997	-0.086*	0.918
Turnover increase	0.148*	1.160	0.012	1.012
Manufacturing	2.000***	7.386	0.063	1.065
Construction	0.118	1.125	0.227	1.255
Wholesale	2.117***	8.306	0.029	1.029
Retail	1.151***	3.163	0.051	1.052
Transport and communication	0.736***	2.087	0.299	1.348
Business services	0.494***	1.639	-0.057	0.945
Constant	-3.650***	0.026	-1.039***	0.354
Home country dummies included	*Yes*		*Yes*	
Host country dummies included			*Yes*	
Pseudo-R^2	0.297		0.210	
-2 Log Likelihood	3,944.620		3,640.519	
Observations	4,908		3,503	

Note: Home/host country dummies not reported.* p<0.10; ** p<0.05; *** p<0.01.

Finally, Table 4.4 reports the results for the binomial logistic regressions with internationalization with the motive to access knowledge and technology as the dependent variable and lack of new technology as the explanatory variable. It is found that perceived lack of new technology increases the likelihood of a SME being internationally active with the motive to access knowledge and/or technology relative to the reference category 'internationalization without the motive to access knowledge and technology'. However, no significant relationship is found between perceived lack of new technology and internationalization with the motive to access knowledge and technology when 'no internationalization' is the reference category. This means that the results do not uphold Hypotheses 3A, but do provide support for Hypothesis 3B.

Table 4.4: Binomial logistic regression estimates for internationalization with motive 'access to know how and technology'

	Dependent variable: Internationalization with motive 'access to know how and technology' (Reference category: no internationalization)		Dependent variable: Internationalization with motive 'access to know how and technology' (Reference category: internationalization without motive 'access to know how and technology')	
	Log odds ratio	Odds ratio	Log odds ratio	Odds ratio
Perceived lack of new technology	*0.280*	*1.324*	*0.701***	*2.017*
Controls				
Log firm size	0.325***	1.384	0.027	1.028
Log firm age	-0.023	0.977	-0.102**	0.903
Turnover increase	0.171**	1.186	0.145**	1.156
Manufacturing	1.880***	6.554	-0.045	0.956
Construction	-0.071	0.932	0.030	1.031
Wholesale	2.090***	8.088	-0.029	0.971
Retail	0.912***	2.488	-0.291**	0.748
Transport and communication	0.436***	1.546	-0.058	0.944
Business services	0.541***	1.718	0.147	1.158
Constant	-2.701	0.067	-0.079	0.924
Home country dummies included	*Yes*		*Yes*	
Host country dummies included			*Yes*	
Pseudo-R^2	0.297		0.115	
-2 Log Likelihood	5,892.710		4,540.121	
Observations	5,768		3,514	

Note: Home/host country dummies not reported.* p<0.10; ** p<0.05; *** p<0.01.

4.5 Discussion and Conclusion

This chapter seeks to explain resource-seeking internationalization among SMEs by investigating, based on resource dependency theory, whether resource-seeking internationalization can be linked to a SME's resource deficiencies. First, this chapter investigates whether perceived resource constraints in terms of labor, finance and new technology increase the likelihood of SMEs to use internationalization as a means to access or acquire the lacking resources, relative to not internationalizing. The findings indicate that perceived lack of skilled labor drives SMEs to pursue internationalization as a means for accessing labor and that perceived constraints regarding access to finance are an important determinant for SMEs to pursue foreign markets as a means to access capital. However, perceived lack of new technology does not increase the likelihood of SMEs to internationalize with the motive to access know how and technology as compared to not internationalizing. These results suggest that perceived constraints in terms of skilled labor and finance are pushing firms to overcome internal resource deficiencies through internationalization.

Second, this chapter also investigates whether perceived resource constraints increase the likelihood of internationally active SMEs to use their international activity as a means to access or acquire the lacking resources. It is found that perceived constraints in terms of skilled labor, access to finance finance and new technology increase the probability of SMEs that are already internationally active to use their international activity as a means to access or acquire these resources.

Generally, these results confirm the prior predictions made in this chapter that resource scarcity in terms of labor, finance and technology stimulates firms to pursue and use internationalization as a means to access the lacking resources and it may be concluded that resource dependency theory is useful for explaining resource-seeking internationalization among SMEs. Whereas resource scarcities are usually perceived as factors that restrain SME internationalization, the findings of this study help to provide a fuller picture on the relationship between resource scarcities and the internationalization of SMEs by highlighting the potential role of resource scarcities in facilitating specific types of (i.e. resource-seeking) firm internationalization. In addition, these findings may suggest that resource-constrained SMEs can be considered as entrepreneurial firms that pro-actively exploit internationalization as a strategy for addressing current resource needs.

The findings of this study have a number of policy implications. First, it is important for SME owner/managers to be aware of the possibility to use internationalization as a means for overcoming resource constraints. Policy makers could help to increase awareness among resource-constrained firms that internationalization as a means for accessing or acquiring resources has become a

(more) feasible option, given that internationalization has become easier and resources have become more easily transferable across countries in the past decades (Autio, 2005; Sapienza, Autio, George and Zahra, 2006). Second, policy makers could play an important role in facilitating the use of international activities by SMEs as a means to overcome resource deficiencies, e.g. by facilitating the formation of alliances with foreign partners for the use of foreign resources (for instance through matchmaking) or by removing constraining regulation, such as restrictions on the free movement of labor.

This study is subject to a number of limitations. The focus in this study is on a firm's intention to acquire or access resources only and it is not possible to assess whether resource-constrained SMEs that pursue or use internationalization as a means for accessing and building up resources are successful in their attempts. Future research could seek to provide more insight into the extent to which SMEs are able to access resources through internationalization and also into how they are able to access resources through internationalization. Furthermore, with the dataset used in this chapter it was possible to control for a firm's current resource base only by using a number of crude proxies (in particular firm size, firm age and a dummy variable for whether a firm has experienced an increase in turnover are used to control for a firm's current resource base). Future research into the link between resource-seeking internationalization and a firm's resource constraints should try to control more elaborately for a firm's existing resource base. In addition, the current study is not able to provide insight into the specific reasons why SME owner/managers are perceiving resource constraints. For example, perceived lack of resources could imply that a firm does not have enough means for achieving growth or that it will be difficult for a firm to survive. Also, future research could investigate how the stocks of resources available in home and host countries affect SME's involvement in internationalization. Finally, this study does not look at differences within industries. Westhead, Wright, Ucbasaran and Martin (2001) found that resource constraints are significantly more relevant for manufacturing firms than for firms active in the construction and services sector. Future research could benefit from undertaking industry-specific analyses.

Part II Cross-Border Entrepreneurship: New Venture Internationalization

5 Entrepreneurial Career Capital and Innovation as Drivers of New Venture Export Orientation

Abstract
This chapter explores the role of entrepreneurial career capital (i.e. entrepreneurial human capital and entrepreneurial social capital) and innovation in explaining new ventures' levels of export orientation. We use Global Entrepreneurship Monitor data from 9,342 early-stage venture entrepreneurs in 36 countries. Our results suggest that both entrepreneurial human capital and entrepreneurial social capital are important in explaining new ventures' export orientation. Entrepreneurial human capital increases the probability for new ventures to offer new products or services. New ventures with unique products or services are more likely to export, indicating that entrepreneurial human capital both has a direct positive relationship with new ventures' export and an indirect positive relationship through the new products or services it offers. We also find that innovative new ventures as well as new ventures with entrepreneurs who possess entrepreneurial human and entrepreneurial social capital are more likely to have a high than a moderate focus on exports.

This chapter is based upon:

Hessels, J. and Terjesen, S. 2008. Entrepreneurial Career Capital, Innovation and New Venture Export Orientation, Research Report H200808, EIM, Zoetermeer.

5.1 Introduction

Traditionally, most international flows of foreign direct investment (FDI), trade and labor were carried out by large, established multinational enterprises (MNEs), however an increasing number of new firms pursue international markets (Rennie, 1993; Oviatt and McDougall, 1994; Moen and Servais, 2002). Firms with international operating domains at or near inception are commonly labeled 'international new ventures' (INVs) (Oviatt and McDougall, 1994). INVs benefit from reductions in international transportation costs and international trade and investment barriers and advancements in technology (Di Gregorio, Musteen and Thomas, 2008; Moen, 2002). The emergence of INVs challenges long-held assumptions about the staged nature of internationalization as a process of increasing involvement in foreign markets (e.g. Johanson and Vahlne, 1977, 1990). Exporting is the first and most common step in a firm's international expansion (Young, Hood and Dunlop, 1988; Young, 1987), including for new ventures (Zahra, Neubaum and Huse, 1997).

We follow previous research in considering firm internationalization (including exports) as an act of entrepreneurship (e.g. Ibeh, 2003; Lu and Beamish, 2001; Lumpkin and Dess, 1996). Internationalization is entrepreneurial as it involves risk-taking: firms face higher levels of risk when operating in foreign markets compared to domestic markets (Lu and Beamish, 2001; Leiblein and Reuer, 2004). Furthermore, internationalization is entrepreneurial as it is associated with innovativeness: international market entry often requires innovative products or products that have been adapted to suit foreign market preferences (Leiblein and Reuer, 2004; Zahra, Hayton, Marcel and O'Neill, 2001). Firms with an entrepreneurial orientation are more likely to survive and succeed in international expansion (Zahra, Hayton, Marcel and O'Neill, 2001). In the present study, we consider all new ventures that enter foreign markets through exports as entrepreneurial, with the high-level exporters considered "more entrepreneurial" than their counterparts with lower levels of export (Fletcher, 2004; Moen, 2002). As export is a strategy of an entrepreneurial firm, we argue that any explanation of the export decision must consider *entrepreneurial* drivers.[16]

Our research answers calls for further understanding of the characteristics that make INVs entrepreneurial (Dimitratos and Jones, 2005), including dimensions of both the individual entrepreneur and the venture. Exporting involves the discovery and exploitation of opportunities abroad and requires substantial quantities of time, information, money, and other resources which are often limited in new ventures. We focus on two entrepreneurial career-specific drivers of new venture export: "entrepreneurial human capital" and "entrepreneurial social capital" which

[16] See also Hessels (2008a) who finds for a sample of SMEs located in the Netherlands that entrepreneurial strategies (such as an innovation strategy) contribute to the internationalization of these firms.

have received limited attention in INV research. Entrepreneurial human capital describes an entrepreneur's skills and experiences regarding entrepreneurship. Entrepreneurial social capital refers to an entrepreneur's networks with other entrepreneurs and the resources that can be drawn from these relationships. In addition we consider the role of innovation as a firm-level entrepreneurial driver of new ventures' export. Innovation is critical to a firm's international expansion (Zahra, Ireland and Hitt, 2001) as unique products/services are easier to sell abroad (Oviatt and McDougall, 1994). Innovation may be important for enabling new ventures' export and also as an outcome of entrepreneurial human capital and entrepreneurial social capital. Therefore, innovation may mediate the relationship between entrepreneurial career capital and new venture export orientation.

To summarize, this chapter explores: How are entrepreneurs' entrepreneurial human capital and entrepreneurial social capital and new venture innovativeness related to new venture export orientation? Most extant INV research draws on case studies or small sample sizes from a handful of countries (Coviello and Jones, 2004). The present study is based on Global Entrepreneurship Monitor (GEM) data from 9,342 early-stage entrepreneurs in 36 countries.

5.2 Theoretical Background

5.2.1 Innovativeness and export orientation

Schumpeter (1939, p. 84) defines innovation as "technological change in the production of commodities already in use, the opening of new markets or of new sources of supply, Taylorization of work, improved handling of material, the setting up of new business organizations such as department stores – in short, any 'doing things differently' in the realm of economic life." Innovation is essential for entrepreneurship (Schumpeter, 1934).

Entrepreneurs are more innovative than non-entrepreneurs (Mueller and Thomas, 2001). Innovation is important in enabling new venture export (Oviatt and McDougall, 1994; Bloodgood, Sapienza and Almeida, 1996): new ventures that possess new products or services and a strong technology base are more likely to enter foreign markets (Keeble, Lawson, Smith, Moore and Wilkinson, 1998; McDougall, 1989; McDougall, Covin, Robinson and Herron, 1994; Oviatt and McDougall, 1995).

Hypothesis 1: The new venture's innovativeness relates positively to the new venture's export orientation.

5.2.2 Entrepreneurial career capital

Through their careers individuals accumulate "information and knowledge embodied in skills, experience and relationship networks acquired through an evolving sequence of work experience over time" (Bird, 1994, p. 326). Career capital includes both human capital and social capital. Entrepreneurial career capital refers to entrepreneurship-specific experience, such as past roles starting and managing an own business (entrepreneurial human capital), and networks of entrepreneurs (entrepreneurial social capital). Entrepreneurial career capital will help people to become more efficient in running their businesses, to become more alert to promising opportunities and to be more aware of what is needed for the business to survive. Consequently, we argue that entrepreneurs with entrepreneurial career capital may be more alert to recognizing promising opportunities abroad, more aware of the advantage of an early focus on international markets or the necessity of international expansion for growth and, because running the business has become more routine, may have more time to explore foreign market opportunities. Therefore, we argue that ventures established by individuals with entrepreneurial career capital are more likely to be export-oriented and that entrepreneurial career capital has a direct and an indirect impact, through innovativeness, on new venture export orientation. In the subsequent sections we will further develop our hypotheses.

5.2.2.1 Entrepreneurial human capital, innovativeness and export orientation

Human capital describes an individual's investments in skills and knowledge (Becker, 1964), predicting that investments in knowledge, skills and experiences enhance cognitive abilities and subsequently result in more productive or efficient behavior. Entrepreneurial human capital refers to an individual's knowledge, skills and experience related to entrepreneurial activity. Individuals typically develop entrepreneurial human capital when they devote time to working in an entrepreneurial firm (Iyigun and Owen, 1998). Previous research considers many aspects of entrepreneurial human capital, including previous start-up experience when explaining entry into (nascent) entrepreneurship (Bates, 1995; Davidsson and Honig, 2003; Gimeno, Folta, Cooper and Woo, 1997; Kim, Aldrich and Keister, 2006; Robinson and Sexton, 1994) and when explaining new ventures' business performance (Bosma, van Praag, Thurik and de Wit, 2004). However, aspects of entrepreneurial human capital have been considered only sporadically in research into new venture internationalization.

New ventures lack organizational experience and do not have established routines. In particular, new ventures are based on the skills and experiences that entrepreneur(s) and their networks bring to a new organization. Prior start-up experience with new ventures may provide basic business skills and confidence that can help compensate for the liability of newness and may therefore facilitate the new market entry (Shrader, Oviatt and McDougall, 2000). Also, individuals

with previous start-up experience may be more efficient in decision making and at running the firm because, for example, they have developed routines, processes and relevant networks (Gimeno, Folta, Cooper and Woo, 1997). Consequently, experienced entrepreneurs may have more time to devote to international activities. Furthermore, individuals with prior start-up experience may have developed skills in recognizing promising opportunities (Shane, 2003), and may be more capable of identifying promising foreign markets opportunities. The same is true for current owner-managers who are apt at spotting new business opportunities (Kim, Aldrich and Keister, 2006). Following the rationale developed above, we expect that ventures started by individuals with entrepreneurial human capital are more likely to be export-oriented.

In addition, based on the premises of human capital theory, we expect there to be a positive relationship between entrepreneurial human capital and new venture innovativeness. Individuals with entrepreneurial human capital are likely to be alert to new market niches and to develop innovative activities. Furthermore, as we expect a direct positive relationship between innovation and export orientation (hypothesis 1), we further expect that entrepreneurial human capital will have an indirect positive relationship with export through innovation.

Hypothesis 2: An entrepreneur's possession of entrepreneurial human capital relates positively to the new venture's export orientation.

Hypothesis 3: An entrepreneur's possession of entrepreneurial human capital relates positively to the new venture's innovativeness.

Hypothesis 4: An entrepreneur's possession of entrepreneurial human capital is indirectly positively related to the new venture's export orientation via the new venture's innovativeness.

5.2.2.2 Entrepreneurial social capital, innovativeness and export orientation

Social capital is "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet and Ghoshal, 1998, p. 243). The fundamental proposition of social capital theory is that network ties provide individuals or organizations with access to resources including knowledge (Bourdieu, 1986; Nahapiet and Ghoshal, 1998). Entrepreneurial social capital captures an individual's network with other entrepreneurs and the resources which can be drawn from these relationships. We expect that entrepreneurs' relationships with other entrepreneurs in their network can play a role in the decisions about firm internationalization. An entrepreneur's social network, for example, can increase alertness to business opportunities (Ardichvili, Cardozo and Ray, 2003) and can help in discovering opportunities abroad, developing specific competitive

advantages and gaining access to knowledge and information, e.g. about foreign markets (Coviello and Martin, 1999; McDougall, Covin, Robinson and Herron, 1994). Furthermore, through network relationships, entrepreneurs can learn from their network partners' responses to various challenges (Yeoh, 2004). Also networks may contribute to a faster pace of market penetration and may help firms to access relevant knowledge from external actors (Eriksson, Johanson, Maajkgård and Sharma, 1997; Ireland, Hitt, Kamp and Sexton, 2001). Thus, in addition to our expectation that an entrepreneur's personal experience and skills are important in explaining new venture internationalization, we expect it to be relevant to also consider social capital from networks with other entrepreneurs.

Furthermore, we expect a positive relationship between entrepreneurial social capital and innovation in the sense that social capital stimulates innovation (Cohen and Fields, 1999). The presence of entrepreneurial social capital enables interaction with other entrepreneurs that, in turn, provides access to resources. We expect that entrepreneurial social capital induces innovation since it is increasingly recognized that entrepreneurial firms make an important contribution to the realization of innovation and technological change (Acs and Varga, 2005; Audretsch and Thurik, 2000). Thus entrepreneurial networks contribute to developing new ideas or to accessing new technologies. We further posit that entrepreneurial social capital has an indirect positive relationship with export through innovation.

Hypothesis 5: An entrepreneur's possession of entrepreneurial social capital relates positively to the new venture's export orientation.

Hypothesis 6: An entrepreneur's possession of entrepreneurial social capital relates positively to the new venture's innovativeness.

Hypothesis 7: An entrepreneur's possession of entrepreneurial social capital is indirectly positively related to the new venture's export orientation via the new venture's innovativeness.

5.2.3 Export orientation level

International involvement, even for new ventures, is not always considered to be entrepreneurial because, for example, internationalization may involve the implementation of routines that the firm developed previously (Zahra, Korri and Yu, 2005). Fletcher (2004) and others suggest that only those new ventures that have an intense international presence from inception can be regarded as truly entrepreneurial. A large number of INV studies focus exclusively on firms with a significant export involvement, such as research into the born global phenomenon (Knight, Madsen and Servais, 2004). However, other authors regard internationalization per se as an act of entrepreneurship or as entrepreneurial (Lu

and Beamish, 2001). In accordance with this view, we consider all new ventures that enter foreign markets through exports as entrepreneurial, while at the same time proposing that high-level exporters are "more entrepreneurial" than their counterparts with lower levels of export (Fletcher, 2004; Moen, 2002). Following this rationale, we expect that individuals who possess entrepreneurial human capital and entrepreneurial social capital are more likely to found new ventures with a high export orientation than with a moderate export orientation. We also expect that innovative new ventures are more likely to have a high than a moderate focus on exports, since innovative products or services and sophisticated technological knowledge are likely to provide new ventures with opportunities to have a substantial focus on international markets (Knight and Cavusgil, 1996).

Hypothesis 8: All else being equal, a new venture is more likely to have a high export orientation than a moderate export orientation when the new venture's entrepreneur posesses entrepreneurial human capital.

Hypothesis 9: All else being equal, a new venture is more likely to have a high export orientation than a moderate export orientation when the new venture's entrepreneur posesses entrepreneurial social capital.

Hypothesis 10: All else being equal, a new venture is more likely to have a high export orientation than a moderate export orientation when the venture is innovative.

5.3 Data and methodology

We use data from the adult population survey of the Global Entrepreneurship Monitor (GEM), an annual population-based survey of entrepreneurial activity in over 40 countries. Each year a telephone or door-to-door survey is conducted with at least 2,000 adults (18-64) in each participating country. We use individual data from 2002 and 2003 from 36 countries. GEM's Total early-stage Entrepreneurial Activity (TEA) measures the percentage of the population that is either actively involved in setting up an own firm (i.e. nascent entrepreneurs) or owner-manager of a young business (i.e. a business that has existed for less than 42 months). For the purpose of our analysis, we focus on export orientation among new and early-stage ventures and select individuals who are involved in TEA. In total, 12,689 people were involved in TEA in the 36 countries that participated in GEM in 2002

and 2003. After omitting missing values and "don't knows"[17], the final sample consists of 9,342 entrepreneurs.

5.3.1 Export orientation

We use several measures of export orientation. GEM respondents provide information about the proportion of customers that normally live abroad. *Export orientation* is coded 1 for new ventures with at least 1% of customers living outside the country's borders and coded 0 for new ventures that have no customers abroad. In the analysis we further distinguish new ventures' *export orientation level*: medium export orientation (i.e. ventures with 1-25% customers that live abroad) and high export orientation (i.e. new ventures with more than a quarter of their customers that live abroad). High export orientation is based on research that commonly operationalizes born globals or high-level exporters as firms that generate at least 25 percent of their total sales from exports (Knight, Madsen and Servais, 2004; Moen, 2002).

One of the defining characteristics for international new ventures is that they are international at their inception (McDougall, 1989; Oviatt and McDougall, 1994; 1997). As it is difficult to observe a firm's inception (Katz and Gartner, 1988), previous studies incorporated definitions up to 6 or 8 years old (e.g. Coviello and Jones, 2004). Oviatt and McDougall (1997) suggest that the time at which the business is founded is when the first serious planning for the business takes place. Accordingly, our measure of new ventures' export orientation includes entrepreneurs that are currently involved in the start-up processes of their venture or have recently gone through this process. This is also consistent with recent research highlighting the importance of considering a firm's very early phases when studying international new ventures (Coviello, 2006; Moen, 2002). Finally, research indicates that foreign market entry by new ventures often takes place within three years of the firm's establishment (Autio, Sapienza and Almeida, 2000; McDougall and Oviatt, 2000). Our definition of new venture export orientation includes ventures up to 42 months old.

5.3.2 Entrepreneurial human capital and entrepreneurial social capital

An individual's entrepreneurial human capital is determined by three dummy variables. First, *perceived entrepreneurial skills* is based on the individual's assessment of whether he/she perceives to have the knowledge, skills and/or experience to start a new venture (coded 1 if 'yes'). Second, *previous entrepreneurial experience* is constructed based on individual's responses to whether he/she has ceased activities as a self-employed or has shut down a firm in

[17] Data on industry types was lacking for a large number of observations and therefore it was not possible to assign the venture to one of the four categories of industry. This is the most important reason for losing a large number of our observations.

the past twelve months which he/she personally owned or managed (coded 1 if 'yes'). Third, *established business owner* captures whether an individual currently owns and manages a firm that has existed for 3.5 years or more (coded 1 if 'yes').

We capture entrepreneur's entrepreneurial social capital with two dummy variables. The first variable, *knowing an entrepreneur,* is based on the individual's response to the question of whether he/she personally knows an entrepreneur who started a new venture in the past two years (coded 1 if 'yes'). A second indicator reflects *informal investor experience* since informal investment experience may enable the individual to establish a network of entrepreneurs. This indicator is based on the individual's response to the question of whether he/she personally invested money in the start-up of someone else's new venture in the past three years (coded 1 if 'yes').

5.3.3 Innovation

Two indicators (dummy variables) are used for new ventures' innovativeness. First, an indicator is used that reflects a venture's *new product/service offerings,* coded 1 when the emerging venture offers a product or service that is new to the market. Second, we also use an indicator that reflects a venture's *use of new technology.* This variable is coded 1 when a venture uses technologies that have been available for less than one year.

Table 5.1 presents descriptives for the variables for export orientation, entrepreneurial human capital, entrepreneurial social capital and innovation.

Table 5.1: Mean and standard deviation for key variables

	Mean	Standard deviation
Export orientation		
Export orientation (0=no foreign customers; 1=at least 1% foreign customers)	0.47	0.49
Export orientation level (0=no foreign customers, 1=1-25% foreign customers; 2= >25% foreign customers)	0.62	0.72
Entrepreneurial human capital		
Entrepreneurial skills (0=no, 1=yes)	0.85	0.36
Previous entrepreneurial experience (0=no, 1=yes)	0.11	0.31
Established business ownership (0=no, 1=yes)	0.05	0.23
Entrepreneurial social capital		
Knowing an entrepreneur (0=no, 1=yes)	0.65	0.48
Informal investor experience (0=no, 1=yes)	0.10	0.30
Innovation		
New product/service offerings (0=no, 1=yes)	0.16	0.37
Use of new technology (0=no, 1=yes)	0.15	0.35

Note: n=9,342

5.3.4 Controls

We include a number of controls. First, four industry dummies are constructed for extractive industries, transforming industries, business services and consumer-oriented industries. In the regression analyses, consumer-oriented industries are taken as the reference category. We also control for the age of the entrepreneur and the entrepreneur's level of education. Three dummies are constructed for low education (no education or some secondary education), medium education (secondary education) and higher education (post secondary education or graduate experience). Low education is the reference category in the regression analysis. Furthermore, we control for opportunity motivation. Opportunity motivation is voluntary participation in entrepreneurial activities; necessity motivation is characterized by the individual's perception that entrepreneurship is the best option for employment, however not necessarily the preferred option. Opportunity entrepreneurship is a dichotomous variable where the responses 'take advantage of business opportunity' and 'have a job but seek better opportunities' are coded 1=yes and 'no better choices for work' is coded 0=no. Entrepreneurs' risk-taking propensity is likely to have a positive influence on the discovery and exploitation of international business opportunities (Oviatt and McDougall, 2005). Low risk aversion and low perceived risk increases the propensity for entrepreneurs to internationalize, since internationalization is usually regarded as more risky than operating in domestic markets (Fletcher, 2001; McDougall and Oviatt, 1996). Therefore, we also include a control variable reflecting

entrepreneurs' fear of failure. When the entrepreneur of the early-stage venture indicates that fear of failure would prevent him/her from starting a new venture this variable is coded 0 and otherwise coded 1. Furthermore, since growth objectives are considered to be relevant in the context of internationalization (Shrader, Oviatt and McDougall, 2000) we also include an indicator for high job-growth expectations coded 1 when an entrepreneur indicates expecting to create 20 or more jobs in his firm within five years and otherwise coded 0. Next, we also include a measure for the extent of competition as a control variable since research suggests that competition is a driving force for early internationalization (McDougall, Covin, Robinson and Herron, 1994). This is a dummy variable, coded 1 when the entrepreneur of the early-stage venture indicates having little or no competitors and otherwise coded 0. We also include a dummy variable for gender (1=male, 0=female). Since we use data covering two years we construct a year dummy for 2002 (0) and 2003 (1). Finally, because our sample includes entrepreneurs of early-stage ventures from 36 countries we construct country dummies for Argentina, Australia, Belgium, Brazil, Canada, Chile, China, Croatia, Denmark, Finland, France, Germany, Greece, Hong Kong[18], Hungary, Iceland, Ireland, Israël, Italy, Japan, Korea, Mexico, the Netherlands, New Zealand, Norway, Poland, Russia, Singapore, Slovenia, Sweden, Switzerland, Thailand, Uganda, the United Kingdom and the United States. The United Kingdom is used as the reference category in the regressions.

5.3.5 Methodology

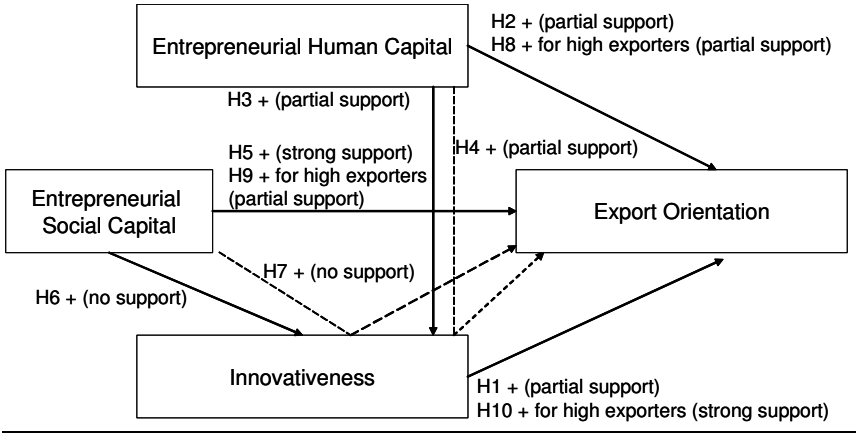
We present the results of the bionomial and multinomial logistic regression analyses used to test our hypotheses. We test for multi-collinearity using variance inflation factors (VIFs). We do not observe VIFs above 10 (the highest VIF is 2.021), indicating that multi-collinearity is not a concern.

5.4 Results

Figure 5.1 depicts the predicted relationships and findings among the key variables.

[18] Although Hong Kong is officially a part of China it is included separately because of its special status.

Figure 5.1: Hypothesized relationships and findings among key variables



To investigate whether our variables for entrepreneurial human capital, entrepreneurial social capital and innovation relate to new ventures' export orientation we first carry out binomial logistic regression with export orientation as the dependent variable (see Table 5.2). The coefficients indicate the effect of a corresponding variable on the odds (ratio of two probabilities) of "export orientation" relative to "no export orientation" which is the base category. The coefficients should be interpreted as follows. A coefficient is above unity implies that the corresponding variable increases the odds of export orientation relative to the "no export" group. A coefficient below unity implies that the variable decreases the odds of belonging to the category "export orientation" to "no export". We find that new ventures with entrepreneurs that perceive entrepreneurial skills are more likely to export. Furthermore, new ventures with entrepreneurs who shut down a business in the past twelve months, who know an entrepreneur and who personally invested money in someone else's new venture are also more likely to export. For the innovation variable 'new product/service offering' we find a positive association with export orientation, whereas we find no significant association for 'use of new technology'. Thus, we find partial support for Hypothesis 1, some support for Hypothesis 2 and strong support for Hypothesis 5.

Table 5.2: Entrepreneurial human capital, entrepreneurial social capital, innovation and export orientation (binomial logistic regression estimates)

	Dependent variable= Export orientation (no export = reference category)	
	Odds ratio	p-value
Entrepreneurial human capital		
Entrepreneurial skills	1.221	0.003
Previous entrepreneurial experience	1.126	0.117
Established business ownership	1.355	0.003
Entrepreneurial social capital		
Knowing an entrepreneur	1.241	0.000
Informal investor experience	1.287	0.001
Innovation		
New product/service offering	1.235	0.001
Use of new technology	1.015	0.829
Controls		
Extractive	0.820	0.051
Transforming	1.087	0.148
Business Services	1.039	0.533
Age of business owner	0.994	0.001
Medium education bus owner	1.030	0.654
High education bus owner	1.321	0.000
Opportunity motivation	1.267	0.000
Fear of failure	1.059	0.316
High job-growth aspirations	1.214	0.000
Little or no competition	1.492	0.000
Gender	1.169	0.001
Year dummy 2003	1.616	0.000
Constant	0.184	0.000
Pseudo-R^2	0.222	
-2 Log Likelihood	11,221.200	
Observations	9,342	

Note: Home country dummies included (not reported).

To investigate whether entrepreneurial human capital and entrepreneurial social capital relate to new ventures' innovativeness we carry out binomial logistic regressions using our indicators for innovation as the dependent variables. Table 5.3 presents our results with new products/service offerings as the dependent variable. We find that two indicators for entrepreneurial human capital (perceived entrepreneurial skills and established business ownership) increase the odds for new ventures to offer new products or services. We find no significant relationship for previous entrepreneurial experience and for our entrepreneurial social capital variables. Table 5.3 also contains results with the use of new technology as the dependent variable. We find a negative association ($p<0.10$) for perceived entrepreneurial skills with new technology use and no significant association for other entrepreneurial human and social capital variables. These results provide partial support for Hypothesis 3 and no support for Hypothesis 6.

Table 5.3: Entrepreneurial human capital, entrepreneurial social capital and innovation (binomial logistic regression estimates)

	Dependent variable= New product/service offerings (no offering of new products/services = reference category)		Dependent variable= Use of new technology (no use of new technology = reference category)	
	Odds	p-value	Odds	p-value
Entrepreneurial human capital				
Entrepreneurial skills	1.265	0.011	0.844	0.056
Previous entrepreneurial experience	0.954	0.626	0.934	0.515
Established business ownership	1.806	0.000	1.054	0.686
Entrepreneurial social capital				
Knowing an entrepreneur	1.042	0.538	0.984	0.807
Informal investor experience	1.162	0.125	1.152	0.157
Controls				
Extractive	0.497	0.000	0.829	0.193
Transforming	0.945	0.449	1.080	0.330
Business Services	0.895	0.165	1.292	0.001
Age of business owner	1.002	0.516	0.998	0.539
Medium education bus owner	1.018	0.839	0.882	0.163
High education bus owner	1.019	0.833	0.919	0.336
Opportunity motivation	1.014	0.856	1.089	0.286
Fear of failure	1.018	0.811	0.918	0.283
High job-growth aspirations	2.430	0.000	2.408	0.000
Little or no competition	1.369	0.000	1.254	0.005
Gender	0.929	0.251	0.969	0.630
Year dummy 2003	1.063	0.393	1.047	0.537
Constant	0.066	0.000	0.107	0.000
Pseudo-R^2	0.148		0.125	
-2 Log Likelihood	7,418.882		7,097.631	
Observations	9,342		9,342	

Note: Home country dummies included (not reported).

The results presented so far allow us to identify indirect associations for entrepreneurial human capital and entrepreneurial social capital with export through the innovation variables. In particular we find that perceived entrepreneurial skills and established business ownership display an indirect positive association with export through new product/service offerings. Overall, our results provide some support for Hypothesis 4 and no support for Hypothesis 7.

As the following next step we distinguish between new ventures with a medium or moderate export orientation level and new ventures with a substantial or high export orientation level. We first use multinomial logistic regression analysis with "no export orientation" as the reference category. The aim of this analysis is to explore the drivers of having a moderate export orientation and of having a high export orientation. The results of the multinomial regression estimates are presented in Table 5.4. We find that all entrepreneurial human and social capital and innovation variables increase the odds of high export orientation (relative to no export orientation). Three of our independent variables (perceived entrepreneurial skills, currently owning an established firm and knowing an entrepreneur) increase the probability of moderate or medium export orientation (relative to no export orientation). These findings suggest that entrepreneurial resources may differ for new ventures along their level of export orientation.

Table 5.4: Entrepreneurial human capital, entrepreneurial social capital, innovation and level of export orientation (multinomial logistic regression estimates)

	Dependent variable = Export orientation (no export = reference category)			
	Medium export		High export	
	Odds	p-value	Odds	p-value
Entrepreneurial human capital				
Entrepreneurial skills	1.160	0.042	1.402	0.001
Previous entrepreneurial experience	1.022	0.798	1.386	0.002
Established business ownership	1.274	0.033	1.531	0.002
Entrepreneurial social capital				
Knowing an entrepreneur	1.249	0.000	1.223	0.006
Informal investor experience	1.134	0.149	1.657	0.000
Innovation				
New product/service offering	1.073	0.332	1.620	0.000
Use of new technology	0.910	0.209	1.255	0.011
Controls				
Extractive	0.672	0.001	1.240	0.125
Transforming	0.964	0.564	1.418	0.000
Business Services	1.070	0.302	0.966	0.697
Age of business owner	0.994	0.007	0.992	0.009
Medium education bus owner	1.075	0.319	0.935	0.491
High education bus owner	1.297	0.000	1.377	0.001
Opportunity motivation	1.271	0.000	1.254	0.008
Fear of failure	1.020	0.750	1.164	0.068
High job-growth aspirations	1.091	0.096	1.565	0.000
Little or no competition	1.264	0.001	2.076	0.000
Gender	1.128	0.024	1.274	0.001
Year dummy 2003	1.710	0.000	1.399	0.000
Pseudo-R^2	0.235			
-2 Log Likelihood	16,139.716			
Observations	9,342			

Note: Home country dummies included (not reported).

We carry out binomial logistic regression analysis to investigate whether entrepreneurial characteristics of entrepreneurs and ventures are indeed more important for explaining the formation of high export-oriented new ventures than moderate export-oriented new ventures. The sample now includes only the 4,424 export-oriented entrepreneurs. The results (see Table 5.5) indicate that new ventures with entrepreneurs who perceive having entrepreneurial skills and who have previous entrepreneurial experience and previous informal investor experience are more likely to have a high than a moderate focus on exports. Also, when new ventures offer new products or services and use the latest technologies this increases the odds of having a high export orientation (as compared to a moderate export orientation). There are only two independent variables that do not increase the odds of high export versus moderate export: currently owning an established firm and knowing an entrepreneur. In sum, we find strong support for Hypothesis 10 and some support for Hypothesis 8 and Hypothesis 9.

Table 5.5: Entrepreneurial human capital, entrepreneurial social capital, innovation and level of export orientation (binomial logistic regression estimates)

	Dependent variable = Export orientation level (medium export = reference category)	
	Odds	p-value
Entrepreneurial human capital		
Entrepreneurial skills	1.209	0.086
Previous entrepreneurial experience	1.343	0.008
Established business ownership	1.214	0.161
Entrepreneurial social capital		
Knowing an entrepreneur	0.984	0.835
Informal investor experience	1.444	0.000
Innovation		
New product/service offering	1.501	0.000
Use of new technology	1.387	0.001
Controls		
Extractive	1.847	0.000
Transforming	1.451	0.000
Business Services	0.890	0.204
Age of business owner	0.997	0.408
Medium education bus owner	0.867	0.166
High education bus owner	1.050	0.620
Opportunity motivation	1.001	0.989
Fear of failure	1.144	0.126
High job-growth aspirations	1.431	0.000
Little or no competition	1.650	0.000
Gender	1.133	0.102
Year dummy 2003	0.898	0.182
Constant	0.328	0.000
Pseudo-R^2	0.121	
-2 Log Likelihood	5,006.179	
Observations	4,424	

Note: Home country dummies included (not reported).

5.5 Discussion and Conclusion

We investigate the role of individuals' entrepreneurial human capital and entrepreneurial social capital and a firm's innovativeness in explaining new venture export orientation. Our research makes several contributions. First, we highlight the potential importance of several entrepreneurial drivers in explaining export orientation among new ventures. Furthermore, we contribute to empirical research in the field of international entrepreneurship by using international comparable data on a large sample of early-stage ventures from 36 different countries. While previous research on international new ventures mainly focused on one country or specific industry samples, our sample includes multiple countries and covers all sectors of industry.

We acknowledge various limitations of our study. First, even though we include a large number of potentially relevant control variables in our analysis, the use of secondary data limits the availability of information. Consequently, we are not able to control for factors such as entrepreneurs' previous international experience (Oviatt and McDougall, 1994; Westhead, Wright and Ucbasaran, 2001) and previous industry experience (Madsen and Servais, 1997; McDougall, Oviatt and Shrader, 2003) which have been considered as relevant factors to explain new venture internationalization in previous research. Second, the cross-sectional nature of our analysis makes it difficult to disentangle causal relationships. Third, this study did not assess performance efects. Future research could consider the role of entrepreneurs' entrepreneurial human capital and of entrepreneurial social capital in new ventures' export success or firm performance. Fourth, future research could consider mediation and interaction effects between firm and entrepreneur characteristics. We considered entrepreneurial human capital and entrepreneurial social capital as separate influences on new venture export, however interdependencies may exist. For example, individuals who have developed entrepreneurship-specific skills and experience are more likely to have build up networks of entrepreneurs than people without entrepreneurial human capital. Entrepreneurial social capital may also increase pressure or provide incentives for individuals to become entrepreneurially active (Stam, Audretsch and Meijaard, 2007) and thus may also contribute to the building up of entrepreneurial human capital. Also, various interactions possibly exist between entrepreneurial human capital, entrepreneurial social capital and innovation. Preliminary analysis with our data provides little evidence of such interactions, which supports the relevance of the straightforward models that are used in this study. Fifth, although we find a clear link between new product/service introductions and new venture export, the quality of new products/services is likely to vary greatly as is the speed with which new products or services penetrate the market (Jovanovic and Lach, 1997). Such aspects are likely to affect the extent to which these new products/services enhance exports. Future research could provide greater insight into the link between new product/service

introductions and new venture export by taking into account the nature and quality of new products and services.

Our study provides additional insight into how entrepreneurs influence new venture behavior and demonstrates the importance of entrepreneurs' entrepreneurial human capital and entrepreneurial social capital for new venture internationalization. We find that new ventures that have entrepreneurs who perceive having entrepreneurial skills, who have undertaken entrepreneurial activities in the past, who personally know an entrepreneur and who have experience as informal investors are more likely to be export-oriented ventures. This supports our suspicion that entrepreneurial human capital and entrepreneurial social capital provide basic business skills and confidence, making individuals more capable of and focused on developing an international orientation with their new firm. Our research provides insight into the relationship between entrepreneurship and internationalization since our findings suggest that fostering entrepreneurship may increase exports. For policymakers these findings imply that support for entrepreneurship in general e.g. by fostering entrepreneurial skills and by supporting people to set up new businesses, may also contribute to a higher number of export-oriented new ventures. Previous research indicates that export-oriented new ventures serve as successful role models, making entrepreneurship a more desirable career option for others (De Clercq, Hessels and van Stel, 2008), thus positive two-sided linkages exist between general and export-driven entrepreneurship, which may provide a rationale for policy makers to integrate entrepreneurship and export policies.

Also, our findings provide more insight into the relationship between new venture innovativeness and export orientation. We find that innovation is important as a driver only for high-level export and not for explaining a moderate export orientation. Furthermore, our findings suggest that new ventures' new products or service offerings has a mediating role in the relation between entrepreneurial career capital and new ventures' export. Oviatt and McDougall (1994) posit that control over unique resources is one of the necessary and sufficient conditions for the existence of INVs. Thus, our finding that moderate exporters are relying neither on unique products/services nor on sophisticated technologies could imply that INV research should not consider moderate exporters. However, although our findings indicate that entrepreneurial resources are more important for new ventures that have a substantial export orientation than for new ventures with a moderate export orientation, we also find that for the latter entrepreneurial resources are more important than for non-export oriented new ventures in terms of entrepreneurial human capital and entrepreneurial social capital. This supports the view that export per se may be considered as an act of entrepreneurship or as entrepreneurial (Ibeh, 2003; Lu and Beamish, 2001; Lumpkin and Dess, 1996). Overall our findings imply the importance of distinguishing between new ventures with a high export drive and those that have only a minor focus on foreign

markets in international entrepreneurship research (Moen, 2002). Such a distinction may also be relevant to consider in research that seeks to differentiate the level of entrepreneurial orientation of exporting firms (Yeoh and Jeong, 1995) or that seeks to understand internationalization as an entrepreneurial behavior over time (Jones and Coviello, 2005). Our findings suggest that new ventures with an entrepreneurial knowledge base and firm-specific advantages are more likely to have a high than a moderate focus on exports. In addition it can be argued that the efficiency by which new knowledge is gained and accumulated through internationalization may be higher in ventures with a substantial focus on exports, for example because such ventures are likely to have a greater exposure to various kinds of knowledge (Yeoh, 2004). Thus, new ventures with a high or substantial focus on exports may be a particularly interesting target group for policymakers and our results suggest that the prevalence of these ventures can be enhanced by fostering innovativeness and by stimulating the development of entrepreneurial human and social capital in society.

6 Export-Driven New Ventures and Economic Growth

Abstract
In this chapter the relationship between a country's prevalence of new ventures and its rate of economic growth is investigated, while distinguishing between *export-oriented new ventures* and *domestic new ventures*. It is generally acknowledged that new venture creation as well as export activity may both be important strategies for achieving national economic growth. However, to our knowledge no attempt has been made to empirically investigate the role of export-driven new ventures in economic growth. We focus on the national level and use data for a sample of 36 countries that participated in the Global Entrepreneurship Monitor in 2002. Our results suggest that a country's prevalence of export-driven new ventures is significantly positively related to economic growth, whereas the prevalence of new ventures that focus exclusively on domestic customers shows no significant relation to national growth.

This chapter is based upon:

Hessels, J. and Stel, A.J. van. 2008. Global Entrepreneurship Monitor and Entrepreneurs' Export Orientation, in: E. Congregado (Ed.), *Measuring Entrepreneurship: Building a Statistical System (International Studies in Entrepreneurship Series, Vol. 16)*, Springer Science, New York, pp. 265-278.

Hessels, J. and Stel, A.J. van. 2007. Export Orientation among New Ventures and Economic Growth, Erasmus Research Institute of Management (ERIM) Report Series 2007-008, Erasmus University Rotterdam, Rotterdam.

6.1 Introduction

This chapter investigates the relationship between a country's prevalence of new ventures and its rate of economic growth while making a distinction between export-oriented new ventures and domestic new ventures (new ventures that focus exclusively on domestic customers). We aim to contribute to three streams of literature: (1) literature on export and economic growth, (2) literature on entrepreneurship, in terms of new venture creation, and economic growth and (3) literature on new venture internationalization and growth.

First, we aim to contribute to literature on export and economic growth by examining the role of export-oriented new ventures in economic growth. Export revenues play an important role in achieving economic growth in both low-income and high-income countries. It is a stylized fact that, on average, exporting firms perform better than non-exporting firms, in particular they tend to be more productive, more capital intensive, more innovative and more efficient (Clerides, Lach and Tybout, 1998; Girma, Greenaway and Kneller, 2004; Kneller and Pisu, 2007). However, previous research with respect to the importance of export for national economies focused strongly on established corporations and large multinational enterprises and paid less attention to the role of start-ups in international markets (Audretsch and Thurik, 2000). In this study we attempt to address this gap by examining the relationship between a country's prevalence of export-oriented new ventures and national economic growth.

Second, it is our aim to contribute to literature on new venture creation and economic growth by making a distinction between different types of new ventures (export-oriented new ventures and domestic new ventures). Entrepreneurship, which involves the creation or startup of new ventures (Gartner, 1985, 1988), is considered to be an important mechanism of economic development (Baumol, 2002; Carree and Thurik, 2003; Schumpeter, 1934; Wennekers and Thurik, 1999) and for developing competitive economies (Hawkins, 1993). Audretsch and Keilbach (2004) argue, based on empirical studies as well as theoretical arguments, that entrepreneurship contributes to economic growth through knowledge spillovers, increased competition and increased diversity. In particular, entrepreneurs contribute to a process of variety and selection where many individual entrepreneurs pursue an observed market opportunity and try to economically exploit a new idea. However, due to increased uncertainty in the global knowledge economy, it is not clear a priori which of these different new ideas are economically viable (Audretsch and Thurik, 2000). Only after setting up a new business do entrepreneurs find out what consumers prefer and hence, whether their new ideas are economically viable. Most of these new ideas will not be economically viable but some of them will be. The successful ideas often turn into innovations. When there are more entrepreneurs pursuing new ideas, the level of competition is higher and the process of variety (i.e. a large number of different new ideas being pursued) and selection will be more intense. From an economy-wide point of view this higher intensity increases the probability of actual

innovations taking place (i.e. of economically viable ideas being 'selected' through the market). Thus, entrepreneurs are important for introducing or generating innovations (Autio, 1994; Acs and Audretsch, 2003). Several empirical studies confirm a positive relationship between entrepreneurship in terms of new venture creation and national economic growth for developed countries (see, for example, van Stel, 2006). We expect that in investigating the relationship between new venture creation and economic growth it is relevant to distinguish between export-oriented new ventures and domestic new ventures. In particular the present chapter builds on the assumption that exporting new ventures develop specific skills (including human capital and innovative skills) through their export activity and, consequently, a high number of exporting new ventures may be even more conducive to the process of variety and selection described above, compared to high numbers of domestically operating new ventures. In other words, high numbers of exporting new ventures may be of specific importance for generating knowledge spillovers and may have a particularly strong impact on competition and innovation and, subsequently, on economic growth.

Third, we aim to extend literature on new venture internationalization and growth by focusing on the country level. Within the field of entrepreneurship there is increased attention for international new ventures, including export-oriented new ventures (Knight and Cavusgil, 1996; McDougall, 1989; Oviatt and McDougall, 1994). Research on international new ventures was spurred by the finding that international new ventures differ significantly from domestic new ventures in terms of their strategy profile and industry structure (McDougall, 1989). Furthermore, interest in international new ventures has also increased because it has been observed that the number of international new ventures is increasing in many different countries around the world (Moen and Servais, 2002; Oviatt and McDougall, 1994; Rennie, 1993) and such ventures are thought to be of importance in terms of innovation and employment (Moen, 2002). However, only a few empirical studies investigated the effect of exports on performance (Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996; Zahra, Ireland and Hitt, 2000), and those that did investigated the link at the micro-level. Whereas it is widely believed that internationally oriented new ventures are important in terms of national economic growth (Moen, 2002), to the best of our knowledge, this link has not been investigated empirically. In this chapter we examine the link between new venture internationalization and growth at the country level. The advantage of using the country- or macro-level is that it is possible to capture indirect effects of export-oriented new ventures that reach further than the firms' own performance (economy-wide effects e.g. in terms of spillover effects, higher levels of competition and increased diversity). Furthermore, based on previous research (Moen, 2002) we distinguish between new ventures with a moderate export orientation and new ventures with a high export orientation.

Our empirical analysis uses data for 36 countries that participated in the Global Entrepreneurship Monitor in 2002. We make a distinction between three groups of countries: higher-income countries, lower-income countries and transition economies. Our model is derived from a model developed by van Stel, Carree and Thurik (2005) for linking new venture creation to economic growth. In the current chapter we extend this model by considering the impact on growth of both domestic new ventures and export-oriented new ventures and by making a distinction between different types of export-oriented new ventures.

The chapter is structured as follows. A review of the literature and the development of our hypotheses are presented in Section 6.2. Next, in Section 6.3, we describe the data and the research method used for the empirical analysis. In Section 6.4 we present the results of our empirical analysis of the association of the presence of new ventures (domestic new ventures and export-oriented new ventures) and national economic growth. Finally, in Section 6.5 we discuss the outcomes and draw some conclusions.

6.2 Theory and hypotheses

6.2.1 Exports and new venture internationalization

Exports are crucial for the economic development of nations (Almeida Couto, Borges Tiagio, Vieira and Fortuna, 2006; Girma, Greenaway and Kneller, 2004; Lages and Montgomery, 2004). Exports have a positive impact on the national amount of foreign exchange reserves and on national prosperity, and contribute to the development of national industries, to improved productivity and to the creation of employment. Previous research regarding the importance of export for national economies focused strongly on established corporations and large multinational enterprises and less attention has been paid to the role of newly established firms (Audretsch and Thurik, 2000). Recently however there has been an increased focus on international operations of new ventures (Oviatt and McDougall, 1994). Such ventures are commonly labeled as 'international new ventures' (Oviatt and McDougall, 1994) or 'born globals' (Rennie, 1993; Knight and Cavusgil, 1996). Although it is generally acknowledged that the international operations of new ventures are important in terms of macro-economic growth (Moen, 2002), this link, to the best of our knowledge, has not been investigated empirically. This may be due partly to the lack of data (in particular international comparative statistics) concerning export activity of new firms at the country level. In order to contribute to this gap in research, the focus in this study will be on investigating the link between a country's prevalence of new ventures that are oriented toward exports and its rate of economic growth. We use a unique data set from the Global Entrepreneurship Monitor project. This data set provides a first attempt to collect international comparative data on the export orientation of a country's early-stage ventures.

Literature on international new ventures describes the internationalization of firms as "a rapid process of international expansion from inception, using a range of market entry modes in multiple markets" (Jones and Coviello, 2005, p. 284). However, export activity is considered to be the first and most common step in a firm's international expansion (Young, 1987; Young, Hood and Dunlop, 1988) and export activity is the most common mode of foreign operation for new ventures (Zahra, Neubaum and Huse, 1997). One reason why exporting is an important means for international expansion among newly established firms is that export does not require major capital investments (Erramilli and D'Souza, 1993; Root, 1994) and the commercial and financial risks are lower compared to, for example, foreign direct investment (Jaffe and Pasternak, 1994).

