

Global Entrepreneurship Monitor

GEM Singapore 2003

Highlights of Key Findings

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GEM 2003

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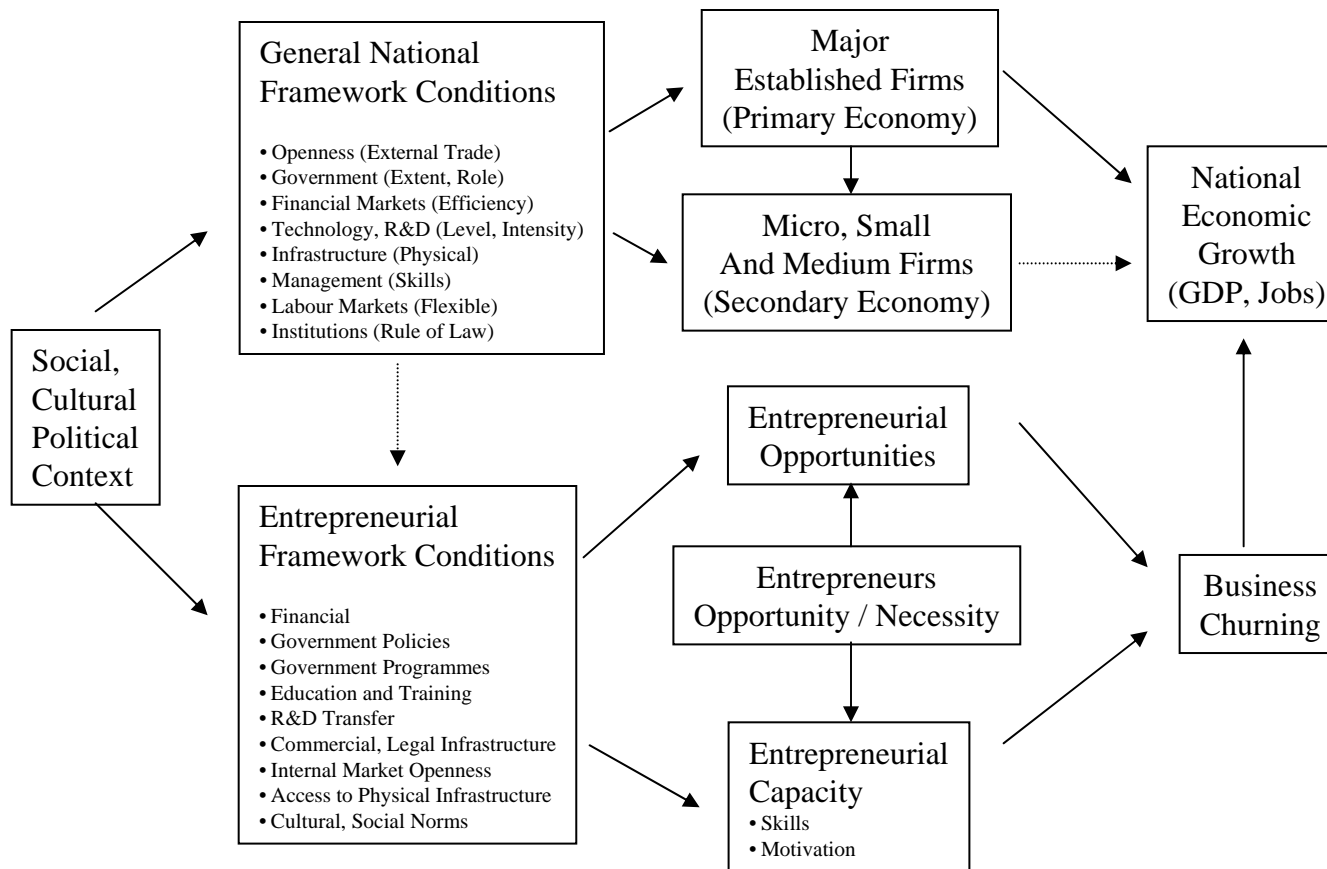
GEM Singapore 2003

Overview of GEM Research Methodology

Overview of GEM Singapore 2003

- Fifth annual GEM cross-national assessment of the level of entrepreneurial activity.
- 10 countries in 1999, 21 in 2000, 28 in 2001, 37 in 2002, and 31 in 2003.
- For Singapore, this is our fourth year of participation.
- NUS Entrepreneurship Centre has been invited to carry out the Singapore Country Study since 2000.
- Jointly funded by National University of Singapore (NUS) and Singapore Economic Development Board (EDB).

GEM Conceptual Model



GEM Research Methodology & Data Sources

GEM employs 3 approaches:

➤ **Adult Population Surveys**

- ✓ 2000 adults or more were selected in each country for a random sampling survey using a common survey instrument. In Singapore, the survey was carried out in June 2003. (Sample size for Singapore: 2008)
- ✓ The results of the analysis are drawn from the responses of the working age group (18 to 64 years old).
- ✓ This year, a total of 101,738 individuals in 31 countries were surveyed by GEM.

GEM Research Methodology & Data Sources

➤ Country Experts Interviews

- ✓ A total of 1,300 key informants were interviewed by the GEM national research teams in 2003 (33 for Singapore). The key informants include entrepreneurs, investors, government policy makers and venture support professionals.
- ✓ The informants were asked to assess the environment for entrepreneurship in their country along NINE dimensions:
 - Financial Support
 - Government Policies
 - Government Programmes
 - Education and Training
 - Research and Development Transfer
 - Commercial and Professional Infrastructure
 - Barriers to Entry
 - Access to Physical Infrastructure
 - Cultural and Social Norms

GEM Research Methodology & Data Sources

- Collection of Secondary National Social-Economic Data for each country
 - ✓ International benchmark Social-Economic data from World Bank, World Competitiveness Report
 - ✓ National sources of data on venture capital investment, firm formation, etc.

Key Indicators of Entrepreneurial Activities in GEM 2003

- **Total Entrepreneurial Activity (TEA) Rate**
 - Nascent Start-up vs. New (“Baby”) Businesses
 - Opportunity vs. Necessity
- **Intensity of Investment in Start-ups**
 - Prevalence of informal (business angel) investment
 - Venture capital investment/GDP ratio
- **National Environment for Entrepreneurial Activities**
 - Attitudes of population towards entrepreneurship
 - Rating on 9 dimensions of national environment for entrepreneurship by selected key informants

Key Indicators of Entrepreneurial Activities in GEM 2003

- **New Indicators introduced in GEM 2003**
 - High Employment Growth Potential TEA rate
 - Firm Entrepreneurial Activity (FEA) Index
 - Contribution of New Businesses to Job Creation
 - Entrepreneurial Intention Rate
 - Prevalence of business discontinuation (Exit rate)

GEM Singapore 2003

Core GEM Indicators Findings

GEM 2003 Singapore – Nascent Start-Up Prevalence Rate

*** Definition ***

- This variable attempts to measure the proportion of working age adults (age between 18 to 64 years old) in a country who is actively engaged in starting up a new business.
- To meet the criteria for this variable, the respondent had to fulfill each of the following criteria:
 - ✓ if they had done something – taken some action – to create a new business in the past year.
 - ✓ they expected to share ownership of the new firm and
 - ✓ the firm had not paid salaries for more than 3 months

GEM 2003 Singapore – New Business Prevalence Rate

* Definition *

- This variable attempts to measure the proportion of working age adults (age between 18 to 64 years old) in a country who are currently running a new business (as opposed to trying to start one).
- To meet the criteria for this variable, the respondent had to fulfill each of the following criteria:
 - ✓ they are currently managing a new business.
 - ✓ they personally owned all or part of the new business.
 - ✓ the firm was started in year 2000 or later (this meant that the business was, at most, 42 months old in Jun 2003).

