GEM

GLOBAL ENTREPRENEURSHIP MONITOR

2007 Global Report on High-Growth Entrepreneurship

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Global Entrepreneurship Monitor

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Mazars is delighted to sponsor this report into high-growth entrepreneurship.

Having worked with entrepreneurs around the globe for many years, we understand the issues they face. We recognise the importance of entrepreneurship in all its forms, and the importance of high-growth entrepreneurship in particular, to a country's economy through wealth and job creation.

We urge governments, policy makers and the business community to create the appropriate economic conditions which will encourage and support an entrepreneurial environment and to develop and promote specific initiatives aimed at increasing levels of high-growth entrepreneurial activity.

Alistair Fraser
Global Head of the International Customer Line
for Owner-Managed Businesses at Mazars

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Executive Summary

- High-expectation and high-growth entrepreneurs represent only a small percentage of all entrepreneurial activity.[1] Even though 12.3% of the adult-age population in countries that participated in the Global Entrepreneurship Monitor study between 2000 and 2006 are active in emerging and new entrepreneurial businesses, only 6.5% of new entrepreneurs (owner-managers of entrepreneurial firms less than 42 months old) expected to have 20 or more jobs in five years' time.

- Even though high-expectation entrepreneurship is rare, its contribution to expected job creation is important. Nascent and new entrepreneurs expecting to create more than 100 jobs in five years represent only 1.7% of all nascent and new entrepreneurs, yet they expect to create nearly 50% of all expected jobs. Almost 90% of all expected new jobs are foreseen by less than one-quarter of nascent and new entrepreneurs.

- The general patterns of entrepreneurial growth expectations vary according to a country's income level. Even though high-income countries (generally speaking) have lower rates of overall entrepreneurial activity than do low-income countries, they generally have higher rates of high-growth and high-expectation entrepreneurship.

- Of all world regions, entrepreneurial activity in Africa and South America, while high in terms of adult-age population prevalence,[2] is the most heavily tilted toward low-expectation activity. In the richest world regions, including North America, highly developed Asia, the European Union, and Oceania, the anatomy of entrepreneurial activity[3] is tilted toward high-expectation entrepreneurship, especially in the category of 20 or more expected jobs.

- There are significant differences between individual countries in terms of both the adult population and the relative prevalence of high-expectation entrepreneurial activity. Among high-income countries, the difference between the United States' and Greece's adult-population prevalence rate of high-expectation entrepreneurship is fifteenfold.

- The world's two largest emerging economies, China and India, exhibit significantly different levels of high-expectation and high-growth entrepreneurship. The difference between China and India is over sixfold.

- Education and household income, as well as entrepreneurial activities and attitudes, appear important for high-expectation and high-growth entrepreneurship. High-expectation and high-growth entrepreneurs are better educated than other entrepreneurs and the general population. High-expectation and high-growth entrepreneurs are significantly more likely to have graduate experience than low-growth entrepreneurs and the general population.

- High-expectation and high-growth entrepreneurs are likely to be wealthier than other entrepreneurs and the general population in high-, middle-, and low-income countries.

- High-expectation and high-growth entrepreneurs are generally overrepresented in the manufacturing and transportation, communication, and utilities sectors, but underrepresented in agriculture and consumer services.

- The adult population and relative prevalence of high-expectation and high-growth entrepreneurship are, in general, positively associated with the quality of national entrepreneurial policy conditions. The pattern of positive associations is stronger for the relative prevalence of high-growth expectations (i.e., percentage of entrepreneurs who expect rapid growth).

- The adult-population prevalence of overall (low-expectation) entrepreneurship is either negatively or neutrally associated with the quality of national entrepreneurial policy conditions, possibly due to the high prevalence of low-expectation entrepreneurship in low-income countries.

- Both high- and low-expectation entrepreneurship are, in general, positively associated with national cultural and societal framework conditions that affect entrepreneurship. Thus, different facets of entrepreneurship react differently to national policy and cultural–societal environments.

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[1] High-expectation entrepreneurs are nascent and new entrepreneurs who expect more than 20 employees in 5 years' time. High-growth entrepreneurs are established entrepreneurs who currently have 20 or more employees.

[2] Adult-population prevalence refers to the percentage of adult-age population (18–64 years) who are active in entrepreneurship.

[3] The anatomy of entrepreneurial activity refers to the percentage of the overall population of entrepreneurs who are growth-oriented.

Since its inception in 1999, the Global Entrepreneurship Monitor's (GEM) major activity has been the creation of a large data set and the construction of harmonized measures of entrepreneurial activity. GEM collects three types of data: adult-population surveys, national expert interviews, and standardized cross-national data.

Adult-Population Survey

Representative samples of randomly selected adults, ranging in size from 1,000 to almost 42,000 individuals, are surveyed each year in each GEM country in order to provide a harmonized measure of the prevalence of entrepreneurial activity. The annual surveys generally take place between May and August and are based on three main elements: the sample of respondents, the interview schedule used to collect the data, and the creation of measures estimating entrepreneurship at the national level. The interview schedule consists of a set of core questions used to derive entrepreneurial activity rates and additional questions concerning the attributes and characteristics of the respondents. The interview schedule is approved by GEM national teams as a collective decision in an annual meeting held in January each year. Both survey and collection procedures are revised annually.

All countries in GEM conduct a national adult-population survey. All countries use region stratification, except for very small countries like Iceland. Most countries conduct telephone surveys. In some middle-income countries where phone penetration rates are low, interviews are conducted face to face using random door-to-door procedures that also result in a representative national sample.

While the survey vendors in each country are among the best available, virtually every data set provided by every vendor requires some adjustments and corrections. Once all data sets are checked and harmonized, the files are consolidated into a single data file, each respondent having a unique identification number. The GEM coordination team then processes the data set to identify people considered as entrepreneurially active and to compute other variables related to entrepreneurial activity.

National Expert Interviews

Each GEM national team conducts up to 50 face-to-face interviews with experts in their respective countries. The interviews are intended to assess a number of entrepreneurial framework conditions. Experts are selected on the basis of reputation and experience. In the interviews, experts express their views on national strengths and weaknesses as a context for entrepreneurship and indicate what policy or program changes they believe would enhance the level of entrepreneurship in their country. The national experts also complete a standardized questionnaire so that GEM can obtain a quantitative measure of their opinions concerning their country as a suitable context for entrepreneurial activity. The questionnaire consists of sets of five to six related items grouped on the basis of countries and individual characteristics relevant for entrepreneurship. These data are not used in this report but were analyzed in previous reports.

Standardized Cross-National Data

Standardized cross-national data are obtained from international data sources such as the World Bank, the International Monetary Fund, and the United Nations. These data serve in establishing the link between national levels of entrepreneurial activity and macroeconomic conditions, as well as the impact of the state of national conditions required for establishing this link. While virtually all of the sources of these cross-national harmonized data are free, it takes some effort to annually update, organize, and describe this material to provide useful consolidated data sets for the analysis. GEM's data sources are summarized in Table 1.

Table 1. GEM Method: Sources of Data

DATA SOURCE	DESCRIPTION
GEM Adult-Population Survey	Telephone and interview survey conducted by a polling organization in each GEM country, of a minimum of 2,000 randomly selected respondents. The data is harmonized to be representative of the adult-age (18–64 years old) population of the country.
National Expert Interviews	Combined mail questionnaire and interview survey of at least 36 national experts in each GEM country knowledgeable of national framework conditions for entrepreneurial activity. The survey questionnaire collects data on finance, policy, government programs, education and training, technology transfer, physical and business service infrastructure, market openness, social and cultural norms, IPR protection, female entrepreneurship, and policy support for high-growth entrepreneurial firms.
Standardized Cross-National Data	Compilation of data from third sources that describe general national conditions: national economy, demographics, society, infrastructure, and institutions. Data are compiled from publicly available sources such as the United Nations, the World Bank, the Organization for Economic Co-operation and Development, and dedicated international surveys.

Typically, GEM annual and special reports are based on a single year of data. Because the focus of the present report is on a small subset of the overall entrepreneurial phenomenon, a combined data set covering years 2000–2006 is used. Thus, the findings of the present report are based on a rather sizeable data set that contains 678,714 interviews of adult-age individuals in 53 countries during years 2000–2006.

Terminology

Entrepreneurship	GEM defines entrepreneurship as any attempt by individuals to start a new firm, including any attempt for self-employment.
Nascent entrepreneur	An adult-age individual (18–64 years old) who: • has, during the past 12 months, taken tangible action to start a new business • would personally own all or part of the new firm • would actively participate in the day-to-day management of the new firm • has not yet paid salaries for anyone for more than three months
New entrepreneur	An adult-age individual who: • is currently actively managing a new firm • personally owns all or part of the new firm • the firm in question is not more than 42 months old
Established entrepreneur	An adult-age individual who: • is currently actively managing a firm • personally owns all or part of the firm • the firm in question is over 42 months old
Start-up attempt	Nascent or new entrepreneurial firm, as defined above.
Total early-stage entrepreneurial activity (TEA)	Total early stage entrepreneurial activity refers to the total rate of early-stage entrepreneurial activity among the adult population aged 18–64 years. In some instances, this rate is less than the combined percentages for nascent and new firm entrepreneurs. This is because, in circumstances where respondents qualify as both a nascent and a new firm entrepreneur, they are counted only once.
High-expectation entrepreneur	A nascent or new entrepreneur who expects to employ at least 20 employees within five years' time.
High-growth entrepreneur	Established entrepreneur who currently employs 20 or more employees.
Adult-population prevalence rate of high-expectation entrepreneurs	The percentage of all adult-age individuals in a given country who qualify as either nascent or new high-expectation entrepreneurs.
Relative prevalence rate of high-expectation entrepreneurs	The percentage of start-up attempts (either nascent or new entrepreneurs) who qualify as high-expectation entrepreneurs.
Anatomy of entrepreneurship	Relative prevalence rate of either high-expectation or high-growth entrepreneurs.

Since its inception in 1999, the Global Entrepreneurship Monitor (GEM) Research Consortium has uncovered complex and non-trivial relationships between entrepreneurship and economic growth (Wennekers *et al.*, 2005). Entrepreneurial processes are undoubtedly linked with macroeconomic conditions, but detailed relationships may vary (e.g., as a function of economic development). Both the GEM data and that from other sources point to one important conclusion, however: Not all entrepreneurial activity similarly contributes to economic growth. Specifically, the importance of high-growth entrepreneurial activity for job creation is increasingly emphasized (Birch *et al.*, 1997; Delmar *et al.*, 2003; Storey, 1994). All entrepreneurial activity is important, but high-growth entrepreneurial activity is particularly so.

Because high-growth entrepreneurial activity is rare, most population-level studies on high-growth entrepreneurship employ post-hoc design and are overwhelmingly limited to single-country data. International comparative studies on high-growth entrepreneurship are virtually nonexistent, leaving researchers and policy makers in the dark as they seek to understand the high-growth entrepreneurship phenomenon.

Thanks to its comparative, multiyear approach, GEM is uniquely positioned to address this gap. GEM measures the growth expectations of both nascent, new, and established entrepreneurs and entrepreneurial firms. GEM's is the only data set that allows international comparisons of the nascent entrepreneurial process. The accumulation of data over several years has created data sets large enough to allow the kind of fine-grained analysis necessary to isolate the small number of high-growth entrepreneurial attempts from the overall data on nascent and new entrepreneurs.

This report is the second in a series of GEM reviews of high-expectation entrepreneurial activity. This report expands the global survey of high-expectation entrepreneurship initiated in 2005 (Autio, 2005). In this report, we expand on the number of countries reported and analyze the prevalence of high-expectation entrepreneurial activity in different world regions.[4] We also expand the study of the anatomy of high-expectation entrepreneurial activity in different countries and world regions, as well as on the characteristics of the individuals who report high-expectation entrepreneurial activity.

CONTRIBUTIONS OF ENTREPRENEURIAL GROWTH EXPECTATIONS TO JOB CREATION

Start-up attempts can be categorized according to their growth ambition. GEM asks all identified entrepreneurial attempts how many employees they expect to have within five years' time. Figure 1 shows nascent and new entrepreneurs in the GEM 2000–2006 data, categorized according to expected job creation.[5] The figure shows the population-level prevalence (as percentage of adult-age population from 18 to 64 years old) of all start-up attempts, both nascent and new entrepreneurs, at different levels of growth expectation.

In the GEM 2000–2006 data set, the adult-population prevalence of any kind of entrepreneurial activity was 12.3%.[6] It is interesting to note that nearly one-half of all start-up attempts do not expect to create any jobs within five years. Approximately one-half of all entrepreneurial activity thus represents part-time entrepreneurial activity that may complement income from regular employment.

Some 6.3% of the adult-age population in the participating GEM countries was involved in nascent or new start-up attempts that envisioned employing at least one person within five years. This percentage falls rapidly as a function of growth expectation. Some 5.5% of the adult-age population was involved with firms that expected two or more employees within five years. Only 2.9% expected to employ at least five employees. Start-up attempts expecting to employ 10 or more employees represented only 1.7% of the adult-age population. Only 0.9% of the adult-age population was involved in start-up attempts expecting 20 or more jobs. This percentage halved for the "50+" category and again for the "100+" category.

Figure 1. Nascent and New Entrepreneurs Categorized According to Growth Expectation (Global Data, GEM 2000–2006 Countries, Adult-Population Prevalence Rate)
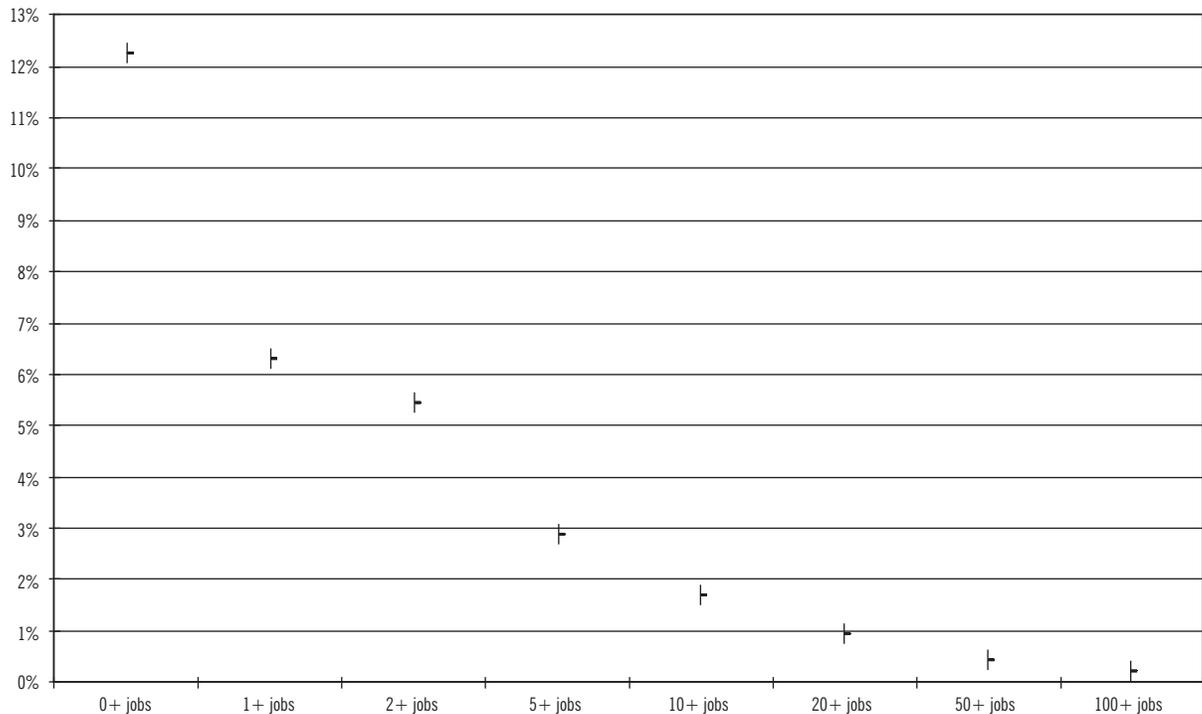
Expectations of high growth are rare among nascent and new entrepreneurs. Only some 7% of all start-up attempts expected to create 20 or more jobs. As many as 70% did not expect any job creation at all. And only some 3% of all start-up attempts expected 50 or more jobs.