6.2.2 New venture internationalization, firm performance and learning

The financial merits of export at the firm-level are well reported in literature. It is, for example, widely acknowledged in literature that exports are important for expanding sales, achieving business growth and for improving financial performance (Daniels and Bracker, 1989; Edmunds and Khoury, 1986; Zahra, Neubaum and Huse, 1997). It is believed that new ventures may benefit from exporting in terms of improving a venture's competitive performance, financial performance and growth (Oviatt and McDougall, 1997; Zahra, Neubaum and Huse, 1997). The new venture internationalization model suggests that internationalization is necessary for ensuring opportunities for firm growth (Oviatt and McDougall, 1994). However, empirical research on international activities of new ventures has focused mainly on antecedents of early-stage international activity in trying to explain the emergence of internationally oriented new firms or the early internationalization of firms (Zahra, 2005). Only a few empirical studies have focused on identifying economic contributions of early-stage firms in terms of growth and profitability (Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996; Zahra, Ireland and Hitt, 2000). These studies find only weak evidence of a positive link between internationalization and performance. Bloodgood, Sapienza and Almeida (1996) found, for example, focusing on 61 high-potential new ventures in the U.S., that internationalization was significantly, but only marginally, related to earnings after two years, and was not related to sales growth. McDougall and Oviatt (1996) found, for their sample of 62 U.S. new venture manufacturers in the computer and communications equipment industries, that higher levels of export sales were related to higher relative market share two years later, but they did not find evidence of a direct significant relation between the percentage of foreign sales and subsequent return on investment. Because of this weak empirical foundation more research is needed on the direct as well as indirect effects of new ventures' international operations on economic performance (Zahra, Ireland and Hitt, 2000).

Export activity may not only generate financial benefits for the firm, but can also be viewed as a process of learning and of accumulation of knowledge and technology (Blalock and Gertler, 2004; Yeoh, 2004). Economic literature suggests a "learning-by-exporting" effect (Blalock and Gertler, 2004; Branstetter, 2006;

Chuang, 1998) and Oviatt and McDougall (1994) argue that international new ventures are also likely to enjoy advantages of knowledge generation through internationalization. In particular, it is suggested that international new ventures differ fundamentally from domestic new ventures because internationalization is a source of competitive advantage through which new ventures are able to access resources and thus to expand their resource base (Autio, 2005; Kuemmerle, 1999; 2002; Oviatt and McDougall, 1994). Case study evidence suggests that, for ventures that internationalize in early-stages, cross-border activities that augment the venture's knowledge base are even more prevalent than cross-border activities that exploit the venture's knowledge base (Kuemmerle, 2002). The augmentation of knowledge may relate to different kinds of knowledge.

Through exporting, for example, firms learn to improve or upgrade their products or their production processes or obtain access to new technological knowledge through contacts with advanced competitors in their export markets (Branstetter, 2006). Thus, exports are likely to contribute to a firm's innovativeness and technological learning (Hessels, 2007a; Zahra, Ireland and Hitt, 2000). Yli-Renko, Autio and Sapienza (2001) find for a sample of young (1-10 years old) technology-based ventures that the acquisition of knowledge through exports relates positively to the development of new products, the development of technological distinctiveness and the realization of overall lower sales costs.

Also, exports are likely to result in increased knowledge and higher human capital levels, also for small and new firms (Lu and Beamish, 2001). Exports, for example, result in the accumulation of knowledge of foreign markets and in the development of new organizational capabilities through the accumulation of experience abroad (Johanson and Vahlne, 1977; Zahra, Ireland and Hitt, 2000). Gaining new knowledge about foreign markets, including knowledge about foreign customers and competitors, also helps firms to differentiate themselves from others, concerning, for example, product features such as quality or customer service (Yeoh, 2004). Also, the experience that firms gain from export activity may lead them to explore new foreign markets and become involved in other forms of internationalization, such as licensing, joint ventures or direct investment abroad (Lages and Montgomery, 2004). Exports may also contribute to the enhancement of managerial skills.

Other potential merits of exporting include the extension of the life cycle of products and absorption of excess capacity (Daniels and Bracker, 1989; Katsikeas, Leonidou and Morgan, 2000; Lages and Montgomery, 2004). Furthermore, through market diversification, exporting provides an opportunity for firms to become less dependent on the domestic market.

The view that exporting provides a basis for organizational learning is in line with organizational learning theory (Cohen and Levinthal, 1990). In particular, this theory stresses that learning, in the sense of the acquisition, assimilation and exploitation of new knowledge, provides a base upon which further knowledge and innovations can be developed. The resource-based view (Barney, 1991;

Penrose, 1959; Wernerfelt, 1984), which argues that firm resources are the key to the firm's acquisition and maintenance of sustainable competitive advantage, predicts that a firm's ability to enter foreign markets is directly related to the tangible and intangible resources that are available to the firm. The resource-based view also acknowledges that a firm may be able to access or develop resources and capabilities through interaction in business relationships. In this sense, undertaking international business activities may be a means for firms to complement or obtain access to new resources or to build up new competences. Hence, the resource-based view also recognizes that internationalization may provide a means for firms to accumulate resources.

Regarding learning through internationalization recent literature suggests a learning advantage of newness for new ventures (Autio, Sapienza and Almeida, 2000; Knight and Cavusgil, 2004; Sapienza, Autio, George and Zahra, 2006; Yeoh, 2004). Autio, Sapienza and Almeida (2000) find that internationalization at an early age is positively related to a firm's subsequent international growth. The idea is that internationalization results in innovativeness, knowledge and capabilities that increases new ventures' probability for growth and for succes in foreign markets (Autio, Sapienza and Almeida, 2000; Knight and Cavusgil, 2004). Yeoh (2004) also suggests that exposure to foreign markets early in a firm's age fosters different kinds of learning such as technological learning and foreign market learning. Sapienza, Autio, George and Zahra (2006) argue that new ventures have a high ability to learn through internationalization because they are less likely to suffer from structural inertia and rigidities (resulting from existing routines or resource configurations for example) than more established organizations. In addition, Lu and Beamish (2001) argue that, since internationalization is particularly risky and uncertain for new ventures, this may stimulate processes of learning and adaptation through foreign market entries.

6.2.3 Export-driven new venture creation and economic growth

In neoclassical or exogenous growth models, economic growth is exogenously determined by technological progress. In contrast, the model of endogenous growth or new economic growth theory proposes that economic growth is driven by the accumulation of knowledge and technologies, which are viewed as forces that are internal to the economic system, i.e. endogenous (Romer, 1986). According to Romer's model the stock of human capital is important for economic growth and economies with larger stocks of human capital will experience faster economic growth (Romer, 1990).

In the endogenous growth model technological advance comes from individual actions or individual agents with endowments of new economic knowledge. Acs, Audretsch, Braunerhjelm and Carlsson (2006) argue that the endogenous model fails to include that entrepreneurship plays an important role in the transmission of knowledge and consequently is a crucial element in the process of economic growth. They suggest that entrepreneurship or the propensity to start new firms should be added to models explaining economic growth as the knowledge of

individuals is commercialized by the start-up of new ventures. Audretsch and Keilbach (2004) argue based on previous empirical studies as well as theoretical arguments that there are three means through which entrepreneurship contributes to economic growth. The first is through knowledge spillovers; the second is through increased competition from the increased number of enterprises and the third is through increased diversity since entrepreneurship increases the variety of enterprises present in an economy. There is indeed empirical evidence that the creation of new ventures exerts a positive influence on economic growth in developed countries (van Stel, 2006).

Studies on the link between new venture creation and economic growth generally make no distinction between different types of new ventures.[19] Following the increasing number of new ventures that internationalize early in their life cycles (Oviatt and McDougall, 1994; Zahra, Ireland and Hitt, 2000) international activities are of increasing interest to researchers in entrepreneurship (McDougall and Oviatt, 2004). We expect that in studying the relationship between new venture creation and economic growth it is relevant to distinguish between new ventures focusing on exports and new ventures focusing on domestic customers only. We argue that export-driven new ventures in particular may contribute to the generation of positive knowledge spillovers, to increased competition and to increased diversity in the economy and, consequently, to economic growth. In economic literature it is considered a stylized fact that exporting firms on average perform better than non-exporting firms. In particular they tend to be more productive, more capital intensive and more innovative (Girma, Greenaway and Kneller, 2004; Kneller and Pisu, 2007). There are two explanations. First, in order to be able to export, firms need some kind of competitive advantage such as unique resources or innovative abilities, because they have to adapt their products or services to foreign markets. Exporting firms either already possess these resources and capabilities before entering a foreign market or they have to develop these since the knowledge and capabilities that the firm has developed for the local or national market are often not suitable for operations abroad (Lu and Beamish, 2001). Second, export activity has many potential benefits for firms, not only in terms of financial gains, but export may also contribute to learning or competence development. By doing business abroad firms are exposed to new processes and technologies that may further contribute to increased productivity and innovativeness. In sum, exporting facilitates both the exploitation of existing knowledge and the acquisition of new knowledge (e.g. market knowledge and technological knowledge).

We expect these positive effects of export activity to apply equally to new ventures and we find support for this in literature. Literature on international new ventures, for example, suggests that new ventures that are able to export from the start tend to be innovative or possess unique resources, in particular intangible knowledge-based resources (e.g. management experience in global markets or technological capabilities) (Bloodgood, Sapienza and Almeida, 1996; Oviatt and

[19] One exception to this is a study by Wong, Ho and Autio (2005).

McDougall, 1994). International new ventures also tend to have high initial levels of human resources (Yeoh, 2004). In the previous section we already discussed the learning benefits from exporting for new ventures.

6.2.4 Developing the hypotheses

The concepts developed so far lead us to argue that (early) export may have positive effects on a firm's performance and learning as well as on a country's economy as a whole. First, when many new ventures are oriented toward export the chance that the knowledge gained through this activity spills over to other firms may be considered high. The reason for this is that small and new firms have many business contacts with other firms (for instance through cooperation or through buyer-supplier relations) that may lead to the exchange of knowledge. Via these so-called spillovers knowledge may accumulate not only at the firm-level (i.e. the exporting firm) but also at the aggregate level (i.e. the firm population in general). Second, since international new ventures both build on their unique knowledge or resources and also accumulate new knowledge and resources through their export activity, they are likely to increase competition in the national market. Third, a higher incidence of exporting new ventures may contribute in particular to more diversity in the economy, since export-oriented new ventures tend to be innovative and they may further increase their innovativeness through foreign market exposure.

We further argue that in examining the relationship between new venture creation and economic growth, next to distinguishing between domestic new ventures and export-oriented new ventures, it is relevant to distinguish between new ventures with a moderate focus on exports and new ventures with a substantial or high focus on exports (Moen, 2002). Ventures with a high focus on exports are likely to have a greater knowledge base or to have a higher level of firm-specific advantages and product or service quality (enabling them to have a high focus on exports) than more moderate exporters (Brooks, 2006). Furthermore, the efficiency by which new knowledge is gained and accumulated through internationalization may be higher in ventures with a substantial focus on exports, for example because such ventures are likely to have a greater exposure to various kinds of knowledge (Yeoh, 2004).

Furthermore, we expect that the relationship between export orientation among new ventures and economic growth may differ for different groups of countries along their level of economic development. It is relevant to distinguish between higher-income countries and lower-income countries, since higher-income countries are better integrated in the world economy than lower-income countries (UNCTAD, 2006). In higher-income countries firms tend to export goods that use specialized skilled labor (Bajona, 2004). Consequently exporting firms, including exporting new ventures tend to have high human capital levels and they are likely to have sufficient absorptive capacity to learn through exporting. In lower-income countries, the rate of necessity entrepreneurship is comparatively high and opportunities to export are more limited for new ventures than in higher-income

countries, since new ventures tend to have lower human capital levels and to be active in low value-added activities. Consequently, export-oriented new ventures in lower-income economies are less likely to increase diversity, to stimulate competition and to generate positive externalities to other economic actors than export-oriented new ventures in higher-income countries.

One group of countries that deserves specific attention are transition economies. These countries used to be closed economies and have only fairly recently opened their markets to the world economy, meaning that there are many potential export opportunities for firms from these countries that have not yet been exploited. There is a lot of internal turbulence resulting from processes of restructuring and privatization, that has resulted in higher levels of entrepreneurial activity in these countries (Grilo and Thurik, 2006). Transition economies are also characterized by relatively low levels of gross domestic product (GDP) per capita (Smallbone and Welter, 2001), meaning that entrepreneurs from these countries have limited opportunities for growth in the domestic market, and this may stimulate firms that are located in these countries to expand to foreign markets. Also, these countries are characterized by highly dynamic environments which have been found to be a major factor in influencing both the incidence of new venture creation and the quality of entrepreneurial activity (Smallbone and Welter, 2001). Foreign firms are now increasingly operating within their markets, which also contributes to these economies being highly turbulent. Furthermore, the population in transition economies is rather highly educated and there are possibilities for cheap high value added production. Overall, this leads us to suspect that export-driven new ventures are more likely to contribute to economic growth in higher-income and transition economies as compared to lower-income countries.

In our analysis we focus on the macro- or national level, since a macro-analysis provides the possibility to capture both the direct effects of exporting on new venture performance and the indirect effects of exporting new ventures that reach further than their own performance. For instance, an increase in the number of exporting new ventures may stimulate incumbent firms to improve their performance as otherwise the incumbents may no longer be able to compete in the market they operate in (van Stel, 2006). Thus, by using a macro-level analysis it is possible to incorporate economy-wide effects in terms of knowledge spillovers, increased competition and increased diversity. To our knowledge, no attempt has been made thus far to link the prevalence of export-oriented new ventures to macro-economic outcomes.

Based on the arguments developed above we formulate the following four hypotheses:

Hypothesis 1: There is a positive relationship between a country's prevalence of new ventures and its rate of economic growth

Hypothesis 2: The positive relationship between a country's prevalence of new ventures and its rate of economic growth is more pronounced for export-oriented new ventures versus domestic new ventures.

Hypothesis 3: The positive relationship between a country's prevalence of export-oriented new ventures and its rate of economic growth is more pronounced for new ventures with a high orientation on exports versus new ventures with a moderate orientation on exports.

Hypothesis 4: The positive relationship between a country's prevalence of export-oriented new ventures and its rate of economic growth is more pronounced in higher-income and transition countries versus lower-income countries.

6.3 Methodology

6.3.1 Data and sample

Data on a country's prevalence of new ventures, domestic new ventures and export-oriented new ventures are taken from the Global Entrepreneurship Monitor (GEM). We use a sample of 36 countries participating in GEM in 2002. The GEM is a world-wide research project aiming to describe and analyze entrepreneurial activity and the institutional conditions to which this is subjected in a large number of countries. Data are collected through adult population surveys that are conducted in participating countries. In all participating countries representative samples of randomly selected adults (at least 2,000 per country) are surveyed each year. The GEM project offers comparable data across countries, since entrepreneurial activity is consistently measured in a harmonized way across a large number of countries (Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia and Chin, 2005).

A TEA (Total early-stage Entrepreneurial Activity) index has been developed within the framework of the GEM in order to measure early-stage or new entrepreneurial activity. The TEA is a combination of nascent entrepreneurs (those currently involved in concrete activities to start up a new business) and owners of young businesses (those currently owning a business that is less than 42 months old) (see definition in Section 6.3.2).

Whereas a large number of organizations publish international comparative export data such as the WTO, OECD, UN (Commodity Trade Statistics Database-COMTRADE) and Eurostat, there are no official international comparative export statistics relating to exports by small and new firms. In this respect the Global

Entrepreneurship Monitor initiative fills an important gap by providing a harmonized measure for export orientation of new/emerging ventures across countries.

Our empirical analysis builds on a previous article by van Stel, Carree and Thurik (2005) in which it is investigated whether TEA -as defined below- is related to gross domestic product (GDP) growth for a sample of 36 countries. The authors find that the TEA does indeed positively relate to economic growth but that the influence depends on the level of economic development. In particular the contribution to economic growth is found to be stronger for higher-income countries, as compared to lower-income countries. The authors argue that this may be related to higher human capital levels of entrepreneurs in higher-income countries.

In the current chapter we perform a similar regression analysis but, in addition to the general TEA, we also use the TEA domestic rate, the TEA export rate, the TEA medium export rate and the TEA high export rate as independent variables (see variable description below). Recent insights indicate not only that new venture internationalization is an important phenomenon to study but also that the age at which new ventures internationalize is important. For example, it has been argued that the earlier a firm internationalizes the more likely the firm will develop capabilities for adaptation to uncertain environments (Sapienza, Autio, George and Zahra, 2006). Research has also found that an early initiation of internationalization is associated with faster international growth (Autio, Sapienza and Almeida, 2000). Based on these insights we wish to include new ventures that focus on exports in their earliest stages and therefore we use the TEA index including both those actively involved in starting a new venture and entrepreneurs of young businesses. Such a definition corresponds with the view that it is essential for international new ventures to view the domain in which they operate "(…) as international from the initial stages of the firm's operation." (McDougall, 1989, p. 387).

In addition to data on new venture creation activity (TEA), new venture domestic activity (TEA domestic) and new venture export orientation (TEA export) from the GEM we also use data from secondary sources on GDP growth, per capita income, and the growth competitiveness index (GCI). The sources and definitions of all variables we use are described below.

6.3.2 Measures

Total early-stage Entrepreneurial Activity (TEA)

We use the TEA as a proxy for a country's prevalence of new ventures. TEA is defined as the percentage of adult population that is either actively involved in starting a new venture or is the owner-manager of a business that is less than 42 months old. Data on total early-stage entrepreneurial activity are taken from the GEM Adult Population Survey for 2002.

Total early-stage Domestic Activity (TEA Domestic)

The TEA domestic is used as an indicator for a country's prevalence of domestic new ventures. The TEA domestic rate is defined as the percentage of adult population that is either actively involved in starting a new venture or is the owner-manager of a business that is less than 42 months old, and has no customers abroad. This data is also derived from the GEM 2002 Adult Population Survey. We define this group as domestic new ventures.

Total early-stage Export Activity (TEA Export)

We use the TEA export as a proxy for a country's prevalence of export-oriented new ventures. The TEA export rate is defined as the percentage of adult population that is either actively involved in starting a new venture or is the owner-manager of a business that is less than 42 months old, and has customers abroad. Data on early-stage export activity is also taken from the GEM Adult Population Survey 2002.

It is our view that research does not distinguish sufficiently between new ventures with a high focus on exports and those with a low or moderate export orientation. In our analysis we distinguish between new ventures with a moderate export orientation, which we label "TEA medium export rate" (1-25% of customers live abroad) and new ventures with a high export orientation: "TEA high export rate" (26-100% of customers live abroad). Having a larger share of customers abroad increases the amount and diversity of knowledge that young firms acquire through internationalization.

Growth of GDP (ΔGDP)

Real GDP growth rates are taken from the IMF World Economic Outlook database of the International Monetary Fund, version September 2005.

Per capita income (GNIC)

Gross national income per capita 2001 is expressed in (thousands of) purchasing power parities per US$, and these data are taken from the 2002 World Development Indicators database of the World Bank.

Growth Competitiveness Index (GCI)

Data on the GCI 2001 are taken from page 32 of The Global Competitiveness Report 2001–2002. The GCI is constituted of the following three main factors to assess a country's potential for economic growth: the quality of the macro-economic environment, the state of the public institutions and the level of technology. For further details about this index we refer to McArthur and Sachs (2002).

6.3.3 Analysis

We investigate whether a country's level of entrepreneurship (in terms of the prevalence of new ventures) may be considered a determinant of economic growth, along with technology, public institutions and the macroeconomic environment (which are captured in a combined way by the GCI). As both entrepreneurship and the factors underlying the GCI are assumed to be structural characteristics of an economy, we do not want to explain short term economic growth but rather growth in the medium term. Therefore we choose average annual real GDP growth over a period of four years (2002–2005) as the dependent variable in this study. Following van Stel, Carree and Thurik (2005) we use the (log of) initial income level of countries, to correct for catch-up effects, and lagged growth of GDP, to correct for reversed causality effects, as additional control variables.

Following van Stel, Carree and Thurik (2005), we allow for the possibility of different effects for highly developed and developing countries. In addition we also test whether the effect of TEA is different for transition countries.[20] TEA rates may reflect different types of new ventures in countries with different development levels. In particular, human capital levels may differ between higher- and lower-income countries, implying different impacts on economic growth. This is tested by defining separate TEA variables for different groups of countries (rich versus poor; higher-income versus transition versus lower-income). Our model is represented by equations (1), (2) and (3). These equations are estimated separately by OLS. Hypothesis 1 corresponds to parameters b1 and c1 being greater than zero. The hypothesis that the positive relationship between a country's prevalence of new ventures and its rate of economic growth is more pronounced for export-oriented new ventures as compared to domestic new ventures (Hypothesis 2) corresponds to b3 (c3) being larger than b2 (c2). Hypothesis 3 implies that coefficients b3 and c3 are increasing with the extent of export orientation of the ventures included in the TEA measure. Finally, the hypothesis of a stronger relationship between a country's prevalence of export-driven new ventures and economic growth for rich countries compared to poor countries (Hypothesis 4) corresponds to coefficient b3 being larger than coefficient c3.

[20] The 36 countries in our sample are: Argentina^{D}, Australia, Belgium, Brazil^{D}, Canada, Chile^{D}, China^{T}, Taiwan, Denmark, Finland, France, Germany, Hong Kong, Hungary^{T}, Iceland, India^{D}, Ireland, Israel, Italy, Japan, Korea, Mexico^{D}, Netherlands, New Zealand, Norway, Poland^{T}, Russia^{T}, Singapore, Slovenia^{T}, South Africa^{D}, Spain, Sweden, Switzerland, Thailand^{D}, United Kingdom and United States. Symbol ^{D} indicates developing (low-income) country while symbol ^{T} indicates a transition country. In the categorisation rich versus poor, eleven of the twelve countries marked as ^{D} or ^{T} are classified as (relatively) poor, the exception being Slovenia.

$$\Delta GDP_{it} = a + b_1\ TEA^{rich}_{i,t-1} + c_1\ TEA^{poor}_{i,t-1} + d\ \log(GNIC_{i,t-1}) + e\ GCI_{i,t-1} + f\ \Delta GDP_{i,t-1} + \varepsilon_{it} \quad (1)$$

$$\Delta GDP_{it} = a + b_2\ TEA\_domestic^{\ rich}_{i,t-1} + c_2\ TEA\_domestic^{\ poor}_{i,t-1} + d\ \log(GNIC_{i,t-1}) + e\ GCI_{i,t-1} + f\ \Delta GDP_{i,t-1} + \varepsilon_{it} \quad (2)$$

$$\Delta GDP_{it} = a + b_3\ TEA\_export^{\ rich}_{i,t-1} + c_3\ TEA\_export^{\ poor}_{i,t-1} + d\ \log(GNIC_{i,t-1}) + e\ GCI_{i,t-1} + f\ \Delta GDP_{i,t-1} + \varepsilon_{it} \quad (3)$$

To illustrate the data at hand, Table 6.1 provides the TEA rates and the TEA medium export and high export rates in 2002 as well as the average annual growth rates of GDP over the period 2002-2005.

Table 6.1: Total early-stage Entrepreneurial Activity (TEA) rates (2002) and average GDP growth rates (2002-2005) for 36 countries

	TEA rate	TEA medium export rate	TEA high export rate	Average GDP growth rate (%)
Argentina	14.15	0.00	1.82	3.60
Australia	8.68	3.29	0.76	3.18
Belgium	2.99	1.33	0.88	1.53
Brazil	13.53	0.50	0.28	2.65
Canada	8.82	4.23	1.86	2.73
Chile	15.68	4.95	2.86	4.48
China	12.34	3.37	0.92	9.08
Denmark	6.53	1.82	1.12	1.45
Finland	4.56	2.19	1.33	2.50
France	3.20	1.64	0.71	1.43
Germany	5.16	3.62	0.95	0.58
Hong Kong	3.44	1.17	1.17	4.88
Hungary	6.64	1.25	0.51	3.50
Iceland	11.32	5.54	1.81	3.28
India	17.88	0.08	0.17	6.63
Ireland	9.14	4.57	2.00	5.00
Israel	7.06	2.03	1.04	2.28
Italy	5.90	1.36	0.81	0.48
Japan	1.81	0.31	0.05	1.45
Korea	14.52	5.21	2.01	4.63
Mexico	12.40	1.59	1.91	2.40
Netherlands	4.62	1.46	0.78	0.60
New Zealand	14.01	5.84	3.08	3.85
Norway	8.69	3.16	1.71	1.88
Poland	4.44	0.99	0.21	3.40
Russia	2.52	0.11	0.34	6.18
Singapore	5.91	2.08	1.49	4.23
Slovenia	4.63	1.78	1.13	3.58
South Africa	6.54	0.97	1.01	3.60
Spain	4.59	1.66	0.64	2.98
Sweden	4.00	0.99	0.75	2.43
Switzerland	7.13	2.83	2.12	0.60
Taiwan	4.27	0.90	0.70	4.08
Thailand	18.90	4.57	1.52	5.45
United Kingdom	5.37	1.67	0.83	2.40
United States	10.51	1.65	0.50	3.00
Mean	*8.11*	*2.24*	*1.16*	*3.22*
Standard deviation	*4.59*	*1.64*	*0.73*	*1.84*

Sources: GEM and IMF.

6.4 Results

The results of our empirical exercises are shown in Tables 6.2-6.6. The regression results of the impact of the general TEA index are presented in Table 6.2 (see Equation 1), while Tables 6.3, 6.4, 6.5 and 6.6 give the results using the TEA domestic (see Equation 2), the TEA export, the TEA medium export and the TEA high export as the main independent variables (see Equation 3).

Table 6.2: Explaining economic growth from TEA rate

TEA	Model 1	Model 2	Model 3
Constant	19.6**	26.1**	22.2**
	(4.2)	(3.0)	(2.5)
TEA	0.047		
	(0.8)		
TEA *rich*		0.087*	
		(1.8)	
TEA *poor*		-0.005	
		(0.1)	
TEA *higher-income*			0.11**
			(2.2)
TEA *transition*			0.19
			(1.4)
TEA *lower-income*			0.023
			(0.2)
log (GNIC)	-2.2**	-2.8**	-2.4**
	(2.8)	(2.7)	(2.6)
GCI	0.62	0.64	0.63
	(0.7)	(0.8)	(0.7)
lagged GDP growth	0.37**	0.30**	0.22
	(2.9)	(2.1)	(1.2)
R^2	0.626	0.636	0.662
adjusted R^2	0.577	0.576	0.592

Note: n=36. Absolute heteroskedasticity-consistent *t*-values are between brackets. Dependent variable is average annual growth of GDP over the period 2002-2005. TEA is Total early-stage Entrepreneurial Activity rate (*Global Entrepreneurship Monitor*); GCI is growth competitiveness index 2001 (*Growth Competitiveness Report*); GNIC is per capita income of 2001; Lagged GDP growth is average annual growth of GDP over the period 1998-2001.
* Significant at a 0.10 level.
** Siginificant at a 0.05 level

Table 6.3: Explaining economic growth from TEA domestic rate (no customers abroad)

TEA no export	Model 1	Model 2	Model 3
Constant	22.0**	30.3**	22.2**
	(3.7)	(2.9)	(2.5)
TEA_domestic	0.0084		
	(0.1)		
TEA_domestic *rich*		0.14	
		(1.5)	
TEA_domestic *poor*		-0.076	
		(0.5)	
TEA_domestic *higher-income*			0.15
			(1.6)
TEA_domestic *transition*			0.15
			(0.6)
TEA_domestic *lower-income*			-0.031
			(0.2)
log (GNIC)	-2.5**	-3.3**	-2.8**
	(2.9)	(2.6)	(2.3)
GCI	0.80	0.74	0.74
	(0.9)	(0.9)	(0.8)
lagged GDP growth	0.35**	0.28**	0.24
	(2.6)	(1.6)	(1.2)
R^2	0.617	0.641	0.652
adjusted R^2	0.568	0.581	0.580

Note: n=36. Absolute heteroskedasticity-consistent *t*-values are between brackets. Dependent variable is average annual growth of GDP over the period 2002-2005. TEA is Total early-stage Entrepreneurial Activity rate (*Global Entrepreneurship Monitor*); GCI is growth competitiveness index 2001 (*Growth Competitiveness Report*); GNIC is per capita income of 2001; Lagged GDP growth is average annual growth of GDP over the period 1998-2001.
* Significant at a 0.10 level.
** Siginificant at a 0.05 level

Table 6.4: Explaining economic growth from TEA export rate (1-100% of customers from abroad)

TEA export	Model 1	Model 2	Model 3
Constant	22.3**	22.1**	22.3**
	(6.2)	(4.4)	(6.0)
TEA_export	0.13*		
	(1.8)		
TEA_export *rich*		0.13	
		(1.6)	
TEA_export *poor*		0.14	
		(1.0)	
TEA_export *higher-income*			0.16*
			(1.9)
TEA_export *transition*			0.47**
			(2.1)
TEA_export *lower-income*			0.10
			(0.9)
log (GNIC)	-2.4**	-2.4**	-2.4**
	(3.5)	(3.0)	(3.6)
GCI	0.54	0.54	0.66
	(0.6)	(0.6)	(0.7)
lagged GDP growth	0.33**	0.33**	0.24
	(2.6)	(2.4)	(1.3)
R^2	0.639	0.639	0.658
adjusted R^2	0.592	0.578	0.587

Note: n=36. Absolute heteroskedasticity-consistent *t*-values are between brackets. Dependent variable is average annual growth of GDP over the period 2002-2005. TEA is Total early-stage Entrepreneurial Activity rate (*Global Entrepreneurship Monitor*); GCI is growth competitiveness index 2001 (*Growth Competitiveness Report*); GNIC is per capita income of 2001; Lagged GDP growth is average annual growth of GDP over the period 1998-2001.

* Significant at a 0.10 level.

** Siginificant at a 0.05 level

Table 6.5: Explaining economic growth from TEA medium export rate (1-25% of customers from abroad)

TEA medium export	Model 1	Model 2	Model 3
Constant	22.3**	21.8**	21.9**
	(6.3)	(4.3)	(5.5)
TEA_medium export	0.17*		
	(1.7)		
TEA_medium export *rich*		0.16	
		(1.3)	
TEA_medium export *poor*		0.20	
		(1.1)	
TEA_medium export *higher-income*			0.19
			(1.5)
TEA_medium export *transition*			0.56*
			(1.7)
TEA_medium export *lower-income*			0.14
			(0.8)
log (GNIC)	-2.4**	-2.3**	-2.4**
	(3.5)	(3.0)	(3.4)
GCI	0.53	0.51	0.61
	(0.6)	(0.6)	(0.7)
lagged GDP growth	0.32**	0.33**	0.25
	(2.5)	(2.3)	(1.3)
R^2	0.636	0.637	0.650
adjusted R^2	0.589	0.576	0.578

Note: n=36. Absolute heteroskedasticity-consistent *t*-values are between brackets. Dependent variable is average annual growth of GDP over the period 2002-2005. TEA is Total early-stage Entrepreneurial Activity rate (*Global Entrepreneurship Monitor*); GCI is growth competitiveness index 2001 (*Growth Competitiveness Report*); GNIC is per capita income of 2001; Lagged GDP growth is average annual growth of GDP over the period 1998-2001.
* Significant at a 0.10 level.
** Siginificant at a 0.05 level

Table 6.6: Explaining economic growth from TEA high export rate (26-100% of customers from abroad)

TEA high export	Model 1	Model 2	Model 3
Constant	22.2**	23.0**	23.4**
	(5.7)	(4.3)	(5.6)
TEA_high export	0.36		
	(1.4)		
TEA_ high export *rich*		0.42*	
		(1.7)	
TEA_ high export *poor*		0.30	
		(0.7)	
TEA_ high export *higher-income*			0.53*
			(1.8)
TEA_ high export *transition*			1.80**
			(2.0)
TEA_ high export *lower-income*			0.26
			(0.7)
log (GNIC)	-2.5**	-2.5**	-2.7**
	(3.4)	(3.1)	(3.7)
GCI	0.65	0.64	0.88
	(0.8)	(0.7)	(1.0)
lagged GDP growth	0.36**	0.35**	0.24
	(2.9)	(2.5)	(1.4)
R^2	0.637	0.637	0.666
adjusted R^2	0.590	0.577	0.597

Note: n=36. Absolute heteroskedasticity-consistent *t*-values are between brackets. Dependent variable is average annual growth of GDP over the period 2002-2005. TEA is Total early-stage Entrepreneurial Activity rate (*Global Entrepreneurship Monitor*); GCI is growth competitiveness index 2001 (*Growth Competitiveness Report*); GNIC is per capita income of 2001; Lagged GDP growth is average annual growth of GDP over the period 1998-2001.
* Significant at a 0.10 level.
** Siginificant at a 0.05 level

From Table 6.2 we see that the general TEA index has a significantly positive impact on national economic growth for highly developed countries but no impact for transition and developing countries, providing partial support for Hypothesis 1.

Tables 6.3-6.6 reveal that a country's prevalence of export-driven new ventures is positively related to economic growth, whereas this is not the case for domestic new ventures. Comparing the coefficients of the various TEA rates across the tables, we see that in each of the three model variants for TEA export the impact of TEA export is higher compared to the impact of TEA domestic. For instance, the coefficient for the TEA domestic rate is 0.0084, while the coefficients of the TEA export rate, the TEA medium export rate and the TEA high export rate are 0.13, 0.17 and 0.36, respectively. The measures for TEA export also display higher t-values as compared to TEA domestic.[21] Our suspicion that it is relevant to distinguish between domestic new ventures and export-driven new ventures when investigating the relationship between new venture creation and economic growth is confirmed. These outcomes provide support for our Hypothesis 2.

Among higher-income countries we find a significant positive association for new ventures that have a substantial or high focus on exports with economic growth but no evidence of a significant impact for medium export involvement. It seems that only a substantial amount of export activity by new ventures contributes to macro-economic growth. This could mean that exporting new ventures have to pass a threshold level of export activity in order to actually increase their human capital levels (e.g. by learning from the experience gained abroad) so that they contribute to growth. A similar pattern is found for transition countries, in accordance with Hypothesis 3.

As indicated previously, an important element in our analysis is to distinguish between different groups of countries, in terms of development levels. Table 6.3 shows that the presence of domestic new ventures makes no significant contribution to economic growth in the various groups of countries that we distinguish. Looking at Tables 6.4-6.6 we see that having more export-oriented new ventures seems to be important for economic growth in both higher-income and in transition countries. The magnitude and the statistical significance of the

[21] Please note that ideally - in order to test whether the positive relationship between a country's prevalence of new ventures and its rate of economic growth is more pronounced for export-oriented versus domestic new ventures - we would like to include the TEA_domestic and the TEA_export variables in one and the same model. Considering the small number of observations (36), this would however result in a model with too many variables (ten, for model three), making it very difficult to make inference about the significance of the estimated coefficients (i.e. standard errors are likely to be overestimated). Nevertheless we did perform exercises including TEA_domestic and TEA_export in a single model. The results of these analyses revealed that, by and large, the magnitude of the regression coefficients is similar to the coefficients reported in Tables 6.3-6.6 for the separate models. However, as expected, t-values are lower compared to the separate models. Since the magnitude of the regression coefficients is similar in both types of methods, we do feel that the results reported in Tables 6.3-6.6 are quite robust.

estimated coefficient, however, indicate a stronger impact for transition economies. Finally, as regards lower-income countries, van Stel, Carree and Thurik (2005) find no impact of entrepreneurship in general, in terms of new venture creation, on economic growth (see also Table 6.2).[22] Neither do we find any evidence for these economies that export-oriented new ventures contribute to economic growth. It may be that human capital levels of entrepreneurs in these countries are too low. Overall, our results provide support for Hypothesis 4.

6.5 Discussion and Conclusion

This chapter investigates the relationship between new venture creation and economic growth. We make a distinction between domestic new ventures and export-driven new ventures. Previous research has suggested that it is relevant to distinguish between these two types of new ventures since the two groups have been found to differ significantly from one another, e.g. in terms of strategy profile and industry structure (McDougall, 1989). Our results indicate that export-driven new ventures make a significant contribution to economic growth whereas domestic new ventures do not. This suggests that export-driven new ventures in particular will contribute to the generation of knowledge spillovers, increased competition and increased diversity, ultimately resulting in higher economic growth rates. These findings further underline the relevance of making a distinction between export-oriented and non-exporting new ventures in international entrepreneurship research and provide additional support for studying cross-border behavior of new ventures (McDougall, 1989; McDougall and Oviatt, 2000; Oviatt and McDougall, 1994, 2004, 2005; Wright and Ricks, 1994).

We also examine the role of domestic and export-driven new ventures in GDP growth for three groups of countries: higher-income economies, transition economies and lower-income economies. The distinction between these three groups of countries relates to the shift from the managed to the entrepreneurial economy (Audretsch and Thurik, 2001). In particular, the nature of entrepreneurship is likely to be different in higher and lower-income countries hence the impact on economic growth may also differ (van Stel, Carree and Thurik, 2005). The findings reveal that domestic new ventures make no significant contribution to economic growth in all three groups of countries. The picture is more diverse for export-driven new ventures.

It is found that in higher-income countries new ventures with a high orientation on exports make a significant contribution to economic growth. In higher-income countries, technologies are in general more widely available than in less developed countries and enterprises increasingly specialize in knowledge-based activities. Therefore, new ventures' foreign operations may be based on the

[22] These authors refer to a possible lack of larger companies in these poorer countries as a possible explanation for the zero effect of entrepreneurial activity.

presence of specific technological knowledge, skills and valuable resources that are available within the firm (Oviatt and McDougall, 1997). For these ventures international expansion is viable and sometimes even necessary for survival. Furthermore, these ventures are likely to develop specific skills (including innovative skills) through their export activity, and may, therefore, have a particularly strong impact on economic growth. However, we find no impact on economic growth in higher-income countries for new ventures that have only a modest focus on exports. This may indicate that exporting new ventures that start with moderate levels of exporting have to pass a threshold level of export activity before they actually increase their human capital levels and other resources (e.g. by learning from the experience gained abroad, by obtaining access to knowledge and technology in foreign markets) so that they contribute to growth.

From a policy perspective our findings suggest that it may be beneficial for governments in higher-income countries to focus on stimulating high export ambitions among new ventures. As part of such a strategy governments could strive to stimulate new ventures with a moderate export orientation to become high-level exporters. This might be particularly challenging though, since research indicates that low-intensity exporters are likely to remain low-intensity exporters (and also that high-intensity exporters are likely to remain high-intensity exporters) (Brooks, 2006; Moen, 2002). In addition governments could introduce new ventures' export growth possibilities and ambitions as a selection criterion in export promotion programs.

In our study we find a particularly strong impact of export-oriented new ventures on economic growth for transition economies. Transition economies have a highly educated labor force, a relatively low level of GDP, and a highly turbulent economy. One explanation for the relatively strong positive impact we find may be that especially the high degree of environmental dynamism in these countries positively affects the international orientation of new firms and the development of competences. Research suggests that environmental dynamism and the ensuing turbulence can stimulate or even push new ventures to internationalize their sales and to intensify their export activities (Andersson, Gabrielsson and Wictor, 2004; McDougall, Covin, Robinson and Herron, 1994; Oviatt and McDougall, 1994; Zahra, Neubaum and Huse, 1997). Our results suggest that in the kind of turbulent environment that is characteristic for transition economies export-oriented new ventures may have a particularly strong impact on competition, innovation and consequently economic growth. Also, most of these economies have only recently opened up to the world economy, so there are many unexploited opportunities abroad.

It is generally considered that integration into the world economy is an important route for developing countries to achieve sustained economic growth (see Fischer (2003) for an overview of the literature on openness to trade and growth among developing countries). However, the results of our study reveal that export-oriented new ventures do not seem to make a significant contribution to economic growth in lower-income countries. Because of the relatively high rate of necessity

entrepreneurship and because of the level of economic development in these countries, new ventures – also export-oriented new ventures – will tend to have low levels of human capital and will mainly be active in low-technology and low value added economic activities, such as agriculture (Acs, Arenius, Hay and Minniti, 2004). This may result in a low level of benefits and development of skills and competences at the firm-level (Zahra, Ireland and Hitt, 2000) and may consequently explain why these firms do not contribute so much to macro-economic growth. Our results underline the suggestions made by Wennekers, van Stel, Thurik and Reynolds (2005) that, because of their stage of development, low-income countries should not have a strong focus on the promotion of new business creation and that it may be more beneficial for these countries to foster the exploitation of scale economies e.g. through foreign direct investment. Also, to achieve economic growth, it may be valuable for these countries to focus on developing their existing small and medium-sized entreprises (SMEs) e.g. by reducing obstacles to SME lending and regulatory burdens and by improving infrastructure (de Ferranti and Ody, 2007; Minniti, Bygrave and Autio, 2006).

Traditional stage models propose that internationalization of firms follows a process of gradual expansion into foreign markets after firms have first established a domestic presence (Johanson and Vahne, 1977, 1990). These models predict that early internationalization may negatively affect firm survival. Conversely, researchers on new venture internationalization argue that early internationalization is viewed as necessary to ensure opportunities for firm growth (Oviatt and McDougall, 1994; Zahra, Ireland and Hitt, 2000) and thus emphasize positive outcomes through early-stage internationalization (Sapienza, Autio, George and Zahra, 2006). However, a complete theoretical model that explicitly incorporates outcomes of internationalization either at the firm-level (Autio, 2005) or at the macro-level is still lacking. We hope that our study will stimulate more researchers to investigate outcomes of new venture internationalization and subsequently that such studies will contribute to the development of a theoretical model of new venture internationalization that includes various outcome effects.

Limitations of this study include the small sample size and the cross-sectional nature of our data. Therefore, the results of our study should be interpreted with care. To gain more detailed insight into the various outcomes of new ventures' export orientation at the firm-level as well as the macro-level, future studies should strive to collect and analyze longitudinal micro-data and macro-level panel data. The skill content of export is likely to induce learning and growth (An and Iyigun, 2004) and therefore future studies on the relationship between new venture export and economic growth should aim to take into account the skill content of new venture's export. Furthermore, we focus only on export orientation and not on other modes of internationalization. Although exports represent the dominant mode of international involvement for new ventures (Zahra, Neubaum and Huse, 1997), future research could benefit greatly from also including other modes of internationalization.

7 Knowledge Spillovers and New Ventures' Export Orientation

Abstract
In this chapter we draw on knowledge spillover literature to suggest that a country's proportion of export-oriented new ventures, compared to its total number of new ventures, represents an *outcome* of knowledge spillovers (export spillovers) that stem from foreign direct investment (FDI) and international trade, as well as a *source* of knowledge spillovers (entrepreneurship spillovers) that have a positive influence on the country's total level of entrepreneurial activity. We distinguish between higher-income and lower-income countries, because the latter are less integrated into the world economy. We use macro-level data from 34 countries during the period 2002–2005 to test the hypotheses. After controlling for relevant factors such as size of the domestic market and industry structure, we find that the relationship between FDI and international trade on the one hand and a country's proportion of export-oriented new ventures on the other differs for higher- and lower-income countries. In addition, a country's proportion of export-oriented new ventures affects the subsequent emergence of new businesses.

This chapter is based upon:

De Clercq, D., Hessels, J. and Stel, A.J. van. 2008. Knowledge Spillovers and New Ventures' Export Orientation, *Small Business Economics,* 31(3), forthcoming.

7.1 Introduction

Evidence indicates that the number of international new ventures i.e. ventures that view their operating domain as international at or near their inception, is increasing in many countries around the world (Moen, 2002; Oviatt and McDougall, 1994; Rennie, 1993); and in response, a wealth of research investigates factors that drive new venture internationalization (Autio, Sapienza and Almeida, 2000; De Clercq, Sapienza and Crijns, 2005; McDougall, Covin, Robinson and Herron, 1994). Research on international new ventures concentrates mainly on exporting, a common entry mode that young entrepreneurial firms use to internationalize (e.g. Burpitt and Rondinelli, 2000; Campbell, 1996; Zahra, Neubaum and Huse, 1997), but knowledge about why some countries have more export-oriented new ventures than others and whether and how export-oriented new ventures contribute to macro-economic outcomes remains limited. We address such issues by investigating macro-level antecedents and outcomes of a country's proportion of export-oriented new ventures.[23] In particular, we argue that the proportion of export-oriented new ventures represents both an *outcome* and a *source* of knowledge spillovers. Furthermore, current understanding of international new ventures relies mainly on case studies or single country samples, despite the need to track and study international new ventures in multiple countries (Coviello and Jones, 2004; Oviatt and McDougall, 1997). Therefore, we consider 34 countries over a four-year period to uncover trends across different economies.

Entrepreneurship literature examining the early entry of new firms into foreign markets relates internationalization mainly to individual-level factors, such as entrepreneurs' international experience (Bloodgood, Sapienza and Almeida, 1996; McDougall, Covin, Robinson and Herron, 1994; Oviatt and McDougall, 1995), or firm-level factors, such as entrepreneurial orientation (Sapienza, De Clercq and Sandberg, 2005) or a technology or knowledge base (Autio, Sapienza and Almeida, 2000; Keeble, Lawson, Smith, Moore and Wilkinson, 1998). Whereas this literature acknowledges the importance of macro-level environmental conditions (e.g. economic integration, transportation advances) to explain the emergence of international start-ups (Bloodgood, Sapienza and Almeida, 1996; Knight and Cavusgil, 1996; Oviatt and McDougall, 1994; Rennie, 1993), empirical contributions generally fail to include macro-level factors as possible determinants of new ventures' international orientation. We argue that two important categories of macro-level factors may serve as determinants of new ventures' export orientation: foreign direct investment (FDI) and international

[23] We focus specifically on the *proportion* of new ventures *relative* to the total number of new ventures that target at least 26% of customers in foreign countries (Knight, Madsen and Servais, 2004; Moen, 2002). For parsimony, we use the shortened term "proportion of export-oriented new ventures" hereafter.

trade. Recent research suggests that FDI and international trade provide likely sources of export spillovers (Aitken, Hanson and Harrison, 1997; Banga, 2003; Greenaway, Sousa and Wakelin, 2004; Kneller and Pisu, 2007), that take place when knowledge about foreign markets or other knowledge that is useful for operating in foreign markets (e.g. technological knowledge) transfers from one economic actor to another or when competition forces actors to become more productive through exporting (Kneller and Pisu, 2007). Building on the literature on export spillovers, we posit that a country's level of inward and outward FDI, export, and import relates positively to the share of new ventures that focus on serving customers abroad. Furthermore, we speculate that export spillover effects may depend on the country's capacity to absorb such spillovers (Borensztein, De Gregorio and Lee, 1998; Durham, 2004; Görg and Greenaway, 2004; Gugler and Brunner, 2007) and, more specifically, that higher-income countries may benefit more from such spillovers than their lower-income counterparts.

In addition to studying macro-level antecedents of new ventures' export orientation, we examine a possible consequence of such export orientations, namely, an increase in the number of new businesses. Few empirical studies focus on the possible economic contributions of international new ventures. Some investigate the impact of early internationalization on growth and profitability (Autio, Sapienza and Almeida, 2000; Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996; Zahra, Ireland and Hitt, 2000) but typically at the firm-level. We instead argue that export-oriented new ventures within a country may generate spillovers that encourage the set up of (more) new businesses within the country's borders (entrepreneurship spillovers). We suspect that export-driven new ventures may be an important *source* of knowledge spillovers, because such ventures tend to be innovative and have high human capital levels (Bloodgood, Sapienza and Almeida, 1996) and hence serve as role models for aspiring entrepreneurs (Davidsson and Honig, 2003). Thus, we add to literature that suggests that the nature of early-stage activity may provide an important source of spillovers (Audretsch and Keilbach, 2004; Parker, 2005).

The scope of this article encompasses whether we can identify a relationship at the *macro-level* (1) among inward FDI, outward FDI, and international trade on the one hand and the proportion of export-oriented new ventures on the other hand and, in turn, (2) between the proportion of export-oriented new ventures and a country's total level of entrepreneurial activity. Thus, though we draw from economics literature on knowledge spillovers to predict and interpret these macro-level relationships, we leave it for further research to investigate, at the *micro-level*, how such knowledge spillovers take place among individual economic actors.

7.2 Theoretical Background

The term "spillover" pertains to the transfer of knowledge across economic players; such spillovers may enable important productivity gains (Coe and Helpman, 1995; Jaffe, Trajtenberg and Henderson, 1993; Marshall, 1920). According to endogenous growth theory, a country's economic growth stems from the endogenous development of knowledge through spillover effects across economic actors (Romer, 1986). Spillovers or knowledge externalities allow firms to acquire knowledge from other economic players without having to pay for it in a formal market transaction (Acs, Audretsch and Feldman, 1994; Bernstein and Nadiri, 1988). They take place from one firm to another partially because knowledge represents a public good (Grossman and Helpman, 1991) or a "non-rival" asset that different economic actors may use simultaneously in different locations (Romer, 1990). Furthermore, knowledge generally is not excludable, so knowledge-generating firms have difficulty extracting compensation in return for others' use of their knowledge (Grossman and Helpman, 1991). Thus, knowledge-generating firms cannot fully appropriate or internalize the returns on knowledge investments and some returns spill over to benefit others as well.

7.2.1 Export spillover effects and new ventures' export orientation

Many studies on knowledge spillovers focus on productivity spillovers (for an overview, see Görg and Greenaway, 2004), including those *across* country borders. Grossman and Helpman (1991) explain that cross-border movements of capital and trade affect economic growth through their related knowledge spillovers. Prior work on the role of spillovers also devotes particular attention to inward FDI, in which knowledge flows from foreign multinational enterprises (MNEs) to the host country's domestic firms are studied (e.g. Feinberg and Majumdar, 2001; Fosfuri, Motta and Rønde, 2001). Such research generally assumes that MNEs possess superior firm-specific assets, such as management know-how or technologies when they enter foreign markets (Dunning, 1981; Hymer, 1976), but they face the challenge of protecting these advantages against other firms in the countries in which they operate (Görg and Greenaway, 2004; Kneller and Pisu, 2007).

In addition to traditional literature on productivity spillovers, an emerging body of research focuses on the effect of spillovers on the export decision of domestic firms, or *export* spillovers (e.g., Aitken, Hanson and Harrison, 1997; Banga, 2003; Greenaway, Sousa and Wakelin, 2004; Kneller and Pisu, 2007). Domestic firms may be more inclined to engage in export activities if they are exposed to other economic actors' international activities (Greenaway, Sousa and Wakelin, 2004). Empirical results support such export spillover effects. Aitken, Hanson and Harrison (1997), for instance, note a spillover effect from foreign MNEs to domestic export activity in Mexican manufacturing industries and show that the dominance of foreign MNEs in a particular industry sector increases the

probability that domestic firms in that sector also export. Similarly, Greenaway, Sousa and Wakelin (2004) use U.K. data to show that foreign MNEs' export activities have a positive effect on a domestic firm's export probability.

This study focuses on such export spillover effects, with the assumption that export spillovers should be particularly relevant in the context of new ventures because emerging firms are more likely to benefit from (external) knowledge spillovers than their more established counterparts (Acs, Audretsch and Feldman, 1994; Henderson and Clark, 1990). Whereas in mature firms, external knowledge spillovers may be less important because they must compete with internal knowledge spillovers that result from prior and ongoing operations, the knowledge production function of new ventures is likely to be influenced by the input provided by external organizations or activities (Acs, Audretsch and Feldman, 1994). Furthermore, export market entry requires upfront sunk costs for firms to sell products or services in foreign markets, such as the costs associated with establishing distribution and logistic channels and acquiring information about the tastes of foreign customers and market structures (Greenaway, Sousa and Wakelin, 2004; Requena-Silvente, 2005). These sunk costs are higher for new ventures compared with their more established counterparts because new ventures are confronted more directly by resource constraints (Requena-Silvente, 2005). Accordingly, new ventures are more likely to depend on and benefit from external spillovers.