GEM 2003 Singapore – Total Entrepreneurial Activity (TEA)

* Definition *

- TEA is the sum of
 - ✓ (1) the propensity of individuals involving in the start-up process (nascent entrepreneurs) (start-up prevalence rate) and
 - ✓ (2) the propensity of individuals engaging as owner-managers of firms less than 42 months old (new business prevalence rate)
- Those that qualified for both are counted only once.

GEM 2003 Singapore – Necessity / Opportunity TEA

* Definition *

- There are two major motivations for individuals to participate in entrepreneurial activities.
 - ✓ (1) “Opportunity Entrepreneurship” - those who voluntarily seek to pursue a perceived business opportunity and
 - ✓ (2) “Necessity Entrepreneurship” - those who become involved in starting up a new business as a last resort, when other options for work or participation in the economy are perceived as absent or are considered unsatisfactory.

Entrepreneurial Activity Rates – 95% Confidence Interval, persons per 100 Adults, 18-64 years old.

	RATES	95% Confidence Interval
Overall TEA '03	5.0	4.0 - 6.0
TEA Opportunity	3.9	3.0 - 4.8
TEA Necessity	1.0	0.5 - 1.5
High Growth Potential TEA	0.8	0.4 - 1.2

GEM 2003 Singapore – Total Entrepreneurial Activity (TEA)

- Among the 31 countries that participated in GEM 2003, TEA varies from 1.6% for France to 29.3% for Uganda. Singapore ranked 21st among the 31 countries with TEA of 5% for 2003, lower than 5.9% in 2002, and 6.6% in 2001.
- However, due to large error bounds, the ranking of countries should be taken with caution as many of the countries TEA fall within the error bounds of Singapore.
- As TEA for some developing countries are high due to high “necessity” start-ups and relative lack of job opportunities, it is better to compare Singapore’s TEA vs. only the OECD and East Asian countries. Among the subset of 22 OECD/East Asian countries that participated in both GEM 2002 & 2003, Spore’s relative ranking is 11th in 2002 vs 15th in 2003.

GEM 2003 - TEA Prevalence Rate & Rank

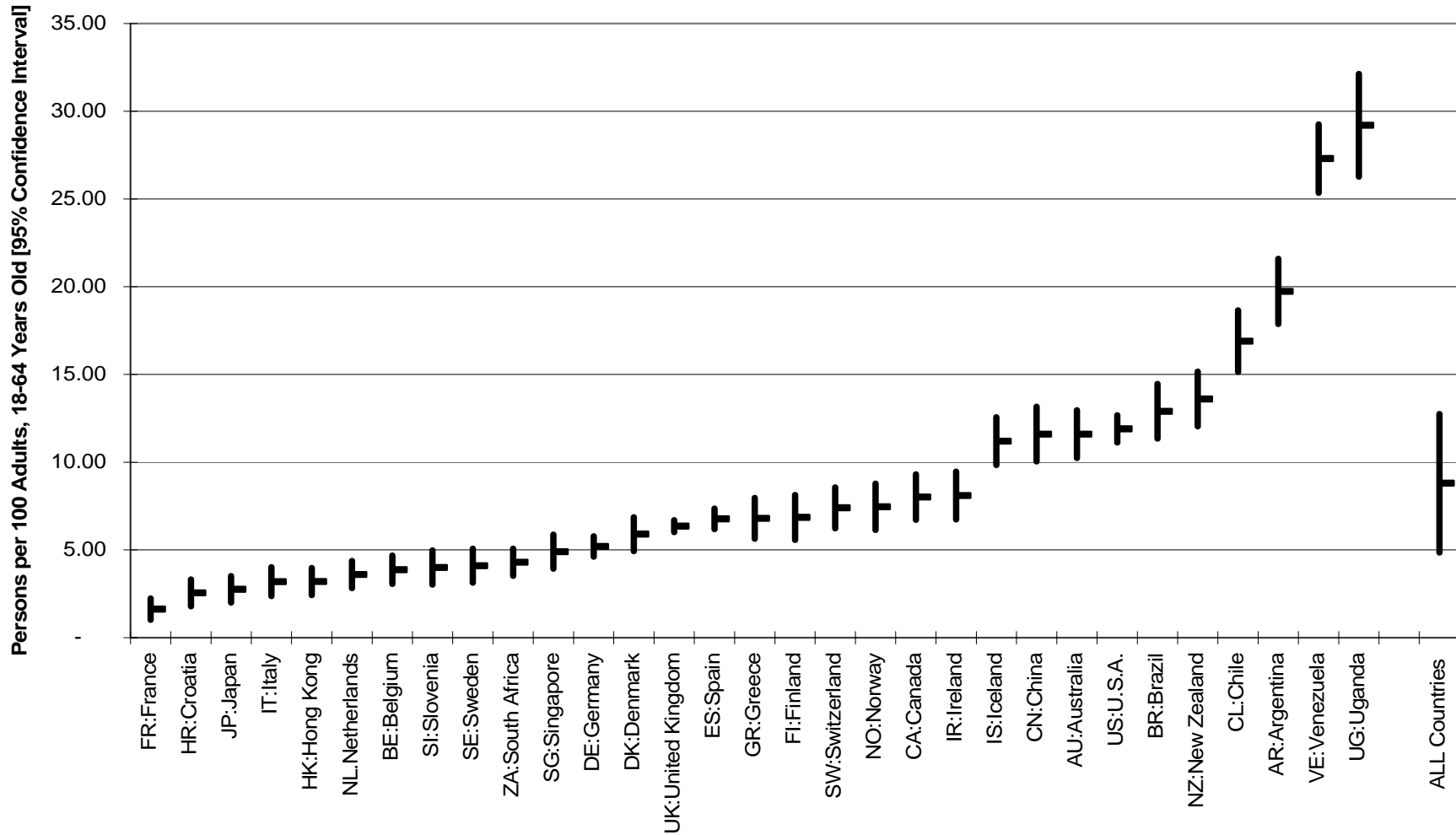
Country	Rate (%)	Rank
Uganda	29.2	1
Venezuela	27.3	2
Argentina	19.7	3
Chile	16.9	4
New Zealand	13.6	5
Brazil	12.9	6
U.S.A.	11.9	7
Australia	11.6	8
China	11.6	9
Iceland	11.2	10
Ireland	8.1	11
Canada	8.0	12
Norway	7.5	13
Switzerland	7.4	14
Finland	6.9	15

Country	Rate (%)	Rank
Greece	6.8	16
Spain	6.8	17
United Kingdom	6.3	18
Denmark	5.9	19
Germany	5.2	20
Singapore	5.0	21
South Africa	4.3	22
Sweden	4.1	23
Slovenia	4.0	24
Belgium	3.9	25
Netherlands	3.6	26
Hong Kong	3.2	27
Italy	3.2	28
Japan	2.8	29
Croatia	2.6	30
France	1.9	31

Mean 8.8

Singapore's 95% confidence interval is 4.0 to 6.0, hence countries ranked from Slovenia to Denmark are within the same band as Singapore