The scarcity of high-growth expectations among nascent and new entrepreneurs does not correspond to their expected contribution to job creation at the cohort level. Overall, the identified nascent and new entrepreneurs expected to employ some 640,000 employees in five years' time (size of base sample: 678,714 adult-population interviews). While this figure is undoubtedly overoptimistic, the contributions of different expectation categories are nevertheless revealing. These are summarized in Table 2.

In Table 2, we can see that firms expecting to create 20 or more jobs, while only representing 7.4% of all nascent and new firms, expected to create some 73% of all new jobs created by the cohort. The remaining 92.6% of all early-stage entrepreneurs contributed only an additional 27.4% to the cohort job creation total. This statistic was quite similar for both nascent and new firms, improving our confidence in the overall distribution.

It is remarkable how concentrated the job creation potential is. Even though early-stage entrepreneurs expecting more than 100 jobs represented less than 2% (1.7% of all) of the cohort, they expected to create nearly half of the total jobs within the cohort. Start-up attempts expecting 50 or more jobs (3.4% of all) represented nearly 60% of total expected jobs. Thus, the high end of the distribution is quite strongly overemphasized in terms of job creation potential by nascent and new firms.

The distributions observed coincide well with published studies of realized growth potential among entrepreneurial firms, as well as with studies of firm size distributions (Cabral *et al.*, 2003; Lotti *et al.*, 2001). The observed disproportionate contribution by high-expectation start-ups to expected job creation is consistent with findings reported in studies of realized growth (Audretsch, 2002; Birch *et al.*, 1997; Davis *et al.*, 1996; Delmar *et al.*, 2003; Storey, 1994). Also, the distributions observed for nascent and new firms are very similar to one another, suggesting that the shape of the distribution does not change when nascent entrepreneurs enter the entrepreneurial process.

Table 2. Expected Job Creation by Growth Expectation

NEW ENTREPRENEURS	TOTAL EXPECTED JOBS FOR CATEGORY	NUMBER OF CASES	% OF COHORT IN CATEGORY	INCREMENTAL CONTRIBUTION TO COHORT TOTAL JOBS, %	% OF COHORT TOTAL JOBS
0 or more jobs	281,068	46,149	100.0%	0.0%	100.0%
1 or more jobs	281,068	32,304	70.0%	4.9%	100.0%
2 or more jobs	267,214	18,450	40.0%	8.5%	95.1%
5 or more jobs	243,282	9,217	20.0%	7.8%	86.6%
10 or more jobs	221,243	5,353	11.6%	9.6%	78.7%
20 or more jobs	194,240	2,987	6.5%	15.9%	69.1%
50 or more jobs	149,534	1,101	2.4%	10.4%	53.2%
100 or more jobs	120,303	573	1.2%	42.8%	42.8%
NASCENT ENTREPRENEURS					
0 or more jobs	380,710	41,529	100.0%	0.0%	100.0%
1 or more jobs	380,710	31,146	70.0%	2.9%	100.0%
2 or more jobs	369,625	20,061	48.3%	6.2%	97.1%
5 or more jobs	345,883	10,999	26.5%	7.0%	90.9%
10 or more jobs	319,075	6,460	15.6%	8.6%	83.8%
20 or more jobs	286,414	3,527	8.5%	10.7%	75.2%
50 or more jobs	245,743	1,894	4.6%	14.8%	64.5%
100 or more jobs	189,354	948	2.3%	49.7%	49.7%
COHORT TOTAL					
0 or more jobs	661,778	87,677	100.0%	0.0%	100.0%
1 or more jobs	661,778	63,450	72.4%	3.8%	100.0%
2 or more jobs	636,839	38,511	43.9%	7.2%	96.2%
5 or more jobs	589,165	20,216	23.1%	7.4%	89.0%
10 or more jobs	540,319	11,814	13.5%	9.0%	81.6%
20 or more jobs	480,654	6,514	7.4%	12.9%	72.6%
50 or more jobs	395,278	2,995	3.4%	12.9%	59.7%
100 or more jobs	309,657	1,522	1.7%	46.8%	46.8%

Summary of Job Contribution Analysis

- Expected job contributions are unevenly distributed across populations of nascent and new entrepreneurs. While some 6.3% of the adult-age population in the GEM countries were involved in nascent and new firms expecting any jobs, only 0.9% of the adult-age population expected to create 20 or more jobs in five years' time.

- Even though high-expectation entrepreneurship is rare, its contribution to expected job creation is important. Nascent and new entrepreneurs expecting to create more than 100 jobs in five years represent only 1.7% of all nascent and new entrepreneurs, yet they expect to create nearly 50% of all expected jobs within the cohort. Almost 90% of all expected new jobs are foreseen by less than one quarter of nascent and new entrepreneurs.

- The above observation is consistent with received studies of realized growth in firm populations. The distributions are similar for nascent and new entrepreneurs, when analyzed separately.

- If nearly 50% of all new jobs are expected by 1.7% of all new entrepreneurs, this has important implications for the design of SME and entrepreneurship policies. These implications will be examined later in this report.

COMPARISON OF GLOBAL REGIONS: PREVALENCE AND ANATOMY OF HIGH-EXPECTATION ENTREPRENEURSHIP

Are there differences between world regions in terms of entrepreneurial growth ambition? Two questions can be asked here. First, does the adult-population prevalence rate of high-expectation entrepreneurs vary according to global region? And second, does the anatomy of entrepreneurship vary in terms of the relative prevalence of high-expectation entrepreneurs? The first question measures the incidence of high-expectation entrepreneurs relative to the entire adult-age population. The second question measures the incidence of high-expectation entrepreneurs relative to the population of nascent and new entrepreneurs.

Adult-Population Prevalence of High-Expectation Entrepreneurship in World Regions

Figure 2 reports the incidence of low expectation entrepreneurial activity across world regions. The population-level prevalence of nascent and new entrepreneurs expecting zero, one, or five or more employees in five years is reported. As is well known from previous GEM global reports, the incidence of low-expectation entrepreneurial activity is highest in regions with low GDP per capita. The incidence of any form of entrepreneurial activity is highest in South America, with a population-level entrepreneurial activity rate of some 15.5%. That is, a total of 15.5% of adult-age population (18–64 years old) in South American GEM countries are either nascent or new entrepreneurs. High early-stage entrepreneurial activity rates are also reported for Africa and developing Asia.

For the highly developed economies, the highest rates of entrepreneurial activity are reported for Oceania (Australia and New Zealand), followed by North America. The lowest rates of overall entrepreneurial activity (combines nascent and new entrepreneurs, all levels of growth expectation) are reported for highly developed Asia and the European Union (including Norway, Switzerland, and Iceland).

The prevalence patterns change for higher levels of growth expectation. While South America and Africa[7] remain on top for the category of one or more expected jobs, developing Asia (including India and China) falls behind Oceania and North America in this category. For the category of five or more expected jobs, Africa also falls behind Oceania and North America, and North America draws to level with South America. Thus, when moving toward higher levels of growth aspiration, the prevalence rates of regions with low levels of GDP per capita tend to drop faster than in regions with high levels of GDP per capita. Highly developed Asia and the European Union are exceptions to this pattern, however, as these two regions signal consistently low levels of entrepreneurial activity regardless of the level of growth expectation.

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[7] Methodoligcal Note: GEM's coverage of African countries is narrow. Uganda and South Africa are the only African countries included in the GEM data set.

Figure 2. Adult-Population Prevalence of Low-Expectation Entrepreneurial Activity in World Regions (Percentage of Adult-Age Population)
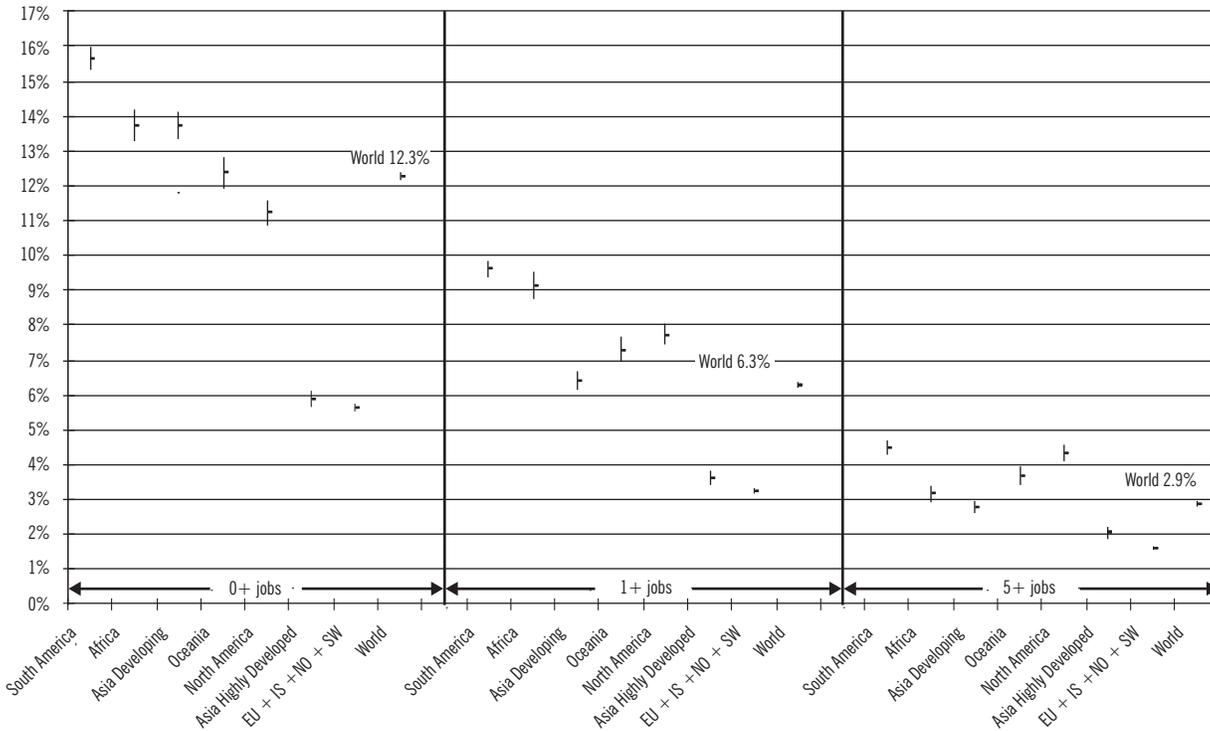
For even higher levels of growth aspiration, the patterns are strengthened. North America signals clearly the highest rate of high-expectation entrepreneurial activity, both for the categories of 20 and 50 or more expected jobs in five years. For the category of 20 or more expected jobs, Oceania is at the same level with South America and developing Asia. For the category of 50 or more expected jobs, South America falls behind developing Asia. For Africa, the rates of high-expectation entrepreneurial activity approach those observed for highly developed Asia and the European Union.

The level of growth aspiration thus appears to vary significantly according to economic context. Even though developing economies have high overall adult-population rates of entrepreneurial activity, North

American and Oceania's entrepreneurial populations may be of better quality, in terms of high-growth potential. The differences between North America and Oceania, on the one hand, and Africa and South America, on the other, may be indicative of different societal opportunity structures that these regions offer for their citizens. It is known that countries with low levels of GDP per capita tend to have higher levels of necessity-driven entrepreneurial activity, whereby individuals start new firms in the absence of other viable sources of income. In the high-income economies of North America and Oceania, it may be that individuals with higher human and social capital are attracted to entrepreneurship because of perceived opportunities for wealth creation. The European Union and highly developed Asia appear less dynamic in this regard.

Figure 3. Adult-Population Prevalence of High-Expectation Entrepreneurial Activity in World Regions (Prevalence as Percentage of Adult-Age Population)
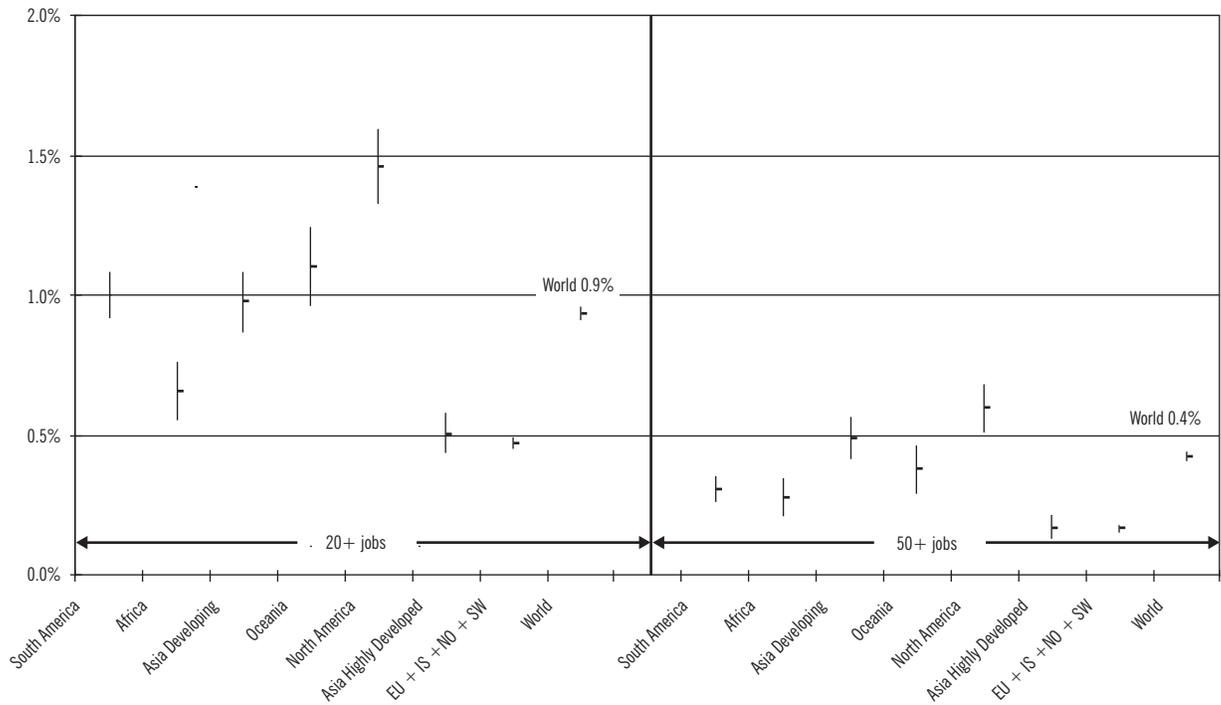
Anatomy of Entrepreneurship in World Regions

The observed patterns suggest that the anatomy of entrepreneurship varies across world regions. By anatomy, we refer to the *relative prevalence* of high-expectation entrepreneurial activity—relative to the region's population of nascent and new entrepreneurs. Figure 4 shows the relative prevalence of low-expectation entrepreneurship in world regions. As can be seen, overall, the relative prevalence of low-growth entrepreneurship is quite similar across regions, with the exception of developing Asia, where a significantly greater number of nascent and new entrepreneurs than in other regions expect no jobs. When we compare "1+," "2+," and "5+" categories, we can observe how Africa and South America drop in terms of relative prevalence as growth expectations increase. For the "5+" category, North America and highly developed Asian countries have higher relative prevalence rates than other world regions. In the European Union and Oceania, the relative prevalence is at the same level for each category.

