

GLOBAL ENTREPRENEURSHIP MONITOR

2004 Executive Report

Zoltan J. Acs • Pia Arenius • Michael Hay • Maria Minniti





GLOBAL ENTREPRENEURSHIP MONITOR

2004 Executive Report

Zoltan J. Acs • Pia Arenius • Michael Hay • Maria Minniti

*with contributions from
Niels Bosma, Sander Wennekers, Silvia Carbonell, Rebecca Harding,
and Wong Poh Kam*

Founding and Sponsoring Institutions

Babson College, Babson Park, MA, USA

London Business School, London, UK

Managing Editor: Mick Hancock

TABLE OF CONTENTS

| | |
|--|-----------|
| GEM Teams and Sponsors | 4 |
| Preface | 11 |
| Executive Summary | 12 |
| The GEM Conceptual Model | 14 |
| The Scope of Entrepreneurial Activity | 16 |
| The Reliability and Stability of GEM's Methodology | 16 |
| Cross-National Differences in Entrepreneurial Activity | 16 |
| Motivation and Types of Entrepreneurial Behavior | 18 |
| Regional Differences in Entrepreneurial Activity | 21 |
| Entrepreneurial Activity | 26 |
| Age Distribution and National Income | 26 |
| Gender and National Income | 27 |
| Education and National Income | 28 |
| Working Status and National Income | 29 |
| Key Points | 30 |
| Entrepreneurial Expectations | 32 |
| Sector Distribution | 32 |
| Job Creation Expectations | 33 |
| Export Expectations | 34 |
| Key Points | 35 |
| Entrepreneurship and the Global Economy | 38 |
| TEA and National Income | 38 |
| Entrepreneurship and Economic Growth | 40 |
| Implications for Policy Makers | 42 |
| Policy Implications for Low Income Countries | 42 |
| Policy Implications for Middle Income Countries | 42 |
| Policy Implications for High Income Countries | 43 |
| Overall Implications | 43 |
| Endnotes | 44 |
| Sponsors | 46 |
| Contacts | 48 |

List of Tables

| | |
|----------|---|
| Table 1: | Total Entrepreneurial Activity by Country |
| Table 2: | World Regions, GDP Per Capita and TEA |
| Table 3: | TEA Characteristics by Country and Income Level |
| Table 4: | Country Positions with Respect to Level of Income |

List of Figures

| | |
|------------|--|
| Figure 1: | GEM Conceptual Model |
| Figure 2: | Total Entrepreneurial Activity 2004: By Country |
| Figure 3: | Opportunity Entrepreneurial Activity 2004: By Country |
| Figure 4: | Necessity Entrepreneurial Activity 2004: By Country |
| Figure 5: | Ratio of Opportunity to Necessity TEA by Country |
| Figure 6: | TEA 2004: Age Categories and Country Income Group |
| Figure 7: | TEA 2004: Gender and Country Income Group |
| Figure 8: | TEA 2004: Education by Country Income Group |
| Figure 9: | TEA 2004: Working Status by Country Income Group |
| Figure 10: | TEA 2004: Sector Distribution by Country Income Group |
| Figure 11: | TEA 2004: Job Growth Expectation by Country Income Group |
| Figure 12: | TEA 2004: Export Intensity by Country Income Group |
| Figure 13: | TEA 2004: National Income and Fitted Parabolic Trend |



GEM TEAMS AND SPONSORS

| Unit | Location | Members | Financial Sponsor |
|-------------------------|--|--|--|
| GEM Project Directors | Babson College London Business School | William D. Bygrave Michael Hay | Babson College London Business School |
| GEM Project Coordinator | University of Lausanne | Pia Arenius | GEM Global Consortium Executive Transition Committee |
| GEM Coordination Team | Babson College London Business School | William D. Bygrave Marcia Cole Michael Hay Stephen Hunt Neils Bosma Erkko Autio Caroline Johns Ingvild Rytter Nancy Chin | Babson College David Potter Foundation Fellow Francis Finlay Foundation Fellow |

| Team | Institution | Members | Financial Sponsor | APS Vendor |
|-----------|---|---|---|---|
| Argentina | Center for Entrepreneurship, IAE Management and Business School Universidad Austral | Silvia Torres Carbonell Hector Rocha Florencia Paolini Natalia Weisz | IAE Management and Business School HSBC Private Equity Latin America Banco Galicia | MORI Argentina |
| Australia | Australian Graduate School of Entrepreneurship, Swinburne University of Technology | Kevin Hindle Allan O'Connor | Westpac Banking Corporation | Australian Centre for Emerging Technologies and Society |
| Belgium | Vlerick Leuven Gent Management School, Universiteit Gent | Dirk De Clercq Sophie Manigart Hans Crijns Kathleen De Cock Bart Clarysse Frank Verzele | Vlerick Leuven Gent Management School Flemish Ministry of Economic Affairs (Steunpunt Ondernemerschap, Ondernemingen en Innovatie) Walloon Ministry of Economic Affairs | SNT Belgium |
| Brazil | IBQP - Instituto Brasileiro da Qualidade e Produtividade no Paraná | Marcos Mueller Schlemm Simara Maria S. S. Greco Mateus Fabricio Feller Paulo Alberto Bastos Junior Rodrigo Rossi Horochovski Joana Paula Machado Nerio Aparecido Cardoso | SEBRAE- Serviço Brasileiro de Apoio às Micro e Pequenas Empresas Instituto Euvaldo Lodi no Parana IEL/PR | Instituto Bonilha |
| Canada | HEC-Montréal University of British Columbia (UBC) | Nathaly Riverin Louis-Jacques Fillion Daniel Muzyka Ilan Vertinsky Aviad Pe'er Victor Cui | HEC Montréal Chaire d'entrepreneuriat Rogers-J.A. Bombardier Développement économique Canada pour les régions du Québec The W. Maurice Young Entrepreneurship and Venture Capital Centre Venture Capital Center | SOM |

| Team | Institution | Members | Financial Sponsor | APS Vendor |
|---------|--|---|---|-----------------------------|
| Croatia | SME's Policy Centre - CEPOR, Zagreb J. J. Strossmayer University in Osijek - Faculty of Economics, Osijek | Slavica Singer Sanja Pfeifer Djula Borozan Natasa Sarlija Suncica Oberman Peterka | Ministry of Economy, Labour and Entrepreneurship SME Policy Centre - CEPOR, Zagreb Open Society Institute - Croatia, Zagreb J.J. Strossmayer University in Osijek - Faculty of Economics, Osijek | Puls, d.o.o., Zagreb |
| Denmark | Centre for Small Business Studies, University of Southern Denmark | Mick Hancock Torben Bager Lone Toftild Thomas Schoett Kim Klyver | Erhvervs- og Byggestyrelsen IRF - Industriens Realkredifond Syddansk Universitet Danfoss - Mads Clausens fond Vaekstfonden Ernst & Young (Denmark) Boersen | IFKA |
| Ecuador | Escuela Superior Politécnica del Litoral - Escuela de Postgrado en Administración de Empresas (ESPAE) | Virginia Lasio Morello Guido Caicedo Rossi Edgar Izquierdo Orellana Victor Osorio Cevallos Alicia Guerrero Montenegro Karen Delgado Arévalo Elizabeth Arteaga | Escuela Superior Politécnica del Litoral (ESPOL University) Petróleos del Pacífico (PACIFPETROL S.A.) Cámara de Comercio de Guayaquil | MARKET ASOMARKET Cia. Ltda. |
| Finland | Helsinki University of Technology Turku School of Economics and Business Administration | Erkko Autio Pia Arenius Anne Kovalainen Marja Kansala | Ministry of Trade and Industry Tekes | Statistics Finland |
| France | EM Lyon | Oliver Torres Aurélien Eminat | Caisse des Depots et Consignations Observatoire des PME | AC Nielsen |
| Germany | University of Cologne Department of Economic and Social Geography | Rolf Sternberg Ingo Lueckgen | Kreditanstalt für Wiederaufbau (KfW) Institut für Arbeitsmarkt - und Berufsforschung (IAB) | Taylor Nelson Sofres EMNID |
| Greece | Foundation for Economic and Industrial Research (IOBE) | Stavros Ioanides Takis Politis | Greek Ministry of Development IOBE Sponsors | Metron Analysis |



GEM TEAMS AND SPONSORS

| Team | Institution | Members | Financial Sponsor | APS Vendor |
|-----------|--|---|---|--|
| Hong Kong | The Chinese University of Hong Kong | Bee-Leng Chua David Ahlstrom Kevin Au Chee-Keong Low Shige Makino Hugh Thomas Le Zheng Wang Weili Dong Ziaoyuan | Trade and Industry Department, SME Development Fund, Hong Kong Government SAR The Asia Pacific Institute of Business, The Chinese University of Hong Kong Chinese Executives Club, Hong Kong Management Association | Consumer Search |
| Hungary | University of Pécs, University of Baltimore (USA) | László Szerb Zoltán Acs Judit Károly József Ulbert Attila Varga | Ministry of Economy and Transport | Szocio-Gráf Piac-és Közvélemény-kutató Intézet |
| Iceland | Reykjavik University | Gudrún Mjöll Sigurdardóttir Rögnvaldur Sæmundsson | Reykjavik University The Confederation of Icelandic Employers New Business Venture Fund Prime Minister's Office | Gallup - Iceland |
| Ireland | University College, Dublin | Paula Fitzsimons Colm O'Gorman Frank Roche | Enterprise Ireland Inter <i>Tradel</i> reland | Lansdowne Market Research Ltd. <i>iff</i> |
| Israel | Tel Aviv University The Academic College of Tel-Aviv-Jaffa | Miri Lerner Anat Oren Amram Turjman | Israel Small Business Authority The Evens Foundation | The B. I. Cohen Institute for Public Opinion Research at Tel Aviv University |
| Italy | L. Bocconi University | Guido Corbetta Ugo Lassini Alexandra Dawson | Bacconi University | Nomesis |
| Japan | Keio University University of Marketing and Distribution Sciences Musashi University | Tsuneo Yahagi Takehiko Isobe Noriyuki Takahashi | Venture Enterprise Center | SSRI |
| Jordan | Young Entrepreneurs Association | Dina Dukhqan Khaled Kurdi | Ministry of Planning and International Cooperation | Al Jidara Pro Group Consulting |

| Team | Institution | Members | Financial Sponsor | APS Vendor |
|-------------|---|---|---|---------------------------------|
| New Zealand | New Zealand Centre for Innovation and Entrepreneurship, Unitec New Zealand | Alastair Emerson Alex Maritz Alvero Reid Anton de Waal Beth Coleman Dean Prebble Debbie Rolland Ella Henry Graedon Chittock Greg Wilson Helen Mitchell Howard Frederick Ingvild Rytter John Webster Judi Campbell Leo Dana Logan Muller Paul Woodward Peter Carswell Peter Mellalieu Pieter Nel Prue Cruickshank Qunhung Xu Ravi Bhat Shelley Eden Simon Peel Tim Boyd-White Tony Ashton Vance Walker Yunxia Zhu | Unitec New Zealand | Digipoll |
| Norway | Bodø Graduate School of Business | Lars Kolvereid Bjørn Willy Åmo Gry Alsos | Inovation Norway Ministry of Trade and Industry Bodø Graduate School of Business Kunnskapsparken Bodø AS, Center for Innovation and Entrepreneurship | TNS |
| Peru | Centro de Desarrollo Emprendedor, Escuela de Administración de Negocios para Graduados (ESAN) | Jaime Serida Peter Yamakawa Armando Borda Oswaldo Morales | Escuela de Administración de Negocios para Graduados (ESAN) Deltron Computer Wholesalers S.A. | SAMIMP - Research International |
| Poland | The Bachalski Educational Foundation | Austin Campbell Krzysztof Baclawski Przemyslaw Zbierowski Maciej Koczerga Roma Szlapka | Polish Agency for Enterprise Development The Karol Adamiecki University of Economics in Katowice The Poznan University of Economics AC Nielsen Poland National Bank of Poland | AC Nielsen |



GEM TEAMS AND SPONSORS

| Team | Institution | Members | Financial Sponsor | APS Vendor |
|--------------|--|--|---|-----------------------------|
| Portugal | Faculdade de Economia da Universidade Nova de Lisboa Sociedade Portuguesa de Inovação | Rita Cunha Manuel Baganha Augusto Medina Douglas Thompson Stuart Domingos | POEFDS - Programa Operacional do Emprego, Formação e Desenvolvimento Social | MetrisGfK |
| Singapore | National University of Singapore | Poh Kam Wong Lena Lee Finna Wong Ho Yuen Ping | Economic Development Board of Singapore National University of Singapore | Joshua Research Consultants |
| Slovenia | Institute for Entrepreneurship and Small Business Management, Faculty of Economics and Business, University of Maribor | Miroslav Rebernik Polona Tominc Ksenja Pusnik | Ministry of Education, Science and Sports Ministry of the Economy Finance - Slovenian Business Daily | Gral-Iteo |
| South Africa | The Centre for Innovation and Entrepreneurship, Graduate School of Business, University of Cape Town | Mike Herrington Eric Wood John Orford | Liberty Life South African Breweries The Shuttleworth Foundation | AC Nielsen ZA |
| Spain | Basque Unit Universidad de Deusto | Iñaki Peña Mikel Navarro Francisco Olarte M ^a José Aranguren Juan José Gibaja | Eusko Ikaskuntza Diputación Foral de Gipuzkoa Diputación Foral de Bizkaia Sociedad para la Promoción y Reconversión Industrial | Opinòmetre |
| | Universidad del Pais Vasco | María Sáiz Arturo Rodríguez | | |
| | Extramadura Unit Fundation Xavier de Salas | Ricardo Hernández Mogollón J. Carlos Díaz Casero | Sofiex Sodiex Caja Rual de Extremadura Los Santos de Maimona Foundation Junta de Extremadura Caja Badajoz Arram Consultores | Opinòmetre |
| | Catalonia Unit Universitat Autònoma de Barcelona | José María Veciana Yancy Vaillant David Urbano | Institut d'Estudis Regionals i Metropolitans de Barcelona | Opinòmetre |

| Team | Institution | Members | Financial Sponsor | APS Vendor |
|-----------------|---|--|---|------------|
| Spain (cont.) | Andalucia Unit Universidad de Cádiz | José Ruíz Navarro José Aurelio Medina José Daniel Lorenzo Álvaro Rojas Salustiano Martínez Antonio Rafael Ramos | CENTRA (Fundación Centro de Estudios Andaluces) UNICAJA Junta de Andalucía (Consejería de Innovación, Ciencia y Empresa) | Opinòmetre |
| | Comunidad Valenciana Unit Universidad Miguel Hernández | Jose Maria Gomez Gras Ignacio Mira Jesus Martinez Antonio J. Verdu | Air Nostrum LAM, S.A. | Opinòmetre |
| | Isla Canarias Unit Universidad de las Palmas de Gran Canaria Universidad de La Laguna | Rosa M. Batista Alicia Bolivar Esther Hormiga Alicia Correa | La Caja Insular de Ahorros de Canarias | Opinòmetre |
| | Castilla y León Unit Universidad de León | Mariano Nieto Antolín Constantino García Ramos Roberto Fernández Gago Sergio del Cano Rojo Noemi Huerga Castro | Centro Europeo de Empresas e Innovacion de Castilla y Leon S.A. | Opinòmetre |
| | Madrid Unit Universidad Autonoma de Madrid | Eduardo Bueno Campos Carlos Merino Lidia Villar | Fundación General de la Universidad Autónoma de Madrid CEIM (Confederación Empresarial de Madrid- CEOE) Caja Madrid | Opinòmetre |
| | National Team Unit Instituto de Empresa | Alicia Coduras Rachida Justo Ignacio de la Vega | Nejeti Instituto de Empresa | Opinòmetre |
| Sweden | ESBRI Entrepreneurship and Small Business Research Institute | Magnus Aronsson Helene Thorgrimsson | Confederation of Swedish Enterprise Ministry of Industry, Employment and Communications Swedish Business Development Agency (NUTEK) Swedish Institute for Growth Policy Studies (ITPS) | SKOP |
| The Netherlands | EIM Business and Policy Research | Sander Wennekers Niels Bosma Jolanda Hessels Andre van Stel Roy Thurik Lorraine Uhlaner Ingrid Verheul | Dutch Ministry of Economic Affairs | Survey@ |



GEM TEAMS AND SPONSORS

| Team | Institution | Members | Financial Sponsor | APS Vendor |
|----------------|--|--|--|------------------------|
| Uganda | Makerere University Business School | Thomas Walter Waswa Balunywa Peter Rosa Arthur Ssewanga Stefanie Barabas Rebecca Namatovu | European Union Bank of Uganda Makerere University Business School | MUBS |
| United Kingdom | London Business School | Rebecca Harding Marc Cowling Niels Billou Michael Hay Dennis Harding | Small Business Service Barclays Bank PLC East Midlands Development Agency Yorkshire Forward Merseyside Enterprise Insight Countryside Agency British Chamber of Commerce | <i>iff</i> |
| | Scotland Unit University of Strathclyde | Jonathan Levie Sarah Cooper Sara Carter | Hunter Centre for Entrepreneurship | <i>iff</i> |
| | Wales Unit University of Glamorgan North East Wales Institute of Higher Learning | David Brooksbank Dylan Jones-Evans | Welsh Development Agency | <i>iff</i> |
| | Northern Ireland Unit Small Business Research Centre, Kingston University Economic Research Institute of Northern Ireland | Mark Hart Maureen O'Reilly | Invest Northern Ireland Belfast City Council Enterprise Northern Ireland | <i>iff</i> |
| United States | Babson College | Maria Minniti William D. Bygrave Marcia Cole | Babson College | Opinion Research Corp. |

PREFACE

This is the sixth annual Global Entrepreneurship Monitor (GEM) cross-national assessment of entrepreneurship. Started in 1999 with 10 participating countries, the project has expanded to include 34 countries in 2004. Over the years national teams have been in operation in 43 countries. Host institutions, membership, and sponsors for all countries participating in the GEM project in 2004 are listed in the previous section. GEM is a collaborative effort in terms of financial resources and intellectual advancement, as well as design and analysis. A GEM consortium assessment and planning meeting is held early in January of each year. More than 150 scholars from the various national teams assist the coordination team. Last year the first GEM consortium Research Conference was organized in Berlin, Germany.

