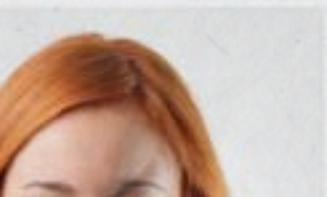
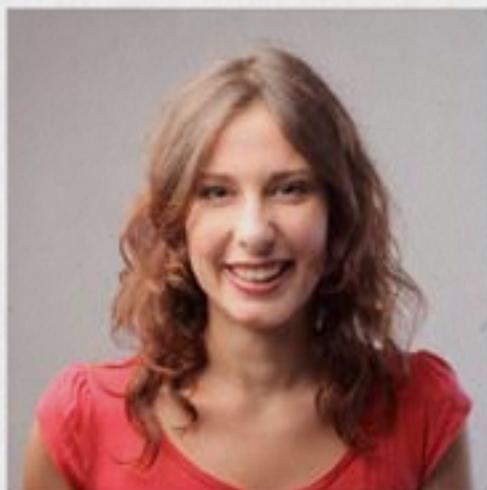
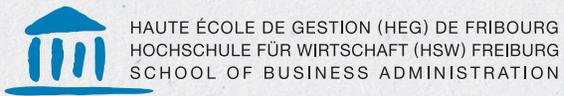




Global Entrepreneurship Monitor 2011

— Report on Switzerland





ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

University of Applied Sciences and Arts
of Southern Switzerland

SUPSI



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Eidgenössisches Volkswirtschaftsdepartement EVD
Kommission für Technologie und Innovation KTI
Förderagentur für Innovation

Copyright 2012

R. Baldegger, S. Alberton, F. Hacklin, A. Brühlhart, A. Huber and O. Saglam (2012)

Global Entrepreneurship Monitor 2011 — Report on Switzerland, Fribourg

ISBN: 978-29440384-19-8

Layout: Plurial

Acknowledgments

The authors wish to thank the national experts who very kindly gave their evaluations of the current business environment for start-ups, as well as to the 2,002 individuals who took part in the phone survey carried out by the Association for Applied Social Research (gfs) in Berne. It is important to mention that this report would not have been possible without the generous support of the Commission for Technology and Innovation (CTI).

For a study of this scope, many individuals have to make an extraordinary contribution. Most importantly, the authors would like to thank the scientific collaborators Muriel Berger, Sabine Frischknecht and Pascal Wild, who were responsible for the efficient and effective coordination at the Institute for Entrepreneurship and SMEs.

The authors are also grateful to the coordination team

of the GEM project, in particular to Mick Hancock, Chris Aylett, Niels Bosma, Alicia Corduras, and Yana Litovsky, as well as to the sponsors of the GEM project at Babson College, Babson Park, MA (USA); Universidad del Desarrollo, Santiago, Chile; and Universiti Tun Abdul Razak, Malaysia. Some elements of this report are based on the results of the global report by Kelley, D. & Singer, S. & Herrington, M. (2012): The Global Entrepreneurship Monitor 2011 Global Report. It is available online at www.gemconsortium.org.

All data used in this report are collected and processed centrally by the GEM consortium. The authors have exclusive responsibility for evaluation and interpretation of the data.

About the Authors

Rico J. Baldegger | As a professor of Management and Entrepreneurship at the School of Business Administration Fribourg, Rico J. Baldegger directs the Entrepreneurship & SME Institute and acts as academic coordinator of the Master in Entrepreneurship. He graduated from the University of St. Gallen and obtained his doctorate from the University of Fribourg. He is the author of numerous publications on entrepreneurship, internationalization of SMEs and the reorganization of family businesses. Moreover, he is a serial entrepreneur, as is demonstrated by the many companies he created.

Siegfried Alberton | Siegfried Alberton leads, as Professor of Economics of Innovation, the competence center inno3 (innovation, firms and entrepreneurship) at the Department of Business and Social sciences of the University of Applied Sciences and Arts of Southern Switzerland. He is the scientific responsible of the Master of Science in Business Administration with Major in Innovation Management. He made his studies at the University of Fribourg. His research interests, publications and service activity cover the fields of economics of innovation, entrepreneurship and entrepreneurial dynamics, regional economics, innovation and entrepreneurship policy, innovation and entrepreneurship metrics.

Fredrik Hacklin | Fredrik Hacklin is research director and junior faculty member at ETH Zurich, heading research activities of the Entrepreneurship group at the Department of Management, Technology and Economics. Fredrik's area of expertise centers around innovation and entrepreneurship in ICT industries. He has been visiting professor at Keio University, Japan, visiting scholar at Stanford University, USA, and associate at Booz & Company. He has published his results in various journals, and is author of the book "Management of convergence in innovation" (Springer, 2008). Fredrik holds a PhD in management from ETH Zurich, and an MSc in computer science from KTH Stockholm.

Andreas A. Brühlhart | Andreas Brühlhart co-directs the master program in Entrepreneurship at the School of Business Administration in Fribourg. In addition, he teaches undergraduate courses and coaches student projects. He obtained a BSc degree in BA from the University of Applied Sciences Western Switzerland and an MBA in Entrepreneurship from the University of Liechtenstein, where he is writing his dissertation at present. His research interests are in the areas of opportunity recognition and entrepreneurship education. Through his involvement in several start-ups, he has gained significant expertise in entrepreneurship.

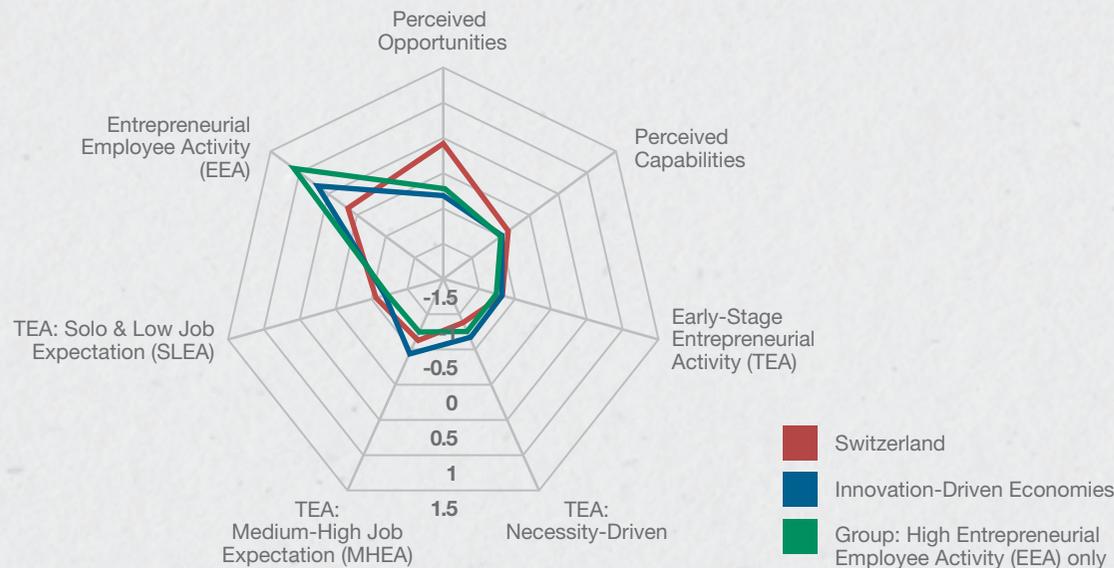
Management Summary (EN)

The following Global Entrepreneurship Monitor Report 2011 on Switzerland illustrates the differences in entrepreneurial attitudes, activity, and aspirations between economies, revealing the factors that determine the nature and level of national entrepreneurial activity and identifying the policy implications for enhancing entrepreneurship in Switzerland. The GEM data complements existing indicators about competitiveness and innovation and allows the creation of a new aggregate index, the Global Entrepreneurship Index (GEDI).

In the 2011 census, the perceived opportunities to start a business are considerably higher in Switzerland than in previous years. This boost in perceived opportunities sets Switzerland apart from neighboring countries and the U.S. Meanwhile, Nordic countries, such as Finland, Sweden, and Norway, remain on top when it comes to available opportunities. As in previous years, Switzerland shows a rather high perception of capabilities paired with a very low fear of failure. While Switzerland's perception of capabilities is at least as good as or even better than the European benchmark, it still lags behind U.S. inhabitants' very strong belief in their own capacity to start a business.

General Characteristics*			
Global Happiness Index	8 (4/149)	Global Innovation Index	64 (1/125)
Human Development Index	0.9 (11/187)	Global Competitiveness Index	5.7 (1/142)
Doing Business Index	(26/183)	GEDI Index	0.54 (7/79)
GEM 2011 Entrepreneurship Indicators*			
Perceived Opportunities	47	Perceived Capabilities	42
Fear of Failure	35	Nascent Entrepreneurship Rate	3.7
Owner-Managers in New Businesses Rate	2.9	Owner-Managers in Established Businesses Rate	10.2
Total Early-Stage Entrepreneurial Activity Rate (TEA)	6.6	Entrepreneurial Employee Activity Rate (EEA)	3.3
- Necessity-Driven TEA Rate	0.8	- Private Sector EEA Rate (PEEA)	2.0
- Medium-High Job Expectation Rate (MHEA)	2.0		
Classification Phase of Economic Development: Innovation-Driven Economies			
Classification Entrepreneurship Profile: High Entrepreneurial Employee Activity (EEA) only			

*For definitions and sources of the indicators, see the glossary.



Entrepreneurial Profile

After the 2010 cycle, which was strongly influenced by the aftermath of the financial crisis, many entrepreneurship activity indicators for 2011 turned upward again, with perceived opportunities or the total entrepreneurial activity (TEA) being two of them. In comparison to other countries, two indicators deserve particular attention; the Swiss MHEA rate is below the average for the innovation-driven countries and, even more strikingly, the entrepreneurial employee activity is much less pronounced than in comparable countries.

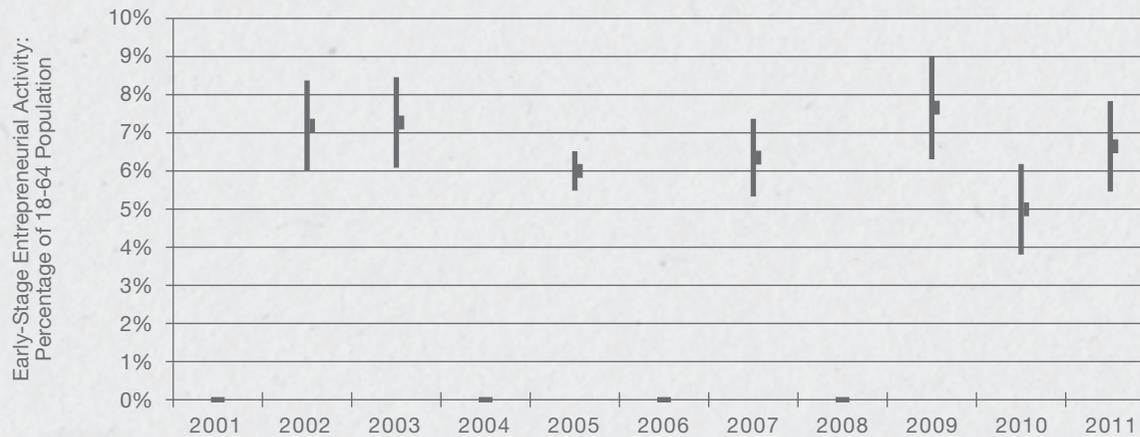
Like others within the comparison group, except for the United States, Switzerland does not, at least in the short term, show great potential for job creation by means of early-stage entrepreneurial activities. To compensate at least in part for this limited impact, however, there is a focus on innovation (in terms of product-market combination) and an international orientation, which, on average, puts Switzerland at a medium to high standing. These two trends may bode well for the long term; it is known that product innovation and orientation to international markets are closely related to the increase in global demand, which in turn generates an increase in employment and, thereby, an increase in economic growth.

With 2010 being an exception, the Swiss TEA rate normally fluctuates between 6 and 8 percent. Although the quantitative aspect of entrepreneurial activity (TEA) is of great interest to policy makers, more attention should be paid to the quality of it (low vs. high job expectations) and to the entrepreneurial behavior of employees. Swiss parameters related to entrepreneurial employee activity are below average compared with other innovation-driven economies. In contrast, Switzerland ranks high in female entrepreneurship (meaning the equalized female-to-male ratio) in comparison with other innovation-driven economies.

Development Total Early-Stage Entrepreneurial Activity (TEA)

The overall entrepreneurial framework conditions in Switzerland — along with those in Singapore — generally turn out better than those of other innovation-based economies included in the study. Switzerland achieves top results for all of the 9 EFCs, with outstanding results in finances, commercial infrastructure, third-level education, and knowledge and technology transfer, as well as in stable internal market dynamics.

Furthermore, the report includes data concerning entrepreneurial behavior in the Canton of Ticino. While the TEA is lower than in Switzerland as a whole, Ticino has a higher percentage of people who believe that good opportunities to start a business exist and that they have the knowledge and skills to undertake an entrepreneurial venture.



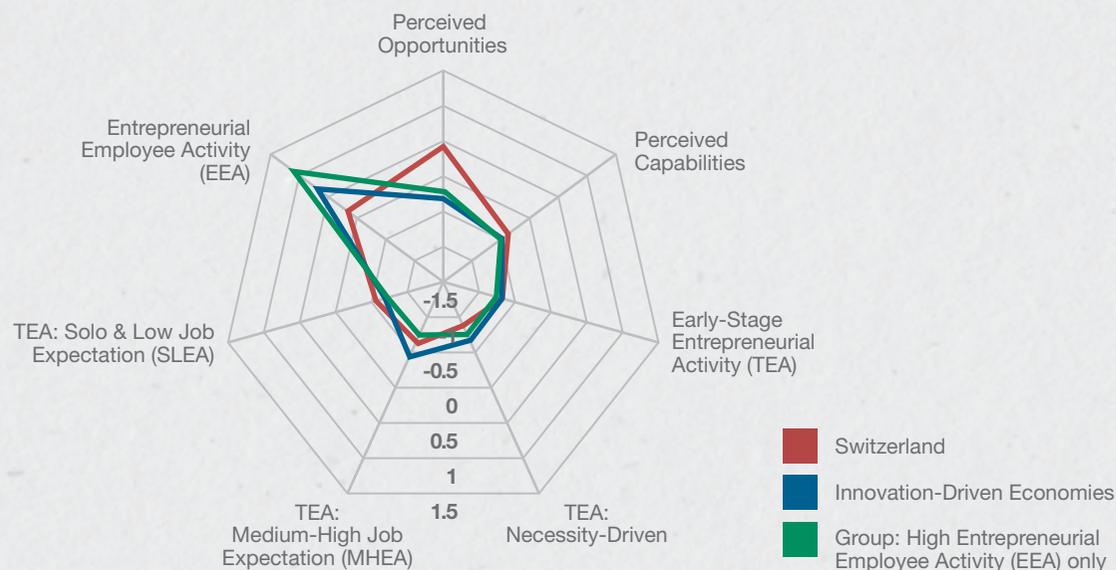
Management Summary (DE)

Der Länderbericht Schweiz des Global Entrepreneurship Monitors 2011 zeigt nationale Unterschiede bezüglich unternehmerischen Einstellungen, Aktivitäten und Ambitionen auf. Im Weiteren wurden die Einflussfaktoren erhoben, welche die Art und das Ausmass der unternehmerischen Tätigkeiten eines Landes bestimmen sowie das politische Engagement analysiert, die das Unternehmertum in der Schweiz fördert. Die GEM-Daten ergänzen nicht nur die bereits bestehenden Daten in den Bereichen Wettbewerbsfähigkeit und Innovation, sondern erlauben auch die Schaffung eines neu aggregierten Index, den Global Entrepreneurship Index (GEDI).

In der Erhebung 2011 wurden in der Schweiz deutlich mehr Möglichkeiten zur Unternehmensgründung wahrgenommen als in den Jahren zuvor. Dieser Anstieg an Geschäftsmöglichkeiten hebt die Schweiz klar von seinen Nachbarländern und den USA ab. Nichtsdestotrotz führen nach wie vor die skandinavischen Länder wie Finnland, Schweden und Norwegen die Liste mit den meisten wahrgenommenen Geschäftsmöglichkeiten pro Land an. Hingegen schätzt die Schweiz im 2011 – so wie auch bereits in früheren Jahren – die Fähigkeiten die benötigt werden um ein Unternehmen zu gründen, mindestens gleich gut oder sogar besser ein als der europäischen Durchschnitt. Der aktuelle Wert liegt jedoch klar hinter den Einschätzungen der US-Amerikaner.

General Characteristics*			
Global Happiness Index	8 (4/149)	Global Innovation Index	64 (1/125)
Human Development Index	0.9 (11/187)	Global Competitiveness Index	5.7 (1/142)
Doing Business Index	(26/183)	GEDI Index	0.54 (7/79)
GEM 2011 Entrepreneurship Indicators*			
Perceived Opportunities	47	Perceived Capabilities	42
Fear of Failure	35	Nascent Entrepreneurship Rate	3.7
Owner-Managers in New Businesses Rate	2.9	Owner-Managers in Established Businesses Rate	10.2
Total Early-Stage Entrepreneurial Activity Rate (TEA)	6.6	Entrepreneurial Employee Activity Rate (EEA)	3.3
- Necessity-Driven TEA Rate	0.8	- Private Sector EEA Rate (PEEA)	2.0
- Medium-High Job Expectation Rate (MHEA)	2.0		
Classification Phase of Economic Development: Innovation-Driven Economies			
Classification Entrepreneurship Profile: High Entrepreneurial Employee Activity (EEA) only			

*Für Definitionen und Quellenangaben siehe Glossar.



Unternehmerisches Profil

Während das Jahr 2010 stark von den Nachwehen der Finanzkrise geprägt war, konnte 2011 für etliche Indikatoren, wie bspw. den wahrgenommenen Gelegenheiten oder der totalen Gründungsaktivität (TEA), wieder ein Aufwärtstrend festgestellt werden. Im Vergleich mit anderen Ländern, sollten in der Schweiz zwei Messgrössen besondere Aufmerksamkeit geschenkt werden: der Anteil der moderaten und starken Wachstumsambitionen (MHEA), die unterhalb des Durchschnitts aller innovationsbasierten Ländern liegt und der Intrapreneurship-Tätigkeit, die hierzulande erstaunlich weniger ausgeprägt ist als in vergleichbaren Ländern.

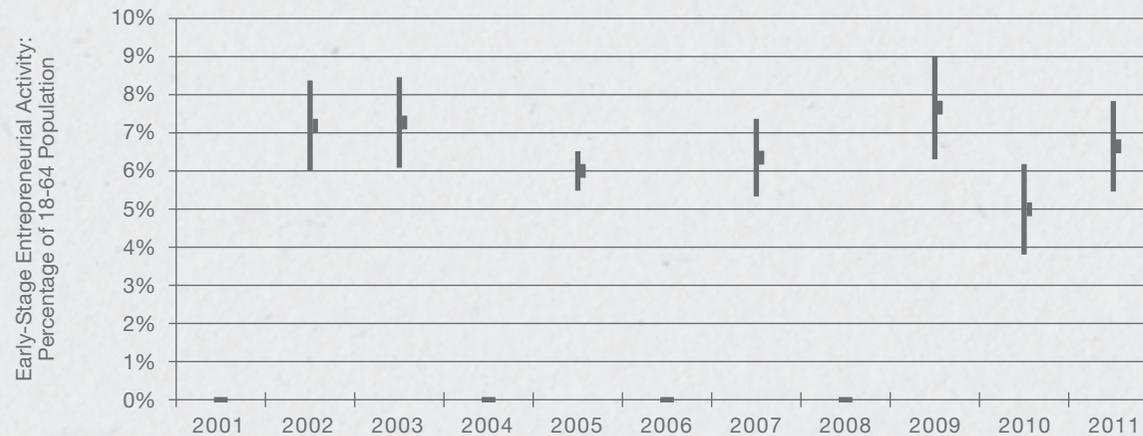
Die Schweiz zeigt, zumindest kurzfristig, kein grosses Potential bezüglich der erwarteten Schaffung neuer Arbeitsstellen durch Jungunternehmen. Dieses fehlende Potential ist auch bei anderen Volkswirtschaften aus der Vergleichsgruppe, ausgenommen den USA, ersichtlich. Hingegen ist eine klare Orientierung auf (kombinierte Produkt-Markt-) Innovationen und auf eine internationale Ausrichtung ersichtlich. In diesen Bereichen belegt die Schweiz Platz vier resp. sechs, was einen langfristigen positiven Effekt mit sich bringt: Es ist bekannt, dass Produktinnovationen und die internationale Ausrichtung von Unternehmen eng mit der globalen Nachfragesteigerung gekoppelt sind. Diese generiert wiederum neue Arbeitsstellen sowie wirtschaftliches Wachstum.

Abgesehen vom Jahr 2010 bewegte sich die Quote der Gründungsaktivität (TEA) jeweils zwischen sechs und acht Prozent. Auch wenn ihr quantitativer Aspekt vor allem politische Entscheidungsträger interessiert, sollte den qualitativen Aspekten (bspw. tiefe vs. hohe Jobberwartungen) sowie dem unternehmerischen Verhalten vermehrt Aufmerksamkeit geschenkt werden. Die Schweizer Ergebnisse im Bereich unternehmerischer Mitarbeiteraktivität liegen unter dem Durchschnitt der innovationsbasierten Volkswirtschaften. Hingegen genießt die Schweiz eine der besten Positionen, wenn es um Gründungsaktivität (TEA) von Frauen geht (praktisch ausgeglichene Frau-Mann-Ratio).

Entwicklung der Gründungsaktivität in der Schweiz (TEA)

Die generellen Rahmenbedingungen in der Schweiz wie auch in Singapur sind im Allgemeinen besser als diejenigen der anderen innovationsbasierten Volkswirtschaften, die an der Studie mitgemacht haben. Die Schweiz erreicht überragende Ergebnisse in den Bereichen Finanzen, wirtschaftliche Infrastruktur, tertiäre Ausbildung, Wissens- und Technologietransfer sowie in der Stabilität der inländischen Marktdynamik.

Ferner beinhaltet der vorliegende Bericht Daten über das unternehmerische Verhalten im Kanton Tessin. Obwohl die TEA im Tessin tiefer ist als in der übrigen Schweiz, werden mehr Möglichkeiten zur Unternehmensgründung wahrgenommen als im restlichen Inland. Auch die eigenen Fähigkeiten, ein unternehmerisches Vorhaben anzupacken, werden vergleichsweise besser eingeschätzt.



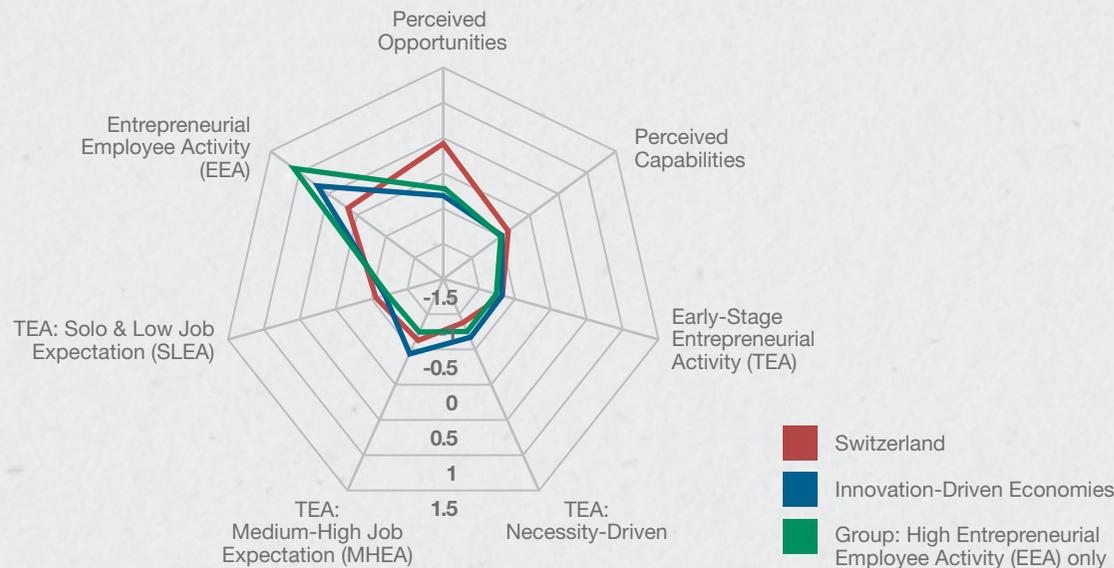
Management Summary (FR)

Le rapport du Global Entrepreneurship Monitor 2011 pour la Suisse illustre les différences entre les économies dans les attitudes, l'activité et les aspirations entrepreneuriales, en révélant les facteurs qui déterminent la nature et le niveau de l'activité entrepreneuriale nationale et en identifiant les implications politiques liées à l'encouragement de l'entrepreneuriat en Suisse. Les données du GEM complètent les indicateurs de compétitivité et d'innovation et permettent la création d'un nouvel indice agrégé, le Global Entrepreneurship Index (GEDI).

