Chapter 13
Global Entrepreneurship Monitor and Entrepreneurs' Export Orientation

Jolanda Hessels and André van Stel

Abstract The Global Entrepreneurship Monitor (GEM) presents an annual assessment of the national level of 'early-stage' entrepreneurial activity and the institutional conditions to which it is subject in a large number of countries. Within the framework of GEM a TEA (Total early-stage Entrepreneurial Activity) index has been developed to measure (early-stage) entrepreneurial activity. Next to this TEA index, the GEM also provides an indicator for the prevalence of *export-oriented* entrepreneurs within countries. This chapter presents an example of an empirical analysis using macro-level GEM data for 36 countries. More specifically, this chapter investigates whether the presence of export-oriented entrepreneurs is a more important determinant of economic growth than entrepreneurial activity in general. Our results suggest that export-oriented entrepreneurship is indeed more important for achieving high economic growth rates than entrepreneurial activity in general.

JEL-classification: F23, L25, L26, O47, O57

Keywords: Global Entrepreneurship Monitor, entrepreneurship, export, economic growth

13.1 Introduction

The Global Entrepreneurship Monitor (GEM), a worldwide research project, presents an annual assessment of the national level of early-stage entrepreneurial activity and the institutional conditions to which it is subjected in a large number of countries. A TEA (Total early-stage Entrepreneurial Activity) index has been developed to be able to measure early-stage entrepreneurial activity within countries. This index is a combination of nascent entrepreneurs (those currently involved in

Jolanda Hessels
EIM Business and Policy Research, Zoetermeer, The Netherlands
joh@eim.nl

E. Congregado, *Measuring Entrepreneurship.*

concrete activities to set up a new business) and owners of young businesses (those currently owning a business that is less than 42 months old). Furthermore, within the framework of GEM also an indicator has been developed for export activity among new or early-stage entrepreneurs. An important focus of the GEM project involves the exploration of the role of entrepreneurship in national economic growth.

Entrepreneurship is considered an important mechanism of economic development (Schumpeter 1934; Baumol 2002) and for developing competitive economies (Hawkins, 1993). For example, entrepreneurs may contribute to economic growth because they are important for introducing or generating innovations (Autio, 1994; Acs and Audretsch, 2003). 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 an 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, 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). Several studies confirm a positive impact of entrepreneurship on national economic growth for developed countries (see e.g. van Stel, 2006).

There is increased attention for firms that are involved in international activity from inception or shortly thereafter. Such firms are commonly referred to as 'born globals' (Rennie, 1993; Knight & Cavusgil, 1996), or 'international new ventures' (Oviatt & McDougall, 1994). There is evidence that the number of born globals or international new ventures is increasing (Oviatt & McDougall, 1994). Born global firms are thought to be of importance in terms of innovation and employment (Moen, 2002). However, only a few empirical studies have investigated the effect of export on business performance among new ventures (Bloodgood et al., 1996; McDougall & Oviatt, 1996; Zahra et al. 2000). Furthermore, whereas it is generally acknowledged that internationally oriented new ventures are important in terms of economic growth (Moen, 2002) to our knowledge, this link has not been investigated empirically. We aim to extend the literature on new venture export activity and growth by focusing on the country level. In particular the present chapter builds on the assumption that exporting entrepreneurs develop specific skills (including innovative skills) through their export activity and, consequently, a high number of exporting entrepreneurs may be even more conducive to the process of variety and selection described above, compared to high numbers of domestically operating entrepreneurs. In other words, high numbers of exporting entrepreneurs may have a particularly strong impact on competition, innovation and economic growth.

To summarize, in studying the relationship between entrepreneurial activity and growth we expect that in particular export-oriented entrepreneurship will make an

important contribution to economic growth. Therefore, we will investigate in this chapter whether the presence of export-oriented entrepreneurship makes a more important contribution to national economic growth than entrepreneurial activity in general. This issue is of specific interest to policy-makers since governments in many countries have developed programs that focus on the promotion of export activity.

The chapter is structured as follows. Section 2 presents an overview of the GEM project and some of its main indices. Subsequently, in Section 3, an example is provided of how GEM data may be used for empirical analysis. In this section we present the data and research method. In Section 4 we present the results of our empirical analysis of the association of the presence of export-oriented entrepreneurs and national economic growth. Finally, in Section 5 we discuss the outcomes and conclusions.