To understand the mechanisms of how spillovers occur across country borders, extant research identifies different spillover channels, specifically with respect to the case of inward FDI. First, market access spillovers occur through commercial links between foreign MNEs and local suppliers, which give the local suppliers preferential access to new technological capabilities and foreign customers' product design and quality preferences (Aitken, Hanson and Harrison, 1997; Barrell and Pain, 1997; Blomström and Kokko, 1998). Second, a demonstration or imitation effect prompts domestic firms to copy foreign MNEs' organizational practices, either through formal interfirm collaborations or more informal channels (Wang and Blomström, 1992). Third, when local employees gain important skills while working for a foreign MNE, a training effect transfers those skills to other organizations (Fosfuri, Motta and Rønde, 2001). Fourth, foreign entrants may increase local competition by, for example, infusing new technologies into the local market and acting as competitive catalysts (Barrell and Pain, 1997; Cantwell, 1989; Chuang and Lin, 1999; Glass and Saggi, 1998). For the purpose of this research, we argue that these different channels of cross-border spillovers may clarify how not only inward FDI but also other sources of knowledge spillovers—such as outward FDI and international trade—influence a country's proportion of export-oriented new ventures.

7.2.2 New ventures' export orientation and entrepreneurship spillovers

In addition to examining the antecedents of new ventures' export orientation, we examine whether export-oriented new ventures generate spillovers that affect a country's economic activity, particularly with regard to the creation of new businesses within the country's borders. This focus on *entrepreneurship* spillovers matches recent research that argues entrepreneurial activity (i.e. new business creation) results from the exploitation of knowledge that incumbent firms have not fully appropriated or commercialized (Acs, Audretsch, Braunerhjelm and Carlsson, 2006). Specifically, when an economic agent with a new idea cannot convince decision makers within the firm to pursue the idea, the agent may start a new business in an attempt to appropriate the new knowledge. This new knowledge thus spills over from the agent to a new business in which it is commercialized (Audretsch and Keilbach, 2004). Hence, a country's total level of entrepreneurial activity represents an important *outcome* of spillover effects. Similarly, we extend existing literature by suggesting that new business creation may result from spillovers from not only incumbent (large) firms but also from other new ventures; in particular, we argue that export-oriented new ventures present a source of spillovers that may affect the emergence of additional new businesses in the country.

7.3 Hypotheses

7.3.1 Inward FDI and the proportion of export-oriented new ventures

Foreign MNEs (through inward FDI) may act as catalysts for new ventures' export orientation for several reasons. First, foreign MNEs can facilitate exports among new ventures through the direct channel established when the latter serve as suppliers or subcontractors for the MNEs. Commercial linkages with foreign MNEs thus provide new ventures with knowledge about new technological developments and foreign market conditions; over time this knowledge may prompt new ventures to export (Blomström and Kokko, 1998). Foreign MNEs can also pave the way for new ventures to enter the same export markets, either because the MNEs have created adequate transport infrastructures or because they disseminate knowledge about specific foreign markets that new ventures can use directly. Second, demonstration effects may lead new ventures to use foreign MNEs as role models for their own decision to engage in exporting (Powell and DiMaggio, 1991). Third, spillover effects from foreign MNEs occur when new ventures acquire relevant human capital. It is difficult for foreign MNEs to lock in their human capital (Djankov and Hoekman, 1999; Dunning, 1981; Fosfuri, Motta and Rønde, 2001), but because they often require a skilled labor force, they organize training for local employees. When those employees move away and start their own businesses or start working for a new venture, the internationalization skills they gained while working for the foreign affiliate spill

over to new ventures (Gerschenberg, 1987). Fourth, inward FDI infuses new technologies in host countries (Barrell and Pain, 1997), and foreign affiliates might replace inefficient firms in the host country (Narula and Marin, 2003). The increased competition should provide local start-ups with the capabilities and need to expand the geographical scope of their activities; that is, the increase in competition that occurs as a result of foreign entry may prompt new ventures to expand their horizons and engage in export activities.

Hypothesis 1: A country's inward FDI relates positively to its proportion of export-oriented new ventures.

In addition, spillover effects may be more pronounced in higher-income versus lower-income countries. The exploitation of spillovers relates to a country's structural characteristics, especially its absorptive capacity (Durham, 2004; Görg and Greenaway, 2004). Spillover effects from inward FDI materialize more easily when the host country has a minimum stock of human capital or level of economic development (Blomström, Lipsey and Zejan, 1994; Borensztein, De Gregorio and Lee, 1998). Extant literature suggests that when the technology gap between the investing country and the host country is not too wide—which indicates firms in the host country have sufficient capacity to absorb advanced technologies—the host economy can benefit from positive spillovers (Borensztein, De Gregorio and Lee, 1998; Görg and Greenaway, 2004; Liu, Siler, Wang and Wei, 2000).[24] Similarly, we reason that lower-income countries may have limited capacity (e.g. human capital) to absorb export-related knowledge provided by foreign MNEs. Furthermore, in lower-income countries positive spillovers from inward FDI to new ventures' export orientation may be hampered because inward FDI contributes to the development of scale economies and thus to the economic activities of larger, incumbent firms rather than those of new ventures (Acs, Audretsch and Feldman, 1994; Wennekers, van Stel, Thurik and Reynolds, 2005).

Hypothesis 1A: The positive spillover effect from a country's inward FDI to the export orientation of its new ventures is more pronounced in higher-income than in lower-income countries.

[24] According to the so-called "technology gap" hypothesis (Gerschenkron, 1962) spillovers are likely to increase with the difference in technology levels between the investing country and the host country. However, this hypothesis has not received much support in empirical studies (see for example Haddad and Harrison (1993) and Kokko (1994)).

7.3.2 Outward FDI and the proportion of export-oriented new ventures

Although literature on the impact of FDI on a host country's economic activities focuses mostly on spillover effects stemming from inward rather than outward FDI, domestic MNEs should also affect a country's proportion of export-oriented new ventures (Blomström and Kokko, 1998). The presence of these domestic MNEs in foreign countries may familiarize foreign customers with common business practices in the MNEs' home country, which could create a pull effect (Nagel, 2003). Furthermore, the rationale for the spillover effects of domestic MNEs to new ventures parallels arguments associated with foreign MNEs (Blomström and Kokko, 1998). First, spillovers may occur if a domestic MNE adapts its products to local conditions abroad and shares this adaptation with its suppliers (e.g. new ventures) in its home country (Aitken, Hanson and Harrison, 1997). Second, the spillovers obtained through demonstration, training, and competition effects, as outlined in the argumentation leading up to Hypothesis 1, may work in a similar fashion for domestic MNEs. In terms of the training effect, for example, a manager of a foreign subsidiary may return to the home country and become an (export-oriented) entrepreneur (Cantwell and Hodson, 1991; Kogut and Chang, 1991). Third, the structural changes that take place in the new ventures' home country because of the wider presence of domestic MNEs (i.e. when there is more outward FDI) may positively influence new ventures' export orientation. Specifically, an increase in outward FDI should shift the home country toward economic activities that entail greater productivity (Blomström and Kokko, 1998); this increased productivity may then force new ventures to increase the overall quality of their products, which ultimately should increase their propensity to export.

Hypothesis 2: A country's outward FDI relates positively to its proportion of export-oriented new ventures.

Similar to the argumentation used for the effect of inward FDI, we also speculate that the beneficial spillovers from outward FDI to new ventures' export orientation materialize more easily in higher- versus lower-income countries. That is, lower-income economies may lack the capacity to absorb spillovers from outward FDI, because their new ventures have relatively lower levels of human capital, which they need to engage in exports (Bloodgood, Sapienza and Almeida, 1996), or they may participate in low-technology sectors for which export opportunities are limited (Durham, 2004; Görg and Greenaway, 2004).

Hypothesis 2A: The positive spillover effect from a country's outward FDI to the export orientation of its new ventures is more pronounced in higher-income than in lower-income countries.

7.3.3 International trade and the proportion of export-oriented new ventures

In the previous hypotheses, we posit that FDI, both inward and outward, offers an important source of knowledge spillovers; we now consider how a country's level of international trade may affect its proportion of export-oriented new ventures. We thus extend prior research that indicates a link between international trade (i.e. export and import) and a country's productivity, based on the transfer of knowledge across country borders (Findlay, 1984; Grossman and Helpman, 1991; Sjoholm, 1996). For the purpose of this study, we hypothesize that a country's levels of export and import represent two additional sources of knowledge spillovers that influence new ventures' export orientation.

A country's overall export level should have a positive effect on its proportion of export-oriented new ventures, particularly through the demonstration effect (Greenaway, Sousa and Wakelin, 2004). That is, simple imitation may play an important role in shaping new ventures' decision to export when they are surrounded by many other firms that engage in export activities. Similarly, the positive relationship between a country's export level and the proportion of export-oriented new ventures mirrors institutional theory that suggests firm behavior results from mimetic isomorphism, or economic actors' tendency to imitate decisions or practices of peers (Powell and DiMaggio, 1991).

Spillovers stemming from a country's level of export should also be significant for new ventures because they minimize the challenge of assessing the costs and benefits associated with export activities (Johanson and Vahlne, 1990). When new ventures come in contact with existing exporters, they gain information about how to become a successful exporter more easily, which diminishes their uncertainty regarding the pros and cons of exporting (Burpitt and Rondinelli, 2000; Ogbuehi and Longfellow, 1994). For example, information that foreign customers provide to incumbent suppliers regarding how to facilitate the production of goods and services they plan to buy could spill over to new ventures through formal partnerships with exporting firms (e.g. strategic alliances) or more informal channels (e.g. trade associations, publications) (De Clercq, Sapienza and Crijns, 2005; Zahra, Ireland and Hitt, 2000). The previously mentioned training effect may also be relevant in this context (Fosfuri, Motta and Rønde, 2001); economic actors who directly or indirectly participate in exporting activities should be stimulated to enter foreign markets when they establish their own companies (McDougall, Covin, Robinson and Herron, 1994). A final mechanism that may explain the positive relationship between a country's overall level of export and the proportion of its export-oriented new ventures refers to existing relationships between domestic suppliers and foreign customers, which may create a sense of familiarity among foreign customers regarding the country in which new ventures operate and its business practices in particular (Blomström and Kokko, 1998;

Nagel, 2003). This familiarity may increase new ventures' anticipation of success when they consider the possibility of export activities.

Hypothesis 3: A country's export level relates positively to its proportion of export-oriented new ventures.

Again, and similar to the arguments given for the spillovers from FDI, we expect that the positive externalities from a country's overall export levels to the export orientation of its new ventures may be constrained in lower-income countries because of their limited absorptive activity, as reflected in their low levels of human capital and the nature of their industry structure (e.g. few high value-added sectors).

Hypothesis 3A: The positive spillover effect from a country's export level to the export orientation of its new ventures is more pronounced in higher-income than in lower-income countries.

We also posit a positive effect between a country's level of import activity and its proportion of export-oriented new ventures. Import activity reflects the amount of knowledge exchange that takes place between domestic producers and foreign suppliers. Prior research on the spillover effects of import focuses mainly on the role of technology transfer; empirical evidence demonstrates that imports provide an important source for the transfer of new technologies across country borders (e.g., Blalock and Veloso, 2005; Coe and Helpman, 1995; Feinberg and Majumdar, 2001; Glass and Saggi, 1998). We extend this research by arguing that spillover effects from imports relate not only to technology transfer but also to other types of knowledge that may induce export activities. New ventures may benefit from their country's import activities if a foreign producer exchanges knowledge about its home market as a sales tool for existing customers (Coe and Helpman, 1995). If such knowledge spills over to a country's new ventures through collaborations with and exposure to more knowledgeable domestic players, the new ventures obtain a better understanding of the foreign producers' specific country context and thus achieve a better position from which to find foreign customers. In short, foreign producers may reveal information about their own country's unique characteristics as a sales tool, in which case this knowledge accumulates indirectly within the country in which the new ventures operate. Over time, accumulated knowledge about particular countries should decrease uncertainty related to undertaking business activities in foreign countries and enhance the proportion of export-oriented new ventures.

Hypothesis 4: A country's import level relates positively to its proportion of export-oriented new ventures.

Based on similar reasoning with respect to the role of export spillovers from FDI and export, we speculate that the spillovers from import are more pronounced in higher- versus lower-income countries.

Hypothesis 4A: The positive spillover effect from a country's import level to the export orientation of its new ventures is more pronounced in higher-income than in lower-income countries.

7.3.4 Export-oriented new ventures and total level of entrepreneurial activity

Finally, we expect that the extent to which a country's new ventures are oriented toward exports is not only a consequence of spillover effects but also provides a specific source of spillovers that influences the emergence of new businesses in the country. That is, the nature of early-stage activity itself can be an important source of spillovers (Parker, 2005). In making this claim, we draw from literature that emphasizes the role of macro-level factors to explain cross-country differences in entrepreneurship (Noorderhaven, Thurik, Wennekers and van Stel, 2004; Verheul, Wennekers, Audretsch and Thurik, 2002). Specifically, previous literature highlights the role of demand-side factors (e.g. country's industrial structure) and supply-side factors (e.g. skills and preferences) in shaping entrepreneurs' willingness or ability to act on new business opportunities and create the opportunities for such start-up activity. A specific supply factor that influences the emergence of new businesses within a country may be the export orientation of its (existing) new ventures. First, exporting new ventures have preferential access to knowledge related to foreign markets and technologies (Autio, Sapienza and Almeida, 2000; Hessels, 2007a; Zahra, Ireland and Hitt, 2000), and this knowledge may generate novel insights into unexploited opportunities for new businesses (De Clercq, Sapienza and Crijns, 2005; Shane and Venkataraman, 2000). Second, new ventures focusing on export may act as extraordinary role models for aspiring entrepreneurs (Davidsson and Honig, 2003). Consistent with the premises underlying institutional theory, individual economic actors may imitate the behavior of highly visible and successful peers, including export-oriented new ventures (Powell and DiMaggio, 1991). Such imitation may then provide support and legitimacy to entrepreneurship as a career choice, resulting in the creation of more new businesses within the country.

Hypothesis 5: A country's proportion of export-oriented new ventures relates positively to its (subsequent) total level of entrepreneurial activity.

7.4 Methodology

7.4.1 Data and Sample

We draw data from various sources. We collect information from the Global Entrepreneurship Monitor (GEM; Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia and Chin, 2005) to determine a country's proportion of export-oriented new ventures and total level of entrepreneurial activity (i.e., dependent variables). Various organizations (e.g. WTO, OECD, UN, and Eurostat) publish international comparative statistics about exports for many countries, but virtually no official international comparative export statistics relate specifically to new ventures. In this respect, the GEM initiative fills an important gap by providing a harmonized measure of new ventures' export orientations across countries. For our independent variables, we draw data about a country's FDI from the Foreign Direct Investment database maintained by the United Nations Conference on Trade and Development (UNCTAD) and gather information about each country's export and import levels from the World Bank. Finally, we include several control variables in our models and obtain these data from several sources, including the Global Competitiveness Report and the World Competitiveness Yearbook.

In essence, our data set includes annual data pertaining to 34 countries over a four-year period (2002–2005). The sample of countries included is limited to those that participated in GEM during 2002–2005. [25] Furthermore, because not all countries participated in GEM in each year and because we note missing data for some independent variables, our analyses are based on 80 observations distributed across 34 countries. Finally, we assign countries to higher- or lower-income categories on the basis of their overall prosperity.[26]

7.4.2 Measures

7.4.2.1 Dependent variables

We measure the total level of (early-stage) entrepreneurial activity (2002–2005) using GEM's TEA index,[27] which assesses the proportion of a country's population between the ages of 18 and 64 years who are either in the start-up phase or manage/own a business that is less than 42 months (i.e. three and a half

[25] The countries are Argentina, Australia, Belgium, Brazil, Canada, Chile, China, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Poland, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, United Kingdom, and United States.

[26] Specifically, following the classification used by the World Bank, the lower-income category includes "low-income economies," "lower-middle-income economies," and "upper-middle-income economies," while the higher-income category includes "high-income economies".

[27] The TEA (Total early-stage Entrepreneurial Activity) index is the most widely known index generated by GEM (Minniti, Bygrave and Autio, 2006; Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia and Chin, 2005).

years) old.[28] The TEA index thus assesses, in a given year, the total level of (early-stage) entrepreneurial activity within a country, irrespective of its nature. Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia and Chin (2005) provide empirical support for the validity of the TEA index by comparing it with national administrative data on firm birth rates and support its reliability by calculating the correlation of countries' TEA rates over different years. The TEA is based on information collected through adult population surveys conducted by telephone or face-to-face.

To measure the proportion of export-oriented new ventures (2002–2005), we consider the percentage of a country's (early-stage) entrepreneurs (as defined by the TEA index) involved in substantial export activity. Specifically, we assess the proportion of new ventures, relative to the total number of new ventures, that stated that at least 26% of their customers were located in foreign countries (Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia and Chin, 2005).[29] With this unique measure, the GEM project provides a first attempt to create cross-country data pertaining to the extent to which new ventures orient toward exports. As one of their defining characteristic, international new ventures are international at their inception (Knight and Cavusgil, 2004; Oviatt and McDougall, 1997). Because of the challenge associated with observing a firm's activities at its inception, extant research typically defines international new ventures pragmatically as those that make foreign market commitments within a relatively long period, such as six or eight years after their founding (Coviello and Jones, 2004; Oviatt and McDougall, 1997). Furthermore, to capture international activity at the time of inception, researchers must define the exact point at which the business was founded (Katz and Gartner, 1988; Reynolds and Miller, 1992). In this regard, Oviatt and McDougall (1997) suggest that the time of business founding occurs when the first serious planning for the business takes place. Accordingly, our measure of new ventures' export orientation includes entrepreneurs that are currently involved in the start-up processes of their venture or have recently gone through this process. Our measure also matches recent research that suggests it is important to take into account a firm's very early phases when studying international new ventures (Coviello, 2006; Moen, 2002). Finally, extant research indicates that foreign market entry by new ventures often takes place within three years of the firm's establishment (Autio, Sapienza and Almeida, 2000; McDougall and Oviatt, 2000; Rennie, 1993). Thus, our definition of new ventures' export orientation includes ventures that are as old as three and half years, which seems appropriate.

[28] We count those engaged in both activities in a given year only once (Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia and Chin, 2005).

[29] Our choice to include only new ventures with a substantial focus on exports (i.e. more than 25% foreign customers) is guided by previous studies in international entrepreneurship, in which high-level exporters are commonly defined as having export sales of 25% or more (Moen, 2002).

7.4.2.2 Independent variables

Inward FDI (1995-2004) reflects the percentage of a country's inward flow of foreign capital relative to its gross fixed capital formation. Outward FDI (1995–2004) equals the percentage of a country's outward flow of capital relative to its gross fixed capital formation. We draw both measures from UNCTAD's World Investment Report.

We use the percentage of a country's exports of goods and services relative to its gross domestic product (GDP) to measure a country's export level (1995–2004), which we obtain from the World Development Indicators database, provided by the World Bank. This measure is skewed toward larger and older firms, which undertake the vast majority of export activity (in terms of value added). The GDP created by new ventures, let alone the amount of their export activity, typically is not recorded in official statistics, in lower-income countries in particular (Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia and Chin, 2005; Sternberg and Wennekers, 2005). Therefore, it seems unlikely that the added value created by the export activities of new ventures, as captured in our GEM-based measure of new ventures' export orientation, would be recorded in the official statistics about countries' export levels.[30] Hence, a positive correlation between export as a percentage of GDP and our measure of the proportion of export-oriented new ventures is by no means straightforward. We measure a country's import level in a similar way, (1995–2004) as the percentage of a country's imports of goods and services relative to its GDP. This measure is also drawn from the World Development Indicators database.

7.4.2.3 Control variables

To account for alternative explanations for the variation of both of our dependent variables (i.e. proportion of export-oriented new ventures and total level of entrepreneurial activity) across countries, we include several control variables. Consistent with the eclectic framework of entrepreneurship (Verheul, Wennekers, Audretsch and Thurik, 2002), we classify these controls into two categories: (1) demand-side factors that reflect the presence of entrepreneurial opportunities through market demand and (2) supply-side factors that entail the skills and preferences of a country's population toward new business creation.

In terms of demand-side factors, we consider employment share in manufacturing and employment share in services (2000) to represent a country's economic structure, which may influence the level and nature of the country's early-stage activity (Verheul, Wennekers, Audretsch and Thurik, 2002). We draw this measure from the World Competitiveness Yearbook. In addition, we use a lower-

[30] Part of the TEA index relates to nascent entrepreneurs which have not yet started their business (Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia and Chin, 2005); thus, for this group of entrepreneurs, official export statistics certainly do not capture (expected) export activity.

income country dummy to reflect a country's overall prosperity, which may influence the level and nature of its new venture activities (Verheul, Wennekers, Audretsch and Thurik, 2002); we code this dummy as 1 when the country belongs to the "low-income economies", "lower-middle-income economies" or the "upper-middle-income economies" according to the World Bank classification of countries by income. To assess the annual percentage change in a country's GDP, a dynamic measure of a country's overall prosperity, we use economic growth (2002–2005), based on data from the World Economic Outlook database, provided by the International Monetary Fund. Finally, our measure of company–university cooperation (2001) assesses (on a seven-point Likert scale) the technology transfer between companies and universities and reflects a source of technological resources for entrepreneurs. This measure emerges from the World Competitiveness Yearbook.

In terms of supply-side factors, ease of access to loans (2001), measured on a seven-point Likert scale and drawn from the Global Competitiveness Report, reflects the extent to which new ventures have easy access to financial resources to support their activities. Furthermore, tertiary education (1997), also drawn from the Global Competitiveness Report, pertains to a country's gross tertiary enrollment rate.

For the estimation of a country's proportion of export-oriented new ventures, we include three additional control variables: Gross domestic product (logarithm) (2002-2005), drawn from the World Development Indicators database, reflects the size of a country's home market. Inflation rate (2002-2005), obtained from the World Economic Outlook Database, reflects increases in consumer price levels (annual percentage changes) that make it harder for economic actors to engage in export activity (domestically, inflation often coincides with wage compensation, but such compensation is less likely at the international trade level). Change in exchange rate (2002–2005), drawn from Economic History Services (and supplemented by information from OANDA.com), is the percentage change of a country's national currency in U.S. dollars. When the exchange rate increases, products become relatively more expensive for foreign buyers and this may hinder new ventures' export orientation. Finally, we include time dummies to control for cyclical changes in the global economic environment that may influence the level and nature of entrepreneurial activity within countries.

7.4.3 Analysis

We test our hypotheses using regression analysis. For the prediction of a country's proportion of export-oriented new ventures, we employ different time lags for the independent and control variables. First, because knowledge spillovers may take some time before they materialize (Jaffe and Trajtenberg, 1998) and because the four independent variables—inward FDI, outward FDI, export, and import—fluctuate heavily over time, we average the four variables over the years t–1 to t–6. Second, we include the cyclical variables, economic growth, inflation rate, and exchange rate contemporaneously with the dependent variables and we capture the remaining cyclical variation by the time dummies. Third, the remaining seven controls—employment share of manufacturing, employment share of services, lower-income country dummy, company–university cooperation, ease of access to loans, tertiary education, and log of GDP—reflect structural characteristics of an economy and thus change only slowly over time. Accordingly, we include them as time-invariant variables in the empirical analysis.[31] Finally, for the prediction of a country's total level of entrepreneurial activity, we use a one-year time lag of the "proportion of export-oriented new ventures" variable.

7.5 Results

In Table 7.1, we display the correlations among the study variables. The correlations between the proportion of export-oriented new ventures and the four sources of cross-border spillovers (inward FDI, outward FDI, export, and import) are significant and positive; however, high correlation coefficients mark the four independent variables, particularly between a country's export and import levels (0.98), which raises concerns about multi-collinearity (Greene, 2004). The correlation between export and import is so high that their effects cannot be

[31] Including these time-invariant independent variables makes the use of fixed effects superfluous, because the time-invariant independent variables can explain structural country differences. As this approach requires fewer independent variables (i.e. 7 instead of 34 country dummies), we can estimate the model coefficients more efficiently.

separated in a single regression model. Therefore, we calculate the sum of export and import and label this variable "total international trade."[32]

[32] To assess the separate effects of export and import in the same model, we include a "surplus in international trade" variable, which equals the difference between a country's export and import levels, in Model 5 (Table 7.3).

Table 7.1: Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. TEA																
2. Proportion export-oriented new ventures	-0.24[a] (N=75)															
3. Inward FDI	-0.16	0.36**														
4. Outward FDI	-0.41**	0.49**	0.71**													
5. Export	-0.28*	0.61**	0.69**	0.53**												
6. Import	-0.30**	0.62**	0.64**	0.50**	0.98**											
7. Employment share in manufacturing	-0.30**	0.025	-0.25*	-0.24*	-0.10	-0.10										
8. Employment share in services	-0.31**	0.45**	0.40**	0.55**	0.30**	0.30**	-0.29**									
9. Dummy for lower-income countries	0.52**	-0.42**	-0.15	-0.52**	-0.30**	-0.31**	-0.070	-0.56**								
10. Economic growth	0.056	-0.0088	-0.009	-0.15	0.12	0.11	-0.054	-0.34**	0.18							
11. Company-university cooperation	-0.22*	0.33**	0.36**	0.52**	0.20	0.18	-0.25*	0.57**	-0.53**	-0.13						
12. Ease of access to loans	-0.37**	0.40**	0.43**	0.71**	0.25*	0.22*	-0.25*	0.65**	-0.71**	-0.25*	0.77**					
13. Tertiary education	-0.22*	0.22*	0.005	0.31**	-0.049	-0.080	0.044	0.55**	-0.70**	-0.17	0.57**	0.58**				
14. Log of GDP	-0.21	-0.45**	-0.15	0.054	-0.33**	-0.34**	-0.055	-0.049	-0.089	-0.044	-0.0065	0.048	0.18			
15. Inflation rate	0.51**	-0.29**	-0.14	-0.34**	-0.26*	-0.29**	0.13	-0.13	0.48**	-0.40**	-0.32**	-0.45**	-0.21	-0.22*		
16. Change in exchange rate	-0.37**	0.22	0.094	0.25*	0.15	0.14	0.010	0.14	-0.48**	0.31**	0.24*	0.41**	0.28*	0.0078	-0.63**	
Mean	8.38	15.69	20.12	16.45	36.84	34.84	25.71	63.92	0.32	2.76	4.32	3.76	42.03	12.77	3.77	5.13
Standard deviation	5.03	9.19	15.42	18.58	25.50	24.25	6.77	12.75	0.47	3.13	1.39	0.95	20.04	1.47	5.25	12.88

Note: n=80; * $p < 0.05$; ** $p < 0.01$.

[a] The indicated correlation refers to the *lagged* value (t – 1) of a country's proportion of export-oriented new ventures compared with its total level of entrepreneurial activity, consistent with our analysis in Table 7.4.

Note: The variables inward FDI, outward FDI, export, and import are averaged over the years t–1 to t–6.

In Table 7.2, we present some descriptive statistics for the study's key variables in higher- versus lower-income countries. As we might expect, the total level of entrepreneurial activity is greater in lower-income countries that tend to have a high proportion of entrepreneurial activity out of necessity, whereas the proportion of export-oriented new ventures is greater in higher-income countries (Acs, Arenius, Hay and Minniti, 2004). Furthermore, levels of FDI and international trade are greater in higher-income versus lower-income countries, which reflects the latter's poor integration into the world economy. In particular, the low level of outward FDI for lower-income countries is striking; they have only recently begun to engage in outward FDI (UNCTAD, 2006).

Table 7.2: Descriptive statistics for dependent and independent variables, by level of economic development (averages 2002-2005)

	Higher-Income Countries (N=55)							
	TEA	% Export-Oriented	Inward FDI	Outward FDI	Export	Import	Total International Trade	Surplus in International Trade
Mean	6.6	18.3	21.7	22.9	42.0	39.8	81.8	2.2
Standard deviation	3.2	8.2	17.8	19.1	28.2	26.7	54.6	5.2
Minimum	1.5	0.0	0.49	1.00	10.6	9.4	20.0	-8.7
Maximum	14.5	43.2	66.5	56.7	143.0	137.7	280.7	14.4
	Lower-Income Countries (N=25)							
	TEA	% Export-Oriented	Inward FDI	Outward FDI	Export	Import	Total International Trade	Surplus in International Trade
Mean	12.2	10.0	16.7	2.2	25.6	23.9	49.5	1.7
Standard deviation	6.1	8.6	7.2	3.1	12.7	12.5	24.9	4.0
Minimum	2.5	0.95	2.9	-0.74	9.4	11.2	20.6	-4.9
Maximum	27.3	32.5	31.9	12.1	63.0	64.4	127.4	10.9

Note: TEA is the number of (early-stage) entrepreneurs as a percentage of the adult population; % export-oriented new ventures is the number of (early-stage) entrepreneurs stating that 26% or more of their customers are foreign as a percentage of the total (early-stage) entrepreneurs; and inward FDI, outward FDI, export, and import are averaged over the years t–1 to t–6.

The results of the regressions predicting a country's proportion of export-oriented new ventures (i.e. export spillover hypotheses) appear in Table 7.3. First, Model 1 includes only the control variables and reveals that the proportion of export-oriented new ventures is influenced positively by the country's employment share in manufacturing and services but negatively by GDP (logged) and the inflation rate.[33] Second, Models 2a-b to 4a-b summarize the results when we enter the various sources of export spillovers (inward FDI, outward FDI, and international trade) into separate models. Specifically, Models 2a–4a do not discriminate between higher- and lower-income countries (to test Hypotheses 1–4), and Models 2b–4b multiply each of the sources of knowledge spillovers with a dummy variable that reflects whether a country belongs to the higher- or lower-income category (to test Hypotheses 1A–4A).[34]

Model 2a indicates no effect of inward FDI on the proportion of export-oriented new ventures and thus a lack of support for Hypothesis 1. However, Model 2b reveals that this lack of effect may be explained by the opposite role that inward FDI plays in higher- versus lower-income countries. Specifically, whereas inward FDI has a positive effect on the proportion of export-oriented new ventures in higher-income countries, its effect is negative in those with lower incomes. This finding provides partial support for Hypothesis 1A, in that we did not anticipate the negative effect for lower-income countries. Furthermore, Model 3a shows a positive effect of outward FDI on the proportion of export-oriented new ventures (in support of Hypothesis 2), and this positive effect manifests itself only in higher-income countries (in support of Hypothesis 2A). Similarly, international trade has a positive effect on the proportion of export-oriented new ventures (Model 4a), which is present only in higher-income countries (Model 4b), in tentative support of Hypotheses 3–4 and 3A–4A.

[33] Since one could argue that it is relevant to consider trade barriers when explaining new ventures' export orientation across countries we also performed some regressions including control variables for the prevalence of trade barriers (taken from the World Bank Doing Business database). However, since we found no indications for a significant impact of the prevalence of trade barriers on our dependent variable we decided not to include these controls in our final models reported here.

[34] Likelihood ratio tests show that the improvement of the model fit is significant for inward FDI (Model 2b versus Model 2a) but not significant for outward FDI and total international trade. Nevertheless, we observe substantial differences between the coefficients for higher- and lower-income countries for both outward FDI and international trade. We also perform a likelihood ratio test to compare Model 5 with a specification that does not distinguish between effects for the two country classifications. The likelihood ratio value for the latter specification (not reported) is -245.0, whereas that of Model 5 is -237.6 (see Table 7.3). Thus, the test statistic equals 14.8. Because the critical value at the 1% level is 13.3 (4 degrees of freedom), the test shows that allowing for different effects for higher- and lower-income countries significantly improves the model fit.

For a more rigorous test of the export spillover hypotheses, in Model 5 we include the three sources of export spillovers simultaneously, as well as the "surplus in international trade" variable to separate the effects of export versus import. The results show positive effects of outward FDI and total international trade in higher-income countries and a negative effect of inward FDI in lower-income countries. The surplus in international trade variable remains insignificant in both types of countries.

Table 7.3: Estimates of a country's proportion of export-oriented new ventures

	Model 1	Model 2a	Model 2b	Model 3a	Model 3b	Model 4a	Model 4b	Model 5
Constant	34.9**	39.1**	37.7**	46.1**	48.3**	24.4#	24.1#	20.7#
Employment share manufacturing	0.26*	0.24#	0.34**	0.24#	0.26#	0.23#	0.25#	0.36**
Employment share services	0.29**	0.24#	0.34**	0.22#	0.24#	0.18	0.17	0.27*
Dummy for lower-income countries	-2.6	-2.9	15.0*	-1.2	1.56	1.16	6.9	22.4*
Economic growth	0.22	0.07	-0.29	0.044	-0.011	-0.14	-0.27	-0.32
Company-university cooperation	-0.19	-0.26	-0.11	-0.080	-0.093	-0.31	-0.093	0.16
Ease of access to loans	0.80	-0.054	-1.56	-1.82	-2.4	0.85	0.26	-0.82
Tertiary education	-0.031	0.0022	0.051	0.026	0.050	0.070	0.091	0.11
Log of GDP	-3.3**	-3.2**	-3.7**	-3.4**	-3.7**	-2.6**	-2.6**	-3.0**
Inflation rate	-0.74**	-0.77**	-1.0**	-0.74**	-0.82**	-0.63**	-0.70**	-0.74*
Change in exchange rate	-0.16	-0.15	-0.11	-0.12	-0.13	-0.10	-0.052	-0.0014
Inward FDI		0.086						
Inward FDI, higher income			0.15*					-0.10
Inward FDI, lower income			-0.68**					-0.83**
Outward FDI				0.19**				
Outward FDI, higher income					0.21**			0.16*
Outward FDI, lower income					-0.53			0.62
Total international trade						0.067**		
Total international trade, higher income							0.078**	0.079**
Total international trade, lower income							-0.0063	0.0056
Surplus in international trade, higher income								-0.13
Surplus in international trade, lower income								-0.16
Log likelihood	-257.3	-256.1	-247.0	-251.1	-249.5	-250.7	-249.6	-237.6
R^2	0.558	0.571	0.659	0.621	0.636	0.625	0.635	0.730
Adjusted R^2	0.471	0.478	0.579	0.539	0.551	0.545	0.549	0.632

Note: n=80. Dependent variable: Number of (early-stage) entrepreneurs stating that 26% or more of their customers are foreign, as a percentage of the total (early-stage) entrepreneurs. Estimation method is ordinary least squares. Year dummies are not reported. Inward FDI, outward FDI, and international trade are averaged over the years t–1 to t–6.

** $p < 0.01$; * $p < 0.05$; # $p < 0.10$ (two-tailed tests).

Finally, in Table 7.4, we assess the effect of a country's proportion of export-oriented new ventures on its total level of entrepreneurial activity.[35] Model 6, which includes only the controls, shows that a country's economic growth and tertiary education enrollment rate has a positive influence on total entrepreneurial activity, whereas employment share in manufacturing has a negative effect. Model 7 also shows that the proportion of export-oriented new ventures does not have a significant effect, but as Table 7.3 and our hypotheses suggest, this variable is not exogenous. In particular, the log of GDP (i.e., size of the home market) has a strong impact on the proportion of export-oriented new ventures, and therefore, the ordinary least squares estimates in Model 7 likely are biased (Greene, 2004). Accordingly, in Model 8, we estimate a country's total level of entrepreneurial activity using the instrumental variable estimation technique (Greene, 2004). [36] Consistent with our expectations in Hypothesis 5, we find a positive, albeit weak, effect of a country's proportion of export-oriented new ventures on its total level of entrepreneurial activity ($p = 0.06$). [37] Furthermore, we note that the inclusion of insignificant variables in our model creates a small upward bias in our standard errors. For example, when we exclude the year dummies—which do not appear in the tables for parsimony—we find that the significance level of the proportion of export-oriented new ventures in Model 8 changes to 0.04, which further corroborates Hypothesis 7. The relatively weak effect of a country's proportion of export-oriented new ventures on its total entrepreneurial activity may be partially due to our use of a one-year time lag in Table 7.4; because data about a country's export-oriented new ventures were collected by the GEM as recently as 2002 only a limited number of data points are available for this variable, and the use of longer time lags is not feasible.

[35] The number of observations in Table 7.4 (N = 75) differs from that in Table 7.3 (N = 80). The one-year time lag used in Table 7.4 results in a loss of observations for the proportion of export-oriented new ventures variable, but Table 7.4 also "gains" observations for which a spillover variable (i.e., FDI, international trade) was missing in Table 7.3.

[36] In Model 8, the number of instruments equals the number of endogenous explanatory variables (i.e., 1), so the model is exactly identified (Greene, 2004). As a robustness test, we tried several alternative estimations, with FDI and the international trade variables as additional instruments. All estimations support the validity of the applied instruments, and the coefficient for the proportion of export-oriented new ventures variable remains similar to that reported in Model 8 (Table 7.4).

[37] We test Hypothesis 7 with a one-tailed test, because the presence of a negative effect of early-stage export activity on total entrepreneurial activity does not seem likely. Also, only 12 of the 75 data points used in Table 7.4 belong to lower-income countries, so a distinction between countries is not feasible.

Table 7.4: Estimates of a country's total level of entrepreneurial activity

	Model 6	Model 7	Model 8
Constant	14.5	14.2	18.5*
Employment share manufacturing	-0.23*	-0.22*	-0.31**
Employment share services	-0.14	-0.14	-0.23*
Dummy for lower-income countries	4.0*	3.8*	5.6**
Economic growth	0.82**	0.83**	0.69*
Company–university cooperation	-0.31	-0.29	-0.54
Ease of access to loans	0.42	0.42	0.39
Tertiary education	0.12**	0.12**	0.16**
H5 Proportion of export-oriented new ventures, (year **t–1**)		-0.015	0.20#
Estimation method	OLS	OLS	IV
Endogenous explanatory variable			Proportion of export-oriented new ventures (year **t-1**)
Instrument used			Log of GDP
R^2	0.491	0.492	0.346
Adjusted R^2	0.421	0.413	0.243

Note: n=75. Dependent variable: Number of (early-stage) entrepreneurs as a percentage of the adult population (i.e., TEA index). Year dummies not reported.
** $p < 0.01$; * $p < 0.05$; # $p < 0.10$ (one-tailed tests).

7.6 Discussion

Extant literature suggests that firms' entry into foreign markets can be very difficult, especially for new ventures that lack necessary resources, such as first-hand information about foreign tastes and distribution channels (Autio, Sapienza and Almeida, 2000; Eriksson, Johanson, Majkgård and Sharma, 1997; McDougall and Oviatt, 2000). We extend literature that typically examines the role of individual- or firm-level factors on new ventures' international activities by considering the effect of macro-level (i.e. country) variables. To this end, we rely on knowledge spillover literature to argue that cross-country differences with respect to the proportion of export-oriented new ventures may be the result of a country's openness to cross-border activities (Grosmann and Helpman, 1991), as reflected in its level of FDI (both inward and outward) and international trade (export and import). In addition, we consider a country's proportion of export-oriented new ventures not only a consequence of export spillovers but also a driver of entrepreneurship spillovers that contribute to the overall emergence of new businesses within a country's borders (Audretsch and Keilbach, 2004; Parker, 2005).

Our results provide mixed support for the role of export spillover effects in shaping the proportion of export-oriented new ventures. First, in terms of the role of inward FDI, we find a positive effect in higher-income countries (Model 2b), but this effect disappears when we take other sources of knowledge spillovers into consideration (Model 5). Furthermore, in lower-income countries, inward FDI has a negative rather than positive spillover effect on the proportion of export-oriented new ventures (Models 2b and 5). These findings are revealing, because significant economics literature concentrates on the role of foreign MNEs in creating economic prosperity within host countries (e.g. Barrell and Pain, 1997) or increasing domestic firms' propensity to export (Aitken, Hanson and Harrison, 1997; Greenaway, Sousa and Wakelin, 2004). However, this source of spillover does not appear to have a positive effect on export orientation among a host country's new ventures, perhaps because the channels for knowledge spillovers from inward FDI seem more relevant to incumbent economic players than to recently created firms. Foreign MNEs may establish commercial linkages with local players that have a certain reputation in the host country rather than with novices that lack legitimacy (Podolny, 1993). Alternatively, new ventures may have limited capacity to absorb the knowledge provided by foreign MNEs (Cohen and Levinthal, 1990) and therefore benefit less from their cooperation. In lower-income countries, this lack of absorptive capacity even appears to have a negative effect on the export orientation of new ventures. However, this negative effect should not be interpreted as implying that a country's economic development is hampered when it is exposed to high levels of inward FDI. Rather, the observed negative effect may simply mean that in lower-income countries, knowledge from inward FDI is more easily absorbed and realized through scale economies by larger firms and thus diverted away from export activities undertaken by new ventures (van Stel, Carree and Thurik, 2005). Also, in lower-income countries inward FDI may result in increased domestic market opportunities for domestic new ventures. We acknowledge that these explanations are somewhat speculative; further research should assess in more detail the intermediate mechanisms from which new ventures benefit, or fail to benefit, from inward FDI, as well as how these mechanisms may differ in higher- versus lower-income countries.

Second, the positive influence of a higher-income country's outward FDI on its proportion of export-oriented new ventures (Models 3b and 5) is revealing in light of the argument, upheld by some researchers, that outward FDI can harm a country's economic prosperity by transferring local production and employment to foreign countries (e.g. Jones, 1996). Our study indicates that in higher-income countries, outward FDI may benefit economic activities by stimulating new ventures' export orientation. This positive spillover, as we hypothesized, may occur because domestic MNEs in foreign markets create pull effects (Nagel, 2003), from which new ventures in the home market can benefit. However, we also find that the positive export spillover effect is absent in lower-income countries, possibly because they lack the capacity, in terms of both human capital

and technology, to fully absorb the associated knowledge within their new ventures (Blomström, Lipsey and Zejan, 1994; Borensztein, De Gregorio and Lee, 1998; Görg and Greenaway, 2004). Overall, the different results for the spillover effects of outward FDI across higher- and lower-income countries provides a nuanced view of the beneficial role of outward FDI for domestic firms (Blomström and Kokko, 1998; Popovici, 2005).

Third, the results in Model 5 show a positive spillover effect of international trade on the proportion of export-oriented new ventures in higher-income countries—an effect that is statistically more significant than that of outward FDI. Although we have argued that the channels through which export spillovers occur generally work in similar ways when they stem from international trade versus FDI (e.g. through commercial linkages or demonstration effects), new ventures may consider MNEs more "distant" economic actors. According to institutional theory, economic actors tend to imitate the behavior and practices to which they can relate most directly (Powell and DiMaggio, 1991). Consequently, an exporting decision may be influenced more by the exposure to "simple" international trade rather than to complex FDI activities. We also note, however, that similar to the case of outward FDI, we find no evidence for such a positive export spillover effect of international trade in lower-income countries, perhaps again because of the limited absorptive capacity in these countries (Durham, 2004; Görg and Greenaway, 2004).

Fourth and finally, we find support for the spillover effect of a country's proportion of export-oriented new ventures on a country's total level of entrepreneurial activity. Export activity by new ventures may provide successful role models for aspiring entrepreneurs and thus function as catalysts for new business creation (Davidsson and Honig, 2003; De Clercq and Arenius, 2006). In this sense, we identify a particular type of entrepreneurship spillover that stems from export activity (Parker, 2005). This finding also extends prior research that seeks to understand the determinants of a country's level of entrepreneurship (e.g. Gavron, Cowling, Holtham and Westall, 1998; Noorderhaven, Thurik, Wennekers and van Stel, 2004; Storey, 1999; Thurik and Wennekers, 2004; van Stel, Carree and Thurik, 2005). To the best of our knowledge, our study is the first to examine the link between the type and level of a country's early-stage entrepreneurial activity. The type of early-stage activity that entrepreneurs choose clearly has important implications for an economy's well-being (Baumol, 1990). Our study suggests that an important mechanism through which new ventures affect economic prosperity at the country level may emerge through the positive spillover effect of new ventures' export orientation on the subsequent emergence of more new businesses within the country's borders.

7.6.1 Limitations and Future Research

Although this study provides important insights into what determines a country's proportion of export-oriented new ventures (and total level of entrepreneurial activity), it also has its limitations. These limitations, in turn, open avenues for future research. First, we focus on only one particular aspect of "productive" activity among new ventures (Baumol, 1990), namely, the extent to which they engage in substantial export activity. Although export represents an important dimension of early-stage international activities (e.g. Burpitt and Rondinelli, 2000; Johanson and Vahlne, 1990), it would be interesting to examine knowledge spillover effects on other facets of new venture's international involvement, such as foreign licensing, franchising, or even FDI (Eriksson, Johanson, Majkgård and Sharma, 1997). Furthermore, the vast body of research on the impact of technology spillovers on economic growth (e.g. Blalock and Veloso, 2005; Feinberg and Majumdar, 2001; Glass and Saggi, 1998) offers a means for entrepreneurship researchers to include alternative dimensions of productive activities (e.g. innovation) that result from FDI and international trade. Such an approach would provide a more encompassing view of how countries' openness to FDI and international trade influences new ventures' potential contribution to economic prosperity.

Second, our data set covers only a relatively short period of time, particularly with regard to the variables drawn from GEM, so our analyses are largely static. Additional research would benefit greatly from longitudinal data that span a longer period of time and thus incorporate dynamic elements in the hypothesized relationships. In particular, further research could use time lags greater than a year to examine the spillover effect of export-oriented new ventures on long-term entrepreneurial activity, because such spillovers may manifest themselves more strongly over time.

Third, in the theory and hypotheses sections, we discuss several channels through which spillovers may occur for new ventures that aspire to engage in export activities (e.g. commercial linkages, prior employment with foreign firms). However, we do not empirically measure these channels. Although the intangible nature of export spillovers makes an empirical assessment of the channels through which spillovers operate challenging (Greenaway, Sousa and Wakelin, 2004; Meyer, 2004), research should provide more insight into the specific effects generated by various types of spillover channels on new ventures' export orientation. Moreover, the importance of different spillover channels may be contingent on the specific source of the spillovers (e.g. FDI versus international trade).

Fourth, because we focus on aggregate country level spillover effects, we may have omitted some important industry-level effects. Literature on technology spillovers traditionally focuses on the industry-level (e.g. Bernstein and Nadiri,

1988; Cohen and Klepper, 1996), including a large body of research examining whether spillovers within versus between industries are more effective for economic growth (e.g. Frenken, van Oort and Verburg, 2007; Glaeser, Kallal, Scheinkman and Shleifer, 1992; Jacobs, 1969; van Stel and Nieuwenhuijsen, 2004). Similarly, in the context of our study, new ventures' involvement in export activities may depend on knowledge flows from other companies active in the same sector of the economy. By ignoring industry-specific factors, we implicitly assume that the mechanisms through which export spillovers work for new ventures are identical across industries. Additional research could examine the extent to which the strength of spillover effects on new ventures' export practices depends on important industry characteristics, such as maturity level or competition. Finally, researchers could compare the effect of vertical spillovers (i.e. between suppliers and buyers within an industry) versus horizontal spillovers (i.e. between equals across industries) on new ventures' export decisions.

7.6.2 Implications

This study also offers some practical implications. First, those entrepreneurs located in higher-income countries who want to become important players in the international arena should locate in areas where other international players are concentrated, especially those that engage in outward FDI and international trade. From a country level perspective, governments that hope to encourage export activities among new ventures may benefit from creating geographical zones specifically reserved for internationally oriented firms (Din, 1994). Our findings imply that such zones in higher-income countries may help reduce the costs encountered by new ventures when they break into foreign markets.

Second, governments traditionally focus on stimulating export activity among domestic firms and attracting inward FDI to generate economic growth (Ghauri and Oxelheim, 2003; Greenaway, Sousa and Wakelin, 2004; Molnar, 2003; Welch and Luostarinen, 1993). Furthermore, even when national instruments for promoting outward FDI exist, they tend to be part of developed countries' policy toward poorer countries (Hessels and Prince, 2005). Our study suggests that in higher-income countries, domestic economies may benefit if governments also promote outward FDI. An increased level of outward FDI, combined with international trade, increases the extent to which new ventures engage in export activities, and could ultimately foster economic prosperity (Hessels and van Stel, 2007).

Third, the lack of positive export spillovers in lower-income countries suggests that in addition to stimulating FDI and international trade, governments should stimulate the capacity for the economy, and new ventures in particular, to absorb and exploit the knowledge associated with these efforts, with respect to both the human capital of its entrepreneurial base (e.g. requisite skills to engage in export activity) and the structure of its economy (e.g. technology-based activities that

lend themselves better to exporting). Because in lower-income countries, inward FDI may naturally contribute more to the development of scale economies in larger firms rather than in new ventures (Wennekers, van Stel, Thurik and Reynolds, 2005), efforts could also be undertaken to channel the knowledge provided by foreign MNEs toward new ventures in these countries.

7.7 Conclusion

We examine the role of a country's foreign direct investment and international trade as sources of spillover effects on new ventures' export orientation and, subsequently, as a means to spur its total level of entrepreneurial activity. Our study highlights that new ventures' export orientation indeed functions as a catalyst for new business creation within a country's borders and that such an export orientation is itself influenced by a country's levels of FDI and international trade, albeit to varying degrees in higher- and lower-income countries. Overall, literature on spillovers provides a useful lens for studying macro-level antecedents and outcomes of the extent to which a country's new ventures are export-oriented. We hope that this will research lead to the further investigations of the fundamental mechanisms by which a country's posture, in terms of its export orientation, may affect the nature and outcomes of its entrepreneurial undertakings.

Part III Cross-Country Studies of Entrepreneurship

8 Social Security Arrangements and Early-Stage Entrepreneurial Activity

Abstract
This exploratory study defines a number of propositions regarding the relation between social security arrangements and the rate of early-stage entrepreneurial activity at the country level. We state that in investigating this relation it may be relevant to distinguish between social security contributions paid by employers and employees and to look at micro-based indicators (replacement rates) for the benefits an individual is entitled to in case of unemployment and illness. Furthermore, we state that it may be especially relevant to focus on the social security position of the self-employed in relation to the social security position of employees. Using a sample of countries participating in the Global Entrepreneurship Monitor, we explore how various measures of entrepreneurial activity are related to various measures of social security arrangements. Our analysis using aggregate indicators shows that the height of *employer* social security contributions negatively influences entrepreneurial activity at the macro-level but that the height of *employee* contributions has no impact. The results of our analysis using micro-level based indicators suggest that the replacement rate of employees has a significantly negative influence on the level of early-stage entrepreneurship at the macro level.

This chapter is based upon:

Hessels, J., Stel, A.J. van, Brouwer, P. and Wennekers, A.R.M. 2007. Social Security Arrangements and Early-Stage Entrepreneurial Activity, *Comparative Labor Law and Policy Journal*, 28(4), 743-774.

8.1 Introduction

Entrepreneurship as an occupational choice has been the subject of analysis in many empirical studies. Determinants of entrepreneurial activity include economic as well as technological, demographic, social and cultural factors. A potentially relevant determinant that has so far received little attention is social security arrangements.

Institutional arrangements for social security in the case of illness or unemployment may influence an individual's decision when choosing between wage employment and self-employment. A generous social security system may lead to fewer but also to more self-employed. There may be a negative impact on self-employment in so far as generous social security benefits for employees increase the opportunity costs of entrepreneurship. Social security in general may have a positive effect on entrepreneurial activity by creating a safety net in case of business failure. The difference in the social security entitlements between self-employed and employees may be of particular relevance.

Only few studies have empirically explored social security as a determinant of entrepreneurship (e.g. Parker and Robson, 2004; Steinberger, 2005; Wennekers, van Stel, Thurik and Reynolds, 2005). These studies report evidence of a negative effect of social security on the level of entrepreneurship. However, these studies have serious limitations. Parker and Robson (2004), using original OECD Labour Force Statistics data 1972-1996 for a panel of 12 countries, find negative effects of the unemployment benefit replacement rate on the aggregate self-employment level. They do not focus on early-stage entrepreneurial activity and so their analysis is only loosely related to occupational choice. Wennekers, van Stel, Thurik and Reynolds (2005) provide a stronger focus on occupational choice by explaining the rate of nascent entrepreneurship. However, they include social security *expenditures* as a control variable in their analysis, which is a very crude measure of social security entitlements. Steinberger (2005) uses a dynamic occupational choice model to link entrepreneurial activity with the size of the public pension system. The size of the system is measured by social security contributions made for old-age, survivor and disability pensions. Unemployment, sickness or accident insurance contributions are not included. Hence, this is a rather crude measure for social security as well.