Figure 4. Anatomy of Entrepreneurship: Relative Prevalence of Low-Expectation Entrepreneurship in World Regions (Prevalence as Percentage of all Nascent and New Entrepreneurs)
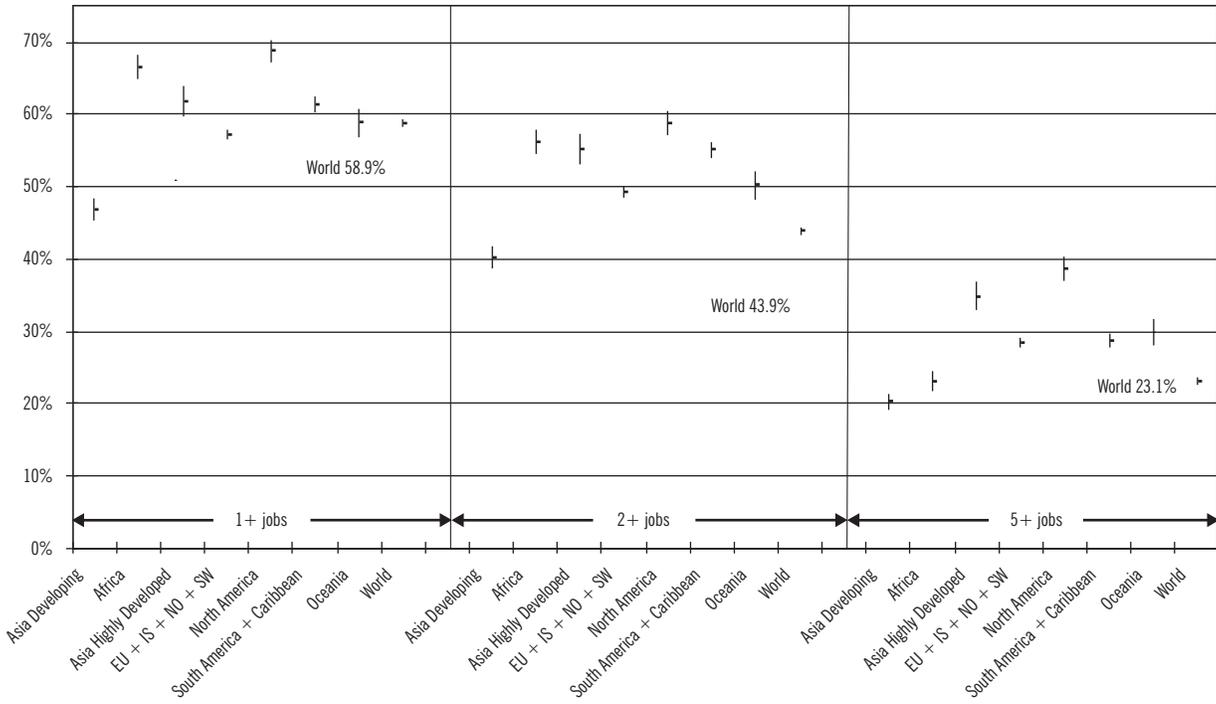
For high-expectation entrepreneurial activity, the above patterns are largely continued, as shown in Figure 5. In North America, the relative prevalence of high-expectation entrepreneurship is clearly higher than in other world regions. Highly developed Asia, developing Asia, the European Union, and Oceania are roughly at the same level for both "20+" and "50+" categories. For Africa and South America, the relative prevalence of high-expectation entrepreneurship is lower than in other world regions.

Figure 5. Anatomy of Entrepreneurship: Relative Prevalence of High-Expectation Entrepreneurship in World Regions (Percentage of all Nascent and New Entrepreneurs)
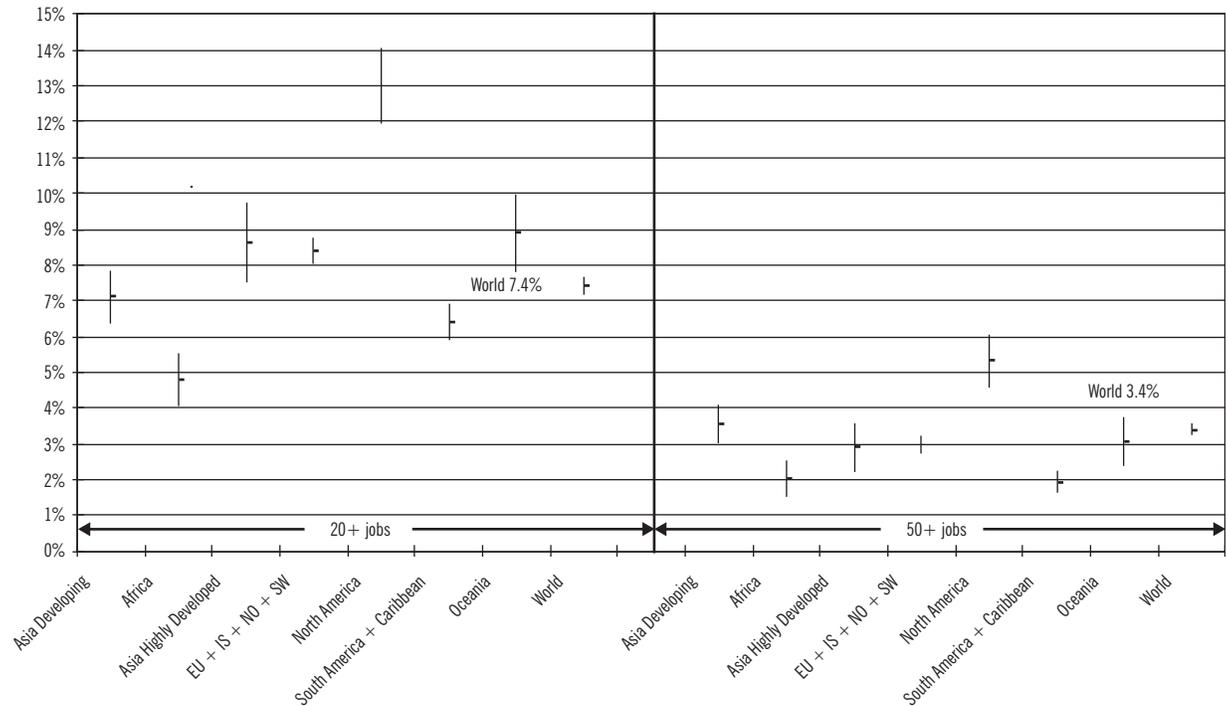
Summary of the Comparison of World Regions

- The patterns of entrepreneurial growth expectations vary across world regions. Regions with low levels of GDP per capita exhibit high overall levels of entrepreneurial activity, but some regions (North America and Oceania in particular) with high levels of GDP per capita exhibit higher levels of high-expectation entrepreneurial activity.

- North America (the United States, Canada, and Mexico) clearly exhibits the highest levels of high-expectation entrepreneurship in categories of 20 and 50 or more expected jobs within five years.

- Whereas South America exhibits the highest overall levels of nascent and new entrepreneurial activity, it is behind North America, developing Asia, and Oceania in terms of high-expectation entrepreneurial activity (50 or more expected jobs in five years).

- Of low-GDP regions, Africa and South America exhibit low levels of high-expectation activity, whereas developing Asia (including China, India, and Chinese Taipei) exhibits more vibrant activity even at high levels of growth expectation.

- As a region, the European Union (plus Iceland, Norway, and Switzerland) and highly developed

Asia (including Japan and South Korea) exhibit the lowest rates of adult-population prevalence of entrepreneurial activity at all levels of growth expectation. (See Figures 2 and 3.)

- Also, the anatomy of entrepreneurial activity (relative prevalence of different levels of growth expectations) varies significantly across world regions. Again, regions with low levels of GDP per capita exhibit higher relative prevalence rates of low growth expectations, whereas richer regions exhibit higher relative prevalence rates of high growth expectations.

- Of all world regions, entrepreneurial activity in Africa and South America, while high in terms of adult-age population prevalence, is the most heavily tilted toward low-expectation activity. In the richest world regions, including North America, highly developed Asia, the European Union, and Oceania, the anatomy of entrepreneurial activity is tilted toward high-expectation entrepreneurship, especially in the category of 20 or more expected jobs.

- North America has the highest adult-age population prevalence of high-expectation entrepreneurship, and in addition, its anatomy of entrepreneurial activity is the most heavily tilted toward high-expectation entrepreneurship of any world region.

COMPARISON OF INDIVIDUAL COUNTRIES: POPULATION PREVALENCE AND ANATOMY OF HIGH-EXPECTATION ENTREPRENEURSHIP

Nascent and New Entrepreneur Data

The accumulating research suggests that the nature of entrepreneurship varies according to economic context (Minniti *et al.*, 2006; Wennekers *et al.*, 1999). In low-income countries (countries with a low GDP per capita), a relatively greater portion of entrepreneurial activity is initiated because of the scarcity of alternative sources of income. In high-income countries, necessity-driven entrepreneurship is virtually nonexistent, and new entrepreneurial initiatives are typically launched by individuals who already have a job. The difference between income substitution and income generation may also affect the level of growth aspiration in new entrepreneurial initiatives. One may speculate that if an entrepreneurial initiative is undertaken in the absence of alternative sources of income, the required growth potential may be lower than in a situation in which the focal entrepreneur already has a source of steady income. Because of these reasons, the following analysis groups GEM countries according to their wealth, as measured by GDP per capita.

Figure 6 presents the adult-population prevalence of high-expectation entrepreneurial activity[8] (both nascent and new entrepreneurs) in the GEM countries, grouped on the basis of GDP per capita. Three country groups are formed: those with per capita GDP of less than USD 10,000 in 2006; those with per capita GDP from 10,000 to 20,000 USD; and those with per capita GDP greater than 20,000 USD in 2006.[9] The vertical bars indicate the 95% confidence interval. If vertical bars overlap between two countries, the difference between those countries is not considered statistically significant.

Figure 6 is broadly consistent with the notion that the adult-population prevalence of high-expectation entrepreneurial activity varies according to economic context. In the group of high-income countries, four countries exhibit clearly higher levels of high-expectation entrepreneurial activity than other high-income countries: the United States, New Zealand, Iceland, and Canada. In these countries, over 1% of the adult-age population is involved with nascent and new ventures that expect 20 or more jobs in five years' time. In the United Kingdom, Switzerland, Germany, Norway, and Denmark, the adult-population

prevalence rate of high-expectation activity is between 0.5 and 0.8%. Of the high-income countries, the lowest levels of high-expectation entrepreneurship are observed for Greece, Japan, Spain, Belgium, France, Finland, and Italy, where the adult-population prevalence of this activity is clearly less than 0.5%. The differences in prevalence rates are considerable, ranging from the US mean of 1.5% to Greece's mean of approximately 0.1%.

Looking at high-income countries, it is interesting to observe how the level of high-expectation entrepreneurship may vary even among broadly similar economies. Of large EU economies, the United Kingdom and Germany exhibit clearly higher levels of high-expectation entrepreneurship than do France and Italy. Of the Benelux countries, clearly higher level high-expectation entrepreneurship is observed for the Netherlands, as compared to Belgium. Of the Scandinavian countries, the level of high-expectation entrepreneurship in Iceland is four times as high as that of Finland.

The comparison between the Scandinavian countries shows that even countries with quite similar fiscal and social security regimes and labor-market institutions can have dramatically different population prevalence rates of high-expectation entrepreneurship. The Scandinavian countries are known for their well-developed social security systems, high levels of taxation, and corporatist and regulated labor market institutions. However, the industry structures between the Scandinavian countries vary, with Finland and Sweden's industrial bases being dominated by large-scale forest and engineering industries, and Denmark, Norway, and Iceland's industrial bases being dominated by small- and medium-sized industrial activity. Thus, the differences between Scandinavian countries may reflect the influence of industry structural conditions on high-expectation entrepreneurship.

Of the middle- and low-income economies, China clearly stands out as a hotbed of high-expectation entrepreneurship.[10] The indicated level of China's adult-population prevalence of high-expectation entrepreneurship is the highest of any GEM country, even though the difference to the United States, New Zealand, and Iceland is not statistically significant. Most other middle- and low-income economies in the sample exhibit lower adult-population prevalence rates of high-expectation entrepreneurship than most high-income countries. It is interesting to note that India's adult-population prevalence of high-expectation entrepreneurship is only one-fifth that of China's.

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[8] Percentage of 18 to 64 year olds involved with either nascent or new entrepreneurial firms who expect at least 20 jobs in five years' time.
[9] Some GEM countries are excluded from this graph because of small sample size.
[10] Shenzen is excluded from China's data because of its anomalous nature.

**Figure 6. Adult-Population Prevalence of High-Expectation Entrepreneurship
(Percent of 18 to 64 Year Olds Involved in Nascent or New Firms Expecting 20 or More Jobs)**
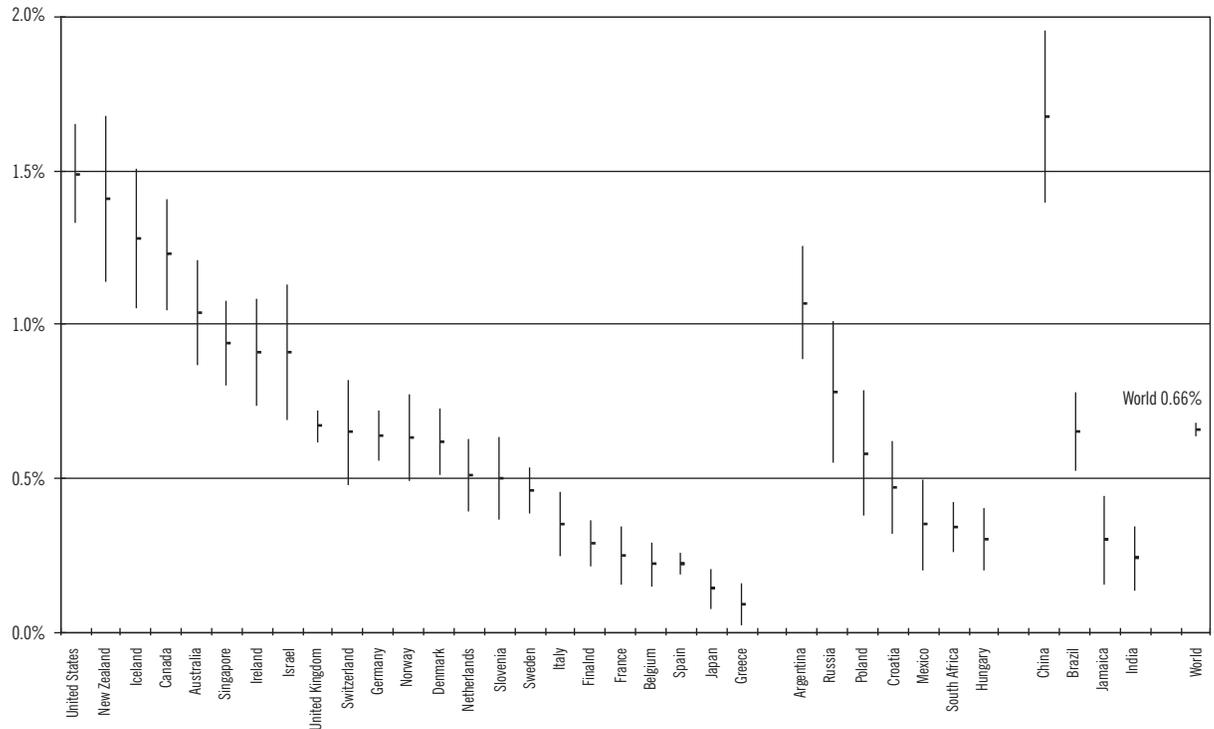
The analysis of the anatomy of entrepreneurial activity (or the relative prevalence of high-expectation entrepreneurs among the population of nascent and new entrepreneurs) reveals slightly different pattern (Figure 7). The countries with arguably the "healthiest" entrepreneurial anatomies, in this comparison, are Singapore, Israel, and China. However, the margins of error for these countries are large. In Singapore, over 15% of nascent and new entrepreneurs aspire for rapid growth. Thus, in spite of its low overall rate of entrepreneurial activity, the contribution of entrepreneurs to the Singaporean economy may be quite significant. Greece and Spain stand out as countries where only a small percentage (less than 5%) of nascent and new entrepreneurs anticipates rapid growth. Also France, Japan, Belgium, Finland, Italy, and Norway exhibit low levels of entrepreneurial growth ambition, with less than 10% of all start-up attempts expecting rapid growth.