Le recensement de 2011 fait apparaître qu'en Suisse, les opportunités perçues de créer une entreprise sont considérablement plus élevées que les années précédentes. Cette augmentation distingue la Suisse des pays voisins et des Etats-Unis. Quant aux pays nordiques tels que la Finlande, la Suède et la Norvège, ils restent en tête en ce qui concerne les opportunités disponibles. Comme les années précédentes, la Suisse montre une perception des capacités plutôt élevée, doublée d'une très faible crainte de l'échec. Alors que la perception des capacités de la Suisse est au moins aussi bonne, voire même meilleure que le benchmark européen, elle n'est pas encore à la hauteur de la conviction très forte des Américains en leurs propres capacités de créer une entreprise.

General Characteristics*			
Global Happiness Index	8 (4/149)	Global Innovation Index	64 (1/125)
Human Development Index	0.9 (11/187)	Global Competitiveness Index	5.7 (1/142)
Doing Business Index	(26/183)	GEDI Index	0.54 (7/79)
GEM 2011 Entrepreneurship Indicators*			
Perceived Opportunities	47	Perceived Capabilities	42
Fear of Failure	35	Nascent Entrepreneurship Rate	3.7
Owner-Managers in New Businesses Rate	2.9	Owner-Managers in Established Businesses Rate	10.2
Total Early-Stage Entrepreneurial Activity Rate (TEA)	6.6	Entrepreneurial Employee Activity Rate (EEA) - Private	3.3 2.0
- Necessity-Driven TEA Rate	0.8	Sector EEA Rate (PEEA)	
- Medium-High Job Expectation Rate (MHEA)	2.0		
Classification Phase of Economic Development: Innovation-Driven Economies			
Classification Entrepreneurship Profile: High Entrepreneurial Employee Activity (EEA) only			

*Voir le glossaire pour les définitions et sources des indicateurs.



Profil Entrepreneurial

Suite au cycle 2010 ayant fortement été influencé par les conséquences de la crise financière, de nombreux indicateurs de l'activité entrepreneuriale sont repartis à la hausse en 2011, dont les opportunités perçues et l'activité entrepreneuriale totale (TEA). En comparaison aux autres pays, deux indicateurs requièrent une attention particulière; le taux MHEA suisse se situe en dessous de la moyenne des pays basés sur l'innovation et, de manière encore plus marquée, l'activité entrepreneuriale des employés est beaucoup moins prononcée que dans les pays comparables.

Comme les autres pays du groupe de comparaison, hormis les Etats-Unis, la Suisse ne montre pas de très grand

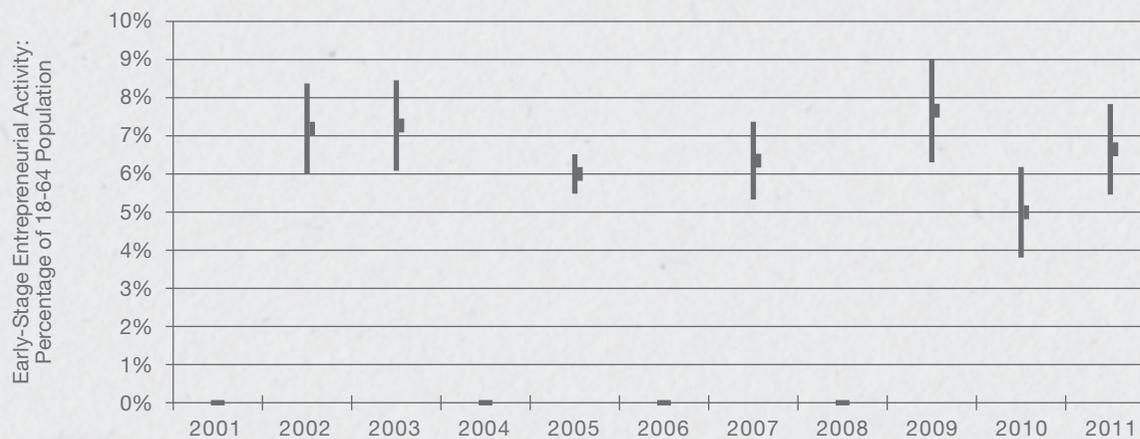
potentiel de création d'emplois par le biais d'activités entrepreneuriales nouvelles, du moins à court terme. La focalisation observée sur l'innovation (en termes de combinaison produit-marché) ainsi qu'une orientation internationale qui place la Suisse dans une position moyenne à élevée peuvent compenser en partie cet impact toutefois limité. Ces deux tendances sont de bon augure sur le long terme; il est connu que l'innovation de produit et l'orientation vers les marchés internationaux sont étroitement liées à la croissance de la demande globale qui, en retour, génère un accroissement de l'emploi et, par là, une accélération de la croissance économique.

2010 étant une exception, le taux de TEA suisse fluctue généralement entre 6 et 8 pour cent. Bien que l'aspect quantitatif de l'activité entrepreneuriale (TEA) soit d'un grand intérêt pour les décideurs politiques, une plus grande attention devrait être portée à sa qualité (attentes faibles vs élevées en matière d'emploi) et au comportement entrepreneurial des employés. Les paramètres suisses liés à l'activité entrepreneuriale des employés (tels que le pourcentage de population adulte et le pourcentage d'employés) se situent en dessous des moyennes en comparaison aux autres économies basées sur l'innovation. Or la Suisse, comparée aux économies semblables, jouit de l'une des meilleures positions relativement à l'entrepreneuriat féminin (dans le sens du rapport hommes-femmes pondéré).

Evolution de l'Activité Entrepreneuriale Nouvelle (TEA)

Les conditions globales du réseau entrepreneurial en Suisse – comme celles de Singapour – se développent généralement mieux que celles des autres économies basées sur l'innovation incluses dans cette étude. La Suisse atteint d'excellents résultats pour tous les 9 conditions globales, en particulier dans la finance, l'infrastructure commerciale, la formation tertiaire, et le transfert de connaissances et technologique, tout en affichant des dynamiques de marché interne stables.¹

Le rapport inclut également des données concernant le comportement entrepreneurial dans le canton du Tessin. Le TEA y est inférieur à celui de la Suisse, mais le Tessin possède un pourcentage plus élevé de personnes qui croient que les bonnes opportunités de démarrer une entreprise existent et un pourcentage plus élevé de personnes convaincues qu'elles disposent des connaissances et des compétences pour se lancer dans l'aventure entrepreneuriale.



¹Les programmes additionnels qui ont été introduits en vue de réduire les effets négatifs du franc suisse fort ne sont pas encore inclus ici.

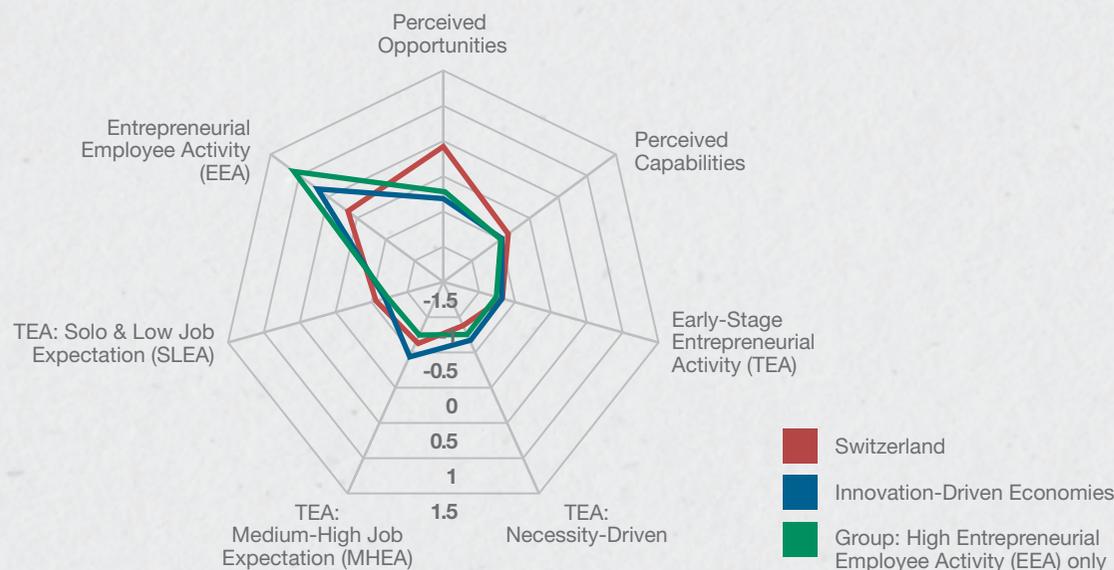
Management Summary (IT)

Il rapporto Global Entrepreneurship Monitor 2011 sulla Svizzera illustra le differenze tra diverse economie nelle attitudini, nelle attività e nelle aspirazioni imprenditoriali, rivelando i fattori che determinano la natura ed il livello d'attività imprenditoriale ed individuando le implicazioni di policy che contribuiscono all'incremento dell'imprenditorialità in Svizzera. I dati del GEM completano gli indicatori esistenti sulla competitività e sull'innovazione, consentendo la costruzione di un nuovo indice aggregato, il Global Entrepreneurship Index (GEDI).

Secondo l'indagine del 2011, rispetto agli anni precedenti le opportunità percepite per l'avvio di un'impresa in Svizzera sono considerevolmente aumentate. Tale incremento contraddistingue la Svizzera rispetto ai paesi confinanti ed agli Stati Uniti. Tuttavia, sul fronte delle opportunità disponibili, i paesi scandinavi, come la Finlandia, la Svezia e la Norvegia, rimangono ai vertici. Come nei precedenti anni, in Svizzera si evidenzia un'elevata percezione riguardante le capacità imprenditoriali, e un basso timore di fallimento. Se la percezione sulle capacità imprenditoriali in Svizzera è simile, se non migliore, nel confronto con le nazioni europee, essa è inferiore rispetto ai livelli statunitensi.

General Characteristics*			
Global Happiness Index	8 (4/149)	Global Innovation Index	64 (1/125)
Human Development Index	0.9 (11/187)	Global Competitiveness Index	5.7 (1/142)
Doing Business Index	(26/183)	GEDI Index	0.54 (7/79)
GEM 2011 Entrepreneurship Indicators*			
Perceived Opportunities	47	Perceived Capabilities	42
Fear of Failure	35	Nascent Entrepreneurship Rate	3.7
Owner-Managers in New Businesses Rate	2.9	Owner-Managers in Established Businesses Rate	10.2
Total Early-Stage Entrepreneurial Activity Rate (TEA)	6.6	Entrepreneurial Employee Activity Rate (EEA)	3.3
- Necessity-Driven TEA Rate	0.8	- Private Sector EEA Rate (PEEA)	2.0
- Medium-High Job Expectation Rate (MHEA)	2.0		
Classification Phase of Economic Development: Innovation-Driven Economies			
Classification Entrepreneurship Profile: High Entrepreneurial Employee Activity (EEA) only			

*Per definizioni e fonti relativi agli indicatori, vedere l'allegato.



Profilo Imprenditoriale

Dopo la congiuntura del 2010, fortemente influenzata dalle conseguenze della crisi finanziaria, nel 2011 molti indicatori dell'imprenditorialità hanno ripreso a salire, tra cui anche l'indicatore sulle opportunità percepite ed il tasso complessivo dell'attività imprenditoriale (TEA nell'acronimo inglese). Nel confronto tra paesi, due indicatori meritano particolare attenzione: il tasso medio/alto legato alle aspettative di crescita dell'occupazione (MHEA nell'acronimo inglese), il quale risulta essere inferiore rispetto alla media dei paesi trainati dall'innovazione e, in modo ancor più sorprendente, il tasso d'intraprenditorialità, anch'esso molto meno pronunciato rispetto ai paesi esaminati.

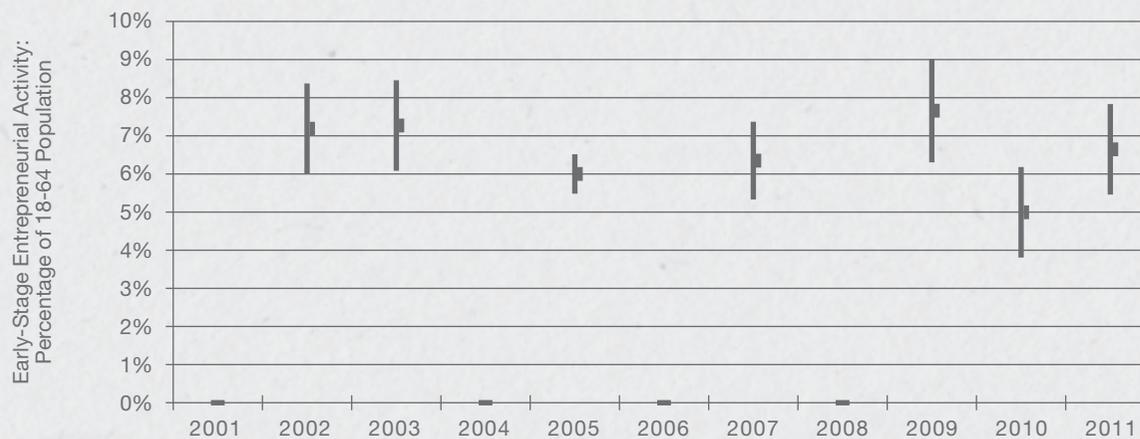
La Svizzera, al pari degli altri paesi considerati nel confronto, fatta eccezione per gli Stati Uniti, non presenta, almeno sul breve termine, potenziali elevati in termini di creazione di posti di lavoro da parte delle attività imprenditoriali early stage. A compensare, almeno in parte, questo impatto limitato, troviamo però l'orientamento all'innovazione (nella combinazione prodotto-mercato) e l'orientamento internazionale che, mediamente, posizionano la Svizzera su un livello medio-alto. Questi due orientamenti fanno ben presagire sul lungo periodo. In effetti, è noto come l'innovazione di prodotto e l'orientamento ai mercati internazionali siano strettamente correlati con l'aumento della domanda globale che genera un aumento dell'occupazione e, quindi, un incremento della crescita economica.

Ad eccezione del 2010, il TEA svizzero oscilla generalmente tra il 6 e l'8 per cento. Benché l'aspetto quantitativo dell'attività imprenditoriale sia importante per i policy makers, maggiore attenzione dovrebbe essere posta sull'aspetto qualitativo (basse, rispettivamente, alte aspettative di crescita in termini di posti di lavoro) e sul comportamento imprenditoriale dei dipendenti (intraprenditorialità). Rispetto alle altre economie guidate dall'innovazione, la Svizzera risulta sotto la media in termini di attività imprenditoriale dei dipendenti, mentre è ben posizionata nell'imprenditorialità femminile (inteso come il rapporto ponderato tra uomini e donne).

Andamento del Tasso di Attività Imprenditoriale Early-Stage (TEA)

In Svizzera, come nel caso di Singapore, le condizioni quadro in favore dell'imprenditorialità sono generalmente migliori nel confronto con le altre economie guidate dall'innovazione considerate nel presente rapporto. La Svizzera si situa ai primi posti in tutte e nove le condizioni quadro, mostrando ottimi risultati nelle aree riguardanti la finanza, il commercio, l'educazione terziaria ed il trasferimento di conoscenza e tecnologia, così come una stabilità nelle dinamiche del mercato interno.¹

Inoltre, il rapporto include i dati relativi al comportamento imprenditoriale del Canton Ticino. Il TEA ticinese risulta essere inferiore alla media svizzera; tuttavia, il Ticino presenta una maggiore percentuale di persone che vede buone opportunità per avviare un'iniziativa imprenditoriale a livello regionale e che crede in misura maggiore di possedere quel bagaglio di conoscenze e competenze sufficienti per intraprendere un'avventura imprenditoriale.



² Programmi speciali che sono stati introdotti per ridurre gli effetti negativi dovuti alla forza del franco svizzero non sono stati inclusi nel presente rapporto.

TABLE OF CONTENTS

Acknowledgements	
About the Autors	
Management Summary (EN)	I
Management Summary (DE)	IV
Management Summary (FR)	VII
Management Summary (IT)	X
1. Introduction	1
1.1 The GEM Project	1
1.2 Patterns of Entrepreneurship: A Country Classification	5
2. The Phases and Profiles of Entrepreneurship	7
2.1 Entrepreneurial Attitudes.....	8
2.2 Entrepreneurial Activities	10
2.2.1 Total Early-Stage Entrepreneurial Activity	11
2.2.2 Motivations to Start a Business	14
2.2.3 Senior entrepreneurship	16
2.2.4 Established Business Ownership.....	19
2.2.5 Discontinuance	20
2.2.6 Women’s Participation in Entrepreneurship.....	22
3. Impact – Growth, Innovation, and Internationalization	24
3.1 Growth Orientation.....	25
3.2 Innovative Orientation	27
3.3 International Orientation	28
4. Focus on the Ticino Reality	30
4.1 The SUPSI inno3 Competence Center Approach to Entrepreneurship	30
4.2 Entrepreneurship in Ticino and in Switzerland.....	31
4.3 The Support of Innovation and Entrepreneurship in Ticino	33
5. Entrepreneurship Framework Conditions	36
6. Entrepreneurial Employee Activity	41
6.1 GEM 2011 Highlights on Switzerland	42
Literature	
Glossary	
Country List	
Global Entrepreneurship Index (GEDI)	
List of Experts	
GEM Team Switzerland	

1 *Introduction*

1.1 *The GEM Project*

The Global Entrepreneurship Monitor (GEM) was conceived in 1997 by M. Hay of the London Business School (LBS) and B. Bygrave of Babson College, who together funded a prototype study. The first GEM Global study was conducted in 1998 by ten national teams, with P. Reynolds as the principal investigator. In 2004 the Global Entrepreneurship Research Association (GERA) was formed to serve as the oversight body for GEM. GERA is a not-for-profit organization governed by representatives of the national teams, the two founding institutions, and sponsoring institutions. Its mission is to contribute to global economic development through entrepreneurship. To achieve this, GERA seeks to increase worldwide knowledge about entrepreneurship by conducting and disseminating world-class research. GEM focuses on three main objectives:

- To measure differences in entrepreneurial attitudes, activity, and aspirations between economies.
- To uncover the factors determining the nature and level of national entrepreneurial activity.
- To identify policy implications for enhancing entrepreneurship in an economy.

GEM is based on the following premises. First, an economy's prosperity is highly dependent on a dynamic entrepreneurship sector — this is true across all stages of development. Yet the nature of this activity can vary in

character and impact. Necessity-driven entrepreneurship, particularly in less-developed regions or those experiencing job losses, can help an economy benefit from self-employment initiatives when fewer work options are available. More developed economies, on the other hand, can leverage their wealth and innovation capacity to create entrepreneurial opportunities, yet they also offer more employment options to attract those who might otherwise become entrepreneurs. In order to pursue the opportunities for entrepreneurship and innovation they need to instill in people opportunity-based motives and entrepreneurial incentives.

Second, an economy's entrepreneurial capacity requires individuals with the ability and motivation to start businesses, and positive societal perceptions about entrepreneurship. Entrepreneurship should include participation from all groups in society, including women and a range of age groups, education levels, and disadvantaged minorities. Finally, high-growth entrepreneurship is a key contributor to new employment in an economy, and national competitiveness depends on innovative and cross-border entrepreneurial ventures.

In 2011, the Global Entrepreneurship Monitor conducted its 13th annual survey of the rate and profile of entrepreneurial activity around the globe, interviewing over 140,000 adults (18–64 years of age) in 54 economies. The overall results show that the world is indeed becoming increasingly entrepreneurial. Based on the survey, GEM estimated that 388 million entrepreneurs were actively engaged in starting and running new businesses in 2011 (Kenward, 2012). As a percentage of the overall current world population of 7 billion, this is about 5.5 percent — a pretty substantial number.

GEM's harmonized dataset enables comparisons of entrepreneurship activity around the globe and within and across geographic regions. Following a typology used by the World Economic Forum, GEM classifies the 54 GEM participants as “factor-driven,” “efficiency-driven” or “innovation-driven” economies.

Switzerland is included in the group of “innovation-driven” economies with 22 other countries: Australia, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Japan, Republic of South Korea, Netherlands, Norway, Portugal, Singapore, Slovenia, Spain, Sweden, Taiwan, United Arab Emirates, United Kingdom, and the United States.

The following report compares the data for Switzerland, especially with countries such as Denmark, Finland, France, Germany, Norway, Singapore, Sweden, United Kingdom, and the United States.

This classification according to phases of economic development is based on the level of GDP per capita and the extent to which countries are factor driven in terms of how much primary goods account for total exports. Factor-driven economies are primarily extractive in nature, while efficiency-driven economies exhibit scale intensity as a major driver of development. At the innovation-driven stage of development, economies are characterized by the production of new and unique goods and services that are created via sophisticated, and often pioneering, methods.

So, how can entrepreneurial activities be measured in the world, and based on above classification, what are the frameworks for GEM analysis? With the aim of taking the pulse of entrepreneurial activities around the globe, since its inception GEM has conducted two types of surveys: the Adult Population Survey (APS), where a sample of the population, usually of the 18-64 age bracket, is surveyed in each nation; and the National Experts Survey (NES), where a sample of experts is interviewed. The sample size is at least 36 experts in NES, whereas in APS, the sample size is at least 2,000 adults for each one of the 54 economies. It is also important to note that these experts have varied profiles, such as entrepreneurs, policy makers, academics, and practitioners. Building on that, for the first time in 13 years, GEM has collected data on EEA (entrepreneurial employee activity) in almost all 52 (2 out of 54 nations did not participate) participating economies, and has reached some interesting conclusions on entrepreneurship with regard to individual employees within organizations.

In order to conduct a meaningful analysis and reflect interesting results, GEM researchers have developed the GEM model (revised model, **Figure 2**), which incorporates a more nuanced distinction of economic phases (**Figure 1**, originally developed by Porter et al., 2002) among economies around the globe where entrepreneurship and innovation can thrive. These phases include phases of factor-driven economies, efficiency-driven economies, and finally, innovation-driven economies. The social, political, and cultural contexts of nations provide the main shape and motivation for the conceptual GEM model, which is followed by the experts' determination of the entrepreneurial framework conditions that offer the necessary "oxygen" of resources, incentives, markets, and supporting institutions to the growth of new firms within each economy.

Combined with the indicators of a population's entrepreneurship profiles (such as attitudes, activities, and aspirations) and their entrepreneurial activity (including EEA), the GEM model aims to yield an explanation for the socioeconomic development of economies in such terms as economic growth, innovation, and job creation.