Furthermore, previous studies that aimed to explain entrepreneurial activity generally did not make a distinction between social security contributions paid by the employer and contributions paid by the employee. Also, in previous studies no distinction was made between the social security entitlements of employees and self-employed. Finally, previous research often concentrated on social security in case of unemployment and did not include social security in case of illness or disability in the analysis.

Our study aims to identify research issues and propositions regarding the relationship between social security and early-stage entrepreneurial activity. Our propositions focus on the difference between social security costs paid by employers and costs paid by employees as well as on social security benefits for unemployment and illness/disability. In addition, we also take account of the difference in social security entitlements between employees and self-employed. We empirically test our propositions by using country data on early-stage entrepreneurial activity from the Global Entrepreneurship Monitor.

The chapter is organized as follows. In Section 8.2 we discuss the relevant literature and state our propositions. In the subsequent section we elaborate the main data used to test our propositions and then we present the results of our regression analysis. A final section presents our conclusions.

8.2 Literature on social security and entrepreneurship

Entrepreneurship as an occupational choice has been the subject of analysis in many theoretical and empirical studies. The level of entrepreneurship can be explained by a broad range of other factors, including economic as well as non-economic conditions, such as technology, demography, culture and institutions. Verheul, Wennekers, Audretsch and Thurik (2002) present a theoretical framework in which these influences are integrated. One of the factors that may influence the decision of an individual to become self-employed is the level of social security benefits in case of unemployment or illness/disability. As discussed in the Introduction of this chapter, generous social security may lead to fewer but also to more self-employed. There is a negative impact in so far as social security entitlements for employees increase the opportunity costs of entrepreneurship. In addition, when unemployment benefit schemes are relatively generous this may reflect a lower 'urgency' for the unemployed to engage in entrepreneurial activity as an inevitable choice for work and income (Bosma, Hunt and Wennekers, 2005). On the other hand, social security may have a positive impact on entrepreneurial activity by creating a safety net in case of business failure.

Occupational choices for individuals involve the options to become an employee, to engage in self-employment or not to participate in the labour market. The framework developed by Verheul, Wennekers, Audretsch and Thurik (2002) views these decisions as being taken on the basis of an assessment of the potential risks and rewards of the various options. The model also assumes that individuals compare both the expected financial and non-financial risks and rewards of the alternatives. Non-financial aspects concern autonomy or social status and prestige (Acemoglu, 1995). In their assessment, individuals take into account environmental factors (opportunities and opportunity costs) as well as their individual characteristics (means, skills and preferences).

Risks play an important role in the assessment of the various employment alternatives. Even when the expected income of entrepreneurship is high, so is the disparity of entrepreneurial income. Some entrepreneurs will earn very high incomes but a relatively large group will face low incomes or even poverty (Folkeringa and Vroonhof, 2002, 2004). Moreover, the risk of failure is also high and it is never certain in the start-up phase whether an enterprise will become successful. Approximately 50% to 60% of new business start-ups survive the first three years of activity (Eurostat, 2004). To start as an entrepreneur may also imply that one loses certain entitlements to future social security benefits. This will raise the opportunity costs of being self-employed and it will positively influence the preference to choose for or stay in wage employment. An additional and related factor raising opportunity costs of self-employment is the degree of 'employment protection' ensuing from the regulation of dismissal and temporary employment (Bosma, Hunt and Wennekers, 2005).[38]

In an earlier empirical study at the micro-level, indications were found that social security indeed plays a role in the decision to become self-employed. A study by Bosch, van Uxum and Westhof (1998) surveyed a group of (former) employees that started their own enterprises about the barriers they were facing. The results bore out evidence that the lack of income security and social security played an important role in the decision making process of these self-employed people before they started their own enterprise.

Thus far only few empirical studies at the macro-level have tried to explain whether social security plays a role in explaining the rate of entrepreneurship. For example, Wennekers, van Stel, Thurik and Reynolds (2005) investigated the determinants of nascent entrepreneurship across countries, using social security expenditures as a percentage of GDP as one of the control variables. They found a negative effect on nascent entrepreneurship, suggesting that in countries with a generous social security system people experience little incentive to set up their own businesses. Another empirical study (Steinberger, 2005) investigated the effects of the social security contribution rate on the level of entrepreneurial activity. The results of this study indicate that the level of social security contribution negatively affects the level of entrepreneurial activity within an economy. This means that a negative relationship has been identified between generous social security provisions and the amount of self-employed in a country.

A major disadvantage of the measures used by these studies is their aggregate character. For instance, when using social security expenditures as a measure the distribution of this expenditure over employers and employees may be of vital importance. In general, the height of the social security contribution rates for

[38] Bosma, Hunt and Wennekers (2005) focus on the relation between employment protection and early-stage entrepreneurial activity in a group of OECD countries. They find that lower levels of employment protection are associated with higher rates of entrepreneurial activity.

employers as well as employees in a country gives information on the generosity of the social security system. When social security contribution rates for both employers and employees are high in a country this possibly indicates that the social security system is rather generous. Since generous social security increases the opportunity costs for entrepreneurship, a higer level of social security contribution rates is likely to have a negative impact on the level of entrepreneurship. Thus, we expect a negative relationship between social security contribution rates and the level of entrepreneurial activity in a country. However, in this respect contribution rates for *employers* may be of particular relevance. First, when employer contributions i.e. the social security contributions that employers pay for their employees, are higher, this implies that when a person changes from being wage-employed to becoming self-employed (and hence no employer contributions are paid for him anymore), he has to pay more himself in order to remain insured at the same level as before when he was wage-employed. Also, when a person becomes self-employed and hires employees this implies that one has to pay employer's social security contributions for one's employees. Then, an increase in social security contribution rates for employers will result in higher wage costs. Therefore, we expect an additional negative effect in case of high social security costs for employers. This leads to the following proposition:

Proposition 1A: Higher social security contribution rates for employers have a relatively strong negative influence on the level of entrepreneurial activity in a country.

Proposition 1B: Higher social security contribution rates for employees have a relatively weak negative influence on the level of entrepreneurial activity in a country.

Although the distinction made above provides valuable insights, it is still measured at a highly aggregated level. In particular, no distinction is made between the number of beneficiaries and the level of social security benefits for individuals. Hence, when social security expenditures in a country are relatively high, this may reflect a high number of beneficiaries rather than a high level of social security benefits. However, it is the level of social security benefits a person is entitled to in case of unemployment or illness (i.e. social security entitlements) that may influence an individual's the decision to become self-employed. Social security entitlements are expected to have a negative impact on the decision of an individual to become self-employed in so far as generous social security for employees increases the opportunity costs of entrepreneurship. This leads to the following proposition:

Proposition 2: Higher social security entitlements of employees are negatively related to the level of entrepreneurial activity in a country.

Another disadvantage of the aforementioned studies at the macro-level is that no distinction is made between the social security entitlements of employees and those of self-employed persons, while, in reality, these may very well differ from one another. With respect to social security systems three types of regulation can be identified (Pieters and Schoukens, 1994): universal regulations, general regulations and categorical regulations. Universal regulations apply to all professions within the labour force or sometimes even to the whole population. The existence of universal regulations implies that the self-employed are insured in the same way and by means of the same laws as employees. A general regulation applies either to all employees or to all self-employed. In this case, there are different regulations for employees compared to those for self-employed. Categorical regulations hold only for specific groups of self-employed or employees. A categorical regulation may involve laws applying to specific professional categories. It may also involve a specific regulation within an existing law. Entrepreneur's social security entitlements are often limited compared to the social security benefits for employees (Bosch and Westhof, 1997).

In literature, little attention has been paid to the specific social security position of self-employed persons. Baenen and Visser (1996) compare the social security system of Belgium, Germany, the United Kingdom and the Netherlands with respect to self-employed. A Social Protection Index (SPI) was developed for this purpose. The SPI can be regarded as an instrument for measuring and comparing differences in the level of social security within and between various countries. The SPIs, in the four countries studied by Baenen and Visser, show that the benefit rates for self-employed persons are often very low. This implies that, in practice, the self-employed often have to rely on social assistance schemes for their income protection. In another study, de Muijnck, Vroonhof and Snijders (2003) indicate that in most EU countries employees have 'more' social security compared to the self-employed, in terms of lower contributions and higher benefits. The transition to entrepreneurship may be particularly troublesome for employee-starters, since they are used to a secure wage and a relatively good social security position as dependent employees. When the difference between the social security position of employees and that of self-employed is greater then the opportunity costs of entrepreneurship will be higher and this will have a negative impact on the entrepreneurial activity in a country. When the difference is small, social security may even have a positive effect on entrepreneurial activity by creating a safety net in the case of business failure. Therefore, we state the following proposition:

Proposition 3: The more the social security entitlements of entrepreneurs resemble those of employees, the higher the level of early-stage entrepreneurial activity in a country will be.

Social security benefits may relate to unemployment as well as to illness/disability. Research into social security as a determinant of entrepreneurship thus far has concentrated on the former and not on the latter category although both may be relevant. First, an entrepreneur bears most of the risk of not having enough work (de Muijnck, Vroonhof and Snijders, 2003). A transition to self-employment often implies that one loses unemployment insurance. In some cases a dependent employee who becomes self-employed will immediately and completely lose all employment protection (European Commission, 2004b). Second, health and disability insurance may also harbour a disincentive to become self-employed, either because the degree of social protection for the self-employed is relatively low or because self-employed have to pay a double contribution i.e. both employers' and employees' premiums. Which of these two types of social security is the most relevant for the self-employment decision? *Ceteris paribus*, we expect social security for the case of unemployment to have a higher impact on self-employment than social security with respect to illness/disability. The main reason is that the risk of business failure[39] is much higher than the risk of unemployment, while the risk of becoming ill is not expected to differ between the self-employed and employees. Therefore, the following proposition is formulated:

Proposition 4: Social security entitlements of individuals with respect to unemployment have a stronger effect on the level of (early-stage) entrepreneurial activity in a country than social security entitlements with respect to illness/disability.

At the micro level people may have different motives for becoming self-employed. Some people start a new business mainly to exploit a perceived business opportunity. These people usually elect to start a business as one of various possible career options. This is for example the case when people choose to become an entrepreneur because they want to be their own boss, to realise a dream or to try and earn more money than in wage employment. This is commonly referred to as opportunity-based entrepreneurship. Other people are pushed into entrepreneurship because all other options for work are either lacking or unsatisfactory. Entrepreneurship is then the last resort to gain work and income. This is for example the case if someone is unemployed and is not able to find a paid job. Since this type of entrepreneurship is necessity driven it is commonly referred to as necessity-based entrepreneurship.

There is a clear variation in the distribution of opportunity and necessity entrepreneurship across countries. As a country's level of per capita income rises, its percentage of opportunity entrepreneurship also goes up (Acs, Arenius, Hay

[39] Business failure thus is one of the major deterrents from self-employment (European Commission, 2004b).

and Minniti, 2004). Social security as a determinant of entrepreneurship is quite likely to have a negative effect on opportunity-based entrepreneurship. When entrepreneurship is opportunity driven this represents a situation in which people will be able to make a choice between various career options. People may be more inclined to exploit business opportunities when opportunity costs of entrepreneurship are low. Based on the above we argue for a strong and negative relationship between social security entitlements and the level of opportunity-based entrepreneurship.

In the case of necessity-based entrepreneurship there are two countervailing effects. On the one hand, opportunity costs of self-employment are not relevant when people have no other choice for work. On the other hand, unemployed people who cannot find a job may prefer unemployment to self-employment when unemployment benefits are generous. This implies a negative effect of social security. On balance we expect the overall effect of social security on necessity-based entrepreneurship to be negative but small. The following propositions are formulated:

Proposition 5A: The social security position of individuals has a relatively strong negative influence on the level of opportunity based entrepreneurial activity in a country.

Proposition 5B: The social security position of individuals has a relatively weak negative influence on the level of necessity based entrepreneurial activity in a country.

8.3 Data

In this section we discuss our data. We use various data on early-stage entrepreneurial activity from the Global Entrepreneurship Monitor. Following Wennekers, van Stel, Thurik and Reynolds (2005), whose investigation into the determinants of nascent entrepreneurship in 36 countries participating in GEM acts as our base, we also employ GEM data for 2002. Data on social security benefits are taken from the *World Competitiveness Yearbook* (published by the Institute for Management Development), as well as OECD statistics and our own calculations based on information in MISSOC (Mutual Information System on Social Protection from the European Commission) (European Commission, 2003b). Data for several control variables are taken from standardized national statistics. Details on the data used in this chapter are provided below.

8.3.1 Entrepreneurial activity

Several measures of entrepreneurship are used in this chapter. These are taken from the GEM 2002 Adult Population Survey. This database contains various entrepreneurial measures that are constructed on the basis of surveys of at least 2,000 respondents per country. We use the following measures.

Total early-stage Entrepreneurial Activity rate (TEA)

This variable is defined as the percentage of the adult population (18-64 years old) that is either actively involved in starting a new venture (nascent entrepreneur) or is the owner-manager of a business that is less than 42 months old (young business entrepreneur). Hence the TEA rate combines two sub indexes, the nascent entrepreneurship rate and the young business entrepreneurship rate.

Nascent entrepreneurship rate

This is the number of people that is actively involved in starting a new venture, as a percentage of adult population. An individual may be considered a nascent entrepreneur if the following three conditions are met: if he or she has taken action to create a new business in the past year, if he or she expects to share ownership of the new firm and if the firm has not yet paid salaries or wages for more than three months (Reynolds, Bygrave, Autio, Cox and Hay, 2002, p. 38).

Young business entrepreneurship rate

This is the percentage of adult population that is the owner-manager of a business that is less than 42 months old.

Established business entrepreneurship rate

This is the percentage of adult population that is the owner-manager of a business that is more than 42 months old.

TEA Opportunity rate and TEA Necessity rate

The Global Entrepreneurship Monitor distinguishes two basic (classes of) dominant reasons or motives why individuals participate in entrepreneurial activities: (a) primarily, they perceive a business opportunity (i.e. they elect to start a business as one of several possible career options), or (b) they see entrepreneurship as their last resort (i.e. they feel compelled to start their own business because all other options for work are either lacking or unsatisfactory). Using this categorization it is possible to label more than 97 percent of those who are active as either “opportunity” or “necessity” entrepreneurs (Reynolds, Bygrave, Autio, Cox and Hay, 2002, p. 15). On average for the countries participating in GEM 2002, three quarters of total entrepreneurial activity consists of opportunity entrepreneurs.

8.3.2 Social security benefits

In this chapter we distinguish between social security premiums paid by the employer and social security premiums paid by the employee. Data on these variables are taken from the *World Competitiveness Yearbook 2001* (WCY). In particular, we use the employer's and employee's compulsory social security contribution as a percentage of GDP per capita in 2000 (WCY variables 2.2.09 and 2.2.04 respectively).

The influence of social security on the decision to become an entrepreneur takes place at the micro-level. Therefore we also use an indicator of the social security position of individuals, in addition to the more commonly used macro-economic indicators of social security as described above. We use the concept of "replacement rates" to indicate the social security position of individuals. Replacement rates denote the level of (cash) benefits a person is entitled to, relative to the income previously earned through work. Thus far replacement rates are mainly used within the context of employees in the case of unemployment. In our analysis we use replacement rates in case of illness/disability as well as unemployment. Additional data indicating the social security entitlements of self-employed are also used, since in several countries the social security position of self-employed is known to differ from that of employees.

It is not possible to use national data sources because of differences in existing definitions and the lack of comparability between national statistics. Data on replacement rates in the case of unemployment for employees are taken from OECD, *Benefits and Wages* (2002). We use the replacement rates in the first year of unemployment, in the case of a single person, earning the average production worker wage.[40] Replacement rates in the case of illness/disability are derived from data available in MISSOC (Mutual Information System on Social Protection from the European Commission). Similar to the unemployment replacement rates, the cash benefits in the first year that a single person becomes ill or disabled, are related to the average income (from OECD National Accounts) within that country.

Since we are particularly interested in the relationship between social security benefits and entrepreneurship, we also need information on the social security entitlements of entrepreneurs. Internationally comparable data on social security benefits for entrepreneurs are scant. Therefore, we have not calculated specific replacement rates for self-employed people. Instead, we have chosen to use

[40] In this study we confine ourselves to the replacement rates in the first year of unemployment or illness/disability for a single person, earning the average wage. Possible extensions to the study are the analyses of other cases: later years of unemployment or illness/disability, different family types and other earning levels.

information from MISSOC to indicate whether the social security position of entrepreneurs is equally or less[41] favourable than that of employees.

The data for the replacement rates were gathered for as many countries participating in GEM 2002 as possible. Furthermore, we were also able to obtain data on replacement rates for Portugal and Greece, which did not participate in GEM 2002 but did participate in GEM 2001 and 2003, respectively.[42] All in all we have data on unemployment replacement rates for 24 countries (for the case of a single person in the first year of unemployment). For six of these countries, however, we could not find data for the replacement rate of self-employed compared to wage-employed, and for the illness replacement rate. In Table 8.1 the data on replacement rates and total entrepreneurial activity rates used in this chapter are displayed. The countries are ranked on the basis of the unemployment replacement rate for employees. We see that the Netherlands has the highest replacement rate whereas Ireland has the lowest replacement rate.

[41] In the cases we study the social security position is never more favourable for entrepreneurs than for employees.

[42] We estimated the various entrepreneurship indexes for Portugal and Greece for 2002 by combining their values in 2001 (Portugal) or 2003 (Greece) with the average growth rates of the corresponding entrepreneurship measures in nearby countries which participated in both 2001 and 2002 (in the case of Portugal: France and Spain) or in 2002 and 2003 (in the case of Greece: Croatia, Italy and Slovenia). This may be plausible as the relative rankings between countries in entrepreneurial activity appear to be quite stable over time (Reynolds, Bygrave, Autio, Cox and Hay, 2002). For the ratio opportunity versus necessity entrepreneurs we used the corresponding ratio of 2001 (Portugal) or 2003 (Greece).

Table 8.1: Replacement rates and TEA (total early-stage Entrepreneurial Activity) in 24 countries [1]

	Unemployment replacement rate (employees)	Unemployment repl. rate, dummy self-employed [2]	Illness replacement rate (employees)	Illness repl. rate, dummy self-employed [2]	Total early-stage entrepreneurial activity rate, 2002
Netherlands	82	1	70	1	4.6
Switzerland	81	1	0	0	7.1
Portugal	79	1	65	1	4.8 [3]
Spain	74	1	73	1	4.6
France	71	1	43	1	3.2
Sweden	71	0	80	1	4.0
Japan	67	N.A.	N.A.	N.A.	1.8
Norway	66	1	100	1	8.7
Finland	65	0	70	0	4.6
Belgium	64	1	57	1	3.0
Denmark	63	1	61	1	6.5
Canada	62	N.A.	N.A.	N.A.	8.8
Germany	60	1	73	1	5.2
United States	58	1	38	0	10.5
Korea	55	N.A.	N.A.	N.A.	14.5
Iceland	55	0	10	0	11.3
Hungary	48	0	71	1	6.6
Greece	47	1	54	1	9.4 [3]
United Kingdom	46	0	18	1	5.4
Italy	42	1	77	1	5.9
New Zealand	39	N.A.	N.A.	N.A.	14.0
Poland	36	N.A.	N.A.	N.A.	4.4
Australia	33	N.A.	N.A.	N.A.	8.7
Ireland	31	1	21	1	9.1

[1] Replacement rates refer to a single person in the first year of unemployment or illness.
[2] This variable indicates whether the replacement rate for self-employed individuals is approximately equal (value 0) or lower (value 1) compared to the replacement rate for wage-employed individuals.
[3] Estimated value.

8.3.3 Control variables

Wennekers, van Stel, Thurik and Reynolds (2005) use a wide selection of candidate explanatory variables that might influence entrepreneurial activity in a country. These variables may be seen as indicators of aggregate conditions in five different domains. These aggregate conditions influence opportunities, resources, skills and preferences with respect to entrepreneurship of individuals, which, in turn, may impact the level of entrepreneurship at the macro-level (Verheul, Wennekers, Audretsch and Thurik, 2002). Basically, in this chapter we use the

same variables as Wennekers, van Stel, Thurik and Reynolds (2005) to act as controls (bearing in mind that our main interest is the effect of social security benefits). The control variables used in this chapter are listed below, ordered by domain of aggregate conditions. The source of most of these variables is the *World Competitiveness Yearbook* (by the Institute for Management Development), or the *Global Competitiveness Report* (by the World Economic Forum). We refer to Wennekers, van Stel, Thurik and Reynolds (2005) for details.

Technology indicators

- Innovative capacity index 2001. This variable is taken from Chapter 2.2 of the Global Competitiveness Report 2001-2002. It describes national innovative capacity as "a country's potential –as both a political and economic entity– to produce a stream of commercially relevant innovations. This capacity is not simply the realized level of innovation but also reflects the fundamental conditions, investments, and policy choices that create the environment for innovation in a particular location or nation." (Porter and Stern, 2002, p. 105).
- Number of computers per capita 2001.
- Number of internet subscribers per capita 2001.

Demography

- Age structure of population 2002. These are the shares in total population of five age groups: 20-24 years, 25-34; 35-44; 45-54 and 55-64 years.
- Female share in total labour force 2001.
- Population growth 1996-2002.

Culture

- Incumbent business ownership 2002. This variable is computed as the sum of the young business entrepreneurship rate and the established business entrepreneurship rate, both taken from GEM.
- (Former) communist country dummy. Over many decades of the 20th century, the dominant culture in (former) communist countries grew to be unfavorable or even hostile to self-employment. We control for this negative impact on entrepreneurship by introducing a (former) communist country dummy. The variable has value 1 for Russia, Hungary, Poland, China, Croatia and Slovenia, and value 0 for all other countries participating in GEM 2002.

Institutions (besides social security arrangements)

- Tax revenue as % of gross domestic product (GDP) (1999).
- Number of permits required to start a new business.
- Number of days required to start a new business.

Economic factors

- Per capita income 2001. Gross national income per capita in 2001 is expressed in purchasing power parities per US$. These data are taken from the 2002 World Development Indicators database of the World Bank.
- Real GDP growth 2001.
- Unemployment rate 2001.

8.4 Empirical analysis

8.4.1 Correlation analysis

In analysing the effect of social security benefits on entrepreneurial activity we start with a simple correlation matrix. Table 8.2 displays the correlations between the various replacement rates and the TEA index for 15 countries. These are the 18 countries for which all measures are available (see Table 8.1) but exclude Iceland, Norway and Switzerland. These countries have extreme values for the illness replacement rate (employees), hence including these countries in the sample could disturb the validity of the analysis. We see that the unemployment replacement rate is significantly and negatively correlated with the TEA index, suggesting that more generous unemployment benefits discourage entrepreneurial activity, as the opportunity costs of self-employment are higher. However, to confirm this relation we have to take account of other factors that may also influence entrepreneurial activity in countries. To this end we carry out a regression analysis, as reported in the next section.

Also noteworthy in Table 8.2 is the significant positive correlation between unemployment replacement rates and illness replacement rates. This indicates that countries also differ in the overall generosity of their social security systems.

Table 8.2: Correlations between replacement rates and TEA (Total early-stage Entrepreneurial Activity) (15 countries)

	TEA	Unempl. RR, employees	Unempl. RR, self-employed [1]	Illness RR, employees	Illness RR, self-employed [1]
TEA	1				
Unempl. RR, employees	-0.61**	1			
Unempl. RR, self-empl. [1]	0.19	0.11	1		
Illness RR, employees	-0.42	0.49*	-0.05	1	
Illness RR, self-empl. [1]	-0.31	-0.04	0.21	0.08	1

**: p<0.05; *: p<0.10.

[1] This is a dummy variable indicating whether the replacement rate for self-employed individuals is approximately equal (value 0) or lower (value 1) compared to the replacement rate for wage-employed individuals.

8.4.2 Regression analysis: social security contribution rates of employers and employees

As mentioned earlier the basis of our regression analysis is the paper by Wennekers, van Stel, Thurik and Reynolds (2005). For 36 countries participating in GEM 2002 they found a significant U-shaped relation between the nascent entrepreneurship rate and the level of per capita income.[43] Furthermore, they found significant effects of various control variables including the incumbent business ownership rate, a (previously) communist country dummy and social security expenditure. However they do not distinguish between social security costs paid by employers and costs paid by employees. Using the same control variables as Wennekers, van Stel, Thurik and Reynolds (2005), these different social security variables (including the *total* expenditures) are included in separate regressions presented in Table 8.3. The first colums of Table 8.3 look at the impact of social security contribution rates on early-stage entrepreneurship for 38 observations (including Greece and Portugal). Table 8.3 indicates for these observations that the total social security contribution rate has a negative, though not significant, impact on the level of early-stage entrepreneurial activity. However, when we look at the employer's and employee's contribution rates

[43] The 36 countries include 22 of the countries listed in Table 8.1 (not Greece and Portugal), and Russia, South Africa, Mexico, Argentina, Brazil, Chile, Singapore, Thailand, China, India, Slovenia, Hong Kong, Taiwan and Israel.

separately it appears that the employer's social security contribution rate has a significant negative impact on the level of early-stage entrepreneurial activity, whereas the impact is negative but not significant for the employee's social security contribution rate. Thus, Propositions 1A and 1B are supported.

Table 8.3: Investigating the impact of social security contribution rates of employers and employees on entrepreneurial activity (OLS estimation results)

	Dependent variable Total early-stage Entrepreneurial Activity rate (TEA)					
Constant	18.2***	18.0***	18.1***	34.0***	33.8***	34.7***
	(6.2)	(6.0)	(6.1)	(4.7)	(4.3)	(4.9)
Established businesses	0.36**	0.41**	0.37**	0.22*	0.25**	0.21
	(2.4)	(2.7)	(2.4)	(2.0)	(2.3)	(1.8)
Communist country	-3.9***	-4.5***	-4.0***			
	(2.8)	(3.2)	(2.8)			
Employer's social security contribution rate (WCY)	-0.078**			-0.041		
	(2.1)			(1.5)		
Employee's social security contrib. rate (WCY)		-0.007			-0.037	
		(0.1)			(1.1)	
Total social security contribution rate (WCY)			-0.046			-0.033
			(1.6)			(1.5)
Female share in total labour force				-0.33**	-0.36***	-0.34***
				(3.1)	(3.5)	(3.4)
Per capita income	-1.04***	-1.22***	-1.06***	-1.47***	-1.46**	-1.46***
	(3.6)	(4.0)	(3.5)	(3.9)	(3.2)	(4.1)
Per capita income, squared	0.021***	0.026***	0.022**	0.035***	0.036***	0.034***
	(2.8)	(3.3)	(2.7)	(5.3)	(4.3)	(5.5)
Adjusted R^2	0.64	0.59	0.62	0.73	0.70	0.74
Observations	38	38	38	15	15	15

Note: Absolute heteroskedasticity-consistent t-values between parentheses.
***: p<0.01; **: p<0.05; *: p<0.10.

Next, we want to compare the model performance using our new social security replacement rate variables with the more aggregate variables used in Table 8.3. To this end we had to reduce the sample to 15 observations because of the limited availability of our replacement rate variables. As mentioned earlier, this sample comprises the 18 countries for which all replacement rates are available (see Table 8.1) but excludes Iceland, Norway and Switzerland, which have extreme values for the illness replacement rate. The communist country dummy was removed as only one former communist country (Hungary) is included in the 15-country

sample. Furthermore, when using the 15 observation sample, it is important to take account of the various control variables introduced in Section 8.3.3. To test their potential influence, we included, in separate regressions, the control variables mentioned in Section 8.3.3. Those variables significant at the 10% level for the specifications in the first three columns of Table 8.3, will be included in the remainder of our analysis. It appeared out that only the female labour share variable is significant. The effect is negative, as expected (Noorderhaven, Thurik, Wennekers and van Stel, 2004). See columns 4 to 6 of Table 8.3. We include this variable in the remainder of our regressions.[44]

Comparing the first three columns with the last three columns we see that the results are reasonably robust to the change in the sample from 38 to 15 observations. Parameter estimates for both the established businesses index and the per capita income variables shaping the U-curve, are significant and have values that do not differ greatly compared to the 38-country sample. This robustness suggests that the small number of observations may not prove to be a large obstacle for our regression analysis.

8.4.3 Comparing the influence of aggregate variables with that of replacement rates

Now, using the 15 observation sample we can include the replacement rates for unemployment and illness in the model.[45] This allows us to test whether the model fit improves by using the replacement rates instead of the employer social security cost variable from the World Competitiveness Yearbook.[46] In both cases we also include a dummy variable indicating whether the replacement rate for self-employed is equal or lower compared to that of wage-employed individuals[47]. Results are reported in Table 8.4.

[44] Female labour share is not significant in the 38 observation sample hence it is not included in the first three columns of Table 8.3.

[45] We do not include both replacement rates in one model as the number of variables may become too large given the small number of observations. Also, the replacement rates for unemployment and illness are significantly correlated (see Table 8.2) which may cause problems of multi-collinearity.

[46] This is not a priori obvious as correlations between the social security cost variable on the one hand, and the unemployment replacement rate and illness replacement rate on the other hand, are remarkably low (0.2 and 0.4 respectively; 15 observations).

[47] The dummy has a non-zero value for countries in which the social security position, as indicated by the replacement rate, is less favourable for self-employed.

Table 8.4: Investigating the impact of social security benefits on entrepreneurial activity (OLS estimation results)

	Dependent variable Total early-stage Entrepreneurial Activity rate (TEA)				
Constant	34.0***	26.7***	29.2***	33.8***	35.5***
	(4.7)	(9.0)	(4.8)	(4.1)	(3.4)
Established businesses	0.22*	0.28***	0.28***	0.25**	0.23*
	(2.0)	(5.7)	(4.9)	(2.6)	(2.2)
Employer's social security contribution rate (WCY)	-0.041				
	(1.5)				
Unemployment replacement rate (employees)		-0.064***	-0.058***		
		(6.0)	(4.2)		
Unemployment RR, dummy self-employed [1]			-0.41		
			(0.5)		
Illness replacement rate (employees)				-0.026**	-0.028*
				(2.3)	(2.1)
Illness RR, dummy self-employed [1]					-0.69
					(0.6)
Female share in total labour force	-0.33**	-0.19***	-0.25*	-0.33***	-0.36*
	(3.1)	(4.0)	(1.9)	(3.3)	(2.6)
Per capita income	-1.47***	-1.20***	-1.23***	-1.44**	-1.37**
	(3.9)	(6.9)	(7.0)	(3.0)	(3.0)
Per capita income, squared	0.035***	0.030***	0.031***	0.034***	0.032***
	(5.3)	(9.5)	(8.1)	(4.1)	(3.9)
Adjusted R^2	0.73	0.89	0.88	0.74	0.72
Observations	15	15	15	15	15

Note: Absolute heteroskedasticity-consistent t-values between parentheses.
***: p<0.01; **: p<0.05; *: p<0.10.
[1] This variable indicates whether the replacement rate for self-employed individuals is approximately equal (value 0) or lower (value 1) compared to the replacement rate for wage-employed individuals.

Focusing on the replacement rate variables, we see that both the replacement rates for unemployment and for illness are negative and significant, which supports Proposition 2. We also note that, by using the unemployment replacement rate instead of the social security cost variable, the model fit is significantly improved (adjusted R^2 of 0.89 instead of 0.73; compare the first two columns of Table 8.4). However, there seems to be no additional impact of the dummy variables indicating whether or not entrepreneur's social security entitlements are equal or worse compared to employees.

8.4.4 Additional entrepreneurship measures

The basic model investigates only the variation in total entrepreneurial activity rates as the dependent variable. In Tables 8.5 and 8.6 we also investigate whether estimation results become different if alternative early-stage entrepreneurship measures are used as dependent variables. In particular we investigate various GEM measures introduced in Section 8.3.1. The basis for the regressions in Tables 8.5 and 8.6 are the specifications in columns 2 (using the unemployment replacement rate) and 4 (using the illness replacement rate) of Table 8.4, respectively. In both tables female labour share is included whereas the dummy variables for self-employed have been omitted, as they were not significant in Table 8.4. We limit the number of independent variables in the regression in order to safeguard adequate degrees of freedom given the low number of observations. Nevertheless, in the second panel of Tables 8.5 and 8.6 we do include the self-employed replacement rate dummies as a robustness test.

Table 8.5: Investigating the impact of social security benefits related to unemployment on entrepreneurial activity (OLS estimation results)

	Dependent variables				
	TEA	TEA OPP.	TEA NEC.	Young businesses	Nascents
Constant	26.7***	13.2**	8.9***	11.1***	17.4***
	(9.0)	(2.9)	(3.6)	(3.5)	(7.3)
Established businesses	0.28***	0.23***	0.10*	0.19***	0.084**
	(5.7)	(3.3)	(2.0)	(6.7)	(2.5)
Female share in total labour force	-0.19***	-0.061	-0.063	-0.046	-0.13***
	(4.0)	(0.9)	(1.3)	(0.9)	(3.5)
Unemployment replacement rate	-0.064***	-0.040**	-0.016*	-0.030***	-0.041***
(employees)	(6.0)	(2.2)	(2.1)	(3.7)	(4.6)
Per capita income	-1.20***	-0.77**	-0.40***	-0.58***	-0.80***
	(6.9)	(2.6)	(6.0)	(4.3)	(5.8)
Per capita income,	0.030***	0.022***	0.008***	0.014***	0.021***
squared	(9.5)	(4.3)	(5.4)	(5.1)	(7.5)
Adjusted R^2	0.89	0.76	0.72	0.84	0.85
Observations	15	15	15	15	15
	Results including dummy replacement rate self-employed				
Unemployment replacement rate	-0.058***	-0.035	-0.017*	-0.020**	-0.045***
(employees)	(4.2)	(1.6)	(2.0)	(3.1)	(4.3)
Unemployment RR,	-0.41	-0.33	0.041	-0.71*	0.24
dummy self-employed [1]	(0.5)	(0.5)	(0.1)	(1.9)	(0.4)
Adjusted R^2	0.88	0.74	0.68	0.86	0.84
Observations	15	15	15	15	15
	Robustness test: 18 observations [2]				
Unemployment replacement rate	-0.076***	-0.048**	-0.015**	-0.032***	-0.051***
(employees)	(5.0)	(2.8)	(2.2)	(3.6)	(6.6)
Unemployment RR,	-0.24	-0.019	-0.060	-0.53	0.30
dummy self-employed [1]	(0.3)	(0.0)	(0.1)	(1.0)	(0.5)
Adjusted R^2	0.78	0.78	0.72	0.74	0.83
Observations	18	18	18	18	18
	Robustness test: 24 observations [3]				
Unemployment replacement rate	-0.108***	-0.080***	-0.017*	-0.049***	-0.068**
(employees)	(3.3)	(3.0)	(1.9)	(3.4)	(2.6)
Adjusted R^2	0.35	0.40	0.54	0.33	0.30
Observations	24	24	24	24	24

Note: Absolute heteroskedasticity-consistent t-values between parentheses.
***: p<0.01; **: p<0.05; *: p<0.10. Estimations in lower three panels of the table use the same control variables as in the upper panel.
[1] This variable indicates whether the replacement rate for self-employed individuals is approximately equal (value 0) or lower (value 1) compared to the replacement rate for wage-employed individuals.
[2] Including Iceland, Norway and Switzerland all of which have extreme values for the illness replacement rate.
[3] All countries for which unemployment replacement rates are available (see Table 8.1).

Table 8.6: Investigating the impact of social security benefits related to illness on entrepreneurial activity (OLS estimation results)

	Dependent variables				
	TEA	TEA OPP.	TEA NEC.	Young businesses	Nascents
Constant	33.8***	18.1**	10.7***	14.5**	21.9***
	(4.1)	(2.6)	(3.3)	(3.0)	(3.9)
Established businesses	0.25**	0.21**	0.097	0.17***	0.071
	(2.6)	(2.5)	(1.7)	(3.3)	(1.1)
Female share in total	-0.33***	-0.15**	-0.10*	-0.11*	-0.22**
labour force	(3.3)	(2.3)	(1.8)	(1.9)	(3.1)
Illness replacement rate	-0.026**	-0.026**	-0.005	-0.014	-0.013
(employees)	(2.3)	(2.3)	(1.3)	(1.6)	(1.2)
Per capita income	-1.44**	-0.90*	-0.47***	-0.69**	-0.96**
	(3.0)	(2.0)	(4.1)	(2.7)	(3.1)
Per capita income,	0.034***	0.024**	0.009***	0.016***	0.024***
squared	(4.1)	(3.0)	(4.1)	(3.3)	(4.4)
Adjusted R^2	0.74	0.74	0.65	0.74	0.70
Observations	15	15	15	15	15
	Results including dummy replacement rate self-employed				
Illness replacement rate	-0.028*	-0.027*	-0.005	-0.014	-0.016
(employees)	(2.1)	(2.2)	(1.0)	(1.4)	(1.3)
Illness RR,	-0.69	-0.34	0.26	0.16	-0.94
dummy self-employed [1]	(0.6)	(0.3)	(0.5)	(0.2)	(1.4)
Adjusted R^2	0.72	0.71	0.62	0.71	0.70
Observations	15	15	15	15	15
	Robustness test: 18 observations [2]				
Illness replacement rate	-0.009	-0.007	-0.003	-0.006	-0.003
(employees)	(0.5)	(0.5)	(1.4)	(0.5)	(0.2)
Adjusted R^2	0.55	0.66	0.67	0.55	0.59
Observations	18	18	18	18	18

Note: Absolute heteroskedasticity-consistent t-values between parentheses.
***: p<0.01; **: p<0.05; *: p<0.10.
Estimations in lower two panels of the table use the same control variables as used in the upper panel.
[1] This variable indicates whether the replacement rate for self-employed individuals is approximately equal (value 0) or lower (value 1) compared to the replacement rate for wage-employed individuals.
[2] Including Iceland, Norway and Switzerland which have extreme values for the illness replacement rate.

8.4.5 Results for unemployment replacement rates

In Table 8.5 we see that the replacement rate for unemployment is negatively and significantly correlated with all entrepreneurship measures. However, the effect is weaker for necessity TEA, compared to the other measures of entrepreneurship.

An interesting picture emerges from the results of the regression analyses, with various measures of entrepreneurship as dependent variables. First, social security benefits in the case of unemployment clearly impact early-stage entrepreneurship. Second, nascent entrepreneurship is more strongly affected by social security benefits than are young businesses. This result is intuitively clear, since such considerations are most likely to be relevant in the earliest stages of starting a new venture. Third, the level of opportunity entrepreneurship is influenced by the replacement rates, whereas necessity entrepreneurship is only weakly so. This finding is as expected in Propositions 5A and 5B.

Looking at the second panel of Table 8.5 we see that the replacement rate dummy for self-employed has no impact on the various TEA measures but it does seem to have some impact on the young businesses index (note that adjusted R^2 increases slightly for this specification). Overall these results provide hardly any support for Proposition 3. The last two panels include two robustness tests by increasing the sample to 18 and 24 countries, respectively. The 18 countries include the three countries with an outlier value for the illness replacement rate (this should not have an impact here as we look at the unemployment replacement rate only) while the 24 countries include all countries from Table 8.1 (including those for which no illness replacement rate is available). Note that the control variables are not reported in these panels. We see that the results for the unemployment replacement rates are robust to these changes. The coefficient is negative and significant in all cases, including necessity TEA (fourth panel).[48]

8.4.6 Results for illness replacement rates

Table 8.6 suggests that the illness replacement rate impacts total entrepreneurial activity and, in particular, opportunity entrepreneurship. Necessity entrepreneurship is not influenced by a higher replacement rate. This is a plausible result as the necessity entrepreneurs are not in the position to weigh the replacement rate in their decision to become entrepreneur. They have no other employment options.

From the second panel it is clear that there is no additional effect of the replacement rate dummy for self-employed, which does not support Proposition 3. Finally, from the third panel, which uses 18 observations, we see that the effect

[48] Note that adjusted R^2 values for the 24-country sample are lower compared to the other samples. The U-shaped relation between entrepreneurship and per capita income is not significant for this sample.

for the illness replacement rate is not robust to including Iceland, Norway and Switzerland in the sample. This is caused by the outlier values for these countries (see Table 8.1) and it supports our decision to exclude these countries from our original sample.

Comparing Tables 8.5 and 8.6 it seems that, with the exception of the opportunity TEA rate, the impact of the unemployment replacement rate is somewhat stronger compared to the illness replacement rate. This offers some support for Proposition 4.

8.5 Discussion and Conclusion

8.5.1 Summary of main results

This study aims to contribute to the literature on social security and entrepreneurship by identifying a number of propositions regarding the relationship between social security arrangements and early-stage entrepreneurial activity. We empirically test our propositions by using data on entrepreneurship from the Global Entrepreneurship Monitor, whereas data on social security premiums from the *World Competitiveness Yearbook 2001* are used and data on social security benefits are taken from the OECD or based upon information in MISSOC. First, we investigate the impact of aggregate social security contributions on the level of early-stage entrepreneurial activity in a country. Second, we examine how micro-level based replacement rates for employees in case of unemployment and illness/disability impact on various aggregate measures of early-stage entrepreneurial activity. Third, we explore the additional influence of the relative social security entitlements of self-employed compared with those of employees.

We find evidence of a significantly negative effect of *employer's* social security contribution rates on entrepreneurship. Furthermore, it appears that using replacement rates in the analyses yields a better model fit and seems to have a stronger relation with entrepreneurship, than the social security measures at the aggregate level used in previous studies. This supports our proposition that social security entitlements at the micro-level influence the rate of entrepreneurship at the macro-level. More specifically, the results of our analyses show a convincing effect of the unemployment replacement rate for employees, while the effect for the replacement rate of employee's illness is not significant in most cases.

The results differ somewhat for different measures of entrepreneurial activity. The negative effect of the unemployment replacement rates for employees is strongest for nascent entrepreneurs, but also a significant negative effect on young businesses is identified. These results suggest that social security benefits particularly affect people who are trying to start an enterprise or who have

recently started one. Furthermore, the unemployment replacement rates for employees have a significant negative effect on opportunity entrepreneurship in most regressions, but the results for necessity entrepreneurship are weaker. Interestingly, the replacement rates for illness of employees also have a significant negative effect on opportunity entrepreneurship.

8.5.2 Discussion

The results of our study indicate that *employer's* social security contributions have a negative impact on the level of early-stage entrepreneurial activity. This may imply that lowering the social security contribution rate for employers may be an appropriate instrument to stimulate entrepreneurship.

As regards the level of social security benefits it is clear from the results of this study that the social security entitlements of employees have a negative effect on the rate of early-stage entrepreneurship. However, the results of our study do not support the proposition that the relative level of social security benefits for self-employed, compared to that for employees, has an additional impact on entrepreneurial activity. The only exception is a negative effect on young businesseses with unemployment replacement rates of self-employed being less favourable than those of employees. In interpreting these results one should keep in mind that they are based only on a limited number of countries and that we use only a very rough indicator (a dummy variable) for the social security position of entrepreneurs relative to that of employees.

Being aware of these limitations, one possible conclusion that could be drawn from our empirical results is that social security benefits do not necessarily (or only) influence the choice between entrepreneurship and wage-employment, but rather (or also) the decision to participate in the labour market in general. This reasoning particularly applies to people who are unemployed (or otherwise economically inactive) and their decision to participate in the labour market either as employee or as entrepreneur. However, it is more common for people to become an entrepreneur after having been wage-employed. One explanation as to why the decision to switch from being an employee to becoming an entrepreneur is not affected by a difference in social security position is that this may be linked to the more general level of insecurity of becoming an entrepreneur, as compared to being an employee. When a person is wage-employed he or she will be aware of possible risks and the implications for his or her income. The possible risks for entrepreneurs are likely to be less clear to them. Furthermore, the higher risks of entrepreneurship are not limited to a possibly less favourable social security position in case of unemployment or illness. Other potential risks may be of much greater importance to an individual: very low income, loss of invested money, running into debt, loss of status when failing, etc. In addition to the potentially

greater risks of being an entrepreneur, other forms of employment protection only applicable to employees (e.g. concerning dismissal procedures) are lost.[49]

Our results may imply that, in order to stimulate entrepreneurship, policy makers should also focus on increasing labour participation in general. When a larger share of the adult population participates on the labour market, *ceteris paribus* this will lead to more entrepreneurs as well. One possible way of stimulating labour participation is by implementing a social security system that is less generous and actively stimulates people to earn a living by participating on the labour market. In addition, policy makers may try to influence a person's decision to become self-employed instead of wage-employed. They may do so by mitigating some of the differences between the risks faced by employees and entrepreneurs, such as those related to social security entitlements. The results of our analyses indicate that converging social security benefits for wage earners and self-employed will have the greatest effect on entrepreneurship if they are achieved by decreasing the social security entitlements of employees. Whether societies are willing to pay this price in order to stimulate entrepreneurship remains a political choice.

8.5.3 Limitations of the current study and suggestion for further research

The present study has several limitations. First, due to data restrictions we have only been able to incorporate a limited number of countries. Second, we have confined ourselves to the replacement rates in the first year of unemployment or illness for a single person, earning the average wage. Third, we have used a very simple dummy variable as a rough indicator for the social security position of entrepreneurs compared to that of employees. Finally, the specification of our model is very straightforward and has not yet considered interaction effects.[50]

Notwithstanding these obvious limitations, we find clear evidence of a negative influence of replacement rates on entrepreneurial activity while using proven models with several control variables. We feel these results encourage further research into this relationship. Straightforward extensions to this study are the analysis of more countries and of other cases, such as benefits beyond the first

[49] There are significant positive correlations (coefficients around 0.5) between the replacement rates we use in our analyses and the employment protection index, as reported by the OECD (2004a), for the countries in our sample.

[50] We did perform some additional exercises concerning these last two limitations. Based on qualitative information we extended the variation in the dummy variable to have values 0, 1 or 2 (value 1 indicating that there is some arrangement for self-employed but that it is not as good as that for employees; value 2 indicating that there is no social security arrangement for self-employed at all). We also included a multiplicative term to study possible interaction between the overall level of social security and the effect of relative social security entitlements of entrepreneurs. However, neither of these exercises provided any new insights compared to those already reported in this chapter. We feel that this may be related to the rough nature of the dummy variable (despite our effort to refine this variable), and to the small number of observations that we (are forced to) use in our regressions.

year of unemployment or illness/disability, different family types (married couple, single parent, etc.) and other earning levels. However, the most valuable, and probably most elaborate, line of research would be to use better indicators for the social security position of entrepreneurs. Preferably, absolute replacement rates for entrepreneurs in a large number of countries should be available, similar to the replacement rates for employees available for employees. In this case, the effect of the actual magnitude of the difference in social security position between entrepreneurs and employees can be studied. Other aspects of social protection such as job security might be added to the model (see Bosma, Hunt and Wennekers, 2005).

9 Drivers of Aspiring Entrepreneurship at the Country Level: The Role of Start-up Motivations and Social Security

Abstract
This chapter investigates whether the incidence of various start-up motivations and the level of social security can explain the prevalence of aspiring or ambitious entrepreneurship at the country level. Country level data from the Global Entrepreneurship Monitor (GEM) for aspiring entrepreneurship rates and start-up motivations are used for the year 2005. We focus on aspiring entrepreneurship in terms of *innovativeness*, *job-growth* and *export orientation* and distinguish between the *necessity motive*, the *independence motive* and the *increase wealth motive*. For social security we use data from the World Competitiveness Yearbook 2005. Our findings indicate that social security negatively affects a country's supply of aspiring entrepreneurship. Furthermore, our results also suggest that countries with a higher proportion of increase-wealth-motivated entrepreneurs have higher rates of job-growth-oriented and export-oriented entrepreneurship.

This chapter is based upon:

Hessels, J., Gelderen, M. van and Thurik, A.R. 2008a. Drivers of Entrepreneurial Aspirations at the Country Level: The Role of Start-up Motivations and Social Security, *International Entrepreneurship and Management Journal*, forthcoming.

9.1 Introduction

This chapter investigates drivers of aspiring entrepreneurship and in particular the role of start-up motivations and social security. There is a plethora of policy measures with an entrepreneurship flavor that aim to stimulate innovation and growth (Audretsch, Grilo and Thurik, 2007; Landstrom and Stevenson, 2005; Stevenson and Landstrom, 2001) and high growth firms are prominent on the agenda of policy makers (European Commission, 2003a; Fischer and Reuber, 2003; Smallbone, Baldock and Burgess, 2002). Aspirations have been shown to be a strong predictor of outcomes (Cassar, 2007; Wiklund and Shepherd, 2003). Therefore it is important to understand the factors that explain the diversity of entrepreneurs in terms of their aspirations.

Previous research explaining aspiring or ambitious entrepreneurship found many determinants on different levels of analyses. Studies looked at individual level factors such as expectancies (Cliff, 1998; Davidsson, 1989; Wiklund, Davidsson and Delmar, 2003), opportunity costs (Cassar, 2006), obstacles (Morris, Miyasaki, Watters and Coombes, 2006), social capital (Liao and Welsh, 2003), ability (Cassar, 2006; Davidsson, 1991), education and household income (Autio and Acs, 2007) and motives (Amit, MacCrimmon, Zietsma and Oesch, 2001; Cassar, 2007; Kolvereid, 1992; Morris, Miyasaki, Watters and Coombes, 2006). Firm-level characteristics explaining growth motivations were studied by Kolvereid (1992), and Gundry and Welsh (2001). At the industry-level, Davidsson (1991) looked at opportunities and Kolvereid (1992) at the sector as a determinant of aspirations. In this chapter, we employ the national level of analysis. We focus on two determinants: national aggregates of individual start-up motives, and social security arrangements.

Policy goals usually do not correspond with the motives of enterprising individuals. Hardly anybody starts a business with the aim of achieving innovation, job creation, or economic growth at the national level. Instead, people desire personal profits or autonomy, among other things, or are forced into entrepreneurship because they have no other options (Shane, Locke, and Collins, 2003). Still, the type of individual entrepreneurial motivation may determine the goals and aspirations for the firm, which in turn may determine macro-economic outcomes. Policy makers can try to influence the type of entrepreneurial motivation in their jurisdiction or they can accept the prevalent motives and take these as a basis for their policies. It is vital for policy makers to know how entrepreneurial motivations relate to aspirations. This is precisely the opening research question of this chapter.

Furthermore, previous research suggests that a country's welfare institutions are likely to affect both the rate of entrepreneurship and its allocation across productive and unproductive activities (Henrekson, 2005). However, empirical

efforts that explore such links are limited. We try to contribute to the empirical literature by examining whether social security arrangements, a factor that has been found to affect the supply of entrepreneurship at the country level in recent empirical contributions (Hessels, van Stel, Brouwer and Wennekers, 2007; Parker and Robson, 2004; Wennekers, van Stel, Thurik and Reynolds, 2005), also affects the level of aspirations that entrepreneurs have for their firm. This is the second research question of this chapter. More specifically, we propose a model where we explain aspiring entrepreneurship using start-up motives and social security. The country level is our unit of analysis and 2005 GEM (Global Entrepreneurship Monitor) data are used for 29 countries.

The chapter is organized as follows. We first discuss literature regarding entrepreneurial motivations and aspirations. In the subsequent sections we elaborate on the main data used, outline our research methodology and present the empirical results. Finally, we discuss and interpret our findings and identify policy implications.

9.2 Background and hypotheses

9.2.1 Aspiring entrepreneurship and entrepreneurial motivation

Within-country studies of entrepreneurial motivation, defined as the motivation to start a business, come in three types. First, there are studies of the reasons, motives, or goals to start a business. This type of study, being mostly conducted in Western countries where push motives are less prevalent, reports mostly pull motives such as autonomy (also referred to as independence and freedom), income and wealth, challenge and recognition and status (Carter, Gartner, Shaver and Gatewood, 2003; Cassar, 2007; Feldman and Bolino, 2000; van Gelderen and Jansen, 2006; Kolvereid, 1996; Kuratko, Hornsby, and Naffziger, 1997; Robichaud, McGraw, and Roger, 2001; Wilson, Marlina and Kickul, 2004). However, individuals may also be pushed into entrepreneurship (Thurik, Carree, van Stel and Audretsch, 2008). Push motives (also referred to as necessity motives) are present, for example, when (a threat of) unemployment forces people into self-employment. They play a major role in developing countries and also in developed countries, albeit to a lesser extent (Bhola, Verheul, Grilo and Thurik, 2006; Grilo and Thurik, 2006).