The GEM program is a major effort aimed at describing and analyzing entrepreneurial processes within a wide range of countries. The GEM program focuses on three main objectives:

- To measure differences in the level of entrepreneurial activity between countries

- To uncover factors leading to appropriate levels of entrepreneurship
- To suggest policies that may enhance the national level of entrepreneurial activity

GEM is unlike any other project in that no other benchmark exists that can be used as a basis for reliable international comparisons. As the GEM program expands and improves, it will continue to provide a unique measure of entrepreneurial activity in a global context. New developments, and all national reports, can be found at

www.gemconsortium.org.

The research program would not have developed without the support and encouragement of two institutions that have played critical roles from the beginning. Babson College and London Business School have provided an optimal context for a complex research project focusing on entrepreneurship. Financial support has been provided over the years by several institutions.

Zoltan J. Acs
Chair of the GEM Research Committee



EXECUTIVE SUMMARY

This report constitutes the sixth annual assessment and review of the state of entrepreneurship around the world. Since the idea of GEM was launched in 1997 by scholars at Babson College and London Business School, the project has developed into one of the world's leading research consortia concerned with improving our understanding of the relationship(s) between entrepreneurial activity and national economic growth. To this end, the project has been designed from the start as a multinational research program providing annual assessments of the entrepreneurial sector for a range of countries.

PARTICIPATING COUNTRIES

Asia and Oceania

Australia, Hong Kong, Japan, New Zealand, and Singapore

Africa and the Middle East

Israel, Jordan, South Africa, and Uganda

Europe

Belgium, Croatia, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, and the United Kingdom

North America

Canada and the United States

South America

Argentina, Brazil, Ecuador, and Peru

KEY FINDINGS IN 2004

The GEM 2004 study clearly shows that a large number of people are engaged in entrepreneurial endeavors around the globe. Based on this year's sample of 34 countries representing a total labor force of 566 million, GEM research estimates that 73 million adults are either starting a new business or managing a young business of which they are also an owner. Total entrepreneurial activity varied from a low of 1.5 percent to a high of 40 percent of adults 18 to 64 years of age. The average level of entrepreneurial activity was 9.3 percent (one adult in eleven). The GEM study also shows that entrepreneurial activity varies significantly by geographic region, types of business, and entrepreneurial motivation.

KEY MACROECONOMIC FINDINGS

The aggregate level of entrepreneurial activity appears to reflect general macroeconomic conditions – increasing or decreasing with changes in per capita GDP – as well as enduring cultural, social, and institutional factors

The general rank order of GEM countries does not vary significantly from year to year, thereby suggesting that the level of aggregate entrepreneurial activity may be a structural characteristic of a country. This being the case, macroeconomic fluctuations are likely to generate short-term changes in the level of entrepreneurial activity in a country, but such changes are short-lived and each country tends to gravitate toward a long-term trend of entrepreneurial activity. This observation has two important implications.

- Short-term policy interventions may result in transitory results, but have no long-term effects.
- Policies that succeed in one country may fail in others. However, countries within the same national income groups can learn from one another, taking into account their particular circumstances and the need to tailor adopted policies, successful in another country, to their own national conditions.

The 2004 GEM study suggests the existence of a U-shaped relationship between entrepreneurial activity and per capita gross domestic product (GDP). In fact, the Total Entrepreneurial Activity (TEA) index declines as countries with higher per capita GDP are considered up to a critical threshold level of GDP, beyond which the TEA rate starts to increase steadily again. Specifically, for the group of countries participating in GEM 2004, the TEA rate is lowest for countries with per capita GDP of about US \$28,000. This observation has several important implications.

- TEA rates vary according to the level of per capita income.
- Policies must be appropriate to the average income level pertinent to the specific economy.
- Inappropriate policies with regard to entrepreneurship may adversely affect the level of economic growth within the country.

Individuals participate in entrepreneurial activities in order to exploit a perceived business opportunity, (referred to as opportunity entrepreneurship), or because all other employment options are either absent or unsatisfactory, (referred to as necessity entrepreneurship). GEM 2004 data show that three in five (65 percent) of those involved in entrepreneurial endeavors around the world are opportunity entrepreneurs, while two in five (35 percent) are necessity entrepreneurs.

Great variability exists in the relative distribution of opportunity and necessity entrepreneurship across the 34 countries in the GEM sample. The opportunity entrepreneurs tend to be more dominant in the high-income countries while necessity entrepreneurship is prevalent in low-income countries. Accordingly, countries with a low ratio of opportunity to necessity entrepreneurship will have low per capita GDP.

Countries that have either very low or very high levels of entrepreneurial activity relative to their per capita GDP seem to experience lower rates of economic growth.

CHARACTERISTICS OF THE ACTIVE ENTREPRENEUR

Young people tend to be more involved in entrepreneurial activity in every country regardless of the level of GDP per capita. However, the levels of activity by age cohorts differ significantly across countries with different income levels. Low-income countries (those with a per capita GDP up to \$10,000) have the highest level of entrepreneurial activity for all age groups. In high-income countries (those with a per capita GDP over \$25,000), entrepreneurial activity is higher for all age groups than in the middle-income countries, but lower than in the low-income countries.

In low-income countries, most people who contemplate starting a business have not completed secondary level education. In high-income countries, on the other hand, education seems to be

positively related to business start-ups. Of those who start up a business in high-income countries, 57 percent have a post-secondary degree as compared to 38 percent in a middle-income country, and 23 percent in low-income countries.

Across all countries, regardless of the level of per capita GDP, men are about twice as likely to start new businesses as women. The difference is wider in middle-income countries and narrower in high-income countries where the TEA rate is 7 percent for women and 9 percent for men.

Across all countries, regardless of the level of per capita GDP, people involved in business start-ups are currently employed elsewhere. This factor varies according to national income levels. In middle-income countries, the numbers of unemployed persons who pursue business start-ups represent one-third of the workforce.

CHARACTERISTICS OF NEW BUSINESSES

At all levels of per capita GDP, the largest number of start-ups occurs in the consumer services sector.

As the level of per capita GDP increases, the proportion of start-ups in the services sector increases steadily.

Across all countries, almost no entrepreneurial activity is found in the healthcare sector.

Two thirds of start-ups expect to create either no jobs or, at maximum, two jobs within five years.

Over 50 percent of start-ups do not expect to export any products.

Only 3 percent of all start-ups qualify as businesses with high potential. Start-ups with high potential are those that expect to have few competitors, intend to bring innovations to the market, and use state-of-the-art technology.



THE GEM CONCEPTUAL MODEL

Traditional analyses of economic growth tend to focus on large corporations and neglect the innovations and competition that small start-ups contribute to the overall economy. Unlike most studies, the conceptual model behind GEM takes a comprehensive approach and considers the economic contribution of all businesses within a country.¹ Specifically, GEM considers that national economic growth is the result of two parallel sets of interrelated activities.

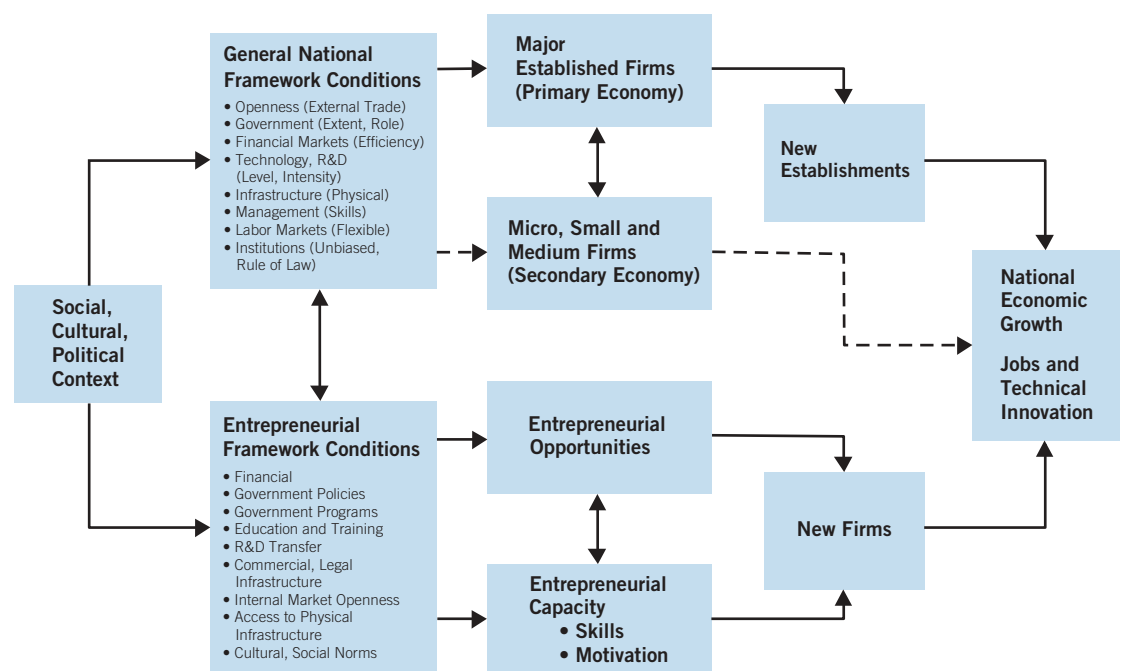
- Those associated with established firms (as shown in the top part of Figure 1)
- Those related directly to the entrepreneurial process (as shown in the bottom part of Figure 1).

For large corporations, the ability to affect national economic growth is influenced by general business conditions, (referred to as the General National Framework Conditions in Figure 1), specific to each country.² These corporations influence economic growth primarily through the construction of new establishments, which in turn create job opportunities. In addition, when an old

establishment (e.g., an old manufacturing plant) is replaced, new technologies are employed resulting in increased productivity. New establishments that positively affect the national economy in this way can be built by domestic firms or by multinational enterprises.³

For potential entrepreneurs, the decision whether to start a business is influenced by additional characteristics within the existing business environment. These are referred to as Entrepreneurial Framework Conditions (see Figure 1). These conditions determine a country's capacity to encourage start-ups and, combined with the skills and motivations of those who wish to go into business for themselves, influence the entrepreneurial process. When successfully combined, these conditions will lead to offshoot businesses, which in turn will increase innovation and competition within the marketplace. The end result is a positive influence on national economic growth. These dynamics, described in the lower part of Figure 1, are at the heart of the GEM project.

Figure 1: GEM Conceptual Model



By considering the complementary nature of the mechanisms among different groups of firms, GEM links the nation's economic growth to the interplay of established and new firms. This opens the door to a clearer understanding of why entrepreneurship is vital to the whole economy.

The relationship between entrepreneurship, corporations, and economic growth is complex and the GEM model as shown here illustrates in a simplified way the interplay of the three factors. By applying this model to a nation's economy, important conclusions can be drawn.

As shown in Figure 1, a nation's economic health depends on successful entrepreneurship combined with the force of established corporations. However, GEM has found that the beneficial value of this mechanism varies with the national income, as measured by GDP per capita.

At low levels of national income, the entrepreneurial sector provides job opportunities and scope for the creation of markets. As per capita income increases, the emergence of new technologies and economies of scale allows larger and established firms to satisfy the increasing demand of growing markets and to increase their relative role in the economy. At the same time, the numbers of business start-ups decrease as a growing number of people find stable employment. Finally, as further increases in income are experienced, the role played by the entrepreneurial sector increases again, as more individuals have the resources to go into business for themselves in an economic environment that allows the exploitation of opportunities. In high-income economies, through lower costs and accelerated technology development, entrepreneurial firms enjoy a newly found competitive advantage. Thus, entrepreneurs in countries with different levels of GDP per capita, face different challenges, and policies and conditions favorable to entrepreneurship in one country (or region) may not be effective or favorable in another. Any serious study of entrepreneurial activity should take these differences into account.

Since its inception in 1999, one of GEM's major activities has been the creation of a large data set and the construction of harmonized measures of entrepreneurial activity. Based on the conceptual model described here, the GEM 2004 data set is based on the following types of data collection.

- Representative samples of randomly selected adults, groups ranging in size from 1,000 to almost 27,000 individuals, were surveyed in each country in order to provide a harmonized measure of the prevalence of entrepreneurial activity.
- Standardized national data were obtained from international data sources such as World Bank, International Monetary Fund and United Nations.
- Each GEM national team conducted up to 50 face-to-face interviews with experts in their respective countries chosen to represent nine entrepreneurial framework conditions. The national experts also completed a standardized questionnaire in order for GEM to obtain a quantitative measure of their opinions concerning their country as a suitable context for entrepreneurial activity. These data are not reported in the GEM 2004 report but were analyzed in previous reports.

This year's report differs from previous years in that the focus is on the relationship between entrepreneurial activity and national income as measured by GDP per capita.



THE SCOPE OF ENTREPRENEURIAL ACTIVITY

GEM estimates the overall level of involvement in entrepreneurial activity by calculating the total entrepreneurial activity (TEA) index. The TEA index is essentially the sum of nascent entrepreneurs (people in the process of starting a new business) and new businesses.⁴

- Nascent entrepreneurs are those individuals, between the ages of 18 and 64 years, who have taken some action toward creating a new business in the past year. In order to qualify in this category, these individuals must also expect to own a share of the business they are starting and the business must not have paid any wages or salaries for more than three months. This measure allows GEM to calculate the level of start-up activity in a specified country.⁵
- Owners-managers of firms are classified as a start-up if the entrepreneurs report that they are active as an owner-manager of a new firm that has paid wages or salaries for more than three months, but less than 42 months. This measure allows GEM to calculate the new business prevalence rates in specified country.

Of the 784 million people comprising the population of 18-64 year olds represented in the 34 countries of the GEM 2004 study, 9.3 percent (73 million) were either nascent entrepreneurs or were the owner/manager of a new business.

THE RELIABILITY AND STABILITY OF GEM'S METHODOLOGY

Table 1 provides a view of entrepreneurial activity in GEM countries in 2004 and also indicates the TEA index for each country in any previous years that they participated in the project.

From this data, GEM is able to show how the TEA index has varied over the past five years for the 17 countries that have participated in all five studies. Here we observe that the average TEA rates range from a low of 6.7 percent in 2002 to a high of 9.3 percent in 2000. However, a comparison across all countries that participated in both GEM 2003 and GEM 2004 shows TEA indexes of 7.94 percent and 7.92 percent, respectively. The fact that the two values are almost identical suggests that levels of

entrepreneurial activity do not shift significantly from one year to the next, as a matter of course.

On closer examination of the data GEM researchers are able to make two key observations with respect to the scope of entrepreneurial activity:

- First, there is some evidence of year-to-year stability within countries. Statistical differences in the TEA index between 2003 and 2004 for 30 of the countries were not significant. In other words, the TEA indexes remained essentially unchanged from one year to the next. While significant statistical changes were observed for only three countries during this period (Argentina, France, and Japan).
- Second, the relative year-to-year rank order of the TEA index for countries in GEM tends to remain stable. That is, cross-country variations tend to persist over time.

These observations have three implications:

- They confirm the reliability of the data obtained by GEM and the soundness of its measurement techniques.
- They suggest that entrepreneurial activity may reflect, to a large extent, slow-to-change cultural and social norms and institutions. In fact, although recessions, currency upheavals, wars, and terrorism appear to have year-to-year effects, the level of aggregate entrepreneurial activity seems to gravitate around country-specific long-term trends.
- Short-term policies unable to influence culture and institutions may have little or transitory effects on the level of entrepreneurial activity.