Figure 3 illustrates the phases of early-stage entrepreneurial activity and EEA. It should be noted that Total early-stage Entrepreneurial Activity (TEA) comprises nascent and new entrepreneurship phases, which are different concepts to EEA.

Figure 1:
Characteristics of
Economic Groups
and Key Development
Focus

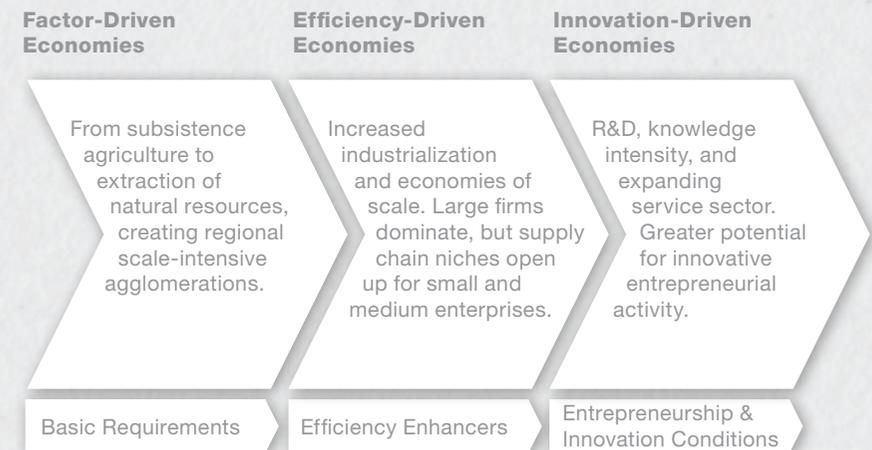


Figure 2:
The GEM Conceptual Model

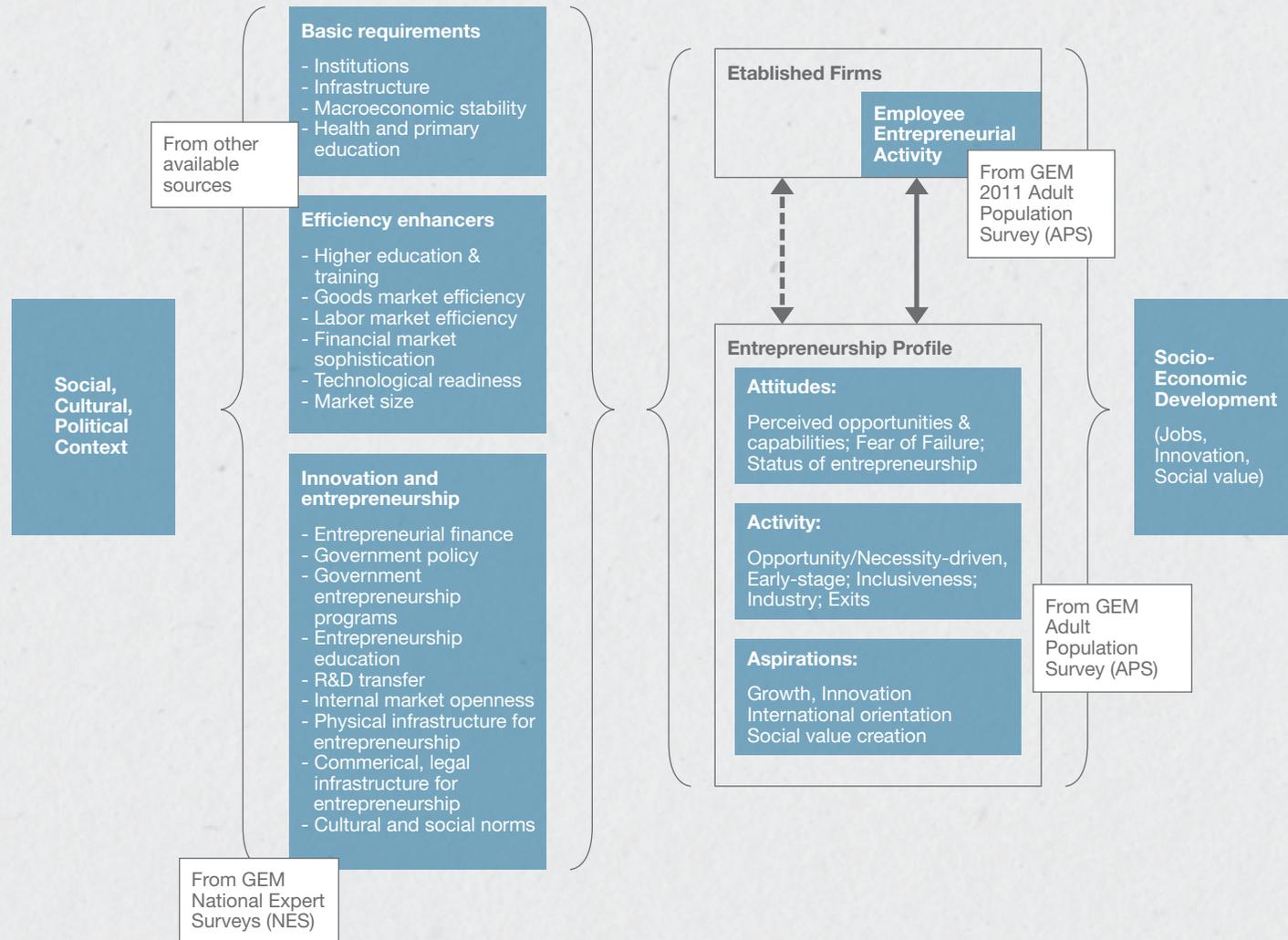
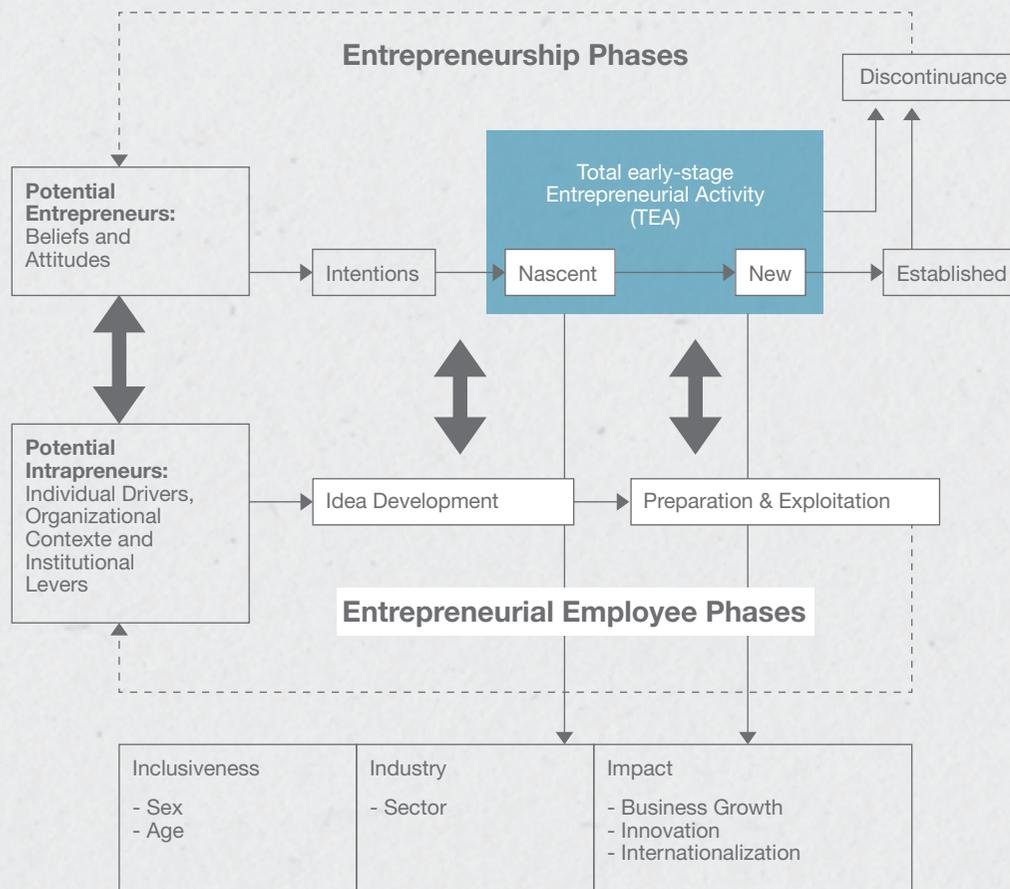


Figure 3:
 Entrepreneurship Process and GEM
 Operational Definitions, Including
 Entrepreneurial Employee Activity



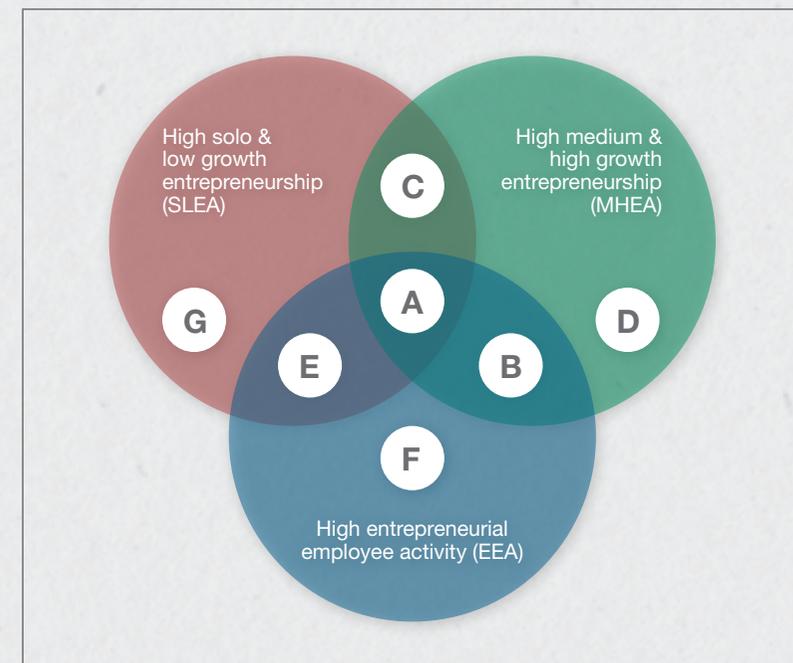
1.2 *Patterns of Entrepreneurship: A Country Classification*

This report examines all three types of entrepreneurship – ambitious early-stage entrepreneurial activity in the sense of medium & high job growth expectations (MHEA), solo & low job growth expectations (early-stage entrepreneurial activity, or SLEA), and EEA – in order to provide a more comprehensive profile of entrepreneurship for each of the 52 countries that have participated in both the regular 2011 GEM cycle and the special topic on EEA. In 2011, GEM has for the first time assessed the degree of EEA in (almost) all participating countries, by including special sets of questions in the GEM Adult Population Survey (APS) and the GEM National Expert Survey (NES). Providing a more complete picture of entrepreneurship, one that includes the role of entrepreneurial employees, is particularly relevant today given the importance of entrepreneurship as a mechanism that could lead to the kind of economic recovery that is now needed in many countries across the globe.

- Type A:** high prevalence of three types of entrepreneurial activity (SLEA, MHEA, and EEA)
- Type B:** high prevalence of medium/high job expectation entrepreneurship (MHEA) and high prevalence of entrepreneurial employee activity (EEA)
- Type C:** high prevalence of solo/low job expectation entrepreneurship (SLEA) and high prevalence of medium/high job expectation entrepreneurship (MHEA)
- Type D:** high prevalence of medium/high job expectation entrepreneurship (MHEA) only
- Type E:** high prevalence of solo/low job expectation entrepreneurship (SLEA) and high prevalence of entrepreneurial employee activity (EEA)
- Type F:** high prevalence of entrepreneurial employee activity (EEA) only
- Type G:** high prevalence of solo/low job expectation entrepreneurship (SLEA) only
- Type H:** low prevalence of three types of entrepreneurial activity (SLEA, MHEA, and EEA)

Figure 4:

Typology of Economies Based on Three Dimensions of Entrepreneurship



2 *The Phases and Profiles of Entrepreneurship*

This section examines the rate of individual participation in the various phases of entrepreneurship for Switzerland as compared with other innovation-driven countries. We discuss potential entrepreneurs, individuals with the intention of starting businesses, people starting and running new businesses (early-stage entrepreneurs), those running established businesses, and the discontinuation of businesses.

The GEM data collection for Switzerland yields entrepreneurial profiles along three important dimensions. Entrepreneurial attitudes, perceptions, and intentions reflect the degree to which individuals tend to appreciate entrepreneurship, both in terms of general attitudes and in terms of self-perceptions: how many individuals recognize business opportunities, how many believe they have the skills and knowledge to exploit such opportunities, and for how many would fear of failure prevent them exploiting such opportunities? Entrepreneurial activity measures the observed involvement in several phases of entrepreneurial activity. It also tracks the degree to which entrepreneurial activities are driven by opportunity and/or necessity. Moreover, discontinuations of entrepreneurial activity (and the reasons for doing so) are estimated based on the GEM Adult Population Surveys. Finally, entrepreneurial aspira-

tions are of key importance in addressing the (socio) economic impact of entrepreneurial behavior. Of particular interest are those entrepreneurs who expect to create jobs, to be involved in international trade, and/or to contribute to the society by offering new products and services

2.1 Entrepreneurial Attitudes

Fostering entrepreneurial awareness and positive attitudes toward entrepreneurship is high on Switzerland's policy agenda. The idea is that evolving attitudes and perceptions toward entrepreneurship could affect those individuals wishing to venture into entrepreneurship. However, the key factor that determines whether someone progresses to entrepreneurship is not the perception of opportunities for start-ups or of (matching) personal capabilities: context also plays a role. Factors such as the availability of (good) job alternatives in an economy can make a difference for those who perceive market opportunities and have confidence in their own entrepreneurial capabilities, and help to determine whether they engage in independent entrepreneurial activity or not. So, while in some societies positive attitudes and perceptions toward entrepreneurship may be instrumental in achieving new (high-value) entrepreneurial activities, in many others they are certainly not, on their own, sufficient reason for people to choose to engage in entrepreneurial activity. For example, there may be other excellent options available to individuals. Bearing this in mind, we can see in **Table 1** how Switzerland compares in terms of entrepreneurial perceptions and attitudes to other innovation-driven economies in general and to the comparison group in particular.

Table 1:
Entrepreneurial Perceptions, Intentions and Societal Attitudes in Innovation-Driven Economies, 2011

Innovation-Driven Economies	Perceived opportunities	Perceived capabilities	Fear of failure*	Entrepreneurial intentions**
Australia	48	47	43	12
Belgium	43	44	41	11
Czech Republic	24	39	35	14
Denmark	47	35	41	7
Finland	61	37	32	7
France	35	38	37	18
Germany	35	37	42	5
Greece	11	50	38	10
Ireland	26	46	33	6
Japan	6	14	42	4
Korea	11	27	45	16
Netherlands	48	42	35	9
Norway	67	33	41	9
Portugal	17	47	40	12
Singapore	21	24	39	12
Slovenia	18	51	31	9
Spain	14	51	39	8
Sweden	71	40	35	10
Switzerland	47	42	31	10
Taiwan	39	29	40	28
United Arab Emirates	44	62	51	2
United Kingdom	33	42	36	9
United States	36	56	31	11
average (unweighted)	35	41	38	10

* Assessed among those seeing opportunities

** Assessed in non-entrepreneur (non-TEA) population

The perceptions of entrepreneurial opportunities in Table 1 reflect the percentage of individuals who believe there are opportunities to start a business in the area they live in. Perceived capabilities reflect the percentages of individuals who believe they have the required skills and knowledge to start a new business. The measure of fear of failure (when it comes to starting your own business) applies to these individuals only. Entrepreneurial intentions are defined by the percentage of individuals who expect to start a business within the next three years (those who are currently already entrepreneurially active are excluded from this measure). For all four measures we should consider that cultural differences and business-cycle patterns are an important explanation for the differences in perceptions across countries.

In the 2011 census the perceived opportunities to start a business are in Switzerland considerably higher than in previous years. This boost in perceived opportunities sets Switzerland apart from neighboring countries and the U.S. Nordic countries, such as Finland, Sweden, and Norway, remain on top when it comes to available opportunities. Switzerland shows, as in previous years, a rather high perception of capabilities paired with a very low fear of failure. While Switzerland's perception of capabilities is at least as good as or even better than the European bench-

mark, it still lags behind United States inhabitants' very strong belief in their own capacity to start a business. The entrepreneurial intentions of Swiss inhabitants (10%) are on a par with the average for innovation-driven countries. Most remarkable are the differences between Switzerland, Germany, and France. While in Germany only 5% of the individuals expect to start a business in the next three years, almost one-fifth of the French think about setting up a new business.

2.2 Entrepreneurial Activities

GEM conceptualizes entrepreneurship as a continuous process that includes nascent entrepreneurs involved in setting up a business, entrepreneurs who own and manage a new business, and entrepreneurs who own and manage an established business. In addition, GEM assesses the rate and nature of business discontinuations. As a result, indicators for several phases of the entrepreneurial process are available. **Table 2** shows these entrepreneurial activity prevalence rates per phase of economic development. Taken together, these prevalence rates form a first glance of the entrepreneurial dynamics for each of the economies. In the remainder of this section, we elaborate on these phases of entrepreneurial activity. Most attention is paid to the situation in Switzerland, its development over the last years, and the comparison with innovation-driven economies.

► **Table 2:**
Entrepreneurial Activity
in Innovation-Driven
Economies, 2011

Innovation-Driven Economies	Nascent entrepreneurship rate	New business ownership rate	Early-stage entrepreneurial activity (TEA)	Established business ownership rate	Discontinuation of businesses	Necessity-driven (% of TEA)	Improvement-driven opportunity (% of TEA)
Australia	6.0	4.7	10.5	9.1	4.3	15	73
Belgium	2.7	3.0	5.7	6.8	1.4	10	72
Czech Republic	5.1	2.7	7.6	5.2	2.7	27	57
Denmark	3.1	1.6	4.6	4.9	2.3	7	64
Finland	3.0	3.3	6.3	8.8	2.0	18	59
France	4.1	1.7	5.7	2.4	2.2	15	71
Germany	3.4	2.4	5.6	5.6	1.8	19	55
Greece	4.4	3.7	8.0	15.8	3.0	25	37
Ireland	4.3	3.1	7.2	8.0	3.4	29	37
Japan	3.3	2.0	5.2	8.3	0.7	25	64
Korea	2.9	5.1	7.8	10.9	3.2	41	36
Netherlands	4.3	4.1	8.2	8.7	2.0	9	62
Norway	3.7	3.3	6.9	6.6	2.5	4	70
Portugal	4.6	3.0	7.5	5.7	2.9	18	58
Singapore	3.8	2.8	6.6	3.3	2.1	16	53
Slovenia	1.9	1.7	3.7	4.8	1.5	12	51
Spain	3.3	2.5	5.8	8.9	2.2	26	39
Sweden	3.5	2.3	5.8	7.0	3.2	6	68
Switzerland	3.7	2.9	6.6	10.1	2.9	11	61
Taiwan	3.6	4.4	7.9	6.3	4.9	17	50
United Arab Emirates	3.7	2.6	6.2	2.7	4.8	14	67
United Kingdom	4.7	2.6	7.3	7.2	2.0	17	46
United States	8.3	4.3	12.3	9.1	4.4	21	59
average (unweighted)	4.0	3.0	6.9	7.2	2.7	18	57

2.2.1 Total Early-Stage Entrepreneurial Activity (TEA)

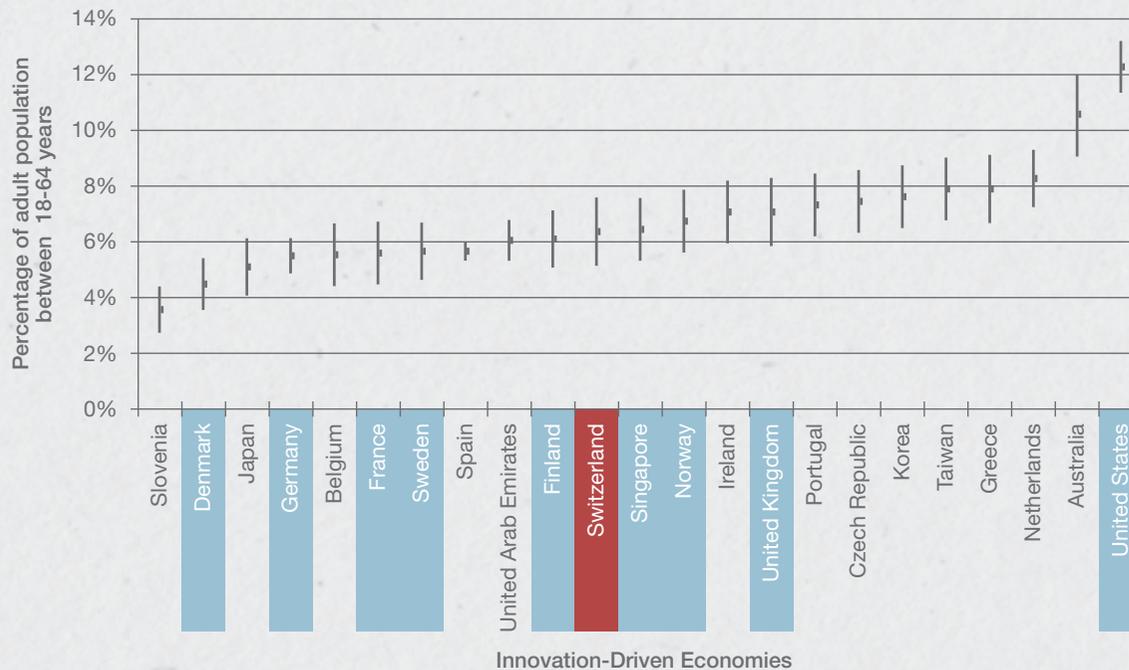
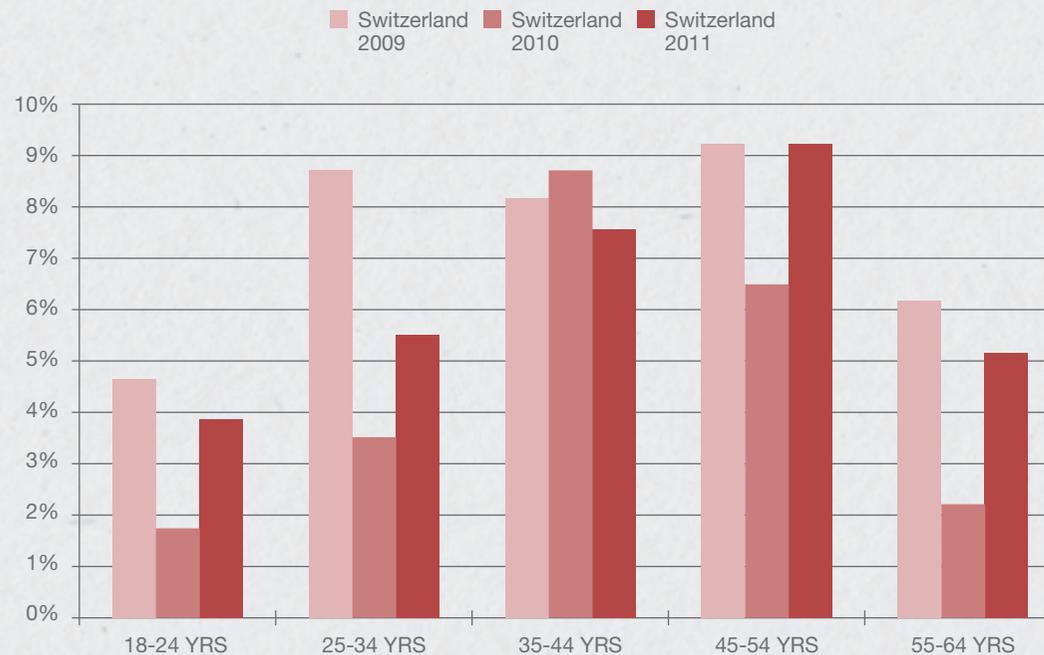


Figure 5:
Total Early-Stage
Entrepreneurial
Activity (TEA) in
Innovation-Driven
Economies, 2011

The Total Early-Stage Entrepreneurial Activity (TEA) rate is defined as the prevalence rate of individuals in the working-age population who are actively involved in business start-ups, either in the phase in advance of the birth of the firm (nascent entrepreneurs), or the phase spanning 42 months after the birth of the firm (owner-managers of new firms). As such, GEM takes the payment of any wages for more than three months as the “birth event” of the firm.