Of the medium- and low-income economies, Russia's entrepreneurs appear to be the most growth-oriented, with over 10% of nascent and new entrepreneurs anticipating rapid growth. India and Jamaica's entrepreneurial activity is marked by low levels of growth expectation. In these countries, growth ambitions are roughly at the same level with those in Greece.

Again, broadly speaking, the anatomy of entrepreneurship appears the most biased toward high-expectation entrepreneurship in high-income countries, and middle- and low-income economies appear to exhibit relatively lower levels of entrepreneurial growth ambition. There are notable exceptions to this overall pattern, however, both among high-income and middle- and low-income economies.

Figure 7. Anatomy of Entrepreneurship: Relative Prevalence of High-Expectation Entrepreneurship (Nascent and New, 20 or More Expected Jobs)
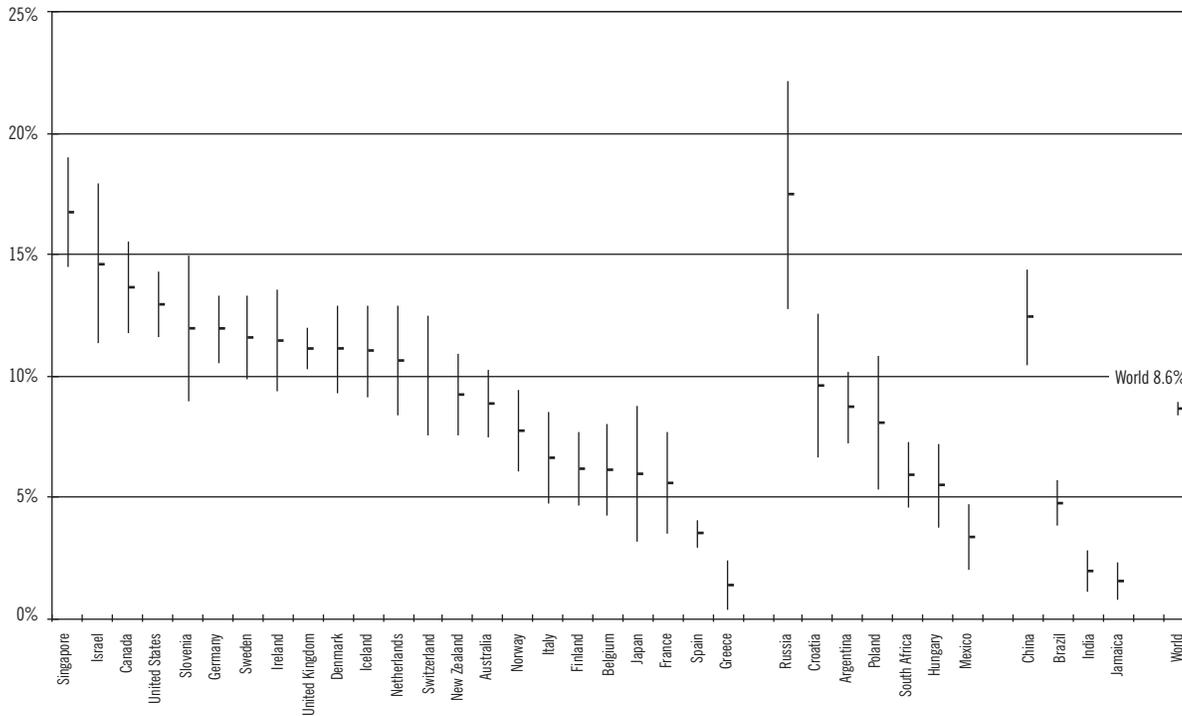
COMPARISON WITH ESTABLISHED HIGH-GROWTH ENTREPRENEURSHIP

The GEM data focus predominantly on the early part of the entrepreneurial process. By so doing, GEM provides a unique cross-national look into start-ups in gestation and gives an indication of where the potential for entrepreneurial growth is likely to be found. Even though growth expectation does not necessarily lead to growth, growth very rarely occurs by accident, or without aspiration. This aspirational aspect of entrepreneurship is uniquely captured in the GEM data. However, not all growth aspirations materialize as anticipated. Many expectations are bound to be unrealistic, and the degree of realism (or overconfidence) may vary among countries. In addition, only one-third of nascent entrepreneurs eventually started a firm (Reynolds, 2007). Therefore, even though aspiration is an important precondition of growth, it needs to be complemented by data on realized growth to provide a more accurate picture of a given country's entrepreneurial growth potential.

In addition to growth expectations, GEM also collects data on realized growth by established entrepreneurs. These data provide an alternative lens into the high-growth phenomenon, complementing the picture provided by growth expectations.[11] In this report, all owner-managers of entrepreneurial firms that currently have 20 or more employees are denoted as "high-growth established entrepreneurs."

Figure 8 shows the adult-population prevalence of established entrepreneurs who currently employ 20 or more employees. As in previous graphs, the countries are grouped according to wealth. Broadly speaking, the adult-population prevalence of high-growth established entrepreneurs appears to be higher in high-income countries than in middle- and low-income countries. However, because of the scarcity of the phenomenon, the confidence intervals are quite large. Of high-income countries, New Zealand is ranked on top, but the difference gains statistical significance only in comparisons beginning from Norway. New Zealand's rate of high-growth entrepreneurship is significantly higher than that of Norway, the United States, Germany, Sweden, Italy,

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[11] Note, however, that even this data has limitations. The data on realized growth reports only achieved scale of operation at the time of interview, and not how quickly this size has been reached. Also, the minimum economic scale varies in different industry sectors. The term "high-growth" is nevertheless used to describe entrepreneurial firms with 20 or more current employees, because only a small minority of all entrepreneurial firms ever reach this scale. Because of the nature of the data, however, "high-growth" does not mean "rapid growth," and it does not necessarily even mean "current growth" in this study.

and France. Interestingly, Iceland ranks higher than other Scandinavian countries, with the exception of Denmark. Iceland's adult-population prevalence of high-growth entrepreneurs is three times that of Finland.

Of the low-income countries, China again stands out, and India's performance is much lower. China's adult-population prevalence of high-growth entrepreneurs is three to four times as high as that of India. Also Jamaica, Mexico, Croatia, and South Africa stand out as countries where established entrepreneurs seldom achieve rapid growth.

The data in Figure 8 provide a reflection of the established size distribution of entrepreneurial firms in the GEM countries. It is important to observe that industry structures differ from one country to another, and the minimum efficient scale of firms also differs across sectors. Whereas expectations provide an idea of the future-oriented growth aspirations of entrepreneurial firms, Figure 8 also reflects (in addition to past growth aspirations) the influence of, for example, industry structure, and possibly even the country's institutional framework on the size distribution of established entrepreneurial firms.

Figure 8. Adult-Population Prevalence of High-Growth Established Entrepreneurs (Firm Over 42 Months Old, 20 or More Current Jobs)
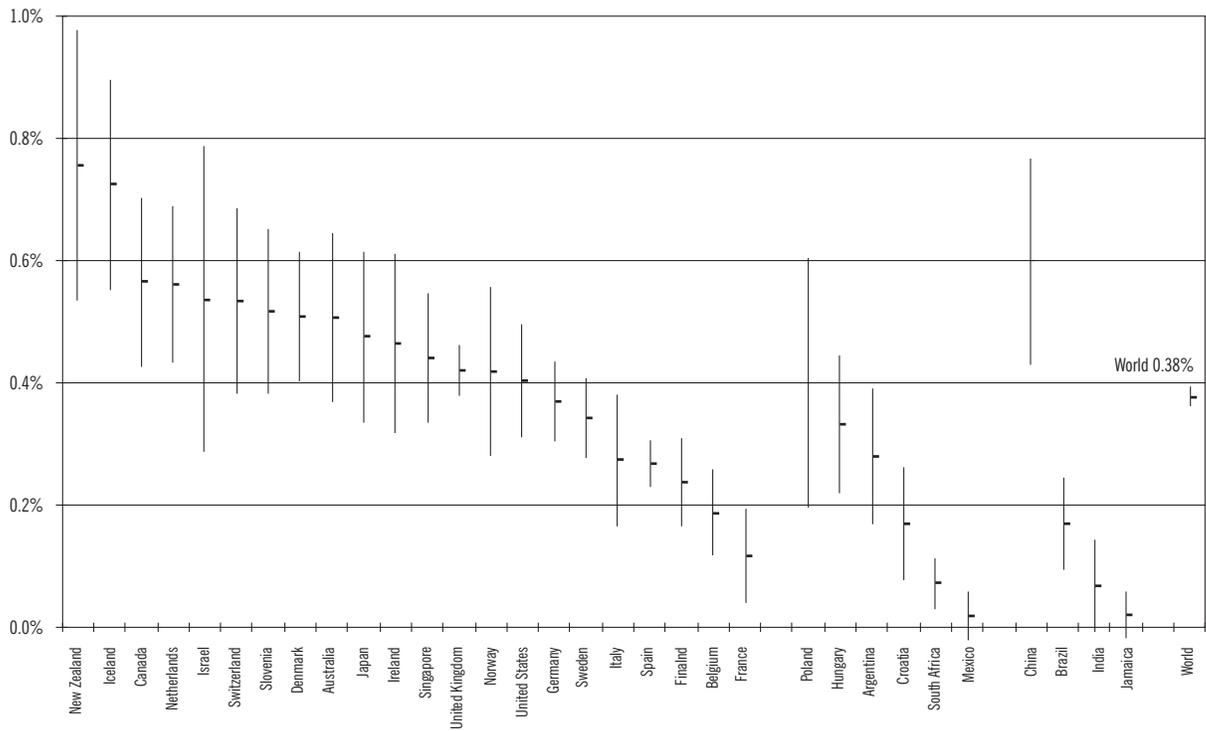
The relative prevalence of high-growth established entrepreneurs (or the anatomy of established entrepreneurship) is shown in Figure 9. In this comparison, Singapore is ranked highest, although the difference gains statistical significance only in comparison from Germany onwards (with the exception of France). Curiously, Finland stands out as a country where the relative prevalence of high-expectation entrepreneurship is lower than it is in other high-income GEM countries. Given Finland's large overall sample size, this finding appears quite reliable and may be indicative of poor ability to grow

entrepreneurial firms. Among high-income countries, low relative prevalence rates of high-growth entrepreneurship are also observed for Spain, Belgium, Australia, and Sweden.

Among low-income countries, China again stands out for its anatomy of entrepreneurship. However, even China's relative prevalence rate is significantly smaller than that of many high-income countries starting from Germany. Jamaica, India, and Brazil stand out for their low relative prevalence, together with Mexico, and, in some comparisons, Finland.

Figure 9. Anatomy of Entrepreneurship: Relative Prevalence of High-Growth Established Entrepreneurs (Firm Over 42 Months Old, 20 or More Current Jobs)
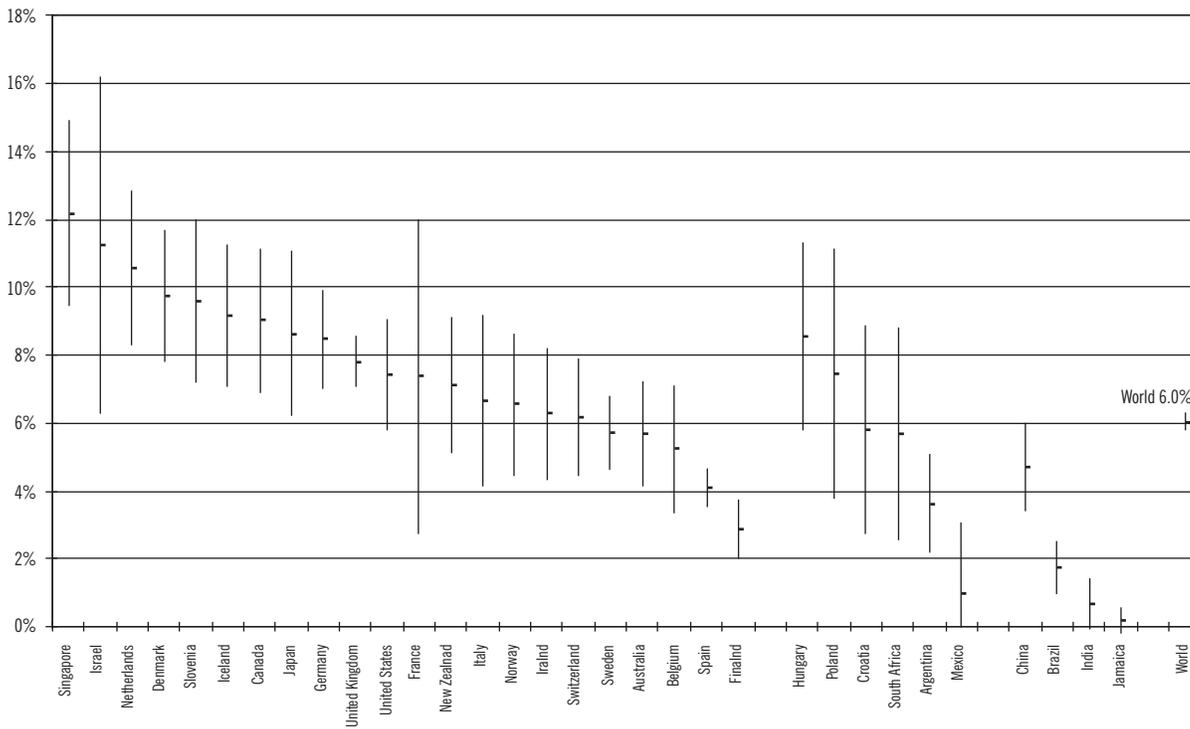
To assess the validity of growth expectations as a measure of entrepreneurial growth potential, GEM's growth expectation data were compared against data on realized growth by established entrepreneurs in the GEM countries. In addition to data on nascent and new entrepreneurs and their expected growth, GEM also records data on established entrepreneurs and the realized growth of these. Table 3 shows the adult-population prevalence rates of nascent and new high-expectation entrepreneurs (20 or more expected jobs), on the one hand, and established high-growth entrepreneurs (owner-managers who currently have 20 or more employees), on the other. Both prevalence rates and rankings are shown.