CROSS-NATIONAL DIFFERENCES IN ENTREPRENEURIAL ACTIVITY

The level of entrepreneurial activity among the 34 countries in Gem 2004 is presented in Figure 2. As this chart illustrates, the TEA rate varies, indicating that those involved in starting a business ranges from about 1.5 percent of adults in Japan (one person in 70) to 40 percent of adults in Peru (one in two people).

Table 1: Total Entrepreneurial Activity by Country: 2004

| Country | TEA 2000 | TEA 2001 | TEA 2002 | TEA 2003 | TEA 2004 | Population 18-64 years 2004 | Total Labor Force 2003 | Estimate of TEA Participants |
|----------------|----------|----------|----------|----------|-------------|-----------------------------|------------------------|------------------------------|
| United States | 16.6 | 11.6 | 10.5 | 11.9 | 11.3 | 183,430,000 | 146,510,000 | 20,783,000 |
| Brazil | 21.4 | 12.7 | 13.5 | 12.9 | 13.5 | 114,005,000 | 85,830,000 | 15,368,000 |
| Peru | | | | | 40.3 | 15,680,000 | 10,400,000 | 6,325,000 |
| Uganda | | | | 29.3 | 31.6 | 10,608,000 | 12,100,000 | 3,356,000 |
| Argentina | 9.2 | 11.1 | 14.2 | 19.7 | 12.8 | 22,895,000 | 13,930,000 | 2,940,000 |
| Germany | 7.5 | 8.0 | 5.2 | 5.2 | 4.5 | 52,404,000 | 39,510,000 | 2,342,000 |
| United Kingdom | 6.9 | 7.8 | 5.4 | 6.4 | 6.3 | 37,582,000 | 29,930,000 | 2,349,000 |
| France | 5.6 | 7.4 | 3.2 | 1.6 | 6.0 | 37,064,000 | 27,010,000 | 2,235,000 |
| Poland | | 10.0 | 4.4 | | 8.8 | 25,265,000 | 17,050,000 | 2,231,000 |
| Ecuador | | | | | 27.2 | 7,264,000 | 5,100,000 | 1,979,000 |
| Canada | 12.2 | 11.0 | 8.8 | 8.0 | 8.9 | 21,060,000 | 17,050,000 | 1,864,000 |
| Australia | 15.2 | 15.5 | 8.7 | 11.6 | 13.4 | 12,542,000 | 10,150,000 | 1,678,000 |
| Italy | 7.3 | 10.2 | 5.9 | 3.2 | 4.3 | 37,162,000 | 24,150,000 | 1,605,000 |
| South Africa | | 9.4 | 6.5 | 4.3 | 5.4 | 25,122,000 | 16,200,000 | 1,357,000 |
| Spain | 6.9 | 8.2 | 4.6 | 6.8 | 5.2 | 26,110,000 | 18,820,000 | 1,345,000 |
| Japan | 6.4 | 5.2 | 1.8 | 2.8 | 1.5 | 80,830,000 | 66,660,000 | 1,196,000 |
| Jordan | | | | | 18.3 | 3,078,000 | 1,400,000 | 562,000 |
| Netherlands | | 6.4 | 4.6 | 3.6 | 5.1 | 10,469,000 | 8,150,000 | 535,000 |
| Greece | | | | 6.8 | 5.8 | 6,780,000 | 4,450,000 | 391,000 |
| New Zealand | | 18.1 | 14.0 | 13.6 | 14.7 | 2,496,000 | 2,020,000 | 366,000 |
| Hungary | | 11.4 | 6.6 | | 4.3 | 6,550,000 | 4,150,000 | 281,000 |
| Portugal | | 7.1 | | | 4.0 | 6,603,000 | 5,410,000 | 261,000 |
| Israel | 7.1 | 5.7 | 7.1 | | 6.6 | 3,617,000 | 2,610,000 | 239,000 |
| Belgium | 4.8 | 4.5 | 3.0 | 3.9 | 3.5 | 6,424,000 | 4,710,000 | 223,000 |
| Sweden | 6.7 | 6.7 | 4.0 | 4.1 | 3.7 | 5,510,000 | 4,450,000 | 204,000 |
| Norway | 11.9 | 8.8 | 8.7 | 7.5 | 7.0 | 2,824,000 | 2,370,000 | 197,000 |
| Ireland | | 12.2 | 9.1 | 8.1 | 7.7 | 2,502,000 | 1,920,000 | 193,000 |
| Denmark | 7.2 | 8.0 | 6.5 | 5.9 | 5.3 | 3,402,000 | 2,870,000 | 181,000 |
| Singapore | 4.2 | 6.6 | 5.9 | 5.0 | 5.7 | 3,142,000 | 2,150,000 | 179,000 |
| Finland | 8.1 | 7.7 | 4.6 | 6.9 | 4.4 | 3,289,000 | 2,600,000 | 144,000 |
| Hong Kong | | | 3.4 | 3.2 | 3.0 | 4,777,000 | 3,500,000 | 142,000 |
| Croatia | | | 3.6 | 2.6 | 3.7 | 2,841,000 | 2,100,000 | 106,000 |
| Slovenia | | | 4.6 | 4.1 | 2.6 | 1,344,000 | 960,000 | 35,000 |
| Iceland | | | 11.3 | 11.2 | 13.6 | 181,000 | 160,000 | 25,000 |

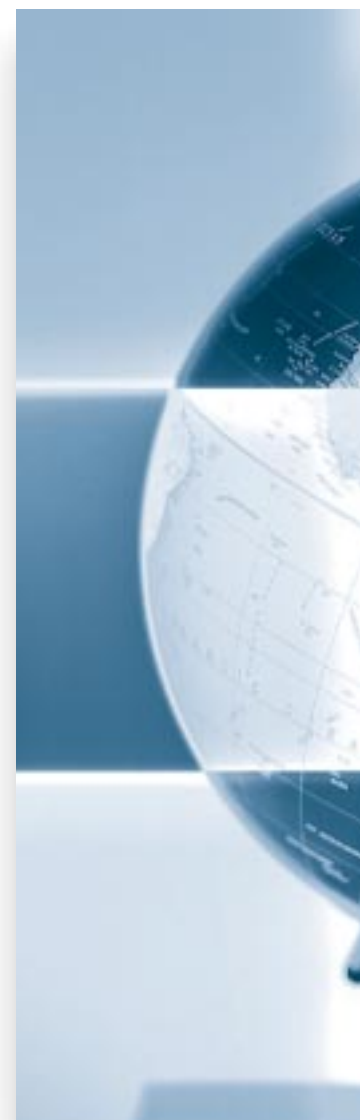
GEM Countries 2000-2004*

| | | | | | |
|------------------|------|-----|-----|-----|------------|
| All countries | 12.5 | 9.9 | 8.1 | 8.7 | 8.4 |
| Country averages | 9.3 | 8.9 | 6.7 | 7.3 | 6.9 |

GEM 2004 Countries

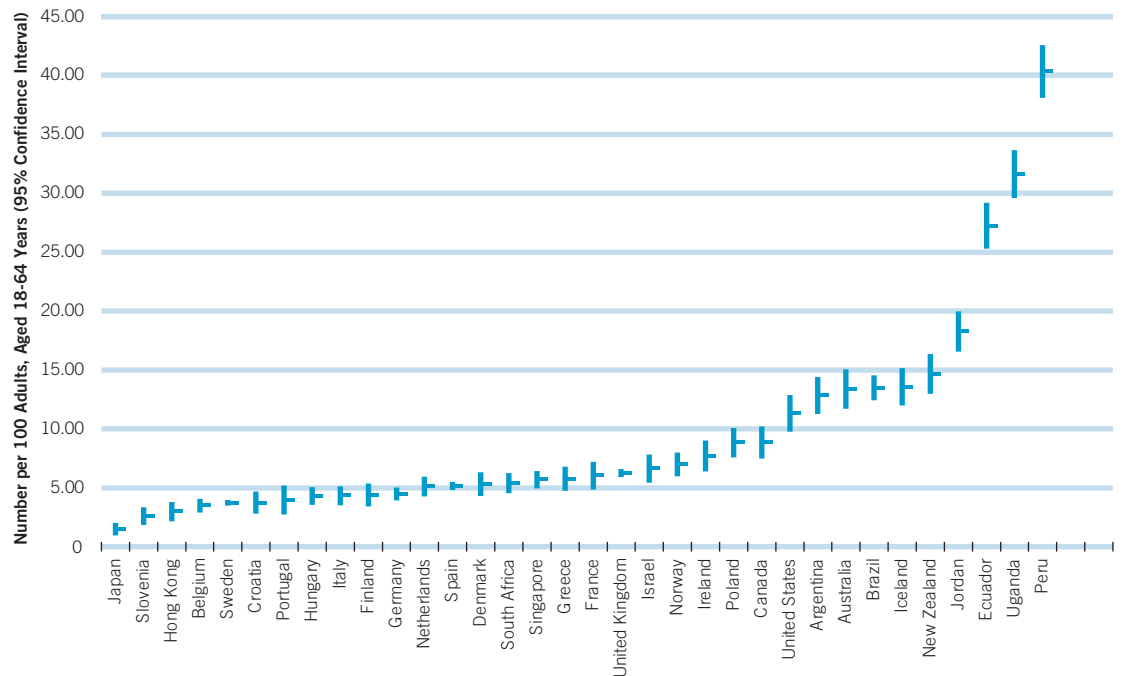
| | | | | |
|------------------|------------|-------------|-------------|------------|
| All countries | 9.3 | 784,851,000 | 596,380,000 | 73,217,000 |
| Country averages | 9.4 | | | |

*Seventeen countries were involved in GEM every year during 2000-2004. These are: Argentina, Australia, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Italy, Japan, Norway, Singapore, Spain, Sweden, United Kingdom, and United States.



THE SCOPE OF ENTREPRENEURIAL ACTIVITY

Figure 2. Total Entrepreneurial Activity (TEA Prevalence) 2004: By Country



The vertical bars in the figure display the 95 percent confidence intervals – sometimes referred to as the margins of error – and indicate the precision of these estimates. In other words, if GEM researchers surveyed the entire population of a country, the actual rate of entrepreneurial activity would have a 95 percent probability of falling along the vertical bar around these estimated points. The length of the bar is a reflection of differences in sample size. The relatively wide vertical bars for Ecuador, Uganda, and Peru indicate a smaller sample size than the one corresponding to narrower bars such as those for Germany, Sweden, and the United Kingdom, which have very large sample sizes.

Where the vertical bars overlap there is no statistical difference between the countries under consideration. So, among nations with lower TEA rates, it can be said that Slovenia, Hong Kong, and Belgium have comparable levels of entrepreneurial activity, while among the more active countries, the United States, Argentina, Australia, Brazil, Iceland, New Zealand, Jordan and Ecuador also have comparable levels of entrepreneurial activity.

MOTIVATION AND TYPES OF ENTREPRENEURIAL BEHAVIOR

In the GEM framework, individuals participate in entrepreneurial activities for two main reasons:

- They start a new business to exploit a perceived business opportunity.
- They are pushed into entrepreneurship because all other options for work are either absent or unsatisfactory.

Over 97 percent of individuals involved in business start-ups are either “opportunity” or “necessity” entrepreneurs.

In 2004 some 65 percent of those involved in entrepreneurial endeavors across the world claim that they are attempting to take advantage of a business opportunity, while 35 percent state that they are doing so because they have no other viable employment option. However; among the 34 countries in the study, GEM observes great variability in the balance of opportunity and necessity entrepreneurship.

Figure 3. Opportunity Entrepreneurial Activity 2004: By Country

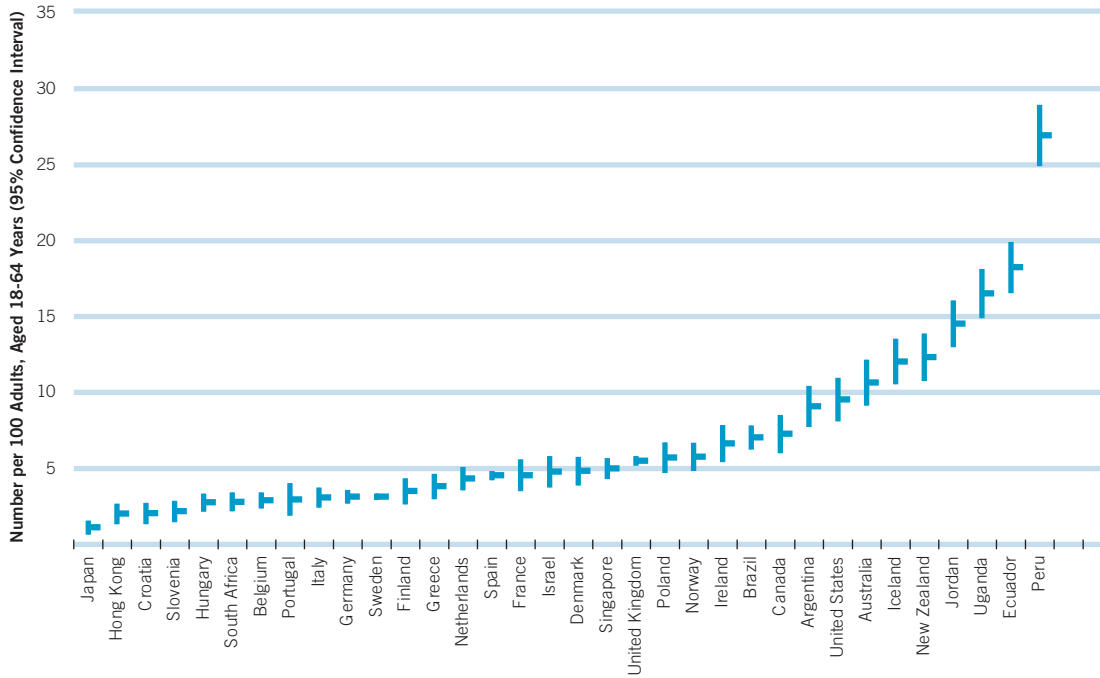
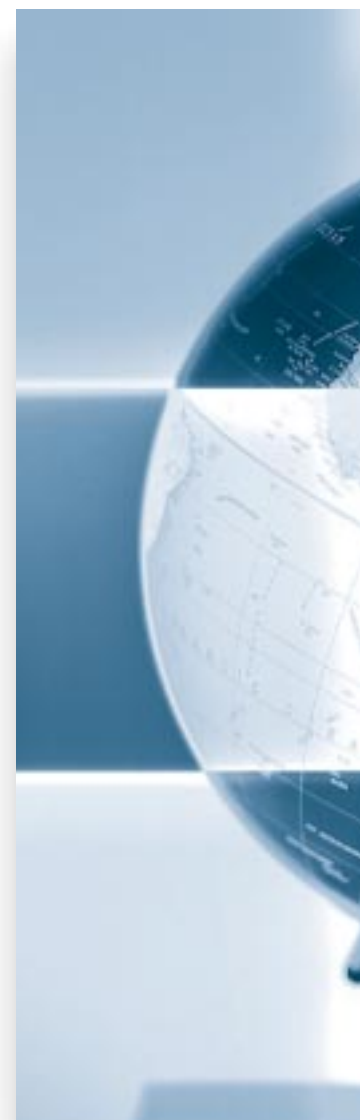


Figure 3 shows the percentage of individuals involved in opportunity entrepreneurship in each country.

The average Opportunity TEA across all countries in the sample is 6.2 percent, but significant statistical differences exist across countries with opportunity prevalence rates ranging from as low 1.1 percent in Japan to 17 percent in Uganda,

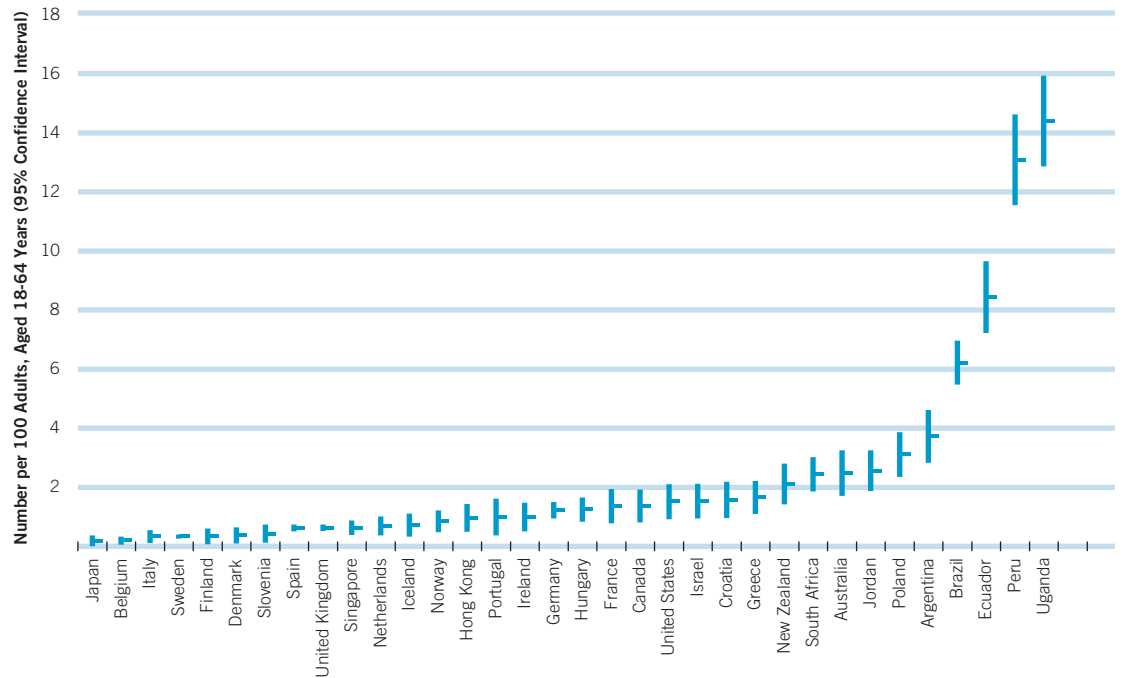
18 percent in Ecuador, and almost 27 percent in Peru.