Figure 5 shows the TEA rates for the innovation-driven economies. The 95% confidence intervals help to interpret the differences between countries. They measure the probability that the average value will fall within a certain range. Although the Swiss TEA rate tends to be higher than in neighboring countries such as France or Germany, adopting the 95% certainty, TEA rates of these countries are not statistically different from its Swiss counterpart. Among the comparison group, only the United States differs considerably. After the 2010 cycle, which was strongly influenced by the aftermath of the financial crisis, many Swiss entrepreneurship activity indicators for 2011 turned upward again, with the total entrepreneurial activity (TEA) being one of them. After the all-time low of a Swiss TEA rate in 2010 of only 5%, the most important indicator for entrepreneurial activity once more reaches a normal level (6.6%). This rebound in entrepreneurial activities in Switzerland is reflected across most of the different age categories (**Figure 6**). Entrepreneurial activity among the adult population older than 35 is again close to the 2009 level, whereas the TEA rate of younger Swiss inhabitants still lags considerably behind the 2009 peak.

Figure 6:
Total Early-Stage
Entrepreneurial
Activity (TEA) in
Switzerland by Age,
2009-2011



Previous GEM reports have reported that TEA rates (in general) decline with increasing levels of GDP per capita, up to a point. The decline follows the increasing availability of job opportunities that arise as economies progress and develop institutions accordingly. When economies are in the innovation-driven stage, the relation with GDP per capita is less pronounced, even though most GEM Global Reports showed a mild positive correlation between TEA rates and GDP per capita at the right-hand tail of the graph. This mild positive correlation for innovation-driven economies is not observed in the 2011 edition, as can be seen in **Figure 7**. Instead the downward slope appears to flatten out. This corresponds to recent observations for business-ownership rates (Wennekers et al. 2010).

In **Figure 8** we set out intentions to start businesses (for that part of the population not active in entrepreneurship at the time of the survey) against observed early-stage entrepreneurial activity. The solid line represents the average trend among the 54 GEM 2011 countries and shows a rather strong positive correlation, with over 60 percent of the variation explained by this linear trend. Switzerland lies slightly below the line, as do other countries from the comparison group, with the exception of the United States. One explanation for the low 'conversion rate', and one that most certainly applies to Switzerland, is that for many people who intend to start a business, the attractiveness of their current job (or another job) is too great and acts as a disincentive to make the transition to entrepreneurship, where there are more risks involved.

Figure 7:
Early-Stage Entrepreneurial Activity and
Levels of GDP per Capita
(for country list see the glossary)

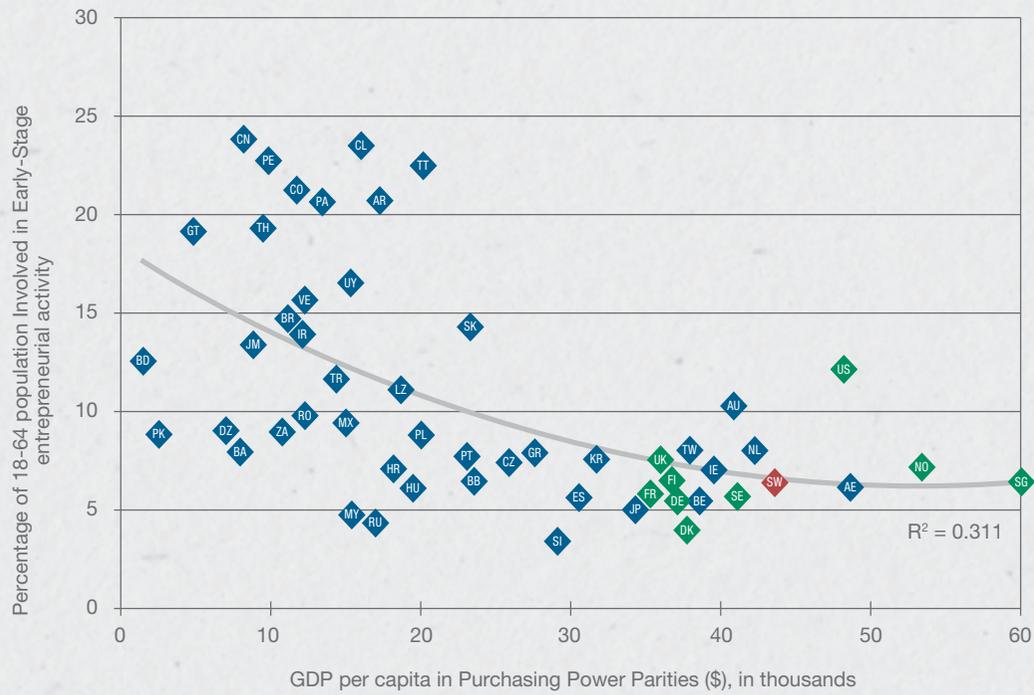
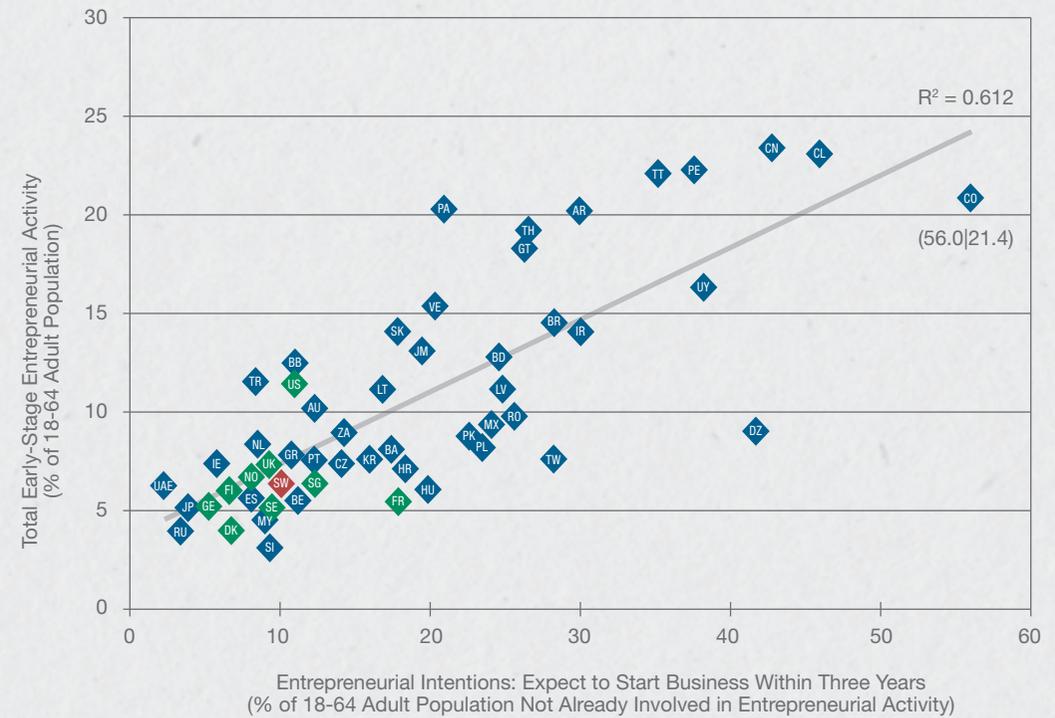
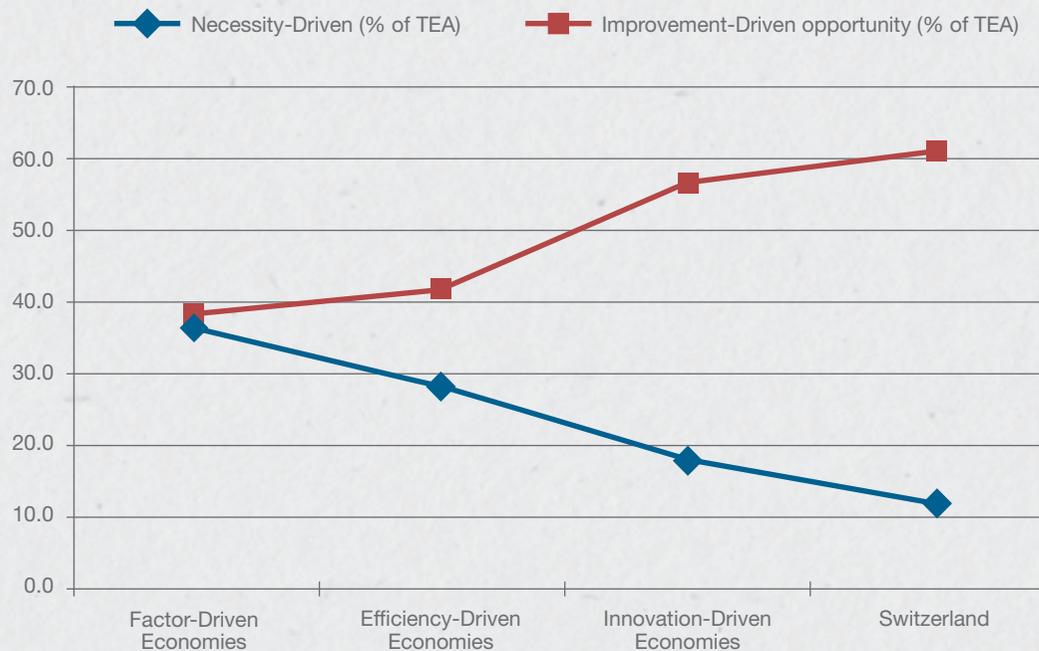


Figure 8:
Entrepreneurial Intentions and
Early-Stage Entrepreneurial Activity
(for country list see the glossary)



2.2.2 Motivations to Start a Business

Figure 9:
Percentage of Early-Stage
Entrepreneurs (TEA) Motivated
by Necessity and by
Improvement-Driven, 2011



The motivations for starting a business differ vastly across the globe. Individual drivers are traditionally captured within the GEM framework by setting out necessity-driven entrepreneurship and opportunity-driven entrepreneurship. A necessity-driven entrepreneur indicates in the GEM Adult Population Survey that s/he started the business because there were no better options for work, rather than s/he saw the start-up as an opportunity. For those who did see the start-up as an opportunity (rather than no other options for work), a further assessment was made on the nature of this opportunity. Improvement-driven opportunity (IDO) entrepreneurs are defined as those opportunity-driven entrepreneurs who indicate that the opportunity is to be linked to either earning more money or being more independent, as opposed to maintaining income.

As **Figure 9** shows, entrepreneurs in factor-driven economies tend to be driven equally by necessity and improvement-driven opportunity motives. With greater economic development levels, necessity gradually falls off as a motivator, while IDO motives increase. The Swiss indicator for improvement-driven activities lies slightly higher than the average for innovation-driven countries and has remained rather stable over the last three years.

Although the difference in the motivation structure of Swiss female and male inhabitants is not statistically significant, one can state that opportunity-driven entrepreneurship in order to maintain income is more strongly represented among females than among males. IDO motives may be less dependent on the economic environment and of a more intrinsic nature; the individual opts to pursue an opportunity that is believed to increase income and/or independence. One could question whether this kind of motivation can be stimulated by, for example, greater exposure to entrepreneurial opportunities in one's environment.

► **Table 3:**
Necessity and Improvement-Driven Opportunity Early-Stage Entrepreneurial Activity Rates, by Innovation-Driven Countries, 2011

Innovation-Driven Economies	Female Necessity-driven (% of Female TEA)	Male Necessity-driven (% of Male TEA)	Female Improvement-driven opportunity (% of Female TEA)	Male Improvement-driven opportunity (% of Male TEA)
Australia	15	15	75	72
Belgium	12	9	66	76
Czech Republic	28	27	57	56
Denmark	8	7	60	66
Finland	20	17	61	59
France	22	12	68	71
Germany	21	17	55	55
Greece	26	25	33	39
Ireland	30	29	40	36
Japan	27	24	55	67
Korea	34	44	41	35
Netherlands	6	11	69	59
Norway	2	5	71	70
Portugal	27	13*	48	63
Singapore	15	18	52	53
Slovenia	3	17	54	50
Spain	30	23*	37	41
Sweden	6	6	65	69
Switzerland	9	13	57	66
Taiwan	16	18	42	54
United Arab Emirates	12	15	65	68
United Kingdom	27	12*	45	47
United States	22	21	57	61
Unweighted average	18	17	55	58

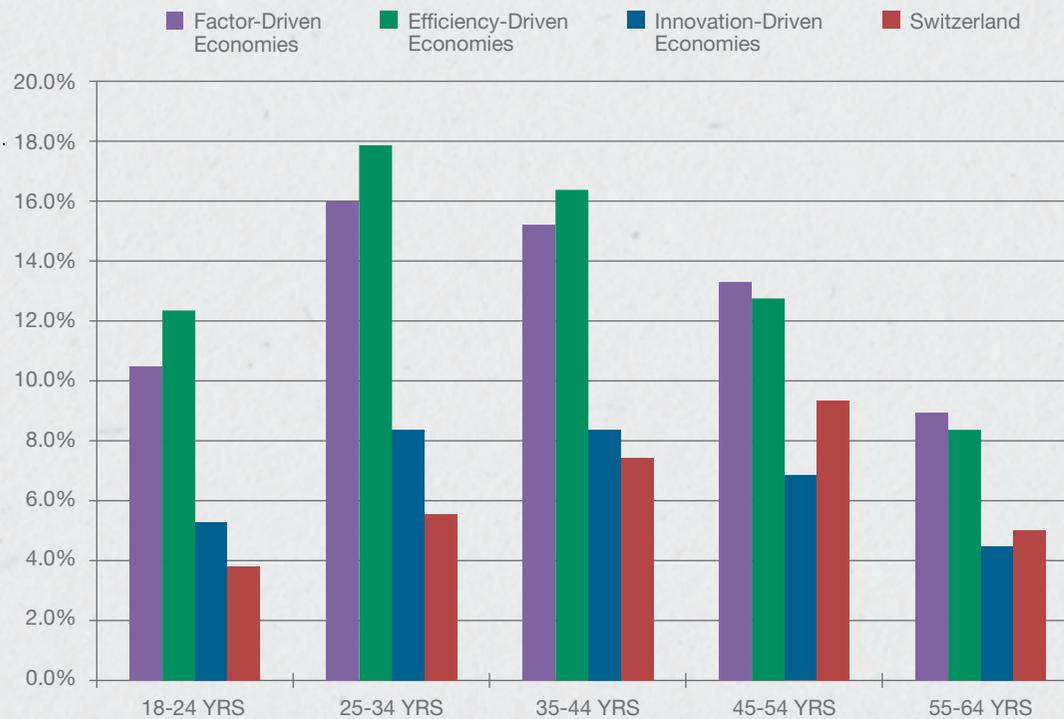
* Significant difference between female and male rates, based on one-sided Chi-squared test statistic, $p < 0.05$

2.2.3 Senior Entrepreneurship

When it comes to entrepreneurship, age matters. On the one hand, young people are often more likely to have fresh ideas; they have grown up with digital technologies, and in some societies they have received more education than their parents. On the other hand, older people have often accumulated an extensive body of experience, contacts, and capital over the course of their careers. This mix of social and financial capital puts this age group into a particular position. Also, the 50+ age group is now increasingly well acquainted with modern information and communication technologies. This allows it to regard these technologies not only as an instrument for optimizing communication and networking with peers, but also as a playground for technological innovation, such as new applications or services designed for the elderly. Above all, however, this rise of the 50+ age group represents a natural consequence of current demographic trends. Particularly in European countries, this percentage of the population is growing; the “baby boomer” generation’s transition to retirement represents just the tip of the iceberg. According to *The Economist* (2004), the median age of German citizens will rise from 40 to 47 by 2050, and in Italy, it will reach 50 by 2025. In contrast, in the U.S., the

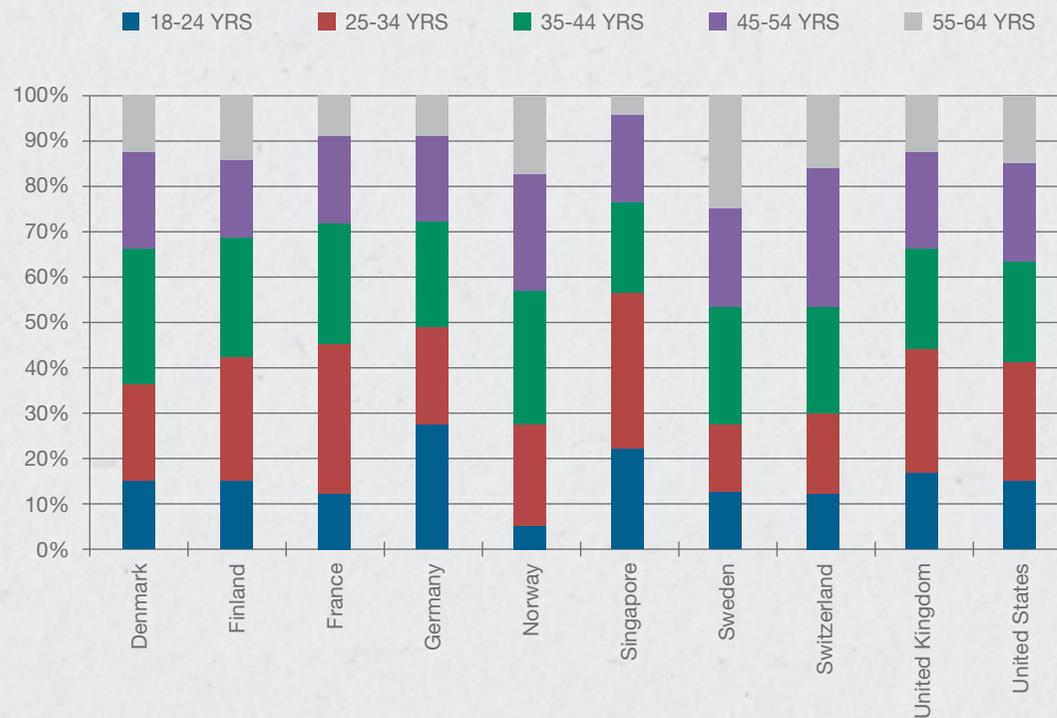
median age will rise only from 35 in 2000 to 40 in 2050. As a consequence, the working-age population will shrink dramatically: by 20% between 2005 and 2035, and a further 15% by 2050 (*The Economist*, 2004). So, regardless of whether retirement ages will be adjusted upward or not, more engagement by and involvement of seniors in the productive part of society is inevitable. When it comes to expecting or even fostering entrepreneurial behavior, policymakers might therefore increasingly look to harness the senior population’s potential (*GEM Global Report*, 2011).

Figure 10:
Early-Stage Entrepreneurial Activity
Rates within Age Groups, by Economic
Phase of Development



In Switzerland, in line with the general European trend, earlier research points to the growing trend of senior entrepreneurship, encouraging the “promoting of senior entrepreneurship as an answer to the problems that occur when a society ages, like pension costs and costs for health and medical services” (Rossi, 2009, p. 179). In this year’s GEM study, the indicators pointing to arguments like these are even stronger, as senior entrepreneurship in Switzerland seems to stand out when compared to other countries. In most countries, generally, early-stage entrepreneurs are often young to middle-aged (25-44 years), and in many developing economies, there is a tendency toward even younger entrepreneurs. In contrast to this global trend, however, in Switzerland (as well as in Japan), older entrepreneurs (44-54 years) represent the most common participants in entrepreneurship (**Figure 10**).

Figure 11:
Early-Stage Entrepreneurial Activity
Rates within Age Groups, Switzerland &
Selected Countries



The reasons for this trend may be manifold. First of all, the strong pension system in Switzerland, with its various tax incentives for additional pension savings, puts today's retirees in a favorable position. And if their children have moved out and the house mortgage is paid, there is a general interest in alternative investment opportunities — other than capital markets. But it is not just that senior entrepreneurship is necessarily higher, it is also the case that youth entrepreneurship is lower, at least relatively speaking. Favorable employment conditions in the Swiss labor market mean that university graduates and young professionals can join established businesses or other institutions, thereby lowering the interest in necessity-based entrepreneurship.

Older people in Switzerland are generally in a beneficial position to start a business, as they often have the necessary income, capital experience, skills and networks (Rossi, 2009) — and, importantly, the time. Therefore, senior entrepreneurs do not represent a marginal phenomenon: they are here to stay.

2.2.4 Established Business Ownership

Figure 12:
Established Business Ownership and
Total Early-Stage Entrepreneurial
Activity (TEA) in Switzerland, 2003-2011



While it is important to have early-stage entrepreneurs for generating dynamism in an economy, established businesses and their owner-managers ensure an important degree of stability for the private sector. Owner-managers in established firms provide stable employment, can resort to the knowledge accumulated in past experiences, and as such may contribute greatly to their societies – also if they are small or even solo entrepreneurs. A healthy set of business owners provides some indication of the sustainability of entrepreneurship in a society.

Together with the TEA, the Swiss rate for established business rose again in 2011 (**Figure 12**). It is notable that the proportion of early entrepreneurial activity and established business remained almost the same as in 2010. However, in 2007 and 2009 the two rates were much closer. The distinct prevalence of the established business rate over the TEA is quite unique within the comparison group. Switzerland, among other countries with lower-than-average TEA rates (Sweden, Japan, Finland, and Spain), shows comparatively high established business ownership, which may, together with entrepreneurial employee activity (Chapter 6) substitute early-stage entrepreneurship to some degree. Some of the countries, such as France, have inverted proportions or nearly identical rates, e.g. Germany (Table 2).

2.2.5 Discontinuance

As new businesses emerge, others close. Those individuals selling or closing their businesses may once again benefit their societies by re-entering the entrepreneurship process. Recognizing the importance of this measure, GEM tracks the number of individuals who have discontinued a business in the last 12 months. Discontinuance may be considered along with TEA and established businesses as a component of entrepreneurial dynamism in an economy.

GEM Survey respondents who had discontinued a business in the previous 12 months were asked to give the main reason for doing so. Financial difficulties, unprofitable businesses, and problems getting finance are considered a 'negative' reason to abandon a business. In Switzerland, these two reasons account for 40% of business discontinuance. For a substantial portion of entrepreneurs, the discontinuance was already planned in advance (meaning that the business start-up was merely considered a 'project'), or resulted from another job or business opportunity or even from the opportunity to sell the business. These 'positive' reasons for discontinuing businesses explain 16% of all discontinuations in Switzerland. The remaining reasons can be seen as more neutral.

Retirement is an issue in innovation-driven economies, for example, especially in several European countries and also in Japan — countries that are facing challenges with their ageing societies.

The Swiss data for 2011 reveals that retirement is the reason why 22% of all businesses were stopped in the last 12 months. Another reason to discontinue a business which has to be highlighted is the opportunity to sell the business. In 2011, 9% of businesses that ceased trading were sold (**Figure 13**), compared to 5% in 2010. Among innovation-driven economies, only the Nordic countries and Germany have a comparable amount of sold businesses.