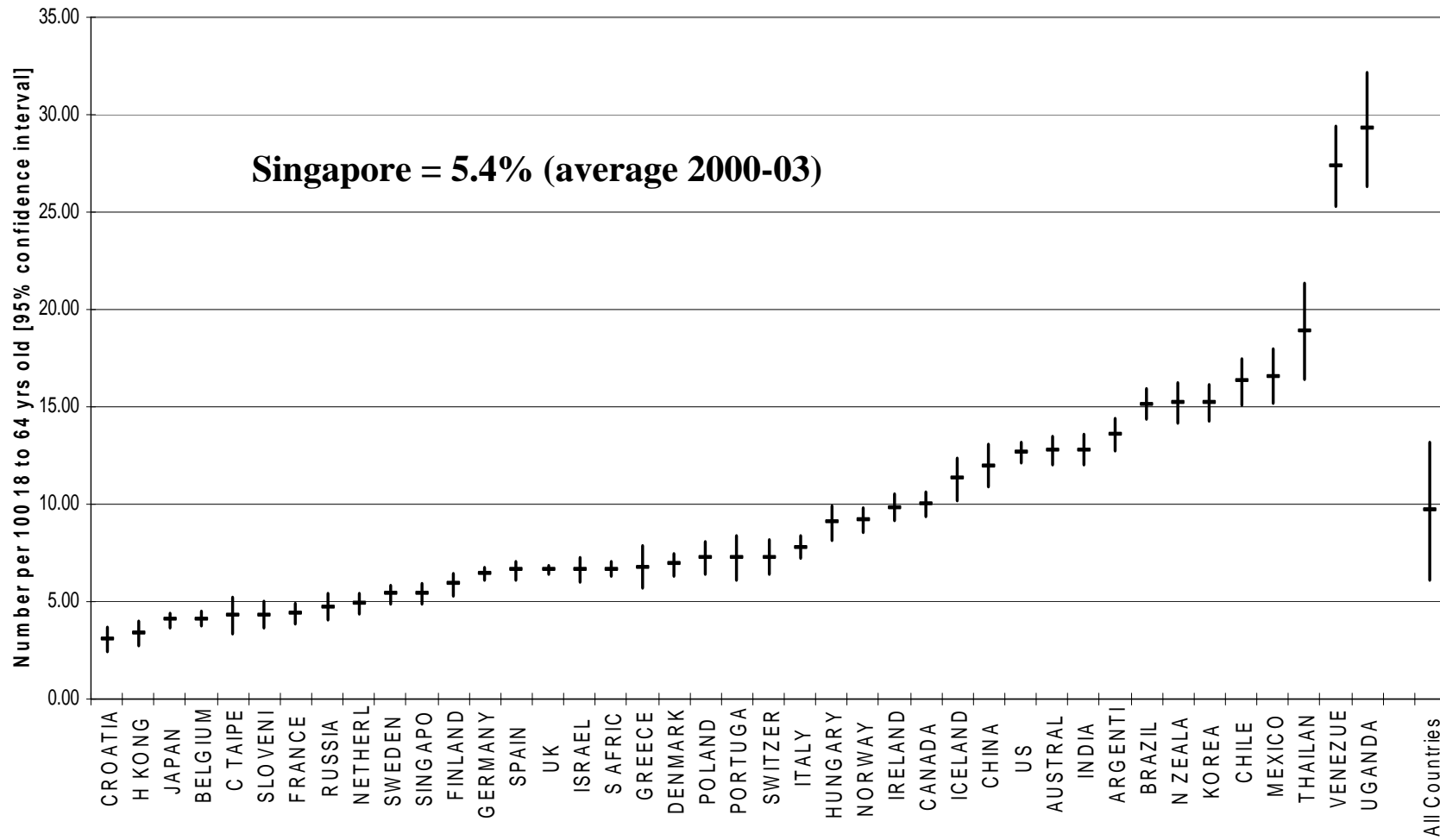
Total Entrepreneurial Activity [TEA Prevalence] 2003: By Country



TEA Prevalence Rate & Rank 2003 among OECD & Advanced East Asia Countries

2003					2002				
Country	Rate (%)	Rank	Rate (%)	Rank	Country	Rate (%)	Rank	Rate (%)	Rank
New Zealand	13.6	1	14.0	1	United Kingdom	6.4	12	5.3	13
United States	11.9	2	10.5	4	Denmark	5.9	13	6.5	10
Australia	11.6	3	8.7	8	Germany	5.2	14	5.2	14
China	11.6	3	12.3	2	Singapore	5.0	15	5.9	11
Iceland	11.2	5	11.3	3	Sweden	4.1	16	4.0	18
Ireland	8.1	6	9.1	5	Belgium	3.9	17	3.0	21
Canada	8.0	7	8.8	6	Netherlands	3.6	18	4.6	15
Norway	7.5	8	8.7	7	Hong Kong	3.2	19	3.4	19
Switzerland	7.4	9	7.1	9	Italy	3.2	20	5.9	12
Finland	6.9	10	4.6	17	Japan	2.8	21	1.8	22
Spain	6.8	11	4.6	16	France	1.6	22	3.2	20
OVERALL MEAN						6.8		6.8	

Total Entrepreneurial Activity [TEA] Index Average [1-4 yrs:2000 to 2003]



Average Total Entrepreneurial Activity: 2001 – 2003

Highest (> 15%)	8	Brazil, Chile, Korea (South), Mexico, New Zealand, Thailand, Uganda, Venezuela
Above Average (10-15%)	8	Argentina, Australia, Canada, China, Iceland, India, Ireland, USA
Below Average (5-10%)	17	Denmark, Finland, Germany, Greece, Israel, Italy, Hungary, Netherlands, Norway, Poland, Portugal, Singapore, South Africa, Spain, Sweden, Switzerland, UK
Lowest (<5%)	8	Belgium, Chinese Taipei [Taiwan], Hong Kong, Croatia, France, Japan, Russia, Slovenia

Change in Singapore's TEA Rates between 2002 and 2003: Summary Findings

- The drop in Singapore's TEA from 5.9% in 2002 to 5.0% in 2003 can be attributed to:
 - a fall in Nascent Start-up Rate from 4.0% to 3.0 % (little change in New (“Baby”) Business Rate)
 - a fall in Opportunity TEA from 4.9% to 3.9% (little change in Necessity TEA)
 - a fall in Prevalence of male TEA from 9.3% to 6.5% (female TEA actually went up from 2.7% to 3.5%)
 - A fall in TEA among the less educated from >6% to <3% (TEA among poly/university grads actually went up from 4.1% to 8%)

Summary of Level of Entrepreneurial Activity in Singapore (2000 – 2003)

	2003	2002	2001	2000
Total Entrepreneurial Activity (TEA)	5.0	5.9	6.6	4.2
Necessity TEA	1.0	0.9	1.2	-
Opportunity TEA	3.9	4.9	5.1	-
Male 18-64 TEA	6.5	9.3	9.7	5.8
Female 18-64 TEA	3.5	2.7	3.6	2.7
Nascent Start-up	3.0	4.0	4.2	2.3
New (“Baby”) Business	2.3	2.0	2.4	1.9
Polytechnic	6.4	4.2	4.0	2.9
University & above	9.6	4.1	9.7	4.0

Source: GEM Master Dataset 2000 - 2003

Comparing GEM estimates with other data sources on new firm formation in Singapore

- Based on an estimated 4.35 million population and 3.16 million pop aged 18-64 (Dept of Statistics (DOS)), the 5.0% TEA estimate translates to about 160,000 people actively involved in starting new business activities in mid-2003 (about 96,000 in nascent start-up and 64,000 owner-manager of new businesses less than 3.5 years old).
- Based on the new firm registration data from DOS, and taking into account survival rates recorded by DOS, there was an estimated 120,000 new firms that are 3.5 years old or less as of the end of 2003. This is reasonably close to the GEM estimate, given that not all nascent start-ups lead to registration of businesses or companies, and more than one person may be involved in one start-up.

Comparing GEM estimates with other data sources on new firm formation in Singapore

- The slight decline in TEA rate in 2003 vs. 2002 as registered by GEM is also consistent with a reduced growth rate of new firm registration recorded by DOS
- Note also that the growth rate of firm registration appears to vary with the overall economic growth rate for the last three years – as economic growth rate moves up and down, so does the new firm registration growth rate.