The percentage of individuals involved in necessity entrepreneurship in each country is shown in Figure 4. As previously indicated the average necessity TEA across all countries in the sample is just over a third of the opportunity average at 2.3 percent.



THE SCOPE OF ENTREPRENEURIAL ACTIVITY

Figure 4. Necessity Entrepreneurial Activity 2004: By Country

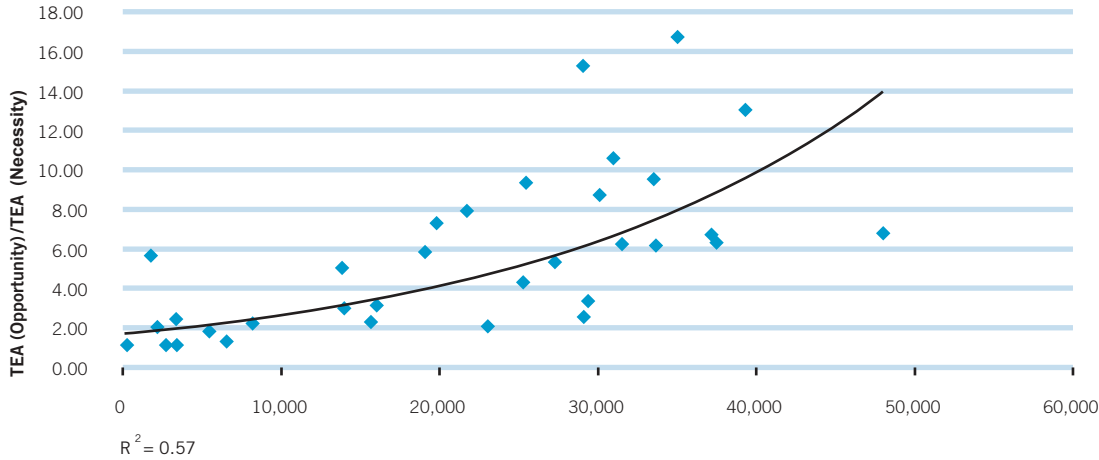


This average reflects the fact that the Necessity TEA for 21 of the 34 participating countries amounts to no more than 1.5 percent. GEM estimates that in the nations with low levels of necessity entrepreneurship, only about one in 130 persons in the labor force participates in entrepreneurship because of the lack of better alternatives. The situation is quite different at the other end of the spectrum, where necessity TEA rates exhibit significant statistical differences from the rest of the world and are as high as 13.1 percent in Peru and 14.4 percent in Uganda. In these countries as many as one in seven working age adults are active entrepreneurs by necessity.

Figure 3 and Figure 4 show, respectively, the absolute levels of opportunity and necessity entrepreneurship by country. Of course, the levels of opportunity or necessity entrepreneurship in a country are also meaningful when measured as percentages of total entrepreneurship. For example, if we were to measure opportunity entrepreneurship as a percentage of total entrepreneurship, Japan

would emerge as one of the countries with the highest ratios, while Uganda would exhibit one of the lowest ratios. The varying levels of necessity entrepreneurship between countries are an initial indicator of the existence of a relationship between entrepreneurship and national income. Countries with higher per capita income exhibit lower necessity TEA rates. This is because people in richer countries tend to have access to more diversified labor markets and often to stronger safety nets in terms of social welfare provision. Figure 5 illustrates this point further; showing a fitted trend line between GDP per capita and the ratio of opportunity to necessity TEA by country.

Figure 5. Ratio of Opportunity to Necessity TEA by Country (GDP per capita US\$)



The ratio of opportunity TEA to necessity TEA for a country is low when a relatively high proportion of people are forced into business start-ups for lack of better alternatives compared to those who choose to improve their conditions by exploiting a business opportunity. GEM also observes that countries with low opportunity TEA to necessity TEA ratios also have low GDP per capita.

As a country's national income rises, its relative percentage of opportunity entrepreneurship increases. The high R squared value of 57 percent confirms that much of the cross-countries variation in the reasons why people start new businesses is accounted for by differences in per capita income (if all countries were on the line, then R² would be 1).

REGIONAL DIFFERENCES IN ENTREPRENEURIAL ACTIVITY

It is clear that certain geographical/cultural clusters demonstrate remarkable similarity in terms of the level and nature of entrepreneurial activity. To illustrate this, the levels of entrepreneurial activity for all GEM 2004 countries have been reordered into six groups: South America; North America; European Union; non-European Union; Africa and the Middle East; and Asia and Oceania. These are shown in Table 2.

When the per capita GDP is considered for each country in the table, it can be seen that countries with very high levels of entrepreneurial activity tend to have low levels of per capita GDP and vice versa. For example, Ecuador has a TEA of 27.2 and a per capita GDP of \$2,127, while Japan, with a per capita GDP of \$36,105, has a TEA rate of only 1.5. In OECD countries (Organization for Economic Cooperation and Development), GDP per capita averages \$32,388. with a TEA index of 6.7. By comparison, non-OECD countries average GDP per capita of \$8,317 and a TEA index of 13.8.

This information enables several observations:

- Variation in entrepreneurial activity seems to be related to GDP per capita.
- Smaller variations in entrepreneurial activity exist across countries that have similar per capita GDP.
- Larger variations in average entrepreneurial activity exist across countries with different per capita GDP.
- Variation across country groups and within country groups exists.

Brief overviews of important issues that affect entrepreneurial activity among groups of nations in four different areas of the world are presented separately in the following boxes.



THE SCOPE OF ENTREPRENEURIAL ACTIVITY

Table 2: World Regions, GDP per capita and TEA

| Region | Country | GDP per capita | TEA 2004 | OECD member | Region TEA 2004* |
|----------------------------------|----------------|----------------|-------------|-------------|------------------|
| South America | Ecuador | 2,127 | 27.2 | | 16.6 |
| | Peru | 2,270 | 40.3 | | |
| | Brazil | 3,182 | 13.5 | | |
| | Argentina | 3,865 | 12.8 | | |
| North America | Canada | 29,777 | 8.9 | X | 11.1 |
| | United States | 39,922 | 11.3 | X | |
| Europe: EU | Poland | 5,728 | 8.8 | X | 5.4 |
| | Hungary | 9,263 | 4.3 | X | |
| | Portugal | 16,173 | 4.0 | X | |
| | Slovenia | 16,275 | 2.6 | | |
| | Greece | 18,569 | 5.8 | X | |
| | Spain | 24,254 | 5.2 | X | |
| | Italy | 28,995 | 4.3 | X | |
| | France | 31,996 | 6.0 | X | |
| | Germany | 32,624 | 4.5 | X | |
| | Belgium | 33,927 | 3.5 | X | |
| | Finland | 34,944 | 4.4 | X | |
| | Netherlands | 35,160 | 5.1 | X | |
| | United Kingdom | 35,718 | 6.3 | X | |
| | Sweden | 37,548 | 3.7 | X | |
| | Ireland | 43,290 | 7.7 | X | |
| Denmark | 45,060 | 5.3 | X | | |
| Europe: non EU | Croatia | 5,357 | 3.7 | | 5.6 |
| | Iceland | 40,748 | 13.6 | X | |
| | Norway | 51,918 | 7.0 | X | |
| Africa and Middle East | Uganda | 248 | 31.6 | | 13.0 |
| | Jordan | 1,885 | 18.3 | | |
| | South Africa | 3,746 | 5.4 | | |
| | Israel | 16,887 | 6.6 | | |
| Asia and Oceania | Singapore | 23,041 | 5.7 | | 3.4 |
| | New Zealand | 23,460 | 14.7 | X | |
| | Hong Kong | 23,507 | 3.0 | | |
| | Australia | 30,695 | 13.4 | X | |
| | Japan | 36,105 | 1.5 | X | |
| NON-OECD member countries | | 10,372 | 15.3 | | |
| OECD member countries | | 30,955 | 7.1 | | |
| TOTAL | | 25,368 | 9.3 | | |

* TEA estimate is region TEA (weighted by country population)

ENTREPRENEURIAL ACTIVITY IN ASIA-OCEANIA

Australia, Hong Kong, Japan, New Zealand, and Singapore

Reported by Wong Poh Kam (Singapore)

In general the economies of the Asia-Oceania nations are prosperous. Following a recent economic depression across the region, the economy improved considerably in the latter part of 2004. This is good news for entrepreneurs in the region that has strong markets, both in terms of intensity and the receptiveness of a strong core of middle-class consumers. The counter to this is that these markets are also subject to high levels of risk. However, Asia-Oceania performs poorly in terms of the proportion of new businesses seeking new market expansion, introducing new products or using new technologies. Such polar differences seem to suggest that new entrepreneurial businesses in the region are driven more by high growth in market opportunities for existing services, and less so by the introduction of new services or innovative products,

when compared to other regions.

The cultural division within the region is quite marked, with Oceania tending to be more influenced by developments in the West than their Asian neighbours. This is noticeable in the sectors that each chooses to concentrate on. The Oceanic countries tend to be dominated by the services sector, while manufacturing is still predominant within most of the Asian countries. There are however, signs of change with an increasing focus on business services in Asia. The high level of commercial infrastructure required for such a move supports this shift. A key difficulty for much of the region lies in the ownership of property rights. These still tend to be owned outside of the region and a greater focus on Research and Development and the commercialisation of its results is required.

ISSUES AND CHALLENGES IN THE EUROPEAN UNION

Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, and United Kingdom

Reported by Niels Bosma and Sander Wennekers (Netherlands)

CHANGING THE ENTREPRENEURIAL MINDSET

While attitudes toward entrepreneurship tend to be somewhat less positive in the EU than in other OECD countries, notable similarities seem to exist among European countries. GEM results from the 2004 survey indicate that cultural support (on a national level) is positively linked with the amount of entrepreneurial activity and the European Union has identified a need to enhance positive attitudes by 'fuelling the entrepreneurial mindset'. This

includes giving entrepreneurship a more prominent place in educational programs and enhancing cultural support and social norms via other channels, such as media and role models.

EMPLOYMENT SECURITY

Since in the EU employment protection and unemployment benefits are both generous, the relatively low TEA rates of many EU countries is a reflection of the high 'opportunity costs' of entrepreneurship and of the lower 'urgency' to



THE SCOPE OF ENTREPRENEURIAL ACTIVITY

engage in necessity entrepreneurial activities. In fact, even within the European Union, countries with lower levels of employment protection have higher TEA rates.

AGE STRUCTURE

People above the age of 50 are less likely to be involved in new entrepreneurial activities than people below the age of 35. Indeed, we see within Europe that countries with a higher share of younger adults tend to have higher TEA rates. Therefore, ageing is a factor that, all else being equal, influences business startups negatively. As this is relevant in many EU countries, greater attention must be paid to entrepreneurship opportunities for people age 50 and above. Immigrants, a group exhibiting significant entrepreneurial behavior, may

also fill part of the vacuum that could be gradually caused by the ageing population.

TECHNOLOGY-BASED STARTUPS

European countries have difficulties in transforming existing technological knowledge into new business activities. This can be explained in part by the fact that complex regulations hinder the creation, growth and expansion of new businesses. In addition to regulation, other factors hindering the entrepreneurial process are a pervading culture and reward systems that penalize the commercialization of knowledge created in research institutions. Although some progress has been made to deregulate and liberalize markets and to commercialize research, much remains to be done in this area.

THE ENTREPRENEURIAL ENVIRONMENT IN LATIN AMERICA

Argentina, Brazil, Ecuador, and Peru

Reported by Silvia Carbonell (Argentina)

COMMON SOCIO-ECONOMIC FEATURES

In recent years, unstable and highly volatile economic conditions have resulted in modest economic growth and in income levels which are not only lower than might be expected for a region at the same level of economic development, but are also growing slower, unsteadily and more unequally distributed among the population. This has led to sharp contrasts and significant concerns about unemployment, inflation, political corruption and job security among the population.

COMMON PROBLEMS FOR ENTREPRENEURSHIP

Many institutions, which should be supporting entrepreneurial effort, are under-developed. Government policies tend not to be supportive of entrepreneurship and government programs are

inefficient in its promotion. Regulatory constraints such as taxation, labor costs, and legal regulations place a high burden on entrepreneurs, and intellectual property rights protection is inadequate. Also in Latin America, stock markets are endemically weak and access to capital markets tends to be limited, due to high inflation and to the perception of high risk. Access to appropriate technologies and information on available techniques is difficult, as is access to international markets. Finally, the commercial and professional infrastructure is weak across the region and there is a need for improved management skills and better consulting services.

COMMON ADVANTAGES FOR ENTREPRENEURSHIP

Recent years have seen remarkable progress in the area of civil and political freedom. Attempts have

also been made at “regionalism” as an integral part of an overall structural policy shift toward more open, market-based economies operating in a democratic setting. Governments are increasingly aware of their role in supporting and promoting economic and social growth through entrepreneurship, e.g., privatization programs have provided quicker and easier access to a good level of infrastructure and utilities (especially in communications and energy) at competitive prices. Overall, the private sector has opened to new players and some groups of large

private firms are starting to promote the development of entrepreneurial activity. There are increasing opportunities for new firms employing new technologies to displace less efficient incumbents, and knowledge is widely recognized as being the key to the future. The economic crisis, which has marked the region in recent times, has opened new and unexploited market niches. Demand is very dynamic and Latin American consumers are very receptive and willing to buy innovative products.

ENTREPRENEURIAL ATTITUDES AND PERCEPTIONS IN THE G7

Canada, France, Germany, Italy, Japan, United Kingdom, and United States

Reported by Rebecca Harding (United Kingdom)

Assessment of the G7 countries presents rather a mixed picture of economic and entrepreneurial performance in 2004. However, across the group as a whole, there has been an overall decline of economic confidence. General confidence in the economy can be measured through the perception of entrepreneurial opportunities, and self-confidence can be measured in two ways – perception of one’s own skills to start a business and fear of failure that would prevent individuals starting a business. Put together these factors enable us to build a picture of the entrepreneurial attitudes and perceptions across the whole group.

A general measure of economic and entrepreneurial optimism is found in the responses to the question, “in the next six months, will there be good opportunities for starting a business in the area where you live?” In 2004, G7 respondents rated this aspect more negatively than any of the other “confidence indicators.” Responses to this question show the sharpest decline of all, representing a fall of about 8 percent on the level recorded in 2003.

A similar picture emerges in the case of entrepreneurial skills. Less than half of the G7 nations are positive in their assessment of the skills possessed for entrepreneurial endeavors and overall the group is about 6 percent more negative in this view in the current year.

The only “confidence indicator” to show a positive move in 2004, is that concerned with the fear of failure. In 2004, approximately 35 percent of G7 respondents claimed that this would prevent them from starting a business, against the 36 percent who admitted this in the previous year.

Finally, GEM seeks to establish how positive the cultural perception of entrepreneurs and entrepreneurship is. This includes questions about the status of entrepreneurship, its suitability as a career choice, and the coverage of entrepreneurship in the media. As with each of the other indicators, the group tended to be divided in its opinions. Overall however, we find a small reduction yet again, with about 2 percent less of the G7 population believing that entrepreneurship is a good choice.



ENTREPRENEURIAL ACTIVITY

As mentioned earlier, GEM estimates that about 73 million people are active entrepreneurs in the 34 nations that participated in the project in 2004: But who are these people and do they have anything in common? The data collected allows GEM researchers to shed some light on this question and to establish a profile of entrepreneurs around the world. For instance, studies can determine whether there are particular characteristics associated with entrepreneurship in individual countries and whether there is any relationship between the level of income in nations and the types of people who become entrepreneurs. In this section, four factors are considered: age, gender, education, and working status, specifically in relation to the GDP per capita of the GEM nations.