Second, there are cost-benefit types of studies that try to explain the decision to start a business (Campbell, 1992; Douglas and Shepherd, 2002). In this type of study, material and immaterial risks and gains are included in some some decision function.

Third, there are studies of entrepreneurial motivation investigating depth-psychological motives. Examples are studies on the need for achievement (nAch)

(Collins, Hanges and Locke, 2004; McClelland, 1961) and the need for power (nPower) (McClelland, 1975). nAch and nPower usually do not figure heavily in the first two types of studies as actual business starters usually do not list these motives as conscious reasons to start a business.

Between-country studies look at motives on an aggregate level. Shane, Kolvereid and Westhead (1991), comparing the U.K. Norway, and New Zealand, and Baum, Olian, Erez, Schnell, Smith, Sims, Scully and Smith (1993), comparing Israel and the U.S. find that prevalence rates of different motives and needs indeed vary between countries (Scheinberg and MacMillan, 1989).

A number of studies relate motives to aspirations (also referred to as ambitions, goals, growth intentions, or growth attitudes). Kolvereid (1992) finds that the achievement motive is related to growth outcomes, but no financial motives are studied. Strong evidence for the relationship between financial motives and growth ambitions is presented by Cassar (2007). Using the U.S. Panel Study of Entrepreneurial Dynamics (PSED) data to track people from nascent entrepreneurship to eventual firm performance, he shows that motivations change over time, with financial motives declining in importance. In addition, he finds that there is a significant recall bias when nascent entrepreneurs are asked to remember their initial motives for starting the business. The results show that initial financial motives strongly impact on sales and employment intentions, growth preference, and risk-return preference. Morris, Miyasaki, Watters and Coombes (2006) also find financial motives to be related to growth ambitions. On the other hand, Amit, MacCrimmon, Zietsma and Oesch (2001) find that a group of growth-oriented high-tech entrepreneurs is mostly motivated by non-financial concerns.

Circumstantial evidence for relationships between motives and aspirations can be found in the studies of Davidsson and colleagues using an expectancy approach. Here, respondents are asked how growth would affect a range of domains such as financial rewards, autonomy, control, and employee well-being. Growth willingness is then explained from these perceived expected outcomes of growth. Davidsson (1989) showed that expectations of financial reward and of increased independence are positively related to the ambition to grow. Fear of loss of control and reduced employee well-being on the other hand are negatively related to the ambition to grow. Wiklund, Davidsson, and Delmar (2003) also explain growth ambition from its expected consequences and find, in a Swedish sample, that concern for employee well-being is the strongest predictor.

In this study we take the country level as the unit of analysis. A comprehensive between-country study providing entrepreneurial motives and aspirations became available in 2005 when, for the first time, GEM data made it possible to distinguish between independence and wealth attainment on the one hand, (within the category of opportunity entrepreneurship), and necessity entrepreneurship on

the other hand. GEM also measures a range of variables with regard to the ambition to innovate, grow and export. Therefore, for the present study we have three dimensions of motivation and three of aspiration. The motivation data are somewhat limited since there are more motivations to start a business than income or wealth creation, independence, and necessity. However, for the purpose of cross-national comparison of the relation between entrepreneurial motivations and aspirations, these are the best data available. Ideally, we would include individual-level data in our research (Autio and Acs, 2007). However, since it takes a lag of several years for GEM micro-data to become publicly available for individual countries, we focus on country level aggregate data.

We argue that, when trying to explain why some countries have higher prevalence rates of aspiring entrepreneurship than others, it is relevant to consider a country's incidence of various start-up motives. We expect the incidence of the independence, wealth attainment and necessity motives to be related to a country's rate of aspiring entrepreneurship in terms of innovation, job-growth and export in the following ways.

First, when autonomy or independence is a dominant motive for becoming self-employed, entrepreneurship is likely to be a vehicle to serve the freedom-related needs of the individual. It will enable a lifestyle in which one can decide one's own goals, methods, and time scheduling (Breaugh, 1999; van Gelderen and Jansen, 2006). A larger firm can be seen as reducing external dependencies and therefore increasing autonomy (Davidsson, 1989). However, it is more likely that the majority of autonomy driven entrepreneurs will see a small firm as a vehicle to achieve freedom. Research by Kolvereid (1992) and by Morris, Miyasaki, Watters and Coombes (2006) indeed found no relationship between autonomy and growth ambitions and Cassar (2007) even found a negative relationship.

Whereas we do not expect the autonomy motive to be related to growth aspirations, we do expect it to be related to aspirations for innovation. Autonomy is valued for its own sake (van Gelderen and Jansen, 2006), and thus an intrinsic motive. Experimental research shows that intrinsic motivation is related to creativity (Amabile, 1996). Previous research at the micro-level found autonomy to be related to innovation. Corman, Perles and Vancini (1988) report that independence is a prime entrepreneurial motive for creating innovative ventures. Amit, MacCrimmon, Zietsma and Oesch (2001) showed a group of high-tech high-growth entrepreneurs to be motivated by a range of non-financial drivers including autonomy. van Gelderen, Sayers and Keen (2008) found that a group of home-based internet businesses perceived themselves as inventors and contributed to variety in the economy. Overall, at the country level we expect that the proportion of independence-motivated entrepreneurs does not relate to the prevalence of growth-oriented entrepreneurship and relates positively to the prevalence of innovative entrepreneurship. This leads to the following hypotheses:

Hypothesis 1A: A country's rate of innovative entrepreneurship relates positively to the incidence of independence as a prime motive for becoming self-employed.

Hypothesis 1B: A country's rate of job-growth-oriented entrepreneurship does not relate to the prevalence of independence as a prime motive for becoming self-employed.

Hypothesis 1C: A country's rate of export-oriented entrepreneurship does not relate to the prevalence of independence as a prime motive for becoming self-employed.

When someone starts a firm with the prime motive of increasing wealth this will probably have a positive effect on the ambitions in terms of growth and innovation that this entrepreneur has with the firm. Both growth and innovation may be instrumental in achieving a higher income. Cassar (2007), investigating the relationships between financial motives and a range of ambition and outcome variables, indeed found a positive relationship between financial motivations and aspirations. Regression analyses showed growth preference, risk-return preference, intended sales and intended employment all to be explained by motivations of financial success at the $p<.001$ level. In a sample of females, Morris, Miyasaki, Watters and Coombes (2006) present qualitative as well as quantitative data relating financial motives to growth ambitions. Amit, MacCrimmon, Zietsma and Oesch (2001) report a group of high-tech high-growth entrepreneurs to be primarily driven by non-financial motives. However, their research did not study entrepreneurs motivated by financial rewards. Overall, at the country level we expect that having a higher incidence of increase-wealth motivated entrepreneurs will relate positively to the prevalence of aspiring entrepreneurship. We formulate the following hypotheses:

Hypothesis 2A: A country's rate of innovative entrepreneurship relates positively to the incidence of increase wealth as a prime motive for becoming self-employed.

Hypothesis 2B: A country's rate of job-growth-oriented entrepreneurship relates positively to the incidence of increase wealth as a prime motive for becoming self-employed.

Hypothesis 2C: A country's rate of export-oriented entrepreneurship relates positively to the incidence of increase wealth as a prime motive for becoming self-employed.

Generally, necessity-motivated entrepreneurs tend to have lower aspiration levels than opportunity-motivated entrepreneurs (Reynolds, Bygrave, Autio, Cox and Hay, 2002). Since necessity motivated entrepreneurs are likely to be strongly dependent on their firm for their daily economic survival this may positively affect the aspirations they have for their firm. However, necessity-motivated entrepreneurs are more likely to be found in less wealthy regions and are therefore likely to be constrained in their access to human capital, financial capital, technology and other resources, and this is expected to inhibit their potential to generate innovations and job-growth and for building competitive advantages needed for export. Thus, even though these types of entrepreneurs are often highly dependent on their firm, they lower their expectations for innovation and growth in terms of jobs and export as they expect this may be difficult for them to realize. They may also be forced, because of their situation, to act on less promising opportunities (Morris, Miyasaki, Watters and Coombes, 2006). Therefore, on average we expect a neutral relationship between a country's incidence of necessity motivated entrepreneurs and entrepreneurial aspirations for innovation and growth.

Hypothesis 3A: A country's rate of innovative entrepreneurship does not relate to the incidence of necessity as a prime motive for becoming self-employed.

Hypothesis 3B: A country's rate of job-growth-oriented entrepreneurship does not relate to the prevalence of necessity as a prime motive for becoming self-employed.

Hypothesis 3C: A country's rate of export-oriented entrepreneurship does not relate to the prevalence of necessity as a prime motive for becoming self-employed.

9.2.2 Aspiring entrepreneurship and social security

In addition to exploring the role of start-up motivations in explaining aspiring entrepreneurship we also investigate the potential role of social security arrangements in influencing the type of ambitions that entrepreneurs have with their firm. We rely on institutional theories (new institutional economics (Willamson, 1998) and new institutional sociology (DiMaggio and Powell, 1983)) emphasizing that institutions may both constrain and enable the action choices of agents. In particular, we build on previous literature that suggests that the supply of entrepreneurship as well as its allocation across productive and unproductive activities is likely to be affected by the institutional set-up of societies and that welfare institutions may be of specific relevance in this respect (Henrekson, 2007). Henrekson (2005) describes in detail how various welfare arrangements may create disincentives for entrepreneurship and in particular for innovative and

growth-oriented entrepreneurship. However, thus far empirical efforts on the effects of welfare on the supply and types of entrepreneurship are still limited.

One aspect of welfare state institutions that has received some attention in recent empirical research with respect to the supply of entrepreneurship are social security arrangements. From a theoretical perspective social security arrangements, for example in the case of illness or unemployment, may in various ways influence decisions made by individuals when choosing between wage employment and self-employment. A generous social security system may either lead to fewer or to more self-employed. There may be a negative impact on self-employment in so far as generous social security benefits for employees increase the opportunity costs of entrepreneurship. Social security in general may have a positive effect on entrepreneurial activity by creating a safety net in case of business failure. Empirical results suggest that social security negatively affects the level entrepreneurship, providing support for the argument that social security increases the opportunity costs of entrepreneurship (Hessels, van Stel, Brouwer and Wennekers, 2007; Parker and Robson, 2004; Wennekers, van Stel, Thurik and Reynolds, 2005). However, it has remained unclear how social security relates to the supply of ambitious or aspiring entrepreneurship.

In this chapter we extend this empirical literature by investigating whether social security affects the quality of entrepreneurship at the country level. Countries with generous social security and welfare schemes do not emphasize the responsibility of the individual for his/her own survival, which may hamper ambitions to strive for innovation and growth. Also, higher levels of social security often imply higher wage costs, since employers normally have to pay at least part of the social security contribution for their employees via taxation (Hessels, van Stel, Brouwer and Wennekers, 2007). This may further limit entrepreneurs' aspirations for growth with their firm, since it may be costly for them to hire employees. Overall, it can be observed that entrepreneurs in countries with a relative lack of social security nets, such as is the case in the U.K. and the U.S.A., tend to be more growth- and innovation-oriented than in regions where social security systems are more generous such as Sweden or the Netherlands.

Hypothesis 4A: A country's rate of innovative entrepreneurship relates negatively to the level of social security.

Hypothesis 4B: A country's rate of job-growth-oriented entrepreneurship relates negatively to the level of social security.

Hypothesis 4C: A country's rate of export-oriented entrepreneurship relates negatively to the level of social security.

9.3 Methodology and data

In order to examine how the rate of aspiring entrepreneurship relates to entrepreneurial motivation and social security we carry out regression analysis, taking into account controls. This leads to the following equation:

A = f (M, S, X),

where

A = Aspiring entrepreneurship;
M = Entrepreneurial motivation;
S = Social security;
X = Control variables.

9.3.1 Dependent variables: aspiring entrepreneurship

For measures of aspiring entrepreneurship we use data from the Global Entrepreneurship Monitor (GEM) Adult Population Survey 2005 on innovativeness, job-growth expectations and export orientations. They relate to the Total early-stage Entrepreneurial Activity (TEA) rate, which is defined as the percentage of the adult population (18 - 64 years old) that is either actively involved in starting a new firm (nascent entrepreneur) or that is the owner-manager of a business that is less than 42 months old (young business owner). For innovative entrepreneurship we use the following indicators:

New technology rate
The rate of early-stage entrepreneurs in the adult population that indicates making use of technologies that have been available for less than one year.

New product rate
The rate of people involved in total early-stage entrepreneurial activity as a percentage of the adult population that has indicated a desire to offer a product or service that is new to the market.

Furthermore, as indicators for job-growth-oriented entrepreneurship we use:

Medium job-growth rate
The rate of early-stage entrepreneurs in the adult population that expect to create six or more jobs in the next five years.

High job-growth rate
The rate of early-stage entrepreneurs in the adult population that expect to create 20 or more jobs in five years time.

As indicators for export-oriented entrepreneurship we use:

Export rate
The rate of early-stage entrepreneurs in the adult population for whom at least 1% of their customers live outside the country's borders.

Substantial export rate
The rate of early-stage entrepreneurs in the adult population for whom 26% or more of their customers live abroad.

9.3.2 Independent variables: entrepreneurial motivations and social security

Various measures of entrepreneurial motivation are used in this chapter. These measures are taken from the GEM Adult Population Survey 2005. Respondents in the GEM Adult Population Survey are first asked to indicate whether they are involved in a start-up to take advantage of a business opportunity or because they have no better choice for work. When they indicate taking advantage of a business opportunity this is considered as opportunity motive and when they indicate that they have no better choice for work they are classified as necessity-motivated entrepreneurs. Next, opportunity motivated entrepreneurs are asked to indicate *the most important* motive for pursuing this opportunity, either the independence or the increase wealth motive (they could select only one motive). Based on these questions, we use the following indicators for entrepreneurial motivation expressed as percentage of TEA:

Necessity motive
The share of early-stage entrepreneurs that indicate participating in entrepreneurial activity primarily because they have no other options for work.

Independence motive
The share of early-stage entrepreneurs for whom independence is the main motive for becoming an entrepreneur.

Increase wealth motive
The share of early-stage entrepreneurs that indicate that their prime motive for being or becoming an entrepreneur is to increase wealth.

The three motives that we distinguish are mutually exclusive. However, they do not add up to 100% since there may also be other motives for becoming self-employed such as challenge or recognition (see also Section 9.2).

The following indicator is taken for social security:

Social security contribution rate
This is the total (employer's and employee's) compulsory social security contribution rate for the year 2004 taken from the World Competitiveness Yearbook 2005 (WCY).

9.3.3 Control variables

We include a number of controls in the analysis. This number of control variables is limited because of the small number of countries included in our sample. We control, in particular, for a country's level of economic development, economic growth, and its age and industry structure. Economic growth is included because higher levels of economic growth are expected to provide entrepreneurial opportunities and therefore aspiring entrepreneurship is assumed to be related to economic growth (Thurik, Carree, van Stel and Audretsch, 2008). Previous studies at the micro-level have identified age and industry as important determinants for aspirations in terms of innovation and growth (Lafuente and Salas, 1989; Madsen and Servais, 1997; Simpson and Kujawa, 1974; Westhead, 1995).

GDP per Capita
We measure the level of economic development using gross domestic product (GDP) per capita. Gross national income per capita is expressed in purchasing power parities per US$ for 2005. These data are taken from the World Development Indicators database of the World Bank.

% Population 25-44 yrs
This variable refers to the percentage of people aged between 25 and 44 years in the total population for the year 2005. Data are taken from the US Bureau of the Census.

Value added in services (% of GDP)
We use data on value added in services from the World Development Indicators database of the World Bank for the year 2005. Value added is the net output of the sector after adding up all outputs and subtracting intermediate inputs.

GDP Growth

Data on GDP Growth for 2005 are taken from the World Economic Outlook Database from the International Monetary Fund (IMF).

To illustrate our data Table 9.1 shows the values for the dependent variables for the 29 countries in our sample. GEM asks entrepreneurs and business owners to evaluate the novelty of the technology they use, the newness of their product or service, and their expectations for growth to be able to measure aspirations for innovation and growth. It is important to keep in mind that such an assessment of innovativeness and growth expectations can be context-specific. What is innovative in one country, for example, is not necessarily regarded as innovative in another country (Minniti, Bygrave and Autio, 2006).

Table 9.1: Aspiring entrepreneurship rates (2005) in 29 countries, percentage of adult population

	Innovation		Job-growth		Export orientation	
	New technology rate (%)	New product rate (%)	Medium job-growth rate (%)	High job-growth rate (%)	Export rate (%)	Substantial export rate (%)
Argentina	1.56	2.22	3.57	1.33	2.20	0.83
Australia	1.15	1.27	2.65	1.04	3.35	1.38
Austria	0.32	0.51	1.58	0.63	3.22	1.14
Belgium	2.33	0.43	0.81	0.19	2.27	0.90
Brazil	1.54	0.53	2.24	0.43	2.09	0.26
Canada	0.99	1.34	3.87	1.65	6.96	2.36
Chile	9.62	3.29	5.03	1.78	-	-
Denmark	0.31	1.00	1.28	0.72	2.52	0.74
Finland	0.82	0.67	0.82	0.10	1.66	0.40
France	1.22	0.17	0.90	0.38	3.96	1.54
Germany	0.57	0.53	1.31	0.79	4.29	0.71
Greece	3.05	0.38	1.54	0.84	3.30	1.41
Hungary	0.62	0.12	0.33	0.25	0.76	0.29
Iceland	1.45	1.36	3.90	1.22	7.15	2.45
Ireland	1.23	1.33	2.81	0.98	5.41	1.58
Italy	0.37	0.33	1.13	0.39	2.44	0.80
Japan	0.26	0.00	0.89	0.17	0.96	0.06
Mexico	1.92	0.69	0.95	0.11	1.24	0.21
Netherlands	0.47	0.79	1.04	0.26	2.09	0.88
New Zealand	1.73	3.17	4.67	1.66	10.89	1.84
Norway	2.54	1.75	2.29	0.74	5.31	1.89
Slovenia	0.53	0.65	1.60	0.80	2.80	1.31
South Africa	1.98	0.82	0.76	0.17	2.56	1.38
Spain	0.11	0.86	1.24	0.18	1.92	1.00
Sweden	0.36	0.31	1.10	0.49	1.36	0.42
Thailand	5.05	4.33	4.87	2.02	4.35	1.61
United Kingdom	1.14	0.78	2.13	0.87	2.96	1.11
United States	1.80	1.75	4.86	1.47	9.28	2.59
Venezuela	7.55	2.80	8.29	2.01	5.61	1.80
Mean	*1.81*	*1.18*	*2.36*	*0.82*	*3.68*	*1.17*

Source: GEM.

Table 9.2 shows the incidence of various entrepreneurial motives for the countries in our sample and confirms that prevalence rates of different motives vary between countries (Baum, Olian, Erez, Schnell, Smith, Sims, Scully and Smith, 1993; Shane, Kolvereid and Westhead, 1991). It can be noted that the incidence of the necessity motive is comparatively high in some of the lesser-developed countries in our sample such as in Argentina, Brazil, South Africa and Venezuela. For European countries the share of early-stage entrepreneurs that indicate starting a firm out of necessity motives is relatively high in France and Hungary.

Australia and Japan score highest on the incidence of the independence motive. In both countries 57% of the early-stage entrepreneurs report that they start their own business out of autonomy related motives. Some European countries also score above average on the independence motive, such as Austria, Denmark, Iceland and the Netherlands. The independence motive has a low incidence in the Latin American countries in our sample, as well as in Thailand and Hungary.

Countries that score high on the incidence of the increase wealth motive are Chile, Greece, Italy and the United States. Incidence of this motive is relatively low in Australia and South Africa and in a number of European countries such as Belgium, France, Germany and The Netherlands.

Table 9.2: Incidence of various entrepreneurial motives (2005) in 29 countries, percentage within TEA (Total early-stage Entrepreneurial Activity)

	Necessity motive (%)	Independence motive (%)	Increase wealth motive (%)
Argentina	30	25	19
Australia	12	57	11
Austria	14	49	23
Belgium	10	35	13
Brazil	47	18	24
Canada	13	34	27
Chile	26	28	42
Denmark	3	49	16
Finland	12	42	15
France	39	24	10
Germany	29	38	13
Greece	14	32	42
Hungary	39	28	23
Iceland	5	49	20
Ireland	19	43	22
Italy	16	31	35
Japan	19	57	21
Mexico	16	19	30
Netherlands	8	46	12
New Zealand	7	52	26
Norway	9	43	20
Slovenia	11	45	30
South Africa	39	33	11
Spain	14	44	27
Sweden	14	40	23
Thailand	24	29	26
United Kingdom	11	39	15
United States	12	35	35
Venezuela	38	25	31
Mean	*19*	*38*	*23*

Source: GEM.

9.4 Empirical analysis

We estimate the equation as presented in Section 9.3 using data for 29 countries that participated in the Global Entrepreneurship Monitor 2005. The countries included in the analysis are Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Mexico, The Netherlands, New Zealand, Norway, Slovenia, South Africa, Spain, Sweden, Thailand, United Kingdom, United States and Venezuela. The unit of analysis is the country level.

Table 9.3 displays the correlations among the variables that we include in our analysis and also some descriptives (mean and standard deviation). Some of the correlation coefficients among the independent variables are above 0.5 indicating that problems of multi-collinearity may exist when carrying out regression analysis. For this reason, we tested for multi-collinearity in all our regression models using the variance inflation factor (VIF) method. We do not observe VIFs above 10 (the highest VIF that we find is 4.4) indicating that multi-collinearity is not a concern.

Table 9.3: Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. New technology rate														
2. New product rate	0.701***													
2. Medium job-growth rate	0.697***	0.826***												
4. High job-growth rate	0.621***	0.851***	0.920***											
5. Export rate	0.295	0.594***	0.696***	0.730***										
6. Substantial export rate	0.369*	0.529***	0.650***	0.699***	0.848***									
7. Necessity motive	0.287	0.007	0.088	-0.012	-0.234	-0.237								
8. Independence motive	-0.412**	-0.108	-0.152	-0.076	0.175	0.131	-0.677***							
9. Increase wealth motive	0.476***	0.297	0.403**	0.391**	0.222	0.190	-0.037	-0.303						
10. GDP Capita	-0.520***	-0.323*	-0.243	-0.157	0.307	0.314	-0.647***	0.650***	-0.281					
11. Social security contribution rate	-0.236	-0.482***	-0.416**	-0.422**	-0.414**	-0.376**	0.219	-0.315*	0.123	-0.007				
12. % Population aged 25-44 yrs	-0.184	-0.023	-0.060	0.096	0.147	0.183	-0.391**	0.289	0.138	0.348*	0.310			
13. Value added in services (% of GDP)	-0.521***	-0.568***	-0.435**	-0.421**	-0.136	-0.196	-0.180	0.098	-0.262	0.278	0.276	-0.042		
14. GDP Growth	0.595***	0.645***	0.572***	0.548***	0.214	0.357	0.230	-0.367*	0.325*	-0.454**	-0.408**	-0.385**	-0.577***	
Mean	1.813	1.178	2.361	0.816	3.675	1.174	0.190	0.376	0.228	0.258	0.317	28.859	64.942	3.252
Standard Deviation	2.160	1.062	1.839	0.601	2.479	0.689	0.119	0.107	0.089	0.107	0.234	1.969	6.124	1.443
Observations	29	29	29	29	28	28	29	29	29	29	29	29	29	29

***: p<0.01; **: p<0.05; *: p<0.10

We investigate the influence of the various start-up motivations and social security on the rate of aspiring entrepreneurship by carrying out regression analyses. Regression results are presented in Table 9.4. For the increase wealth motive we find a significant positive impact on the medium job-growth rate ($p<0.1$) and on the export rate ($p<0.1$). We do not find a significant impact for the necessity motive and the independence motive on the ambition variables. Thus, Hypotheses 1B, 1C, 2B, 2C, 3A, 3B and 3C receive some support, although the results do not hold up Hypotheses 1A and 2A.

For the social security contribution rate we find a significant negative impact on all aspiration variables, with the exception of the new technology rate. This means that we find some support for Hypothesis 4A and that Hypotheses 4B and 4C are broadly supported.

Looking at the control variables we find that GDP per capita has a significant positive impact on the export rate as well as on the substantial export rate. As expected, we find a positive sign between GDP growth and our aspiration variables. The impact of GDP growth is significantly positive on the new product rate, on the high job-growth rate and on the substantial export rate. Furthermore, the results indicate that the share of the population aged between 25-44 years has a positive impact on the high job-growth rate and on the substantial export rate. We do not find a significant impact for our control variable for a country's sector structure (value added in services).

Table 9.4: Investigating the impact of entrepreneurial motivations and social security on aspiring entrepreneurship (including controls)

	Dependent variables: Aspiring entrepreneurship rates					
	Innovation		Job-growth		Export orientation	
	New technology rate	New product rate	Medium job-growth rate	High job-growth rate	Export rate[1]	Substantial export rate[1]
Constant	7.492	-1.026	-8.149	-5.091	-20.089	-7.138*
	(0.677)	(-0.198)	(-0.816)	(-1.655)	(-1.462)	(-2.024)
Necessity motive	0.856	-0.827	4.481	1.438	8.174	1.983
	(0.181)	(-0.373)	(1.051)	(1.095)	(1.393)	(1.317)
Independence motive	-3.994	-0.528	-0.273	-0.051	-2.125	-0.690
	(-0.757)	(-0.214)	(-0.057)	(-0.035)	(-0.324)	(-0.410)
Increase wealth motive	7.306	0.623	7.345*	2.090	11.680*	2.125
	(1.615)	(0.294)	(1.801)	(1.664)	(1.981)	(1.404)
Soc. security contribution rate	-2.239	-1.655*	-3.657**	-1.285**	-6.672**	-1.395**
	(-1.138)	(-1.797)	(-2.062)	(-2.352)	(-2.755)	(-2.245)
GDP Capita	-3.404	-2.055	2.083	0.812	14.552**	4.341***
	(-0.728)	(-0.938)	(0.494)	(0.625)	(2.526)	(2.935)
% Population 25-44 yrs	0.017	0.151	0.234	0.140**	0.445	0.157**
	(0.077)	(1.451)	(1.164)	(2.268)	(1.574)	(2.228)
Value added in services	-0.084	-0.029	0.007	0.010	0.075	0.025
	(-1.133)	(-0.826)	(0.107)	(0.504)	(0.820)	(1.050)
GDP Growth	0.161	0.295*	0.458	0.199*	0.445	0.285**
	(0.430)	(1.681)	(1.354)	(1.911)	(0.941)	(2.348)
R^2 (Adjusted)	0.395	0.452	0.322	0.396	0.304	0.407
Observations	29	29	29	29	28	28

Note: t-values between brackets.***: p<0.01; **: p<0.05; *: p<0.10.

[1]For export orientation no data are available for Chile, therefore 28 instead of 29 countries are included in the analysis.

9.5 Discussion and Conclusion

This chapter investigates whether entrepreneurial motivations and social security can explain a country's rate of aspiring entrepreneurship. Although several studies focus on aspects of entrepreneurial motivation in relation to firm emergence and success (Baum and Locke, 2004; Collins, Hanges and Locke, 2004; Cooper and Dunkelberg, 1986; Locke and Baum, 2007), little is known about how the incidence of various entrepreneurial motives - such as the necessity motive, the independence motive and the increase wealth motive - affects the aspects of entrepreneurial aspirations such as innovativeness, job-growth and export orientation at the country level. Furthermore, empirical contributions investigating the influence of welfare institutions on the type of entrepreneurial activity are still limited (Henrekson, 2005).

The results support the view that when countries have a higher proportion of entrepreneurs primarily motivated to increase wealth the prevalence of job-growth and export aspirations (which may be needed to achieve the desired financial gains) is higher. Our results confirm that when countries have a higher proportion of entrepreneurs mainly motivated by independence, this does not affect a country's prevalence of aspiring entrepreneurship in terms of job-growth and export. This may indicate that entrepreneurs mainly motivated by independence do not have a strong focus on job-growth and export. However, contrary to our expectations, we find no evidence that independence contributes to variety. Van Gelderen and Jansen (2006) found that whereas all independence driven entrepreneurs value their decisional freedom, there is an underlying typology on how autonomy is valued for instrumental reasons. Some simply do not like to work for a boss, others want to do their own thing, and a third type wants control. Possibly not all subtypes feel attracted to innovation. Furthermore, as hypothesized, we find that a country's incidence of necessity-motivated entrepreneurs does not relate to aspiring entrepreneurship rates, which may reflect the fact that necessity-motivated entrepreneurs are not so greatly oriented towards innovation and growth.

Policy-makers should be aware that entrepreneurs motivated to start a firm to strive for independence are not likely to have high ambitions for their business and therefore are probably not the ones making a significant contribution to their country's innovation, employment creation and economic growth. It should be noted, however, that research on nascent entrepreneurship indicates that some start-ups have high aspirations because of over-optimism or incompetence, while others have modest aspirations which, however, often are based on more realistic perceptions (Davidsson, 2006).

Given that autonomy is usually the most cited motive for people to start a business, generic policies to stimulate entrepreneurship may have little impact on macro-economic ambitions. It may be rewarding for policy makers to devote attention to the enhancement of aspiration levels among independence-motivated entrepreneurs. After all, growth and innovation can be seen as enhancing autonomy by reducing outside dependency and vulnerability. Furthermore, promoting a higher incidence of the increase wealth motive in the population of entrepreneurs seems to be an advantageous avenue when aiming to support a higher rate of ambitious entrepreneurship. Future research should seek to explore the various ways in which policy makers can stimulate entrepreneurship with the aim to pursue material gains. Tax laws and a reduction of compliance costs and red tape may be integral elements of material gain policies.

In addition to previous empirical studies that have explored the relationship between social security arrangements and the supply of entrepreneurship at the country level (Hessels, van Stel, Brouwer and Wennekers, 2007; Parker and Robson, 2004; Wennekers, van Stel, Thurik and Reynolds, 2005) this chapter investigates whether social security arrangements also hamper the supply of aspiring entrepreneurship. We find a negative relation between the social security contribution rate and all ambition variables (with the exception of the rate of early-stages entrepreneurs that uses the very latest technology) indicating that, when social security systems are more generous, start-ups tend to be less oriented towards innovation in the sense of introducing new products or services and especially towards growth in terms of jobs and exports. Thus, as we suspected, social security arrangements not only negatively affect the supply of entrepreneurship as illustrated by previous studies, but also seem to hinder the supply of ambitious entrepreneurship. The challenge for policy makers is then to design social security systems in such a way that they do provide sufficient income security combined with incentives for innovative and growth-oriented behavior to better exploit entrepreneurship as a potential source for innovation, employment creation and growth. For instance, entrepreneurs of aspiring firms could be granted a discount on the employer contributions if they meet certain targets related to innovation and growth. It is left for future research to explore this type of policy options in more detail.

Overall, our results seem to indicate that a country's institutional set-up in terms of social security arrangements may be far more important in encouraging or discouraging ambitious entrepreneurial activity than aggregate measures of the type of motive for self-employment. Future empirical research should seek to include other elements of a country's institutional set-up, such as taxation and labor market regulatory systems (Henrekson, 2007).

The empirical part of this study has a number of limitations, such as the small sample size and the cross-sectional nature of the analysis. In addition we were able to take into account only a limited number of motives currently measured as part of the GEM project. Although we distinguish between various prime motives for becoming self-employed, in reality individuals may be motivated by a combination of both intrinsic as well as extrinsic factors (Kuratko, Hornsby and Naffziger, 1997). Entrepreneurial motives may also change over time (Cassar 2007; Littunen, 2000), for example, individuals who started their firm out of independence motives may, over time, as their firm becomes successful, be motivated by achieving financial gains. Future research should seek to take into account such dynamic aspects. Furthermore, this chapter looks at early-stage entrepreneurship. Future research could incorporate other entrepreneurial engagement levels (Grilo and Thurik, 2008). In the current study we did not assess how aspirations relate to actual outcomes and whether aspiring entrepreneurship contributes to national economic development. Such an assessment could contribute to the critical area of research on the relation between entrepreneurship, institutions and economic development (Acs, Desai and Hessels, 2008). Furthermore, to better understand the relationship between aspiring entrepreneurship and start-up motivations it may prove useful to investigate the drivers of entrepreneurial motivations (Hessels, van Gelderen and Thurik, 2008b) Finally the use of individual micro data may prove superior in unraveling the mechanics of aspiring entrepreneurship (Autio and Acs, 2007).

10 Conclusions and Implications

This chapter presents an overview of the main conclusions (Section 10.1) and implications (Section 10.2) that follow from the studies included in this book. Note that each of the individual chapters also contain conclusions and implications for research and policy.

10.1 Conclusions

The conclusions are presented in the following sections. First, the findings of each of the individual chapters are summarized in Section 10.1.1. Then the research questions posed in Chapter 1 (i.e. what are the antecedents and outcomes of international entrepreneurship?) are answered in Section 10.1.2 (antecedents of international entrepreneurship) and Section 10.1.3 (outcomes of international entrepreneurship). Finally, Section 10.1.4 provides a summary of the main findings.

10.1.1 Findings of individual chapters

Part I Cross-Border Entrepreneurship: SME Internationalization (Chapters 2, 3 and 4)

Chapter 2 that investigates the relationship between innovation and international trade among small and medium-sized entreprises (SMEs), finds that innovative SMEs are more likely than non-innovative SMEs to be involved in exports and also in imports. Furthermore, it is found that a positive feedback loop exists between innovation and export and import. In particular such a loop is found between product/service innovations on the one hand and export and import on the other hand. Some indications are also found for the existence of a positive feedback loop between business process innovations and import. Overall, the findings of this chapter support the existence of a two-way causation between innovation and involvement in export and import activity among SMEs.

Chapter 3 develops and tests resource dependency and institutional theory arguments to explain two choices facing SME owner/managers: the decision whether to export or not, and, if the firm exports, the choice between exporting directly or indirectly. It is found that institutional theory perspectives (SME owner/managers' perception of increased international presence of their domestic competitors, customers and suppliers and perception of increased use of foreign suppliers) are relevant when explaining the decision to export or not. Furthermore, resource dependency theory arguments (SME owner/managers' perception of the favorability of access to knowledge and technology, of production costs and of

access to capital in the home market) are found to be particularly relevant in explaining the choice between direct and indirect export modes.

In chapter 4 it is argued that scarcities of resources in terms of labor, capital and technology provide an important incentive for SMEs to try to access or acquire lacking resources through internationalization. Firms can use internationalization as a strategy to access and build up resources and such a strategy may be particularly interesting or even necessary for firms that lack specific resources. The empirical analysis indicates that perceived constraints in terms of labor and access to finance increase the likelihood of SMEs to pursue internationalization as a means to acquire scarce resources. Furthermore, it is also found that perceived constraints in terms of labor, access to finance and new technology increase the probability of internationally active SMEs to try to access lacking resources through their internationalization activities.

Part II Cross-Border Entrepreneurship: New Venture Internationalization (Chapters 5, 6 and 7)

Chapter 5 links entrepreneurial human capital, entrepreneurial social capital and a firm's innovativeness to new venture's export orientation. The empirical analysis provides some indications for direct positive relationships of entrepreneurial human capital, entrepreneurial social capital and innovation with new venture export orientation. Furthermore, evidence is found for indirect positive linkages of entrepreneurial human capital with new ventures' export through a firm's new product or service offerings. Distinguishing between new ventures with a moderate export orientation (new ventures with 1-25% customers that live abroad) and new ventures with a high export orientation (new ventures with more than 25% customers that live abroad) reveals that both groups of new ventures have different drivers. Innovation is significant as a driver only for a high and not for a moderate export orientation. All indicators for entrepreneurial human capital and entrepreneurial social capital are significantly positively related to a high export orientation. While some aspects of entrepreneurial human capital and entrepreneurial social capital display a significant positive relationship with a moderate export orientation, we find that new ventures with entrepreneurs who possess entrepreneurial human and entrepreneurial social capital as well as new ventures that are innovative are more likely to have a high than a moderate focus on exports. The findings support the relevance of considering both high-level exporters and low-level exporters and of distinguishing between these two groups in research into new venture internationalization.

In Chapter 6 the focus is on the relationship between new venture creation and economic growth, while distinguishing between export-oriented new ventures and domestic new ventures. The outcomes indicate that export-driven new ventures make a significant contribution to economic growth whereas domestic new ventures do not. This supports the contention that in particular export-driven new

ventures will contribute to the generation of knowledge spillovers, increased competition and increased diversity, ultimately resulting in higher economic growth rates. These findings further underline the relevance of making a distinction between export-oriented and non-exporting new ventures in international entrepreneurship research and provide additional support for studying the cross-border activities of new ventures. This chapter examines the role of domestic and export-driven new ventures in GDP growth for three groups of countries: higher-income economies, transition economies and lower-income economies. The findings reveal that domestic new ventures make no significant contribution to economic growth in any of the three groups of countries. The picture is more diverse for export-driven new ventures. It is found that in higher-income countries new ventures with a high orientation on exports make a significant contribution to economic growth. However, no impact is found on economic growth in higher-income countries for new ventures that have only a modest focus on exports. This may indicate that exporting new ventures, that start with moderate levels of exporting, have to cross a threshold level of export activity before they actually increase their human capital levels and other resources (e.g. by learning from the experience gained abroad, by gaining access to knowledge and technology in foreign markets) so that they contribute to growth. Furthermore, a particularly strong impact of export-oriented new ventures on economic growth for transition economies suggests that in the kind of turbulent environment that is characteristic for transition economies export-oriented new ventures may have a particularly strong impact on competition, innovation and consequently on economic growth. The results further reveal that export-oriented new ventures do not seem to make a significant contribution to economic growth in lower-income countries. Because of the relatively high rate of necessity entrepreneurship and because of the level of economic development in these countries, new ventures – also export-oriented new ventures – will tend to have low levels of human capital and will be active mainly in low-technology and low value added economic activities, such as agriculture. This may result in a low level of benefits and development of skills and competences at the firm-level and may consequently explain why these firms do not contribute so much to macro-economic growth.

Chapter 7 examines the role of a country's level of foreign direct investment and international trade as sources of spillover effects on new ventures' export orientation and, subsequently, as a means to spur its total level of entrepreneurial activity. This chapter uses literature on spillovers as a lens to study macro-level antecedents and outcomes of the extent to which a country's new ventures are export-oriented. The empirical results provide indications for export spillovers to new ventures for outward FDI and international trade in higher-income countries. No impact is found for inward FDI in higher-income countries and there is even a negative impact in lower-income countries. This negative effect should not be interpreted to imply that lower-income country's economic development is

hampered when it is exposed to high levels of inward FDI. Rather, the observed negative effect may simply mean that in lower-income countries, knowledge from inward FDI is more easily absorbed and realized through scale economies by larger firms and thus diverted away from export activities undertaken by new ventures. Also, in lower-income countries inward FDI may result in increased domestic market opportunities for domestic new ventures. The findings illustrate that when studying macro-level antecedents of a country's proportion of export-driven new ventures it is relevant to make a distinction between higher- and lower-income countries. The findings also provide some support for the argument that a country's proportion of export-oriented new ventures functions as a catalyst for new business creation within a country's borders.

Part III Cross-Country Studies of Entrepreneurship (Chapters 8 and 9)

In Chapter 8 a number of propositions are defined regarding the relationship between social security arrangements and the rate of early-stage entrepreneurial activity at the country level. It is stated that in investigating this relationship it may be relevant, when using aggregate indicators for social security, to distinguish between social security contributions paid by employers and those paid by employees. Furthermore, it is argued that it may be more relevant to look at micro-based indicators (replacement rates) for the benefits an individual is entitled to in case of unemployment and illness than at aggregate indicators. It is also pointed out that it may be especially relevant to focus on the social security position of self-employed relative to the social security position of employees. The empirical analysis using aggregate indicators shows that the level of *employer* social security contributions negatively influences entrepreneurial activity at the macro-level, but that the level of *employee* contributions has no impact. The results of the analysis using micro-level based indicators suggest that the replacement rate of employees has a significantly negative influence on the level of early-stage entrepreneurship at the macro-level. Furthermore, it appears that using replacement rates in the analyses yields a better model fit, than do the social security measures at the aggregate level. However, the empirical results do not support the proposition that the relative level of social security benefits for self-employed, compared to that for employees, has an additional impact on entrepreneurial activity. In interpreting these results one should keep in mind that these are based on a limited number of countries only and that a very rough indicator (a dummy variable) for the social security position of entrepreneurs relative to that of employees has been used.

Chapter 9 investigates the drivers of aspiring entrepreneurship at the country level with specific attention for the role of start-up motivations and social security. The main finding of the empirical analysis presented in this chapter is that a country's level of social security relates negatively to the prevalence of innovative, job-growth-oriented and export-oriented entrepreneurship. In addition, the results also

provide support for the argument that a country's incidence of increase wealth-motivated entrepreneurs relates positively to the prevalence of entrepreneurs who aspire job-growth and export, whereas no significant relation is found between the extent to which a country's entrepreneurs are primarily driven by independence- and necessity- motives to start their own business and a country's rate of aspiring entrepreneurship.

10.1.2 Antecedents of international entrepreneurship

Antecedents of cross-border entrepreneurship (SME and new venture internationalization)

This book investigates the influence of a number of individual-specific factors on new venture export: entrepreneurial human capital, entrepreneurial social capital and the incidence of individual start-up motives (motives for starting an own business) at the country level. It is found that entrepreneurial human capital and entrepreneurial social capital relate positively to new ventures' export orientation. Also, a positive relationship is found between the prevalence of the increase wealth start-up motive and a country's rate of export-oriented entrepreneurship.

This book also investigates how innovation (as a potential firm-level driver) relates to SME export and import activity and to new venture export. The results indicate that innovaton, in terms of expenditure on innovation, product/service innovations and business process innovations, increases the probability for SME involvement in both export and import activity. With regard to the role of innovation in enabling new venture export the focus is on the following two indicators for innovation: a firm's new product/service introductions and a firm's use of new technology. Results indicate that a firm's new product/service introductions relate positively to new venture export, while this is not the case for a firm's use of new technology. Both indicators increase the probability for new ventures to focus extensively on exports (relative to no export orientation and to a moderate export orientation).

Another firm-specific determinant of SME internationalization explored in this book is (perceived) scarcity of resources. It is found that perceived resource scarcity in terms of labor and finance increases the probability for SMEs to internationalize as a means of accessing lacking resources (relative to not internationalizing). Furthermore, among internationally active SMEs constraints perceived in terms of labor, access to finance and new technology are found to relate positively to the use of international activity as a strategy to access lacking resources.

This book has also considered a number of environment-specific factors as potential antecedents of cross-border entrepreneurship. In case of SME internationalization these include the following factors: perceived internationalization of the organization field and perceived favorability of home market conditions. It is found that SME owner/managers' perception of the extent to which domestic actors in a SME's organization field (i.e. customers, competitors and suppliers) are increasingly global and a perception of making increased use of foreign suppliers relates positively to SME export involvement. It is also found that perceived favorability of home market conditions explains SME mode of export. Specifically, it is found that SME indirect exporters are more likely to perceive favorable home market access to capital and unfavorable home market conditions in terms of production costs and access to knowledge and technology. In the case of new venture internationalization this book focuses on the following types of potential environment-specific antecedents: a country's level of FDI and international trade and social security arrangements. The findings indicate that a country's level of outward FDI and international trade relate positively to a country's proportion of export-oriented new ventures in higher-income countries and also that the level of social security relates negatively to a country's rate of export-oriented entrepreneurship.

Antecedents of entrepreneurship in multiple countries

With respect to antecedents of entrepreneurship in multiple countries this book focuses on social security as a potentially relevant determinant of entrepreneurship that has, so far, received little research attention. Furthermore, in investigating the impact of social security on entrepreneurship a distinction is made between various types of ambitious entrepreneurship. The findings indicate that social security relates negatively to the supply of entrepreneurship at the country level – providing support for the argument that social security increases the opportunity costs for entrepreneurship – and also to a country's supply of ambitious entrepreneurship.

In addition this book investigates how the incidence of various start-up motives relates to a country's rate of ambitious entrepreneurship and finds that a higher incidence of the increase wealth motive is associated with higher rates of aspiring entrepreneurship in terms of job-growth and export.

Finally, this book explores whether a country's proportion of export-oriented new ventures affects a country's level of entrepreneurial activity and the findings provide support for this.

10.1.3 Outcomes of international entrepreneurship

Outcomes of cross-border entrepreneurship (SME and new venture internationalization)

This book explores micro-level (innovation) and macro-level (economic growth and entrepreneurship) outcomes of cross-border entrepreneurship. Regarding innovation as a micro-level outcome it investigates whether a SME's export and import activity contribute positively to a SME's investments in innovation. Results confirm that this is indeed the case. Specifically, it is found that export and import activity relate positively to future (expected) investments in product/service renewals and also there is some confirmation that import activity relates positively to future (expected) investments in business process renewals.

With respect to economic growth as a macro-level outcome it is found that export-driven new ventures make a significant contribution to economic growth. Only a few empirical studies investigated the effect of new venture export on growth, and those that did investigated the link at the micro-level (Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996; Zahra, Ireland and Hitt, 2000). This book contributes to the literature by investigating the link between new venture internationalization and growth at the macro-level, but also by exploring the relation with economic growth for different groups of countries and by distinguishing between new ventures with a moderate export orientation (new ventures with 1-25% customers that live abroad) and new ventures with a substantial export orientation (new ventures with more than 25% customers that live abroad). It is found that in transition economies both new ventures with a moderate export-orientation and new ventures with a substantial export orientation display a significantly positive relationship with economic growth. In higher-income countries a significant positive relation is found only for new ventures with a substantial export orientation.

Another contribution is made to research into effects of new venture internationalization at the macro-level by exploring whether a country's proportion of export-oriented new ventures relates positively to the rate of new venture creations within a country's borders. The findings support that export-driven new ventures are a stimulating force for the set up of new ventures, suggesting that export-driven new ventures function as role models providing legitimacy for entrepreneurship as a career choice.

Outcomes of entrepreneurship in multiple countries

In accordance with previous research the findings of this book confirm that new venture creation contributes positively to national economic growth in higher-income countries. It also indicates that it is relevant to distinguish between different types of entrepreneurship when investigating the relationship between new venture creation activity and economic growth. In particular, it is found that

there is a positive relationship between economic growth and export-oriented new ventures in higher-income and transition countries and that there is no significant relationship with economic growth for domestic new ventures. This finding is important, complementing previous research on the link between new venture creation activity and economic growth that failed to include cross-border entrepreneurship.

This book also contributes to existing research into entrepreneurship in multiple countries by providing insight into micro-level outcomes. More specifically it is found that when individuals who are setting up a new venture have experience with owning/managing their own firm and possess entrepreneurial knowledge, skills and networks, this increases the probability of setting up an export-oriented new venture. Thus, at the micro-level the individual's entrepreneurial experience, knowledge, skills and networks facilitate cross-border entrepreneurship. This finding, in combination with the result that export-oriented entrepreneurship relates positively to economic growth in higher-income and transition economies, suggests that, in the long run, entrepreneurship is likely to make a positive contribution to national economic growth (at least in higher-income and transition economies) through its positive impact on the emergence of cross-border entrepreneurship.

10.1.4 Main findings

This section provides a summary of the main findings of this book. First, the findings point towards the importance of cross-border entrepreneurship for fostering innovation at the micro-level, and, at the macro-level, for achieving national economic growth and for supporting the set-up of new businesses. These findings illustrate that cross-border entrepreneurship contributes to value creation.

Second, the findings indicate that, at the micro-level, innovation is both an antecedent and an outcome of cross-border entrepreneurship. This supports the existence of a two-way causation between cross-border entrepreneurship and innovation. In particular, the findings provide evidence of a positive feedback loop between product/service innovations on the one hand and export and import on the other hand.

Third, the findings suggest that cross-border entrepreneurship is an antecedent of entrepreneurship at the macro-level, while it is an outcome of entrepreneurship at the micro-level, indicating that a two-way causation exists between entrepreneurship (in general) and cross-border entrepreneurship. More specifically, a positive relationship is found between a country's proportion of export-oriented new ventures and its rate of entrepreneurship at the macro-level. This suggests that export-oriented new ventures and their entrepreneurs serve as successful role models or peers that make entrepreneurship a more attractive career option for others. Furthermore, at the micro-level the evidence indicates that when

entrepreneurs have entrepreneurship-specific experience, knowledge, skills and networks, then they are more likely to set up an export-oriented new venture. This suggests that such entrepreneurship-specific experience, knowledge, skills and networks, make running the business more of a routine so that entrepreneurs have more time to react to foreign market opportunities and make entrepreneurs better able to recognize prospective opportunities abroad.

Fourth, the results support the premise that exposure to other internationalizing agents is an antecedent of cross-border entrepreneurship. This finding complements the emerging research on export spillovers, which suggests that firms are more inclined to engage in export activities if they are exposed to the international activities of other economic actors. At the macro-level it is found that, in higher-income countries, the level of outward FDI and international trade relate positively to the share of new ventures that focus on serving foreign customers, which suggests that outward FDI and international trade are sources of export spillovers to new ventures in these countries. At the micro-level the findings indicate that internationally active participants in a SMEs' organization field (domestic competitors, domestic customers and both domestic and foreign suppliers) are sources of export spillovers to SMEs.

Fifth, it is found that social security is an antecedent of (cross-border) entrepreneurship in multiple countries as it has a negative effect on both a country's supply of entrepreneurship in general and a country's supply of various types of ambitious entrepreneurship, including export-oriented entrepreneurship.

10.2 Implications

The following sections present a number of overall implications for research and policy that follow from the studies included in this book.

10.2.1 Implications for research

This book seeks to add a perspective on cross-border activities to research on entrepreneurship in multiple countries and to add a multiple-country perspective to research on cross-border entrepreneurship. Adding a perspective on cross-border activities to research on entrepreneurship in multiple-countries helps to increase our understanding of the economic benefits and drivers of entrepreneurship across countries. Adding a multiple-country perspective to research on cross-border entrepreneurship helps to increase the ability to generalize findings. Researchers are encouraged to further extend and build upon this approach in future international entrepreneurship research. This section identifies a number of research gaps that may guide future research.

Although this book makes a contribution to the limited existing research on outcomes of cross-border entrepreneurship, in particular by examining macro-level outcomes, future research should further explore outcomes of cross-border entrepreneurship including macro-level outcomes (e.g. innovation and employment growth). One important finding reported in this book is that cross-border entrepreneurship makes a significant positive contribution to economic growth. Future research could seek to provide more insight into the importance of the various mechanisms (e.g. the supply of diversity, the generation of positive knowledge spillovers, and the intensification of competition) through which export-driven new ventures contribute to economic growth.

Furthermore, the evidence provided in this book indicates that innovation is both a determinant and an outcome of cross-border entrepreneurship in terms of export and import. Future research could explore whether such a two-way causation also exists for other aspects of cross-border entrepreneurship, such as foreign direct investments and international cooperation.

Also, whereas the findings suggest that other internationalizing agents are a determinant of cross-border entrepreneurship through the generation of export spillovers, the findings do not provide insight into the exact channels through which such spillovers occur (e.g. through commercial linkages and through pior employment with foreign firms). Micro-level research could help to determine the exact spillover channels and to provide insight into the importance of the various channels in stimulating SME and new venture internationalization.

In addition to the role of social security, which has been found to affect the supply of entrepreneurship in general and the supply of ambitious entrepreneurship, future research could consider other aspects of social welfare systems that might have an impact on entrepreneurship, such as job security. Future research could also explore the impact of other elements of a country's institutional set-up, e.g. taxation and labor market regulatory systems, on the level and nature of entrepreneurial activity.