Statistics on New Firm formation

	Year of Registration					
	1998	1999	2000	2001	2002	2003
	Number					
Start-Ups	29,870	34,604	36,457	33,202	36,675	39,337
Companies	6,524	8,018	11,032	8,511	11,338	13,542
Businesses	23,346	26,586	25,425	24,691	25,337	25,795
	% Change over previous years					
Start-Ups	-	15.8%	5.4%	-8.9%	10.5%	7.3%
Companies	-	22.9%	37.6%	-22.9%	33.0%	19.4%
Businesses	-	13.9%	-4.4%	-2.9%	2.6%	1.8%
Overall GDP (S\$m)*	138,345	147,834	162,162	159,073	162,493	164,266
% Growth	-0.9	6.9	9.7	-1.9	2.2	1.1

Source: Department of Statistics

* GDP at 1995 Market Prices

GEM 2003 Singapore – Business Angel Prevalence Rate

*** Definition ***

- To meet this criterion for operating as a business angel, individuals had to fulfill the following criterion:
 - ✓ they had in the past personally provided funds for a new business started by someone else – public traded shares or mutual funds excluded.

GEM 2003 Singapore – Business Angel Prevalence Rate

- Business Angel Prevalence Rate varies from 0.4% for Japan to 13.2% for Uganda.
- Singapore ranked 25th among the 31 countries with business angel TEA of 1.6% for 2003, lower than 3.6% in 2002, 2.0% in 2001 and 1.3% in 2000.
- Among the OECD and East Asian countries that participated in GEM 2003, Singapore's Business Angel Prevalence rate is ranked 19th out of 23 countries.
- There was also an increase in the share of informal capital coming from family and relatives in 2003 vs. 2002

GEM 2003 – Business Angel Prevalence Rate & Rank

Country	Rate (%)	Rank	Country	Rate (%)	Rank
UGANDA	13.2	1	GERMANY	2.7	17
ICELAND	7.3	2	IRELAND	2.6	18
CHINA,P	7.1	3	DENMARK	2.5	19
UNITED STATES	4.9	4	SWEDEN	2.3	20
NEW ZEALAND	4.8	5	GREECE	2.3	21
NORWAY	4.7	6	SOUTH AFRICA	1.9	22
SWITZERLAND	4.7	7	BELGIUM	1.7	23
CHILE	4.7	8	UNITED KINGDOM	1.6	24
ARGENTINA	4.4	9	SINGAPORE	1.6	25
VENEZUELA	4.3	10	ITALY	1.5	26
FINLAND	4.2	11	NETHERLANDS	1.3	27
SPAIN	3.4	12	BRAZIL	0.9	28
CANADA	3.3	13	FRANCE	0.7	29
HONG KONG	3.2	14	CROATIA	0.6	30
AUSTRALIA	3.2	15	JAPAN	0.4	31
SLOVENIA	3.0	16	Mean	3.4	

Singapore's 95% confidence interval is 1.0 to 2.2, hence countries ranked from South Africa to Netherlands are within the same band as Singapore

Business Angel Investor – Relationship to Investee

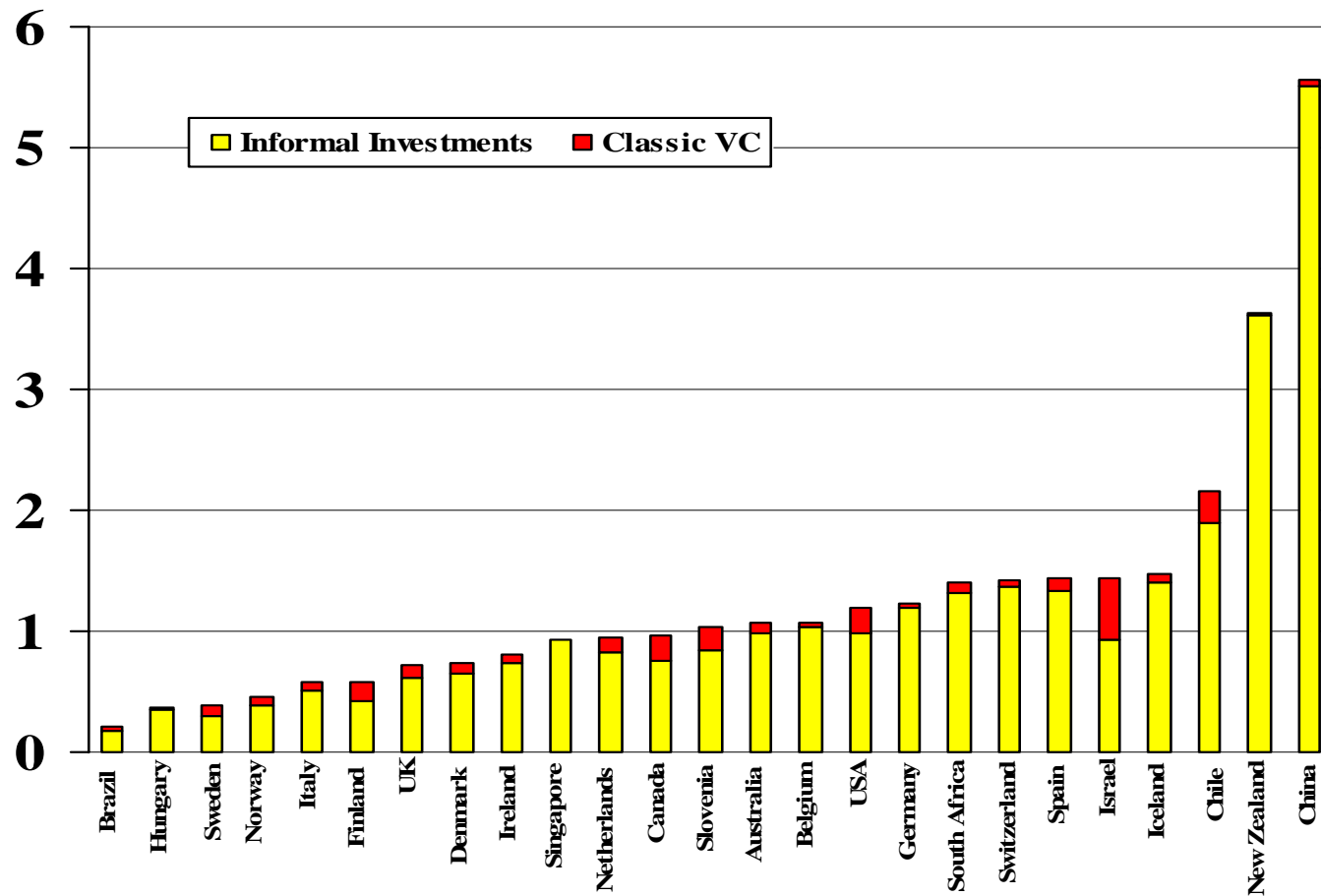
Relationship	% of Business Angels	
	2003	2002
Close family	37.8	25.6
Other relative	10.6	11.5
Work colleague	3.9	2.9
Friend/neighbor	40.1	48.6
Stranger	4.3	2.9
Others	0.0	1.5
Don't know/ Refused	3.3	7.1

Venture Capital Investment in New Business

- Globally, only a very small percentage of new businesses received funding from Venture Capital (VC), while the bulk comes from informal capital sources. For Singapore, the ratio of informal investment to formal venture capital funding is 7.7 times in 2002.
- While GEM survey does not cover VC investment, for all GEM nations with independent VC investment data from secondary sources for 1999 to 2002, a continued downward trend is observed for classic venture capital investment as a percentage of GDP.
- For Singapore, data from EDB indicated that total VC investment in Singapore had been declining from 2000 to 2002. Although data for 2003 are not available yet, it is unlikely to have increased by much.