AGE DISTRIBUTION AND NATIONAL INCOME

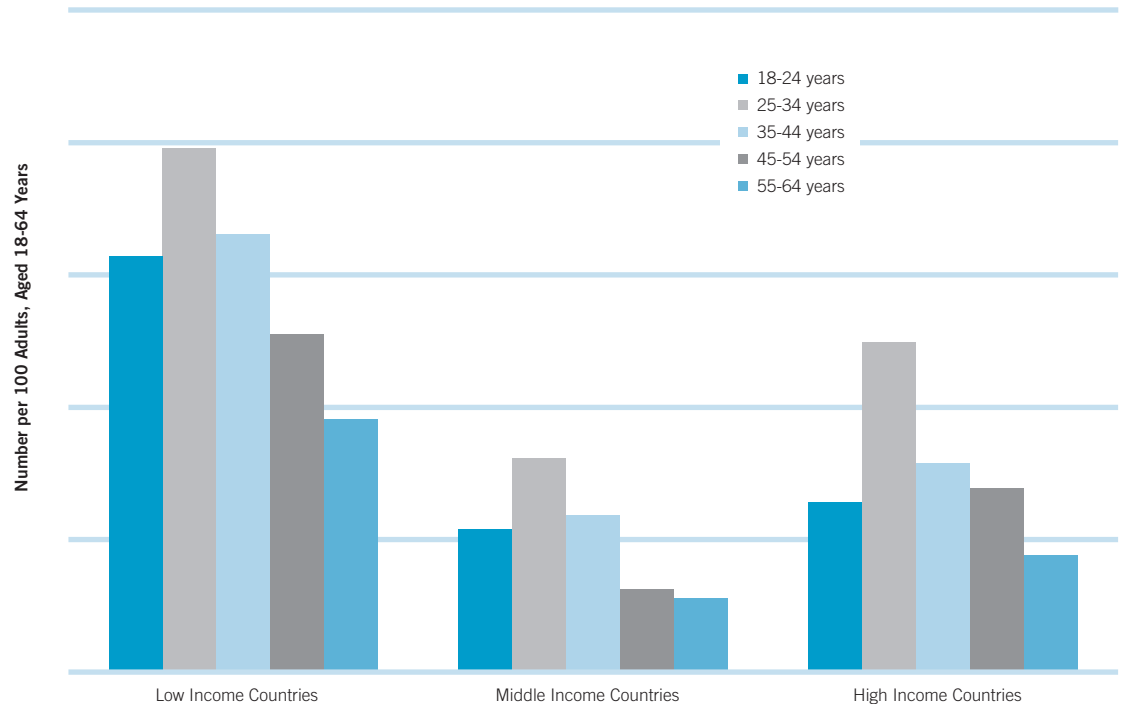
Figure 6 illustrates the entrepreneurial prevalence rates by age for low-income, middle-income and high-income countries.

The first observation is that it is young people between 25 and 34 years of age who are the most

active entrepreneurial group of the population regardless of the wealth of the country from which they come. After the age of 35, all populations show a steady decline in entrepreneurial activity. While some minor differences can be observed between individual countries, the pattern has remained unchanged since GEM's inception in 1999. This suggests that age is an important factor in the decision to become an entrepreneur. It also implies that in countries where there is a non-uniform age distribution across the population, (i.e., a predominantly young or ageing population), that there may be difficulties in sustaining or increasing the level of entrepreneurship. Overall, GEM finds that demography has important implications for countries in developing and sustaining its level of entrepreneurial activity. In the short-term, a nation's demographic structure is important for the immediate level of activity, and demographic change will have a significant impact on entrepreneurial activity in the long-term.

It is also clear that the different income groups have markedly different entrepreneurship activity

Figure 6. TEA 2004: Age Categories and Country Income Group



levels across all age groups. Low-income countries have the highest activity levels across all age groups, ranging from one person in every five (for the 24 to 34 year old group) down to one person in 10, among 56 to 64 year olds. However, previous GEM reports have shown that the level of necessity entrepreneurship is higher in low-income countries and is also very high among the younger age groups in those countries, where better opportunities for employment are scarcer.

Between the three income categories, it is clear that both low- and high-income nations have higher levels of entrepreneurial activity across all age groups than middle-income nations. However, the levels of involvement of a specific age group are not the same across income levels. For instance, low-income countries experience roughly three times the level of activity across all age groups as do middle-income countries: The differences between high and middle-income countries are less.

Although the 25 to 34 year old cohort is the most active age group in each of the national income categories, the difference between their

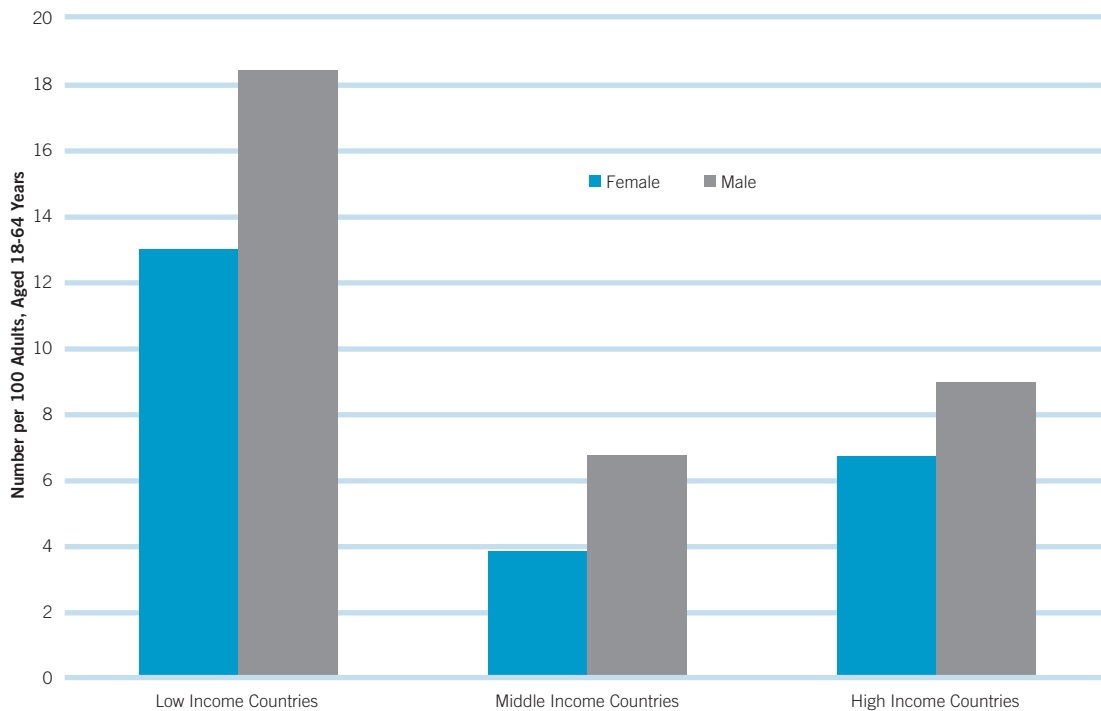
level of activity and that of the 35 to 44 year old group in high-income nations is notable (a TEA of 12.45 compared to 7.9 for the older group). This result is consistent with the observation that an entrepreneurial revolution may be taking place in high-income countries where the 1990s witnessed an ever-increasing number of 25 to 34 year olds actively engaged in starting businesses.⁷

GENDER AND NATIONAL INCOME

In general, there are almost twice as many men who are active entrepreneurs than women, and these differences are consistent across age groups and across most countries. In no country are there more women who are active entrepreneurs than men, but there is wide variation between countries.

In 2004, France, Greece, Hong Kong, and Spain all show a large gender division in entrepreneurial activity, while in Ecuador, Finland, Hungary, Japan, Peru, South Africa, and the United States, participation rates are statistically identical. The narrower division in this last group of countries may be the result of two different sets of circumstances.

Figure 7. TEA 2004: Gender and Country Income Group



ENTREPRENEURIAL ACTIVITY

First, the ratio of female to male entrepreneurs is higher in the case of necessity-based entrepreneurship, which constitutes a high proportion of activity in the low-income countries (Ecuador, Hungary, Peru, and South Africa). For high-income countries such as Finland and the United States, closing the gender gap may be the result of targeted programs, cultural changes, and more stress on entrepreneurial education leading to more equal opportunities for women. Second, what appears to be a closing of the gender gap in these countries may possibly be the result of sample bias, which does not apply only to small samples (such as in the case of Japan) where the overall level of activity is very low, resulting in large standard errors, which make existing gender differences hard to capture statistically.

Figure 7 illustrates that the level of male entrepreneurial activity is higher than that of women across all national income categories.

This figure shows that the largest gender division occurs within the middle-income nations where men

are 75 percent more likely than women to be active entrepreneurs. The smallest gap appears in the high-income countries where the percentage difference falls to 33 percent. In low-income countries men are 41 percent more likely to be active in entrepreneurial activity than women.

One possible interpretation of Figure 7 is that women in low-income countries are active entrepreneurs out of necessity, while in the high-income countries, both men and women pursue opportunities. It is clear that in the case of necessity entrepreneurship there is much less gender distinction than in opportunity entrepreneurship.

EDUCATION AND NATIONAL INCOME

The relationship between education and entrepreneurial activity is not clear and is very much country-specific. Nevertheless, levels of educational attainment are commonly considered to have implications for entrepreneurial behavior. Figure 8 shows the relationship between entrepreneurship and less-than-secondary education; secondary

Figure 8. TEA 2004: Education by Country Income Group (GDP per Capita)

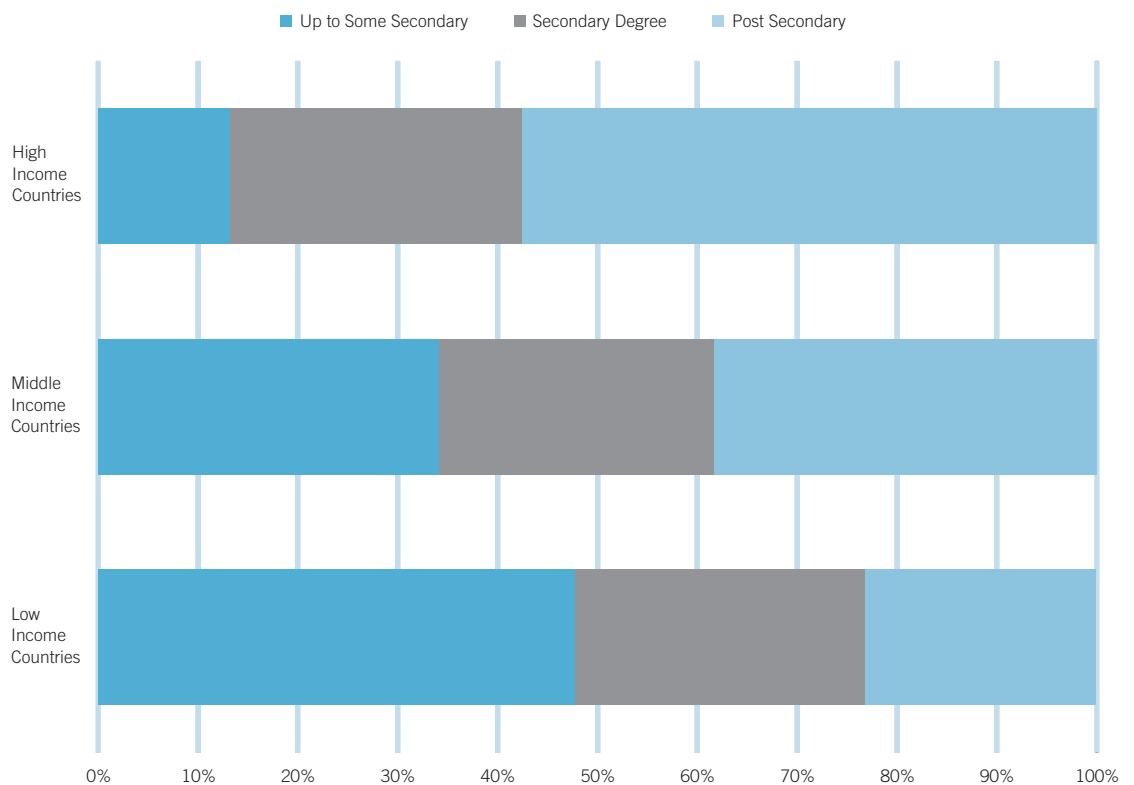
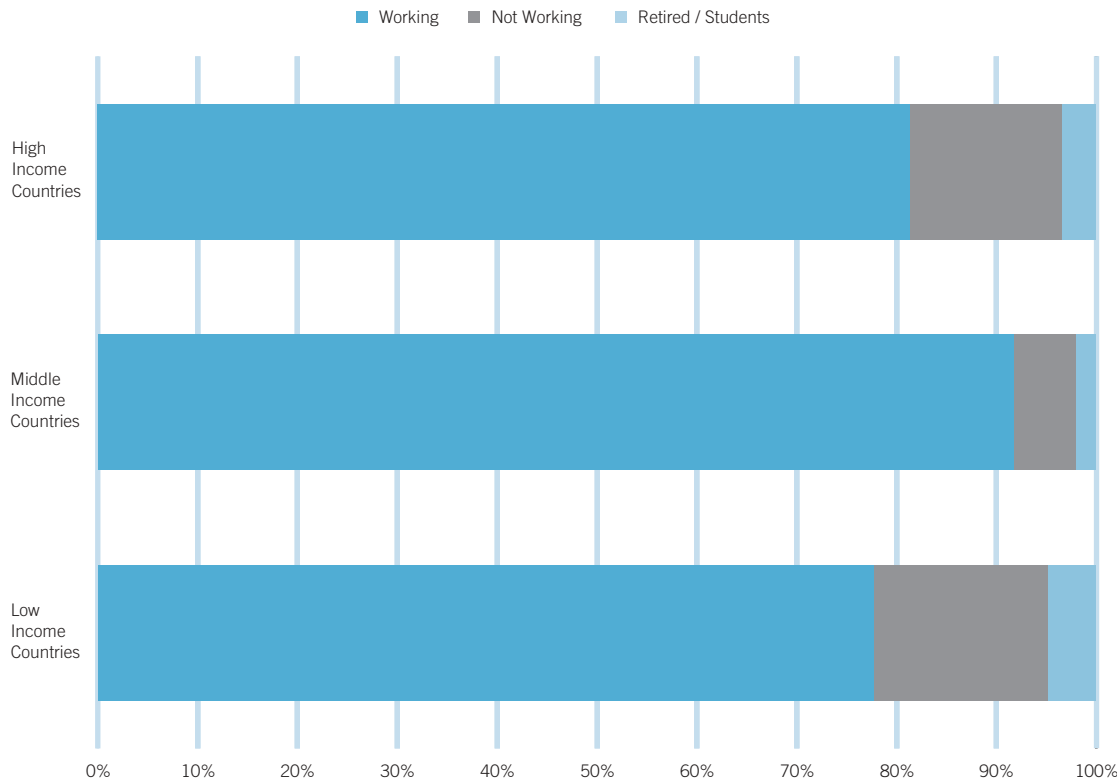


Figure 9. TEA 2004: Working Status by Country Income Group (GDP per Capita)



education, and post-secondary education for each of the three national income groups. Taking into account that terms used to describe educational levels vary widely across the globe, in this report secondary education refers to the (generally accepted) Western idea of school education for young people roughly between the ages of 12 and 18 years.⁸

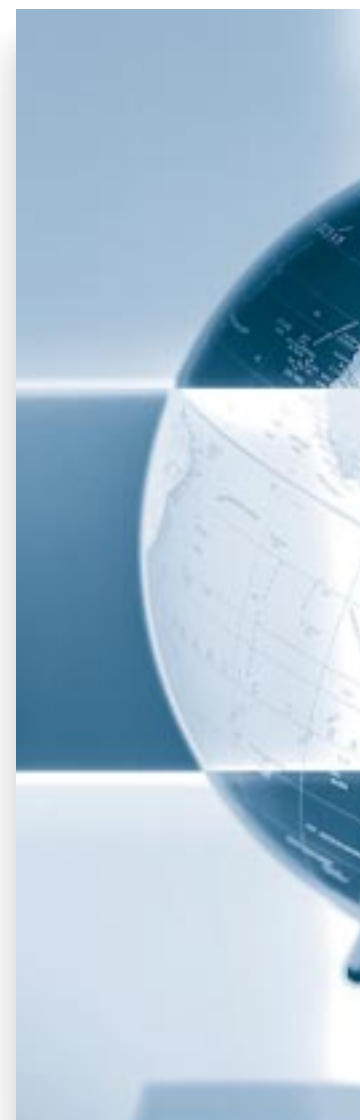
Immediately obvious is the wide differential between the educational profiles of entrepreneurs in low and high-income countries. In high-income countries 57 percent of entrepreneurs have a post-secondary education, suggesting that in these countries the education systems tend to build a suitable skills base for entrepreneurs. In the poorest countries only 23 percent of entrepreneurs have a post-secondary education. On the other hand, almost half of entrepreneurs in low-income nations have not successfully completed secondary education; this is the case for only 13 percent of their high-income counterparts. In the middle-income countries the highest and lowest educated

fall between these two extremes and exhibit a slight tendency toward the more educated end of the continuum.