Table 3. Adult-Population Prevalence Rate of High-Expectation
(Nascent and New) and High-Growth (Established) Entrepreneurs in GEM 2000–2006 Countries

	ADULT POPULATION PREVALENCE			
	NASCENT AND NEW ENTREPRENEURS		ESTABLISHED ENTREPRENEURS	
COUNTRY	PREVALENCE	RANK	PREVALENCE	RANK
China (PRC)	1.68%	1	0.60%	3
USA	1.49%	2	0.40%	16
New Zealand	1.41%	3	0.76%	1
Iceland	1.28%	4	0.73%	2
Canada	1.23%	5	0.57%	4
Argentina	1.07%	6	0.28%	21
Australia	1.04%	7	0.51%	10
Singapore	0.94%	8	0.44%	13
Israel	0.91%	9	0.54%	6
Ireland	0.91%	10	0.47%	12
United Kingdom	0.67%	11	0.42%	14
Switzerland	0.65%	12	0.54%	7
Brazil	0.65%	13	0.17%	26
Germany	0.64%	14	0.37%	18
Norway	0.63%	15	0.42%	15
Denmark	0.62%	16	0.51%	9
Poland	0.58%	17	0.40%	17
Netherlands	0.51%	18	0.56%	5
Slovenia	0.50%	19	0.52%	8
Croatia	0.47%	20	0.17%	27
Sweden	0.46%	21	0.34%	19
Mexico	0.35%	22	0.02%	32
Italy	0.35%	23	0.27%	22
South Africa	0.34%	24	0.07%	29
Hungary	0.30%	25	0.33%	20
Jamaica	0.30%	26	0.02%	31
Finland	0.29%	27	0.24%	24
France	0.25%	28	0.12%	28
India	0.24%	29	0.07%	30
Belgium	0.22%	30	0.19%	25
Spain	0.22%	31	0.27%	23
Japan	0.14%	32	0.48%	11

Table 3 shows that while some countries are more optimistic than others, the correspondence between high expectations by nascent and new entrepreneurs and high growth by established entrepreneurs is quite good. The correlation between high expectations and high growth is high: 0.67 (statistically significant at the level of $p < 0.001$). Nevertheless, we can observe some important differences between high expectations and high growth. Even though the United States ranks second in terms of high-expectations by nascent and new entrepreneurs, it only ranks sixteenth in terms of realized growth by established entrepreneurs. This would seem to fit well with the general perception that US citizens tend to be quite optimistic and self-confident, perhaps more so than in many other countries. China, on the other hand, ranks highly in both measures, as do New Zealand, Iceland, and Canada. However, while Japan ranks last (thirty-second) in terms of high expectations, it ranks eleventh in terms of actual high-growth performance. This, again, would seem to be consistent with the perception that the Japanese may be quite careful and conservative in their general outlook. The lowest adult-population prevalence rates for established high-growth entrepreneurs can be observed for Mexico, Jamaica, India, and South Africa, none of which is a high-income country.

In Table 4, Singapore ranks on top among the 32 GEM countries in terms of relative prevalence of high-expectation and high-growth entrepreneurs (i.e., anatomy of entrepreneurship – see Table 4 on page 24). The correlation between high-expectation and high-growth rates is statistically highly significant: 0.75 ($p < 0.001$). In addition to Singapore, Israel stands out for its high relative prevalence of high-expectation and high-growth entrepreneurs. The lowest relative prevalence rates of high-growth and high-expectation entrepreneurs are reported for Jamaica, India, Mexico, Spain, and Brazil, which, with the exception of Spain, are all middle- to low-income countries.

Table 4. Relative Prevalence of High-Expectation Nascent and New (20 or more Expected Jobs) and High-Growth Established (20 or More Current Employees) Entrepreneurs

| COUNTRY | RELATIVE PREVALENCE (ANATOMY OF ENTREPRENEURSHIP) | | | |
| | NASCENT AND NEW ENTREPRENEURS | | ESTABLISHED ENTREPRENEURS | |
	PREVALENCE	RANK	PREVALENCE	RANK
Singapore	16.7%	1	12.2%	1
Israel	14.6%	2	11.2%	2
Canada	13.6%	3	9.0%	7
USA	13.0%	4	7.4%	13
China (PRC)	12.4%	5	4.7%	25
Slovenia	12.0%	6	9.6%	5
Germany	11.9%	7	8.5%	10
Sweden	11.6%	8	5.7%	21
Ireland	11.5%	9	6.3%	18
United Kingdom	11.1%	10	7.8%	11
Denmark	11.1%	11	9.8%	4
Iceland	11.0%	12	9.2%	6
Netherlands	10.6%	13	10.6%	3
Switzerland	10.0%	14	6.2%	19
Croatia	9.6%	15	5.8%	20
New Zealand	9.2%	16	7.1%	15
Australia	8.9%	17	5.7%	22
Argentina	8.7%	18	3.6%	27
Poland	8.1%	19	7.5%	12
Norway	7.8%	20	6.6%	17
Italy	6.6%	21	6.7%	16
Finland	6.1%	22	2.9%	28
Belgium	6.1%	23	5.2%	24
Japan	6.0%	24	8.6%	8
South Africa	5.9%	25	5.7%	23
France	5.6%	26	7.4%	14
Hungary	5.5%	27	8.5%	9
Brazil	4.7%	28	1.8%	29
Spain	3.5%	29	4.1%	26
Mexico	3.4%	30	1.0%	30
India	1.9%	31	0.7%	31
Spain	1.5%	32	0.2%	32

Table 5 shows bivariate correlations between early-stage entrepreneurial activity (overall and high-expectation), established entrepreneurial activity (overall and high-growth), and the anatomy of both early-stage and established entrepreneurial activity (relative prevalence).

The table reveals several interesting patterns. First, the adult-population prevalence of total early-stage entrepreneurial activity (first vertical column) correlates strongly with the adult-population prevalence of high-expectation TEA[12] as well as with the adult-population prevalence of established entrepreneurial activity. However, overall TEA is *not* associated with the adult-population prevalence of high-growth established entrepreneurship. This suggests the presence of factors that intervene to obscure the relationship between overall levels of entrepreneurship and entrepreneurial firm growth. On the other hand, a positive correlation exists between high-expectation TEA and high-growth established entrepreneurship.

The correlations between adult-population prevalence of entrepreneurial activity and the anatomy of entrepreneurship (i.e., relative prevalence of high-growth and high-expectation entrepreneurship) are revealing. Overall, TEA correlates *negatively and*

significantly with the relative prevalence of both high-expectation and high-growth entrepreneurial activity. The adult-population prevalence of high-expectation TEA, in contrast, correlates *positively* with high-expectation anatomy and has no relationship with high-growth anatomy. Also, the adult-population prevalence of established entrepreneurs correlates *negatively* with both aspects of the anatomy of entrepreneurship, whereas high-growth established entrepreneurship correlates *positively* with both aspects of the anatomy of entrepreneurship.

This set of correlations suggests complex relationships between overall population rates of entrepreneurship, the anatomy of entrepreneurship, and the population rates of high-growth and high-expectation entrepreneurship. It appears that high-growth and high-expectation entrepreneurship may be quite different phenomena, and each may be associated with and driven by different macroeconomic, cultural, and demographic conditions. At the very least, on the basis of correlations reported in Table 5, it *cannot* be claimed that increasing overall levels of entrepreneurship would automatically lead to greater entrepreneurial growth. Clearly, further theory development and empirical research is required to fully understand the patterns observed in Table 5.

Table 5. Correlations Between Prevalence Rates of High-Expectation (Nascent and New Entrepreneurs, 20 or More Expected Jobs) and High-Growth (Established Entrepreneurs, 20 or More Current Employees) Entrepreneurship[13]

		1	2	3	4	5
Total Early-Stage Entrepreneurial Activity TEA (Adult-Population Prevalence)	1 Overall activity					
	2 High-expectation	0.625(**)				
Established Entrepreneurial Activity (Adult-Population Prevalence)	3 Overall activity	0.653(**)	0.329(**)			
	4 High-Growth	-0.018	0.241(**)	0.287(**)		
High-Expectation Activity (Relative Prevalence)	5 % TEA	-0.135(*)	0.549(**)	-0.199(**)	0.320(**)	
High-Growth Activity (Relative Prevalence)	6 % Established Entrepreneurs	-0.354(**)	0.000	-0.319(**)	0.661(**)	0.435(**)

[12] Total early-stage entrepreneurial activity.
[13] Methodological note: The correlations compare distribution means grouped by year and country. Pearson correlations, 2-tailed significance; *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

The relationship between economic wealth and high-expectation entrepreneurship is explored in Figure 10. Figure 10 shows the relationship between adult-population prevalence of high-expectation entrepreneurship and a country's real GDP per capita (PPP) in 2006. The data seem to exhibit a reasonably linear pattern, different from GEM's analyses of overall levels of entrepreneurial activity (Minniti *et al.*, 2006). The fit is not very strong, however, indicating that factors other than GDP per capita exercise an important influence on the adult-population prevalence of high-expectation entrepreneurship. Even though a number of countries fall onto an almost direct line, the spread seems to increase as a function of GDP per capita.

Figure 10. Adult-Population Prevalence of High-Expectation Entrepreneurial Activity (Nascent and New, 20 or More Expected Jobs)
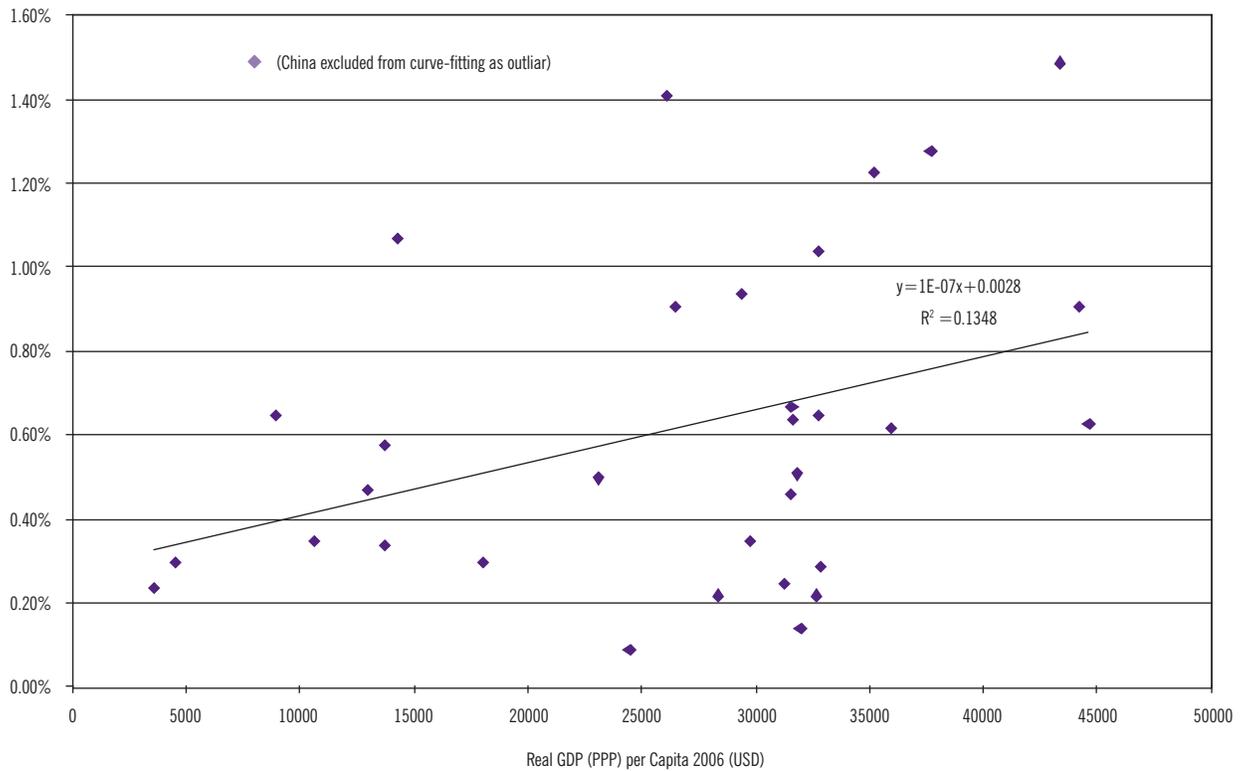
The relationship between GDP per capita and the anatomy of entrepreneurship is shown in Figure 11. In this figure, the relative prevalence of high-expectation entrepreneurs (as percentage of a country's population of nascent and new entrepreneurs) is indicated. Again, a linear curve provides the best fit with the data, and the R^2 is much higher than for adult-population prevalence.

The differences between adult-population prevalence and relative prevalence patterns may be indicative of the effect of opportunity costs on high-growth expectations. Even though a mild linear pattern could be observed for the relationship between per-capita GDP and adult-population prevalence rate of high-expectation entrepreneurship, other factors also seem to be at play. On the one hand, one potential influence could be industry structural conditions, which could exercise an influence on the overall level

of entrepreneurial activity, at any level of growth expectations. On the other hand, the link between per-capita GDP and the anatomy of entrepreneurship may reflect the effect of opportunity costs on high-growth expectations. Remember that in high-income countries, nearly all entrepreneurial activity is opportunity-driven, undertaken by individuals who already have a steady employment. For an employed person to switch from steady income to more uncertain and volatile entrepreneurial income, a higher upside potential is probably required than in the case of necessity entrepreneurship. If an individual has no current income, the opportunity cost of the entrepreneurial career option will be small, and the required upside potential may not need to be as high for the individual to choose the entrepreneurial option. Thus, opportunity costs could partly explain the pattern observed in Figure 11.