13.2 Global Entrepreneurship Monitor: Entrepreneurial Activity, Export Orientation and Economic Growth

13.2.1 GEM Project: Objectives, Methods and Measures

The Global Entrepreneurship Monitor (GEM) project was initiated in 1999 with ten participating countries, expanded rapidly in its early years to 21 countries in the year 2000, 29 countries in 2001 and to 37 countries in 2002. In 2006 there were 42 national teams. The GEM research program provides an annual assessment of the national level of entrepreneurial activity within countries. The research program is based on a harmonized assessment of the level of national entrepreneurial activity for all participating countries. It also involves the exploration of the role of entrepreneurship in national economic growth. There are systematic differences between countries. Some countries that reflect low economic growth have a high level of entrepreneurial activity. The GEM program is a major effort aimed at describing and analyzing entrepreneurial processes within a wide range of countries.

The GEM program focuses on the following main objectives:

- to measure differences in the level of entrepreneurial activity between countries; various measures for entrepreneurial activity, according to various stages of the business cycle.
- to uncover factors that lead to appropriate levels of entrepreneurship, and
- to suggest policies that may enhance the national level of entrepreneurial activity; The GEM results may provide useful suggestions for policy makers. For example, the GEM results shows that the share of informal investors in the adult population is low in the Netherlands from an international perspective. Results from GEM have also indicated that informal investment is an important source of start-up capital for new and starting firms. This may call for policies to enhance the number of informal investors/stimulate more people to invest in other people businesses by creating adequate mechanisms.

As part of the GEM research different types of data are collected:

- Adult Population Survey (APS): This is a representative population survey of adults that is held every year in each participating country. In each country at least 2,000 adults take part in a telephone interview. One part of the questionnaire consists of items related to participation in entrepreneurial activities. These activities refer to starting a new firm, owning and managing a new firm and informally investing in another's new firm (informal investors). The other part of the questionnaire aims to assess attitudes and perceptions towards entrepreneurship and knowledge of the entrepreneurial climate.
- Standardized questionnaires completed by experts in each country. This questionnaire contains a series of statements concerning entrepreneurial framework conditions in a country, such as financial support, government policies and programs (e.g. aimed at stimulating female entrepreneurship, high growth firms), education and training, attitudes, cultural and social norms, innovation & technology transfer etc.
- The GEM co-ordination team collects standardized cross-national data on a variety of national characteristics and attributes (e.g. GDP, growth in GDP, exports) from a wide range of harmonized international sources.
- Every year an executive global report is published, see e.g. Acs et al. (2005). Also, most national teams publish their own national reports. Furthermore, GEM data is used by researchers for scientific purposes (see for example Reynolds et al., 2005).
- The principal objective of the GEM project is to measure early-stage entrepreneurial activity for each country, and to do this in such a harmonized way that comparisons between countries can be made. To this end the so-called Total early-stage Entrepreneurial Activity or TEA-index is calculated. The TEA index is a combination of identifying:
- nascent entrepreneurs: people currently involved in concrete activities to set up a new business; Nascent entrepreneneurs are those individuals between the ages of 18 and 64 years, who have taken some action toward creating a new business in the past year. To qualify for this category, these individuals must also expect to own a share of the business they are starting and the business must not have paid any wages or salaries for more than three months.
- owner/managers of young businesses: people currently owing a business that is less than 42 months old. The entrepreneurs report that they are active as owner/managers of new firms that have paid wages or salaries for more than three months, but less than 42 months.

The sum of these two measurements allows GEM to calculate the prevalence rates of early-stage entrepreneurial activity in each country. The people that qualify for early-stage entrepreneurial activity are identified by means of randomly telephoning at least 2,000 adults per country. The TEA index/prevalence rate of Early-stage Entrepreneurial Activity is the number of entrepreneurially active individuals in the two categories above, per 100 (people) in the adult population 18–64 years of age (based on the adult population surveys).

13.2.2 Entrepreneurship and Export Orientation

It is important to look at export when studying entrepreneurship. First, export may be one of the means for realising growth of a business. As a result of increased economic integration firms, even small and new firms are increasingly involved in foreign markets. Traditionally, research on export used to be focused on large (multinational) enterprises. Currently there is more attention for internationalisation of small and new firms as it is acknowledged that SMEs are increasingly involved in international markets (Reynolds 1997). The increasing commitment of small and new firms in the international market place is rooted in for example technological changes (especially in the field of information and communication technology and transport) and the liberalisation of international trade (European Commission 2004). The dominant view in the literature with regard to the process of internationalisation is the stage theory of internationalisation (Johanson and Vahlne 1977; Eriksson et al. 1997). According to this view the internationalisation process of a firm evolves in a sequential and developmental way leading from low to high commitment in foreign markets. This means that firms are likely to start their internationalisation with activities that involve less risk, such as export, before they will be involved in a more substantial commitment in foreign markets such as producing abroad. As enterprises have more experience with internationalisation and foreign markets they are more likely to increase commitment in foreign markets.