A surprising observation is that the level of activity among those with secondary level education is the same across all three national income groups (between 28 percent to 29 percent). This is something of an unexpected result given the varying income levels being considered. Nevertheless this, and the fact that the key differences between national income categories occur at opposite ends of the education scale, suggest that the more educated entrepreneurs are pursuing more opportunity-based ventures, while less educated entrepreneurs are involved out of necessity, and most people who have a secondary level education are more inclined to work for wages than become entrepreneurs.

WORKING STATUS AND NATIONAL INCOME

Another factor to consider is whether there is any pattern in terms of those involved in entrepreneurial



ENTREPRENEURIAL ACTIVITY

activity, their working status, and the national income categories. Figure 9 shows the working status of active entrepreneurs in low, medium and high-income countries according to whether these people are working, not working, or are classified as retired or students.

Here it can be seen that the overwhelming majority of people starting businesses in all national income groups are currently working. In middle-income countries 91 percent have jobs, while in high-income countries the figure drops to 81 percent and in low-income nations it stands at 77 percent. The relatively low proportion of entrepreneurs who work elsewhere, recorded in the low-income countries, is likely to be a reflection of the high necessity entrepreneurship level in those countries where people start up businesses because no better option exists.

In the case of those starting businesses who are not currently employed, GEM observes that the level in middle-income countries (6 percent) is only about a third of that in the low and high-income groups (at 17 percent and 15 percent respectively). Although the latter two groups are similar in terms of level, GEM researchers suspect that there are different reasons that underpin the figures. In low-income countries, the lack of job opportunities and social welfare services is likely to force people to seek other activities. In high-income countries, some segments of the population might be without work because of industrial restructuring, outsourcing, or productive shifts due to new technologies. Because of the high levels of social benefits, however, only a few of these people are forced to seek employment through entrepreneurial activity. This observation is supported by the fact that necessity entrepreneurship for high-income countries, and especially in the EU, is well below 1 percent of total entrepreneurial activity.

KEY POINTS: WHO IS INVOLVED IN ENTREPRENEURSHIP?

Overall, when studying the personal profile of people who start businesses with respect to age, gender, education, and work status, findings suggest that:

- Most entrepreneurial activity is carried out by 25 to 34 year olds, regardless of the level of income in their countries
- Entrepreneurial activity levels, across all age groups, vary according to the level of national income
- In low-income countries, those with lower levels of education start businesses
- In high-income countries those with higher levels of education start businesses
- Women are less likely than men to start businesses regardless of the level of per capita income in their countries
- The difference between male and female entrepreneurial activity is smallest in some high-income countries
- Unemployment and necessity entrepreneurial activity are highest in the low-income countries





ENTREPRENEURIAL EXPECTATIONS

Previously in this report the characteristics of the world's entrepreneurs are addressed. This section turns its attention to the types of firms they are trying to create and their potential to contribute to economic growth. Traditionally, indicators of the potential for growth are the number of jobs that are expected to be created by a firm, the extent to which a company is export-oriented, and the industrial sectors favored by entrepreneurs. Continuing the theme established in the previous section, these questions are considered in relation to the income levels of GEM nations.

SECTOR DISTRIBUTIONS

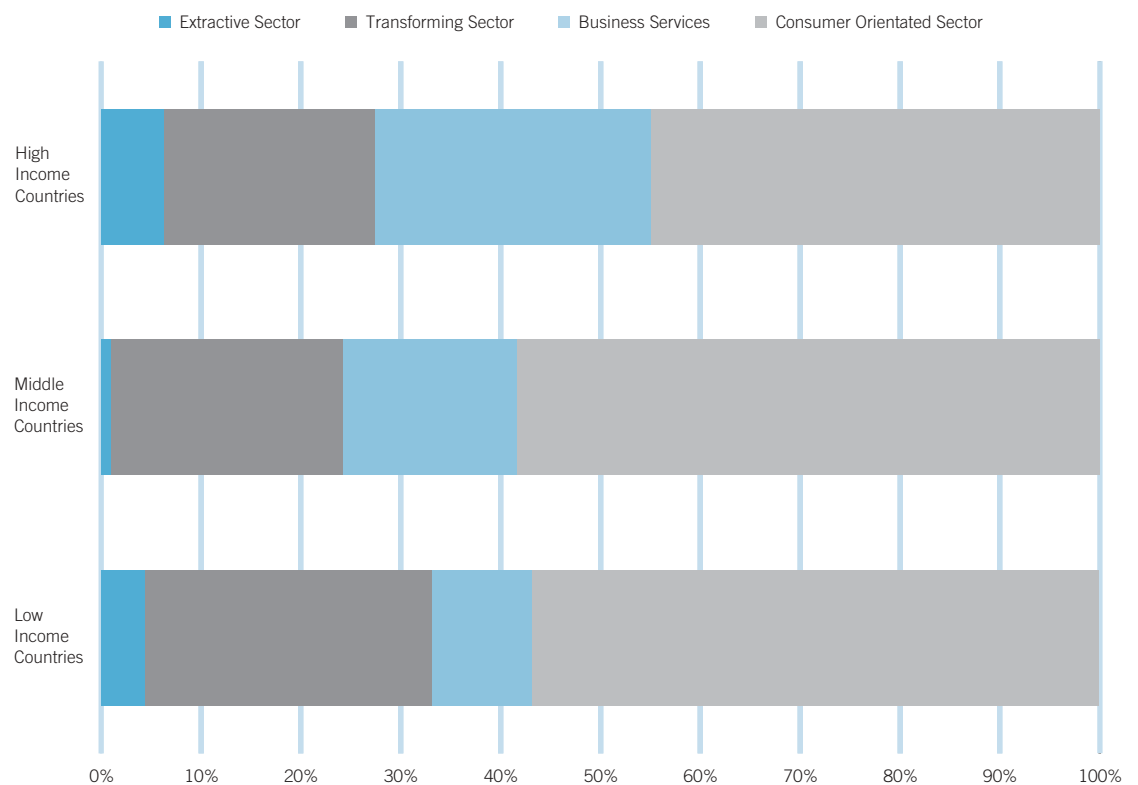
In order to analyze the sectors in which people attempt to start new businesses, GEM codes activity according to the International Standard Industry Codes (ISIC).⁹ These codes identify more than five hundred different types of activity, which GEM consolidates under four main headings for ease of analysis.

These sectoral groups are:

- **Extraction:** agriculture, forestry, fishing, and mining (i.e., extraction of products from the natural environment)
- **Transformation:** construction, manufacturing, transportation, and wholesale distribution (physical transformation or relocation of goods and people)
- **Business Services:** where the primary customer is another business
- **Consumer Oriented:** where the primary customer is a physical person (e.g., retail, restaurants and bars, lodging, health, education, social services, recreation)

As Figure 10 shows, the consumer-oriented sector is the largest sector in each of the national income groups. In low and middle-income countries, consumer focused businesses constitute the majority of firms being started at 55 percent and 57 percent respectively. The proportion of activity in this sector drops somewhat to 45 percent in the high-income group.

Figure 10. TEA 2004: Sector Distribution by Country Income Groups (GDP per Capita)



A clearly discernible pattern can also be seen in respect to the business services sector, which increases as national income rises. In low-income countries this sector accounts for just 10 percent of new firms, while in the high-income group the figure is almost three times higher at 28 percent. In middle-income nations business services are 17 percent of the total.

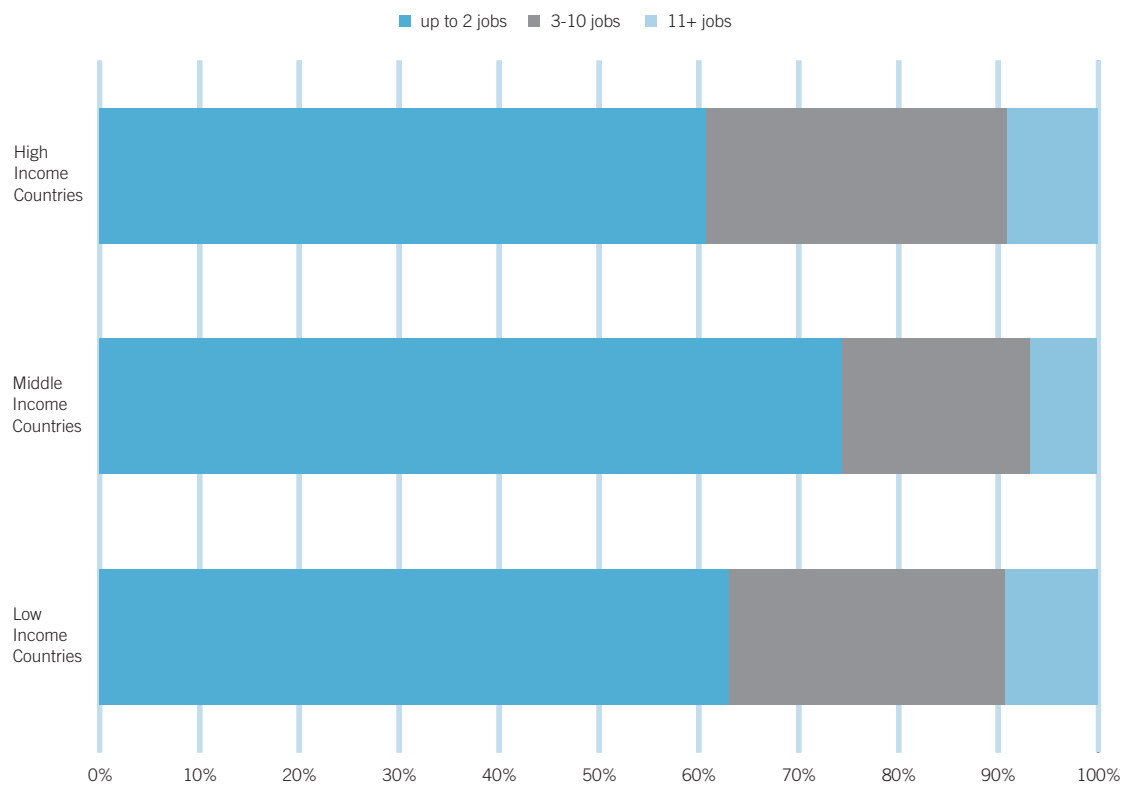
The transformation sector (physical transformation or relocation of goods and people) also appears to be linked to national income level. In low-income countries 29 percent of entrepreneurs attempt to start firms in this sector. The figure falls to 23 percent for the middle-income and 21 percent for the high-income groups. The relationship between income groups and the transformation sector is the opposite to that which occurs in the business services sector, although the differences are not as great. This suggests that there is perhaps a link between these sectors according to national wealth. It may be that a country's ability to

pay for imports reduces its need to manufacture goods itself. Another possible explanation for this might lie in the education levels of entrepreneurs. It has already been shown that the high-income nations have the greatest proportion of highly educated entrepreneurs and it is these individuals that form the core of the professional infrastructure that provides business services.

JOB CREATION EXPECTATIONS

A simple measure of the ambitions and intentions of entrepreneurs is the extent to which they expect their new venture to grow and to employ people. Each year GEM asks those in the process of starting a business to project the number of people they expect to employ within five years of starting their business. At the same time, the researchers ask the owner/managers of new firms (newly created businesses that have paid wages for between three and 42 months) to project the number of employees that they expect to have five years from now.

Figure 11. TEA 2004: Job Growth Expectation by Country Income Group (GDP per Capita)



ENTREPRENEURIAL EXPECTATIONS

Each year, GEM finds that those trying to start a venture tend to be more optimistic than owners of new businesses who have the benefit of greater experience in trying to ensure the survival and growth of a new business. Despite the slightly different degrees of optimism between these groups, the overall picture around the world shows a high proportion of small scale ventures: typically, self-employment (perhaps on a part-time basis), rather than growth oriented entrepreneurship.

Figure 11 illustrates the aspirations and expectations of entrepreneurs. Presented here are responses consolidated into a single data set and established in 3 categories of job creation: 0-2 jobs, 3-10 jobs, and more than 11 jobs. These are illustrated according to the National Income Groups.

Regardless of national income, about two thirds of all new ventures around the world expect to employ no more than two people within five years of the survey. However, it may be that there are different reasons for the levels recorded in each of the income groups. In high-income nations, the low level of new job opportunities may be a result of the relatively high proportion of business service enterprises such as small consultancies. In the low-income countries, GEM suspects that the high level of necessity entrepreneurship leads to a high degree of self-employment. The group with the highest proportion of small firms is the middle-income nations where, 75 percent of new ventures expect to employ a maximum of two people. In these countries the reason may lie in what can be described as the “transitional” phase in which they find themselves. As middle-income nations become wealthier, three interconnected factors are likely to affect firm size. First, necessity entrepreneurship levels will decrease. At the same time, there will be a tendency for an increase in business services opportunities, while opportunities to enter high employment areas such as manufacturing remain blocked by the existing large and medium sized firms.

The expectations of entrepreneurs in the low and high-income groups are very similar in each job

creation category, with roughly 30 percent of respondents expecting to employ between three and 10 people and 9 percent expecting to employ more than 10. The expectations of entrepreneurs in the middle-income nations are about 30 percent lower than these.

EXPORT EXPECTATIONS

The extent to which new businesses expect to export their goods and services provides an indication of their capacity to increase national wealth through international trade. At the national level, exports represent tradable goods that allow a country to import goods that it cannot produce as cheaply as other countries, or at all. Exports also allow a country to specialize in those industries where it has a comparative advantage and can create economies of scale. Apart from the implications for national economic growth, exports are important to firms because:

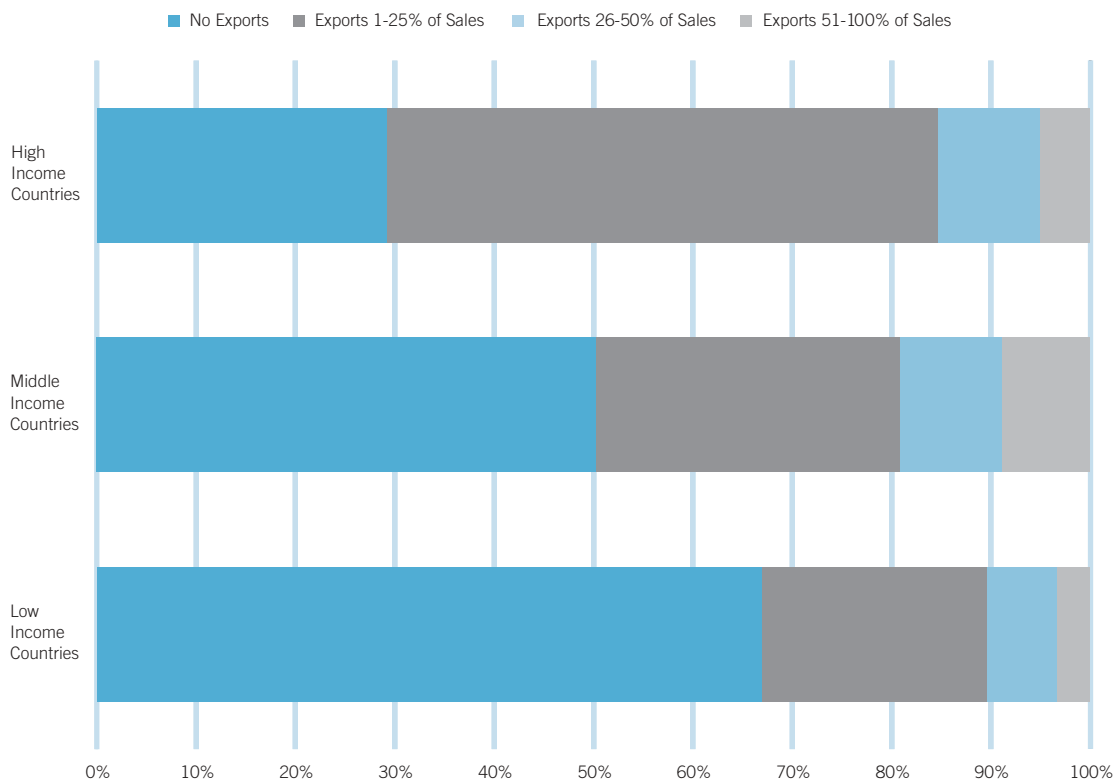
- They widen a company's customer base and increase sales revenue
- Establish geographic market diversity helping to offset booms and slumps in the domestic market
- Can lengthen the life-cycle of a product or service that has already matured in the home market

Despite these advantages, about 50 percent of all start-ups around the world do not expect to export anything at all. As Figure 12 indicates, the focus on domestic market orientation is related to national income. Low-income countries record the highest level of non-exporting start-ups (67 percent) and this decreases as nations become wealthier: 50 percent in the case of middle-income countries and 29 percent among the high-income group.

This suggests the existence of a link between exports and necessity/opportunity entrepreneurs. As the proportion of necessity entrepreneurship falls, so does the proportion of start-ups that do not expect to export.