Figure 13:
Reasons for Discontinuing a
Business, Selected Countries
and Switzerland, 2011

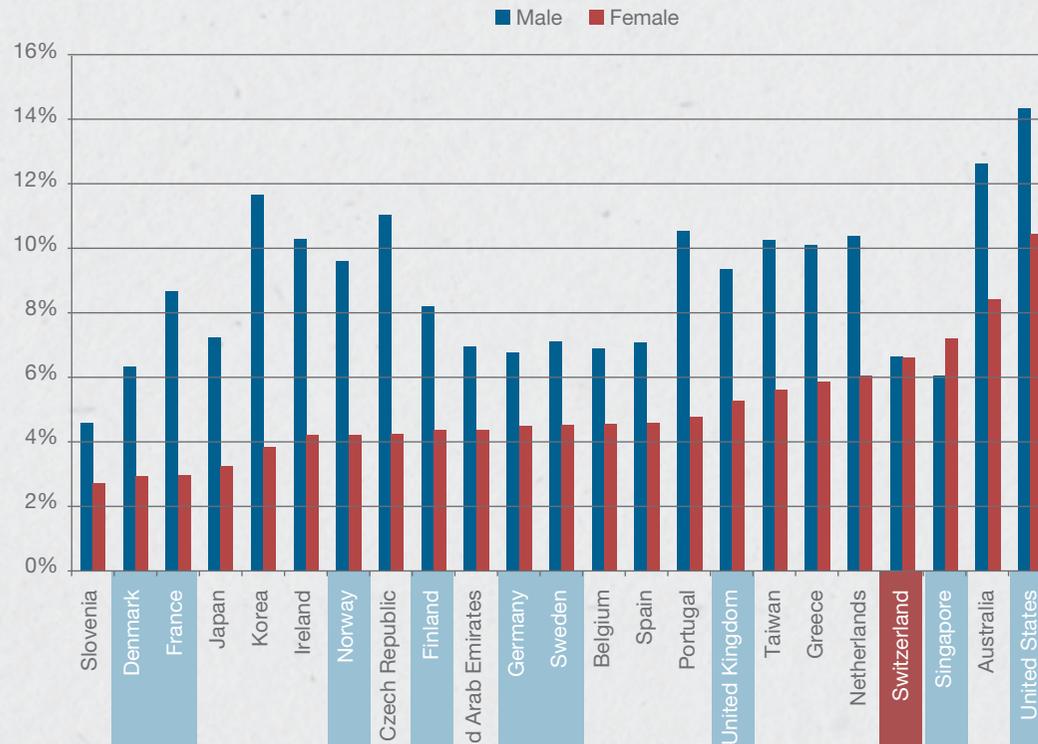


2.2.6 Women's Participation in Entrepreneurship

The structure and nature of entrepreneurial activities not only vary across countries or over time, but gender also plays a determining role in such activities (Acs et al., 2011). Demographically, Switzerland has an equal proportion of men and women in the 15-64 age groups, which is also the case in most of the other nations in the world (CIA World Fact Book, 2012). However, as a global trend, the number of females engaged in entrepreneurial activity is in most countries historically lower than for their male counterparts, which may well be explained by various social, cultural, or economic factors. In some countries, the number of males participating in entrepreneurial activities can be dramatically higher and the male preponderance is obvious. Pakistan is one such country; there, the number of male entrepreneurs is as much as ten times higher than that of their female counterparts. For example, Rossi (2009) argues that this male preponderance in entrepreneurship is accounted for by the lack of specific business skills, the less extensive social network, and perhaps the lack of identification patterns among women (Rossi, 2009). It can be argued, therefore, that addressing these issues should help increase the proportion of female entrepreneurs.

There also exist a few 'outlier' nations where exactly the opposite scenario can be observed, that is, where female entrepreneurs outnumber male entrepreneurs; these include a couple of countries in Southeast Asia, such as Thailand and Singapore. As well as these extreme cases, however, there are economies where the female and male ratio of early-stage entrepreneurial activity is balanced. Female and male numbers that remain in equilibrium may sound like a desirable scenario since women's entrepreneurship brings about additional contribution to economic growth, such as job creation and the increased GDP that the global economy is in urgent need of (OECD Report, 2004). This category also includes Switzerland, which is very good news for this innovation-driven economy. Seven other economies together with Switzerland enjoy the equal participation of men and women in entrepreneurship (others being Panama, Venezuela, Jamaica, Guatemala, Brazil, Thailand, and Singapore). Actually, in terms of early-stage entrepreneurial activity, Switzerland enjoys one of the best positions (meaning the equalized female-to-male ratio) when compared with other innovation-driven economies such as those in the Scandinavian countries or the French, German, and even U.S. economies. Switzerland is beaten only by Singapore in this class (**Figure 14**).

Figure 14:
Male and Female Early-Stage Entrepreneurial Activity 2011, by Country and Phase of Economic Development



Even better news is that Switzerland shows strong potential to bridge the existing gender gap in entrepreneurial activities. Although progress toward closing the gender gap in Switzerland is comparatively lower within its own class (i.e., the innovation-driven economies), it is hoped that facilitating female entrepreneurship and the existence of strong women entrepreneurs will assist in closing the gender gap and reaching the levels seen in Scandinavian countries (WEF Report, 2011; GEM Global Report, 2011). A higher level can be achieved in Switzerland if certain issues are addressed, such as increasing social services, opportunities, and the acceptance and encouragement of female entrepreneurship.

3 Impact – Growth, Innovation, and Internationalization

Governments have for years focused their attention on entrepreneurship, and its promotion is evident from the substantial resources, both human and financial, that have been invested in it. Entrepreneurship not only contributes to the creation of jobs and economic growth, but also allows for people to reach their potential, leading to the satisfaction of ‘higher needs’ such as self-actualization and independence (European Commission, 2003). New entrepreneurial action, such as starting a new business or taking on a new direction for an existing business, stimulates productivity and increases competition pressures, forcing other firms to react by improving efficiency and introducing innovations. The impact of entrepreneurship may therefore be analyzed and considered on various levels (Wennekers & Thurik, 1999) in terms of microeconomics (individuals and companies), macroeconomics (structures and society as a whole), and mesoeconomics (market sectors, local communities, and territorial subsystems, such as regions, etc.).

As far as measuring its impact is concerned, the time factor is crucial (Godin & Doré, 2005). For example, some phenomena may have an immediate effect while others may have an effect only in the medium or long, if not very long, term. Entrepreneurship is part of these phenomena. Its promotion and support do not always produce immedi-

ate effects on economic growth or on regional development. Entrepreneurship is a complex process that affects not just any economic aspects. Nevertheless, most of the indicators developed for the purpose of measuring this process, including those of impact, have focused primarily on economic aspects. Since entrepreneurship is essentially a social process, as well as an economic and technological one, the extent of its impact should be measured in multiple dimensions (Steffen, Davidsson, & Fitzsimmons, 2009).

The GEM measures the impact of the phenomenon of entrepreneurship by looking at the expectations of entrepreneurs, particularly growth expectations (in terms of jobs), innovation (especially in terms of product/services and markets), and international orientation (GEM, 2011). These factors are all closely related to economic development (Wennekers et al., 2010; Bosma, 2011).

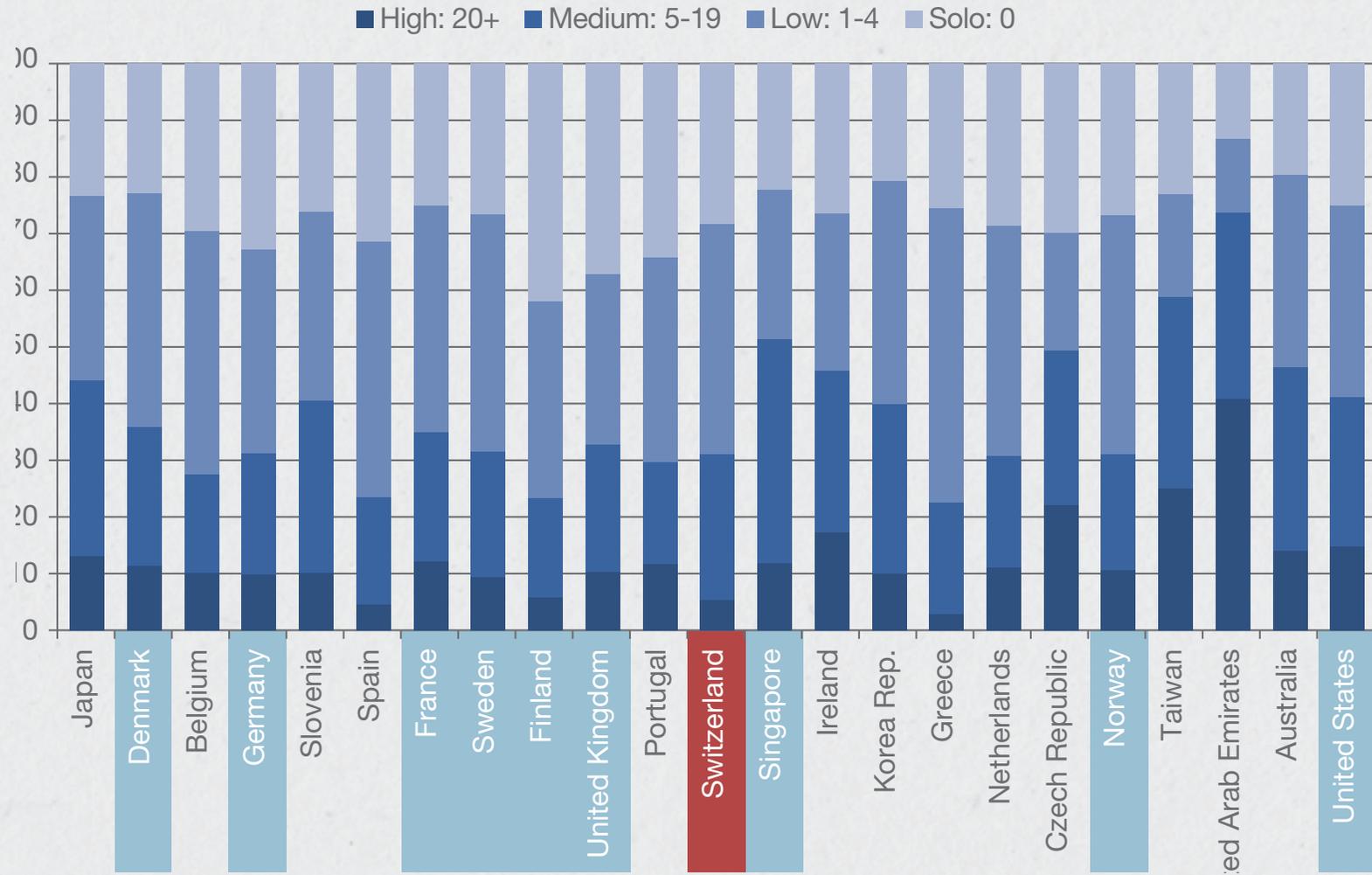
3.1 Growth Orientation

In the research on entrepreneurship, business growth, understood mostly in terms of growth in sales and employment, is often used to assess entrepreneurial success (Steffen, Davidsson, & Fitzsimmons, 2009). In recent years there have been numerous studies that aim to understand better the phenomenon of company growth. From a socio-economic point of view, the most important studies have shown that companies that grow more are those that generate new jobs, which, together with productivity gains, contribute to economic growth (Littunen & Tohmo, 2003). Growth aspirations are therefore an important dimension of the impact of any entrepreneurial activity. In order to estimate the growth of firms, the GEM uses the (future) creation of new jobs as the primary indicator. Entrepreneurs, defined according to GEM criteria, were asked how many jobs there were in the company at the time of the survey, and the number of jobs planned in five years.

Figure 15 illustrates the TEA (Total Early-Stage Entrepreneurial Activity), divided by growth expectations in terms of jobs. The TEA for Switzerland is 6.4% for the period 2009-2011, just over 40% of which is from entrepreneurial businesses with low growth expectations (employers expect to increase their workforce over the next five years by between 1 and 4 employees). Just over 30% of the TEA

is composed of businesses that do not foresee the hiring of personnel; about one-quarter are businesses with mid-sized growth (from 5 to 19 new jobs) and the remaining 5% are businesses that expected to increase their personnel by more than 20 employees. Among the countries considered in this report, Switzerland is the country that in relative terms, with respect to its TEA, has the lowest percentage of firms with high growth potential (20+ jobs). In contrast, in countries such as Singapore, France, Denmark, the U.K., Germany, and Norway, companies with high growth potential represent 10% or more of their TEA. Although entrepreneurs with high growth potential generally tend to overestimate the number of jobs they expect to generate, the impact of their businesses on the actual creation of these jobs will still probably be substantial (GEM, 2011).

Figure 15:
Distribution of the
Growth Expectation
within the TEA rate, 2011



3.2 *Innovative Orientation*

Generally, innovation is seen as a key factor for growth and competitiveness. Innovation can be defined as an act of economic creativity and can therefore be understood as the economic application of invention (Schumpeter, 1934). Innovation is one of the most important entrepreneurial processes, in that it implies the discovery, evaluation, and exploitation of opportunities in the introduction to the market of new products and/or services, new production processes, new organizational models, or new raw materials, through the different or completely new organization of resources and behaviors (Shane, 2003).

Without innovation, businesses and economic systems stagnate or regress. And in markets that are increasingly globalized, continuous innovation (of products, processes, organization, markets, or sometimes even entire business models) is now necessary for the survival and competitiveness of individual companies, as well as entire economic and territorial systems.

Among the factors affecting competitiveness and growth (usually expressed by the GDP) are production factors that, according to the neoclassical model, can be traced back to the combination of labor and capital. Generally, product and market innovation, as well as new entrepreneurship, has a positive impact on employment, in that

they create jobs, while process and organizational innovations have an impact primarily on productivity (technical progress).

Figure 16 illustrates the percentage of early-stage entrepreneurs with a combination of new products/services and new markets, and shows that Switzerland is among the leading economies that are driven by innovation. Switzerland's high ranking was confirmed by the most recent Innovation Union Scoreboard of the European Commission, which places Switzerland at the top of the list of the most innovative nations in Europe (IUS, 2011). Switzerland's strong points include the number of international patent applications, the high number of employees operating in the science field, and sales of new products. The main weaknesses, however, are related to the support and financing of businesses, as well as collaboration between businesses in terms of innovation; more of all of the above is needed.

3.3 International Orientation

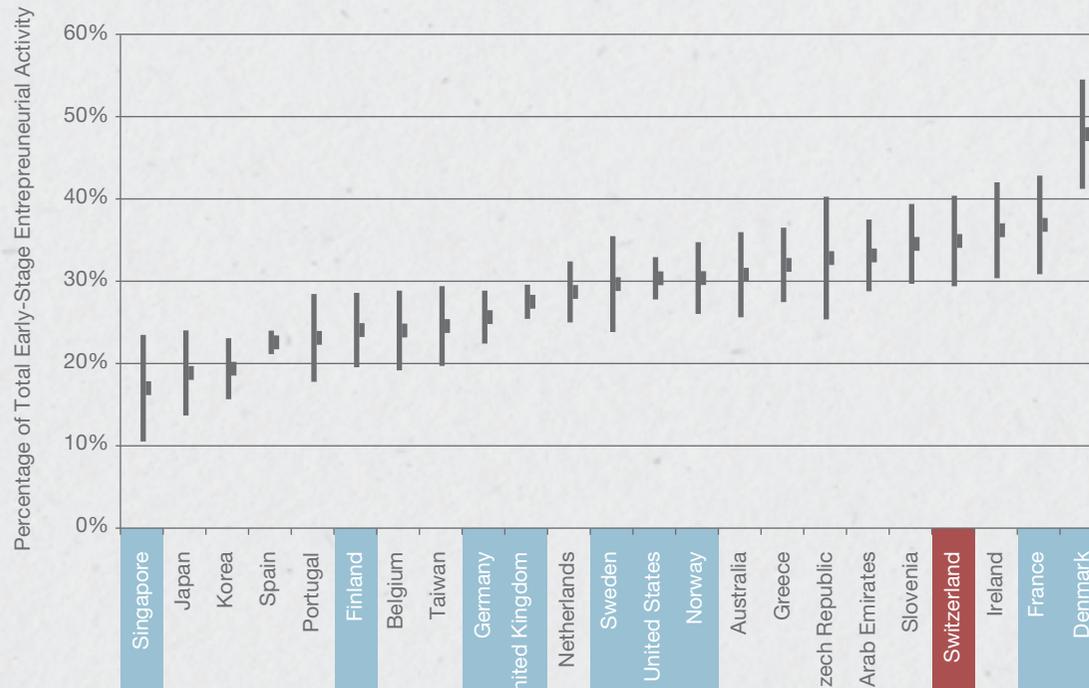


Figure 16:
Innovative Orientation of Early-Stage
Entrepreneurs, Innovation-Driven
Countries

In order to grow further, companies can expand their reference market beyond national borders. This has a positive effect on a country’s balance of payments and, consequently, on economic growth.

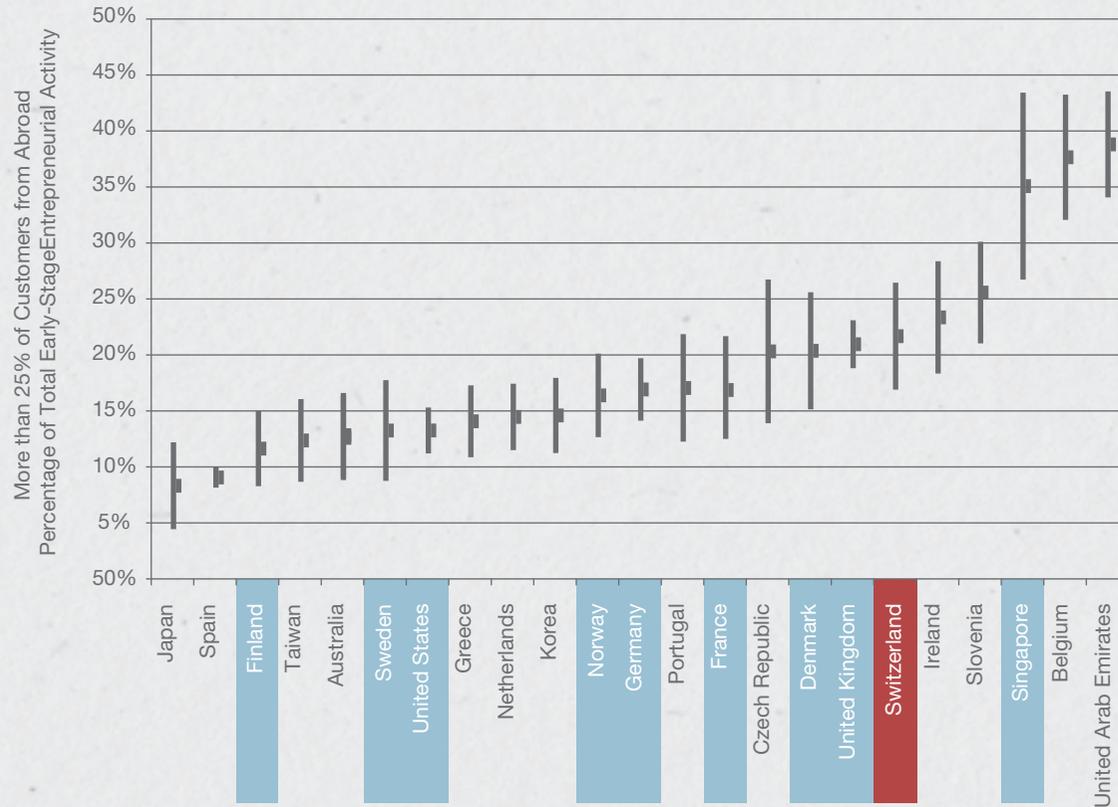
While until recently generally only large companies had an international focus, today even SMEs have an increasingly global orientation. Thanks to dynamism and capacity for innovation, there is indeed a substantial number of SMEs with emerging markets in other countries (Baldegger, 2011).

Figure 17 shows the proportion of early-stage entrepreneurs with at least 25% foreign customers. Swiss companies are ranked in the middle to high range in terms of international ambition when compared with other countries. Furthermore, compared with the 2008-2010 period, there has been a slight increase, from 19.8% to 22%. Switzerland is clearly heavily oriented toward and dependent on international markets.

Singapore, with a level of 35% of foreign customers, ranks first among the countries considered in the comparison. Thanks to its strategic location at the heart of Southeast Asia, and to the free-trade agreements stipulated in that area, Singapore has consolidated its position as a regional hub, with over 7,000 major multinational companies (WEF, 2011).

Figure 17:
International Orientation of
Early-Stage Entrepreneurs,
Innovation-Driven Countries

Naturally, entrepreneurs located in small countries bordering profitable markets usually tend to have a greater number of foreign customers. In contrast, entrepreneurs in large countries, such as the United States, tend to focus primarily, at least in the early stages of business, on the domestic market (GEM, 2011).



Switzerland, like others within the comparison group, except for the United States, does not, at least in the short term, show great potential for job creation by means of early-stage entrepreneurial activities. To compensate for this limited impact, at least in part, however, there is a focus on innovation (in terms of product-market combination) and an international orientation, which, on average, puts Switzerland at a medium to high standing. These two trends bode well for the long term. It is known that product innovation and orientation to international markets are closely related to the increase in global demand, which in turn generates an increase in employment and, thereby, an increase in economic growth.

In agreement with Stam et al., in order to have a greater and more complete understanding of the impact of entrepreneurship on the mechanisms of growth and development, other factors should be measured in addition to those considered already in the GEM framework. Such factors could include the existence of clusters, as well as the institutional context itself (both formal and informal), and, finally, the series of framework conditions that directly and indirectly affect entrepreneurial processes (Stam et al., 2012).

4 *Focus on the Ticino Reality*

4.1 *The SUPSI inno3 Competence Center Approach to Entrepreneurship*

The mechanisms and systemic effects of entrepreneurship at micro-, meso-, and macro-economic levels, as well as social, cultural, scientific-technical, and environmental levels, mean that by its very nature it is a multidimensional process. This view is greatly supported by the literature on economic growth, from Schumpeter's seminal work to the more recent work of Lucas (Lucas, 1988) and Romer (Romer, 1990) on endogenous growth, the work of Audretsch et al. (Audretsch, Keilbach, & Lehmann, 2006) and Wennekers et al. (Wennekers & Thurik, 1999) on the connection between entrepreneurship and economic growth, as well as by the literature on regional development, particularly the territorial approaches to innovation (Moulaert & Sekia, 2003) (Hamdouch & Depret, 2009) and on the relationship between entrepreneurship, innovation, and regional development (Nelson & Winter, 1982) (Freeman, 1995) (Etzkowitz & Leydesdorff, 1997) (Acs & Storey, 2004) (Acs, 2010) (Karlsson, 2010). According to the inno3 Competence Center of the Department of Business and Social Sciences of the University of Applied Sciences and Arts of Southern Switzerland (SUPSI), these aspects need to be thoroughly considered if entrepreneurship is to be

interpreted with a view to defining appropriate, efficient, and effective policies that make a positive impact on the creation and development of new entrepreneurial businesses and on the support and renewal of already existing businesses (including the complex process of change and handover of the management and assets of a company), not to mention on the development of entire economic and territorial systems.

4.2 *Entrepreneurship in Ticino and in Switzerland*

Official statistics (Federal Business Census, business demographics, and the Swiss Labor Force Survey from the Swiss Federal Statistical Office) show an encouraging entrepreneurial trend in Ticino. This trend is also confirmed by the results of the 2011 GEM survey, which was conducted on a representative sample of 500 people aged between 18 and 64 and resident in Ticino (GEM-TI), investigating businesses that had been in operation for more than 42 months (Established Business Ownership Rate)¹. The rate calculated for this type of business in Ticino, approximately 9% in 2011, is only slightly below the national average of 10%.