The stage theory has been challenged by empirical studies that point to the existence and growth of the number of young enterprises that are involved in international activities from inception. These enterprises are commonly marked as international new ventures (McDougall et al. 1994) or born globals (Knight and Cavusgil 1996). However, the stage theory and the born globals perspective do not necessarily contradict, as internationalisation may also be gradual for born globals, even though it follows a compact, rapid progress (European Commission 2004). Also, the existence of born global does not seem to be representative for SMEs in general as they are typically found in global niche markets.

Empirical research in the field of internationalisation of small and new firms tends to focus on single countries using micro-data. There is a lack of empirical studies using cross-country data. This is related to the fact that international export statistics do not make a distinction according to size-class. This is where the GEM project can contribute, because it provides cross-country data on involvement in exports of new and starting firms. In particular, GEM provides a mechanism for measuring export orientation of early-stage firms. Export orientation is measured as the average percentage of customers that live outside a country's borders as assessed across a random sample of a country's early-stage entrepreneurs.

The degree to which new businesses expect to export their goods and services provides an indication of their capacity to increase national wealth through international trade. Exports may be important for national economic growth but also for firms because it widen's a company's customer base, to increases sales revenues. Furthermore, geographic market diversity may help to offset slums in domestic markets and it can lengthen the life-cycle of products or services that are already matured in the home market.

13.2.3 Entrepreneurship, Export Orientation and Economic Growth

Some previous empirical studies have found evidence of an impact of entrepreneurship on economic growth (e.g. van Stel 2006). We expect that in particular export-oriented entrepreneurship makes a significant contribution to national economic growth. This is related to (assumed) higher skill levels of exporting entrepreneurs, thereby contributing to more intense levels of competition in the economy and increasing the innovative capacity of economies. Export activity may not only generate financial benefits for new ventures, but is likely to result in increased knowledge and higher human capital levels, also for small and new firms (Lu and Beamish 2001). For example, in case of entry into foreign markets firms often have to develop new resources and capabilities since the knowledge and capabilities that the firm has developed for the local or national market are often not suitable to operations abroad (Lu and Beamish 2001). Export may also 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). Also, when many new firms engage in export activity, the chance that the knowledge gained through this activity spills over to other firms may be considered relatively high. The reason for this is that small and new firms have a lot of business contacts with other firms (for instance through cooperation or through buyer-supplier relations) which may lead to 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).

In combining the potential benefits of export activity for new ventures (e.g. in terms of financial gains or competence development) and the potential for knowledge spillovers to the rest of the economy, we hypothesize that export activity among new ventures is more positively related to national economic growth than entrepreneurial activity in general. 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. Therefore, we will investigate in the next sections whether the presence of export-oriented entrepreneurship is a more important determinant of national economic growth than entrepreneurial activity in general, taking into account a country's level of economic development. This will be explained further in the next section.

13.3 Method

13.3.1 Data and Sample

Data on entrepreneurial activity and export-oriented entrepreneurship are taken from the Global Entrepreneurship Monitor (GEM). We use a sample of 36 countries participating in GEM in 2002.

Whereas a large number of organization 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 GEM initiative fills an important gap by providing a harmonized measure for export orientation of entrepreneurs across countries.

In the current study we investigate whether the presence of export-oriented entrepreneurs is a more important determinant of national economic growth than entrepreneurial activity in general. Our empirical analysis builds on a previous article by van Stel et al. (2005) in which it is investigated whether Total early-stage Entrepreneurial Activity (TEA) -as defined below- influences GDP growth for a sample of 36 countries. The authors find that the TEA indeed affects 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 more highly developed countries, as compared to developing countries. The authors argue that this may be related to higher human capital levels of entrepreneurs in higher developed countries.

In the current chapter we will perform a similar regression analysis but next to the general TEA, we will also use the TEA export rate as independent variable and compare its impact on economic growth with the impact of the general TEA index. The data and model used in this study are described below.

Next to data on early-stage entrepreneurial activity (TEA) and early-stage export activity (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.

13.3.2 Measures

Total Early-Stage Entrepreneurial Activity (TEA)

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 Export Activity (TEA Export)

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 are also taken from the GEM Adult Population Survey 2002.