This pattern continues in terms of start-ups that expect a modest level of exports (up to 25 percent of sales). Here the high-income nations are by far the most export oriented. Fifty-five percent of high-income group start-ups expect exports amounting to

Figure 12. TEA 2004: Distribution by Export Intensity, by Country Income Group (GDP per Capita)



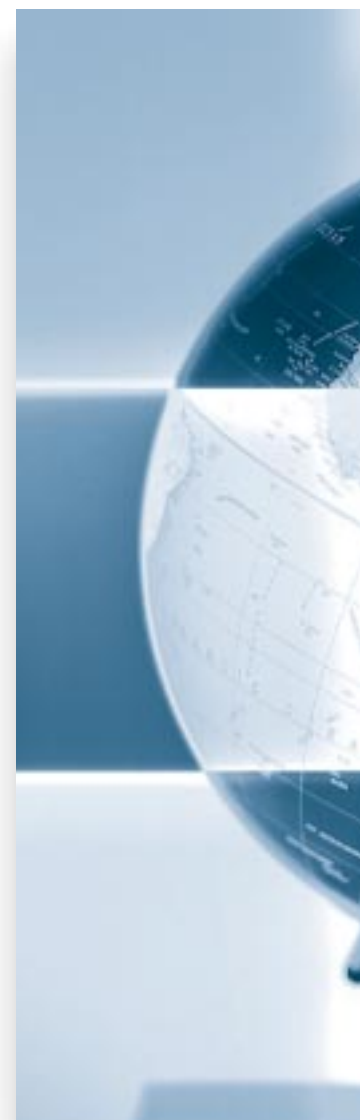
up to a quarter of their sales, while the figure decreases to 30 percent in middle-income nations, and is less than half of the high-income expectation (23 percent) among countries in the low-income group.

Beyond the point where start-ups expect exports to constitute a maximum of 25 percent of sales, the pattern changes. Start-ups expecting significant levels of exports (over 51 percent of sales) are highest in the middle-income nations (9 percent), while the high and low-income groups each record levels about half of this. Given the very low percentage of the sample that is involved at the highest level (only 4 percent of the total sample), it is impossible to draw any sensible conclusions as to why this shift appears to occur.

KEY POINTS: ENTREPRENEURIAL EXPECTATIONS AND NATIONAL INCOME

The ambitions of entrepreneurs in terms of sector choice, job creation, and export orientation provide some indication of the economic health of a nation's entrepreneurial endeavors. The overriding global picture in 2004 is of entrepreneurship that, for the most part, will have little in the way of market impact. Fifty-four percent of new start-ups around the world fall into this category and, of those that have any chance of creating market impact, this will be a small impact for 65 percent of them.

However, these figures hide a difference in expectations between countries with differing national income levels. The results for the three national income groups as well as the whole sample are summarized in Table 3.



ENTREPRENEURIAL EXPECTATIONS

Table 3. TEA 2004 Characteristics by Country Income Level

| | All | Low | Middle | High | |
|--|--------------|--------------|--------------|--------------|------------------|
| Number of TEA cases | 9,404 | 3,561 | 1,687 | 4,156 | Row Total |
| | | | 38% | 18% | 44% |
| No. jobs in 5 years | 23% | 27% | 12% | 61% | 100% |
| 1 - 5 jobs in 5 years | 50% | 40% | 21% | 39% | 100% |
| 6 -19 jobs in 5 years | 18% | 32% | 23% | 46% | 100% |
| 20+ jobs in 5 years | 9% | 27% | 16% | 58% | 100% |
| | 100% | | | | |
| No export sales | 54% | 44% | 18% | 37% | 100% |
| 1 - 25 % export sales | 34% | 27% | 18% | 55% | 100% |
| 26 - 50% export sales | 7% | 25% | 22% | 53% | 100% |
| 51-100% export sales | 4% | 21% | 22% | 57% | 100% |
| | 100% | | | | |
| Agriculture, forestry, fishing | 5% | 5% | 3% | 6% | |
| Mining, construction | 6% | 5% | 8% | 7% | |
| Manufacturing | 10% | 13% | 5% | 7% | |
| Transportation, communication, utilities | 5% | 5% | 3% | 5% | |
| Wholesale, motor vehicle sales and service | 7% | 9% | 18% | 5% | |
| Retail, hotel, restaurants | 34% | 46% | 31% | 22% | |
| Financial, insurance, and real estate | 4% | 1% | 3% | 6% | |
| Business services | 19% | 10% | 23% | 30% | |
| Health, education, and social services | 0% | 0% | 0% | 1% | |
| Consumer services | 9% | 6% | 5% | 12% | |
| | 100% | 100% | 100% | 100% | |

In Table 3 the four sectors have been expanded and the data is presented in the form of 10 sectors, which gives a more fine-grained view of where start-ups are focused. Noticeably, in spite of being among

the largest sectors in the economy, health, education, and social services have almost no activity. This is probably because in most countries these activities are controlled by the public sector.

Concerning the relationship between business ambitions and national income groups GEM finds that:

- The consumer-oriented sector is the most popular for start-ups regardless of national income level.
- The business services and transformation sectors appear to be linked to national income level, but in opposite ways. Business services start-ups tend to increase with increasing national income, while start-ups in the transformation sector tend to fall with increasing national income.
- Regardless of national income, the majority of start-ups intend to create little, if any, employment opportunities.
- Anticipated job creation tends to be high for low-income countries, lower for medium income countries, and significantly high again for high-income countries, thereby creating the familiar U-shaped relationship.
- Start-ups that are export focused are more prevalent in the high-income countries.
- A domestic market orientation is related to national income. Low-income countries record the highest level of non-exporting start-ups and this reduces as nations become wealthier.
- There appears to be a link between exports and necessity/opportunity entrepreneurship. As the proportion of necessity entrepreneurship (more common in low-income countries) falls, so does the proportion of start-ups that do not expect to export products.



ENTREPRENEURSHIP AND THE GLOBAL ECONOMY

Exactly how much influence entrepreneurial activity has on national economic growth is a matter of ongoing debate among economists. Nevertheless, most now agree that entrepreneurship is responsible for much of the competition and innovation in the business world. This is achieved through the process known as “creative destruction”: The innovations introduced by entrepreneurs challenge and render obsolete the technologies and products of existing industries.

While this sounds fairly simple, the relationship between entrepreneurship and economic growth is, in fact, complex and these two elements are joined in what is referred to as a “virtuous circle.” In other words, entrepreneurship contributes to economic growth, and the level of a nation’s wealth contributes to entrepreneurial activity. Determining the nature and structure of the relationship between entrepreneurship and national economies requires data to be collected over a long period so that the time lag with which each element influences the other can be taken into account. In the next few years, GEM will have collected a sufficient amount

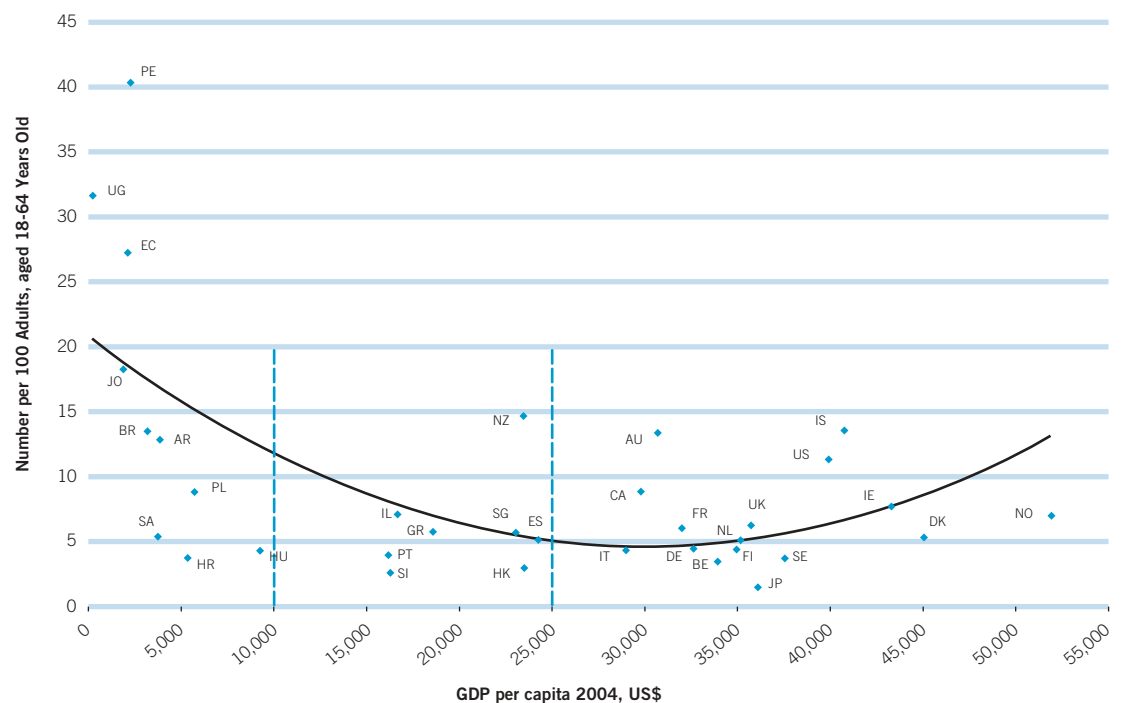
of this kind of data from several countries. This will enable GEM to construct answers to important questions surrounding the virtuous circle.

In the meantime, the data collected in the last six years allows GEM researchers to identify and investigate aspects of the relationship between TEA rates and national income. Indeed, a recent study using GEM data has found a positive relationship between entrepreneurial activity and technological change for a cross-section of European Union countries after controlling for the stock of knowledge and research and development.¹⁰

TEA AND NATIONAL INCOME

The importance of understanding the relationship between these two elements has been heightened now that many low and middle-income countries are included in the GEM studies. The first study, in 1999, comprised the G7 nations plus Denmark, Finland, and Israel, all of which, except Israel, were high-income nations. Evidence presented in this report suggests the existence of a U-shaped relationship between TEA and National Income.¹¹

Figure 13. TEA 2004: National Income and Fitted Parabolic Trend



This has implications for policy in all countries, within any particular income group. Furthermore, investigation of this phenomenon ties together the three questions that GEM originally set out to answer.

- Does the level of entrepreneurial activity vary between countries, and if so, to what extent?
- What makes a country entrepreneurial?
- Does the level of entrepreneurial activity affect a country's rate of national economic growth?

Although there are many ways to measure national income, GEM uses GDP per capita. This is because, to a large extent, it reflects the wealth of a country and its average living standards for its citizens. Researchers can take this information and make reasonable assumptions about the quality of services and infrastructure that entrepreneurs may face.

Figure 13 shows the relationship between entrepreneurial activities as measured by the TEA index and National Income (GDP per capita) for the 34 countries participating in the 2004 GEM. The fitted trend line in the figure shows that the TEA index declines as countries attain higher national income and reaches its lowest point at about \$30,000 of GDP per capita. Beyond that level of GDP, TEA begins rising slowly and steadily as per capita GDP continues to rise. Thus, Figure 13 seems to support the existence of a U-shaped relationship between GDP and entrepreneurial activity.

The countries in the upper left-hand quadrant are all countries with high levels of TEA but very low national incomes, such as Uganda, Peru, and Ecuador. As per capita GDP approaches \$10,000, countries begin to exhibit lower levels of TEA such as in the case of Brazil and Argentina. The middle section, with GDP per capita ranging from \$10,000 to \$25,000, includes a set of countries that appear to be close to moving from the middle-income group to the high-income group. Among these are New Zealand, Singapore, Hong Kong, and Spain.

As National Income rises to between \$30,000 and \$40,000 GDP per capita, it can be observed that several countries are grouped together with a

TEA rate of about 5 percent. Among these are Germany, France, Belgium, Finland, and the Netherlands. In this GDP range, two countries are noticeable outliers, namely Japan with one of the lowest levels of TEA, and Australia with one of the highest levels of TEA. These digressions from the trend line are likely to be the result of a complex set of interdependent factors, many of which are embedded in the specific cultural and social norms of those nations. These factors are not captured by GDP per capita. Finally, when national income exceeds \$40,000, the TEA rate begins to rise more steeply again.

Table 4 shows all 2004 GEM countries grouped in a matrix depending on their national income level and their position on the trend line as depicted in Figure 13.

Table 4: Income level (GDP per capita)

| | Low | Middle | High |
|------------------------|--|--|--|
| Above the curve | Peru: PE Uganda: UG Ecuador: EC India*: IN | New Zealand: NZ | Canada: CA Australia: AU Iceland: IS United States: US |
| On the curve | Jordan: JO Brazil: BR Argentina: AR | Israel: IL Greece: GR Singapore: SG Spain: ES | France: FR Germany: DE Netherlands: NL Belgium: BE United Kingdom: UK Finland: FI Ireland: IE Italy: IT |
| Below the curve | Poland: PO South Africa: ZA Croatia: HR Hungary: HU China*: CN | Slovenia: SI Portugal: PT Hong Kong: HK | Japan: JP Sweden: SE Denmark: DK Norway: NO |

*Not in 2004 cycle

Taking into consideration the countries within these groups, some commonalities can be found that have implications for the kind of entrepreneurial policies being pursued. The matrix also indicates that policies appropriate for countries at a lower level of income may not be appropriate for ones at a higher level of income. A simple illustration of this can be seen by looking at groups of nations at two extremes of the matrix.



Ecuador, India, Peru, and Uganda (all low-income countries) are above the curve. Entrepreneurship is based on economic necessity, and the entrepreneurs have proportionately lower education. The start-ups in these countries tend to use older technologies, and offer the market little in the way of innovations. In the absence of advanced technologies and innovative product offerings, venture capitalists are not likely to be attracted to these entrepreneurship. Likewise, national policy makers will be less interested in supporting start-ups of this nature.

All Central European economies in GEM 2004, as well as China, are below the curve. These countries activities will reflect relatively high growth as they move to the right towards the curve.¹²

Now turn to the lower right-hand corner of Table 4. Japan, Sweden, Denmark, and Norway (all high-income countries) have lower levels of entrepreneurship. These countries all have well-developed welfare systems that act as a safety net for the unemployed. Entrepreneurs in these countries are among the best educated in the world. They go into business because they see opportunities, not out of economic necessity. Even so, if they use older technologies and produce few innovations, entrepreneurs have little potential for market expansion. Nevertheless, because of the healthy economy, they can benefit from more venture capital and better technology transfer policies. In these countries, government policies are more likely to support entrepreneurship.

ENTREPRENEURSHIP AND ECONOMIC GROWTH

The three national income groups appear to have some commonality with the three major stages of economic development.

The first stage is marked by high rates of agricultural employment. In many low-income countries between 70 and 80 percent of the population may be involved in agricultural production. Non-agricultural sole proprietors – i.e., the self-employed – probably account for most small manufacturers and service firms.¹³

The second stage is marked by decreasing rates of entrepreneurship. There are several reasons to expect that TEA will decrease as per capita income increases. Rates of necessity entrepreneurship can be expected to drop as a nation becomes wealthier. The focus then turns to those who are able to spot and act on opportunities. A sound national infrastructure (such as transportation, telecommunications, and credit markets) assists opportunity entrepreneurs as they grow larger firms. Better transportation and telecommunications make it cheaper to distribute goods and services over wider areas. Efficient distribution systems enable firms to operate bigger production units, and therefore hire more employees. In this scenario, medium to large firms are able to exploit more opportunities as they arise. For countries within this national income group, it can therefore be expected that fewer people will need, or want, to start new businesses.¹⁴



The third stage is marked by an increase in entrepreneurial activity, as was observed in the United States in the 1970s.¹⁵ Recent studies confirmed that this phenomenon exists among the wealthier countries in the European Union and most OECD countries.¹⁶ The empirical evidence clearly shows that the economy in most high-income countries began to shift away from larger firms and head back toward entrepreneurial activity.¹⁷ There are several reasons why entrepreneurial activity rises in the third stage. In high-income nations there now tends to be a reduced role played in the economy by manufacturers. Virtually all of the industrialized market economies have experienced a decline in manufacturing during the last thirty years. This leads naturally to downsizing. At the same time there has been a corresponding expansion of the business services sector. Service firms tend to be smaller than manufacturing firms; therefore, the average size of firms within a country is likely to decline as well. Moreover, service firms provide more opportunities for entrepreneurship. Improvements in information technologies, telecommunications, express mail and package services, photocopiers, fax machines, e-mail, computer programs, the Internet, e-commerce, and mobile phones make it less expensive and less time-consuming for geographically disparate individuals to exchange information and do business.¹⁸

Following the logic of the third stage, it can be expected that in locations where manufacturers

are growing, entrepreneurial activity will be negatively related to economic growth. In economies where the business services sector is growing, it can be expected that entrepreneurial activity will be positively related to an increase in per capita income.