There is, however, contrasting data concerning nascent companies. The 2011 GEM survey shows that in 2011 the Total Early-Stage Entrepreneurial Activity (TEA) in the Canton of Ticino was only 4.3%, more than two percentage points lower than the average figure for Switzerland (6.6%). This data is not much different from what emerged from the same study conducted in 2005, which demonstrated that the TEA for central Switzerland was significantly higher than for both the Canton of Ticino and the Lake Geneva region (GEM, 2005). One significant figure, which confirms the importance of the strong effort made in recent years in the Canton of Ticino by the bodies that focus on the promotion of innovation and new entrepre-

neurship, is the rate of nascent entrepreneurship (related to start-up companies). As with Switzerland as a whole, the main component (more than 50%) of the TEA for Ticino comes from this type of business.

Despite recording a lower TEA than in Switzerland as a whole, the Canton of Ticino has a higher percentage of people who believe that good opportunities to start a business exist in the area where they live. Ticino also has a higher percentage of people who believe that they have the knowledge and skills required to undertake an entrepreneurial venture. From this point of view, the efforts made in the field of education (at all levels, from basic vocational training to higher education at USI and SUPSI, not to mention entrepreneurship programs such as venturelab and others operating in Ticino) seem to be bearing the first significant fruits. Nevertheless, the proportion of people actually willing to put this knowledge and these skills to good use, transforming them into real business projects of their own, is still lower than the national average.

¹ The EBOR represents the percentage of the population that are managers or owners of businesses that are active and have paid salaries or other forms of remuneration to the owners of the companies for a period of more than 42 months.

In spite of the fact that the main motivation for launching a new business venture is connected to the desire to seize new business opportunities, the proportion of people who actually start a business out of necessity in Ticino is substantially higher than the Swiss average (20% in contrast to the national average rate of 11%).

As far as entrepreneurial businesses and gender are concerned, the Canton of Ticino has a TEA for women equal to 3.8%, which equates to a ratio of about 8 women to 10 men. For the whole of Switzerland, the ratio is 1 to 1. According to the figures relating to the initiatives of various organizations that promote women's entrepreneurship, and also considering the increase, over the years, in women's participation in training courses for young entrepreneurs, it is likely that these figures will increase further in Ticino as well.

In recent years the scientific community has focused increasingly on the issue of intrapreneurship (Bosma, Stam, & Wennekers, 2010), a term that is defined as entrepreneurship within existing organizations (GEM, 2011). According to the GEM survey, the level of intrapreneurship in Ticino is lower than the Swiss average. This difference is based on the more or less active involvement of the employee (whether a manager or any other professional in the company) in the development, preparation, and implementation of new activities (e.g. active information search, brainstorming, submitting ideas for new activities, preparing a business plan, marketing the new activity, finding financial resources, and acquiring a team of workers for the

new activity). It can be explained by the structural peculiarities of the cantonal economy, since many companies operating in Ticino are subcontractors of products and services, and the activities conducted by most employees are therefore largely operational in nature. In effect, these companies' decision-making functions and development departments, particularly for research, are located elsewhere, either in Northern Switzerland or Northern Italy. These factors may therefore help explain the gap that exists between the degree of Ticino intrapreneurship and the national average. For this reason, over the last few years in Ticino, resources (human and financial) have been invested in the dissemination and promotion of an entrepreneurial and intrapreneurial spirit at the vocational training level, as well as at the academic training level.

Table 4

	Switzerland	Ticino
Perceived Opportunities	47	61
Perceived capabilities	42	53
Fear of failure*	31	27
Entrepreneurial intentions**	10	8
Nascent entrepreneurship rate	3.7	2.6
New Business ownership rate	2.9	1.7
Early-stage entrepreneurial activity (TEA)	6.6	4.3
Necessity-Driven (% of TEA)	11	20
Established Business Ownership Rate	10.1	8.6
Discontinuation of Businesses	2.9	2.9

* Assessed among those seeing opportunities

** Assessed in non-entrepreneur (non-TEA) population

4.3 *The Support of Innovation and Entrepreneurship in Ticino*

Similarly to what is happening nationally and internationally, for at least the past 15 years Ticino has invested considerable human and financial resources in the support and promotion of entrepreneurship, particularly in terms of innovation, thereby recognizing the fundamental role of science, technology, and innovation in economic growth and social well-being. Over the same period, the Canton of Ticino (understood as an economic and institutional system) has invested nearly 2% of its annual GDP in innovative businesses and in the transfer of knowledge and technology, as well as in the promotion of entrepreneurship, along the strategic lines of cantonal socioeconomic development and the objectives of the new generation of regional policies. If we look at the developmental data in reference to the creation of new businesses in Ticino in the last decade (Source: Swiss Federal Statistical Office - FSO, Company Demographics), the results of these efforts are encouraging.

In the first years of the new millennium, the number of initiatives and projects to support these companies increased considerably in the Canton of Ticino. These projects and initiatives gradually led to the establishment

of the Ticino Regional System of Innovation (RSI-Ti), based on the National System of Innovation model, adopted by the OECD in the 1990s and, later, by the European Union. At the heart of this model are systems theory and the central role of innovation and (interactive) collective learning, derived from the cooperative and market relationships between the various system components. According to the Triple Helix Model (Etzkowitz & Leydersdorff, 2000), its key features are the concept of networks, the organization of businesses into territorialized clusters, the interaction between firms (and entrepreneurs), and the state and system of education and science. The following diagram shows a reconstruction of the RSI-Ti.

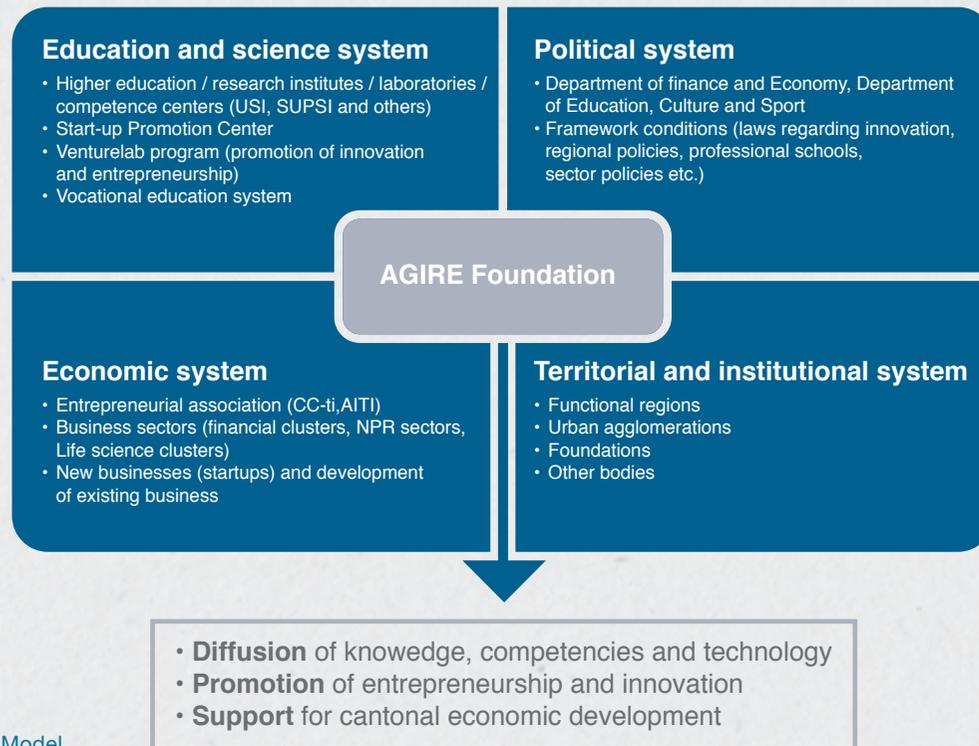


Figure 19:
Triple Helix Model

In the center of the diagram is the AGIRE Foundation, the cantonal platform for the transfer of knowledge and technologies and for the promotion of entrepreneurship, which supports both general cantonal and regional socio-economic development as well as of projects implemented under regional policy (www.agire.ch). The founding members are the Canton of Ticino, the University of Applied Sciences and Arts of Southern Switzerland (SUPSI), the University of Lugano (USI), the Industrial Association of Ticino, and the Chamber of Commerce, Industry, Craftsmanship and Services of the Canton of Ticino.

There are many private and public initiatives that promote entrepreneurship, such as the Start-up Promotion Center (www.cpstartup.ch). Since its inception in the summer of 2004, the center has received 317 applications for evaluation and assistance in starting entrepreneurial businesses. Last year, the Commission of Experts “promoted” 6 new projects, bringing the number of projects considered worthy of support to 36. Of these, 29 have been or are in the process of being actualized (24 in Ticino, 2 in Central Switzerland, and 3 in Italy), 5 were abandoned by their promoters due to a lack of funds or an insufficient market response on the part of the market. Two projects never went beyond the conceptual stage. Overall, the start-ups assisted by the Start-up Promotion Centre have to date generated over 110 new jobs in Ticino and approximately 40 new jobs in the rest of Switzerland. Seventeen start-ups have “grown” inside the Business Startup Incubator of the Center, which was supporting roughly ten in late 2011. Within the cantonal education and science systems, the University of Lugano (USI) and the University of Applied Sciences and Arts of Southern Switzerland (SUPSI) play a key role, both in research (basic and applied) and in the educational field. The most significant programs include the Master of Science in Business Administration with a major in Innovation Management (SUPSI), which provides students with in-depth knowledge and expertise in the fields of strategic enterprise management, innovation, and entrepreneurship (also understood in the sense of intrapreneurship). In this respect we can also mention the

Ticino outpost of the federal program called *venturelab* (www.venturelab.ch). Since 2005, the program has had about 1,000 participants, representing almost 6% of all enrolments with *venturelab* in Switzerland. Moreover, between 2005 and 2010, 29 Ticino companies signed up for start-up coaching, which corresponds to 3.7% of all enrolments nationwide.

Over the last 15 years, the cantonal economic system has changed considerably. As well as the traditional sectors of specialization in the cantonal economy (clothing, metallurgy, trade, construction, financial, and tourism-related business), there have been significant developments in other sectors, which are more innovative, offer greater added value, and are more export-oriented. Examples include the machinery industry, electronics, ICT, optical and measurement instruments and devices, and the pharmaceutical industry, as well as scientific and technical firms and the healthcare sector.

More and more, in Ticino and elsewhere, there are tangible signs of development of meta sectors, where different areas intersect; this is the case for the life sciences, the clean tech sector, computational science, ICT, and audiovisual business, as well as sustainable mobility, an unequivocal indication of a particular entrepreneurial vitality in those businesses and sectors that manage to best meet the challenges posed by the major trends currently recorded at the demographic, technological, social, and environmental levels. In these areas, innovative entrepreneurial ventures have begun in recent years, including a

number of promising start-ups.

If it is to grasp and fully capitalize on the changes that are taking place, the political system must also upgrade those instruments and measures that relate to or facilitate entrepreneurial activity. One example of this is the recent assessment of the Cantonal Law on economic innovation, which led to the proposal of a framework law designed to support and promote economic development (Alberton, Mini, Huber, Leon-Lopez, & Mantegazzi, 2011). Possible future areas where this law may be applied, in addition to the framework conditions, include those of economic promotion, the exploitation of economic and territorial potential (within the Canton as a whole and its constituent regions), and employment support, as well as the promotion of innovation and entrepreneurship, in accordance with the new strategic guidelines set by the OECD and the European Union, as well as by the Swiss Confederation and some of its Cantons.

In conclusion, it is important to remember the territorial and institutional system itself, which also serves as a physical, organizational, and institutional support for educational, scientific, economic, and political systems. With the advent of the new generation of regional policy and municipal aggregation policy, territorial planning is making positive changes to the framework, within which the efforts toward entrepreneurship and innovation are organized and implemented.

5 *Entrepreneurship Framework Conditions*

The GEM conceptual model of the institutional environment and its effect on entrepreneurship illustrates two sets of conditions — basic requirements and efficiency enhancers — that represent the essential conditions that influence the functioning of a society and the well-being of its people. These have been adopted from the World Economic Forum's (WEF) Global Competitiveness Report. They are general framework conditions that affect economic activity more broadly, but they are also critical to entrepreneurship because without a solid foundation, conditions cannot function effectively. The entrepreneurial framework condition can be considered a crucial part of the process for understanding business creation. The state of these conditions directly influences the existence of entrepreneurial opportunities and the entrepreneurial capacity, which in turn determine the business dynamics. The source of this information is the National Experts Survey (NES), one of the worldwide standard questionnaires of the GEM methodology, which assess the different entrepreneurial framework conditions as defined in the GEM Model. The NES uses qualitative information based on informed judgments of national, and in our case also

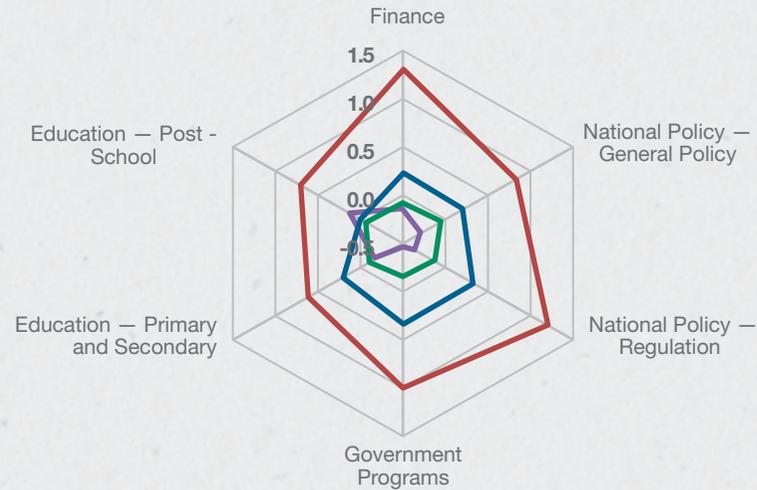
regional, experts regarding the status of entrepreneurship framework conditions in their own countries and/or regions. National and regional experts were selected on the basis of reputation and experience. Thanks to these experts' evaluation of a wide array of items, the NES questionnaire is able to extract information on the state of the framework conditions. These items are organized in blocks of affirmations on each one of the framework conditions. **Table 5** also shows nine entrepreneurship framework conditions (EFC).

Table 5:

GEM's key Framework
Conditions

-
- 1. Entrepreneurial Finance.**
The availability of financial resources — equity and debt — for small and medium enterprises (SMEs) (including grants and subsidies).
 - 2. Government Policy.**
The extent to which public policies give support to entrepreneurship. This EFC has two components:
 - 2a.** Entrepreneurship as a relevant economic issue and
 - 2b.** Taxes or regulations are either size-neutral or encourage new and SMEs.
 - 3. Government Entrepreneurship Programs.**
The presence and quality of programs directly assisting SMEs at all levels of government (national, regional, municipal).
 - 4. Entrepreneurship Education.**
The extent to which training in creating or managing SMEs is incorporated within the education and training system at all levels. This EFC has two components:
 - 4a.** Entrepreneurship Education at basic school (primary and secondary) level and
 - 4b.** Entrepreneurship Education at post school levels (such as vocational, college, business schools).
 - 5. R&D Transfer.**
The extent to which national research and development will lead to new commercial opportunities and is available to SMEs.
 - 6. Commercial and Legal Infrastructure.**
The presence of property rights, commercial, accounting, and other legal and assessment services and institutions that support or promote SMEs.
 - 7. Entry Regulation.**
Contains two components:
 - 7a.** Market Dynamics: the level of change in markets from year to year and
 - 7b.** Market Openness: the extent to which new firms are free to enter existing markets.
 - 8. Physical Infrastructure.**
Ease of access to physical resources — communication, utilities, transportation, land or space — at a price that does not discriminate against SMEs.
 - 9. Cultural and Social Norms.**
The extent to which social and cultural norms encourage or allow actions leading to new business methods or activities that can potentially increase personal wealth and income.
-

- Switzerland
- Efficiency-Driven Economies
- Innovation-Driven Economies
- Factor-Driven Economies

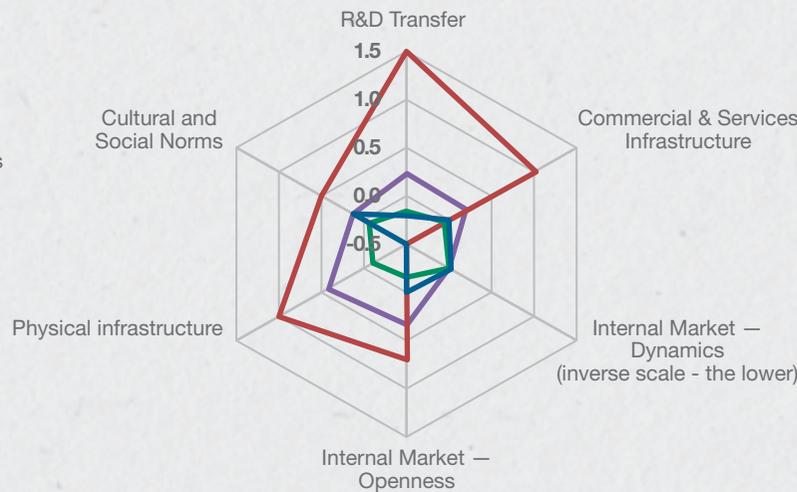


Note: Values of indicators are based on averaging the Z-scores (standardized values) for the countries in each of the three phases of economic development.

◀ **Figure 20:**
Entrepreneurship Frameworks A
by Stage of Development & Switzerland

In general, experts in more economically developed countries gave higher ratings to the EFCs. In some sense higher rates in innovation-driven economies are consistent with the GEM model and the notion that EFCs have higher priorities among more economically developed countries. At the same time, it should be noted that reference points may differ across economies: what is perceived to be good in one country may be seen as poor in others.

- Switzerland
- Efficiency-Driven Economies
- Innovation-Driven Economies
- Factor-Driven Economies



Note: Values of indicators are based on averaging the Z-scores (standardized values) for the countries in each of the three phases of economic development.

◀ **Figure 21:**
GEM 2011 Entrepreneurship Frameworks B
by Stage of Development & Switzerland (Z-Scores)

The entrepreneurial framework conditions in Switzerland — along with those in Singapore — are generally better assessed than in the other innovation-based economies. Switzerland achieves top results for all of the 9 EFCs outlined above. A detailed analysis of the data should shed some light on one special theme concerning the entrepreneurial condition in Switzerland.

Figure 22



Figure 22 compares the conditions with the results of selected innovation-driven countries. Switzerland's strengths are to be found in the commercial infrastructure (3.89; av. 3.13), in finances (3.50; 2.62), in education – post school (3.50; av. 2.84), and in knowledge and technology transfer (3.46; av. 2.59) as well as in the stable internal market dynamics.

Despite the overall positive assessment of the financial environment, the experts see potential for improvement. On the one hand there aren't sufficient government subsidies available for new and growing firms (3.06) and on the other hand there isn't sufficient funding available through initial public offerings (IPOs) for new and growing firms (2.97).

In the assessment of knowledge and technology transfer, the experts remarked upon the outstanding support for technology-based start-ups on a world-class level (4.03) but also expressed a desire to have more government subsidies for new and growing firms to acquire new technology (2.94).

Government Policy or the extent to which public policies give support to entrepreneurship is seen as quite positive. One area where there is potential to improve is in the time new firms can take to get most of the required permits and licenses (2.69). Furthermore, the cultural and social norms are assessed (3.29; 2.81) as being higher than in comparing countries, but the experts do also emphasize in particular the lack of a willingness to take risks (2.64).

The evaluations concerning the social image of the entrepreneur emphasize that entrepreneurship is increasingly becoming an issue in Switzerland. Entrepreneurs are more present in the media and the entrepreneur has more and more a positive image. Nevertheless, the experts found that self-employment is still considered insufficient as a career option.

⁴ Value: The values represent the average ranking of experts to a series of statements on a scale from 1 (completely false) back to 5 (completely true). The higher the value, the better the conditions were assessed. Only for the 'internal market dynamics' is an inverse scale (the lower the score the better).

Table 6:
Entrepreneurial
Framework Conditions
in Selected Innovation-
Driven Countries

	Finance		National Policy - General Policy		National Policy - Regulation		Government Programs		Education - Prim. and Second.		Education - Post- School	
Finland	2.62	(0.11)	3.16	(0.14)	2.89	(0.15)	2.74	(0.14)	2.34	(0.13)	2.77	(0.13)
France	2.47	(0.15)	3.07	(0.16)	2.88	(0.17)	3.20	(0.08)	1.55	(0.15)	2.98	(0.14)
Germany	2.95	(0.09)	2.94	(0.11)	2.85	(0.14)	3.63	(0.11)	1.92	(0.13)	2.68	(0.11)
Norway	2.81	(0.12)	2.31	(0.16)	2.82	(0.17)	2.92	(0.12)	2.53	(0.12)	2.63	(0.13)
Singapore	3.02	(0.13)	3.49	(0.19)	4.03	(0.13)	3.45	(0.17)	2.48	(0.16)	3.18	(0.15)
Sweden	2.66	(0.16)	2.63	(0.13)	2.61	(0.22)	2.84	(0.16)	2.30	(0.20)	2.84	(0.13)
Switzerland	3.50	(0.14)	3.35	(0.13)	3.49	(0.15)	3.42	(0.16)	2.60	(0.15)	3.50	(0.12)
UK	2.29	(0.16)	2.62	(0.14)	3.01	(0.23)	2.31	(0.12)	2.21	(0.15)	2.60	(0.09)
Average Innovation-Driven Countries	2.62		2.66		2.71		2.89		2.16		2.84	

	R&D Transfer		Commercial Infrastructure		Internal Market – Dynamics*		Internal Market – Openness		Physical Infrastructure		Cultural and Social Norms	
Finland	2.57	(0.14)	3.26	(0.12)	2.91	(0.15)	2.56	(0.13)	4.01	(0.15)	2.65	(0.14)
France	2.44	(0.15)	2.98	(0.15)	3.22	(0.22)	2.13	(0.16)	4.21	(0.17)	2.36	(0.13)
Germany	2.85	(0.12)	3.30	(0.08)	2.88	(0.13)	2.95	(0.11)	3.84	(0.11)	2.64	(0.08)
Norway	2.74	(0.09)	3.41	(0.12)	2.84	(0.16)	2.34	(0.12)	4.26	(0.10)	2.63	(0.10)
Singapore	2.90	(0.14)	3.23	(0.14)	2.83	(0.13)	3.13	(0.16)	4.70	(0.06)	3.21	(0.16)
Sweden	2.63	(0.15)	3.08	(0.14)	3.19	(0.19)	2.54	(0.16)	4.44	(0.11)	2.91	(0.17)
Switzerland	3.46	(0.12)	3.89	(0.12)	2.50	(0.17)	3.12	(0.15)	4.57	(0.09)	3.29	(0.15)
UK	2.22	(0.14)	3.28	(0.12)	3.04	(0.17)	3.04	(0.18)	3.93	(0.11)	3.08	(0.14)
Average Innovation-Driven Countries	2.59		3.13		3.06		2.71		4.07		2.81	

Note:

Standard errors in parentheses

*Inverse scale

6 *Entrepreneurial Employee Activity*

Entrepreneurship as a scholarly field typically distinguishes between ‘independent entrepreneurship’ and ‘entrepreneurship within existing organizations’. Despite this rather delimiting distinction in academic research, both perspectives boil down to the very same principles:

“Entrepreneurship is based upon the same principles, whether the entrepreneur is an existing large institution or an individual starting his or her new venture single-handed. It makes little or no difference whether the entrepreneur is a business or a non-business public-service organization, not even whether the entrepreneur is a governmental or non-governmental institution. The rules are pretty much the same, the things that work and those that don’t are pretty much the same, and so are the kinds of innovation and where to look for them” (Drucker, 2006, p. 143).