10.2.2 Policy implications

National internationalization policies tend to concentrate on facilitating domestic firms' exports (Korhonen, Luostarinen and Welch, 1996; Welch and Luostarinen, 1993). The findings presented in this book suggest that it could be beneficial for governments to pay (more) attention to other modes of internationalization in their internationalization policies, in particular imports, as this may enhance innovativeness, and outward FDI, as this may support new venture export.

The two-way causation that is found between innovation and cross-border entrepreneurship (export and import) may provide a rationale for policy makers to (more closely) integrate innovation and internationalization policies. For instance,

policy measures for stimulating innovation could incorporate a module for helping firms in developing an international business plan for innovative products and services, while policy measures for supporting internationalization could pay specific attention to innovative firms. Furthermore, policy makers could increase awareness among business owners of the possibilities for (innovative) learning through internationalization.

The positive two-sided linkages that are found between entrepreneurship in general and cross-border entrepreneurship (export) suggest that support for entrepreneurship in general (including fostering entrepreneurial skills, experience and networks) is also likely to contribute to a higher number of export-oriented new ventures. And, vice versa: policy measures that stimulate new ventures' export are subsequently likely to contribute to higher entrepreneurship (start-up) rates. This may provide a rationale for policy makers to (more closely) integrate entrepreneurship and export policies.

One important finding of this book is that the internationalization behavior of small and new firms is influenced by the internationalization behavior of surrounding actors through knowledge spillovers. Policy makers could facilitate such knowledge spillovers e.g. through the creation of specific geographical zones for internationally active firms or through the facilitation of network development between internationally active actors and (non-internationally active) SMEs and new ventures.

Finally, the finding that social security negatively affects (ambitious) entrepreneurship offers a challenge to policy makers (wishing to promote (ambitious) entrepreneurship) to design social security systems in such a way that they provide incentives for entrepreneurship and for innovative- and growth-oriented behavior, combined with adequate income security.

Nederlandse Samenvatting (Summary in Dutch)

Internationaal ondernemerschap: waardecreatie over nationale grenzen

Achtergrond en onderzoeksvragen

Dit boek beoogt een bijdrage te leveren aan de literatuur over determinanten en uitkomsten van internationaal ondernemerschap. Internationaal ondernemerschap als onderzoeksgebied richt zich op de bestudering van *ondernemerschap in meerdere landen* (internationaal vergelijkend onderzoek naar de aard en mate van ondernemerschapsactiviteiten) en op de bestudering van *grensoverschrijdend ondernemerschap* (internationalisering van het midden- en kleinbedrijf (MKB) en van nieuwe ondernemingen). Ondernemerschap, of de creatie van nieuwe economische activiteiten, omvat zowel de oprichting van nieuwe ondernemingen als nieuwe economische activiteiten van bestaande bedrijven. Er wordt vaak verondersteld dat ondernemerschap, en grensoverschrijdend ondernemerschap in het bijzonder, bijdraagt aan waardecreatie voor bedrijven en voor de economie als geheel.

Ondernemerschap, gemeten naar verschillende indicatoren zoals het aantal starters of de toename van het zelfstandig ondernemerschap, speelt een belangrijke rol in nationale economieën. Zo is ondernemerschap belangrijk voor het introduceren van innovaties en voor het creëren van werkgelegenheid. Er bestaan echter belangrijke verschillen tussen landen in de mate waarin ondernemerschap gericht is op innovatie en groei en daardoor ook in de mate waarin ondernemerschap een positieve bijdrage levert aan macro-economische ontwikkeling. Het is dan ook van belang, zowel voor wetenschappers als voor beleidsmakers en ondernemers zelf, om inzicht te hebben in de factoren die van invloed zijn op het ontstaan van (verschillende typen) ondernemerschap en in de economische effecten van (verschillende typen) ondernemerschap.

Om de betekenis van ondernemerschap voor nationale economieën te begrijpen is het onder andere van belang om te kijken naar grensoverschrijdend ondernemerschap oftewel naar de internationale activiteiten van MKB-bedrijven en nieuwe ondernemingen. Kleinere en nieuwe bedrijven spelen een steeds grotere rol in de internationale economie. In de huidige wereldeconomie is de onderlinge afhankelijk tussen landen groter geworden. Vanouds waren met name grote multinationale ondernemingen verantwoordelijk voor internationale stromen van handel en buitenlandse investeringen. De recente stijging van internationale handels- en investeringsstromen lijkt echter vooral te komen van bedrijven die voorheen op de binnenlandse markt actief waren en niet zozeer van bedrijven die al internationaal actief zijn. Een kenmerk van de huidige internationale economie is dat een steeds groter aantal bedrijven internationale activiteiten ontplooit en dat

dit ook (in toenemende mate) kleinere en jonge bedrijven betreft. Ook verloopt internationalisering voor kleinere en jonge bedrijven vaak sneller dan voorheen. Er lijkt dus sprake te zijn van zowel een verbreding als een versnelling van de internationalisering van MKB-bedrijven en nieuwe ondernemingen.

De toegenomen internationale betrokkenheid van kleinere en nieuwe bedrijven en versnelde internationalisering is mogelijk geworden doordat de transactiekosten voor internationaal ondernemen sterk zijn verlaagd in de afgelopen decennia. De transactiekosten voor internationaal ondernemen zijn verlaagd als gevolg van, onder andere, de wereldwijde reductie van barrières voor internationale handel en buitenlandse investeringen, technologische ontwikkelingen, met name op het gebied van informatie- en communicatietechnologie, en de verlaging van transport- en reiskosten. De informatiestromen tussen landen zijn vergroot. Dergelijke ontwikkelingen hebben internationalisering niet alleen gemakkelijker gemaakt, maar maken het soms ook noodzakelijk voor bedrijven om te internationaliseren.

Internationaal ondernemerschap als apart onderzoeksgebied is ontstaan vanaf het einde van de jaren ’80 en ontstond vanuit belangstelling voor (toegenomen) internationale activiteiten van nieuwe ondernemingen. Internationaal ondernemerschap wordt bestudeerd vanuit zowel ondernemerschapsonderzoek als “international business” onderzoek. Ondernemerschapsonderzoek had aanvankelijk nauwelijks aandacht voor internationale activiteiten, maar dit is veranderd sinds het einde van de jaren ’80. De “international business” literatuur heeft vanouds vooral aandacht gehad voor de rol van multinationale ondernemingen, vanwege hun dominante rol in de wereldeconomie. Nu is er in deze literatuur ook steeds meer aandacht voor de internationalisering van kleinere en nieuwe bedrijven.

Ondernemerschap wordt onder andere bestudeerd vanuit de economische wetenschap, waarbij er met name aandacht is voor economische determinanten en economische effecten van ondernemerschap. Dit type onderzoek heeft vooralsnog vrijwel geen aandacht voor grensoverschrijdende activiteiten. Hoewel het niveau van analyse binnen de internationale economie (dat zich richt op de bestudering van internationale handels- en investeringsstromen) voornamelijk het landenniveau is, heeft de internationale economie wel steeds meer aandacht voor het gedrag van bedrijven, met name multinationale ondernemingen. Gezien de toegenomen deelname van kleinere en nieuwe bedrijven in de internationale economie en het mogelijke belang van deze bedrijven voor kennisuitwisseling en nationale economische groei lijkt het gerechtvaardigd om deze groep bedrijven meer aandacht te geven binnen (internationaal) economisch onderzoek.

In dit boek, dat een bijdrage beoogt te leveren aan de literatuur over determinanten en uitkomsten van internationaal ondernemerschap, staan de volgende twee onderzoeksvragen centraal:

1. Wat zijn determinanten van internationaal ondernemerschap (grensoverschrijdend ondernemerschap en ondernemerschap in meerdere landen)?
2. Wat zijn uitkomsten van internationaal ondernemerschap (grensoverschrijdend ondernemerschap en ondernemerschap in meerdere landen)?

De hoofdstukken 2 tot en met 9 proberen een bijdrage te leveren aan de beantwoording van één van deze of van beide vragen. De selectie van de specifieke (potentiële) determinanten en uitkomsten zoals die aan bod komen in de afzonderlijke hoofdstukken is gebaseerd op lacunes in de bestaande literatuur.

Samenvatting per hoofdstuk

Er volgt nu een korte samenvatting van de verschillende hoofdstukken van dit boek. Elk hoofdstuk is afzonderlijk leesbaar.

Hoofdstuk 1 geeft een introductie op het onderwerp internationaal ondernemerschap, zet de onderzoeksvragen uiteen en geeft een beknopte beschrijving van de inhoud van de afzonderlijke hoofdstukken die in dit boek zijn opgenomen. Hierbij komt ook aan bod dat het boek uit drie delen bestaat. Deel I van het boek is gericht op de internationalisering van het MKB (Hoofdstuk 2, 3 en 4). Deel II richt zich in hoofdzaak op de internationalisering van nieuwe ondernemingen (Hoodstuk 5, 6 en 7). Deel III presenteert een aantal internationaal vergelijkende studies naar ondernemerschap (Hoofdstuk 8 en 9).

Deel I Grensoverschrijdend Ondernemerschap: Internationalisering van het MKB (Hoofdstuk 2, 3 en 4)

Hoofdstuk 2 besteedt aandacht aan de relatie tussen enerzijds innovativiteit en anderzijds het export- en importgedrag van MKB-bedrijven. Eerder onderzoek onder MKB-bedrijven naar de link tussen innovatie en internationalisering was vooral gericht op exportactiviteiten. Innovatieve inspanningen kunnen echter ook aanleiding geven tot importactiviteiten zoals de aankoop van nieuwe machines of technologieën uit het buitenland. Conceptueel kan worden beargumenteerd dat innovatie leidt tot zowel export als import en dat export en import leiden tot (verdere) innovatie, doordat internationalisering toegang biedt tot nieuwe kennis en ideeën in het buitenland. Beide relaties komen in dit hoofdstuk aan bod. In eerder onderzoek naar de relatie tussen innovatie en internationale handel op bedrijfsniveau was vooral aandacht voor grotere bedrijven. Ook richtte eerder onderzoek zich met name op de rol van innovatie als katalysator voor internationalisering en in veel mindere mate op de invloed van internationalisering op innovatie. Voor de empirische analyses in dit hoofdstuk is gebruik gemaakt van een dataset van ruim 1,800 Nederlandse MKB-bedrijven voor 2004. De uitkomsten ondersteunen dat innovatieve bedrijven meer geneigd zijn om te exporteren en te importeren dan niet innovatieve bedrijven. De resultaten ondersteunen ook dat export en import leiden tot nieuwe innovatieve

investeringen. Er wordt met name ondersteuning gevonden voor het bestaan van een positieve terugkoppeling tussen enerzijds product-/diensteninnovatie en anderzijds export en import.

Hoofdstuk 3 richt zich op het verklaren van twee keuzes voor ondernemers/managers van MKB-bedrijven: de keuze om al dan niet te exporteren, en, in geval een onderneming heeft besloten te exporteren, de keuze tussen directe en indirecte export (export met behulp van een intermediair, zoals een agent, een groothandelsbedrijf of een kantoor van een multinational). Bij het verklaren van deze keuzes wordt gebruik gemaakt van institutionele theorie en "resource dependency" theorie. Op basis van institutionele theorie wordt beargumenteerd dat MKB-bedrijven met eigenaars/managers die van mening zijn dat actoren (bijvoorbeeld binnenlandse klanten, concurrenten en leveranciers) binnen het organisatieveld waarin ze opereren in toenemende mate internationaal actief zijn eerder geneigd zullen zijn te exporteren, zowel direct als indirect, dan andere bedrijven. Op basis van "resource dependency" theorie wordt beargumenteerd dat de wijze waarop eigenaars/managers de economische omgeving in de thuismarkt beoordelen (bijvoorbeeld in termen van hoogte van productiekosten, aanwezigheid van klanten en toegang tot technologie) relevant is voor het verklaren van directe en indirecte exportactiviteiten van het MKB. In de analyses wordt gebruik gemaakt van een sample van Nederlandse MKB-bedrijven, gebaseerd op een internetsurvey die gehouden is in 2006. Overeenkomstig institutionele theorie wijzen de uitkomsten uit dat MKB-bedrijven eerder geneigd zijn te exporteren wanneer eigenaars/managers het organisatieveld waarin ze opereren (binnenlandse concurrenten, binnenlandse klanten, binnenlandse en buitenlandse leveranciers) als steeds internationaler beschouwen. Hoewel de argumenten die gebaseerd zijn op institutionele theorie relevant blijken om de keuze tussen wel of geen export te verklaren, heeft de perceptie van de mate van internationalisering van het organisatieveld geen invloed op de keuze tussen directe en indirecte export. Daarnaast wijzen de resultaten uit dat de argumenten die in dit hoofdstuk zijn ontwikkeld op basis "resource dependency" theorie geen verklarende kracht hebben voor de keuze om al dan niet te exporteren, maar wel relevant zijn voor de keuze tussen directe en indirecte export. Ondernemers van MKB-bedrijven die indirect exporteren (in vergelijking tot ondernemers van bedrijven die direct exporteren) beoordelen de thuismarkt eerder gunstig als het gaat om toegang tot kapitaal en ongunstig als het gaat om goedkope productiemogelijkheden en toegang tot kennis en technologie.

Ook in hoofdstuk 4 is er aandacht voor "resource dependency" theorie. Dit hoofdstuk onderzoekt of percepties van MKB-ondernemers over gebrek aan bepaalde bronnen binnen het bedrijf een motivatie vormen voor deze bedrijven om te gaan internationaliseren of om bestaande internationale activiteiten te gebruiken met het doel om toegang te krijgen tot de schaarse bronnen. Het begrip schaarste staat centraal in de economische wetenschap en speelt een belangrijke rol in de studie van MKB internationalisering. De belangrijkste reden om internationalisering van MKB-bedrijven afzonderlijk te bestuderen van de internationalisering van grotere bedrijven is dat MKB-bedrijven veel vaker dan grotere bedrijven te maken hebben met schaarste, bijvoorbeeld in termen van financieel en menselijk kapitaal. Er wordt vaak verondersteld dat bronnenschaarste de mogelijkheden van MKB-bedrijven op internationale markten beperkt. Onderzoek laat echter zien dat in de huidige geïnternationaliseerde economie bedrijven met beperkte bronnen in staat zijn om te internationaliseren en om toegang te krijgen tot bronnen via internationalisering. Door toenemende internationalisering is het eenvoudiger geworden om diverse bronnen zoals arbeid, kapitaal en technologie te verplaatsen over nationale grenzen. Internationalisering is een belangrijke manier om toegang te krijgen tot bronnen en een dergelijke strategie kan met name interessant of zelfs noodzakelijk zijn voor bedrijven met beperkte bronnen. Het idee dat bronnenschaarste ertoe leidt dat bedrijven afhankelijk zijn van externe organisaties voor het verkrijgen van bronnen staat centraal in "resource dependency" theorie. Op basis van deze theorie wordt in dit hoofdstuk beargumenteerd dat bronnenschaarste (gebrek aan arbeid, kapitaal en technologie) ertoe leidt dat bedrijven internationaliseren, of gebruik maken van bestaande internationale activiteiten, om toegang te krijgen tot de bronnen waar ze gebrek aan hebben. Deze verwachtingen worden grotendeels ondersteund in de empirische analyses, waarbij gebruik is gemaakt van een dataset van bijna 8,000 MKB-bedrijven uit 18 Europese landen (ENSR Enterprise Survey 2003).

Deel II Grensoverschrijdend Ondernemerschap: Internationalisering van Nieuwe Ondernemingen (Hoofdstuk 5, 6 en 7)

In hoofdstuk 5 wordt evenals in hoofdstuk 2 de relatie tussen innovatie en export belicht, ditmaal met een focus op nieuwe ondernemingen. Er wordt onderzocht of exportgerichtheid van nieuwe ondernemingen verklaard kan worden uit innovatie (de introductie van nieuwe producten/diensten en het gebruik van nieuwe technologieën) en uit het bezit van menselijk ondernemerschapskapitaal (vaardigheden, kennis en ervaring van een individu op het gebied van ondernemerschap) en sociaal ondernemerschapskapitaal (het netwerk van ondernemers waarover een individu beschikt en de bronnen die een individu verkrijgt uit dit netwerk) van de ondernemer. Ook wordt onderzocht of innovatie een mediërende rol speelt in de relatie tussen menselijk en sociaal ondernemerschapskapitaal en exportgerichtheid van nieuwe ondernemingen. Voor de empirische analyses in dit hoofdstuk wordt gebruik gemaakt van Global

Entrepreneurship Monitor data van 9,342 nieuwe ondernemers uit 36 landen voor 2002 en 2003. De empirische analyses wijzen op een directe positieve relatie van innovatie, menselijk ondernemerschapskapitaal en sociaal ondernemerschaps-kapitaal met exportgerichtheid van nieuwe ondernemingen. Daarnaast bieden de analyses ook ondersteuning voor een indirecte positieve relatie van menselijk ondernemerschapskapitaal met exportgerichtheid via de introductie van nieuwe producten/ diensten. In de analyses wordt ook een onderscheid gemaakt tussen nieuwe ondernemingen met een beperkte exportgerichtheid (ondernemingen met maximaal een kwart buitenlandse klanten) en ondernemingen met een meer uitgebreide exportgerichtheid (ondernemingen met meer dan een kwart buitenlandse klanten). De uitkomsten laten zien dat nieuwe ondernemingen eerder een uitgebreide dan een beperkte exportgerichtheid hebben wanneer deze ondernemingen innovatief zijn en menselijk en sociaal ondernemerschapskapitaal bezitten.

In hoofdstuk 6 staat de relatie tussen de creatie van nieuwe ondernemingen en economische groei centraal. Er wordt beargumenteerd dat het bij het onderzoeken van deze relatie relevant is om een onderscheid te maken tussen exportgerichte nieuwe ondernemingen en nieuwe ondernemingen die zich puur richten op de binnenlandse markt. Nieuwe ondernemingen dragen bij aan economische groei via drie mechanismen: het vergroten van diversiteit in de economie, het genereren van positieve kennis "spillovers" en het bevorderen van de concurrentie. Naar verwachting zullen met name exportgerichte nieuwe ondernemingen van belang zijn voor economische groei. De reden hiervoor is dat exporterende bedrijven vaak kwalitatief betere bedrijven zijn. Ze zijn innovatiever, hebben vaak meer menselijk kapitaal en ook door te exporteren krijgen ze toegang tot nieuwe kennis en nieuwe technologieën wat weer verder bijdraagt aan de kwaliteit van deze ondernemingen. In het empirische deel van dit hoofdstuk wordt gebruik gemaakt van een macro-analyse, zodat zowel de directe bijdrage van nieuwe onderne-mingen aan economische groei als de indirecte bijdrage (economiebrede effecten via kennis "spillovers", concurrentie en diversiteit) kan worden meegenomen. De analyse richt zich op 36 landen die hebben deelgenomen aan de Global Entrepreneurship Monitor in 2002. De uitkomsten laten zien dat exportgerichte nieuwe ondernemingen een significant positieve bijdrage leveren aan economische groei, terwijl er geen relatie wordt gevonden tussen op de binnenlandse markt gerichte nieuwe ondernemingen en economische groei.

In de analyses van hoofdstuk 6 wordt ook onderscheid gemaakt tussen verschillende groepen landen: hogere-inkomenslanden, transitielanden en lagere-inkomenslanden. De uitkomsten laten zien dat er geen significante relatie is tussen nieuwe ondernemingen die zich richten op de binnenlandse markt en economische groei voor alle drie de groepen landen. Voor exportgerichte nieuwe ondernemingen is het beeld diverser. In hogere-inkomenslanden is er alleen sprake van een positieve relatie tussen exportgerichte nieuwe ondernemingen en

economische groei voor nieuwe ondernemingen met een aanzienlijk aandeel (meer dan een kwart) buitenlandse klanten. Dus het lijkt erop dat exportgerichte starters in deze landen een bepaald drempelniveau moeten bereiken voordat export bijdraagt aan de opbouw van menselijk kapitaal en andere bronnen. In transitielanden wordt het sterkste positieve verband gevonden tussen exportgerichte nieuwe ondernemingen en economische groei en is de relatie significant positief zowel voor nieuwe ondernemingen met een beperkte exportgerichtheid als voor nieuwe ondernemingen met een meer uitgebreidere exportgerichtheid. Tot slot wordt er geen verband gevonden tussen exportgerichte nieuwe ondernemingen en economische groei in lagere-inkomenslanden. Lagere-inkomenslanden hebben veelal een hoog aandeel "ondernemerschap uit noodzaak" en nieuwe ondernemingen kenmerken zich door een laag niveau van menselijk kapitaal, zijn vaak gericht op activiteiten met een lage toegevoegde waarde en actief in sectoren met een lage technologie-intensiteit. Daardoor zullen nieuwe ondernemingen in deze landen ook minder financiële voordelen en kennis en vaardigheden opbouwen via hun exportactiviteiten en minder indirecte positieve economiebrede effecten genereren.

Terwijl in hoofdstuk 6 de nadruk ligt op het belang van exportgerichte nieuwe ondernemingen voor economische groei wordt in hoofdstuk 7 een ander mogelijk macro-economisch effect van exportgerichte nieuwe ondernemingen onderzocht, namelijk of deze ondernemingen een stimulans vormen voor nieuwe bedrijfsoprichtingen in een land. Er wordt beargumenteerd dat nieuwe exportgerichte ondernemingen een bron zijn kennis "spillovers" die leiden tot een toename van ondernemerschapsactiviteiten in een land ("ondernemerschaps-spillovers"). Het idee is dat exportgerichte nieuwe ondernemingen over het algemeen succesvolle bedrijven zijn die als rolmodellen fungeren en zo het animo voor ondernemerschap in een land vergroten. De uitkomsten van de empirische analyses, waarbij onder andere gebruik gemaakt wordt van Global Entrepreneurship Monitor data op landenniveau voor de periode 2002-2005, ondersteunen dat exportgerichte nieuwe ondernemingen een katalysator zijn voor nieuwe bedrijfsoprichtingen in een land.

Hoofdstuk 7 zoekt daarnaast, eveneens op basis van de literatuur over kennis "spillovers", een verklaring voor waarom sommige landen een hoger aandeel exportgerichte nieuwe ondernemingen hebben dan andere landen. Er wordt verondersteld dat zowel de omvang van de directe buitenlandse investeringen als de omvang van de internationale handel van een land een bron zijn van spillover-effecten die leiden tot een hoger aandeel exportgerichte nieuwe ondernemingen. Het gaat dan om "export spillovers". Het idee hierbij is dat bedrijven aangespoord worden om te exporteren wanneer ze worden blootgesteld aan de internationale activiteiten van andere economische actoren. Er is sprake van "export spillovers" wanneer kennis over buitenlandse markten of andere kennis die van nut kan zijn voor het opereren op buitenlandse markten (bijvoorbeeld technologische kennis)

overgedragen wordt van een economische actor naar een andere economische actor, of wanneer economische actoren door concurrentie worden gestimuleerd om te gaan exporteren. Op basis van de literatuur over "export spillovers" wordt in dit hoofdstuk beargumenteerd dat er een positieve relatie is tussen, enerzijds, het niveau van inkomende en uitgaande buitenlandse investeringen, export en import van een land en, anderzijds, het aandeel nieuwe ondernemingen dat zich richt op export in een land. Ook wordt in dit hoofdstuk gesteld dat dergelijke effecten sterker zullen zijn in hogere-inkomenslanden dan in lagere-inkomenslanden, omdat nieuwe ondernemingen in hogere-inkomenslanden meer capaciteit hebben om "export spillovers" te absorberen. De uitkomsten ondersteunen dat uitgaande buitenlandse investeringen en internationale handel bronnen zijn van "export spillovers" in hogere-inkomenslanden, terwijl dit niet geldt voor lagere-inkomenslanden. Er wordt geen verband gevonden tussen het aandeel exportgerichte nieuwe ondernemingen en het niveau van inkomende binnenlandse investeringen in hogere-inkomenslanden en voor lagere-inkomenslanden wordt zelfs een negatieve relatie gevonden tussen inkomende binnenlandse investeringen en het aandeel exportgerichte nieuwe ondernemingen.

Deel III Internationaal Vergelijkende Studies naar Ondernemerschap

In zowel hoofdstuk 8 als 9 wordt de relatie tussen sociale zekerheid en ondernemerschap belicht. In hoofdstuk 8 worden een aantal proposities ontwikkeld aangaande de relatie tussen sociale zekerheidsregelingen en het niveau van nieuw ondernemerschap binnen een land. In dit hoofdstuk wordt beargumenteerd dat het bij het onderzoeken van deze relatie relevant is om een onderscheid te maken tussen de werkgevers- en de werknemersbijdrage van de sociale zekerheid en dat het van belang is om op micro-niveau te kijken naar de hoogte van de uikeringen waar een individu recht op heeft ("replacement rates"). Ook wordt gesteld dat het relevant is om de relatieve sociale zekerheidspositie van ondernemers ten opzichte van werknemers in beschouwing te nemen. De verschillende proposities worden getest met behulp van data voor een aantal landen die hebben deelgenomen aan de Global Entrepreneurship Monitor 2002. De resultaten wijzen uit dat de hoogte van de werkgeversbijdrage negatief samenhangt met nieuw ondernemerschap, terwijl er geen samenhang is tussen de hoogte van de werknemersbijdrage en het niveau van nieuw ondernemerschap. De resultaten suggereren ook dat "replacement rates" van werknemers in geval van werkloosheid negatief samenhangen met het niveau van nieuw ondernemerschap op landenniveau. Er wordt geen effect gevonden voor "replacement rates" van werknemers in geval van ziekte op ondernemerschap. Tot slot wordt geen ondersteuning gevonden voor de verwachting dat de relatieve sociale zekerheidspositie van ondernemers, ten opzichte van die van werknemers, van invloed is op het aantal nieuwe ondernemerschapsactiviteiten.

In hoofdstuk 9 wordt onderzocht wat de determinanten zijn van ambitieus nieuw ondernemerschap op landenniveau. Hierbij wordt in het bijzonder aandacht besteed aan de rol van sociale zekerheid en aan de prevalentie van motieven voor het starten van een eigen bedrijf. In de analyses wordt gebruik gemaakt van data op landenniveau van de Global Entrepreneurship Monitor voor 2005 aangevuld met data uit andere bronnen. Een belangrijke uitkomst van de analyses is dat sociale zekerheid negatief samenhangt met het niveau van zowel innovatief als groeigericht (in termen van werkgelegenheid en export) nieuw ondernemerschap in een land. Verder wijzen de resultaten ook uit dat wanneer een land een hoger aandeel nieuwe ondernemers heeft dat een bedrijf start vanuit het motief om de eigen inkomsten te vergroten dit positief samenhangt met het niveau van nieuw ondernemerschap dat is gericht op banengroei en export binnen het land.

Ten slotte worden in hoofdstuk 10 de belangrijkste conclusies gepresenteerd zoals die volgen uit de verschillende hoofdstukken. Hoofdstuk 10 besluit met een aantal implicaties voor onderzoek en beleid.

Conclusies

Samenvattend volgen er een aantal belangrijke conclusies uit de hoofdstukken die zijn gepresenteerd in dit boek. Ten eerste wijzen de uitkomsten erop dat grensoverschrijdend ondernemerschap op micro-niveau bijdraagt aan innovatie, en op macro-niveau aan economische groei en aan de oprichting van nieuwe ondernemingen. Deze bevindingen illustreren dat grensoverschrijdend ondernemerschap leidt tot waardecreatie.

Ten tweede laten de uitkomsten zien dat innovatie op micro-niveau zowel een determinant als een uitkomst is van grensoverschrijdend ondernemerschap: innovatie draagt bij aan internationalisering (export en import) en internationalisering draagt bij aan innovatie. Deze uitkomsten duiden op het bestaan van een positieve tweezijdige relatie tussen innovatie en internationalisering op bedrijfsniveau. Er wordt met name ondersteuning gevonden voor het bestaan van een positieve terugkoppeling tussen enerzijds product-/diensteninnovatie en anderzijds export en import.

Ten derde tonen de uitkomsten aan dat grensoverschrijdend ondernemerschap een determinant is van ondernemerschap op macro-niveau, terwijl het een uitkomst is van ondernemerschap op micro-niveau. Dit duidt op het bestaan van een positief tweezijdig verband tussen ondernemerschap en internationalisering. Meer specifiek laten de uitkomensten op macro-niveau zien dat het aandeel nieuwe ondernemingen dat zich richt op export positief samenhangt met het aantal nieuwe ondernemerschapsactiviteiten in een land. Dit suggereert dat exportgerichte ondernemers fungeren als succesvolle rolmodellen die ertoe bijdragen dat het hebben van een eigen bedrijf een meer aantrekkelijke carrièremogelijkheid wordt voor anderen. Op micro-niveau laten de uitkomsten zien dat de kans groter is dat

een nieuwe onderneming zich richt op export wanneer de ondernemer ervaring heeft met het hebben van een eigen bedrijf, specifieke kennis en vaardigheden bezit op het gebied van ondernemerschap en een netwerk van ondernemers heeft. Dit suggereert dat ondernemerschaps-specifieke ervaring, kennis, vaardigheden en netwerken ertoe bijdragen dat ondernemers beter in staat zijn om kansen in het buitenland te identificeren en dat ondernemers hun bedrijf meer routinematig kunnen besturen, waardoor ze meer tijd hebben om zich te richten op het ontplooien van activiteiten in het buitenland.

Ten vierde suggereren de bevindingen van dit boek dat blootstelling aan internationaal actieve economische actoren een determinant is van grensoverschrijdend ondernemerschap. Dit biedt ondersteuning aan de groeiende literatuur over "export spillovers" waarin wordt gesteld dat bedrijven meer geneigd zijn om te exporteren als ze in aanraking komen met internationale activiteiten van andere economische actoren. Dit boek biedt aanwijzingen dat dergelijke "export spillovers" een verklaring bieden voor de internationalisering van nieuwe ondernemingen en MKB-bedrijven. Op macro-niveau laten de uitkomsten zien dat het niveau van uitgaande directe buitenlandse investeringen en internationale handel in hogere-inkomenslanden positief samenhangt met het aandeel nieuwe bedrijven dat zich richt op export. Dit duidt erop dat uitgaande directe buitenlandse investeringen en internationale handel in deze landen fungeren als bronnen van "export spillovers" voor nieuwe ondernemingen. Op micro-niveau wijzen de bevindingen erop dat internationaal actieve actoren die opereren in het organisatieveld van een MKB-onderneming (binnenlandse concurrenten, binnenlandse klanten en zowel binnenlandse als buitenlandse leveranciers) een bron zijn van "export spillovers" voor MKB-bedrijven.

Ten vijfde tonen de resultaten aan dat sociale zekerheid een determinant is van (grensoverschrijdend) ondernemerschap in de zin dat sociale zekerheid een remmend effect heeft op zowel het aanbod van ondernemerschap in het algemeen als op het aanbod van ambitieus ondernemerschap, inclusief grensoverschrijdend ondernemerschap, in een land.

References

Aaby, N.-E. and Slater, F.S. 1989. Managerial Influence on Export Performance: A Review of the Empirical Literature 1978-1988, *International Marketing Review*, 6(4), 7-26.

Abrahamson, E. and Fombrun, C.J. 1994. Macrocultures: Determinants and Consequences, *Academy of Management Review,* 19(4), 728-755.

Acemoglu, D. 1995. Reward Structures and the Allocation of Talent, *European Economic Review*, 39(1), 17-33.

Acs, Z.J. (Ed.). 1996. *Small Firms and Economic Growth*, Edward Elgar, Cheltenham, UK.

Acs, Z.J., Arenius, P., Hay, M. and Minniti, M. 2004. *Global Entrepreneurship Monitor. 2004 Executive Report*, Babson College and London Business School, Wellesley, MA/London.

Acs, Z.J. and Audretsch, D.B. 1990. *Innovation and Small Firms,* MIT Press, Cambridge, MA.

Acs, Z.J. and Audretsch, D.B. 2003. Innovation and Technological Change, in: Z.J. Acs and D.B. Audretsch (Eds), *Handbook of Entrepreneurship Research. An Interdisciplinary Survey and Introduction*, Kluwer Academic Publishers, Dordrecht, pp. 55-80.

Acs, Z.J. and Audretsch, D.B. 2005. Entrepreneurship and Innovation. Discussion Papers on Entrepreneurship, Growth and Public, Max Planck Institute of Economics, Prepared for the 2005 Summer Institute of the Entrepreneurship, Growth & Public Policy Division of the Max Planck Institute of Economics, Jena.

Acs, Z.J., Audretsch, D.B., Braunerhjelm, P. and Carlsson, B. 2006. The Knowledge Spillover Theory of Entrepreneurship, CESIS Electronic Working Paper Series, Paper No. 77, Centre of Excellence for Science and Innovation Studies, Royal Institute of Technology, Stockholm.

Acs, Z.J., Audretsch, D.B. and Feldman, M. 1994. R&D Spillovers and Recipient Firm Size, *Review of Economics and Statistics,* 76(2), 336-340.

Acs, Z.J., Dana, L.-P. and Jones, M.V. 2003. Toward New Horizons: The Internationalisation of Entrepreneurship, *Journal of International Entrepreneurship,* 1(1), 5-12.

Acs, Z.J., Desai, S. and Hessels, J. 2008. Entrepreneurship, Economic Development and Institutions, *Small Business Economics*, 31(3), forthcoming.

Acs, Z.J., Morck, R., Shaver, J.M. and Yeung, B. 1997. The Internationalization of Small and Medium-Sized Enterprises: A Policy Perspective, *Small Business Economics*, 9(1), 7-20.

Acs, Z.J. and Terjesen, S. 2006. Born Local: Two Views of Internationalization, Working Paper presented at the Academy of Management Annual Meeting 2006, August 2006, Atlanta, GA.

Acs, Z.J. and Varga, A. 2005. Entrepreneurship, Agglomeration and Technological Change, *Small Business Economics*, 24(3), 323-334.

Acs, Z.J. and Yeung, B. (Eds). 1999. *Small and Medium Sized Firms in the Global Economy,* The University of Michigan Press, Ann Arbor.

Adams, G. and Hall, G. 1993. Influences on the Growth of SMEs: An International Comparison, *Entrepreneurship & Regional Development*, 5(1), 73-84.

Aitken, B., Hanson, G.H. and Harrison, A.E. 1997. Spillovers, Foreign Investment and Export Behavior, *Journal of International Economics,* 43(1-2), 103-132.

Akoorie, M. and Enderwick, P. 1992. The International Operations of New Zealand Companies, *Asia Pacific Journal of Management,* 9(1), 51-69.

Almeida Couto, J.P., Borges Tiagio, M.T., Vieira, J.C. and Fortuna, M.A. 2006. Contextual and Operational Determinants of Export Performance of Companies in Europe, *The Business Review*, 5(1), 145-154.

Alvarez, R. 2004. Sources of Export Success in Small- and Medium-Sized Enterprises: The Impact of Public Programs, *International Business Review,* 13(3), 383-400.

Amabile, T. 1996. *Creativity in Context*, Westview Press, Boulder, CO.

Amit, R., MacCrimmon, K.R., Zietsma, C. and Oesch, J.M. 2001. Does Money Matter: Wealth Attainment as the Motive for Initiating Growth-Oriented Technology Ventures, *Journal of Business Venturing*, 16(2), 119-143.

An, G. and Iyigun, M.F. 2004. The Export Skill Content, Learning by Exporting and Economic Growth, *Economic Letters,* 84(1), 29-34.

Andersen, O. 1993. On the Internationalization Process of the Firm: A Critical Analysis, *Journal of International Business Studies*, 24(1), 209-231.

Andersson, S., Gabrielsson, J. and Wictor, I. 2004. International Activities in Small Firms: Examining Factors Influencing the Internationalization and Export Growth of Small Firms, *Canadian Journal of Administrative Sciences*, 21(1), 22-34.

Antoncic, B. and Hisrich, R.D. 2000. An Integrative Conceptual Model, in: L.-P. Dana (Ed.), *Global Marketing Co-operation and Networks,* International Business Press, New York, pp. 17-35.

Ardichvili, A., Cardozo, R. and Ray, S. 2003. A Theory of Entrepreneurial Opportunity Identification and Development, *Journal of Business Venturing,* 18(1), 105-123.

Arthur, B. 1994. *Increasing Returns and Path Dependence in the Economy,* The University of Michigan Press, Ann Arbor.

Audretsch, D. 2002. The Dynamic Role of Small Firms: Evidence from the US, *Small Business Economics,* 18(1-3), 13-40.

Audretsch, D.B., Grilo, I. and Thurik, A.R. 2007. Explaining Entrepreneurship and the Role of Policy: A Framework, in: D.B. Audretsch, I. Grilo and A.R. Thurik (Eds), *The Handbook of Research on Entrepreneurship Policy*, Edward Elgar Publishing Limited, Cheltenham, UK and Northampton, MA, pp. 1-17.

Audretsch, D.B. and Keilbach, M. 2004. Entrepreneurship Capital and Economic Performance, *Regional Studies,* 38(8), 949-959.

Audretsch, D.B. and Thurik, A.R. 2000. Capitalism and Democracy in the 21st Century: From the Managed to the Entrepreneurial Economy, *Journal of Evolutionary Economics*, 10 (1), 17-34.

Audretsch, D.B. and Thurik, A.R. 2001. What's New about the New Economy? From the Managed to the Entrepreneurial Economy, *Industrial and Corporate Change*, 10(1), 267-315.

Audretsch, D.B. and Thurik, A.R. 2004. A Model of the Entrepreneurial Economy, *International Journal of Entrepreneurship Education*, 2(2), 143-166.

Autio, E. 1994. New Technology-Based Firms as Agents of R&D and Innovation, *Technovation*, 14(4), 259-273.

Autio, E. 2005. Creative Tension: The Significance of Ben Oviatt's and Patricia McDougall's Article 'Toward a Theory of International New Ventures', *Journal of International Business Studies*, 36(1), 9-19.

Autio, E. 2007. *Global Entrepreneurship Monitor. 2007 Global Report on High Growth Entrepreneurship*, Babson College and London Business School, Wellesley, MA/London.

Autio, E. and Acs, Z.J. 2007. Individual and Country Level Determinants of Growth Aspirations in New Ventures. Paper presented at the Third Global Entrepreneurship Monitor Research Conference, October 2007, Washington D.C.

Autio, E., Sapienza, H.J. and Almeida, J.G. 2000. Effects of Age at Entry, Knowledge Intensity, and Imitability on International Growth, *Academy of Management Journal*, 43(5), 909-924.

Axinn, C.N. 1988. Export Performance: Do Managerial Perceptions Make a Difference?, *International Marketing Review*, 5(5), 67-71.

Baenen, N.M.A. and Visser, F.J.W. 1996. Social Security for the Self-Employed in Belgium, Germany, the United Kingdom and the Netherlands, Strategic Study, EIM, Zoetermeer.

Bajona, C. 2004. Specific Factors, Learning and the Dynamics of Trade, *International Economic Review,* 45(2), 499-521.

Baker, T. and Nelson, R. 2005. Making Do With What's at Hand: Entrepreneurial Bricolage, *Adminstrative Science Quarterly*, 50(3), 329-366.

Balabanis, G.I. 2000. Factors Affecting Export Intermediaries' Service Offerings: The British Example, *Journal of International Business Studies*, 31(1), 83-99.

Baldwin, R.E. 1971. Determinants of the Commodity Structure of U.S. Trade, *American Economic Review*, 61(1), 126-146.

Banga, R. 2003. Differential Impact of Japanese and U.S. Foreign Direct Investments on Exports of Indian Manufacturing, Working Paper, Delhi School of Economics, Delhi.

Barkema, H.G. and Vermeulen, F. 1998. International Expansion through Start-Up or Acquisition: A Learning Perspective, *Academy of Management Journal,* 41(1), 7-26.

Barney, J.B. 1991. Firm Resources and Sustained Competitive Advantage, *Journal of Management*, 17(1), 99-120.

Barney, J.B. and Arikan, A.M. 2001. The Resource-Based View: Origins and Implications, in: M. A. Hitt, R. E. Freeman and J. S. Harrison (Eds), *Blackwell Handbook of Strategic Management,* Blackwell Publishing, Oxford, pp. 124-189.

Barrell, R. and Pain, N. 1997. Foreign Direct Investment, Technological Change, and Economic Growth within Europe, *Economic Journal,* 107(445), 1770-1786.

Barringer, B.R. and Harrison, J.S. 2000. Walking a Tightrope: Creating Value through Interorganizational Relationships, *Journal of Management*, 26(3), 367-403.

Basile, R. 2001. Export Behaviour of Italian Manufacturing Firms over the Nineties: The Role of Innovation, *Research Policy,* 30(8), 1185-1201.

Bates, T. 1995. Self-Employment Entry across Industry Groups, *Journal of Business Venturing,* 10(2), 143-156.

Baum, J.R. and Locke, E.A. 2004. The Relationship of Enterprising Traits, Skill, and Motivation to Subsequent Venture Growth, *Journal of Applied Psychology*, 89(4), 587-598.

Baum, J.R., Olian, J.D., Erez, M., Schnell, E.R., Smith, K.G., Sims, H.P., Scully, J.S. and Smith, K.A. 1993. Nationality and Work Role Interactions: A Cultural Contrast of Israeli and U.S. Entrepreneurs' versus Managers' Needs, *Journal of Business Venturing*, 8(6), 499-512.

Baumol, W.J. 1990. Entrepreneurship: Productive, Unproductive and Destructive, *Journal of Political Economy,* 98(5), 893–921.

Baumol, W.J. 2002. *The Free-Market Innovation Machine: Analyzing the Growth Miracle of Capitalism*, Princeton University Press, Princeton.

Beamish, P.W. 1990. The Internationalisation Process for Smaller Ontario Firms: A Researchagenda, in: A.M. Rugman (Ed.), *Research in Global Strategic Management: International Business Research for the Twenty-First Century, Canada's New Research Agenda*, JAI Press, Greenwich, pp.77-92.

Becker, G.S. 1964. *Human Capital*, University of Chicago Press, Chicago, IL.

Becker, S.O. and Egger, P.H. 2007. Endogenous Product versus Process Innovation and a Firm's Propensity to Export, CESifo Working Paper Series No. 1906, Center for Economic Studies and Ifo Institute for Economic Research, Munich.

Bell, J., Crick, D. and Young, S. 2004. Small Firm Internationalization and Business Strategy. An Exploratory Study of 'Knowledge Intensive' and Traditional Manufacturing Firms in the UK, *International Small Business Journal*, 22(1), 23-56.

Bello, D.C. and Lohtia, R. 1995. Export Channel Design: The Use of Foreign Distributors and Agents, *Journal of the Academy of Marketing Science*, 23(2), 83-93.

Bernard, A.B. and Jensen, J.B. 1999. Exceptional Export Performance: Cause, Effect or Both, *Journal of International Economics,* 47(1), 1-25.

Bernardt, Y., Borger, J. and Braaksma, R. 2001. De Innovativiteit van de Nederlandse Industrie (The Innovativeness of the Dutch Manufacturing Sector), Strategic Study A0017, EIM, Zoetermeer.

Bernstein, J.I. and Nadiri, M. 1988. Interindustry R&D Spillovers, Rates of Return, and Production in High-Tech Industries, *American Economic Review,* 78(2), 429-434.

Bettis, R.A. and Hitt, M.A. 1995. The New Competitive Landscape, *Strategic Management Journal,* 16(5), 7-19.

Bhola, R., Verheul, I., Grilo, I. and Thurik, A.R. 2006. Explaining Engagement Levels of Opportunity and Necessity Entrepreneurs, Research Report H200610, EIM, Zoetermeer.

Bijmolt, T.H.A. and Zwart, P.S. 1994. The Impact of Internal Factors on the Export Success of Dutch Small and Medium-Sized Firms, *Journal of Small Business Management*, 32(2), 69-83.

Bilkey, W.J. 1978. An Attempted Integration of the Literature on the Export Behavior of Firms, *Journal of International Business Studies,* 9(1), 33-46.

Bilkey, W.J. and Tesar, G. 1977. The Export Behaviour of Small Wisconsin Manufacturing Firms, *Journal of International Business Studies*, 8(1), 93-98.

Bird, A. 1994. Careers as Repositories of Knowledge: A New Perspective on Boundaryless Careers, *Journal of Organizational Behavior*, 15(4), 325-344.

Biscourp, P. and Kramarz, F. 2007. Employment, Skill Structure and International Trade: Firm-Level Evidence for France, *Journal of International Economics,* 72(1), 22-51.

Blalock, G. and Gertler, P.J. 2004. Learning from Exporting Revisited in a Less Developed setting, *Journal of Development Economics,* 75(2), 397-416.

Blalock, G. and Veloso, F. 2005. Trade, Technology Transfer and Productivity Growth: The Neglected Role of Imports, Working Paper, Cornell University, Ithaca, NY.

Blomstermo, A., Sharma, D.D. and Sallis, J. 2006. Choice of Foreign Market Entry Mode in Service Firms, *International Marketing Review*, 23(2), 211-229.

Blomström, M. and Kokko, A. 1998. Multinational Corporations and Spillovers, *Journal of Economic Surveys,* 12(2), 1-31.

Blomström, M., Lipsey, R.E. and Zejan, M. 1994. What Explains Developing Country Growth?, NBER Working Paper No. 4132, National Bureau of Economic Research, Cambridge, MA.

Bloodgood, J.M., Sapienza, H.J. and Almeida, J.G. 1996. The Internationalization of New High-Potential U.S. Ventures: Antecedents and Outcomes, *Entrepreneurship Theory and Practice*, 20(4), 61-76.

Borensztein, E., De Gregorio, J. and Lee, J-W. 1998. How Does Foreign Direct Investment Affect Economic Growth?, *Journal of International Economics,* 45(1), 115-135.

Bosch, L.H.M., Uxem, F.W. van and Westhof, F.M.J. 1998. Een Eigen Bedrijf: Een Begaanbare Weg voor Ondernemers? (An Own Business: A Passable Road for Entrepreneurs?), Report prepared for the Ministry of Social Affairs, EIM, Zoetermeer.

Bosch, L.H.M. and Westhof, F.M.J. 1997. Sociale Zekerheid en Ondernemerschap (Social Security and Entrepreneurship), Strategic Study, EIM, Zoetermeer.

Bosma, N., Hunt, S. and Wennekers, A.R.M. 2005. Regional Commentary: European Union, in: M. Hancock and P. Fitzsimons, *Global Entrepreneurship Monitor 2004, National & Regional Summaries*, Babson College and London Business School, Wellesley, MA/London.

Bosma, N., Praag, M. van, Thurik, A.R. and Wit, G. de. 2004. The Value of Human and Social Capital Investments for the Business Performance of Startups, *Small Business Economics,* 23(3), 227-236.

Bourdieu, P. 1986. The Forms of Capital, in: J.G. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education,* Greenwood, New York, pp. 241-258.

Brakman, S., Garretsen, H., Marrewijk, C. van and Witteloostuijn, A. van. 2006. *Nations and Firms in the Global Economy. An Introduction to International Economics and Business*, Cambridge University Press, Cambridge, UK.

Branstetter, L. 2006. Is Foreign Direct Investment a Channel of Knowledge Spillovers? Evidence from Japan's FDI in the United States, *Journal of International Economics*, 68(2), 325-344.

Braunerhjelm, P. 1996. The Relation between Firm-Specific Intangibles and Exports, *Economic Letters,* 53(2), 213-219.

Breaugh, J.A. 1999. Further Investigation of the Work Autonomy Scales: Two Studies, *Journal of Business and Psychology*, 13(3), 357-373.

Brooks, E.L. 2006. Why Don't Firms Export More? Product Quality and Colombian Plants, *Journal of Development Economics,* 80(1), 160-178.

Buckley, P.J. 1989. Foreign Direct Investment by Small and Medium Sized Enterprises: The Theoretical Background, *Small Business Economics*, 9(1), 67-78.

Buckley, P.J. 1997. International Technology Transfer by Small and Medium-Sized Enterprises, *Small Business Economics*, 9(1), 67-78.

Burpitt, W.J. and Rondinelli, D.A. 2000. Small Firms' Motivations for Exporting: To Earn and Learn?, *Journal of Small Business Management,* 38(4), 1-14.

Campbell, A.J. 1996. The Effects of Internal Firm Barriers on the Export Behavior of Small Firms in a Free Trade Environment, *Journal of Small Business Management,* 34(3), 50-58.

Campbell, C.A. 1992. A Decision Theory Model for Entrepreneurial Acts, *Entrepreneurship Theory and Practice,* 17(1), 21-27.

Cantwell, J. 1989. *Technological Innovation and Multinational Corporations,* Basil Blackwell, Oxford, UK.

Cantwell, J. and Hodson, C. 1991. Global R&D and UK Competitiveness, in: M. Casson (Ed.), *Global Research Strategy and International Competitiveness,* Basil Blackwell, Oxford and Cambridge, UK.

Carree, M.A. and Thurik, A.R. 2003. The Impact of Entrepreneurship on Economic Growth, in: Z.J. Acs and D.B. Audretsch (Eds), *Handbook of Entrepreneurship Research*, Kluwer Academic Publishers, Boston, MA, pp. 437-471.

Carter, N.M., Gartner, W.B., Shaver, K.G. and Gatewood, E.J. 2003. The Career Reasons of Nascent Entrepreneurs, *Journal of Business Venturing*, 18(1), 13-39.

Cassar, G. 2006. Entrepreneur Opportunity Costs and Intended Venture Growth, *Journal of Business Venturing*, 21(5), 610-632.

Cassar, G. 2007. Money, Money, Money? A Longitudinal Investigation of Entrepreneur Career Reasons, Growth Preferences and Achieved Growth, *Entrepreneurship & Regional Development*, 19(1), 89-107.

Cassiman, B. and Martínez-Ros, E. 2007. Product Innovation and Exports. Evidence from Spanish Manufacturing, IESE working paper, IESE Business School, University of Navarra, Barcelona.

Caves, R.E. 1971. International Corporations: The Industrial Economics of Foreign Investment, *Economica,* 38(3), l-27.

Caves, R.E. 1982. *Multinational Enterprise and Economic Analysis*, Cambridge University Press, Cambridge, MA.

Cavusgil, T. 1980. On the Internationalization Process of Firms, *European Research*, 8(6), 273-281.

Cavusgil, T. and Nevin, J.R. 1981. Internal Determinants of Export Marketing Behavior: An Empirical Investigation, *Journal of Marketing Research*, 18(1), 114-119.

Chang, S. 1995. International Expansion Strategy of Japanese Firms: Capability Building through Sequential Entry, *Academy of Management Journal*, 38(2), 383-407.

Chetty, S.K. and Hamilton, R.K. 1993. Firm Level Determinants of Export Performance: A Meta-Analysis, *International Marketing Review*, 10(3), 26-34.

Chuang, Y.C. 1998. Learning by Doing, the Technology Gap, and Growth, *International Economic Review,* 39(3), 697-721.

Chuang, Y.C. and Lin, C. M. 1999. Foreign Direct Investment, R&D and Spillover Efficiency: Evidence from Taiwan's Manufacturing Firms, *Journal of Development Studies,* 35(4), 117-137.

Clerides, S.K., Lach, S. and Tybout, J.R. 1998. Is Learning by Exporting Important? Micro-Dynamic Evidence from Colombia, Mexico, and Morocco, *Quarterly Journal of Economics,* 113(3), 903-947.

Cliff, J.E. 1998. Does One Size Fit All? Exploring the Relationship between Attitudes towards Growth, Gender and Business Size, *Journal of Business Venturing*, 13(6), 523-542.

Coe, D. and Helpman, E. 1995. International R&D Spillovers, *European Economic Review,* 39(5), 859-887.

Cohen, S.S. and Fields, G. 1999. Social Capital and Capital Gains in Silicon Valley, *California Management Review,* 41(2), 108-130.

Cohen, W.M. and Klepper, S. 1992. The Tradeoff between Firm Size and Diversity in the Pursuit of Technological Progress, *Small Business Economics,* 4(1), 1-14.

Cohen, W.M. and Klepper, S. 1996. Firm Size and the Nature of Innovation within Industries: The Case of Process and Product R&D, *Review of Economics and Statistics,* 78(2), 232-243.