Domestic informal & classic venture capital investments as a % of GDP

Informal and Classic VC Investments
Percent of GDP



Source: Global Report 2003

Ratio of Venture Capital to GDP (Singapore)

	2000	2001	2002
Venture Capital (VC) investments in Singapore Companies	S\$601.3 million	S\$384.4 million	S\$155.0 million
Gross Domestic Product (GDP)*	S\$157,700 million	S\$152,065 million	S\$155,726 million
VC Investment / GDP Ratio	0.38%	0.25%	0.10%
Average VC per Investment	S\$3.3 million	S\$5.3 million	S\$2.4 million
No. of Companies Invested	182	73	65

Note: exchange rate US\$1 is S\$1.73 in 2000, S\$1.79 in 2001, S\$1.79 in 2002

*GDP at current market price

Source: Economic Development Board

GEM Singapore 2003

**New (“Experimental”) Indicators of
Entrepreneurial Activities
Introduced in 2003**

GEM 2003 –High Employment Growth Potential TEA

- **Definition:** High Employment Growth Potential entrepreneurial activity rate is defined as new start-ups that indicated they intend to employ at least 20 people in 5 years. Prior literature has shown that a small proportion of new businesses eventually contribute the bulk of job and value creation in most countries; this indicator seeks to focus on such high growth potential ventures.
- Overall, across the 31 countries, the overwhelming majority of new start-ups did not expect to employ more than 20 people in five years. High employment growth TEA rate varies from 0.1% for Spain to 2.4% for Chile.
- Singapore's high employment growth potential TEA rate is 0.8% (about 1 in 6 new start-ups), virtually the same as the average of 0.9% for all GEM countries and ranking 16th out of the 31 countries, better than its overall TEA ranking.

GEM 2003 – High Employment Growth Potential TEA Rate & Rank

Country	Rate (%)	Rank
CHILE	2.4	1
VENEZUELA	2.2	2
NEW ZEALAND	1.9	3
ARGENTINA	1.6	4
USA	1.5	5
CANADA	1.4	6
CHINA	1.3	7
IRELAND	1.2	8
SWITZERLAND	1.1	9
ICELAND	1.1	10
AUSTRALIA	1.0	11
DENMARK	1.0	12
UGANDA	0.9	13
FINLAND	0.9	14
HONG KONG	0.9	15
SINGAPORE	0.8	16

Country	Rate (%)	Rank
UK	0.8	17
BRAZIL	0.7	18
SLOVENIA	0.7	19
NORWAY	0.6	20
JAPAN	0.6	21
GERMANY	0.5	22
NETHERLANDS	0.5	23
SOUTH AFRICA	0.5	24
SWEDEN	0.5	25
FRANCE	0.3	26
BELGIUM	0.3	27
GREECE	0.3	27
HUNGARY	0.1	29
ITALY	0.1	30
SPAIN	0.1	31
Overall Mean	0.9	

Singapore's 95% confidence interval is 0.4 to 1.2, hence countries ranked from Slovenia to Denmark are within the same band as Singapore

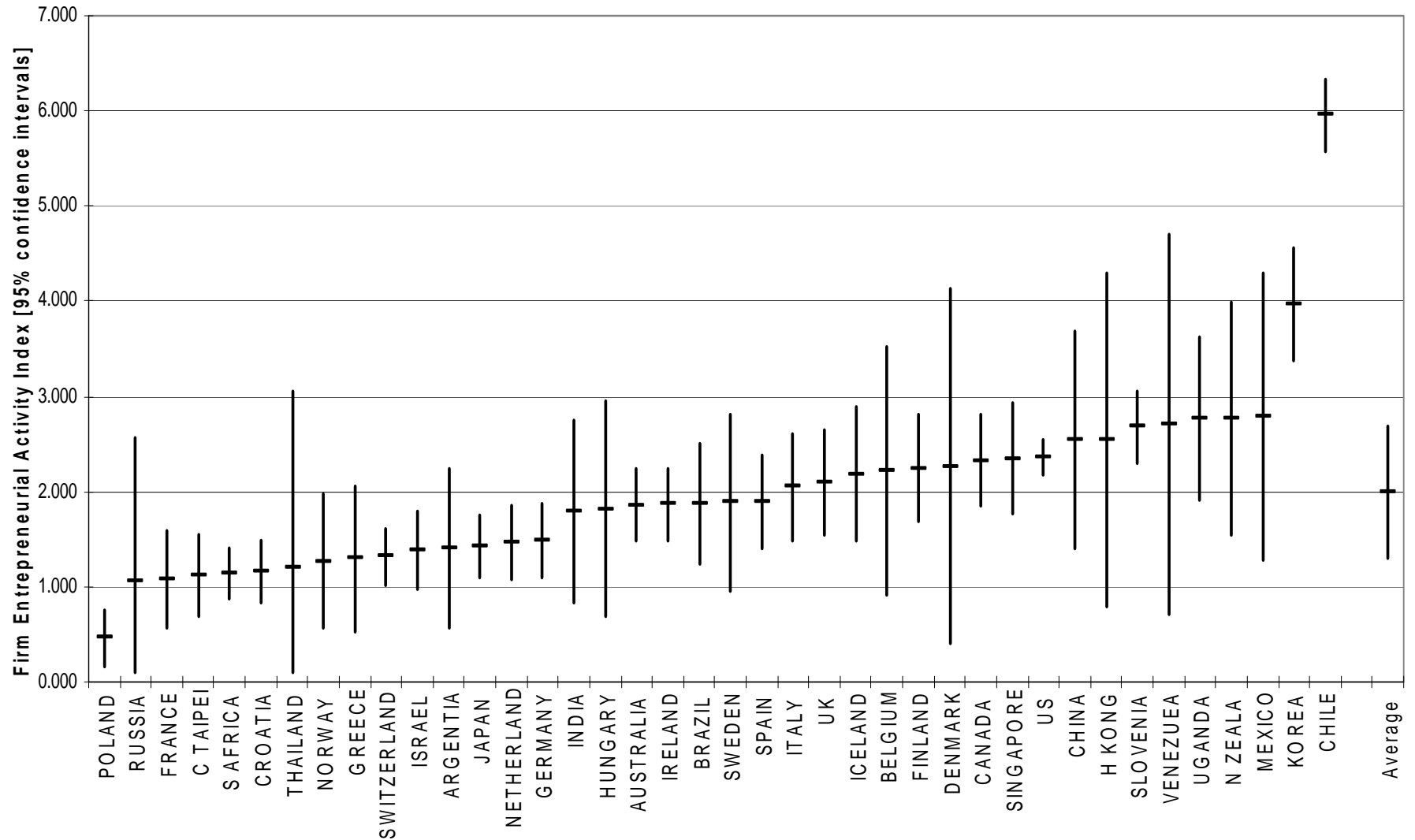
Firm Entrepreneurial Activity [FEA] Index

- A composite index that combines two related measures:
 - Market Innovators – the proportion of new businesses that indicated they are providing *new* goods or services
 - Share of job creation by innovators – the share of employment generated by such firms introducing new products or services among all employment by new firms
- This index is normalized to have an average value of 2 among the sample of countries

Firm Entrepreneurial Activity [FEA] Index

- As a complementary index to the overall TEA index, which measures new business start-up propensity in general, FEA index provides a measure of the extent to which these new firms are innovating new products or services
- FEA is thus a more restrictive measure that covers only the new businesses that were (trying to be) innovative
- Calculated by averaging data for 40 countries over 2002-03, the FEA rate varies from 0.5 (Poland) to 6 (Chile), with a normalized average value of 2.0.
- Singapore's average FEA rate is 2.4, vs. an average of 2.0 for all GEM countries. This puts Singapore in rank 11th out of the 40 countries covered in the period, better than its overall TEA rank. However, due to the large error bounds of the FEA rates, the interpretation of the country ranking should be made with caution.