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 assessing 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).

Analysis

We investigate whether export-oriented entrepreneurship may be considered a determinant of economic growth, next to 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 et al. (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 et al. (2005), we allow for the possibility of different effects of highly developed and developing countries. In addition we also test whether the effect of TEA is different for transition countries.[1] TEA rates may reflect different types of entrepreneurs in countries with different development levels. In particular human capital levels may differ between higher and lower developed countries, implying different impacts on economic growth. This is tested by defining separate TEA variables for different

[1] 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. Mark ^{D} indicates developing country while mark ^{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.

Table 13.1 Entrepreneurial activity rates (2002) for 36 countries

	TEA rate	TEA export rate		TEA rate	TEA export rate
Argentina	14.15	1.82	Japan	1.81	0.36
Australia	8.68	4.06	Korea	14.52	7.23
Belgium	2.99	2.21	Mexico	12.40	3.50
Brazil	13.53	0.77	Netherlands	4.62	2.24
Canada	8.82	6.09	New Zealand	14.01	8.92
Chile	15.68	7.81	Norway	8.69	4.87
China	12.34	4.30	Poland	4.44	1.20
Denmark	6.53	2.95	Russia	2.52	0.46
Finland	4.56	3.52	Singapore	5.91	3.56
France	3.20	2.35	Slovenia	4.63	2.91
Germany	5.16	4.56	South Africa	6.54	1.98
Hong Kong	3.44	2.34	Spain	4.59	2.29
Hungary	6.64	1.76	Sweden	4.00	1.74
Iceland	11.32	7.35	Switzerland	7.13	4.95
India	17.88	0.25	Taiwan	4.27	1.61
Ireland	9.14	6.57	Thailand	18.90	6.09
Israel	7.06	3.07	United Kingdom	5.37	2.50
Italy	5.90	2.17	United States	10.51	2.15
Mean	8.11	3.40			
Standard deviation	4.59	2.24			

groups of countries (rich versus poor; highly developed versus transition versus developing). Our model is represented by Equations (1) and (2). These equations are estimated separately by OLS. The hypothesis of a more positive effect for rich countries corresponds to coefficient b_1 (b_2) being larger than coefficient c_1 (c_2). Furthermore, the hypothesis that export-oriented entrepreneurs contribute more to national economic growth than entrepreneurs in general corresponds to b_2 (c_2) being larger than b_1 (c_1).

$$\Delta GDP_{\mathrm{it}} = a + b_1\, TEA^{rich}{}_{\mathrm{i,t-1}} + c_1\, TEA^{poor}{}_{\mathrm{i,t-1}} + d\,\log(GNIC_{\mathrm{i,t-1}}) + eGCI_{\mathrm{i,t-1}} + f\,\Delta GDP_{\mathrm{i,t-1}} + \varepsilon_{\mathrm{it}} \tag{13.1}$$

$$\Delta GDP_{\mathrm{it}} = a + b_2\, TEA\_export^{rich}{}_{\mathrm{i,t-1}} + c_2\, TEA\_export^{poor}{}_{\mathrm{i,t-1}} + d\,\log(GNIC_{\mathrm{i,t-1}}) + eGCI_{\mathrm{i,t-1}} + f\,\Delta GDP_{\mathrm{i,t-1}} + \varepsilon_{\mathrm{it}} \tag{13.2}$$

13.4 Results

The results of our empirical exercises are in Tables 13.2 and 13.3. In Table 13.2 the regression results of the impact of the general TEA index are presented (see Equation 1), while Table 13.3 shows the results using the TEA export rate (see Equation 2).

Table 13.2 Explaining economic growth from TEA rate; N=36

	Model 1	Model 2	Model 3
Constant	19.6 **	26.1 **	22.2 **
	(4.2)	(3.0)	(2.5)
TEA	.047		
	(0.8)		
TEA rich	.087		
	*(1.8)		
TEA poor	–.005		
	(0.1)		
TEA highly developed		.11 **	
		(2.2)	
TEA transition		.19	
		(1.4)	
TEA developing		.023	
		(0.2)	
log (GNIC)	–2.2 **	–2.8 **	–2.4 **
	(2.8)	(2.7)	(2.6)
GCI	.62	.64	.63
	(0.7)	(0.8)	(0.7)
lagged gdp growth	.37 **	.30 **	.22
	(2.9)	(2.1)	(1.2)
R^2	0.626	0.636	0.662
adjusted R^2	0.577	0.576	0.592