Cohen, W.M. and Levin, R.C. 1989. Empirical Studies of Innovation and Market Structure, in: R. Schmalansee and R. Willig (Eds), *Handbook of Industrial Organization (Volume II),* Amsterdam, North-Holland, pp. 1059-1107.

Cohen, W.M. and Levinthal, D.A. 1990. Absorptive Capacity: A New Perspective on Learning and Innovation, *Administrative Science Quarterly*, 35(1), 128-152.

Collins, C.J., Hanges, P.J. and Locke, E.A. 2004. The Relationship of Achievement Motivation to Entrepreneurial Behavior: A Meta-Analysis, *Human Relations*, 17(1), 95-117.

Cooper, A.C. and Dunkelberg, W.C. 1986. Entrepreneurship and Paths to Business Ownership, *Strategic Management Journal*, 7(1), 53-68.

Corman, J., Perles, B. and Vancini, P. 1988. Motivational Factors Influencing High-Technology Entrepreneurship, *Journal of Small Business Management*, 26(1), 36-42.

Coviello, N.E. 2006. The Network Dynamics of International New Ventures, *Journal of International Business Studies*, 37(5), 713-731.

Coviello, N.E. and Jones, M.V. 2004. Methodological Issues in International Entrepreneurship Research, *Journal of Business Venturing,* 19(4), 485-508.

Coviello, N.E. and Martin, K.A.M. 1999. Internationalization of Service SMEs: An Integrated Perspective from the Consulting Sector, *Journal of International Marketing*, 7(4), 42-66.

Coviello, N.E. and McAuley, A. 1999. Internationalisation and the Smaller Firm: A Review of Contemporary Empirical Research, *Management International Review*, 39(3), 223-256.

Covin J. and Slevin D. 1989. Strategic Management of Small Firms in Hostile and Benign Environments, *Strategic Management Journal,* 10(1), 75-87.

Dahlman, C.J. and Westphal, L.E. 1982. Technological Effort in Industrial Development, in: F. Stewart and J. James (Eds), *The Economics of New Technology in Developing Countries,* Frances Pinter, London, pp. 105-137.

Daniels, J.D. and Bracker, J. 1989. Profit Performance: Do Foreign Operations Make a Difference?, *Management International Review*, 29(1), 46-56.

David, P. 1975. *Technical Choice, Innovation and Economic Growth,* Cambridge University Press, Cambridge, UK.

Davidsson, P. 1989. Entrepreneurship – and After? A Study of Growth Willingness in Small Firms, *Journal of Business Venturing*, 4(3), 211-226.

Davidsson, P. 1991. Continued Entrepreneurship: Ability, Need and Opportunity as Determinants of Small Firm Growth, *Journal of Business Venturing*, 6(6), 405-429.

Davidsson, P. 2006. Nascent Entrepreneurship: Empirical Studies and Developments, *Foundations and Trends in Entrepreneurship*, 2(1), 1-76.

Davidsson, P., Delmar, F. and Wiklund, J. 2006. Entrepreneurship as Growth; Growth as Entrepreneurship, in: P. Davidsson, F. Delmar and J. Wiklund (Eds), *Entrepreneurship and the Growth of Firms*, Edward Elgar Publisher, Cheltenham, UK, pp. 21-38.

Davidsson, P. and Honig, B. 2003. The Role of Social and Human Capital among Nascent Entrepreneurs, *Journal of Business Venturing,* 18(3), 301-331.

Davis, P.S., Desai, A.B. and Francis, J.D. 2000. Mode of International Entry: An Isomorphism Perspective, *Journal of International Business Studies*, 31(2), 239-258.

De Clercq, D. and Arenius, P. 2006. The Role of Knowledge in Business Start-Up Activity, *International Small Business Journal,* 24(4), 339-358.

De Clercq, D. Hessels, J. and Stel, A. van. 2008. Knowledge Spillovers and New Ventures' Export Orientation, *Small Business Economics*, 31(3), forthcoming.

De Clercq, D., Sapienza, H.J. and Crijns, H. 2005. The Internationalization of Small and Medium-Sized Firms: The Role of Organizational Learning Effort and Entrepreneurial Orientation, *Small Business Economics,* 24(4), 409-419.

Dhanaraj, C. and Beamisch, P.W. 2003. A Resource-Based Approach to the Study of Export Performance, *Journal of Small Business Management*, 41(3), 242-261.

Di Gregorio, D., Musteen, M. and Thomas, D.E. 2008. International New Ventures: The Cross-Boder Nexus of Individuals and Opportunities, *Journal of World Business,* forthcoming.

Dichtl, E., Koeglmayr, H.-G. and Mueller, S. 1990. International Orientation as a Precondition for Export Success, *Journal of International Business Studies,* 21(1), 23-40.

Dijken, J.A. van and Prince, Y.M. 1997. *Zicht op de Relaties tussen Marktwerking, Innovativiteit en Export. Theorie en Praktijk (A View on the Relation between the Functioning of the Market, Innovativeness and Export. Theory and Practice),* Ministry of Economic Affairs, The Hague.

DiMaggio. P. and Powell. W. 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields, *American Sociological Review*, 48(2), 147-160.

Dimitratos, P. and Jones, M.V. 2005. Future Directions for International Entrepreneurship Research, *International Business Review,* 14(2), 119-128.

Din, M. 1994. Export Processing Zones and Backward Linkages, *Journal of Development Economics,* 43(2), 369-385.

Djankov, S. and Hoekman, B. 1999. Foreign Investment and Productivity Growth in Czech Enterprises, *World Bank Economic Review,* 14(1), 49-64.

Dosi, G. 1988. Sources, Procedures and Microeconomic Effects of Innovation, *Journal of Economic Literature,* 26(3), 1120-1171.

Douglas, E.J. and Shepherd, D.A. 2002. Self-Employment as a Career Choice: Attitudes, Entrepreneurial Intentions, and Utility Maximization, *Entrepreneurship Theory and Practice*, 26(3), 81-90.

Dunning, J.H. 1981. *International Production and the Multinational Enterprise*, George Allen & Unwin, London, UK.

Dunning, J.H. 1993. *Multinational Enterprises and the Global Economy*, Addison-Wesley, Reading, MA.

Durham, K. B. 2004. Absorptive Capacity and the Effects of Foreign Direct Investment and Equity Foreign Portfolio Investment on Economic Growth, *European Economic Review,* 48(2), 285-306.

Edmunds, S. and Khoury, S. 1986. Exports: A Necessary Ingredient in the Growth of Small Business Firms, *Journal of Small Business Management*, 24(4), 54-65.

Eng, T.-Y. 2005. An Empirical Analysis of the Influence of Cross-Relational Impacts of Strategy Analysis on Relationship Performance in a Business Network Context, *Journal of Strategic Marketing*, 13(3), 219-237.

Eriksson, K., Johanson, J., Majkgård, A. and Sharma, D.D. 1997. Experiential Knowledge and Cost in the Internationalization Process, *Journal of International Business Studies*, 28(2), 337-360.

Erramilli, M.K. and D'Souza, D.E. 1993. Venturing into Foreign Markets: The Case of the Small Service Firm, *Entrepreneurship Theory and Practice*, 17(3), 29-41.

Etemad, H. 2004. Internationalization of Small and Medium-sized Enterprises: A Grounded Theoretical Framework and an Overview, *Canadian Journal of Administrative Sciences*, 21(1), 1-21.

Etemad, H. 2005. SMEs' Internationalization Strategies Based on a Typical Subsidiary's Evolutionary Life Cycle in Three Distinct Stages, *Management International Review*, 45(3), 145-186.

Ethier, W. 1982. National and International Returns to Scale in Modern Theory of International Trade, *American Economic Review,* 72(3), 389-405.

European Commission. 2003a. *Green Paper Entrepreneurship in Europe*, European Commission, Brussels.

European Commission. 2003b. *MISSOC 2003: Social Protection in the Member States of the European Union, of the European Economic Area and in Switzerland*, European Commission, Brussels.

European Commission. 2004a. *Internationalisation of SMEs, Observatory of European SMEs*; Report 2003 No. 4, Report submitted to the Enterprise Directorate General by KPMG Special Services, EIM Business and Policy Research, and ENSR, Brussels.

European Commission. 2004b. *Second Career. Overcoming the Obstacles Faced by Dependent Employees Who Want to Become Self-Employed and/or Start their own Business*, European Commission, Brussels.

Eurostat. 2004. *Business Demography in Europe. Results for 10 Member States and Norway*, Eurostat, Luxembourg.

Feinberg, S. and Majumdar, S.K. 2001. Technology Spillovers from Foreign Direct Investment in the Pharmaceutical Industry, *Journal of International Business Studies,* 32(3), 421-438.

Feldman, D.C. and Bolino, M.C. 2000. Career Patterns of the Self-Employed: Career Motivations and Career Outcomes, *Journal of Small Business Management*, 38(1), 53-67.

Ferranti, D. de and Ody, A.J. 2007. Beyond Microfinance: Getting Capital to Small and Medium Enterprises to Fuel Faster Development, Policy Brief #159, The Brookings Institution, Washington D.C.

Findlay, R. 1984. Growth and Development in Trade Models, in: R. Jones and P. Kenen (Eds), *Handbook of International Economics (Volume 1: International Trade),* Elsevier, Amsterdam, pp. 185-236.

Fischer, E.A. and Reuber, R. 2003. Support for Rapid-Growth Firms: A Comparison of the Views of Founders, Government Policymakers, and Private Sector Resource Providers, *Journal of Small Business Management*, 41(4), 346-65.

Fischer, S. 2003. Globalization and its Challenges, *American Economic Review,* 93(2), 1-30.

Fletcher, D. 2004. International Entrepreneurship and the Small Business, *Entrepreneurship & Regional Development,* 16(4), 289-305.

Fletcher, R. 2001. A Holistic Approach to Internationalisation, *International Business Review*, 10(1), 25-49.

Folkeringa, M. and Vroonhof, P. 2002. Vrijheid, Ongelijkheid en Ondernemerschap (Freedom, Independence and Entrepreneurship), Strategic Study B200201, EIM, Zoetermeer.

Folkeringa, M. and Vroonhof, P. 2004. Armoede onder Zelfstandige Ondernemers (Poverty among Independent Entrepreneurs), Research Report H200409, EIM, Zoetermeer.

Ford, I.D. and Leonidou, L.C. 1991. Research Developments in International Marketing, in: S.J. Paliwoda, *New Perspectives on International Marketing,* Routledge, London, pp. 3-32.

Fosfuri, A., Motta, M. and Rønde, T. 2001. Foreign Direct Investment and Spillovers through Workers' Mobility, *Journal of International Economics,* 53(1), 205-222.

Franko, L.G. 1989. Global Corporate Competition: Who's Winning, Who's Losing, and the R&D Factor as One Reason Why, *Strategic Management Journal,* 10(5), 449-474.

Frear, C.R., Metcalf, L.E. and Alguire, M.S. 1992. Off-Shore Sourcing: Its Nature and Scope, *International Journal of Purchasing and Materials Management,* 28(3), 2-11.

Frenken, K., Oort, F.G. van and Verburg, T. 2007. Related Variety, Unrelated Variety and Regional Economic Growth, *Regional Studies*, 41(5), 685-697.

Fujita, M. 1995. Small and Medium Sized Transnational Corporations: Trends and Patterns of Foreign Direct Investment, *Small Business Economics,* 7(3), 183-204.

Gartner, W.B. 1985. A Framework for Describing and Classifying the Phenomenon of New Venture Creation, *Academy of Management Review*, 10(4), 696-706.

Gartner, W. B. 1988. Who is an Entrepreneur? Is the Wrong Question, *American Journal of Small Business*, 12(1), 11-32.

Gavron, R., Cowling, M., Holtham, G. and Westall, A. 1998. *The Entrepreneurial Society*, Institute for Public Policy Research, London.

Gelderen, M.W. van and Jansen, P.G.W. 2006. Autonomy as a Startup Motive, *Journal of Small Business and Enterprise Development*, 13(1), 23-32.

Gelderen, M.W. van, Sayers, J. and Keen, C. 2008. Home-based Internet Businesses as Drivers of Variety, *Journal of Small Business and Entreprise Development,* 15(1), 162-177.

George, G. 2005. Slack Resources and the Performance of Privately Held Firms, *Academy of Management Journal*, 48(4), 661-676.

George, G., Wiklund, J. and Zahra, S. 2005. Ownership and Internationalization of Small Firms, *Journal of Management,* 31(2), 210-233.

Gerschenberg, I. 1987. The Training and Spread of Management Know-How: A Comparative Analysis of Multinational and Other Firms in Kenya, *World Development,* 15(7), 931-939.

Gerschenkron, A. 1962. *Economic Backwardness in Historical Perspective: A Book of Essays,* Belknap Press of Harvard University Press, Cambridge, MA.

Ghauri, P. and Oxelheim L. 2003. *European Union and the Race for Foreign Direct Investment in Europe,* Elsevier, Oxford.

Gimeno, J., Folta, T.B., Cooper, A.C. and Woo, C.Y. 1997. Survival of the Fittest? Entrepreneurial Human Capital and the Persistence of Underperforming Firms, *Administrative Science Quarterly,* 42(4), 750-783.

Gimeno, J., Hoskisson, R.E., Beal, B.D. and Wan, W.P. 2005. Explaining the Clustering of International Expansion Moves: A Critical Test in the U.S. Telecommunications Industry, *Academy of Management Journal*, 48(2), 297-319.

Girma, S., Greenaway, D. and Kneller R. 2004. Does Exporting Increase Productivity? A Microeconomic Analysis of Matched Firms, *Review of International Economics,* 12(5), 855-866.

Glaeser, E.L., Kallal, H.D., Scheinkman, J.A. and Shleifer, A. 1992. Growth in Cities, *Journal of Political Economy,* 100(6), 1126-1152.

Glass, A. and Saggi, K. 1998. International Technology Transfer and the Technology Gap, *Journal of Development Economics,* 55(2), 369-398.

Görg, H. and Greenaway, D. 2004. Much Ado About Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment?, *World Bank Research Observer,* 19(2), 171-197.

Graaff, C.C. van de and Overweel, M.J. 2002. Het Belang van Importen voor het MKB (The Importance of Imports to SMEs), General Study A200203, EIM, Zoetermeer.

Greenaway, D., Gullstrand, J. and Kneller, R. 2008. Surviving Globalisation, *Journal of International Economics,* 74(2), 264-277.

Greenaway D., Sousa N. and Wakelin K. 2004. Do Domestic Firms Learn to Export from Multinationals?, *European Journal of Political Economy,* 20(4), 1027-1043.

Greene, W. 2004. *Econometric Analysis,* 5th Edition, Prentice Hall, New York.

Grilo, I. and Thurik, A.R. 2006. Entrepreneurship in the Old and New Europe, in: E. Santarelli (Ed.), *Entrepreneurship, Growth, and Innovation: The Dynamics of Firms and Industrie (International Studies in Entrepreneurship)*, Springer Science, Berlin, pp. 75-103.

Grilo, I. and Thurik, A.R. 2008. Determinants of Entrepreneurial Engagement Levels in Europe and the US, *Industrial and Corporate Change*, forthcoming.

Grossman, G.M. and Helpman, E. 1991. Trade, Knowledge Spillovers, and Growth, *European Economic Review,* 35(2-3), 517-526.

Gruber, W.H., Mehta, D. and Vernon, R. 1967. The R&D Factor in International Trade and International Investments of United States Industries, *Journal of Political Economy,* 75(1), 20-37.

Gugler, P. and Brunner, S. 2007. FDI Effects on National Competitiveness: A Cluster Approach, *International Advances in Economic Research,* 13(3), 268-284.

Gundry, L.K. and Welsch, H.P. 2001. The Ambitious Entrepreneur: High Growth Strategies of Women-Owned Enterprises, *Journal of Business Venturing*, 16(5), 453-470.

Haddad, M. and Harrison, A. 1993. Are there Positive Spillovers from Direct Foreign Investment? Evidence from Panel Data for Morocco, *Journal of Development Economics,* 42(1), 51-74.

Hadjimanolis, A. 2000. An Investigation of Innovative Antecedents in Small Firms in the Context of a Small Developing Country, *R&D Management,* 30(3), 235-245.

Hawkins, D.I. 1993. New Business Entrepreneurship in the Japanese Economy, *Journal of Business Venturing*, 8(2), 137-150.

Henderson, R. and Clark, K. 1990. Architectural Innovation: The Reconfiguration of Existing Product Technologies and the Failure of Established Firms, *Administrative Science Quarterly*, 35(1), 9-30.

Henrekson, M. 2005. Entrepreneurship: A Weak Link in the Welfare State?, *Industrial and Corporate Change,* 14(3), 437-467.

Henrekson, M. 2007. Entrepreneurship and Institutions, *Comparative Labor Law and Policy Journal,* 28(4), 717-742.

Hessels, J. 2005. Internationalisation of Dutch SMEs, RePEC (Research Papers in Economics), Research Report M200507, EIM, Zoetermeer.

Hessels, J. 2007a. Innovation and International Involvement of Dutch SMEs, *International Journal of Entrepreneurship and Small Business*, 4(3), 234-255.

Hessels, J. 2007b. Reactie op: Kentering in het Denken over Mondiale Strategieën (Response to: A Shift in Thinking about Global Strategies), *ESB dossier Globaliseren in Nederland*, 92, 59.

Hessels, J. 2008a. Internationalization of Dutch SMEs, in: L. Dana, I.M. Welpe, M. Han, and V. Ratten (Eds), *Handbook of Research on European Business and Entrepreneurship: Towards a Theory of Internationalization*, Edward Elgar, Cheltenham, UK, pp. 494-512.

Hessels, J. 2008b. Overcoming Resource-Constraints through Internationalization? An Empirical Analysis of European SMEs, Research Report H200806, EIM, Zoetermeer.

Hessels, J., Gelderen, M. van and Thurik, A.R. 2008a. Drivers of Entrepreneurial Aspirations at the Country Level: The Role of Start-up Motivations and Social Security, *International Entrepreneurship and Management Journal*, forthcoming.

Hessels, J., Gelderen, M. van and Thurik, A.R. 2008b. Entrepreneurial Aspirations, Motivations, and their Drivers, *Small Busines Economics,* 31(3), forthcoming.

Hessels, J., Overweel, M.J. and Prince, Y.M. 2005. Internationalisering van het Nederlandse MKB. Bestaande en Gewenste Inzichten (Internationalization of Dutch SMEs. Available and Required Insights), General Study A200414, EIM, Zoetermeer.

Hessels, J. and Prince, Y. 2005. International Comparison of the Internationalisation of SMEs, Report prepared for the Ministry of Economic Affairs, EIM, Zoetermeer.

Hessels, J. and Stel, A.J. van. 2007. Export Orientation among New Ventures and Economic Growth, Erasmus Research Institute of Management (ERIM) Report Series 2007-008, Erasmus University Rotterdam, Rotterdam.

Hessels, J. and Stel, A.J. van. 2008. Global Entrepreneurship Monitor and Entrepreneurs' Export Orientation, in: E. Congregado (Ed.), *Measuring Entrepreneurship: Building a Statistical System (International Studies in Entrepreneurship Series, Vol. 16)*, Springer Science, New York, pp. 265-278.

Hessels, J., Stel, A.J. van, Brouwer, P. and Wennekers, A.R.M. 2007. Social Security Arrangements and Early-Stage Entrepreneurial Activity, *Comparative Labor Law and Policy Journal*, 28(4), 743-774.

Hessels, J. and Terjesen, S. 2007. SME Choice of Direct and Indirect Export Modes: Resource Dependency and Institutional Theory Perspectives, RePEc (Research Papers in Economics), Research Report H200712, EIM, Zoetermeer.

Hessels, J. and Terjesen, S. 2008. Entrepreneurial Career Capital, Innovation and New Venture Export Orientation, Research Report H200808, EIM, Zoetermeer.

Hinings, C.R. and Greenwood, R. 1988. *The Dynamics of Strategic Change*, Blackwell, New York.

Hirsch, S. and Bijaoui, I. 1985. R&D Intensity and Export Performance: A Micro View, *Weltwirtschaftliches Archiv*, 121(2), 238-251.

Hitt, M.A., Hoskisson, R.E. and Kim, H. 1997. International Diversification: Effects of Innovation and Firm Performance in Product-Diversified Firms, *Academy of Management Journal,* 40(4), 767-798.

Hollenstein, H. 2005. Determinants of International Activities: Are SMEs Different?, *Small Business Economics*, 24(5), 431-450.

Hughes, K. 1986. *Exports and Technology,* Cambridge University Press, Cambridge, UK.

Hymer, S.H. 1976. *The International Operations of National Firms: A Study of Direct Foreign Investment*, MIT Press, Boston, MA.

Ibeh, K. 2003. Toward a Contingency Framework of Export Entrepreneurship: Conceptualisations and Empirical Evidence, *Small Business Economics,* 20(1), 49-68.

Ibeh, K. 2006. Internationalisation and the Small Business, in: S. Carter and D. Jones-Evans (Eds), *Enterprise and Small Business: Principles, Practice and Policy*, Pearson Education, Harlow, UK, pp. 465-484.

Ireland, D.R., Hitt, M.A., Camp, M.S. and Sexton, D.L. 2001. Integrating Entrepreneurship and Strategic Management Actions to Create Firm Wealth, *Academy of Management Executive*, 15(1), 49-64.

Iyigun, M.F. and Owen, A.L. 1998. Risk, Entrepreneurship and Human-Capital Accumulation, *American Economic Review,* 88(2), 454-457.

Jacobs, J. 1969. *The Economy of Cities*, Vintage, New York.

Jaffe, E.D. and Pasternak, H. 1994. An Attitudinal Model to Determine the Export Intention of Non-Exporting Small Manufacturers, *International Marketing Review*, 11(3), 17-32.

Jaffe, A.B. and Trajtenberg, M. 1998. International Knowledge Flows: Evidence from Patent Citations, NBER Working Paper No. 6507, National Bureau of Economic Research, Cambridge, MA.

Jaffe, A.B., Trajtenberg, M. and Henderson, R. 1993. Geographical Localization of Knowledge Spillovers as Evidenced by Patent Citations, *Quarterly Journal of Economics,*108(3), 577 -599.

Jarillo, J.C. 1988. On Strategic Networks, *Strategic Management Journal*, 9(1), 31–41.

Johanson, J. and Vahlne, J.-E. 1977. The Internationalization Process of the Firm: A Model of Knowledge Development and Increasing Foreign Market Commitments, *Journal of International Business Studies*, 8(1), 23-32.

Johanson, J. and Vahlne, J.-E. 1990. The Mechanism of Internationalization, *International Marketing Review*, 7(4), 11-24.

Johanson, J. and Wiedersheim-Paul, F. 1975. The Internationalization of the Firm: Four Swedish Cases, *Journal of Management Studies*, 12(3), 305-322.

Johnson, J.E. 2004. Factors Influencing the Early Internationalization of High Technology Start-Ups: US and UK Evidence, *Journal of International Entrepreneurship*, 2(1-2), 139-154.

Jones, G. 1996. *The Evolution of International Business,* Routledge, London/New York.

Jones, M.V. and Coviello, N.E. 2005. Internationalisation: Conceptualizing an Entrepreneurial Process of Behaviour in Time, *Journal of International Business Studies,* 36(3), 284-303.

Jovanovic, B. and Lach, S. 1997. Product Innovation and the Business Cycle, *International Economic Review,* 38(1), 3-22.

Karagozoglu, N. and Lindell, M. 1998. Internationalization of Small and Medium-Sized Technology Based Firms, *Journal of Small Business Management,* 36(1), 44-60.

Katila, R. and Shane, S. 2005. When Does Lack of Resources Make New Firms Innovative?, *Academy of Management Journal*, 48(5), 814-829.

Katsikeas, C.S., Leonidou, L.C. and Morgan, N.A. 2000. Firm-Level Export Performance Assessment: Review, Evaluation and Development, *Journal of the Academy of Marketing Science*, 28(4), 493-511.

Katz, J. and Gartner, W.B. 1988. Properties of Emerging Organizations, *Academy of Management Review,* 13(3), 429-441.

Keeble, D., Lawson, C., Smith, H., Moore, B. and Wilkinson, F. 1998. Internationalisation Processes, Networking and Local Embeddedness in Technology-Intensive Small Firms, *Small Business Economics*, 11(4), 327-342.

Kim, P.H., Aldrich, H.E. and Keister, L.A. 2006. Access (Not) Denied: The Impact of Financial, Human and Cultural Capital on Entrepreneurial Entry in the United States, *Small Business Economics,* 27(1), 5-22.

Kirzner, I.M. 1979. *Perception, Opportunity and Profit: Studies in the Theory of Entrepreneurship,* University of Chicago Press, Chicago, IL.

Kleinknecht, A. 1987. Measuring R&D in Small Firms: How Much Are We Missing?, *Journal of Industrial Economics,* 36(2), 253-256.

Kleinknecht, A. and Oostendorp, R. 2002. R&D and Export Performance: Taking Account of Simultaneity, in: A. Kleinknecht and P. Mohnen (Eds), *Innovation and Firm Performance: Econometric Explorations of Survey Data,* Palgrave, London, pp. 310-320.

Kleinknecht, A. and Verspagen, B. 1989. R&D and Market Structure: The Impact of Measurement and Aggregation Problems, *Small Business Economics,* 1(4), 297-302.

Kneller, R. and Pisu, M. 2007. Industrial Linkages and Export Spillovers from FDI, *The World Economy*, 30(1), 105-134.

Knight, G.A. 2000. Entrepreneurship and Marketing Strategy: The SME Under Globalization, *Journal of International Marketing*, 8(2), 12-32.

Knight, G.A. and Cavusgil, S.T. 1996. The Born Global Firm: A Challenge to Traditional Internationalization Theory, in: S.T. Cavusgil and T.K. Madsen. (Eds), *Export Internationalizing Research - Enrichment and Challenges (Advances in International Marketing Series*, *Vol. 8*), JAI Press Inc, New York, pp. 11-26.

Knight, G.A. and Cavusgil, S.T. 2004. Innovation, Organizational Capabilities, and the Born-Global Firm, *Journal of International Business Studies*, 35(2), 124-141.

Knight, G.A., Madsen, T.K. and Servais, P. 2004. An Inquiry into Born-Global Firms in Europe and the USA, *International Marketing Review,* 21(6), 645-665.

Kogut, B. and Chang, S.J. 1991. Technological Capabilities and Japanese Foreign Direct Investment in the United States, *Review of Economics and Statistics,* 73(3), 401-414.

Kokko, A. 1994. Technology, Market Characteristics, and Spillover, *Journal of Development Economics,* 43(2), 279-293.

Kolvereid, L. 1992. Growth Aspirations among Norwegian Entrepreneurs, *Journal of Business Venturing*, 7(3), 209-222.

Kolvereid, L. 1996. Organizational Employment versus Self-Employment: Reasons for Career Choice Intentions, *Entrepreneurship Theory and Practice*, 20(3), 23-31.

Korhonen, H. 1999. *Inward-Outward Internationalization of Small and Medium Enterprises,* Helsinki School of Economics and Business Administratio, Helsinki.

Korhonen, H., Luostarinen, R. and Welch, L. 1996. Internationalization of SMEs: Inward – Outward Patterns and Government Policy, *Management International Review,* 36(4), 315-329.

Kotabe, M. 1992. *Global Sourcing Strategy: R&D, Manufacturing, and Marketing Interfaces*, Quorum Books, New York.

Kuemmerle, W. 1999. Foreign Direct Investment in Industrial Research in the Pharmaceutical and Electronics Industries. Results from a Survey of Multinational Firms, *Research Policy*, 28(2-3), 179-193.

Kuemmerle, W. 2002. Home Base and Knowledge Management in International New Ventures, *Journal of Business Venturing*, 17(2), 99-122.

Kumar, N. and Siddharthan, N.S. 1994. Technology, Firm Size and Export Behaviour in Developing Countries: The Case of Indian Enterprises, *Journal of Development Studies,* 31(2), 289-309.

Kuratko, D.F., Hornsby, J.S. and Naffziger, D.W. 1997. An Examination of Owner's Goals in Sustaining Entrepreneurship, *Journal of Small Business Management*, 35(1), 24-33.

Lachenmaier, S. and Wößmann, L. 2006. Does Innovation Cause Exports? Evidence from Exogenous Innovation Impulses and Obstacles Using German Micro Data, *Oxford Economic Papers,* 58(2), 317-350.

Lafuente, A. and Salas, V. 1989. Types of Entrepreneurs and Firms: The Case of New Spanish Firms, *Strategic Management Journal*, 10(1), 17-30.

Lages, L.F. and Montgomery, D.B. 2004. Export Performance as an Antecedent of Export Commitment and Marketing Strategy Adaptation. Evidence from Small and Medium-Sized Exporters, *European Journal of Marketing*, 38(9-10), 1186-1214.

Landstrom, A. and Stevenson, L.A. 2005. *Entrepreneurship Policy*, Springer, New York.

Lefebvre, E. and Lefebvre, L.-A. 2002. Innovative Capabilities as Determinants of Export Performance and Behaviour: A Longitudinal Study of Manufacturing SMEs, in: A. Kleinknecht and P. Mohnen (Eds), *Innovation and Firm Performance: Econometric Explorations of Survey Data,* Palgrave, London, pp. 281-309.

Leiblein, M.J. and Reuer, J.J. 2004. Building a Foreign Sales Base: The Roles of Capabilities and Alliances for Entrepreneurial Firms, *Journal of Business Venturing*, 19(2), 285-307.

Leonidou, L.C. 1995. Export Stimulation Research: Review, Evaluation and Integration, *International Business Review,* 4(2), 133-156.

Li, L. 2004. Research Note: The Internet's Impact on Export Channel Structure, *Thunderbird International Business Review*, 46(4), 443-463.

Liang, N. and Parkhe, A. 1997. Importer Behavior: The Neglected Counterpart of International Exchange, *Journal of International Business Studies*, 28(3), 495-530.

Liao, J. and Welsh, H. 2003. Social Capital and Entrepreneurial Growth Aspiration: A Comparison of Technology- and Non-Technology Based Nascent Entrepreneurs, *Journal of High Technology Management Research*, 14(1), 149-170.

Littunen, H. 2000. Entrepreneurship and the Characteristic of the Entrepreneurial Personality, *International Journal of Entrepreneurial Behavior and Research*, 6(6), 295-309.

Liu, X., Siler, P., Wang, C. and Wei, Y. 2000. Productivity Spillovers from Foreign Direct Investment: Evidence from UK Industry Level Panel Data, *Journal of International Business Studies,* 31(3), 407-425.

Locke, E.A. and Baum, J.R. 2007. Entrepreneurial Motivation, in: J. R. Baum, M. Frese and R.A. Baron (Eds), *The Psychology of Entrepreneurship (SIOP Organizational Frontiers Series)*, Lawrence Erlbaum, Mahwah, NJ, pp. 93-112.

Lowinger, T.C. 1975. The Technology Factor and the Export Performance of U.S. Manufacturing Industries, *Economic Inquiry,* 13(2), 221-236.

Lu, J.W. and Beamish, P.W. 2001. The Internationalization and Performance of SMEs, *Strategic Management Journal,* 22(6/7), 565-586.

Lu, J.W. and Beamish, P.W. 2006. Partnering Strategies and Performance of SMEs' International Joint Ventures, *Journal of Business Venturing*, 21(4), 461-486.

Lumpkin, G.T. and Dess, G.G. 1996. Clarifying the Entrepreneurial Orientation Construct and Linking it to Performance, *The Academy of Management Review,* 21(1), 135-258.

Luostarinen, R.K. and Welch, L.S. 1990. *International Business Operations,* Export Consulting Ky, Helsinki.

Madsen, K.T. and Servais, P. 1997. The Internationalization of Born Globals: An Evolutionary Process, *International Business Review*, 6(6), 561-583.

Marshall, A. 1920. *Principles of Economics*, Macmillan, London.

McClelland, D.C. 1961. *The Achieving Society*, Van Nostrand, Princeton.

McClelland, D.C. 1975. *Power. The Inner Experience*, Irvington, New York.

McDougall, P.P. 1989. International versus Domestic Entrepreneurship: New Venture Strategic Behaviour and Industry Structure, *Journal of Business Venturing*, 4(6), 387-400.

McDougall, P.P., Covin, J., Robinson, R. Jr., and Herron, L. 1994. The Effects of Industry Growth and Strategic Breadth on New Venture Performance and Strategy Content, *Strategic Management Journal*, 15(7), 537-553.

McDougall, P.P. and Oviatt, B.M. 1991. Global Start-Ups: New Ventures without Geographic Limits, *The Entrepreneurship Forum,* (Winter), 1-5.

McDougall, P.P. and Oviatt, B.M. 1996. New Venture Internationalization, Strategic Change, and Performance: A Follow-Up Study, *Journal of Business Venturing*, 11(1), 23-40.

McDougall, P.P. and Oviatt, B.M. 2000. International Entrepreneurship: The Intersection of Two Research Paths, *Academy of Management Journal*, 43(5), 902-906.

McDougall, P.P., Oviatt, B.M. and Shrader, R.C. 2003. A Comparison of International and Domestic New Ventures, *Journal of International Entrepreneurship,* 1(1), 59-82.

McDougall, P.P., Shane, S. and Oviatt, B.M. 1994. Explaining the Formation of International New Ventures: The Limits of International Business Research, *Journal of Business Venturing*, 9(6), 469-487.

Meyer, K.E. 2004. Perspectives on Multinational Enterprises in Emerging Economies, *Journal of International Business Studies,* 35(4), 259-276.

Miesenbock, K.J. 1988. Small Business and Exporting: A Literature Review, *International Small Business Journal*, 6(2), 42-61.

Minniti, M., Bygrave, W. and Autio, E. 2006. *Global Entrepreneurship Monitor – 2005 Executive Report*, Babson College and London Business School, Wellesley, MA/London.

Moen, Ø. 1999. The Relationship between Firm Size, Competitive Advantages and Export Performance Revisited, *International Small Business Journal*, 18(1), 53-72.

Moen, Ø. 2002. The Born Globals. A New Generation of Small European Exporters, *International Marketing Review,* 19(2-3), 156-175.

Moen, Ø. and Servais, P. 2002. Born Global or Gradual Global? Examining the Export Behavior of Small and Medium-Sized Enterprises, *Journal of International Marketing*, 10(3), 49-72.

Molnar, K. 2003. Australian Export Promotion in a Global Era, Working Papers GOV2003-3, The University of Sydney, Sydney.

Morris, M.H., Miyasaki, N.N., Watters, C.E. and Coombes, S.M. 2006. The Dilemma of Growth: Understanding Venture Size Choices of Women Entrepreneurs, *Journal of Small Business Management*, 44(2), 221-244.

Mueller, S.L. and Thomas, A.S. 2001. Culture and Entrepreneurial Potential: A Nine Country Study of Locus of Control and Innovativeness, *Journal of Business Venturing*, 16(1), 51-75.

Muijnck, J. de, Vroonhof, P. and Snijders, J. 2003. Second Career. Self-Employment and Becoming an Entrepreneur as a Second Career for Dependent Employees, Report prepared for the European Commission, EIM, Zoetermeer.

Muller, A. 2004. *The Rise of Regionalism*, ERIM PhD Series, Rotterdam.

Nagel, A. 2003. Beyond Knut Holt's Fusion Model: Balancing Market Pull and Technology Push, *International Journal of Technology Management,* 25(6/7), 614-622.

Napahiet, J. and Ghoshal, S. 1998. Social Capital, Intellectual Capital, and the Organizational Advantage, *Academy of Management Review,* 23(3), 242-266.

Narula, R. and Marin, A. 2003. FDI-Spillovers, Absorptive Capacities and Human Capital Development: Evidence from Argentina, MERIT-Infonomics Research Memorandum series, Maastricht Economic Research Institute on Innovation and Technology, Maastricht.

Noorderhaven, N., Thurik, A.R., Wennekers, A.R.M. and Stel, A.J. van. 2004. The Role of Dissatisfaction and Per Capita Income in Explaining Self-Employment across 15 European Countries, *Entrepreneurship Theory and Practice,* 28(5), 447-466.

OECD. 1997. *Globalisation and Small and Medium Enterprises (Vol. 1)*, OECD, Paris.

OECD. 2000. *OECD Small and Medium Enterprise Outlook*, OECD, Paris.

OECD. 2002. *Benefits and Wages, OECD Indicators*, OECD, Paris.

OECD. 2004a. *Employment Outlook*, OECD, Paris.

OECD. 2004b. *Promoting Entrepreneurship and Innovative SMEs in a Global Economy: Towards a More Responsible and Inclusive Globalisation*, OECD, Paris.

OECD. 2006. Dynamic Gains from Trade, OECD Trade Policy Working Paper No. 43, OECD, Paris.

Ogbuehi, A.O. and Longfellow, T.A. 1994. Perceptions of U.S. Manufacturing SMEs Concerning Exporting: A Comparison Based on Export Experience, *Journal of Small Business Management,* 32(4), 37-47.

Ohlin, B. 1933. *Interregional and International Trade,* Harvard University Press, Cambridge, MA.

Oliver C. 1997. Sustainable Competitive Advantage: Combining Institutional and Resource Based Views, *Strategic Management Journal*, 18(9), 697-713.

Oviatt, B.M. and McDougall, P.P. 1994. Toward a Theory of International New Ventures, *Journal of International Business Studies*, 25(1), 45-64.

Oviatt, B.M. and McDougall, P.P. 1995. Global Start-Ups: Entrepreneurs on a Worldwide Stage, *Academy of Management Executive*, 9(2), 30-44.

Oviatt, B.M. and McDougall, P.P. 1997. Challenges for Internationalization Process Theory: The Case of International New Ventures, *Management International Review,* 37(2), 85-99.

Oviatt, B.M. and McDougall, P.P. 1999. A Framework for Understanding Accelerated International Entrepreneurship, in: A.M. Rugman and R.W. Wright (Eds), *Research in Global Strategic Management (Vol. 7)*, JAI Press, Stamford, CT, pp. 23-40.

Oviatt, B.M. and McDougall, P.P. 2004. The Internationalization of Entrepreneurship, *Journal of International Business Studies*, 25(1), 2-8.

Oviatt, B.M. and McDougall, P.P. 2005. Defining International Entrepreneurship and Modeling the Speed of Internationalization, *Entrepreneurship Theory and Practice,* 29(5), 537-553.

Parker, S.C. 2004. *The Economics of Self-Employment and Entrepreneurship*, Cambridge University Press, Cambridge, UK.

Parker, S.C. 2005. The Economics of Entrepreneurship: What We Know and What We Don't, *Foundations and Trends in Entrepreneurship,* 1(1), 1-55.

Parker, S.C. and Robson, M.T. 2004. Explaining International Variations in Entrepreneurship: Evidence from a Panel of OECD Countries, *Southern Economic Journal*, 71(2), 287-301.

Pavitt, K., Robson, M. and Townsend, J. 1987. The Size Distribution of Innovating Firms in the UK: 1945-1983, *Journal of Industrial Economics,* 35(3), 297-316.

Peng, M.W. 2005. *Global Strategy,* Thomson, Cincinnati, OH.

Peng, M.W. and Ilinitch, A.Y. 1998. Export Intermediary Firms: A Note on Export Development Research, *Journal of International Business Studies*, 29(3), 609-620.

Peng, M.W. and York, A.S. 2001. Behind Intermediary Performance in Export Trade: Transactions, Agents and Resources, *Journal of International Business Studies*, 32(2), 327-346.

Penrose, E. T. 1959. *The Theory of the Growth of the Firm*, John Wiley, New York.

Pfeffer J. and Salancik, G. 1978. *The External Control of Organizations: A Resource Dependence Perspective*, Harper and Row, New York.

Pieters, D. and Schoukens, P. 1994. Legal Comparison of the Social Security Protection of the Self-Employed in the Member States of the European Community, in: P. Schoukens (Ed.), *Social Protection of the Self-Employed in the European Union*, Kluwer - Sovac Series on Social Security, Deventer-Boston, pp. 5-25.

Podolny, J.M. 1993. A Status-Based Model of Market Competition, *American Journal of Sociology,* 98(4), 829-872.

Popovici, I. 2005. Outward R&D and Knowledge Spillovers: Evidence Using Patent Citations, Working Papers No 516, Florida International University, Department of Economics, Miami, FL.

Porter, M.E. 1990. *The Competitive Advantage of Nations,* Macmillan, New York.

Porter, M.E. 1998. *On Competition,* Harvard Business Review Press, Boston, MA.

Porter, M.E. and Stern, S. 2002. National Innovative Capacity, in: M.E. Porter, J.D. Sachs, P.K. Cornelius, J.W. McArthur and K. Schwab (Eds), *The Global Competitiveness Report 2001-2002*, Oxford University Press, New York, pp. 102-118.

Powell, W.W. and DiMaggio, P.J. 1991. *The New Institutionalism in Organizational Analysis,* University of Chicago Press, Chicago, IL.

Preston, L. and Heller, C.O. 1997. Special Issue on Small and Medium-Sized Enterprises in the Global Economy, *Small Business Economics,* 9(1), 1-85.

Rasmussen, E.S., Madsen T.K. and Evangelista, F. 2001. The Founding of the Born Global Company in Denmark and Australia: Sensemaking and Networking, *Asia Pacific Journal of Marketing and Logistics*, 13(3), 75-107.

Redding, S. 2002. Path Dependence, Endogenous Innovation, and Growth, *International Economic Review,* 43(4), 1215-1248.

Rennie, M.W. 1993. Global Competitiveness: Born Global, *The McKinsey Quarterly*, 4, 45-52.

Requena-Silvente, F. 2005. The Decision to Enter and Exit Foreign Markets: Evidence from UK SMEs, *Small Business Economics*, 25(3), 237-253.

Reuber, A.R. and Fischer, E. 1997. The Influence of the Management Team's International Experience on the Internationalization Behaviors of SMEs, *Journal of International Business Studies*, 28(4), 807-825.

Reynolds, P.D. 1997. New and Small Firms in Expanding Markets, *Small Business Economics,* 9(1), 78-84.

Reynolds, P.D., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, I., Lopez-Garcia, P. and Chin, N. 2005. Global Entrepreneurship Monitor: Data Collection Design and Implementation 1998-2003, *Small Business Economics*, 24(3), 205-231.

Reynolds, P.D., Bygrave, W.D., Autio, E., Cox, L.W. and Hay, M. 2002. *Global Entrepreneurship Monitor, 2002 Executive Report*, Babson College, Wellesley, MA.

Reynolds, P.D. and Miller, B.A. 1992. New Firm Gestation: Conception, Birth and Implications for Research, *Journal of Business Venturing,* 7(5), 405-417.

Rialp, A., Rialp, J. and Knight, G.A. 2005. The Phenomenon of Early Internationalizing Firms: What Do We Know After a Decade (1993-2003) of Scientific Inquiry?, *International Business Review*, 14(2), 147-166.

Ricardo, D. 1817. *On the Principles of Political Economy and Taxation,* John Murray, London.

Roberts, E.B. and Senturia, T.A. 1996. Globalizing the Emerging High-Technology Company, *Industrial Marketing Management*, 25(6), 491-506.

Robichaud, Y., McGraw, E. and Roger, A. 2001. Toward the Development of a Measuring Instrument for Entrepreneurial Motivation, *Journal of Developmental Entrepreneurship*, 6(2), 189-201.

Robinson, P. and Sexton, E. 1994. The Effect of Education and Experience on Self-Employment Success, *Journal of Business Venturing,* 9(2), 141-156.

Romer, P.M. 1986. Increasing Returns and Long-Run Growth, *Journal of Political Economy*, 94(5), 1002-1037.

Romer, P.M. 1990. Endogenous Technological Change, *Journal of Political Economy*, 98(5, part 2), S71-S102.

Root, F. 1994. *Entry Strategies for International Markets,* Lexington Books, Lexington, MA.

Roper, S. and Love, J.H. 2002. Innovation and Export Performance: Evidence from the UK and German Manufacturing Plants*, Research Policy*, 31(7), 1087-1102.

Rosenberg, N. 1994. *Exploring the Black Box: Technology, Economics and History*, Cambridge University Press*,* Cambridge, UK.

Rothwell, R. 1988. Small Firms, Innovation and Industrial Change, *Small Business Economics,* 1(1), 51-64.

Rothwell, R. 1991. External Networking and Innovation in Small and Medium-Sized Manufacturing Firms in Europe, *Technovation,* 11(2), 93-112.

Rothwell, R. and Dodgson, M. 1994. Innovation and Size of Firm, in: M. Dodgson and R. Rothwell (Eds), *The Handbook of Industrial Innovation,* Edward Elgar, Aldershot, pp. 310-324.

Rugman. A.M. and Wright. R.W. (Eds). 1999. *Research in Global Strategic Management: International Entrepreneurship,* JAI Press, Stamford, CT.

Ruzzier, M., Hisrich, R.D. and Antoncic, B. 2006. SME Internationalization Research: Past, Present and Future, *Journal of Small Business and Enterprise Development,* 13(4), 476-497.

Sapienza, H.J., Autio, E., George, G. and Zahra, S.A. 2006. A Capabilities Perspective on the Effects of Early Internationalization on Firm Survival and Growth, *Academy of Management Journal*, 31(4), 914-933.

Sapienza, H.J., De Clercq, D. and Sandberg, W.R. 2005. Antecedents of International and Domestic Learning Effort, *Journal of Business Venturing,* 20(4), 437-457.

Scheinberg, S. and MacMillan, I.C. 1988. An 11 Country Study of Motivation to Start a Business, in: B.A. Kirchhoff, W.A. Long, W. E. McMullan, K.H. Vesper and W.E. Wetzel (Eds), *Frontiers of Entrepreneurship Research*, Babson College, Wellesley, MA, pp. 669-687.

Scherer, F.M. 1991. Changing Perspectives on the Firm Size Problem, in: Z.J. Acs and D.B. Audretsch (Eds), *Innovation and Technological Change: An International Comparison*, University of Michigan Press, Ann Arbor, pp. 24-38.

Schumpeter, J.A. 1934. *The Theory of Economic Development*, Harvard University Press, Cambridge, MA.

Schumpeter, J.A. 1939. *Business Cycles*, McGraw-Hill, New York.

Schumpeter, J.A. 1950. *Capitalism, Socialism and Democracy*, Harper and Sons, New York.

Scott, J. 1987. *Organizations*, Simon and Schuster, Englewood Cliffs, NJ.

Scott, W.R. 1995. *Institutions and Organizations*, Sage, Thousand Oaks, CA.

Shane, S. 2003. *A General Theory of Entrepreneurship: the Individual-Opportunity Nexus,* Edward Elgar, Cheltenham, UK.

Shane, S., Kolvereid, L. and Westhead, P. 1991. An Exploratory Examination of the Reasons Leading to New Firm Formation across Country and Gender, *Journal of Business Venturing*, 6(6), 431-446.

Shane, S., Locke, E. and Collins, C.J. 2003. Entrepreneurial Motivation, *Human Resource Management Review*, 13(2), 257-280.

Shane, S. and Venkataraman, S. 2000. The Promise of Entrepreneurship as a Field of Research, *Academy of Management Review,* 25(1), 217–226.

Sharma, V.M. and Erramilli, M.K. 2004. Resource-Based Explanation of Entry Mode Choice, *Journal of Marketing Theory and Practice*, 12(1), 1-18.

Sherer, P.D. and Lee, K. 2002. Institutional Change in Large Law Firms: A Resource Dependency and Institutional Theory Perspective, *Academy of Management Journal*, 45(1), 102-119.

Shrader, R.C., Oviatt, B.M. and McDougall, P.P. 2000. How New Ventures Exploit Trade-Offs among International Risk Factors: Lessons for the Accelerated Internationalization of the 21st Century, *Academy of Management Journal*, 43(6), 1227-1247.

Simpson, C.L. and Kujawa, D. 1974. The Export Decision Process: An Empirical Inquiry, *Journal of International Business Studies*, 5(1), 107-117.

Sjoholm, F. 1996. International Transfer of Knowledge. The Role of International Trade and Geographic Proximity, *Weltwirtschaftliches Archiv*, 132(1), 97-115.

Smallbone D., Baldock R. and Burgess S. 2002. Targeted Support for High-Growth Start-Ups: Some Policy Issues, *Environment and Planning C – Government and Policy*, 20(2), 195-209.

Smallbone, D. and Welter, F. 2001. The Distinctiveness of Entrepreneurship in Transition Economies, *Small Business Economics,* 16(4), 249-262.

Smallbone, D. and Wyer, P. 1995. Export Activity in SMEs, CEEDR, Working Paper Series No 9, Center for Enterprise and Economic Development Research, Terre Haute, IN.

Smith, A. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations,* Methuan and Co., London.

Stam, E., Audretsch, D.B. and Meijaard, J. 2007. Renascent Entrepreneurship - Entrepreneurial Preferences Subsequent to Firm Exit, in: E. Zacharakis, S. Alvarez, P. Davidsson, J. Fiet and G. George (Eds), *Frontiers of Entrepreneurship Research 2006*, Babson College, Wellesley, MA, pp.174-187.

Starr, J. and MacMillan, I. 1990. Resource Cooptation via Social Contracting: Resource Acquisition Strategies for New Ventures, *Strategic Management Journal*, 11(1), 79-93.

Steinberger, T. 2005. Social Security and Entrepreneurial Activity, Working Paper, Università di Salerno, Center for Studies in Economics and Finance, Salerno.

Stel, A.J. van. 2006. *Empirical Analysis of Entrepreneurship and Economic Growth (International Studies in Entrepreneurship Series, Vol. 13)*, Springer Science, New York.

Stel, A.J. van, Carree, M. and Thurik A.R. 2005. The Effect of Entrepreneurial Activity on National Economic Growth, *Small Business Economics*, 24(3), 311-321.

Stel, A.J. van and Nieuwenhuijsen, H.R. 2004. Knowledge Spillovers and Economic Growth: An Analysis Using Data of Dutch Regions in the Period 1987-1995, *Regional Studies,* 38(4), 393-407.

Sterlacchini, A. 1999. Do Innovative Activities Matter to Small Firms in Non-R&D-Intensive Industries? An application to export performance, *Research Policy*, 28(8), 819-832.

Stern, R.M. and Maskus, E.K. 1981. Determinants of the Structure of U.S. Foreign Trade, 1958-76, *Journal of International Economics,* 11(2), 207-224.

Sternberg, R. and Wennekers, A.R.M. 2005. Determinants and Effects of New Business Creation: Investigations Using Global Entrepreneurship Monitor Data, *Small Business Economics,* 24(3), 205-231.

Stevenson, L.A. and Landstrom, A. 2001. Entrepreneurship Policy for the Future: Best Practice Components, Keynote speech for the ICSB Conference, 18 June 2001, Taipei.

Storey, D.J. 1999. Six Steps to Heaven: Evaluating the Impact of Public Policies to Support Small Business in Developed Economies, in: D.L. Sexton and H. Landström (Eds), *Handbook of Entrepreneurship*, Blackwell, Oxford, pp. 176-194.

Terjesen, S., O'Gorman, C. and Acs, Z.J. 2008. Intermediated Mode of Internationalization: New Software Ventures in Ireland and India, *Entrepreneurship & Regional Development*, 20(1), 89-109.

Tesfom, G., Lutz, C. and Ghauri, P. 2004. Comparing Export Marketing Channels: Developed versus Developing Countries, *International Marketing Review*, 21(4-5), 409-422.

Thirkell, P.C. and Dau, R. 1998. Export Performance: Success Determinants for New Zealand Manufacturing Exporters, *European Journal of Marketing*, 32(9/10), 813-829.

Thurik, A.R. Carree, M.A., Stel A.J. van and Audretsch, D.B. 2008. Does Self-Employment Reduce Unemployment?, *Journal of Business Venturing,* forthcoming.

Thurik, A.R. and Wennekers, A.R.M. 2004. Entrepreneurship, Small Business and Economic Growth, *Journal of Small Business and Enterprise Development,* 11(1), 140-149.

Trabold, H. 2002. Export Intermediation: An Empirical Test of Peng and Ilinitch, *Journal of International Business Studies*, 33(2), 327-44.

UNCTAD. 2006. *World Investment Report 2006. FDI from Developing and Transition Economies: Implications for Development*, United Nations, New York/Geneva.