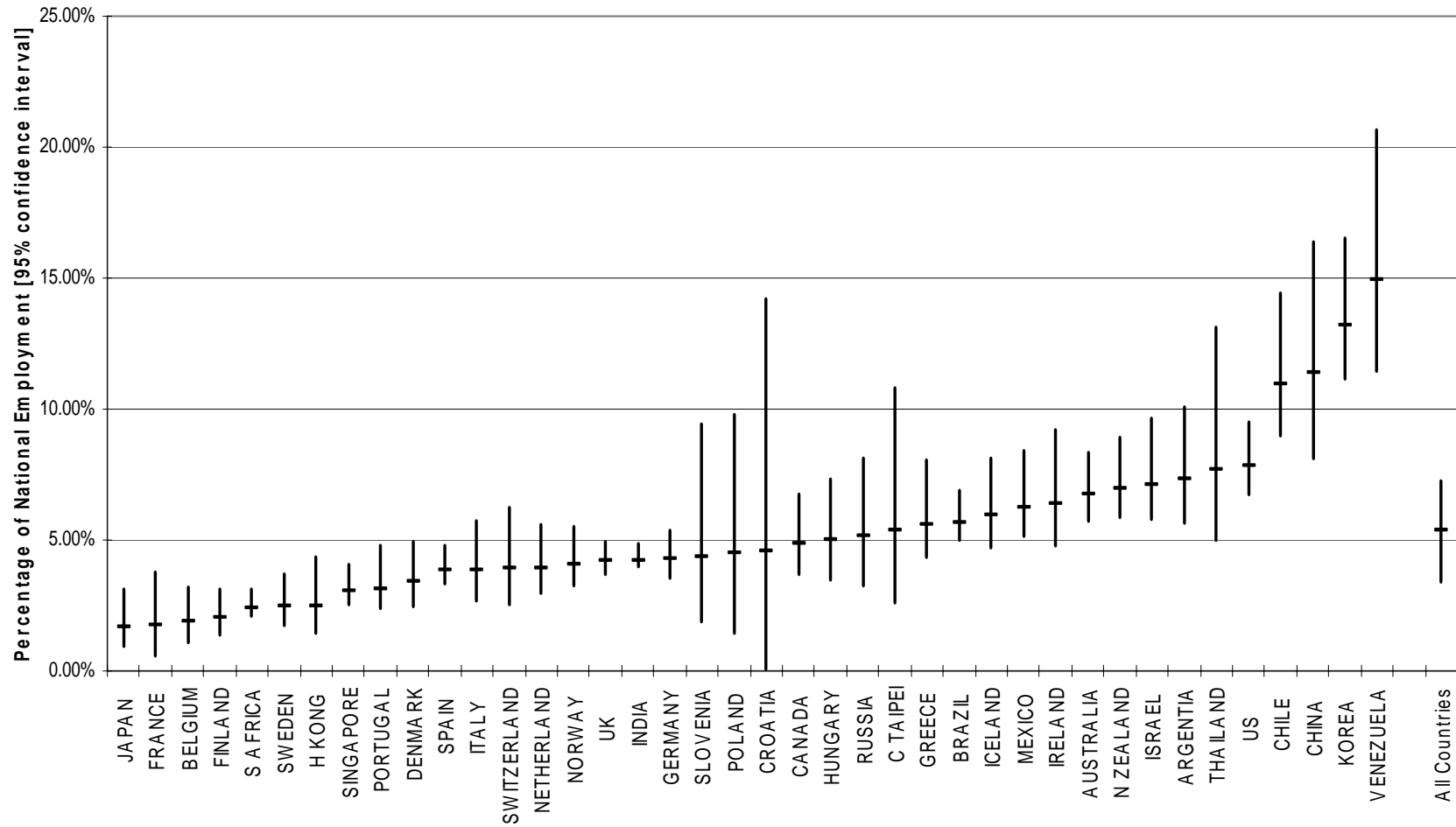
Firm Entrepreneurial Activity Index: 2002-2003



Contribution of New Businesses to Employment Creation

- Based on the reported employment in new businesses less than 3.5 years old from the GEM survey 2000-03, an estimate can be made of the contribution of such new businesses to total national employment in each of the survey countries.
- New business job creation as % of national employment was estimated to vary from less than 2% in Japan to 15% in Venezuela. It is estimated to be slightly over 3% for Singapore. Due to the large error bounds, these estimates need to be treated with caution. However, the relatively low figure for Singapore is understandable in view of the high dependence of Singapore on MNCs for job creation.

Annual Contribution of New Firms to National Job Pool: 2002-2003



GEM 2003 – Entrepreneurial Intention Rate

* Definition *

- Proportion of Adult Population that have not engaged in any start-ups or new businesses but expects to start a new business in the next three years
 - ✓ Includes any type of self employment
 - ✓ May be alone or with others
- Singapore's Entrepreneurial Intention rate is 11.2%, ranking 17th among the 31 countries

GEM 2003 – Prevalence of Entrepreneurial Intention Rate & Rank

Country	Rate (%)	Rank	Country	Rate (%)	Rank
UGANDA	56.3	1	SINGAPORE	11.2	17
VENEZUELA	49.7	2	CANADA	10.0	18
CHILE	46.5	3	NORWAY	9.5	19
BRAZIL	38.6	4	HONG KONG	9.0	20
CHINA	34.7	5	GERMANY	8.8	21
ARGENTINA	25.6	6	FINLAND	8.3	22
ICELAND	18.3	7	HUNGARY	8.3	23
NEW ZEALAND	17.2	8	ITALY	8.1	24
USA	15.5	9	UK	7.8	25
AUSTRALIA	14.8	10	DENMARK	7.3	26
SWEDEN	13.9	11	SPAIN	6.7	27
GREECE	13.6	12	BELGIUM	6.6	27
SLOVENIA	12.6	13	FRANCE	6.3	29
SOUTH AFRICA	12.2	14	NETHERLANDS	5.7	30
SWITZERLAND	11.8	15	JAPAN	3.6	31
IRELAND	11.3	16	Overall Mean	16.4	

Singapore's 95% confidence interval is 9.6 to 12.8, hence countries ranked from Slovenia to Canada are within the same band as Singapore

GEM 2003 – Prevalence of Businesses Discontinuance (Exit Rate)

*** Definition ***

- Proportion of Adult Population that has in the past 12 months shut down, discontinued or quit :
 - ✓ A business that was owned and managed by the individual
 - ✓ Any form of self employment
 - ✓ Selling goods and services
- Excludes those who sold off businesses
- Singapore exhibited an exit rate of 1.5%, ranking about 24 out of the 31 countries covered

GEM 2003 – Prevalence of Businesses Discontinuance Rate & Rank

Country	Rate (%)	Rank	Country	Rate (%)	Rank
UGANDA	23.8	1	UK	2.1	17
VENEZUELA	12.6	2	HONG KONG	1.9	18
ARGENTINA	10.4	3	GERMANY	1.9	19
CHILE	9.5	4	NETHERLANDS	1.6	20
BRAZIL	8.1	5	SPAIN	1.5	21
CHINA	8.0	6	BELGIUM	1.5	22
NEW ZEALAND	4.4	7	DENMARK	1.5	23
SWEDEN	4.2	8	SINGAPORE	1.5	24
USA	3.8	9	FINLAND	1.5	25
ICELAND	3.7	10	SWITZERLAND	1.4	26
CANADA	3.6	11	HUNGARY	1.3	27
SOUTH AFRICA	3.4	12	SLOVENIA	1.3	28
AUSTRALIA	3.3	13	ITALY	1.3	29
GREECE	3.0	14	FRANCE	1.0	30
NORWAY	2.7	15	JAPAN	0.9	31
IRELAND	2.5	16	Overall Mean	4.2	

