Global Entrepreneurship Monitor
(GEM: www.gemconsortium.org)

THE 2012 CONFERENCE ON ENTREPRENEURIAL UNIVERSITIES

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Contents

1. GEM: Intro & Main Results
2. Entrepreneurial Employees
3. Entrepreneurship Education & Training
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Why GEM Emerged

• “Entrepreneurship is important for economic development”

• Need for better understanding of the links between entrepreneurship & growth, and the role of policy

• Lack of detailed internationally comparable data
About GEM

• Co-founded by Babson College and London Business School
  – First survey conducted in 1999
  – 2012 survey now being prepared: represents GEM’s 14th year

• Global Sponsors
  – Babson College, USA
  – Universidad del Desarrollo, Chile
  – Universiti Tun Abdul Razak, Malaysia

• Measures individual participation in multiple phases of entrepreneurship
  – Also exhibits the profile of entrepreneurs

• Assess entrepreneurship globally; across multiple economic development levels and geographic regions
  – Adult Population Survey → Now over 1,5 million data points!
  – National Expert Survey
GEM 1999: 11 Economies

Canada
USA
UK
France
Italy
Germany
Denmark
Finland
Israel
Japan
GEM 2011: 54 Economies

More than 80 economies have participated since 1999
Phases and Profile of Entrepreneurship

**Entrepreneurship Phases**

- Potential Entrepreneurs: beliefs and abilities
- Intentions
- Nascent
- New
- Established
- Discontinuance

**Entrepreneurship Profile**

- Inclusiveness
  - Sex
  - Age
- Industry
  - Sector
- Impact
  - Business Growth
  - Innovation
  - Internationalization
Students: Intentions & TEA

Based on GEM 2007-2011 Adult Population Survey
GEM Conceptual Model

Basic requirements
- Institutions
- Infrastructure
- Macroeconomic stability
- Health and primary education

Efficiency enhancers
- Higher education & training
- Goods market efficiency
- Labor market efficiency
- Financial market sophistication
- Technological readiness
- Market size

Innovation and entrepreneurship
- Entrepreneurial finance
- Government policy
- Government entrepreneurship programs
- Entrepreneurship education
- R&D transfer
- Internal market openness
- Physical infrastructure for entrepreneurship
- Commercial, legal infrastructure for entrepreneurship
- Cultural and social norms

From GEM National Expert Surveys (NES)

Established Firms
Entrepreneurial Employee Activity
From GEM 2011 Adult Population Surveys (APS)

Entrepreneurship Profile
Attitudes:
- Perceived opportunities & capabilities; Fear of Failure;
- Status of entrepreneurship

Activity:
- Opportunity/Necessity-driven, Early-stage; Inclusiveness;
- Industry; Exits

Aspirations:
- Growth, Innovation
- International orientation
- Social value creation

Social, Cultural, Political Context

From other available sources

Socio-Economic Development
- Jobs, Innovation, Social value
Delineating TEA into Growth Expectations

Source: Global Entrepreneurship Monitor 2009-2011
Low- and High Growth Expectation TEA over Time,
Innovation-Driven Economies

Source: Global Entrepreneurship Monitor
Note: the ten selected economies are those that have participated in GEM every year throughout 2002-2010. Entries in the figure are simple country averages. The values for each country are based on simple moving averages including the current year, the previous year and the next year. Base year is 2005 (set at 100 for each indicator).
Innovation-Oriented TEA
Promoting Ambitious Entrepreneurship

Stam et al. (2012), based on their literature review on ambitious entrepreneurship, identify four key transitions:

- Education at an early age is crucial for developing achievement orientation...
- ... while professional education at a later stage is also relevant for ambitious entrepreneurs.
- Investing in public research increases the knowledge base for entrepreneurial opportunities.
- Other focal policy areas:
  - Labour market
  - Entrepreneurial activity within organizations
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Two ‘Faces’ of Entrepreneurship
“Father of the PlayStation”
Ken Kutaragi