Absolute heteroskedasticity-consistent *t*-values are between brackets. Dependent variable is average annual growth of GDP over the period 2002-2005. TEA is Total 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.
** Significant at a 0.05 level

Tables 13.2 and 13.3 reveal, as hypothesized, that the presence of export-oriented entrepreneurs indeed seems to be more important for achieving GDP growth than entrepreneurship in general. Comparing the coefficients of the various TEA rates across the tables, we see that in each of the three model variants the impact of TEA Export is higher compared to the impact of TEA in general. For instance, the TEA rate has a coefficient of 0.047 (Table 13.2), while the coefficient of the TEA export rate is 0.13 (Table 13.3).

As indicated before, an important element in our analysis is to distinguish between different groups of countries. Table 13.2 confirms, in accordance with earlier findings of van Stel et al. (2005), that it is important to distinguish between different groups of countries along their level of economic development in investigating the relationship between entrepreneurship and economic growth. In particular, the table reveals that for rich countries the impact of entrepreneurial activity is significantly positive, whereas the impact for poor countries is effectively zero (Model 2). Looking at the results for our export variable (Table 13.3) a first finding is that having more entrepreneurs with export orientation seems to be important in

Table 13.3 Explaining economic growth from TEA export rate (1–100% of customers from abroad); N = 36

TEA export	Model 1	Model 2	Model 3
Constant	22.3 **	22.1 **	22.3 **
	(6.2)	(4.4)	(6.0)
TEA_export	.13 *		
	(1.8)		
TEA_export rich	.13		
	(1.6)		
TEA_export poor	.14		
	(1.0)		
TEA_export highly developed		.16 *	
		(1.9)	
TEA_export Transition		.47 **	
		(2.1)	
TEA_export Developing		.10	
		(0.9)	
log (GNIC)	–2.4 **	–2.4 **	–2.4 **
	(3.5)	(3.0)	(3.6)
GCI	.54	.54	.66
	(0.6)	(0.6)	(0.7)
lagged gdp growth	.33 **	.33 **	.24
	(2.6)	(2.4)	(1.3)
R^2	0.639	0.639	0.658
adjusted R^2	0.592	0.578	0.587

Absolute heteroskedasticity-consistent *t*-values are between brackets. Dependent variable is average annual growth of GDP over the period 2002-2005. TEA is Total 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.
** Significant at a 0.05 level

highly developed as well as in transition countries (Model 3). The effect is strongest for transition economies. We find no evidence of an impact of new ventures export activity on GDP growth in developing countries. Van Stel et al. (2005) find no impact of entrepreneurship in general on economic growth in developing economies. For these economies we also find no evidence that *export-oriented* entrepreneurship contributes to economic growth. It may be that human capital levels of entrepreneurs in these countries are too low.

13.5 Conclusion and Discussion

This chapter presents an introduction to the GEM project and describes its objectives, methods and a number of its measures for entrepreneurial activity. Whereas GEM is well known for its index for early-stage entrepreneurial activity (TEA), its data also provide an indicator for export orientation among early-stage ven-

tures. This is important since official international comparative export statistics on exports do not provide a distinction according to size-class or age of firms. This chapter presents an empirical analysis using this indicator for early-stage export activity. More specifically, this chapter investigates whether the presence of export-oriented entrepreneurs is a more important determinant of national economic growth than entrepreneurial activity in general. We also compare the extent of influence of export-oriented entrepreneurship on GDP growth for three groups of countries: highly developed economies, transition economies and developing economies. The distinction between these three groups of countries relates to the shift from the managed to the entrepreneurial economy (Audretsch and Thurik 2000). In particular, the nature of entrepreneurship is likely to be different for higher and lower developed countries hence the impact on economic growth may also differ (van Stel et al. 2005).

For the groups of highly developed countries and transition countries we find that export-oriented entrepreneurship contributes more strongly to macro-economic growth than entrepreneurial activity in general. The effect is particularly strong for transition economies. The results of our study do not provide evidence of a relationship between new ventures' export orientation and economic growth for developing countries.

The findings of this study suggest that in developed countries export orientation among new ventures contributes to economic growth. In developed 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 presence of specific technological knowledge, skills and valuable resources that are available within the firm. For these ventures international expansion is viable and sometimes even necessary for survival, and they are likely to display high international involvement. 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.

In our study we find a particular strong impact of export-oriented entrepreneurship 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 (McDougall et al. 1994; Oviatt and McDougall 1994). Our results suggest that in the kind of turbulent environment that is characteristic for transition economies exporting entrepreneurs may have a particularly strong impact on competition, innovation and consequently economic growth.