Figure 11. Entrepreneurial Anatomy: Relative Prevalence of High-Expectation Activity (Nascent and New Entrepreneurs, 20 or More Expected Jobs, as Percent of All Start-Up Activity)

$y = 2E\text{-}06x + 0.034$

$R^2 = 0.2909$

(China excluded as outliar)

Real GDP (PPP) per Capita 2006 (USD)
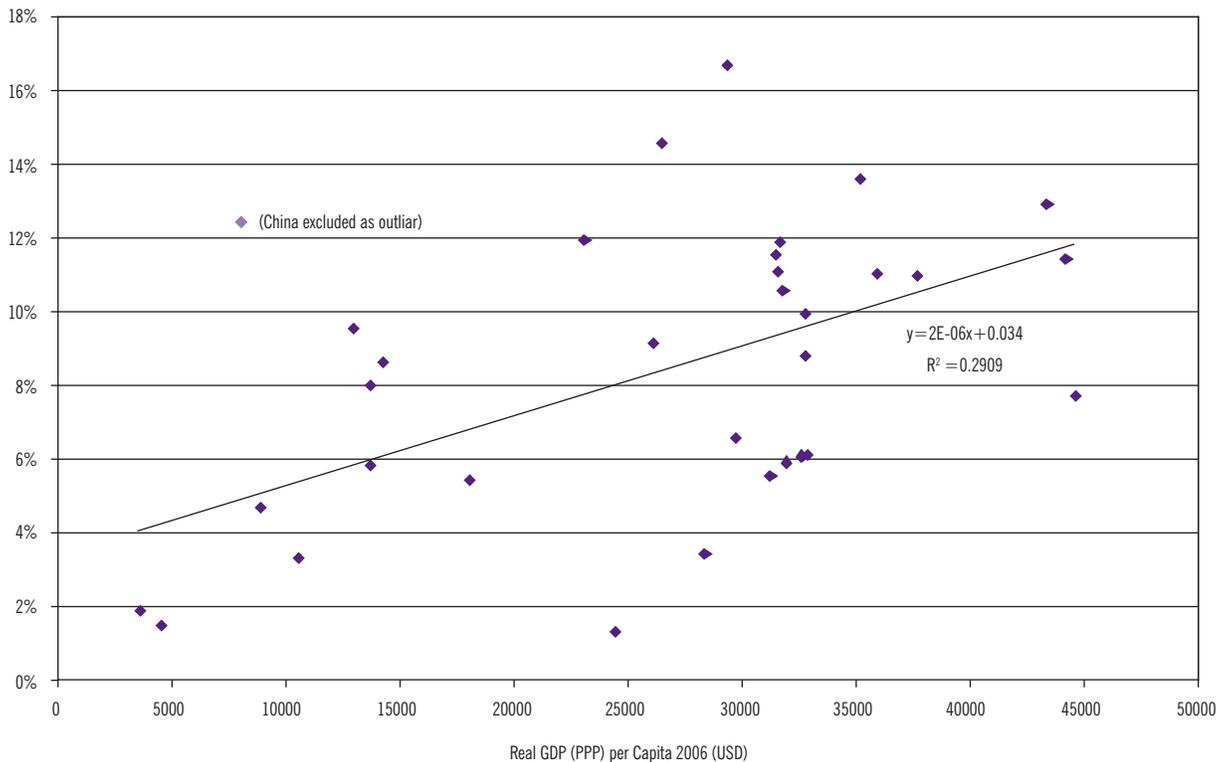
SUMMARY OF COUNTRY COMPARISON

- There are significant differences between individual countries in terms of both the adult-population and relative prevalence of high-expectation entrepreneurial activity. Among high-income countries, the difference between the United States' and Greece's adult-population prevalence rate of high-expectation entrepreneurship is fifteenfold.

- There are surprisingly large differences in high-expectation entrepreneurship even among countries with similar GDP per capita and similar social security and fiscal regimes. The comparison among the Scandinavian countries may suggest the importance of industry structural conditions as a determinant of adult-population prevalence of high-expectation entrepreneurship in high-income countries.

- The two largest emerging economies in the world, China and India, exhibit dramatically different levels of high-expectation and high-growth entrepreneurship. The difference between China and India is over sixfold.

- As a general rule, high-income countries appear to perform better in terms of high-expectation entrepreneurship than in terms of overall entrepreneurial activity rates. Of high-income countries, the United States, Israel, Iceland, and Canada exhibit the highest adult-population prevalence rates of high-expectation entrepreneurship.

- The United States ranks higher in terms of high-expectation entrepreneurship than in terms of high-growth (established) entrepreneurship. In terms of high-growth established entrepreneurship (adult-population prevalence of established entrepreneurs who currently have 20 or more employees), the United States ranks behind Japan. Note, however, that high-expectations and high-growth are quite different phenomena and cannot be directly compared with one another.

- In terms of the anatomy of entrepreneurship, high-income countries do better than middle- and low-income countries. Singapore stands out as the country with the highest relative prevalence of high-expectation entrepreneurship.

- The patterns between per-capita GDP and adult-population and both adult-population and relative prevalence of high-expectation entrepreneurship may suggest the effect of career opportunity costs as a contributing factor to the high relative prevalence of high-expectation entrepreneurs in high-income countries.

An individual's decision to launch a new venture is affected by both contextual factors (i.e., the entrepreneur's environment) and his or her personal characteristics and skills. The size and shape of an "opportunity" (and related growth expectation) is not defined by the environment alone, but rather by the match between opportunity and the personal characteristics of the individual considering it (Shane, 2000). A given "opportunity" may represent significant growth potential for some individuals (for example, those possessing the right skills and social capital to effectively exploit it) but only a small potential for others (i.e., those whose human and social capital is poorly suited to exploit the opportunity). Thus, growth expectations and realized growth may be influenced by individuals' characteristics, and it may be possible, at least to some extent, to identify characteristics associated with high-growth expectations and realized entrepreneurial growth.

Because the GEM data contain demographic data on nascent, new, and established entrepreneurs, they offer a good opportunity to explore the profile of high-expectation and high-growth entrepreneurs. Table 6 provides a summary of the profiles of nascent, new, and established entrepreneurs in high-income countries, as compared against the general adult population. The table is organized in three major columns, with one each for nascent, new, and established entrepreneurs. The profile of high-expectation and high-growth entrepreneurs is presented in the middle of each major column. For nascent and new entrepreneurs, high-expectation entrepreneurs (20 or more expected jobs in five years) are compared first against the general population of nascent or new entrepreneurs (left subcolumn), and second against the adult-age population in general (right subcolumn). For established entrepreneurs (owner-managers of firms over 42 months old), high-growth entrepreneurs (those who currently have 20 or more employees) are similarly compared against the general population of established entrepreneurs and adult-age population in general. Statistical significances of the differences are also indicated.

Because of the large size of the GEM sample, most differences are statistically significant. In a sample of this magnitude, a difference between means can be statistically significant without being very meaningful in practice. A closer examination of the table reveals many interesting patterns, however.

In terms of age profile, nascent high-expectation entrepreneurs are most heavily biased toward young individuals, whereas established high-growth entrepreneurs are biased toward older individuals. In all, 18.8% of nascent high-expectation entrepreneurs were from 18 to 24 years old, whereas only 3.3% of established high-growth entrepreneurs were observed in this age bracket. In contrast, the two oldest age

categories are overrepresented among high-growth established entrepreneurs and under-represented among nascent and new entrepreneurs.

While women are underrepresented among all categories of entrepreneurs, they are particularly underrepresented among high-expectation and high-growth entrepreneurs. Only some one-third of all categories of entrepreneurs were women, whereas less than one-quarter of the high-expectation and high-growth entrepreneurs were women.

For secondary education, lower levels of education are underrepresented among all categories of entrepreneurs, but particularly so among high-expectation and high-growth entrepreneurs. With the exception of graduate experience, nascent and new high-expectation entrepreneurs tend to have higher education, perhaps reflecting the higher opportunity costs faced by this group, as highly educated individuals typically have more alternative employment opportunities.

Also, household income distinguishes entrepreneurs—high-expectation and high-growth entrepreneurs, in particular—from the general population. Only one-fifth of high-expectation nascent entrepreneurs belonged to the lowest third household income category, and less than one-tenth of high-expectation and high-growth new and established entrepreneurs. Some 43% of nascent high-expectation entrepreneurs belonged to the highest income tier, as did as many as 63% of high-growth established entrepreneurs.

While the generally higher wealth of established high-growth entrepreneurs probably reflects their entrepreneurial success, the wealth of nascent and new high-expectation entrepreneurs may have more to do with social stratification of growth opportunities. It may be that wealthy individuals, thanks to their social capital, may both get to see more growth opportunities, and their wealth, human capital, and societal connections may also make them better equipped to pursue such opportunities.

Not surprisingly, entrepreneurs in all categories are more likely to have either full- or part-time employment than the general population, and high-growth and high-expectation entrepreneurs are particularly likely to do so.

Entrepreneurial activity variables set all categories of entrepreneurs apart from the general population. With the exception of recent experience on business closure, the activity variables also set high-expectation and high-growth entrepreneurs apart from other entrepreneurs. High-expectation and high-growth entrepreneurs are twice as likely as other entrepreneurs to have made business angel investments[14] during the past three years, are more likely to have known other entrepreneurs during the past two years, and are more likely to expect to start a new business within the next three years. There is no notable difference between high-growth and high-expectation and other entrepreneurs with regard to experience on business closure. Interestingly, nascent and new high-expectation entrepreneurs are twice as likely as established high-growth entrepreneurs to have shut down a business during the past 12 months.

In addition, attitude variables set both nascent and new high-expectation entrepreneurs apart from both the population of entrepreneurs as well as from the general population. Nascent and new high-expectation entrepreneurs are less likely to be inhibited by fear of failure, are more optimistic concerning start-up opportunities, and are more likely to believe that they have sufficient skills to start a new firm. However, established high-growth entrepreneurs do not differ markedly from all established entrepreneurs in

terms of their attitudes. Perception of opportunities, thus, may have more to do with the initiation of new high-expectation businesses than with actual growth, and it may well be a reflection of a certain degree of overconfidence. Or, it may also be that entrepreneurs' attitudes change as they gather firsthand business experience.

The distribution of high-expectation and high-growth entrepreneurs across business sectors provides insight into the effect of industry structure on high-growth entrepreneurship. We can observe that high-expectation and high-growth entrepreneurs are underrepresented in the agriculture, fishery, forestry, and hunting sectors (i.e., primary agricultural output). High-expectation new entrepreneurs and high-growth established entrepreneurs are slightly overrepresented in the manufacturing sector and in transportation, communication, and utilities. Nascent and new high-expectation entrepreneurs are underrepresented in retail, hotel, and restaurant sectors, but not so for high-growth established entrepreneurs. Interestingly, nascent high-expectation entrepreneurs are overrepresented in the financial, insurance, and real-estate sectors, but high-growth established entrepreneurs are underrepresented in these sectors. There is also slight underrepresentation of high-expectation and high-growth new and established entrepreneurs in consumer services.

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[14] A 'business angel investment' refers to a situation in which a private individual invests his or her own funds to new privately-held entrepreneurial companies started by others. This activity does not include investments in public share offerings, however.

Table 6. Demographic Characteristics of Nascent, New, and Established Entrepreneurs in High-Income Countries
(* p < 0.001; **p < 0.01; * p< 0.05; +p < 0.1; 2-tailed significances)**

HIGH-INCOME COUNTRIES

CATEGORY	NASCENT ENTREPRENEURS				NEW ENTREPRENEURS				ESTABLISHED ENTREPRENEURS				
	Sig.	All	High-Expectation	Adult population	Sig.	All	High-Expectation	Adult population	Sig.	All	High-Growth	Adult population	Sig.
AGE													
18 – 24 YEARS OLD	***	12.5%	18.8%	14.2%	***	9.3%	10.3%	14.2%	*	2.4%	3.3%	14.1%	***
25 – 34 YEARS OLD	*	28.2%	26.4%	22.2%	*	30.5%	33.0%	22.2%	**	12.9%	13.5%	22.1%	***
35 – 44 YEARS OLD	***	27.9%	26.8%	23.6%	+	29.6%	27.9%	23.6%	**	28.7%	32.0%	23.7%	***
45 – 54 YEARS OLD	***	19.3%	15.4%	21.0%	***	18.1%	15.4%	21.0%	+	31.2%	29.4%	21.3%	***
55 – 64 YEARS OLD	**	8.0%	6.6%	16.3%	*	9.0%	7.6%	16.3%		22.1%	21.6%	16.7%	***
GENDER													
% FEMALES OF TOTAL	***	35.1%	20.7%	49.9%	***	34.8%	17.8%	49.9%	***	32.5%	23.6%	49.9%	***
EDUCATION													
SOME SECONDARY EDUCATION	***	12.1%	9.9%	19.4%	***	13.9%	8.8%	19.4%	***	17.8%	11.4%	21.2%	***
SECONDARY EDUCATION DEGREE	***	31.9%	26.8%	36.6%	***	32.4%	24.6%	36.6%	*	32.2%	29.8%	35.4%	***
POST SECONDARY EDUCATION	***	37.9%	42.2%	28.3%	***	35.4%	41.3%	28.3%	**	29.7%	29.8%	27.3%	*
COLLEGE OR UNIVERSITY DEGREE													
GRADUATE EXPERIENCE	***	14.0%	16.2%	12.3%	***	14.4%	19.2%	12.3%	***	18.6%	27.3%	14.5%	***
HOUSEHOLD INCOME													
LOWEST THIRD IN COUNTRY	***	23.3%	19.2%	27.6%	***	19.1%	9.3%	27.6%	***	18.6%	8.9%	29.9%	***
MIDDLE THIRD IN COUNTRY	***	31.3%	25.8%	30.7%	***	30.0%	23.8%	30.7%	***	27.4%	12.8%	31.6%	***
HIGHEST THIRD IN COUNTRY	***	31.2%	42.8%	25.2%	***	38.0%	58.4%	25.2%	***	41.4%	63.3%	24.7%	***
EMPLOYMENT STATUS													
WORKING FULL TIME	***	65.8%	71.5%	57.0%	***	77.9%	86.6%	57.0%	***	85.8%	90.0%	58.6%	***
WORKING FULL OR PART TIME	***	79.3%	80.4%	67.3%	***	91.9%	94.8%	67.3%	***	94.1%	95.8%	68.8%	***
NOT WORKING	***	14.3%	11.3%	20.5%	**	5.1%	3.8%	20.5%	***	2.5%	1.4%	20.0%	***
ENTREPRENEURIAL ACTIVITY													
BUSINESS ANGEL ACTIVITY DURING PAST 3 YEARS (% YES)	***	11.2%	16.8%	3.3%	***	13.5%	25.8%	3.3%	***	8.7%	18.8%	3.1%	***
SHUT DOWN BUSINESS DURING PAST 12 MONTHS (% YES)	***	9.1%	12.3%	2.6%	***	10.0%	11.5%	2.6%	***	5.5%	6.5%	2.6%	***
PERSONALLY KNOWN ENTREPRENEURS DURING PAST 2 YEARS (% YES)	***	67.3%	77.4%	37.5%	***	69.5%	84.6%	37.5%	***	54.6%	65.8%	37.4%	***
EXPECTS TO START A BUSINESS WITHIN THE NEXT 3 YEARS (% YES)	***	65.7%	76.9%	10.9%	***	35.9%	43.8%	10.9%	***	18.2%	24.4%	10.9%	***
ATTITUDES													
"FEAR OF FAILURE WOULD PREVENT ME FROM STARTING A BUSINESS" (% YES)	***	21.7%	14.3%	32.3%	***	21.4%	13.4%	32.3%	***	21.6%	20.3%	31.6%	***
"IN THE NEXT 6 MONTHS, THERE WILL BE GOOD OPPORTUNITIES TO START A BUSINESS IN THE AREA WHERE I LIVE" (% YES)	***	61.4%	68.4%	28.5%	***	52.7%	62.2%	28.5%	*	40.0%	40.9%	28.7%	***
"I HAVE SUFFICIENT SKILLS AND KNOWLEDGE TO START UP A NEW FIRM" (% YES)	***	86.0%	91.3%	44.1%	***	85.9%	92.3%	44.1%	***	80.6%	86.1%	45.2%	***
BUSINESS SECTOR													
AGRICULTURE, FORESTRY, HUNTING, FISHING	***	4.2%	0.7%	n.a.	***	4.1%	1.7%	n.a.	***	8.4%	3.2%	n.a.	n.a.
MINING, CONSTRUCTION	*	6.5%	5.0%	n.a.	***	9.5%	13.2%	n.a.	***	12.0%	11.8%	n.a.	n.a.
MANUFACTURING		8.1%	9.1%	n.a.	**	8.0%	10.6%	n.a.	***	10.1%	13.9%	n.a.	n.a.
TRANSPORTATION, COMMUNICATION, UTILITIES	***	4.7%	7.2%	n.a.	***	6.1%	10.5%	n.a.	***	5.0%	8.1%	n.a.	n.a.
WHOLESALE, MOTOR VEHICLE SALE AND REPAIR	*	7.5%	9.2%	n.a.	*	7.8%	9.6%	n.a.		7.8%	7.5%	n.a.	n.a.
RETAIL, HOTEL, RESTAURANTS	***	24.4%	15.4%	n.a.	***	24.0%	16.0%	n.a.	*	20.0%	23.1%	n.a.	n.a.
FINANCIAL, INSURANCE, REAL ESTATE	***	5.9%	10.2%	n.a.	***	5.6%	5.5%	n.a.	**	6.1%	3.4%	n.a.	n.a.
BUSINESS SERVICES	***	19.5%	26.2%	n.a.	***	19.4%	21.1%	n.a.		16.3%	17.7%	n.a.	n.a.
HEALTH, EDUCATION, SOCIAL SERVICES	**	7.0%	4.7%	n.a.		6.8%	6.0%	n.a.		6.8%	7.5%	n.a.	n.a.
CONSUMER SERVICES	***	12.3%	12.3%	n.a.	***	8.8%	5.7%	n.a.	***	7.5%	3.7%	n.a.	n.a.