- Intrapreneur: initiated development Sony PlayStation (1994)
- Chairman and CEO of Sony Computer Entertainment (SCEI)
- CEO of Cellius (2007): joint venture Sony & Namco Bandai, to develop computer games
- Founded a new internet company in 2009
Intrapreneurs are “dreamers who do”, those who take hands-on responsibility for creating innovation of any kind within an organization

*Gifford Pinchot*
New GEM Measure in 2011:

Entrepreneurial Employee Activity (EEA):

...employees developing new business activities for their employer

e.g. establishing a new outlet or subsidiary and launching new products or new product-market combinations
Broad Patterns of Entrepreneurial Behaviour

Source: Global Entrepreneurship Monitor 2011
Note: MHEA (5 or more jobs) and SLEA (up to 4 jobs) based on job expectations five years ahead, averages 2009-2011; EEA averages 2011. In this figure, other than in table 4.2, all three indicators are calculated for 52 economies.
TEA and EEA Prevalence

Source: Global Entrepreneurship Monitor 2011
### A Simple Classification (work in progress)

#### Types of Economies Based on Two Dimensions of Entrepreneurial Activity (EEA and MHEA); Innovation-Driven Economies

<table>
<thead>
<tr>
<th>MHEA: high</th>
<th>EEA: low</th>
<th>EEA: high</th>
</tr>
</thead>
</table>
| **Four Asian tigers (plus Czech R.)** | Czech Republic  
Korea  
Singapore  
Taiwan  
UAE | **Three Anglo-Saxon countries**  
Australia  
Ireland  
United States |
| MHEA: low | **Other European countries (plus Japan)**  
Greece  
France  
Germany  
Japan  
Portugal  
Slovenia  
Spain  
Switzerland  
United Kingdom | **Five small open economies in North-West Europe**  
Belgium  
Denmark  
Finland  
Netherlands  
Sweden |

High versus low based on unweighted averages (corrected for outliers)
Country Profile: Germany

Perceived Opportunities
Perceived Capabilities
Early Stage Entrepreneurial Activity (TEA)
Entrepreneurial Employee Activity (EEA)
TEA: Solo & Low Job Expectation (SLEA)
TEA: Medium-High Job Expectation (MHEA)
TEA: Necessity-Driven

Germany

Innovation-Driven Economies
Country Profile: Finland

Perceived Opportunities vs. Perceived Capabilities

- Entrepreneurial Employee Activity (EEA)
- Early-Stage Entrepreneurial Activity (TEA)
- TEA: Solo & Low Job Expectation (SLEA)
- TEA: Medium-High Job Expectation (MHEA)
- TEA: Necessity-Driven

Finland

Innovation-Driven Economies
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Average Level of Training Across 38 Economies

Have Not Received Training
79%

Have Received Training
21%

Voluntary Training 13%
Compulsory Training 4%
Both Types 3%
Not Classified 1%
Voluntary and Compulsory Training Across 38 Economies

Percentage of Adult Population (18-64 Years)

- Only Voluntary
- Both Voluntary and Compulsory
- Only Compulsory
- Not Classified

Countries and Regions: Egypt, India, Bolivia, Bosnia and Herzegovina, Ecuador, Colombia, Group Average, Turkey, Romania, Dominican Republic, Serbia, Hungary, South Africa, Brazil, Mexico, Jamaica, Argentina, Croatia, Latvia, Macedonia, Iran, Uruguay, Peru, Chile, Group Average, Denmark, Republic of Korea, Israel, France, Italy, United Kingdom, Japan, Greece, Ireland, Spain, Germany, Slovenia, Belgium, Finland.
Education Distribution of Trained and Untrained Individuals