Within the GEM model, there exist mainly three dimensions of entrepreneurial activity, namely: medium/high job expectation entrepreneurial activity (MHEA), solo/low job expectation entrepreneurial activity (SLEA), and entrepreneurial employee activity (EEA)⁵. The first two facets are

mostly in the field of independent entrepreneurship whereas the last refers to the entrepreneurial activities of individual employees within existing organizations. As described in the GEM Global Report 2011, EEA refers to “[...] employees developing new activities for their main employer such as launching new products or services, setting up a new business unit, a new establishment or subsidiary” (GEM Global Report, 2011, p. 81). So far GEM has paid more attention to early-stage entrepreneurial activities by independent individuals and their aspirations, motivations, and other characteristics. However, the Global Report of 2011 has highlighted the entrepreneurial employee activity as a special topic. To many academics and practitioners, EEA is seen as a special type of entrepreneurship in the sense that it aims at new venture creation and shares the general behavioral characteristics with the overall entrepreneurship concept, such as taking initiatives, pursuit of opportunities, and innovativeness. Why does intrapreneurship deserve emphasis? A scholar such as Rothwell (1975) was one of the first to acknowledge that intrapreneurship plays a crucial role in the innovative activity of a corporation in general.

⁵ The term “intrapreneurship” is used interchangeably with EEA throughout the report.

6.1 *GEM 2011 Highlights on Switzerland*

It has remained the case since then and without any doubt will also remain so in the future, and for one very simple reason: Innovative activities create competitive advantage and value at all levels, whether political, organizational or individual. Such innovative activity, in particular, requires an inner environment that promotes intrapreneurship and individual commitment. This, in turn, enhances the opportunity-seeking behavior of employees, which contributes to creating the necessary edge in terms of changing market conditions and creating competitive advantage.

Switzerland deserves a strong position within innovation-driven economies, with its strong macro-indicators, including gross domestic product (GDP), the unemployment rate, and indices such as Human Development or Global Happiness. Even better, when it comes to indices such as Global Competitiveness and Global Innovation, Switzerland ranks number one in the world. Henceforth, expectations regarding the Swiss economy and Swiss entrepreneurial activities in general are rather high, given the ranking enjoyed by this robust economy. Since the 2011 GEM National Report's special topic is entrepreneurial employee activity, special attention is given to Switzerland's status quo within this dimension of entrepreneurship. As mentioned previously, because Switzerland finds itself enjoying a very good standing with regard to all the macro-indicators and is the frontrunner among the innovation-driven economies, it makes sense to compare the Swiss economy and Swiss entrepreneurial levels within its own class and, in some specific cases, to compare them to benchmark countries such as Singapore, Sweden, and other Scandinavian economies.

	Broad definition: Involved in entrepreneurial employee activity in past three years in % of		Narrow definition: Currently involved in entrepreneurial employee activity in % of	
	adult population	employees	adult population	employees
Denmark	15.1	20.7	9.2	12.6
Finland	9.4	13.4	8.0	11.4
France	4.7	7.5	3.9	6.1
Germany	4.8	7.6	3.5	5.5
Singapore	3.3	6.2	2.6	4.8
Sweden	16.2	22.2	13.5	18.4
Switzerland	4.6	7.2	3.3	5.1
United Kingdom	5.3	8.1	4.3	6.6
United States	6.6	10.5	5.3	8.4
unweighted average	5.8	9.1	4.6	7.2

Table 7:
Prevalence of
Entrepreneurial Employee
Activity – Reference
Countries only

The highlights for Swiss entrepreneurial activities generally concentrate on three main topics: the standing of Swiss EEA (intrapreneurship) parameters with respect to benchmark economies, TEA vs. EEA within the Swiss economy, and last but not least, the GDP and EEA correlation. To start with, all Swiss parameters related to entrepreneurial employee activity (such as percentage of adult population and percentage of employee) are below the averages compared with other innovation-driven economies. Moreover, GEM uses two time-wise definitions for EEA, broad and narrow; ‘broad’ refers to intrapreneurial activity involvement in the past three years and ‘narrow’ refers to the employees who are currently involved the development of such activities (GEM Global Report, 2011). The

details of the parameters and benchmarking economies can be found on **Table 7**.

One can see immediately that, for all economies, the broad definition is always greater than the narrow definition, which as it turns out is feasible, as there may always be discontinuities in activities. The percentages of populations being higher in broad and narrow definitions would, in fact, have been a point of interest if deviations existed among economies. However, it is an important point for researchers and policymakers to keep an eye on for the future. Furthermore, if backtracked to the position of the Swiss economy with respect to the others, it turns out that the EEA parameters for Switzerland are below the unweighted average, and also that they rank behind all benchmark economies except. The performances of Scandinavian economies are also notable. The reasons for this standing might vary, but if the literature on establishing a suitable intrapreneurship environment is consulted, the factors may well be linked to organizational arrangements and managerial tools within Swiss organizations (either for profit or not-for-profit). According to Kuratko et al. and Hornsby et al. factors that would foster intrapreneurship are: the management (employer) support, availability of free time, convenient organizational structures, appropriate use of rewards and incentives, and last but not least, tolerance. (Kuratko et al. 1990, 1992; Hornsby et al. 1993, 1999). Here, it is also vital to mention that intrapreneurship is mostly and mainly of a bottom-up nature rather than top-down, where the em-

employees take initiative and ownership in decisions rather than implementing managerial instructions. Hence, the relatively low Swiss figures may stem from the organizational culture and employer support. This year at GEM there have been also surveys on employers' support for intrapreneurship; however, only 32 economies were included in the sampling and Switzerland was not one of them. Therefore, these are only speculations rather than solid facts, at least in the case of managerial support toward intrapreneurship in Switzerland. In the coming years these hypotheses may be tested, as more data will be available.

Another point that merits attention is the comparison of EEA and TEA figures. The general trend in innovation-driven economies is that the percentage of adult population involved in intrapreneurship is usually lower than the percentages of total early-stage entrepreneurial activity (narrow definition taken as a basis). When the TEA and EEA are compared within Switzerland itself, it is observed that EEA (3.3% of adult population) is less than TEA (6.4% adult population), and that this is in keeping with the global trend. As mentioned earlier, the Swiss EEA key indicators are below the unweighted average; however, in the case of TEA, Switzerland meets the unweighted average of innovation-driven economies. It is also interesting to differentiate between EEA taking place in private sector versus public sector. More than 60% of Swiss EEA takes place in the private for-profit sector; it is 71% in Germany, 62% in France, and 85% in Singapore, but 47% in Sweden and 52% in Denmark. Another aspect to note concerning

Swiss entrepreneurial activities is that, although EEA takes place in organizations of all sizes (small, medium, large), most of EEA (47%) takes place in medium-sized (10-249 employees) organizations. This is mostly due to the distribution of medium-sized organizations in the Swiss economy (like most of other economies), where they constitute the biggest portion by number (**Table 8**).

Table 8:
Distribution of Entrepreneurial
Employee Activity (current year)
across Organization Size Classes

Organization size class	Efficiency-Driven Economies	Innovation-Driven Economies	Switzerland
10 employees	28	15	16
10–249 employees	41	44	47
≥ 250 employees	21	34	34
Unknown firm size	10	7	4

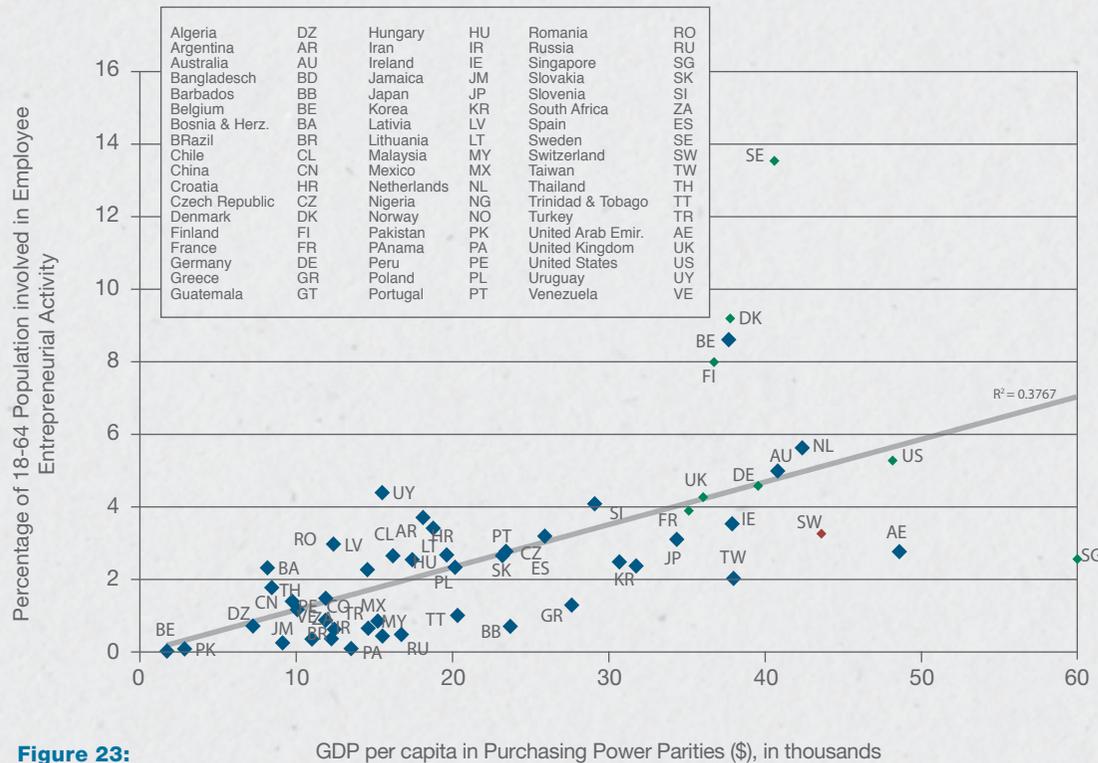


Figure 23: Entrepreneurial Employee Activity as Percentage of Adult Population (18-64 years of age) versus GDP

GDP per capita in Purchasing Power Parities (\$), in thousands

As a final point, GDP per capita within an economy and entrepreneurial activities are highly correlated and this is statistically significant. Switzerland has one of the highest levels of GDP per capita with 43,509 USD (PPP), hence the expectations for EEA are also high in that sense. However, as seen in **Figure 23** (SW=Switzerland), the Swiss EEA is below the regression line versus its high GDP and also less than in other comparison innovation-driven economies.

Switzerland has for a long time been home to many multiperson organizations, both for-profit and not-for-profit. This is supposed to result in a greater prevalence of EEA among adults since their share of employment by such organizations is really high (OECD, 2009). Additionally, the high presence of larger organizations negatively affects the degree of independent entrepreneurship, TEA, and especially, necessity-based entrepreneurship (Choi and Phan, 2006; Parker, 2009). Another effect is that high real wages due to high GDP make it more appealing for independent entrepreneurs to opt for a salaried job, which should increase the probability for having higher EEA (Lucas, 1978). However, despite all the factors mentioned in the literature so far, the Swiss EEA remains low compared to other benchmark economies such as Germany, France, or the U.S. It is also noticeable how the Scandinavian economies' EEA indicators are high along with their GDP. There may be a couple of accompanying factors to low Swiss EEA with a high GDP level, many of which are already discussed in the previous paragraph. All in all, this is certainly an issue that needs more scrutiny and it may therefore represent a possible future research area for academics and policymakers.

Literature

Acs, Z. (2010). Entrepreneurship and Regional Development. Northampton, MA: Edward Elgar.

Acs, Z., & Storey, D. (2004). Introduction: entrepreneurship and economic development, in *Regional Studies* 38, 8, 871-877.

Alberton, S., Mini, V., Huber, A., Leon-Lopez, Y., & Mantegazzi, D. (2011). Valutazione ex post della legge cantonale sull'innovazione economica del 1997. Lugano-Manno: IRE (USI)-DSAS (SUPSI).

Audretsch, D., Keilbach, M., & Lehmann, E. (2006). Entrepreneurship and Economic Growth. New York: Oxford.

Baldegger, R.J. (2011). Swiss International Entrepreneurship Survey (SIES)-2010. Fribourg: School of Business Administration.

Bosma, N. (2011). Entrepreneurship, Urbanization Economies and Productivity of European Regions, in Fritsch M.F. (ed.): *Handbook of Research on Entrepreneurship and Regional Development*. Cheltenham (UK); Northampton, MA (USA): Edward Elgar, 107-132.

Bosma, N., Stam, E., & Wennekers, S. (2010). Intrapreneurship - An international study. Zoetermeer: EIM.

Choi Y.R., & Phan P. H. (2006). The influences of economic and technology policy on the dynamics of new firm formation, in *Small Business Economics*, 26, 493-503.

Drucker, P. F. (2006). Innovation and Entrepreneurship, Harper: New York.

Etzkowitz, H., & Leydersdorff, L. (2000). The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university-industry-government relations. *Research Policy*, 29, 109-123.

Etzkowitz, H., & Leydesdorff, L. (1997). In H. Etzkowitz, & L. Leydesdorff (Eds.), *Universities in the Global Economy: A Triple Helix of University-Industry-Government Relations*. London: Cassell Academic.

European Commission (2003). Green Paper. Entrepreneurship in Europe. Brussels: Enterprise publications.

Freeman, C. (1995). The National System of Innovation in Historical Perspective, in *Cambridge Journal of Economics*, 5-24.

Kelley, D., Singer, S., & Herrington, M. (2012). The Global Entrepreneurship Monitor 2011 Global Report. GEM. (2005). Rapport 2005 sur l'entrepreneuriat en Suisse et dans le monde.

Hamdouch, A., & Depret, M. (2009). Surveying the Literature on Territorial Innovation Systems: a Suggested Interpretation Framework. SSRN, Working Paper Series.

Godin, B., & Doré, C. (2005). Measuring the Impacts of Science: Beyond the Economic Dimension. International Conference “Science Impact - Rethinking the impact of Basic Research on Society and the Economy. Helsinki.

Hornsby, J.S., Kuratko D.F., & Montagno, R.V. (1999). Perception of internal factors for corporate entrepreneurship: A comparison of Canadian and U.S. manager, in *Entrepreneurship Theory and Practice*, 17, 2, 29-37.

Hornsby, J.S., Naffziger D.W., Kuratko, D.F. & Montagno, R.V. (1993). An interactive model of the corporate entrepreneurship process, in *Entrepreneurship Theory and Practice*, 24, 2, 9-24.

IUS. (2011). Innovation Union Scoreboard 2011. Tratto da Proinno-Europe: <http://www.proinno-europe.eu/inno-metrics/page/innovation-union-scoreboard-2010>

Karlsson, C. (2010). Entrepreneurship and regional development: local processes and global patterns. Northampton, MA: Edward Elgar.

Kenward, M. (2012). Corporate ‘intrapreneurs’ can be innovative, too: http://www.eitawards.eu/17_02_12_Corporate_intrapreneurs_can_be_innovative_too.aspx

Kuratko, D.F., & Montagno, R.V. (1989). The intrapreneurial spirit, in *Training and Development Journal*, 43, 10, 83-87.

Kuratko, D.F., Hornsby, J.S. & Montagno, R.V. (1992). Critical Organizational Elements in Corporate Entrepreneurship: An Empirical Study, in *Proceedings of 52nd Annual Meeting of the Academy of Management, Nevada-Las Vegas.*

Kuratko, D.F., Montagno, Ray V. & Hornsby J.S. (1990). Developing an intrapreneurial assessment instrument for an effective corporate entrepreneurship, in *Strategic Management Journal*, 11, 5, 49-58.

Littunen, H., & Tohmo, T. (2003). The high growth in new metal-based manufacturing and business service firms in Finland, in *Small Business Economics*, 21, 187-200.

Lucas, R. (1988). On the Mechanics of Economic Development, in *Journal of Monetary Economics*, 22, 30-42.

Lucas, R. E. (1978). On the Size Distribution of Firms, in *Bell Journal of Economics*, 9, 2, 508-23.

Moulaert, F., & Sekia, F. (2003). Territorial Innovation Models: A critical Survey. *Regional Studies*, 37, 3, 289-302.

Nelson, R., & Winter, S. (1982). *An Evolutionary Theory of Economic Change.* Cambridge, Mass.: Harvard University Press.

OECD (2004). *Women’s entrepreneurship: issues and Policies.* Istanbul: OECD.

OECD (2009). *Is Informal Normal? Towards More and Better Jobs in Developing Countries,* Paris: OECD.

Parker, S. (2009). Why do small firms produce the entrepreneurs?, in *The Journal of Socio Economics*, 38, 484-494.

Porter, M.E., Sachs, J.J., & McArthur, J. (2002). Executive Summary: Competitiveness and Stages of Economic Development. In *The Global Competitiveness Report 2001-2002*, edited by Porter M.E., Sachs J.J., Cornelius P.K., McArthur J.W. and Schwab K., 16-25. New York, NY: Oxford University Press.

Rossi, M. (2009). Motivation and entrepreneurial intentions among potential seniors entrepreneurs (55+) in Switzerland, in *The International Journal of Knowledge, Culture and Change Management*, 9, 8, 179-183.

Romer, P. (1990). Endogenous Technological Change, in *Journal of Political Economy*, 98, 5, 71-102.

Rothwell, R. (1975). Intracorporate Entrepreneurs, in *Management Decision*, 13, 3, 142-15.

Schumpeter, J. (1934). *The Theory of Economic Development*. Cambridge: Harvard University Press.

Shane, S. (2003). *A General Theory of Entrepreneurship: The Individual-Opportunity Nexus*. Cheltenham: Edward Elgar.

Stam, E., Bosma, N., Van Witteloostuijn, A., De Jong, J., Bogaert, S., Edwards, N., et al. (2012). Ambitious Entrepreneurship. A review of the academic literature and new directions for public policy. AWT report (41).

Steffen, P., Davidsson, P., & Fitzsimmons, J. (2009). Performance Configurations Over Time: Implications for Growth- and Profit-Oriented Strategies, in *Entrepreneurship Theory and Practice*, 33 (1), 125-148.

The Economist (2004). Old Europe: Ageing populations will hurt Europe's economies and put pressure on budgets—and there are no easy solutions, Sep 30th 2004.

WEF. (2011). *The Global Competitiveness Report 2011-2012*.

Wennekers, A., & Thurik, A. (1999). Linking entrepreneurship and economic growth, in *Small Business Economics*, 13, 27-55.

Wennekers, A., Carree, M., & Thurik, A. (2010). The relationship between entrepreneurship and economic development: Is it U-shaped? *Foundations and Trends in Entrepreneurship*, 6, 3, 167-237.

GLOSSARY

Table:

Main GEM measures used in this Report

Measure	Description
Entrepreneurial Attitudes and Perceptions	
Perceived Opportunities	Percentage of 18-64 age groups who see good opportunities to start a firm in the area where they live
Perceived Capabilities	Percentage of 18-64 age groups how believe to have the required skills and knowledge to start a business
Entrepreneurial Intention	Percentage of 18-64 age groups (individuals involved in any stage of entrepreneurial activity excluded) who intend to start a business within three years
Fear of Failure Rate	Percentage of 18-64 age groups with positive perceived opportunities who indicate that fear of failure would prevent them from setting up a business
Entrepreneurship as Desirable Career Choice	Percentage of 18-64 age groups who agree with the statement that in their country, most people consider starting a business as a desirable career choice
High-Status Successful Entrepreneurship	Percentage of 18-64 age groups who agree with the statement that in their country, successful entrepreneurs high status
Media Attention for Entrepreneurship	Percentage of 18-64 age groups who agree with the statement that in their country, they will often see stories in the public media about successful new businesses
Entrepreneurial Activity	
Nascent Entrepreneurship Rate	Percentage of 18-64 age groups who are currently a nascent entrepreneur, i.e., actively involved in setting up a business they will own or co-own; this business has not paid salaries, wages or any other payments to the owners for more than three months
New Business Ownership Rate	Percentage of 18-64 age groups who are currently an owner-manager of a new business, i.e, owning and managing a running business that has paid salaries, wages or any other payments to the owners for more than three months, but not more than 42 months
Total Early-Stage Entrepreneurial Activity (TEA)	Percentage of 18-64 age groups who are either a nascent entrepreneur or owner-manager of a new business (as defined above)
Established Business Ownership Rate	Percentage of 18-64 age groups who are currently owner-manager of an established business, i.e, owning and managing a running business that has paid salaries, wages or any other payments to the owners for more than 42 months

Measure	Description
Business Discontinuation Rate	Percentage of 18-64 age groups who have, in the past 12 months, discontinued a business, either by selling, shutting down or otherwise discontinuing an owner/management relationship with the business. Note: This is not a measure of business failure rates.
Necessity-Driven Entrepreneurial Activity: Relative Prevalence	Percentage of those involved in total early-stage entrepreneurial activity (as defined above) who are involved in entrepreneurship because they had no other option for work
Improvement-Driven Opportunity Entrepreneurial Activity: Relative Prevalence	Percentage of those involved in total early-stage entrepreneurial activity (as defined above) who (i) claim to be driven by opportunity, as opposed to finding no other option for work; and (ii) who indicate the main driver for being involved in this opportunity is begin independent or increasing their income, rather than just maintaining their income
Entrepreneurial Aspirations	
Solo/Low Job Expectation early-stage Entrepreneurial Activity (SLEA)	Percentage of 18-64 age groups who are either a nascent entrepreneur or owner-manager of a new business (as defined above) AND expect to provide fewer than 5 jobs five years from now. Based on 2009-2011 data.
Medium/High Job Expectation early-stage Entrepreneurial Activity (MHEA)	Percentage of 18-64 age groups who are either a nascent entrepreneur or owner-manager of a new business (as defined above) AND expect to provide 5 or more jobs five years from now. Based on 2009-2011 data.
New Product-Market Oriented Early-Stage Entrepreneurial Activity: Relative Prevalence	Percentage of total early-stage entrepreneurs (as defined above) who indicate that product or service is new to at least some customers and indicate that not many businesses offer the same product or service. Based on 2009-2011 data.
International Orientation early-stage Entrepreneurial Activity	Percentage of total early-stage entrepreneurs (as defined above) with more than 25 % of the customers coming from other countries. Based on 2009-2011 data.
Entrepreneurial Employee Activity	
Entrepreneurial Employee Activity (EEA)	Percentage of 18-64 age groups who are currently involved in developing new entrepreneurial activities for their employer and fulfill a leading role in this activity.
Private Sector Entrepreneurial Employee Activity (PEEA)	Percentage of 18-64 age groups who are currently involved in developing new entrepreneurial activities for their employer, active in the private sector, and fulfill a leading role in this activity. Hence the PEEA measure constitutes a subset of the EEA measure.
Employers' Support for Entrepreneurial Employee Activity	Percentage of 18-64 employees indicating that their employer provides at least some support when employees come up with new ideas

Table:

Measures from other
Data Sources used in
this Report

Measure	Source	Description
Economic Freedom Index	Heritage Foundation	The Economic Freedom index uses 10 specific freedoms, some as composites of even further detailed and quantifiable components. Each of these freedoms is weighted equally and turned into an index ranging from 0 to 100, where 100 represents the maximum economic freedom. Cross section data 2002
Employment protection deters employees to start business	GEM National Expert Survey	Statement assessed by experts in the 2011 GEM National Expert Survey (mean values per economy; based on likert scale 1-5)
Entrepreneurs have much lower access to social security than employees	GEM National Expert Survey	Statement assessed by experts in the 2011 GEM National Expert Survey (mean values per economy; based on likert scale 1-5)
GDP Per Capita (PPP)	IMF World Development Indicators, October 2011.	GDP per capita in Purchasing Power Parities (PPP), US Dollars, 2011
Gender Gap Index	World Economic Forum Gender Gap 2011 Report	All scores are reported on a scale of 0 to 1, with 1 representing maximum gender equality. The study measures the extent to which women have achieved full equality with men in five critical areas: economic participation, economic opportunity, political empowerment, educational attainment and health & well-being
Global Entrepreneurship Index (GEI):	Acs, Z., Szerb, L. (2012) Global Entrepreneurship & Development Index	The GEI combines measures of activity, aspiration, and attitudes with relevant measures of the favorability of the environment for entrepreneurship. The GEI is simply the average of three subindices: one for attitudes, one for activity, and one for aspiration. Similarly, each subindex is the average of four or five normalized indicator scores, after adjustment for “bottlenecks”, or the weakest indicator in a country.
Income inequality (Gini index)	World Bank World Development Indicators	Gini measure of economic inequality, where greater values represent greater inequality. Data are based on primary household survey data
Informal investment prevalence rate	GEM Adult Population Survey	Percentage of 18-64 groups who have personally invested funds in business start-ups in the past three years
Investment Freedom Index	Heritage Foundation	This factor scrutinizes each country’s policies toward foreign investment, as well as its policies toward capital flows internally, in order to determine its overall investment climate. The country’s investment freedom ranges between 0 and 100, where 100 represents the maximum degree of investment freedom. Cross section data 2002

Measure	Source	Description
Old age, disability and death benefit index	Botero, Djankov, La Porta, López-de-Silanes & Shleifer (2004) Regulation of Labor Data	Measures the level of old age, disability and death benefits as the average of the following four normalized variables: (1) the difference between retirement age and life expectancy at birth, (2) the number of months of contributions or employment required for normal retirement by law, (3) the percentage of the worker's monthly salary deducted by law to cover old-age, disability, and death benefits, and (4) the percentage of the net pre-retirement salary covered by the net old - age cash-benefit pension. Cross section data covering 1997-2002 period.
Political Stability	World Bank Governance Indicators	"Political Stability combines several indicators which measure perceptions of the likelihood that the government in power will be destabilized or overthrown by possibly unconstitutional and/or violent means, including domestic violence and terrorism. Cross section data covering 2002-2006.
Secular-rational (versus traditional) values	World Value Survey; Inglehart and Baker (2000)	Principal components factor index based on religiousness, autonomy, abortion attitudes, respect for authority and national pride.
Social security laws index	Botero, Djankov, La Porta, López-de-Silanes & Shleifer (2004) Regulation of Labor Data	Measures social benefits as the average of the three variables: Old Age, Disability and Death Benefit Index; and unemployment Benefits Index. Cross section data covering 1997-2002.
Unemployment benefits index	Botero, Djankov, La Porta, López-de-Silanes & Shleifer (2004) Regulation of Labor Data	Measures the level of unemployment benefits as the average of the following four normalized variables: (1) the number of months of contributions or employment required to qualify for unemployment benefits by law, (2) the percentage of the worker's monthly salary deducted by law to cover unemployment benefits, (3) the waiting period for unemployment benefits, and (4) the percentage of a one-year unemployment spell. Cross section data covering 1997-2002 period.