Table 7. Demographic Characteristics of Nascent, New, and Established Entrepreneurs in Middle- and Low-Income Countries (* p < 0.001; **p < 0.01; * p< 0.05; +p < 0.1; 2-tailed significances)**

MIDDLE TO LOW INCOME COUNTRIES

CATEGORY	NASCENT ENTREPRENEURS					NEW ENTREPRENEURS					ESTABLISHED ENTREPRENEURS				
	Sig.	All	High-Expectation	Adult population	Sig.	Sig.	All	High-Expectation	Adult population	Sig.	Sig.	All	High-Growth	Adult population	Sig.
AGE															
18 - 24 YEARS OLD	***	23.7%	33.5%	20.3%	***	***	21.5%	27.2%	20.3%	***		8.6%	8.1%	20.1%	***
25 - 34 YEARS OLD		32.4%	29.1%	27.2%		**	34.3%	29.2%	27.2%	**	**	25.5%	30.6%	27.5%	***
35 - 44 YEARS OLD		23.4%	24.3%	23.0%	***	***	24.2%	31.5%	23.0%	***	+	33.1%	36.6%	23.6%	***
45 - 54 YEARS OLD	***	13.6%	6.1%	17.3%	***	***	13.7%	7.5%	17.3%	***	*	22.8%	18.8%	17.9%	***
55 - 64 YEARS OLD	***	6.2%	5.4%	10.6%	***	***	5.7%	3.0%	10.6%	***	**	10.0%	6.1%	10.9%	***
GENDER															
% FEMALES OF TOTAL	***	40.3%	20.2%	49.2%	***	***	44.0%	34.1%	49.2%	***	***	38.1%	24.4%	49.2%	***
EDUCATION															
SOME SECONDARY EDUCATION	***	49.6%	41.7%	56.7%	***	***	58.2%	34.7%	56.7%	***	***	66.0%	39.2%	56.0%	***
SECONDARY EDUCATION DEGREE	**	22.8%	24.8%	19.0%	***	**	19.2%	17.6%	19.0%		***	17.2%	29.0%	19.1%	***
POST SECONDARY EDUCATION	***	14.0%	14.8%	12.3%	*	**	10.9%	15.2%	12.3%	*	***	9.5%	19.7%	12.2%	***
GRADUATE EXPERIENCE	***	5.2%	16.7%	5.2%	***	***	6.1%	29.2%	5.2%	***	***	3.4%	11.6%	6.2%	***
HOUSEHOLD INCOME															
LOWEST THIRD IN COUNTRY	***	40.2%	24.8%	42.2%	***	***	36.0%	5.2%	42.2%	***	***	38.3%	9.6%	42.7%	***
MIDDLE THIRD IN COUNTRY	*	26.8%	23.2%	29.9%	***	***	30.0%	29.9%	29.9%		***	30.5%	14.2%	28.1%	***
HIGHEST THIRD IN COUNTRY	***	20.5%	34.4%	16.6%	***	***	25.7%	60.5%	16.6%	***	***	25.4%	64.5%	17.5%	***
EMPLOYMENT STATUS															
WORKING FULL TIME	***	66.6%	78.2%	55.0%	***	***	79.0%	62.4%	55.0%	***	***	82.2%	87.9%	55.9%	***
WORKING FULL OR PART TIME	***	77.1%	89.2%	61.6%	***	***	92.2%	93.6%	61.6%	***	***	92.1%	99.2%	63.2%	***
NOT WORKING	***	16.5%	5.9%	26.6%	***	**	5.5%	5.3%	26.6%	**	***	5.2%	0.4%	24.2%	***
ENTREPRENEURIAL ACTIVITY															
BUSINESS ANGEL ACTIVITY DURING PAST 3 YEARS (% YES)	***	11.5%	26.1%	5.1%	***	**	9.5%	20.3%	5.1%	***	***	9.7%	11.0%	5.8%	***
SHUT DOWN BUSINESS DURING PAST 12 MONTHS (% YES)	**	12.2%	15.8%	6.7%	***	**	11.3%	16.6%	6.7%	***	***	8.5%	11.9%	6.7%	***
PERSONALLY KNOWN ENTREPRENEURS DURING PAST 2 YEARS (% YES)	***	62.4%	81.6%	44.0%	***	**	62.4%	89.5%	44.0%	***	*	61.9%	79.8%	48.7%	***
EXPECTS TO START A BUSINESS WITHIN THE NEXT 3 YEARS (% YES)	***	67.4%	85.0%	30.9%	***	***	47.6%	62.0%	30.9%	***	***	38.1%	61.0%	30.9%	***
ATTITUDES															
"FEAR OF FAILURE WOULD PREVENT ME FROM STARTING A BUSINESS" (% YES)	***	23.4%	16.7%	29.4%	***	***	24.6%	20.3%	29.4%	***	***	27.6%	23.6%	28.6%	***
"IN THE NEXT 6 MONTHS, THERE WILL BE GOOD OPPORTUNITIES TO START A BUSINESS IN THE AREA WHERE I LIVE" (% YES)	**	61.5%	67.0%	36.5%	***	***	49.6%	78.2%	36.5%	***	+	44.3%	39.5%	36.5%	***
"I HAVE SUFFICIENT SKILLS AND KNOWLEDGE TO START UP A NEW FIRM" (% YES)	***	74.5%	82.3%	45.6%	***	**	65.7%	61.8%	45.6%	***	***	69.6%	77.8%	46.3%	***
BUSINESS SECTOR															
AGRICULTURE, FORESTRY, HUNTING, FISHING		6.2%	8.2%	n.a.		**	5.6%	1.8%	n.a.		***	12.4%	1.5%	n.a.	
MINING, CONSTRUCTION	***	2.0%	11.0%	n.a.		**	1.3%	4.4%	n.a.		***	4.9%	13.7%	n.a.	
MANUFACTURING	***	14.7%	32.1%	n.a.		**	11.5%	18.4%	n.a.		*	12.3%	7.4%	n.a.	
TRANSPORTATION, COMMUNICATION, UTILITIES		3.5%	2.2%	n.a.		***	3.8%	11.4%	n.a.			2.4%	3.9%	n.a.	
WHOLESALE, MOTOR VEHICLE SALE AND REPAIR		9.8%	7.7%	n.a.			10.1%	12.7%	n.a.			16.9%	43.6%	n.a.	
RETAIL, HOTEL, RESTAURANTS	***	51.7%	20.4%	n.a.		***	53.4%	36.4%	n.a.		***	42.3%	25.5%	n.a.	
FINANCIAL, INSURANCE, REAL ESTATE	***	0.9%	5.5%	n.a.			0.9%	1.3%	n.a.			0.4%	0.0%	n.a.	
BUSINESS SERVICES		4.4%	5.5%	n.a.		**	5.8%	10.5%	n.a.			2.7%	3.4%	n.a.	
HEALTH, EDUCATION, SOCIAL SERVICES	***	2.1%	6.6%	n.a.			4.2%	2.6%	n.a.			2.1%	0.5%	n.a.	
CONSUMER SERVICES		2.6%	2.9%	n.a.		**	3.4%	0.4%	n.a.		**	3.5%	0.0%	n.a.	

The demographic characteristics of high-expectation and high-growth entrepreneurs show largely similar patterns in middle- and low-income countries (GDP per capita less than USD 20,000 in 2006) as in high-income countries. As in high-income countries, nascent and new high-expectation entrepreneurs are overrepresented in the youngest age bracket and underrepresented in the oldest age brackets. Unlike in high-income countries, the overrepresentation of high-growth established entrepreneurs peaks in the age bracket of 35 to 44 years and tapers off toward older age brackets.

The gender distribution also shows similar patterns in middle- and low-income countries as in high-income countries, although females are less underrepresented among entrepreneurs in middle- and low-income countries than in high-income countries.

As in high-income countries, entrepreneurs of any kind are underrepresented in the lowest education bracket and tend to be overrepresented in higher education brackets. The distinguishing effect of higher education appears particularly pronounced for high-expectation new entrepreneurs and high-growth established entrepreneurs.

In middle- and low-income countries, household income is similarly associated with the incidence of entrepreneurship as in high-income countries. Again, both social stratification and wealth-creation mechanisms may be at play here, with wealth likely affecting both exposure to opportunities and willingness to pursue them, which, when successful, enhances the wealth of the high-growth entrepreneur.

Both employment status and entrepreneurial activity characteristics display similar general trends in middle- and low-income countries as in high-income countries. In middle- and low-income countries, high-growth established entrepreneurs are not significantly more likely than other established entrepreneurs to report business angel activity. Unlike in high-income countries, they are more likely than all established entrepreneurs to have shut down a business during the past 12 months. For entrepreneurial attitudes, as in high-income countries, established high-growth entrepreneurs are not more likely to perceive good business opportunities than is the general population in middle- and low-income countries.

SUMMARY

- Education and household income, as well as entrepreneurial activities and attitudes, are significantly associated with high-expectation and high-growth entrepreneurship.

- High-expectation and high-growth entrepreneurs are better educated than other entrepreneurs and the general population. In high-, middle-, and low-income countries, high-expectation and high-growth entrepreneurs are significantly more likely to have graduate experience than reference groups.

- High-expectation and high-growth entrepreneurs are likely to be wealthier than other entrepreneurs and the general population, in high-, middle-, and low-income countries.

- High-expectation and high-growth entrepreneurs are more likely to exhibit entrepreneurial attitudes and activities than other entrepreneurs and the general population, with a few exceptions. Established high-growth entrepreneurs are not more likely than other established entrepreneurs to perceive good opportunities for start-up activity, whereas nascent and new entrepreneurs are.

- The uneven distribution of high-expectation, high-growth, and other entrepreneurs across industry sectors suggests the effect of industry structural conditions on entrepreneurial growth. High-expectation and high-growth entrepreneurs are generally overrepresented in the manufacturing, transportation, communication, and utilities sectors, but underrepresented in agriculture and consumer services.

GEM's adult population surveys provide the base data for the study of country-level entrepreneurial activity. In addition to adult population surveys, GEM also collects data describing the national context of entrepreneurial activity. This data is collected by means of a questionnaire survey conducted among some 35 to 50 experts knowledgeable about entrepreneurship in the national context. These survey data are used to compute multi-item scales describing various aspects of national entrepreneurial framework conditions.[15] Two types of framework conditions are considered: first, those that can be more or less directly influenced by government policy, and second, those describing the national culture and society in general.

The first group of policy indicators measures the following aspects:

- Availability of funding for new and growing firms (including venture capital, debt funding, subsidies, business angel finance, and capital market finance through initial public offerings)

- Government policy priorities with regard to entrepreneurship at national and regional government levels

- Degree of regulatory burden within the economy (e.g., ease of obtaining permits and licenses, fiscal burden, and consistency and predictability of regulatory control)

- Availability and quality of support programs and initiatives for new and growing firms

- The degree to which primary and secondary education support the development of entrepreneurial skills and initiative

- The degree to which post-secondary education and vocational training support the development of entrepreneurial skills and initiative.

- Efficiency of technology transfer from research to entrepreneurial firms, quality of national science and technology base, and the openness of this base for access by new and growing firms

- Availability and accessibility of professional and business services for new and growing firms

- Dynamism and change in domestic consumer and business-to-business markets

- Ease of market entry by new and growing firms, and effectiveness and enforcement of antitrust legislation

- Quality of physical infrastructure relevant for new business activity (e.g., roads, utilities, communications infrastructure)

- Protection of intellectual property rights

All the indicators above can be more or less directly influenced by purposeful government intervention. However, there are also cultural and societal conditions and valuations in national contexts that also influence entrepreneurial activity, even though they cannot be easily and immediately influenced by government policy. Such cultural and societal framework conditions measured by GEM are:

- Entrepreneurial orientation in national culture (national cultural emphasis on innovation, proactiveness, individual risk-taking, self-sufficiency and autonomy, appreciation of success through individual effort)

- Existence of new business opportunities in the economy and society

- Existence of entrepreneurial skills and capabilities in the population (skills to start up and manage new and growing firms, ability to mobilize resources for new firms, ability to react quickly to emerging opportunities)

- Existence of entrepreneurial motivations in the population (e.g., appreciation of entrepreneurship as career choice, societal status of successful entrepreneurs, visibility of entrepreneurial success stories in the media)

- Societal support for female entrepreneurship.

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[15] Methodological note: Five-step Likert scales are used to assess various conditions. Higher values of scale indicate better quality of the framework condition. Typically, five to six statements per multi-item scale are assessed. All scales are checked for factor loading and internal reliability (Cronbach alpha). The internal reliability coefficients of multi-item scales range from a low of 0.74 to a high of 0.92.

Table 8 shows how the national entrepreneurial framework conditions compare against adult-population and relative prevalence of overall, high-expectation, and high-growth entrepreneurial activity.[16]

Consistent with analyses reported above, overall levels of entrepreneurial activity are either negatively or neutrally associated with national policy conditions influencing entrepreneurship. This pattern is likely explained by the fact that overall levels of entrepreneurial activity tend to be higher in middle- to low-income countries, where the policy framework and business infrastructure may not be as well developed as it is in high-income countries. The pattern of negative and significant, or neutral (i.e., non-significant) correlations holds for all facets of overall entrepreneurial activity (i.e., TEA, nascent, new, and established), with one notable exception: Domestic market change and dynamism are positively and statistically significantly associated with the adult-population prevalence of overall new and established entrepreneurial activity.

For the adult-population prevalence of high-expectation and high-growth entrepreneurship (second group of columns in Table 8), the correlations with national policy conditions are either neutral or positive. The pattern, thus, is very different from that observed for overall entrepreneurial activity. Notably, positive associations with high-growth and high-expectation entrepreneurship are observed for government regulations; education support for entrepreneurship (primary, secondary, and post-secondary); market openness; physical infrastructure; and IPR protection (for established high-growth entrepreneurship). While this pattern is probably encouraging for policy makers, it is likely that at least a part of it is due to high-income countries having greater levels of high-expectation and high-growth

entrepreneurship. On the basis of this data, it is not possible to say whether high-expectation activity is caused by policy conditions, or whether both are driven by economic wealth.