Source: GEM Adult Population Survey 2008

<table>
<thead>
<tr>
<th></th>
<th>Trained Factor-Driven</th>
<th>Trained Efficiency-Driven</th>
<th>Trained Innovation-Driven</th>
<th>Untrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Secondary</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>1%</td>
</tr>
<tr>
<td>Some Secondary</td>
<td>15%</td>
<td>12%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Secondary Degree</td>
<td>26%</td>
<td>21%</td>
<td>15%</td>
<td>0%</td>
</tr>
<tr>
<td>Some Post-Secondary</td>
<td>13%</td>
<td>27%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Graduate</td>
<td>30%</td>
<td>43%</td>
<td>41%</td>
<td>27%</td>
</tr>
</tbody>
</table>
### “Gain from Training” in Early-Stage Entrepreneurial Activity

<table>
<thead>
<tr>
<th>FACTOR-DRIVEN COUNTRIES</th>
<th>GAIN IN TEA RATE FROM TRAINING</th>
<th>EFFICIENCY-DRIVEN COUNTRIES</th>
<th>GAIN IN TEA RATE FROM TRAINING</th>
<th>INNOVATION-DRIVEN COUNTRIES</th>
<th>GAIN IN TEA RATE FROM TRAINING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>1.0</td>
<td>Iran</td>
<td>0.8</td>
<td>Spain</td>
<td>1.1</td>
</tr>
<tr>
<td>Bolivia</td>
<td>1.2</td>
<td>Jamaica</td>
<td>0.8</td>
<td>Denmark</td>
<td>1.2</td>
</tr>
<tr>
<td>India</td>
<td>1.3</td>
<td>Latvia</td>
<td>1.2</td>
<td>Republic of Korea</td>
<td>1.3</td>
</tr>
<tr>
<td>Colombia</td>
<td>1.5</td>
<td>Peru</td>
<td>1.3</td>
<td>Slovenia</td>
<td>1.4</td>
</tr>
<tr>
<td>Egypt</td>
<td>1.6</td>
<td>Macedonia</td>
<td>1.3</td>
<td>Finland</td>
<td>1.5</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>2.5*</td>
<td>Chile</td>
<td>1.5</td>
<td>Greece</td>
<td>1.8**</td>
</tr>
<tr>
<td>Mexico</td>
<td>1.5*</td>
<td>Ireland</td>
<td>1.9**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>1.5**</td>
<td>Japan</td>
<td>2.1*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>1.6</td>
<td>Italy</td>
<td>2.3**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Croatia</td>
<td>1.7*</td>
<td>Iceland</td>
<td>2.3***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uruguay</td>
<td>1.7**</td>
<td>United Kingdom</td>
<td>2.4***</td>
<td></td>
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</tr>
<tr>
<td>Brazil</td>
<td>2.1**</td>
<td>Belgium</td>
<td>2.6***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serbia</td>
<td>2.1**</td>
<td>Germany</td>
<td>2.8***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>2.6***</td>
<td>Israel</td>
<td>3.0***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>3.3*</td>
<td>France</td>
<td>4.3***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>3.3***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Average Gain</strong></td>
<td><strong>1.5</strong></td>
<td><strong>Average Gain</strong></td>
<td><strong>1.8</strong></td>
<td><strong>Average Gain</strong></td>
<td><strong>2.1</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of countries with significant gain at 5% level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of countries with significant gain at 5% level</th>
</tr>
</thead>
<tbody>
<tr>
<td>38%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of countries with significant gain at 5% level</th>
</tr>
</thead>
<tbody>
<tr>
<td>60%</td>
</tr>
</tbody>
</table>

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Key to statistical significance levels: * low (p < .1); ** medium (p < .05); *** high (p < .01)

Note: Argentina was not included in the analysis due to missing variables.
Conclusions

- GEM: Profiles of entrepreneurship and the role of institutions; context for entrepreneurial universities
- Entrepreneurial employees (intrapreneurship):
  - Similar personal characteristics as independent entrepreneurs
  - Often a springboard for independent entrepreneurship
  - Not to be neglected by (university-level) policy makers!
- Education
  - Primary and secondary school also important for developing achievement ambitions – source for local universities
  - Ambitious entrepreneurs and entrepreneurial employees often have high education levels, professional education relevant
- Entrepreneurship training
  - Enhances involvement in early-stage entrepreneurial activity in many countries
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