Country List

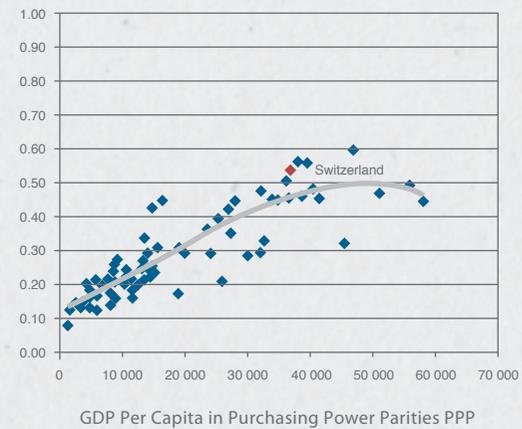
Country / Intcode

United States	<i>US</i>	Norway	<i>NO</i>	Korea, South	<i>KR</i>	Bosnia & Herzegovina	<i>BA</i>
Russia	<i>RU</i>	Poland	<i>PL</i>	China	<i>CN</i>	Czech Republic	<i>CZ</i>
South Africa	<i>ZA</i>	Germany	<i>DE</i>	Turkey	<i>TR</i>	Slovakia	<i>SK</i>
Greece	<i>GR</i>	Peru	<i>PE</i>	Pakistan	<i>PK</i>	Guatemala	<i>GT</i>
Netherlands	<i>NL</i>	Mexico	<i>MX</i>	Iran	<i>IR</i>	Panama	<i>PA</i>
Belgium	<i>BE</i>	Argentina	<i>AR</i>	Algeria	<i>DZ</i>	Venezuela	<i>VE</i>
France	<i>FR</i>	Brazil	<i>BR</i>	Barbados	<i>BB</i>	Uruguay	<i>UY</i>
Spain	<i>ES</i>	Chile	<i>CL</i>	Portugal	<i>PT</i>	Trinidad and Tobago	<i>TT</i>
Hungary	<i>HU</i>	Colombia	<i>CO</i>	Ireland	<i>IE</i>	Jamaica	<i>JM</i>
Romania	<i>RO</i>	Malaysia	<i>MY</i>	Finland	<i>FI</i>	Bangladesh	<i>BD</i>
Switzerland	<i>SW</i>	Australia	<i>AU</i>	Lithuania	<i>LT</i>	Taiwan	<i>TW</i>
United Kingdom	<i>UK</i>	Singapore	<i>SG</i>	Latvia	<i>LV</i>	United Arab Emirates	<i>AE</i>
Denmark	<i>DK</i>	Thailand	<i>TH</i>	Croatia	<i>HR</i>		
Sweden	<i>SE</i>	Japan	<i>JP</i>	Slovenia	<i>SI</i>		

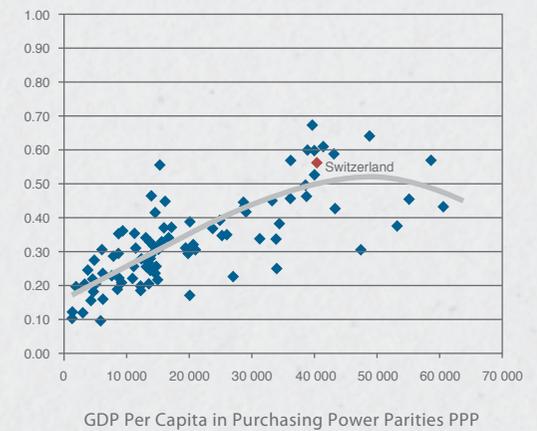
Global Entrepreneurship Index (GEDI) and Switzerland

Global Entrepreneurship and Development Index rank (point)	7 (0.54)
Entrepreneurial Attitudes sub-index rank (point)	11 (0.54)
Entrepreneurial Action sub-index rank (point)	8 (0.58)
Entrepreneurial Aspirations sub-index rank (point)	4 (0.51)
Weakest pillar to improve (value)	HIGH GROWTH (0.24)
Weakest variable to improve (value)	GAZELLE (0.19)

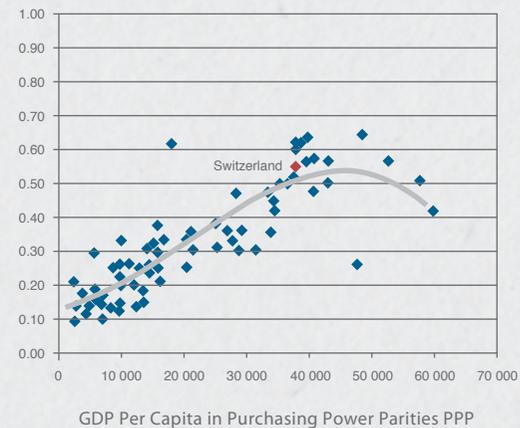
Global Entrepreneurship and Development Index



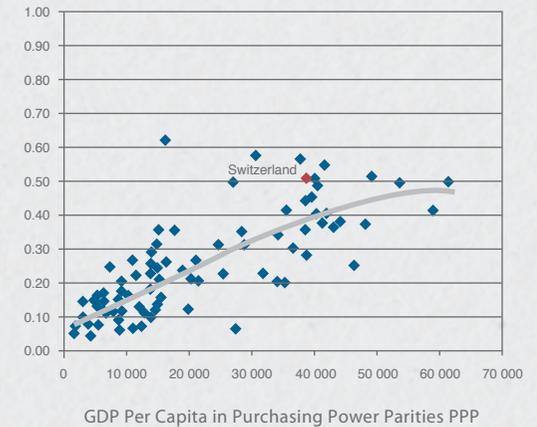
Entrepreneurial Attitudes Sub-index



Entrepreneurial Action Sub-index



Entrepreneurial Aspiration Sub-index

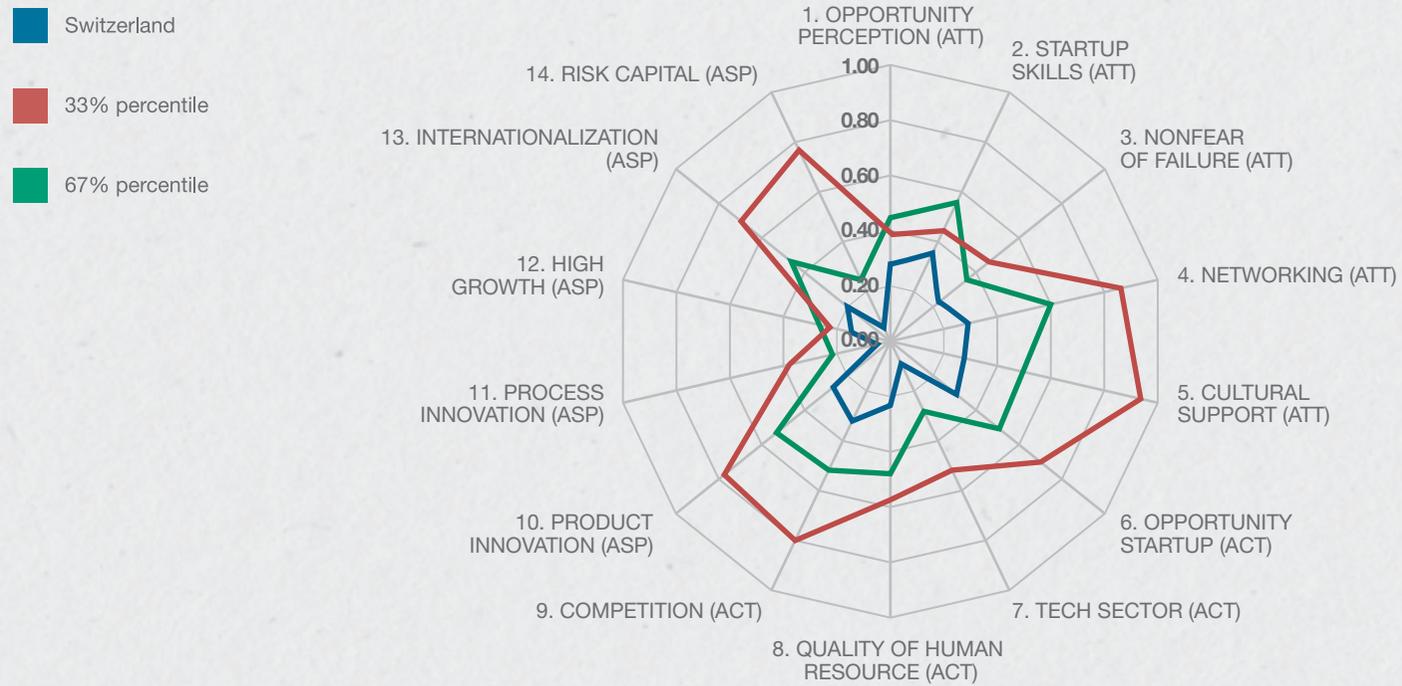


The Rank of the Countries and the Relative Position of Switzerland in the GEDI

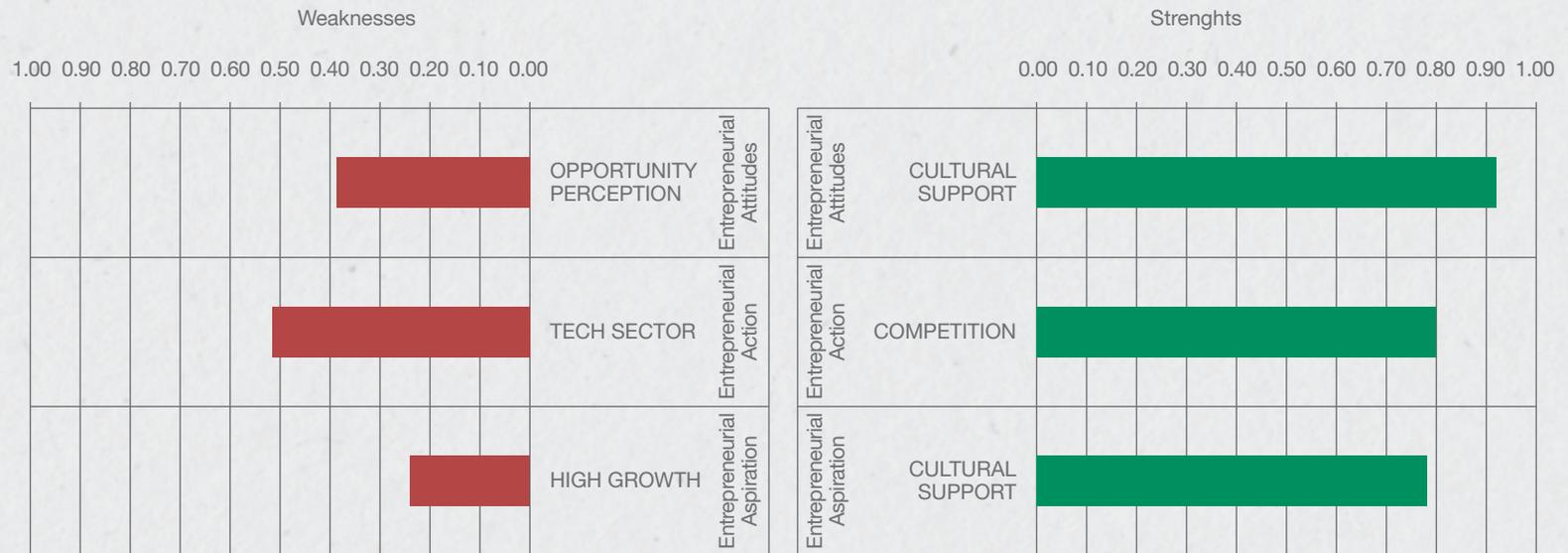
Rank	Country	GEDINDEX	Rank	Country	GEDINDEX
1	United States	0.60	21	Israel	0.45
2	Sweden	0.57	22	Chile	0.42
3	Australia	0.56	23	Slovenia	0.42
4	Iceland	0.55	24	Czech Republic	0.40
5	Denmark	0.55	25	Saudi Arabia	0.36
6	Canada	0.54	26	Korea	0.35
7	Switzerland	0.54	27	Uruguay	0.34
8	Belgium	0.50	28	Japan	0.34
9	Norway	0.49	29	Spain	0.33
10	Netherlands	0.48	30	Hong Kong	0.32
11	Taiwan	0.48	31	Poland	0.31
12	Singapore	0.47	32	Latvia	0.31
13	United Kingdom	0.46	33	Italy	0.29
14	Austria	0.46	34	Hungary	0.29
15	Ireland	0.46	35	Portugal	0.29
16	Germany	0.46	36	Turkey	0.29
17	Finland	0.45	37	Croatia	0.29
18	France	0.45	38	Greece	0.29
19	Puerto Rico	0.45	39	Colombia	0.27
20	United Arab Emirates	0.45	40	Montenegro	0.27

Rank	Country	GEDINDEX	Rank	Country	GEDINDEX
41	Peru	0.26	61	Morocco	0.19
42	Lebanon	0.26	62	Russia	0.18
43	Mexico	0.25	63	Serbia	0.18
44	Malaysia	0.25	64	Kazakhstan	0.18
45	South Africa	0.25	65	Thailand	0.18
46	Argentina	0.24	66	Syria	0.18
47	Tunisia	0.24	67	Iran	0.17
48	Romania	0.23	68	Egypt	0.17
49	Macedonia	0.23	69	Bolivia	0.16
50	Jamaica	0.22	70	Bosnia and Herzegovina	0.16
51	Trinidad and Tobago	0.21	71	Ecuador	0.15
52	Jordan	0.21	72	Philippines	0.15
53	Costa Rica	0.21	73	Pakistan	0.14
54	Dominican Republic	0.21	74	India	0.14
55	Panama	0.21	75	Guatemala	0.13
56	Brazil	0.20	76	Zambia	0.13
57	Venezuela	0.20	77	Ghana	0.13
58	China	0.20	78	Angola	0.13
59	Algeria	0.20	79	Uganda	0.08
60	Indonesia	0.20			

The relative position of Switzerland in the pillar level



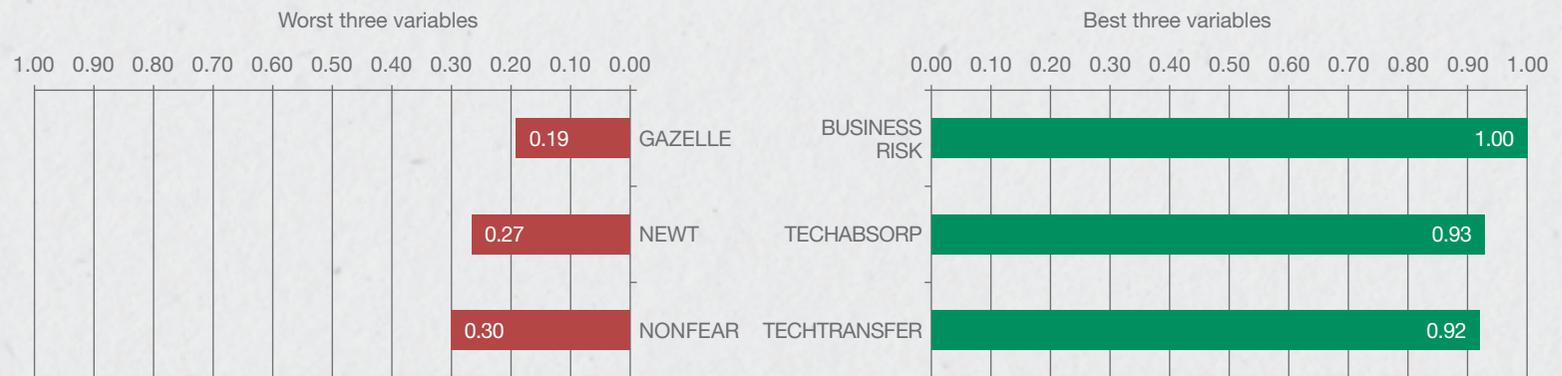
The strengths and weaknesses of Switzerland at the pillar level



The relative position of Switzerland in the variable level

	INSTITUTIONAL VARIABLES		INDIVIDUAL VARIABLES		PILLARS	
ENTREPRE- NEURIAL ATTITUDES	MARKETAGGLOM	0.54	OPPORTUNITY	0.37	OPPORTUNITY PERCEPTION	0.38
	EDUCPOSTSEC	0.49	SKIL	0.46	STARTUP SKILLS	0.44
	BUSINESS RISK	1.00	NONFAIR	0.30	NONFEAR OF FAILURE	0.45
	INTERNETUSAGE	0.87	KNOWENT	0.68	NETWORKING	0.85
	CORRUPTION	0.91	CARSTART	0.64	CULTURAL SUPPORT	0.93
ENTREPRE- NEURIAL ACTION	FREEDOM	0.70	TEAOPPORT	0.90	OPPORTUNITY STARTUP	0.70
	TECHABSORP	0.93	TECHSECT	0.43	TECH SECTOR	0.52
	STAFFTRAIN	0.90	HIGHEDUC	0.48	QUALITY OF HUMAN RESOURCE	0.57
	MARKDOM	0.91	COMPET	0.71	COMPETITION	0.80
ENTREPRE- NEURIAL ASPIRATIONS	TECHTRANSFER	0.92	NEWP	0.48	PRODUCT INNOVATION	0.78
	GERD	0.60	NEWT	0.27	PROCESS INNOVATION	0.38
	BUSS STRATEGY	0.88	GAZELLE	0.19	HIGH GROWTH	0.24
	GLOBAL	0.80	EXPORT	0.72	INTERNATIONALIZATION	0.69
	VENTCAP	0.49	INFINV	0.47	RISK CAPITAL	0.76
	INSTITUTIONS	0.78	INDIVIDUAL	0.51	GEDI	0.54

The best and worst three variables of Switzerland



List of Experts

Anton Affentranger

CEO, Implenia Construction AG, *Zurich*

Doris Albisser

Founder and CEO, CLS Communication AG, *Zurich*

Urs Althaus

Headcoach, CTI Start-up, *Bern*

Erich Ammann

Managing Director, Ammann & Partner, *Zug*

Norman Bandi

Economics Journalist and Assistant Head of Departement, Handelszeitung

Pius Baschera

Professor at ETH Zurich, Chairman of the Board of Directors of Hilti Corporation in Zurich, Chairman of the Board of Directors at Venture Incubator AG in Zug

Brigitte Baumann

Founder and CEO, Go Beyond AG, *Zurich*

Hans Baumgartner

Head of SME Business, Crédit Suisse, *Zurich*

Hans-Ulrich Bigler

Director, Swiss Trades Association (SGV / USAM), *Bern*

Miriam Blocher

Owner and CEO, Lächerli Huus AG, *Munchenstein*

Rolf Boffa

Founder and CEO, Qualipet AG, *Dietlikon*

Thomas Christ

Managing Director, DHL Logistics, *Basel*

Heinrich Christen

Partner in Charge of the Entrepreneur of the Year, Ernst & Young Ltd, *Zurich*

Christine Demen-Meier

Professor at Ecole Hôtelière de Lausanne and Chair Holder of the Food & Beverage Research Chair, *Lausanne*

Peter Friedli

Investment Manager and President of the Board of Directors, New Venturetec, *Zug*

Stephane Garelli

Professor, International Business School (IMD), *Lausanne*

Ulrich Geilinger

Member of the Board of Directors and Investment Advisor, HBM Partners AG, *Zug*

Martin Godel

Head of Division, Small and Medium Size Enterprise Policy, at State Secretariat for Economic Affairs (SECO), *Bern*

Ruedi Gygax

Biotech Expert, Director on the Administrative Boards of several Biotech Companies, *Zurich*

Annette Heimlicher

Head of Corporate Development and Member of the Management Board, Contrinex AG, *Givisiez*

Daniel Isler

Founder and CEO, Fargate AG, *Zurich*

Michael Käppeli

CEO, ETH Board, *Zurich*

Jean-Philippe Lallement

Director, Parc Scientifique, *Lausanne*

Heike Mayer

Professor of Economic Geography, University of Bern

Christoph Meier

Director, Platinn Innovation Platform, *Freiburg*

Geneviève Morand

Founder and CEO, Rezonance AG, *Geneva*

Alfred Mürger

CEO and Member of the Administrative Board, Loomis Switzerland AG, *Rümlang*

Ruedi Noser

Chairman of Noser Management AG and Member of the Swiss National Council

Peter Friedli

President of the Administrative Board and Investment Manager, New Venturetec AG, *Zug*

Céline Renaud

CEO and Member of the Administrative Board, JMC Lutherie AG, *Le Brassus*

Beat Schillig

Managing Partner, IFJ Institut für Jungunternehmen AG, *St. Gallen*

Moritz Suter

President of the Foundation of Trustees, W.A. de Vigier Foundation

Andrej Vckovski

CEO, Netcetera AG, *Zurich*

Remi Walbaum

Professor of Entrepreneurship, Faculté des Haute Etudes Commerciales (HEC), *Lausanne*

Julia Wingen

Corporate Finance Specialist, Emerald Technology Ventures AG, *Zurich*

Roger Wüthrich-Hasenböhler

Head of Small and Medium Sized Entreprises, Swisscom AG, *Bern*

GEM Team Switzerland



Muriel Berger



Sabine Frischknecht



Andrea Huber



Onur Saglam



Pascal Wild



Siegfried Alberton



Rico J. Baldegger



Andreas Brühlhart



Fredrik Hacklin