IMPLICATIONS FOR POLICY MAKERS

The GEM project is designed to provide a systematic and comprehensive description of the status of entrepreneurial activity around the globe. This, in turn, is intended to inform and provide a platform for debate concerning policy implications and best practices. This year's study suggests the existence of a systematic relationship between TEA and GDP per capita.

The policy implication of this observation is that "one size does not fit all." In other words, effective policy strategies with respect to entrepreneurship need to be tailored to the context of sub-national regions and perhaps even to a country's specific context.¹⁹ GEM researchers in each country will develop specific policy analyses for their own country in their national reports. In this Executive Report, however, GEM is able to provide policy considerations that are relevant for 3 groups of countries.²⁰

In the first group we find countries where nearly all of the world's technology innovations (defined here as 10 patents per year per million population) are produced by a small proportion of the world's population: about 15 percent. The United States, for example, supplies about one third of the world's patents. This group can expect to generate economic wealth through the creation, use, and sale of advanced technology. These technologies are then adopted by a second group, which constitutes about 50 percent of the world's population.

The second group (defined as having high-tech exports representing at least 2 percent of total exports) is able to generate income by using these adopted technologies in production and/or consumption. The countries in this group are able to use, rather than develop, the latest technology and are capable of generating wealth, but not to the same extent as those that produce the technology in the first place. They do, however, generate a higher national income than countries in the third group.

The third group, constituting about a third of the world's population can be described as technologically disconnected, neither innovating at home nor adopting foreign technologies.²¹

These 3 groups of countries roughly correspond

to GEM's categories of high, medium and low-income countries.

POLICY IMPLICATIONS FOR LOW-INCOME COUNTRIES

Low-income countries, (i.e., those that are neither innovating at home nor adopting foreign technologies), need to focus more on General National Framework Conditions and less on the Entrepreneurial Framework Conditions set out in the GEM conceptual model. In particular, low-income nations need to strengthen their small and medium sized sector, before focusing on the Entrepreneurial Framework Conditions, since this is the first step toward economic growth. These policies should be focused at existing firms rather than at individual entrepreneurs. Areas of importance include financial assistance, management assistance, training, and reducing regulatory burdens. Part of the goal should be to reduce the number of necessity entrepreneurs; and strengthen the existing small and medium sized sectors.

- In low-income countries, a strong commitment to education and training is necessary, both at the elementary and secondary level. Those without formal education in low-income countries will end up in necessity entrepreneurship. Without education it is difficult to secure a better paying job. Therefore, in these countries, the goal should be to reduce the existing dependence on necessity entrepreneurship for individual and family incomes to grow.
- Low-income countries might need to strengthen the conditions allowing major established firms to develop, including the rule of law, labor market flexibility, infrastructure, financial market efficiency, and management skills. Most of these conditions are necessary to attract major investments that will provide employment, technology transfer, exports, and tax revenues.

POLICY IMPLICATIONS FOR MIDDLE-INCOME COUNTRIES

For middle-income countries, (i.e., those adopting technologies in production and consumption), a



decrease in entrepreneurial activity is observed as an increasing number of both domestic and foreign work opportunities in larger establishments become available. These technology-centered countries are in many cases using technologies that have been developed elsewhere. At the point where countries in this group want to start developing their own technologies, (i.e., become technology-creating countries) they need to start laying the foundation for entrepreneurship.

- Middle-income countries should focus on strengthening the Entrepreneurial Framework Conditions in their countries because, as they move from being technology-adopting countries to technology-creating countries, the entrepreneurial sector will become more important over time.
- In these countries a strong commitment to entrepreneurial education is important because it will be necessary to educate the population about entrepreneurship, especially in elementary and secondary schools. There is a need to instill fundamental aspects of the entrepreneurial mindset, as well as the need for the celebration of role models and the development of informal investors.

POLICY IMPLICATIONS FOR HIGH-INCOME COUNTRIES

For high-income countries the goal is to sustain innovation rates. In these countries the Entrepreneurial Framework Conditions in the GEM Conceptual Model should be strong. However, GEM finds considerable variance in this area across the high-income nations. It may be that in some countries it will be necessary to focus on strengthening some of these Entrepreneurial Framework Conditions. Entrepreneurial economies need to strengthen technology transfer; make early stage funding available; and support entrepreneurial activity at the state, corporate, and university level. In short they need to create a mindset of creativity and innovation.

It is accepted that not all entrepreneurial activity in this group of countries will be innovative and neither will all innovation take place within entrepreneurial firms. Therefore, in high-income

countries the focus should be on developing a highly innovative entrepreneurial sector and on supporting high value-added new companies that have the potential to grow and to develop internationally.

- In high-income economies the higher education system needs to play a more important role in research and development, technology commercialization and scientific education.
- Where new ventures are created as a result of technology transfer, the entrepreneur often has well developed technical skills and here the challenge is to make the necessary commercial skills available to the new venture either through training for entrepreneurs or through team building.

OVERALL IMPLICATIONS

- Effective entrepreneurship policy must be adapted to prevailing national circumstances, because “one size does not fit all”.
- In all national income groups, governments need to remove barriers to competition; review the provision of services by the state in terms of relative efficiency and effectiveness; reduce the burden of regulation on new and developing firms; and make it easier for new and developing companies to bid for state purchases/contracts.

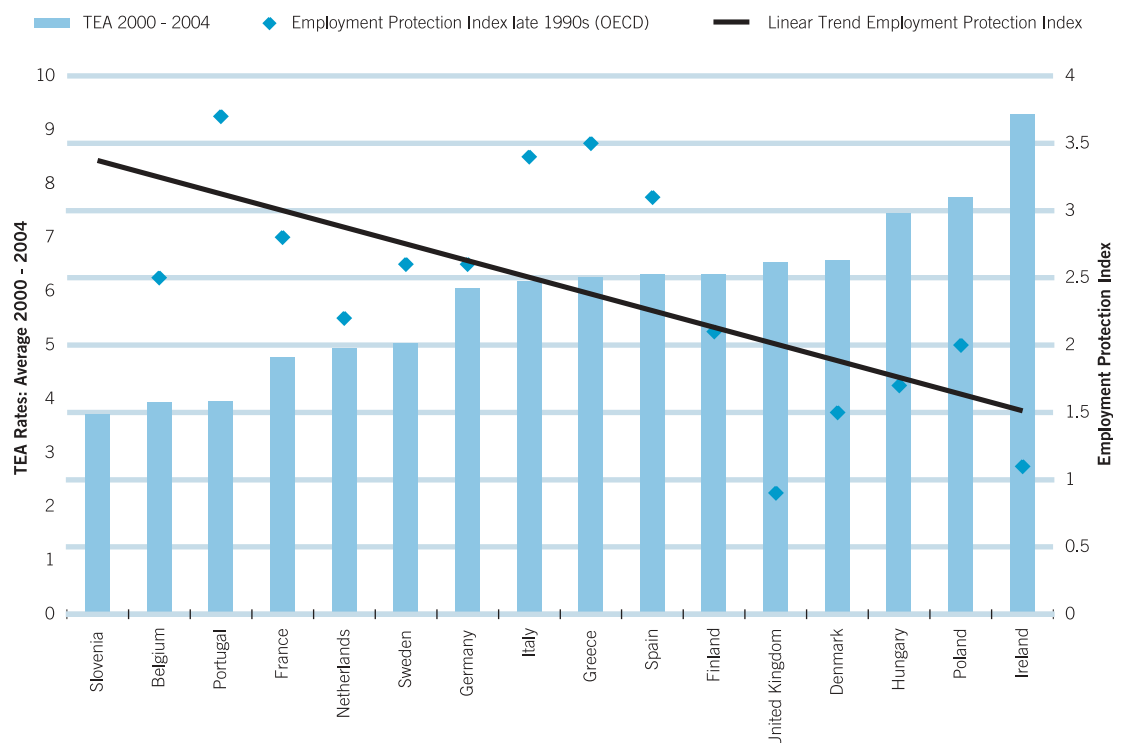


END NOTES

- 1 Reynolds, P. D., N. S. Bosma, E. Autio, 2005, "Global Entrepreneurship Monitor: Data Collection Design and Implementation 1998-2003", *Small Business Economics*, in press.
- 2 *The World Competitiveness Yearbook*, 2004. Lusanne, Switzerland: International Institute for Management Development.
- 3 The major generators of employment growth are both new plants and new firms with each creating about one half of net new employment in any given year. Acs, Z. J. and C. Armington, 2004, "Employment Growth and Entrepreneurial Activity in Cities", *Regional Studies*, 28, 911-927.
- 4 An individual may be considered a 'nascent entrepreneur' under three conditions: first, if he or she has done something (taken some action) to create a new business in the past year; second, if he or she expects to share ownership of the new firm; and, third, if the firm has not yet paid salaries or wages for more than three months. In cases where the firm has paid salaries and wages for more than three months but for less than 42 months, it is classified as a 'new business'. Those 5 percent who qualify as both a 'nascent entrepreneur' and a 'new business' is counted only once.
- 5 The source of standardized annual population structure estimates was the U.S. Census Bureau International Database <http://www.census.gov/ipc/www/didbnew.html> The 18 to 64-age range are covered by all samples in all countries and approximate the ages for which individuals are expected to be active in the labor force.
- 6 Bosma, N. and S. Wennekers, 2004, "Illustration of the Relationship between Employment Protection and Total Entrepreneurial Activity in the European Union," in *Issues and Challenges in the European Union*.

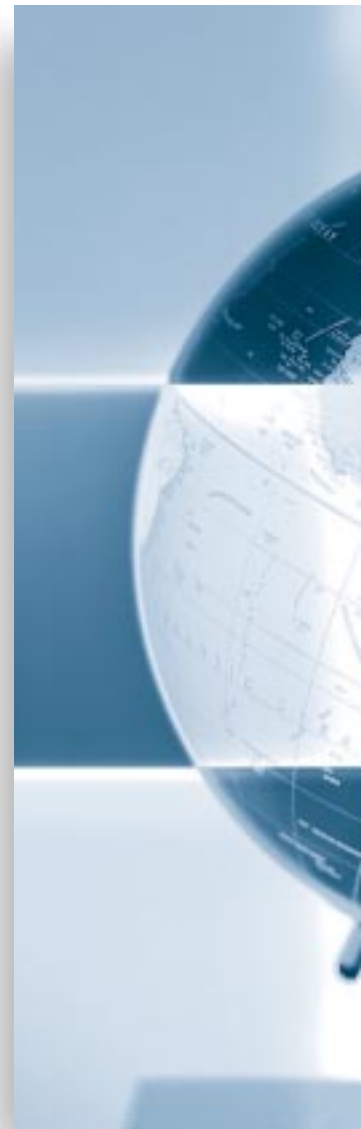


Employment Protection and Total Entrepreneurial Activity in the European Union*



* Averages TEA for 2000-2004 except for Ireland and the Netherlands (2001-2004), Hungary and Poland (2001, 2003, 2004), Portugal (2001 and 2004), Slovenia (2002-2004) and Greece (2003 and 2004).

-
- 7 Acs, Z. J. and D. Storey, 2004, "Entrepreneurship and Economic Development," *Regional Studies*, 38, 1-12.
- 8 Education data has been standardized across all countries in order to make comparison possible.
- 9 United Nations. International Standard Classification of All Economic Activities, revision 3. (<http://esa.un.org/unsd/cr/registry/regist2.asp>).
- 10 Acs, Z. J. and A. Varga, 2005, "Agglomeration, Entrepreneurship and Technological Change", *Small Business Economics*, in press.
- 11 Wennekers, A. R. M., A. J. van Stel, A.R. Thurik and P. D. Reynolds, 2005, "Nascent Entrepreneurship and Economic Development", *Small Business Economics*, in press.
- 12 China and Hungary have relied on a model of high levels of foreign direct investment to stimulate economic growth.
- 13 Kuznets observed the tendency for the self-employment rate to decline with economic development, Kuznets, S., 1966, *Modern Economic Growth* (New haven: Yale University Press).
- 14 The shift in manufacturing production in China from the United States and the European Union are a clear manifestation of this trend. See for example, Fortune, "Inside the New China", October 4, 2004.
- 15 Blau, D. M., 1987, "A Time-Series Analysis of Self-employment in the United States", *Journal of Political Economy*, 95, 445-467. Evans, D. and L. S. Leighton, 1989, "The Determinants of Changes in U.S. Self-employment", *Small Business Economics*, 1, 111-120.
- 16 Acs, Z.J., D. Audretsch and D. Evans, 1994, "Why Does the Self-employment Rate Vary Across Countries and Over Time?" Discussion Paper No. 871, Center for Economic Policy Research, January 1994.
- 17 Carree, M., A. van Stel, R. Thurik, S. Wennekers, 2002, "Economic Development and Business Ownership: An Analysis Using Data of 23 OECD Countries in the Period 1976-1996", *Small Business Economics*, 19, 271-290.
- 18 Jorgenson, D. W., 2001, "Information Technology and the U.S. Economy", *American Economic Review*, 91, 1-32.
- 19 Wagner, J. and R. Sternberg, 2004, "Start-up Activities, Individual Characteristics, and the Regional Milieu: Lessons for Entrepreneurship Support Policies from German Micro Data", *The Annals of Regional Science*, 38, 219-240.
- 20 Two excellent books on entrepreneurship have been published in the last year focusing on entrepreneurship policies, entrepreneurship by sector and equity issues in entrepreneurship. Hart, D. M., ed., 2003, *The Emergence of Entrepreneurship Policy* (New York: Cambridge University Press). Holtz-Eakin, D and H. S. Rosen, 2004, *Public Policy and the Economics of Entrepreneurship* (Cambridge: The MIT Press).
- 21 Sachs, J., Sachs on Globalization, *The Economist*, June 24th 2000, 81-83.



GLOBAL ENTREPRENEURSHIP MONITOR SPONSORS



Babson College in Wellesley, Mass., is recognized internationally as a leader in entrepreneurial management education. Babson grants BS degrees through its innovative undergraduate program (recipient of the 2002 Theodore M. Hesburgh Award). It grants MBA and custom MS and MBA degrees through the F.W. Olin Graduate School of Business at Babson College (currently celebrating 50 years of Babson MBAs). Babson's School of Executive Education offers executive development programs to experienced managers worldwide. Babson Interactive LLC develops distance learning programs and business simulations for executives and graduate students. More information about Babson is available at www.babson.edu.



London Business School's vision is to be the pre-eminent global business school, nurturing talent and advancing knowledge in a multi-national, multi-cultural environment. Founded in 1965, the School graduated over 800 MBAs, Executive MBAs, Masters in Finance, Sloan Fellows and PhDs from over 70 countries last year. The School's executive education department serves 6,000 executives and 60 corporate clients on its programmes every year. Both the full-time MBA and Executive MBA programmes are consistently ranked among the world's best. For more information, visit www.london.edu.

CONTACTS

**For more information on this report,
contact:**

Zoltan J. Acs
University of Baltimore
zacs@ubalt.edu
www.ubalt.edu

Pia Arenius
HEC – Lausanne
pia.arenius@unil.ch
www.hec.unil.ch

Michael Hay
London Business School
mhay@london.edu
www.london.edu

Maria Minniti
Babson College
minniti@babson.edu
www.babson.edu/entrep

**For more information on the Global
Entrepreneurship Monitor visit the website at
www.gemconsortium.org, or contact:**

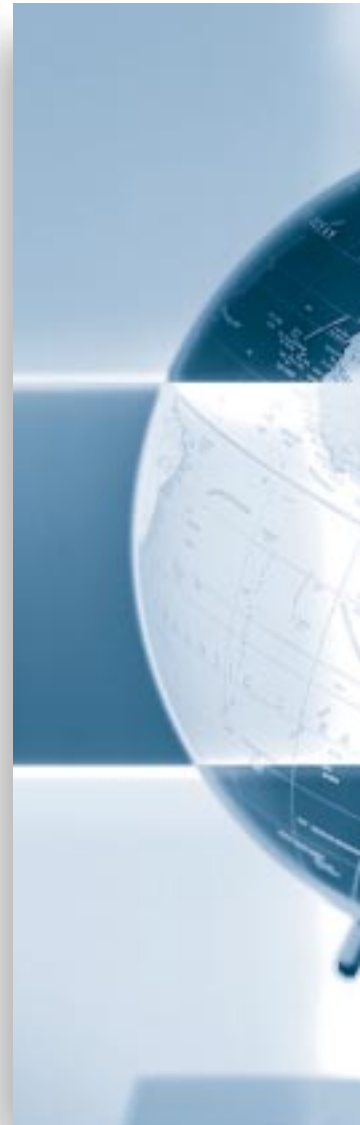
Pia Arenius
HEC – Lausanne
pia.arenius@unil.ch
www.hec.unil.ch

William D. Bygrave
Babson College
bygrave@babson.edu
www.babson.edu/entrep

Paula Fitzsimons
National Coordinator: GEM Ireland
paulafitzsimons@eircom.net

Mick Hancock
University of Southern Denmark
mha@sam.sdu.dk
www.sdu.dk

Michael Hay
London Business School
mhay@london.edu
www.london.edu



NOTES