Singapore's 95% confidence interval is 0.9 to 2.1, hence countries ranked from UK to Japan are within the same band as Singapore

GEM Singapore 2003

Indicators on National Environment for Entrepreneurship

Indicators of Social & Cultural Attitudes of Singaporeans Towards Entrepreneurship

- 29.5% of adult population surveyed know someone who has started a business, up from 27.6% in 2002.
- 33.2% of those surveyed perceived to have the skills to start a business, up from 26.6% in 2002.
- 19.9% of those surveyed between 18 – 64 years old perceived good business opportunities now, up from 16.6% in 2002.
- However, these figures are all lower than the averages of GEM 28 nation of 40.9%, 46.2% and 35.9% respectively.
- In terms of fear of failure, 64.1% do not perceive fear as a deterrent, higher than 59.2% from the year before but slightly lower than GEM average of 64.8%.

GEM 2003 - Indicators of Social & Cultural Attitudes of Singaporeans Towards Entrepreneurship

Indicators of Social/Cultural Attitudes towards Entrepreneurship (Source: Adult Population Survey, Rating % of answering “Yes”)				
	SG	ALL GEM		
	2003	Mean	High Score (Ctry)	Low Score (Ctry)
Know someone who started a business	29.5%	40.9%	88.1% (IS)	24.6% (UK)
Have skills to start a business	33.2%	46.2%	85.9% (UG)	22.3% (HK)
Perceive good start-up opportunities in next 6 months	19.9%	35.9%	65.1% (AR)	13.5% (DE)
Fear of failure is not a deterrent	64.1%	64.8%	77.3% (US)	41.4% (GR)

Source:

- 1) GEM 2003 Adult Population Survey
- 2) GEM 2003 Master Dataset

9 Dimensions of Entrepreneurial Environment

- Financial Support
- Government Policies
- Government Programmes
- Education and Training
- Research and Development Transfer
- Commercial and Professional Infrastructure
- Barriers to Entry
- Access to Physical Infrastructure
- Cultural and Social Norms

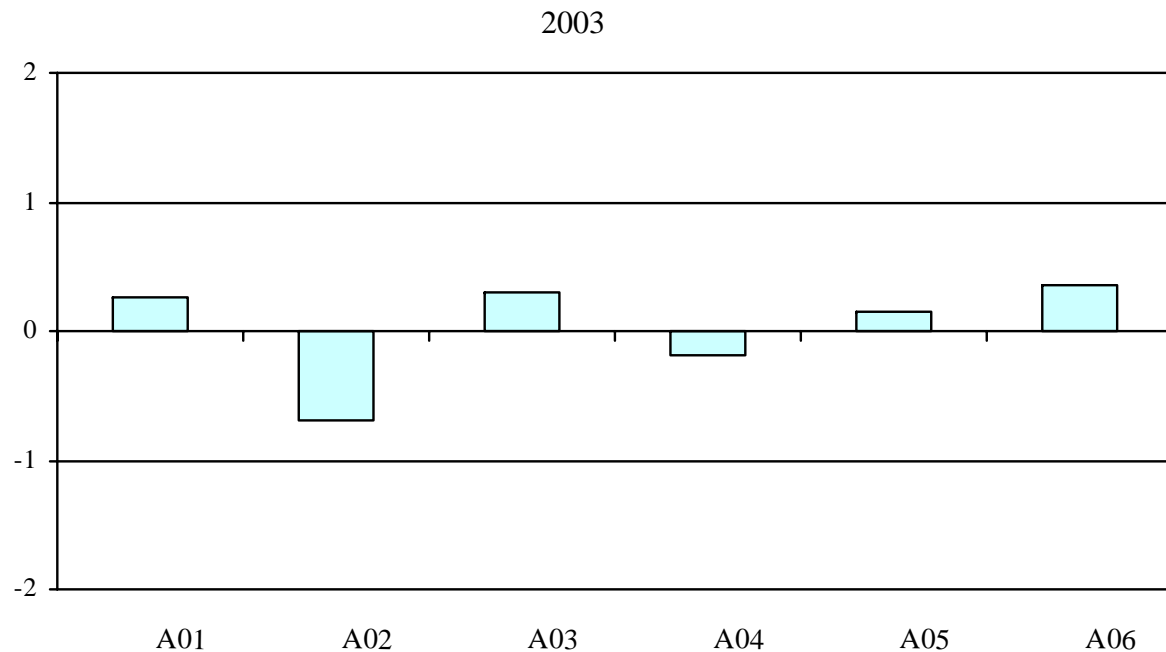
Each dimension is measured using several sub-indicators

Breakdown of Key Informants – 2000 - 2003

	2000	2001	2002	2003
Entrepreneurs	17	6	18	11
Policy Makers	12	9	4	8
Investors	6	5	7	6
Venture Support	4	11	7	8
Total	39	31	36	33

Entrepreneurship Environment – Dimension on Financial Support

(A) Financial Support



01 – In my country, there is enough equity funding available for new and growing firms.

02 – In my country, there is enough debt equity for new and growing firms.

03 – In my country, public subsidies have a major impact promoting firm creation and growth.

04 – In my country, private individuals (other than founders) are an important source of financial support for new and growing firms.

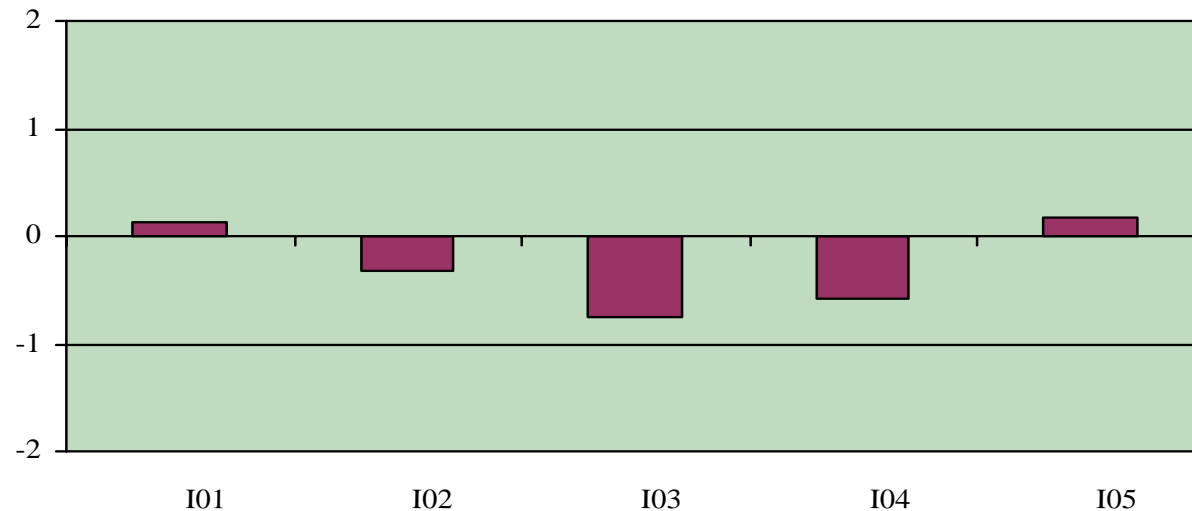
05 – In my country, venture capitalists are an important source of private support for new and growing firms.

06 – In my country, initial public offerings (IPO) are an important source of equity for new and growing firms.