For the relative prevalence of high-expectation and high-growth entrepreneurship, the patterns are amplified. As can be seen in the rightmost columns in Table 8, the anatomy of entrepreneurship is positively and significantly associated with almost all national policy conditions, with the exception of market change and dynamism. It is interesting how market change and dynamism showed positive associations with the overall levels of entrepreneurship, but not for high-expectation and high-growth entrepreneurship.

The associations with entrepreneurial framework conditions related to national culture and society show quite different patterns from those related to policy. Here, the associations are positive and significant, or neutral, for all aspects of entrepreneurial activity. Specifically, the entrepreneurial orientation of national culture is positively associated with the adult-population prevalence of both overall and high-growth activity, as well as with the anatomy of entrepreneurship. Existence of new business opportunities is positively associated with adult-population prevalence but not associated with relative prevalence. Entrepreneurial skills and motivations are positively associated with adult-population prevalence, but not with the relative prevalence of high-growth entrepreneurship. Societal support for women entrepreneurship is positively associated with both the adult-population and relative prevalence of high-expectation and high-growth entrepreneurship, but not so for overall entrepreneurship. Thus, it appears that national cultural and societal conditions tend to generally enhance all aspects of entrepreneurship, regardless of the level of growth ambition.

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[16] Methodological note: Pearson correlations, 2-tailed significance; *** p < 0.001; ** p < 0.01; * p < 0.05. Correlations are based on observations grouped by country and year. N ranges from 176 to 226.

Table 8. Bivariate Correlations Between National Entrepreneurial Framework Conditions and Entrepreneurship

| | ADULT-POPULATION PREVALENCE OF ENTREPRENEURSHIP | | | | | | | | RELATIVE PREVALENCE | |
| | OVERALL | | | | HIGH-EXPECTATION AND HIGH-GROWTH | | | | HIGH-EXPECTATION AND HIGH-GROWTH | |
	TEA	Nascent	New	Established	TEA	Nascent	New	Established	TEA	Established
ENTREPRENEURIAL FRAMEWORK CONDITION: POLICY										
Availability of equity and debt funding for new and growing firms	-0.269(**)	-0.212(**)	-0.269(**)	-0.222(**)	-0.017	-0.050	0.048	0.098	0.235(**)	0.274(**)
Government policy emphasis on entrepreneurship	-0.227(**)	-0.204(**)	-0.197(**)	-0.157	-0.036	-0.085	0.060	0.060	0.141(*)	0.146
Government regulations do not obstruct entrepreneurship	-0.103	-0.097	-0.081	-0.047	0.184(**)	0.109	0.240(**)	0.256(**)	0.350(**)	0.297(**)
Availability of entrepreneurship support programmes	-0.291(**)	-0.269(**)	-0.238(**)	-0.203(*)	-0.013	-0.083	0.111	0.135	0.281(**)	0.252(**)
Primary and secondary education support for entrepreneurship	-0.103	-0.055	-0.119	-0.155	0.182(**)	0.136	0.203(**)	0.282(**)	0.357(**)	0.364(**)
Post-secondary education support for entrepreneurship	0.032	0.097	-0.037	-0.230(**)	0.283(**)	0.297(**)	0.185(*)	0.005	0.276(**)	0.144
Technology transfer to entrepreneurial firms	-0.307(**)	-0.282(**)	-0.258(**)	-0.128	-0.002	-0.060	0.100	0.188(*)	0.218(**)	0.208(**)
Availability of business services for entrepreneurial firms	-0.181(*)	-0.128	-0.195(**)	-0.173(*)	0.079	0.045	0.111	0.140	0.290(**)	0.268(**)
Domestic market change and dynamism	0.083	0.018	0.144(*)	0.170(*)	0.019	0.035	-0.021	0.064	-0.009	-0.056
Market openness to entry by entrepreneurial firms	-0.078	-0.032	-0.097	0.010	0.212(**)	0.151(*)	0.251(**)	0.342(**)	0.257(**)	0.311(**)
Availability and quality of physical infrastructure	-0.121	-0.082	-0.129	-0.084	0.231(**)	0.210(**)	0.213(**)	0.209(**)	0.387(**)	0.285(**)
Protection of intellectual property rights	-0.340(**)	-0.271(**)	-0.342(**)	-0.233(**)	0.044	-0.005	0.122	0.241(**)	0.345(**)	0.347(**)
ENTREPRENEURIAL FRAMEWORK CONDITION: CULTURE AND SOCIETY										
Entrepreneurial orientation of national culture	0.209(**)	0.202(**)	0.187(**)	0.117	0.338(**)	0.259(**)	0.358(**)	0.251(**)	0.220(**)	0.177(*)
Existence of new business opportunities in the economy	0.253(**)	0.198(**)	0.291(**)	0.214(**)	0.267(**)	0.183(**)	0.326(**)	0.066	0.081	-0.084
Existence of entrepreneurial skills in the population	0.163(*)	0.175(*)	0.121	0.106	0.247(**)	0.193(**)	0.248(**)	0.273(**)	0.122	0.156
Existence of entrepreneurial motivations in the population	0.197(**)	0.135	0.241(**)	0.122	0.253(**)	0.141(*)	0.348(**)	0.073	0.162(*)	0.055
Societal support for women entrepreneurship	0.072	0.051	0.095	0.143	0.225(**)	0.202(*)	0.207(*)	0.277(**)	0.238(**)	0.152

Table 8 further reinforces the conclusions emerging from earlier analyses. Clearly, it appears that high-growth and high-expectation entrepreneurship differ from overall entrepreneurship in important ways. While the differences remain to be fully explored and uncovered, it may be that policies designed to support one aspect of entrepreneurship may not be effective in supporting another aspect (for example, high growth). It may even be that policies effective in addressing one aspect of entrepreneurship (say, overall entrepreneurship) may even be counterproductive for other aspects (say, high-growth). At the very least, Table 8 should be read as cautionary evidence that governments should carefully consider which aspects of entrepreneurial activity they wish to enhance, with what measures, and based on which causal logic. Clearly, a well thought-out entrepreneurship policy should have broader and more nuanced aims than merely increasing the numbers of entrepreneurs.

SUMMARY

- Overall entrepreneurship and high-growth entrepreneurship differ significantly in terms of their relationship with national entrepreneurial policy conditions. While some of these differences may be driven by a common underlying factor (i.e., national wealth), they may also partially result from intrinsic differences between high-expectation and low-expectation entrepreneurship.

- The adult-population prevalence of overall (low-expectation) entrepreneurship is either negatively or neutrally associated with the quality of national entrepreneurial policy conditions, possibly due to the high prevalence of low-expectation entrepreneurship in low-income countries.

- The adult-population and relative prevalence of high-expectation and high-growth entrepreneurship is, in general, positively associated with the quality of national entrepreneurial policy conditions. The pattern of positive associations is stronger for the anatomy of entrepreneurship.

- Both high- and low-expectation entrepreneurship are, in general, positively associated with national cultural and societal framework conditions that affect entrepreneurship. Thus, different facets of entrepreneurship react differently to national policy and cultural–societal environments.

Conclusions and Discussion

The analysis presented in this year's GEM report on high-growth entrepreneurship provides further empirical evidence supporting the importance of high-growth entrepreneurship for job creation. Nearly 50% of all nascent and new firms do not expect to create any jobs within five years' time. Only some 6% of all new firms reach the size of 20 or more employees, and entrepreneurial firms expecting 20 or more jobs are responsible for some 70% of total expected job creation by entrepreneurial firms. The importance of these observations for the makers of national entrepreneurship policies can hardly be overstated.

Our analysis reveals important differences between world regions and high-, middle-, and low-income countries in terms of both the adult-population and relative prevalence of high-growth entrepreneurship. As a general rule, when a country's per-capita income increases, its rate of high-growth entrepreneurship is also likely to increase, or at least its anatomy of entrepreneurial activity is likely to be tilted toward high-growth entrepreneurial activity. While the mechanisms underlying this pattern have yet to be uncovered, a partial explanation may be found in opportunity costs faced by individuals when they make career choices. More than low-growth entrepreneurial firms, high-expectation firms are started by individuals who already have a secure job. For an individual to make the transition from secure and steady employment to the world of uncertain and volatile income offered by an entrepreneurial venture, the prospect of high returns must be promising. There may also be other, perhaps structural reasons that explain the different emphasis of entrepreneurial activity in high- and low-income countries. The larger service sector in high-income countries may offer more prospects for high-growth entrepreneurship. A stronger science and technology base may offer more opportunities for innovation-driven growth. Potential explanations are numerous, and they should be explored further.

Even though high-income countries generally differ from middle- and low-income countries, striking variation also exists within each income group. Perhaps the most dramatic observation concerns the fivefold difference between China and India in terms of high-growth and high-expectation entrepreneurship. Highly significant differences can be observed for countries of similar size that have virtually the same income level and similar fiscal and social security systems, as the comparison between Scandinavian countries reveals. Iceland's adult-population rate of high-expectation and high-growth entrepreneurship is three to four times as high as Finland's, for example. These are important, even dramatic differences, given the important role that high-growth entrepreneurship plays in job creation. Such large differences cannot be ignored by policy makers in either high- or low-income countries. The reasons for this important variation call for urgent and sustained research attention.

While preliminary, the analysis presented in this report nevertheless has revealed interesting identifying characteristics of high-growth and high-expectation entrepreneurship. It can be seen that high-expectation and high-growth entrepreneurs differ from the demographics of the general population, as well as of the general population of entrepreneurs. High-expectation and high-growth entrepreneurs are more likely to be male, belong to certain age brackets, enjoy high household income, be well educated, have a job, and exhibit a range of entrepreneurial behaviors more often than either the general population or the population of entrepreneurs. Such demographic differences can be telling, and, once their underlying reasons are better understood, they may provide important pointers for policy design and implementation. It must be emphasized, however, that even though the incidence of high-expectation entrepreneurial activity may vary significantly across population cells, high-growth entrepreneurs can be found in virtually any demographic category.

Our analysis has also revealed telling, and potentially important, differences in the relationships between high- and low-growth entrepreneurship and national entrepreneurial framework conditions. The observed patterns suggest potentially important implications for entrepreneurship policy, although considerably more research is necessary to elaborate upon these. The relationships between high- and low-growth entrepreneurship, national policy conditions, and national culture provide for a fascinating area of cross-country studies.

While it is difficult to point to tangible policy implications based on the analysis reported here, general pointers for policy emphasis can be suggested. As pointed out in previous GEM reports and in previous research, entrepreneurship policy needs to cover several aspects of the economy and society, ranging from the entrepreneur to the broader societal and national context (Acs, 2004; Minniti et al., 2005; Minniti *et al.,* 2006; Reynolds *et al.,* 2002). Comprehensive entrepreneurship policy has to cut across policy departments, and only multilayered, coordinated policies are likely to produce lasting results. In particular, given the importance of national cultural factors on individual-level entrepreneurial choice, the central role of the educational system has often been emphasized as an important driver of cultural change.

The analyses in this report point to further policy implications. In particular, the differing relationships between high- and low-growth entrepreneurship and national policy conditions suggest that the two

Conclusions and Discussions

facets of entrepreneurship may well react differently to policy stimuli. At the basic level, our findings suggest an important difference between quantity and quality in entrepreneurship policy. Increasing numbers of entrepreneurship does not necessarily mean that growth will follow automatically. It may well be that policies aimed at raising overall levels of entrepreneurship produce even counterproductive results for high-growth entrepreneurship. There is increasing empirical evidence to suggest that the relationship between "numbers-oriented"

entrepreneurship policies and subsequent job creation in the economy is not automatic and may, in some situations, even be negative (Mueller et al., 2007; Van Stel et al., 2004). Depending on context, more entrepreneurs may sometimes mean less jobs. In a recent policy study undertaken by participants of the GEM consortium, several potential areas of conflict between generic entrepreneurship policies and high-growth entrepreneurship policies were highlighted, as summarized in Table 9.

Table 9. Trade-Offs Between SME and High-Growth Entrepreneurship Policies (Autio *et al.*, 2007)

	SME POLICY	HIGH-GROWTH ENTREPRENEURSHIP POLICY
POLICY GOALS		
Objectives in relation to entrepreneurs	Entice more people to become entrepreneurs	Entice the right people to become entrepreneurs
Objectives in relation to entrepreneurial firms	Increase the number of new entrepreneurial firms	Increase the growth of entrepreneurial firms
Objectives in relation to operational environment	Facilitate the environment for small business operation	Facilitate the environment for entrepreneurial firm growth
RESOURCE PROVISION		
Source	Mostly from public sources	Combination of public and private sources
Type of financial resources	Grants, subsidies, soft loans	R&D loans and innovation grants, business angel finance, venture finance, IPOs
Dominant service	Basic (standard) advice for firm creation, business planning, small business operation	Experience-based advice for venture finance; strategic planning; internationalization; organizational growth
Resource distribution principle	Ensure equal access for everyone (resource spread)	Select promising recipients (resource focus)
REGULATORY EMPHASIS		
Life cycle focus	Remove bottlenecks to new business entry	Remove bottlenecks to entrepreneurial firm growth
Compliance bottleneck addressed	Reduce cost of compliance for small businesses	Smooth compliance requirements for growing firms
Fiscal regulations	Reduce VAT for small firms	Accommodate dramatic changes in firm scale; treat share options neutrally
Attitude toward failure	Avoid failure, bankruptcy	Accept firm failure and bankruptcy, but reduce the economic and social cost of these
Links to other policy domains	Industrial policy, social policy, labor policy	Industrial policy, innovation policy, labor policy

Conclusions and Discussions

The trade-off between numbers and quality is particularly relevant for resource-intensive and distribution policies. Should governments provide much support for many or a little support for few? Overall, the importance of high-growth entrepreneurship for job creation would appear to suggest the need for greater selectiveness and focus in national entrepreneurship policy, but such a policy emphasis also raises difficult issues concerning what entrepreneurial ventures to select for support, how to select them, and who should be making those selections. Entrepreneurial growth is famously easy to predict after growth has occurred, but not before. It is not reasonable to expect governments to be better at predicting growth than professional venture capitalists, whose hit rate is not very high.

Instead of trying to "pick winners," governments can do many things to facilitate entrepreneurial choice by appropriately qualified individuals and solve problems faced by growing firms. For example, fiscal policies and measures can be used to alleviate career trade-offs faced by prospective entrepreneurs. Governments can also alleviate regulatory burdens that kick in as organizations grow, for example, by introducing honeymoon periods before additional compliance requirements come into affect after the firm reaches a certain threshold size. In addition to facilitating small business operation, governments should be careful to avoid creating regulatory traps that would deter entrepreneurial firms from growing beyond certain size. Policy choices addressing the balance between entrepreneurship and high-growth policies are thus often delicate and require considerable understanding of the high-growth phenomenon.

The data highlighted in this report has provided further evidence of the importance of the high-growth entrepreneurship phenomenon. While unique in its global coverage, the analysis presented here has only scratched the surface of this important phenomenon. Through its continued data collection efforts, GEM continues to contribute toward improved understanding of the workings of high-growth entrepreneurship.

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