UNCTAD. 2008. *United Nations Conference on Trade and Development. Handbook of Statistics 2006-2007*, United Nations, New York/Geneva.

Verheul, I., Wennekers, A.R.M., Audretsch, D.B. and Thurik, A.R. 2002. An Eclectic Theory of Entrepreneurship, in: D.B. Audretsch, A.R. Thurik, I. Verheul and A.R.M. Wennekers (Eds), *Entrepreneurship: Determinants and Policy in a European-US Comparison,* Kluwer Academic Publishers, Boston/ Dordrecht, pp. 11-81.

Vermeulen, P.A.M., O'Shaughnessy, K.C. and Jong, J.P.J. de. 2003. Innovation in SMEs: An Empirical Investigation of the Input-Throughput-Output-Performance Model, Research Report N200302, EIM, Zoetermeer.

Vernon, R. 1966. International Investment and International Trade in the Product Cycle, *Quarterly Journal of Economics*, 80(2), 190-207.

Vestal, J.E. 1989. Evidence on the Determinants and Factor Content Characteristics of Japanese Technology Trade, 1977-1982, *Review of Economics and Statistics,* 71(4), 565-571.

Wakelin, K. 1998. Innovation and Export Behaviour at the Firm Level, *Research Policy*, 26(7-8), 829-841.

Wang, J.-Y. and Blomström, M. 1992. Foreign Investment and Technology Transfer: A Simple Model, *European Economic Review,* 36(1), 137-155.

Welch, L.S. 1990. Internationalisation by Australian Franchisers, *Asia Pacific Journal of Management,* 7(2), 101-121.

Welch, L.S. and Luostarinen, R.K. 1988. Internationalization: Evolution of a Concept, *Journal of General Management*, 14(2), 35-55.

Welch, L.S. and Luostarinen, R.K. 1993. Inward-Outward Connections in Internationalization, *Journal of International Marketing,* 1(1), 44-56.

Wennekers, A.R.M. 2006. *Entrepreneurship at Country Level; Economic and Non-Economic Determinants*, ERIM PhD Series, Rotterdam.

Wennekers, A.R.M. and Thurik, A.R. 1999. Linking Entrepreneurship and Economic Growth, *Small Business Economics*, 13(1), 27-55.

Wennekers, A.R.M., Stel, A.J. van, Thurik, A.R. and Reynolds, P. 2005. Nascent Entrepreneurship and the Level of Economic Development, *Small Business Economics*, 24(3), 293-309.

Wernerfelt, R. 1984. A Resource-Based View of the Firm, *Strategic Management Journal*, 5(2), 171-180.

Westhead, P. 1995. Exporting and Non-Exporting Small Firms in Great Britain, *International Journal of Entrepreneurial Behavior and Research*, 1(2), 6-36.

Westhead, P., Wright, M. and Ucbasaran, D. 2001. The Internationalization of New and Small Firms. A Resource-Based View, *Journal of Business Venturing*, 16(4), 333-358.

Westhead, P., Wright, M. and Ucbasaran, D. 2002. International Market Selection Strategies Selected By 'Micro' and 'Small' Firms, *Omega*, 30(1), 51-68.

Westhead, P., Wright. M. and Ucbasaran, D. 2004. Internationalization of Private Firms: Environmental Turbulence and Organizational Strategies and Resources, *Entrepreneurship & Regional Development,* 16(6), 501-522.

Westhead, P., Wright, M., Ucbasaran, D. and Martin, F. 2001. International Market Selection Strategies of Manufacturing and Service Firms, *Entrepreneurship & Regional Development*, 16(6), 501-522.

Westney, D.E. 2003. Japanese Enterprise Faces the Twenty-First Century, in: P. DiMaggio (Ed.), *The Twenty-First-Century Firm: Changing Economic Organization in International Perspective,* Princeton University Press, Princeton.

Wiklund, J., Davidsson, P. and Delmar, F. 2003. What Do They Think and Feel About Growth? An Expectancy-Value Approach to Small Business Managers' Attitudes toward Growth, *Entrepreneurship Theory and Practice*, 27(3), 247-270.

Wiklund, J. and Shepherd, D. 2003. Aspiring for, and Achieving Growth: The Moderating Role of Resources and Opportunities, *Journal of Management Studies*, 40(8), 1919-1941.

Wilkinson, T.J. 2006. Entrepreneurial Climate and U.S. State Foreign Trade Offices as Predictors of Export Success, *Journal of Small Business Management*, 44(1), 99-113.

Williamson, O.E. 1975. *Markets and Hierarchies: Analysis and Antitrust Implications,* The Free Press, New York.

Williamson, O.E. 1998. The Institutions of Governance, *American Economic Review*, 88(2), 75-79.

Willmore, L. 1992. Transnationals and Foreign Trade: Evidence from Brazil, *Journal of Development Studies,* 28(2), 314-335.

Wilson, F., Marlino, D. and Kickul, J. 2004. Our Entrepreneurial Future: Examining the Diverse Attitudes and Motivations of Teens across Gender and Ethnic Identity, *Journal of Developmental Entrepreneurship*, 9(3), 177-197.

Witteloostuijn, A. van and Boone, C. 2006. A Resource-Based Theory of Market Structure and Organizational Form, *Academy of Management Review*, 31(2), 409-426.

Wong, P.K., Ho, Y.P. and Autio, E. 2005. Entrepreneurship, Innovation, and Economic Growth: Evidence from GEM Data, *Small Business Economics*, 24(3), 335-350.

Wright, R.W. and Ricks, D.A. 1994. Trends in International Business Research: Twenty-Five Years Later, *Journal of International Business Studies*, 25(4), 687-701.

Yeoh, P.-L. 2004. International Learning: Antecedents and Performance Implications among Newly Internationalizing Companies in an Exporting Context, *International Marketing Review,* 21(4-5), 511-535.

Yeoh, P.-L. and Jeong, I. 1995. Contingency Relationships between Entrepreneurship, Export Channel Structure and Environment, *European Journal of Marketing,* 29(8), 95-115.

Yli-Renko, H., Autio, E. and Sapienza, H.J. 2001. Social Capital, Knowledge Acquisition, and Knowledge Exploitation in Young Technology-Based Firms, *Strategic Management Journal*, 22(6-7), 587-613.

Yli-Renko, H.K., Autio, E. and Tontti, V. 2002. Social Capital, Knowledge Acquisition, and the International Growth of Technology-Based New Firms, *International Business Review*, 11(3), 279-304.

Young, S. 1987. Business Strategy and the Internationalization of Business: Recent Approaches, *Managerial and Decision Economics,* 8(1), 31-40.

Young, S., Hood N. and Dunlop S. 1988. Global Strategies, Multinational Subsidiary Roles and Economic Impact in Scotland, *Regional Studies*, 22(6), 487-497.

Zacharakis, A. 1998. Entrepreneurial Entry into Foreign Markets: A Transaction Costs Perspective, *Entrepreneurship Theory and Practice*, 21(3), 23-39.

Zahra, S.A. 2005. A Theory of International New Ventures: A Decade of Research, *Journal of International Business Studies*, 36(1), 20-28.

Zahra, S.A., Hayton, J., Marcel, J. and O'Neill, H. 2001. Fostering Entrepreneurship During International Expansion: Managing Key Challenges, *European Management Journal*, 19(4), 359-369.

Zahra, S.A., Ireland, R. and Hitt, M.A. 2000. International Expansion by New Venture Firms: International Diversity, Mode of Market Entry, Technological Learning, and Performance, *Academy of Management Journal,* 43(5), 925-950.

Zahra, S.A., Korri, J.S. and Yu, J. 2005. Cognition and International Entrepreneurship: Implications for Research on International Opportunity Recognition and Exploitation, *International Business Review*, 14(2), 129-146.

Zahra, S.A., Kuratko, D. and Jennings, D.F. 1999. Corporate Entrepreneurship in A Global Economy, *Entrepreneurship Theory and Practice*, 24(1), 5-91.

Zahra, S.A., Matherne, B.P. and Carleton, J. 2003. Technological Resource Leveraging and the Internationalisation of New Ventures, *Journal of International Entrepreneurship*, 1(2), 163-186.

Zahra, S.A., Neubaum, D.O. and Huse, M. 1997. The Effect of the Environment on Export Performance among Telecommunications New Ventures, *Entrepreneurship Theory and Practice*, 22(1), 25-46.

Zhao, H. and Li, H. 1997. R&D and Export: An Empirical Analysis of Chinese Manufacturing Firms, *Journal of High Technology Management,* 8(1), 89-106.

Acknowledgements

Writing this dissertation has been a great journey and at this place I would like to thank a number of people who have been involved in this process. First of all I would like to thank Roy Thurik for being my supervisor. I learned a lot from you and I appreciate it that you were always available for advice when I needed it. I hope we will continue working together in the coming years. I would like to thank Wim Hulsink, Charles van Marrewijk and Leo Sleuwaegen for taking part in the small committee and for providing feedback on my manuscript. Erkko Autio and Simon Parker, thanks for being willing to join the grand committee and for coming all the way to Rotterdam for the defence.

A great "thank you" goes to my co-authors who worked together with me on one or more of the chapters included in this book: Peter Brouwer, Dirk De Clercq, Marco van Gelderen, André van Stel, Siri Terjesen, Roy Thurik and Sander Wennekers. It has been wonderful to work with you and with most of you I had many inspiring discussions, which helped to improve our work.

Two people have been of utmost importance throughout this PhD trajectory and they deserve special thanks, these are André van Stel and Siri Terjesen. André, thank you for supporting me to start this dissertation, for your unsurpassed willingness to exchange thoughts and ideas on all kind of research-related issues and for your constructive feedback on most of the chapters. Siri, thanks for your insistence on making me start this PhD and for the faith you had in me all along. It has been a pleasure working with you and I really hope we will keep on working together in the coming years. Also many thanks for inviting me over for research visits at Queensland University of Technology in Brisbane, Australia and at Texas Christian University in Fort Worth, USA. Both these visits offered great experiences and were of extreme importance to my research.

Karen Meijer and Siri Terjesen, thank you for being willing to act as my 'paranimfen', it means a lot to me and it is encouraging to know that you will stand beside me during the PhD defense.

In the past years I had the opportunity to present my work at several academic conferences and workshops and my research benefited greatly from the feedback I received on these occasions. I would like to thank the editors of the academic journals and books in which some of my work has been published for granting permission to use published materials for this book.

I thank my colleagues at EIM and Erasmus University Rotterdam for all their interest and support. It has been most helpful to work in an environment in which many people are interested in similar research topics. Also, the Global Entrepreneurship Monitor (GEM) network of international researchers and the possibility to use the GEM data have been of utmost importance. I would like to give thanks to Jacqueline Snijders who facilitated the start-up of this dissertation and who highlighted the importance of making a good planning. I thank Peter van der Zwan for giving some advice on the multinomial logistic regressions. Furthermore, I am grateful to Ruud Hoevenagel for providing the opportunity to include questions in an internet survey held in 2006. Thanks to Shirley Cooper for the English language check.

I would like to thank my friends and all others who have shown interest and encouragement, which I very much appreciated. Final thanks go to my family, in particular my brothers Arjan and André, and, above all, my parents. Thank you for all your love and support throughout the years and I hope to see a bit more of you from now on.

Jolanda Hessels

The Hague, September 2008

Curriculum Vitae

Jolanda Hessels (1976) is working as Researcher at the Strategic Research department of EIM Business and Policy Research. She also has a position as Assistant Professor at Erasmus University Rotterdam (Erasmus School of Economics). Her research interests include the internationalization of new and small ventures, the role of foreign direct investment as a source of knowledge spillovers, and the relation between entrepreneurship, institutions and economic development. Her work has been published in several journals, including *Small Business Economics*, and as book chapters in edited volumes. Jolanda is also the project coordinator of the Global Entrepreneurship Monitor (GEM) for the Netherlands.

ERASMUS RESEARCH INSTITUTE OF MANAGEMENT (ERIM)

ERIM PH.D. SERIES

RESEARCH IN MANAGEMENT

ERIM Electronic Series Portal: http://hdl.handle.net/1765/1

Althuizen, N.A.P., *Analogical Reasoning as a Decision Support Principle for Weakly Structured Marketing Problems*, Promotor: Prof. dr. ir. B. Wierenga, EPS-2006-095-MKT, ISBN: 90-5892-129-8, http://hdl.handle.net/1765/8190

Alvarez, H.L., *Distributed Collaborative Learning Communities Enabled by Information Communication Technology*, Promotor: Prof. dr. K. Kumar, EPS-2006-080-LIS, ISBN: 90-5892-112-3, http://hdl.handle.net/1765/7830

Appelman, J.H., *Governance of Global Interorganizational Tourism Networks: Changing Forms of Co-ordination between the Travel Agency and Aviation Sector*, Promotors: Prof. dr. F.M. Go & Prof. dr. B. Nooteboom, EPS-2004-036-MKT, ISBN: 90-5892-060-7, http://hdl.handle.net/1765/1199

Baquero, G, *On Hedge Fund Performance, Capital Flows and Investor Psychology*, Promotor: Prof. dr. M.J.C.M. Verbeek, EPS-2006-094-F&A, ISBN: 90-5892-131-X, http://hdl.handle.net/1765/8192

Berens, G., *Corporate Branding: The Development of Corporate Associations and their Influence on Stakeholder Reactions*, Promotor: Prof. dr. C.B.M. van Riel, EPS-2004-039-ORG, ISBN: 90-5892-065-8, http://hdl.handle.net/1765/1273

Berghe, D.A.F. van den, *Working Across Borders: Multinational Enterprises and the Internationalization of Employment*, Promotors: Prof. dr. R.J.M. van Tulder & Prof. dr. E.J.J. Schenk, EPS-2003-029-ORG, ISBN: 90-5892-05-34, http://hdl.handle.net/1765/1041

Berghman, L.A., *Strategic Innovation Capacity: A Mixed Method Study on Deliberate Strategic Learning Mechanisms*, Promotor: Prof. dr. P. Mattyssens, EPS-2006-087-MKT, ISBN: 90-5892-120-4, http://hdl.handle.net/1765/7991

Bijman, W.J.J., *Essays on Agricultural Co-operatives: Governance Structure in Fruit and Vegetable Chains*, Promotor: Prof. dr. G.W.J. Hendrikse, EPS-2002-015-ORG, ISBN: 90-5892-024-0, http://hdl.handle.net/1765/867

Bispo, A., *Labour Market Segmentation: An investigation into the Dutch hospitality industry*, Promotors: Prof. dr. G.H.M. Evers & Prof. dr. A.R. Thurik, EPS-2007-108-ORG, ISBN: 90-5892-136-9, http://hdl.handle.net/1765/10283

Blindenbach-Driessen, F., *Innovation Management in Project-Based Firms*, Promotor: Prof. dr. S.L. van de Velde, EPS-2006-082-LIS, ISBN: 90-5892-110-7, http://hdl.handle.net/1765/7828

Boer, C.A., *Distributed Simulation in Industry,* Promotors: Prof. dr. A. de Bruin & Prof. dr. ir. A. Verbraeck, EPS-2005-065-LIS, ISBN: 90-5892-093-3, http://hdl.handle.net/1765/6925

Boer, N.I., *Knowledge Sharing within Organizations: A situated and Relational Perspective,* Promotor: Prof. dr. K. Kumar, EPS-2005-060-LIS, ISBN: 90-5892-086-0, http://hdl.handle.net/1765/6770

Boer-Sorbán, K., *Agent-Based Simulation of Financial Markets: A modular, Continuous-Time Approach,* Promotor: Prof. dr. A. de Bruin, EPS-2008-119-LIS, ISBN: 90-5892-155-0, http://hdl.handle.net/1765/10870

Boon, C.T., *HRM and Fit: Survival of the Fittest!?,* Promotors: Prof. dr. J. Paauwe & Prof. dr. D.N. den Hartog, EPS-2008-129-ORG, ISBN: 978-90-5892-162-8, http://hdl.handle.net/1765/1

Brito, M.P. de, *Managing Reverse Logistics or Reversing Logistics Management?* Promotors: Prof. dr. ir. R. Dekker & Prof. dr. M. B. M. de Koster, EPS-2004-035-LIS, ISBN: 90-5892-058-5, http://hdl.handle.net/1765/1132

Brohm, R., *Polycentric Order in Organizations: A Dialogue between Michael Polanyi and IT-Consultants on Knowledge, Morality, and Organization,* Promotors: Prof. dr. G. W. J. Hendrikse & Prof. dr. H. K. Letiche, EPS-2005-063-ORG, ISBN: 90-5892-095-X, http://hdl.handle.net/1765/6911

Brumme, W.-H., *Manufacturing Capability Switching in the High-Tech Electronics Technology Life Cycle,* Promotors: Prof. dr. ir. J.A.E.E. van Nunen & Prof. dr. ir. L.N. Van Wassenhove, EPS-2008-126-LIS, ISBN: 978-90-5892-150-5, http://hdl.handle.net/1765/1

Campbell, R.A.J., *Rethinking Risk in International Financial Markets*, Promotor: Prof. dr. C.G. Koedijk, EPS-2001-005-F&A, ISBN: 90-5892-008-9, http://hdl.handle.net/1765/306

Chen, H., *Individual Mobile Communication Services and Tariffs*, Promotor: Prof. dr. L.F.J.M. Pau, EPS-2008-123-LIS, ISBN: 90-5892-158-1, http://hdl.handle.net/1765/11141

Chen, Y., *Labour Flexibility in China's Companies: An Empirical Study*, Promotors: Prof. dr. A. Buitendam & Prof. dr. B. Krug, EPS-2001-006-ORG, ISBN: 90-5892-012-7, http://hdl.handle.net/1765/307

Damen, F.J.A., *Taking the Lead: The Role of Affect in Leadership Effectiveness*, Promotor: Prof. dr. D.L. van Knippenberg, EPS-2007-107-ORG, http://hdl.handle.net/1765/10282

Daniševská, P., *Empirical Studies on Financial Intermediation and Corporate Policies*, Promotor: Prof. dr. C.G. Koedijk, EPS-2004-044-F&A, ISBN: 90-5892-070-4, http://hdl.handle.net/1765/1518

Delporte-Vermeiren, D.J.E., *Improving the Flexibility and Profitability of ICT-enabled Business Networks: An Assessment Method and Tool*, Promotors: Prof. mr. dr. P.H.M. Vervest & Prof. dr. ir. H.W.G.M. van Heck, EPS-2003-020-LIS, ISBN: 90-5892-040-2, http://hdl.handle.net/1765/359

Derwall, J.M.M., *The Economic Virtues of SRI and CSR*, Promotor: Prof. dr. C.G. Koedijk, EPS-2007-101-F&A, ISBN: 90-5892-132-8, http://hdl.handle.net/1765/8986

Dijksterhuis, M., *Organizational Dynamics of Cognition and Action in the Changing Dutch and US Banking Industries*, Promotors: Prof. dr. ir. F.A.J. van den Bosch & Prof. dr. H.W. Volberda, EPS-2003-026-STR, ISBN: 90-5892-048-8, http://hdl.handle.net/1765/1037

Elstak, M.N., *Flipping the Identity Coin: The Comparative Effect of Perceived, Projected and Desired Organizational Identity on Organizational Identification and Desired Behavior*, Promotor: Prof. dr. C.B.M. van Riel, EPS-2008-117-ORG, ISBN: 90-5892-148-2, http://hdl.handle.net/1765/10723

Fenema, P.C. van, *Coordination and Control of Globally Distributed Software Projects*, Promotor: Prof. dr. K. Kumar, EPS-2002-019-LIS, ISBN: 90-5892-030-5, http://hdl.handle.net/1765/360

Fleischmann, M., *Quantitative Models for Reverse Logistics*, Promotors: Prof. dr. ir. J.A.E.E. van Nunen & Prof. dr. ir. R. Dekker, EPS-2000-002-LIS, ISBN: 35-4041-711-7, http://hdl.handle.net/1765/1044

Flier, B., *Strategic Renewal of European Financial Incumbents: Coevolution of Environmental Selection, Institutional Effects, and Managerial Intentionality*, Promotors: Prof. dr. ir. F.A.J. van den Bosch & Prof. dr. H.W. Volberda, EPS-2003-033-STR, ISBN: 90-5892-055-0, http://hdl.handle.net/1765/1071

Fok, D., *Advanced Econometric Marketing Models*, Promotor: Prof. dr. Ph.H.B.F. Franses, EPS-2003-027-MKT, ISBN: 90-5892-049-6, http://hdl.handle.net/1765/1035

Ganzaroli, A., *Creating Trust between Local and Global Systems*, Promotors: Prof. dr. K. Kumar & Prof. dr. R.M. Lee, EPS-2002-018-LIS, ISBN: 90-5892-031-3, http://hdl.handle.net/1765/361

Gilsing, V.A., *Exploration, Exploitation and Co-evolution in Innovation Networks*, Promotors: Prof. dr. B. Nooteboom & Prof. dr. J.P.M. Groenewegen, EPS-2003-032-ORG, ISBN: 90-5892-054-2, http://hdl.handle.net/1765/1040

Ginkel, W.P. van, *The Use of Distributed Information in Decision Making Groups: The Role of Shared Task Representations*, Promotor: Prof. dr. D. van Knippenberg, EPS-2007-097-ORG, http://hdl.handle.net/1765/8424

Govers, R., *Virtual Tourism Destination Image: Glocal Identities Constructed, Perceived and Experienced*, Promotors: Prof. dr. F.M. Go & Prof. dr. K. Kumar, EPS-2005-069-MKT, ISBN: 90-5892-107-7, http://hdl.handle.net/1765/6981

Graaf, G. de, *Tractable Morality: Customer Discourses of Bankers, Veterinarians and Charity Workers*, Promotors: Prof. dr. F. Leijnse & Prof. dr. T. van Willigenburg, EPS-2003-031-ORG, ISBN: 90-5892-051-8, http://hdl.handle.net/1765/1038

Groot, E.A. de, *Essays on Economic Cycles*, Promotors: Prof. dr. Ph.H.B.F. Franses & Prof. dr. H.R. Commandeur, EPS-2006-091-MKT, ISBN: 90-5892-123-9, http://hdl.handle.net/1765/8216

Gutkowska, A.B., *Essays on the Dynamic Portfolio Choice*, Promotor: Prof. dr. A.C.F. Vorst, EPS-2006-085-F&A, ISBN: 90-5892-118-2, http://hdl.handle.net/1765/7994

Hagemeijer, R.E., *The Unmasking of the Other*, Promotors: Prof. dr. S.J. Magala & Prof. dr. H.K. Letiche, EPS-2005-068-ORG, ISBN: 90-5892-097-6, http://hdl.handle.net/1765/6963

Halderen, M.D. van, *Organizational Identity Expressiveness and Perception Management: Principles for Expressing the Organizational Identity in Order to Manage the Perceptions and Behavioral Reactions of External Stakeholders*, Promotor: Prof. dr. S.B.M. van Riel, EPS-2008-122-ORG, ISBN: 90-5892-153-6, http://hdl.handle.net/1765/10872

Hartigh, E. den, *Increasing Returns and Firm Performance: An Empirical Study*, Promotor: Prof. dr. H.R. Commandeur, EPS-2005-067-STR, ISBN: 90-5892-098-4, http://hdl.handle.net/1765/6939

Hermans. J.M., *ICT in Information Services; Use and Deployment of the Dutch Securities Trade, 1860-1970,* Promotor: Prof. dr. drs. F.H.A. Janszen, EPS-2004-046-ORG, ISBN 90-5892-072-0, http://hdl.handle.net/1765/1793

Heugens, P.P.M.A.R., *Strategic Issues Management: Implications for Corporate Performance*, Promotors: Prof. dr. ir. F.A.J. van den Bosch & Prof. dr. C.B.M. van Riel, EPS-2001-007-STR, ISBN: 90-5892-009-7, http://hdl.handle.net/1765/358

Heuvel, W. van den, *The Economic Lot-Sizing Problem: New Results and Extensions*, Promotor: Prof. dr. A.P.L. Wagelmans, EPS-2006-093-LIS, ISBN: 90-5892-124-7, http://hdl.handle.net/1765/1805

Hoedemaekers, C.M.W., *Performance, Pinned down: A Lacanian Analysis of Subjectivity at Work*, Promotors: Prof. dr. S. Magala & Prof. dr. D.H. den Hartog, EPS-2008-121-ORG, ISBN: 90-5892-156-7, http://hdl.handle.net/1765/10871

Hooghiemstra, R., *The Construction of Reality: Cultural Differences in Self-serving Behaviour in Accounting Narratives*, Promotors: Prof. dr. L.G. van der Tas RA & Prof. dr. A.Th.H. Pruyn, EPS-2003-025-F&A, ISBN: 90-5892-047-X, http://hdl.handle.net/1765/871

Hu, Y., *Essays on the Governance of Agricultural Products: Cooperatives and Contract Farming*, Promotors: Prof. dr. G.W.J. Hendrkse & Prof. Dr. B. Krug, EPS-2007-113-ORG, ISBN: 90-5892-145-1, http://hdl.handle.net/1765/10535

Huij, J.J., *New Insights into Mutual Funds: Performance and Family Strategies*, Promotor: Prof. dr. M.C.J.M. Verbeek, EPS-2007-099-F&A, ISBN: 90-5892-134-4, http://hdl.handle.net/1765/9398

Huurman, C.I., *Dealing with Electricity Prices*, Promotor: Prof. dr. C.D. Koedijk, EPS-2007-098-F&A, ISBN: 90-5892-130-1, http://hdl.handle.net/1765/9399

Iastrebova, K, *Manager's Information Overload: The Impact of Coping Strategies on Decision-Making Performance*, Promotor: Prof. dr. H.G. van Dissel, EPS-2006-077-LIS, ISBN: 90-5892-111-5, http://hdl.handle.net/1765/7329

Iwaarden, J.D. van, *Changing Quality Controls: The Effects of Increasing Product Variety and Shortening Product Life Cycles,* Promotors: Prof. dr. B.G. Dale & Prof. dr. A.R.T. Williams, EPS-2006-084-ORG, ISBN: 90-5892-117-4, http://hdl.handle.net/1765/7992

Jansen, J.J.P., *Ambidextrous Organizations*, Promotors: Prof. dr. ir. F.A.J. Van den Bosch & Prof. dr. H.W. Volberda, EPS-2005-055-STR, ISBN: 90-5892-081-X, http://hdl.handle.net/1765/6774

Jong, C. de, *Dealing with Derivatives: Studies on the Role, Informational Content and Pricing of Financial Derivatives*, Promotor: Prof. dr. C.G. Koedijk, EPS-2003-023-F&A, ISBN: 90-5892-043-7, http://hdl.handle.net/1765/1043

Keizer, A.B., *The Changing Logic of Japanese Employment Practices: A Firm-Level Analysis of Four Industries,* Promotors: Prof. dr. J.A. Stam & Prof. dr. J.P.M. Groenewegen, EPS-2005-057-ORG, ISBN: 90-5892-087-9, http://hdl.handle.net/1765/6667

Kijkuit, R.C., *Social Networks in the Front End: The Organizational Life of an Idea,* Promotor: Prof. dr. B. Nooteboom, EPS-2007-104-ORG, ISBN: 90-5892-137-6, http://hdl.handle.net/1765/10074

Kippers, J., *Empirical Studies on Cash Payments,* Promotor: Prof. dr. Ph.H.B.F. Franses, EPS-2004-043-F&A, ISBN: 90-5892-069-0, http://hdl.handle.net/1765/1520

Klein, M.H., *Poverty Alleviation through Sustainable Strategic Business Models: Essays on Poverty Alleviation as a Business Strategy,* Promotor: Prof. dr. H.R. Commandeur, EPS-2008-135-STR, ISBN: 978-90-5892-168-0, http://hdl.handle.net/1765/1

Kole, E., *On Crises, Crashes and Comovements*, Promotors: Prof. dr. C.G. Koedijk & Prof. dr. M.J.C.M. Verbeek, EPS-2006-083-F&A, ISBN: 90-5892-114-X, http://hdl.handle.net/1765/7829

Kooij-de Bode, J.M., *Distributed Information and Group Decision-Making: Effects of Diversity and Affect*, Promotor: Prof. dr. D.L. van Knippenberg, EPS-2007-115-ORG, http://hdl.handle.net/1765/10722

Knapp, S., *The Econometrics of Maritime Safety: Recommendations to Enhance Safety at Sea*, Promotor: Prof. dr. Ph.H.B.F. Franses, EPS-2007-096-ORG, ISBN: 90-5892-127-1, http://hdl.handle.net/1765/7913

Koppius, O.R., *Information Architecture and Electronic Market Performance*, Promotors: Prof. dr. P.H.M. Vervest & Prof. dr. ir. H.W.G.M. van Heck, EPS-2002-013-LIS, ISBN: 90-5892-023-2, http://hdl.handle.net/1765/921

Kotlarsky, J., *Management of Globally Distributed Component-Based Software Development Projects,* Promotor: Prof. dr. K. Kumar, EPS-2005-059-LIS, ISBN: 90-5892-088-7, http://hdl.handle.net/1765/6772

Kuilman, J., *The Re-Emergence of Foreign Banks in Shanghai: An Ecological Analysis,* Promotor: Prof. dr. B. Krug, EPS-2005-066-ORG, ISBN: 90-5892-096-8, http://hdl.handle.net/1765/6926

Langen, P.W. de, *The Performance of Seaport Clusters: A Framework to Analyze Cluster Performance and an Application to the Seaport Clusters of Durban, Rotterdam and the Lower Mississippi*, Promotors: Prof. dr. B. Nooteboom & Prof. drs. H.W.H. Welters, EPS-2004-034-LIS, ISBN: 90-5892-056-9, http://hdl.handle.net/1765/1133

Le Anh, T., *Intelligent Control of Vehicle-Based Internal Transport Systems*, Promotors: Prof. dr. M.B.M. de Koster & Prof. dr. ir. R. Dekker, EPS-2005-051-LIS, ISBN: 90-5892-079-8, http://hdl.handle.net/1765/6554

Le-Duc, T., *Design and Control of Efficient Order Picking Processes*, Promotor: Prof. dr. M.B.M. de Koster, EPS-2005-064-LIS, ISBN: 90-5892-094-1, http://hdl.handle.net/1765/6910

Leeuwen, E.P. van, *Recovered-Resource Dependent Industries and the Strategic Renewal of Incumbent Firm: A Multi-Level Study of Recovered Resource Dependence Management and Strategic Renewal in the European Paper and Board Industry*, Promotors: Prof. dr. ir. F.A.J. Van den Bosch & Prof. dr. H.W. Volberda, EPS-2007-109-STR, ISBN: 90-5892-140-6, http://hdl.handle.net/1765/10183

Lentink, R.M., *Algorithmic Decision Support for Shunt Planning*, Promotors: Prof. dr. L.G. Kroon & Prof. dr. ir. J.A.E.E. van Nunen, EPS-2006-073-LIS, ISBN: 90-5892-104-2, http://hdl.handle.net/1765/7328

Liang, G., *New Competition: Foreign Direct Investment and Industrial Development in China,* Promotor: Prof. dr. R.J.M. van Tulder, EPS-2004-047-ORG, ISBN: 90-5892-073-9, http://hdl.handle.net/1765/1795

Liere, D.W. van, *Network Horizon and the Dynamics of Network Positions: A Multi-Method Multi-Level Longitudinal Study of Interfirm Networks,* Promotor: Prof. dr. P.H.M. Vervest, EPS-2007-105-LIS, ISBN: 90-5892-139-0, http://hdl.handle.net/1765/10181

Loef, J., *Incongruity between Ads and Consumer Expectations of Advertising*, Promotors: Prof. dr. W.F. van Raaij & Prof. dr. G. Antonides, EPS-2002-017-MKT, ISBN: 90-5892-028-3, http://hdl.handle.net/1765/869

Maeseneire, W., de, *Essays on Firm Valuation and Value Appropriation,* Promotor: Prof. dr. J.T.J. Smit, EPS-2005-053-F&A, ISBN: 90-5892-082-8, http://hdl.handle.net/1765/6768

Londoño, M. del Pilar, *Institutional Arrangements that Affect Free Trade Agreements: Economic Rationality Versus Interest Groups*, Promotors: Prof. dr. H.E. Haralambides & Prof. dr. J.F. Francois, EPS-2006-078-LIS, ISBN: 90-5892-108-5, http://hdl.handle.net/1765/7578

Maas, A.A., van der, *Strategy Implementation in a Small Island Context: An Integrative Framework,* Promotor: Prof. dr. H.G. van Dissel, EPS-2008-127-LIS, ISBN: 978-90-5892-160-4, http://hdl.handle.net/1765/1

Maeseneire, W., de, *Essays on Firm Valuation and Value Appropriation,* Promotor: Prof. dr. J.T.J. Smit, EPS-2005-053-F&A, ISBN: 90-5892-082-8, http://hdl.handle.net/1765/6768

Mandele, L.M., van der, *Leadership and the Inflection Point: A Longitudinal Perspective*, Promotors: Prof. dr. H.W. Volberda & Prof. dr. H.R. Commandeur, EPS-2004-042-STR, ISBN: 90-5892-067-4, http://hdl.handle.net/1765/1302

Meer, J.R. van der, *Operational Control of Internal Transport*, Promotors: Prof. dr. M.B.M. de Koster & Prof. dr. ir. R. Dekker, EPS-2000-001-LIS, ISBN: 90-5892-004-6, http://hdl.handle.net/1765/859

Mentink, A., *Essays on Corporate Bonds*, Promotor: Prof. dr. A.C.F. Vorst, EPS-2005-070-F&A, ISBN: 90-5892-100-X, http://hdl.handle.net/1765/7121

Meyer, R.J.H., *Mapping the Mind of the Strategist: A Quantitative Methodology for Measuring the Strategic Beliefs of Executives*, Promotor: Prof. dr. R.J.M. van Tulder, EPS-2007-106-ORG, ISBN: 978-90-5892-141-3, http://hdl.handle.net/1765/10182

Miltenburg, P.R., *Effects of Modular Sourcing on Manufacturing Flexibility in the Automotive Industry: A Study among German OEMs*, Promotors: Prof. dr. J. Paauwe & Prof. dr. H.R. Commandeur, EPS-2003-030-ORG, ISBN: 90-5892-052-6, http://hdl.handle.net/1765/1039

Moerman, G.A., *Empirical Studies on Asset Pricing and Banking in the Euro Area,* Promotor: Prof. dr. C.G. Koedijk, EPS-2005-058-F&A, ISBN: 90-5892-090-9, http://hdl.handle.net/1765/6666

Mol, M.M., *Outsourcing, Supplier-relations and Internationalisation: Global Source Strategy as a Chinese Puzzle*, Promotor: Prof. dr. R.J.M. van Tulder, EPS-2001-010-ORG, ISBN: 90-5892-014-3, http://hdl.handle.net/1765/355

Mom, T.J.M., *Managers' Exploration and Exploitation Activities: The Influence of Organizational Factors and Knowledge Inflows*, Promotors: Prof. dr. ir. F.A.J. Van den Bosch & Prof. dr. H.W. Volberda, EPS-2006-079-STR, ISBN: 90-5892-116-6, http://hdl.handle.net/1765

Mulder, A., *Government Dilemmas in the Private Provision of Public Goods*, Promotor: Prof. dr. R.J.M. van Tulder, EPS-2004-045-ORG, ISBN: 90-5892-071-2, http://hdl.handle.net/1765/1790

Muller, A.R., *The Rise of Regionalism: Core Company Strategies Under The Second Wave of Integration*, Promotor: Prof. dr. R.J.M. van Tulder, EPS-2004-038-ORG, ISBN: 90-5892-062-3, http://hdl.handle.net/1765/1272

Nalbantov G.I., *Essays on Some Recent Penalization Methods with Applications in Finance and Marketing*, Promotor: Prof. drP.J.F. Groenen, EPS-2008-132-F&A, ISBN: 978-90-5892-166-6, http://hdl.handle.net/1765/1

Ning, H., *Hierarchical Portfolio Management: Theory and Applications*, Promotor: Prof. dr. J. Spronk, EPS-2007-118-F&A, ISBN: 90-5892-152-9, http://hdl.handle.net/1765/10868

Noeverman, J., *Management Control Systems, Evaluative Style, and Behaviour: Exploring the Concept and Behavioural Consequences of Evaluative Style*, Promotors: Prof. dr. E.G.J. Vosselman & Prof. dr. A.R.T. Williams, EPS-2007-120-F&A, ISBN: 90-5892-151-2, http://hdl.handle.net/1765/10869

Oosterhout, J., van, *The Quest for Legitimacy: On Authority and Responsibility in Governance*, Promotors: Prof. dr. T. van Willigenburg & Prof.mr. H.R. van Gunsteren, EPS-2002-012-ORG, ISBN: 90-5892-022-4, http://hdl.handle.net/1765/362

Paape, L., *Corporate Governance: The Impact on the Role, Position, and Scope of Services of the Internal Audit Function*, Promotors: Prof. dr. G.J. van der Pijl & Prof. dr. H. Commandeur, EPS-2007-111-MKT, ISBN: 90-5892-143-7, http://hdl.handle.net/1765/10417

Pak, K., *Revenue Management: New Features and Models*, Promotor: Prof. dr. ir. R. Dekker, EPS-2005-061-LIS, ISBN: 90-5892-092-5, http://hdl.handle.net/1765/362/6771

Pattikawa, L.H, *Innovation in the Pharmaceutical Industry: Evidence from Drug Introduction in the U.S.*, Promotors: Prof. dr. H.R.Commandeur, EPS-2007-102-MKT, ISBN: 90-5892-135-2, http://hdl.handle.net/1765/9626

Peeters, L.W.P., *Cyclic Railway Timetable Optimization*, Promotors: Prof. dr. L.G. Kroon & Prof. dr. ir. J.A.E.E. van Nunen, EPS-2003-022-LIS, ISBN: 90-5892-042-9, http://hdl.handle.net/1765/429

Pietersz, R., *Pricing Models for Bermudan-style Interest Rate Derivatives*, Promotors: Prof. dr. A.A.J. Pelsser & Prof. dr. A.C.F. Vorst, EPS-2005-071-F&A, ISBN: 90-5892-099-2, http://hdl.handle.net/1765/7122

Poel, A.M. van der, *Empirical Essays in Corporate Finance and Financial Reporting*, Promotors: Prof. dr. A. de Jong & Prof. dr. G.M.H. Mertens, EPS-2007-133-F&A, ISBN: 978-90-5892-165-9, http://hdl.handle.net/1765/1

Popova, V., *Knowledge Discovery and Monotonicity*, Promotor: Prof. dr. A. de Bruin, EPS-2004-037-LIS, ISBN: 90-5892-061-5, http://hdl.handle.net/1765/1201

Pouchkarev, I., *Performance Evaluation of Constrained Portfolios*, Promotors: Prof. dr. J. Spronk & Dr. W.G.P.M. Hallerbach, EPS-2005-052-F&A, ISBN: 90-5892-083-6, http://hdl.handle.net/1765/6731

Prins, R., *Modeling Consumer Adoption and Usage of Value-Added Mobile Services*, Promotors: Prof. dr. Ph.H.B.F. Franses & Prof. dr. P.C. Verhoef, EPS-2008-128-MKT, ISBN: 978/90-5892-161-1, http://hdl.handle.net/1765/1

Puvanasvari Ratnasingam, P., *Interorganizational Trust in Business to Business E-Commerce*, Promotors: Prof. dr. K. Kumar & Prof. dr. H.G. van Dissel, EPS-2001-009-LIS, ISBN: 90-5892-017-8, http://hdl.handle.net/1765/356

Quak, H.J., *Sustainability of Urban Freight Transport: Retail Distribution and Local Regulation in Cities*, Promotor: Prof. dr.M.B.M. de Koster, EPS-2008-124-LIS, ISBN: 978-90-5892-154-3, http://hdl.handle.net/1765/11990

Rinsum, M. van, *Performance Measurement and Managerial Time Orientation*, Promotor: Prof. dr. F.G.H. Hartmann, EPS-2006-088-F&A, ISBN: 90-5892-121-2, http://hdl.handle.net/1765/7993

Romero Morales, D., *Optimization Problems in Supply Chain Management*, Promotors: Prof. dr. ir. J.A.E.E. van Nunen & Dr. H.E. Romeijn, EPS-2000-003-LIS, ISBN: 90-9014078-6, http://hdl.handle.net/1765/865

Roodbergen, K.J., *Layout and Routing Methods for Warehouses*, Promotors: Prof. dr. M.B.M. de Koster & Prof. dr. ir. J.A.E.E. van Nunen, EPS-2001-004-LIS, ISBN: 90-5892-005-4, http://hdl.handle.net/1765/861

Rook, L., *Imitation in Creative Task Performance*, Promotor: Prof. dr. D.L. van Knippenberg, EPS-2008-125-ORG, http://hdl.handle.net/1765/11555

Schauten, M.B.J., *Valuation, Capital Structure Decisions and the Cost of Capital,* Promotors: Prof. dr. J. Spronk & Prof. dr. D. van Dijk, EPS-2008-134-F&A, ISBN: 978-90-5892-172-7, http://hdl.handle.net/1765/1

Schramade, W.L.J., *Corporate Bonds Issuers,* Promotor: Prof. dr. A. De Jong, EPS-2006-092-F&A, ISBN: 90-5892-125-5, http://hdl.handle.net/1765/8191

Schweizer, T.S., *An Individual Psychology of Novelty-Seeking, Creativity and Innovation,* Promotor: Prof. dr. R.J.M. van Tulder, EPS-2004-048-ORG, ISBN: 90-5892-077-1, http://hdl.handle.net/1765/1818

Six, F.E., *Trust and Trouble: Building Interpersonal Trust Within Organizations*, Promotors: Prof. dr. B. Nooteboom & Prof. dr. A.M. Sorge, EPS-2004-040-ORG, ISBN: 90-5892-064-X, http://hdl.handle.net/1765/1271

Slager, A.M.H., *Banking across Borders*, Promotors: Prof. dr. R.J.M. van Tulder & Prof. dr. D.M.N. van Wensveen, EPS-2004-041-ORG, ISBN: 90-5892-066–6, http://hdl.handle.net/1765/1301

Sloot, L., *Understanding Consumer Reactions to Assortment Unavailability*, Promotors: Prof. dr. H.R. Commandeur, Prof. dr. E. Peelen & Prof. dr. P.C. Verhoef, EPS-2006-074-MKT, ISBN: 90-5892-102-6, http://hdl.handle.net/1765/7438

Smit, W., *Market Information Sharing in Channel Relationships: Its Nature, Antecedents and Consequences*, Promotors: Prof. dr. ir. G.H. van Bruggen & Prof. dr. ir. B. Wierenga, EPS-2006-076-MKT, ISBN: 90-5892-106-9, http://hdl.handle.net/1765/7327

Sonnenberg, M., *The Signalling Effect of HRM on Psychological Contracts of Employees: A Multi-level Perspective*, Promotor: Prof. dr. J. Paauwe, EPS-2006-086-ORG, ISBN: 90-5892-119-0, http://hdl.handle.net/1765/7995

Speklé, R.F., *Beyond Generics: A closer Look at Hybrid and Hierarchical Governance*, Promotor: Prof. dr. M.A. van Hoepen RA, EPS-2001-008-F&A, ISBN: 90-5892-011-9, http://hdl.handle.net/1765/357

Teunter, L.H., *Analysis of Sales Promotion Effects on Household Purchase Behavior*, Promotors: Prof. dr. ir. B. Wierenga & Prof. dr. T. Kloek, EPS-2002-016-MKT, ISBN: 90-5892-029-1, http://hdl.handle.net/1765/868

Tims, B., *Empirical Studies on Exchange Rate Puzzles and Volatility*, Promotor: Prof. dr. C.G. Koedijk, EPS-2006-089-F&A, ISBN: 90-5892-113-1, http://hdl.handle.net/1765/8066

Tuk, M.A., *Empirical Studies on Exchange Rate Puzzles and Volatility*, Promotors: Prof. dr. ir. A. Smidts & Prof.dr. D.H.J. Wigboldus, EPS-2008-130-MKT, ISBN: 978-90-5892-164-2, http://hdl.handle.net/1765/1

Yu, M, *Enhancing Warehouse Performance by Efficient Order Picking*, Promotor: Prof. dr. M.B.M. de Koster, EPS-2008-139-LIS, ISBN: 978-90-5892-167-3, http://hdl.handle.net/1765/1

Valck, K. de, *Virtual Communities of Consumption: Networks of Consumer Knowledge and Companionship*, Promotors: Prof. dr. ir. G.H. van Bruggen & Prof. dr. ir. B. Wierenga, EPS-2005-050-MKT, ISBN: 90-5892-078-X, http://hdl.handle.net/1765/6663

Valk, W. van der, *Buyer-Seller Interaction Patterns During Ongoing Service Exchange*, Promotors: Prof. dr. J.Y.F. Wynstra & Prof. dr. ir. B. Axelsson, EPS-2007-116-MKT, ISBN: 90-5892-146-8, http://hdl.handle.net/1765/10856

Verheul, I., *Is There a (Fe)male Approach? Understanding Gender Differences in Entrepreneurship*, Prof. dr. A.R. Thurik, EPS-2005-054-ORG, ISBN: 90-5892-080-1, http://hdl.handle.net/1765/2005

Vis, I.F.A., *Planning and Control Concepts for Material Handling Systems*, Promotors: Prof. dr. M.B.M. de Koster & Prof. dr. ir. R. Dekker, EPS-2002-014-LIS, ISBN: 90-5892-021-6, http://hdl.handle.net/1765/866

Vlaar, P.W.L., *Making Sense of Formalization in Interorganizational Relationships: Beyond Coordination and Control,* Promotors: Prof. dr. ir. F.A.J. Van den Bosch & Prof. dr. H.W. Volberda, EPS-2006-075-STR, ISBN 90-5892-103-4, http://hdl.handle.net/1765/7326

Vliet, P. van, *Downside Risk and Empirical Asset Pricing*, Promotor: Prof. dr. G.T. Post, EPS-2004-049-F&A, ISBN: 90-5892-07-55, http://hdl.handle.net/1765/1819

Vlist, P. van der, *Synchronizing the Retail Supply Chain*, Promotors: Prof. dr. ir. J.A.E.E. van Nunen & Prof. dr. A.G. de Kok, EPS-2007-110-LIS, ISBN: 90-5892-142-0, http://hdl.handle.net/1765/10418

Vries-van Ketel E. de, *How Assortment Variety Affects Assortment Attractiveness: A Consumer Perspective*, Promotors: Prof. dr. G.H. van Bruggen & Prof. dr. ir. A. Smidts, EPS-2006-072-MKT, ISBN: 90-5892-101-8, http://hdl.handle.net/1765/7193

Vromans, M.J.C.M., *Reliability of Railway Systems*, Promotors: Prof. dr. L.G. Kroon, Prof. dr. ir. R. Dekker & Prof. dr. ir. J.A.E.E. van Nunen, EPS-2005-062-LIS, ISBN: 90-5892-089-5, http://hdl.handle.net/1765/6773

Vroomen, B.L.K., *The Effects of the Internet, Recommendation Quality and Decision Strategies on Consumer Choice*, Promotor: Prof. dr. Ph.H.B.F. Franses, EPS-2006-090-MKT, ISBN: 90-5892-122-0, http://hdl.handle.net/1765/8067

Waal, T. de, *Processing of Erroneous and Unsafe Data*, Promotor: Prof. dr. ir. R. Dekker, EPS-2003-024-LIS, ISBN: 90-5892-045-3, http://hdl.handle.net/1765/870

Watkins Fassler, K., *Macroeconomic Crisis and Firm Performance,* Promotors: Prof. dr. J. Spronk & Prof. dr. D.J. van Dijk, EPS-2007-103-F&A, ISBN: 90-5892-138-3, http://hdl.handle.net/1765/10065

Wennekers, A.R.M., *Entrepreneurship at Country Level: Economic and Non-Economic Determinants,* Promotor: Prof. dr. A.R. Thurik, EPS-2006-81-ORG, ISBN: 90-5892-115-8, http://hdl.handle.net/1765/7982

Wielemaker, M.W., *Managing Initiatives: A Synthesis of the Conditioning and Knowledge-Creating View*, Promotors: Prof. dr. H.W. Volberda & Prof. dr. C.W.F. Baden-Fuller, EPS-2003-28-STR, ISBN: 90-5892-050-X, http://hdl.handle.net/1765/1042

Wijk, R.A.J.L. van, *Organizing Knowledge in Internal Networks: A Multilevel Study*, Promotor: Prof. dr. ir. F.A.J. van den Bosch, EPS-2003-021-STR, ISBN: 90-5892-039-9, http://hdl.handle.net/1765/347

Zhang, X., *Strategizing of Foreign Firms in China: An Institution-based Perspective*, Promotor: Prof. dr. B. Krug, EPS-2007-114-ORG, ISBN: 90-5892-147-5, http://hdl.handle.net/1765/10721

Zhu, Z., *Essays on China's Tax System*, Promotors: Prof. dr. B. Krug & Prof. dr. G.W.J. Hendrikse, EPS-2007-112-ORG, ISBN: 90-5892-144-4, http://hdl.handle.net/1765/10502

Zwart, G.J. de, *Empirical Studies on Financial Markets: Private Equity, Corporate Bonds and Emerging Markets*, Promotors: Prof. dr. M.J.C.M. Verbeek & Prof. dr. D.J.C. van Dijk, EPS-2008-131-F&A, ISBN: 978-90-5892-163-5, http://hdl.handle.net/1765/1

Erasmus Research Institute of Management - ERIM

INTERNATIONAL ENTREPRENEURSHIP:
VALUE CREATION ACROSS NATIONAL BORDERS

This book investigates antecedents and outcomes of international entrepreneurship. International entrepreneurship as a field of research involves both research into *entrepreneurship in multiple countries* (cross-country comparisons of the nature and extent of entrepreneurial activity) and research into *cross-border entrepreneurship* (international activity of small and medium-sized enterprises and new ventures). Entrepreneurship is considered to be an important mechanism for national economic development e.g. through the generation of innovations and employment. However, considerable differences exist between countries in the extent to which entrepreneurship is innovation- or growth-oriented and consequently in the extent to which entrepreneurship contributes positively to national economic development. Therefore, it is essential for scientists, policy makers and entrepreneurs, to gain insight into the factors that affect the emergence of (various types of) entrepreneurship and into the economic outcomes of (various types of) entrepreneurship. This book is devoted to examining such issues, with a specific focus on cross-border entrepreneurship. The chapters included in this book address various research themes, such as the relationship between international trade and innovation, the extent to which foreign direct investment and international trade are sources of knowledge spillovers, the role of cross-border entrepreneurship in economic growth and the impact of social welfare schemes on entrepreneurship. In investigating these issues both micro-economic and macro-economic analyses are used. The book is divided into three parts. Part I focuses on the internationalization of small and medium-sized enterprises, Part II on new venture internationalization, while Part III presents cross-country studies of entrepreneurship.

ERIM

The Erasmus Research Institute of Management (ERIM) is the Research School (Onderzoekschool) in the field of management of the Erasmus University Rotterdam. The founding participants of ERIM are Rotterdam School of Management, Erasmus University, and the Erasmus School of Economics. ERIM was founded in 1999 and is officially accredited by the Royal Netherlands Academy of Arts and Sciences (KNAW). The research undertaken by ERIM is focussed on the management of the firm in its environment, its intra- and interfirm relations, and its business processes in their interdependent connections.

The objective of ERIM is to carry out first rate research in management, and to offer an advanced doctoral programme in Research in Management. Within ERIM, over three hundred senior researchers and PhD candidates are active in the different research programmes. From a variety of academic backgrounds and expertises, the ERIM community is united in striving for excellence and working at the forefront of creating new business knowledge.

ERIM PhD Series
Research in Management

Rotterdam School of Management
Erasmus University
Erasmus School of Economics
P.O. Box 1738, 3000 DR Rotterdam
The Netherlands

Tel. +31 10 408 11 82
Fax +31 10 408 96 40
E-mail info@erim.eur.nl
Internet www.erim.eur.nl

Design & layout: B&T Ontwerp en advies (www.b-en-t.nl) Print: Haveka (www.haveka.nl)