Entrepreneurship Environment – Dimension on Cultural Norms

(I) Cultural and Social Norms

2003



- 01- In my country, the national culture is highly supportive of individual success achieved through own personal efforts.
- 02- In my country, the national culture emphasises self-sufficiency, autonomy, and personal initiative.
- 03- In my country, the national culture encourages entrepreneurial risk-taking.
- 04- In my country, the national culture encourages creativity and innovativeness
- 05- In my country, the national culture emphasises the responsibility that the individual (rather than the collective) has in managing her own life.

GEM 2003

Singapore's Entrepreneurial Environment Scoreboard

Entrepreneurship Environment Ratings by Country Informants (Source: Country Expert Survey; Scale 1 = Low to 5 = High)					
ITEM	SG		All GEM Countries (2003)		
	2002	2003	Mean	High Score (Ctry)	Low Score (Ctry)
Availability of capital	3.3	3.1	2.6	3.5 (TH)	1.6 (VZ)
Government policy support	3.2	3.0	2.6	3.6 (TH)	1.5 (VZ)
Low regulation and taxation burden	3.9	3.7	2.4	4.3 (HK)	1.3 (BR)
Government program effectiveness	3.4	3.2	2.6	3.5 (IE)	1.2 (VZ)
Effectiveness of primary & secondary education & training	2.7	2.6	2.0	2.6 (SG)	1.4 (FR)
Effectiveness of university & mgmt. education & training	2.7	3.5	2.7	3.5 (SG)	1.9 (FR)
R&D transfer effectiveness	2.6	2.7	2.5	3.2 (CA)	1.6 (UG)
Business service effectiveness	3.3	3.5	3.2	3.8 (CA) ⁺⁺	2.6 (BR)
Rapidity of change in markets	2.6	3.1	2.8	4.0 (CH)	1.9 (CA)
Market Access	2.6	2.9	2.7	3.2 (CL)	2.1 (BR)
Ease of access to physical infrastructure	4.4	4.4	3.9	4.7 (HK)	3.1 (BR)
Cultural value placed on independence	2.8	2.7	2.7	4.1 (HK)	1.7 (SE)

Overall Assessment of Singapore's Environment for Entrepreneurship

- Compared to the other 30 nations, Singapore was rated above average on all dimensions. In particular, Singapore was most highly rated in terms of “access to physical infrastructure (4.4)” “low regulation and taxation burden (3.7)” and “business service effectiveness” (3.5).
- The dimensions where Singapore received relatively low ratings were “effectiveness of primary/secondary school education on entrepreneurship” (2.6), “R&D transfer effectiveness” (2.7), “cultural values” (2.7) and “market access” (2.9)
- Overall, the rating of Singapore's environment for entrepreneurship in 2003 appears to have slipped or stayed more or less constant for most sub-indicators that make up each dimension, although a number of sub-indicators registered improvement, in particular, the availability of courses on entrepreneurship in tertiary education level.

GEM Singapore 2003

Conclusions and Policy Implications for Singapore

Conclusions

- Entrepreneurial propensity in Singapore declined from 5.9% in 2002 to 5% in 2003. This can be attributed to a fall in opportunity TEA and nascent start-up TEA, and to declining entrepreneurial rate among male and the less educated.
- The timing of the GEM survey (June 2003) when Singapore was just recovering from the adverse effect of SARS in 1H 2003, as well as the broader economic slowdown, may also have affected the start-up TEA.
- Another contributing factor for the decline in Singapore's TEA in 2003 may be a fall in investment in start-ups -- Informal (business angel) investment declined in 2003 vs. 2002, while venture capital investment is also likely to have continued its falling trend from 2001 to 2002. Informant rating of Singapore's financial support environment also indicated a deterioration in 2003 vs. 2002.

Conclusions (Contd)

- New GEM indicators introduced in 2003 indicate that Singapore fared better in terms of start-ups that have higher employment growth potential and innovative products or services. Singapore also ranked higher on entrepreneurial intention rate, and lower on exit rate. However, new businesses appear to have contributed only to 3% of Singapore's total employment, low compared to the other 30 GEM nations, due to Singapore's high dependence on MNCs for job creation
- Singapore's environment for entrepreneurship was rated above average on all dimensions vs. GEM average, although there was a slight decline compared to 2002. The four dimensions where ratings were lowest were Research & Development Transfer, Primary/Secondary Education, Social & Cultural Values, and Barriers to Entry.

Conclusions (Contd)

- The low rating of Singapore in terms of “cultural norms” by informants in particular is borne out by the GEM population survey which shows that the % of Singaporean who knows of an entrepreneur or who indicated fear of failure is not a deterrent are both below the mean for all 31 GEM countries. Singapore also scored below average on % who believe they have the skills to start a business, or who perceive good opportunities in the next 6 months.
- For most GEM nations, those with tertiary education are found to be more likely to be involved in entrepreneurial activities. This is the case for Singapore as well in 2003, and represents an improvement compared to 2002 when the entrepreneurial propensity among the tertiary educated was lower than those with secondary education or less.

Policy Implication 1: Raising entrepreneurial propensities in general

- To derive relevant policy implications for Singapore, data across all the GEM countries are pooled to identify statistically the most important common **external environmental** and **individual factors** that influence entrepreneurial propensities
- Based on statistical analysis across all GEM countries (see Wong, Lee and Ho 2004), we now know that, besides from demographic factors (gender, age, education level), the strongest **individual** determinant factors that influence opportunity entrepreneurial propensity are (1) **perception of self-efficacy**, (2) **personal knowledge of entrepreneurs**, (3) **perception of business opportunities**, and (4) **fear of failure**, in that order.
- All of these predictors registered either much weaker or non-significant effect on necessity entrepreneurship.

Policy Implication 1 (Continued)

- As for **external environmental** factors, the **availability of informal capital & market entry barriers** have been found to be most significant in influencing “high growth potential” start-up rate (see Autio, Wong and Reynolds 2004). Their impacts on opportunity entrepreneurial rate are also positive, although much weaker. They have however no effect on necessity start-up rates.
- As Singapore scored **below average on all these six factors**, public policy should focus attention on how to improve on each of these areas.

Policy Implication 2: Raising High growth potential/innovative start-up rate

- Based on pooling GEM data globally across many different countries, we now know that not all forms of entrepreneurial activities contribute equally to economic growth.
- While it has been known for some time that high growth firms (“gazelles”) have been a major contributor to economic growth in the US, new evidence from statistical analysis of the factors influencing national GDP/worker growth across 37 countries in 2002 (Wong, Ho and Autio, 2004) shows that, besides innovation intensity, the only entrepreneurial indicator that shows significant positive effect is “high growth potential entrepreneurial rate”. Opportunity entrepreneurial rate has positive (but statistically not significant) effect, while necessity entrepreneurial rates had *negative* (although not significant) correlation with economic growth.

Policy Implication 2 (Continued)

- This new GEM finding confirms that truly significant contributions to the economy are not made by new firms in general but by new firms that are fast growing (“gazelle” firms). Gazelle firms form only a small proportion of new firms formed, but contribute the bulk of national wealth enhancement resulting from new business formation.
- Besides general entrepreneurship promotion, Singapore should therefore also have special efforts targeted at enhancing the environment for high growth potential, innovation-driven start-ups
 - Need to monitor the propensity of people with advanced/specialized knowledge to start ventures to exploit their knowledge
 - Incentive schemes for innovation and IP exploitation need to be refined to support start-up entrepreneurs, not just large firms; the successful SBIR/STTR schemes in the US are examples of what can be introduced in Singapore
 - Such internationally-scaleable businesses, including commercialization of IP (technology, brand), are of even greater importance in the context of Singapore, given our small domestic market and high costs