The results of our study reveal that export-oriented new ventures do not seem to make a significant contribution to economic growth in developing countries. Because of the relatively high rates of necessity entrepreneurship associated with

the low level of economic development in these countries, new entrepreneurs—including export-oriented entrepreneurs—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. This may result in a low level of benefits and development of skills and competences at the firm level (Zahra et al. 2000) and may consequently explain that these firms do not so much contribute to macro-economic growth. Our results underline the suggestions made by Wennekers et al. (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.

Limitations of this study include the small sample size and the focus on export orientation only and not on other modes of internationalization. Future research could benefit greatly from longitudinal data and from including other modes of internationalization.

References

Acs ZJ, Arenius P, Hay M, Minniti M (2005) Global Entrepreneurship Monitor, 2004. Executive Report, London Business School, London, UK and Babson College, Wellesley, MA

Acs ZJ, Audretsch DB (2003) Innovation and Technological Change. In: Acs ZJ, Audretsch DB (eds) Handbook of Entrepreneurship Research. Kluwer Academic Publishers, Boston, MA, pp 55–79

Audretsch DB, Thurik AR (2000) Capitalism and democracy in the 21st century: from the managed to the entrepreneurial economy. Journal of Evolutionary Economics 10 (1):17–34

Autio E (1994) New technology-based firms as agents of R&D and innovation. Technovation 14(4):259–273

Baumol W (2002) The Free-Market Innovation Machine: Analyzing the Growth Miracle of Capitalism. Princeton University Press, Princeton

Bloodgood JM, Sapienza HJ, Almeida JG (1996) The Internationalization of New High-Potential U.S. Ventures: Antecedents and Outcomes. Entrepreneurship Theory and Practice 20(4): 61–76

Eriksson K, Johanson J, Majkgård A, Sharma DD (1997) Experiential Knowledge and Cost in the Internationalization Process. Journal of International Business Studies 28 (2):337–60

European Commission (2004) Internationalisation of SMEs. Observatory of European SMEs; Report 2003 No. 4, Report submitted to the Enterprise Directorate General by KPMG Special Services, EIM Business & Policy Research, and ENSR, Brussels

Hawkins DI (1993) New Business Entrepreneurship in the Japanese Economy. Journal of Business Venturing 8:137–50

Johanson J, Vahlne JE (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

Knight GA, Cavusgil ST (1996) The born global firm: a challenge to traditional internationalisation theory. Advances in International Marketing 8:11–26

Lu JW, Beamish PW (2001) The internationalization and performance of SMEs. Strategic Management Journal 22(6-7):565–86

McArthur JW, Sachs JD (2002) The Growth Competitiveness Index: Measuring Technological Advancement and the Stages of Development. In: Porter ME, Sachs JD, Cornelius PK, McArthur JW, Schwab K (eds) The Global Competitiveness Report 2001–2002. Oxford University Press, New York, pp 28–51

McDougall P, Covin J, Robinson R, 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 PP, Oviatt BM (1996) New venture internationalization, strategic change, and performance: a follow-up study. Journal of Business Venturing 11:23–40

Moen O (2002) The Born Globals. A new generation of small european exporters. International Marketing Review 19(2):156–175

Oviatt BM, McDougall PP (1994) Toward a theory of international new ventures. Journal of International Business Studies 25(1):45–64

Rennie MW (1993) Global competitiveness: born global. The McKinsey Quarterly 4:45–52

Reynolds P, Bosma N, Autio E, Hunt S, De Bono N, Servais I, Lopez-Garcia P, Chin N (2005) Global Entrepreneurship Monitor: Data Collection Design and Implementation 1998–2003. Small Business Economics 24(3):205–231

Reynolds PD (1997) New and Small Firms in Expanding Markets. Small Business Economics 9(1):79–84

Schumpeter JA (1934) The Theory of Economic Development. Harvard University Press, Cambridge, MA

Stel A van, Carree M, Thurik AR (2005) The Effect of Entrepreneurial Activity on National Economic Growth. Small Business Economics 24:311–321

Stel A van (2006) Empirical Analysis of Entrepreneurship and Economic Growth. Springer Science, New York

Wennekers S, Van Stel A, Thurik R, Reynolds P (2005) Nascent Entrepreneurship and the Level of Economic Development. Small Business Economics 24(3):293–309

Zahra SA, Duane Ireland R, Hitt MA (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