



Strathprints Institutional Repository

Levie, Jonathan (2015) Global Entrepreneurship Monitor Scotland 2014. [Report] ,

This version is available at <http://strathprints.strath.ac.uk/57319/>

Strathprints is designed to allow users to access the research output of the University of Strathclyde. Unless otherwise explicitly stated on the manuscript, Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Please check the manuscript for details of any other licences that may have been applied. You may not engage in further distribution of the material for any profitmaking activities or any commercial gain. You may freely distribute both the url (<http://strathprints.strath.ac.uk/>) and the content of this paper for research or private study, educational, or not-for-profit purposes without prior permission or charge.

Any correspondence concerning this service should be sent to Strathprints administrator: strathprints@strath.ac.uk



University of
Strathclyde
Business
School

Global Entrepreneurship Monitor

Scotland 2014



Jonathan Levie





Contents



Page		
3	Foreword	Professor Eleanor Shaw
4	Chapter 1	Introduction
7	Chapter 2	Summary Highlights for GEM Scotland 2014
8	Chapter 3	Entrepreneurial Business Attitudes, Activity and Aspirations in Scotland: 2014 Update
16	Chapter 4	The Location of Entrepreneurial Activity in Scotland
21	Chapter 5	Family Business and Entrepreneurship
25	Chapter 6	Funding of Start-up Ventures
29	Chapter 7	Scottish Entrepreneurship Policy and Programmes Review 2014
30	Chapter 8	GEM and Entrepreneurship Policy in Scotland
31	Appendix 1	
32	Appendix 2	

Data for this study were provided by the Global Entrepreneurship Research Association. Names of the members of national teams, the global coordination team, and the financial sponsors are published in the Global Entrepreneurship Monitor 2014 Global Report, which can be downloaded at www.gemconsortium.org. The author thanks all the researchers and their financial supporters who made this research possible.

Whilst this work is based on data collected by the GEM consortium, responsibility for analysis and interpretation of those data is the sole responsibility of the author.

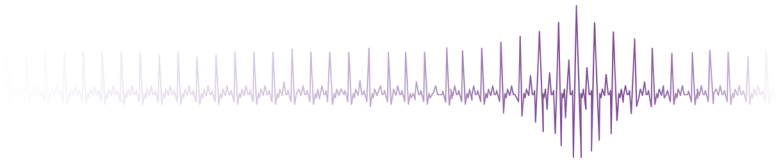
the place of useful learning

www.strath.ac.uk

University of Strathclyde Glasgow G1 1XQ

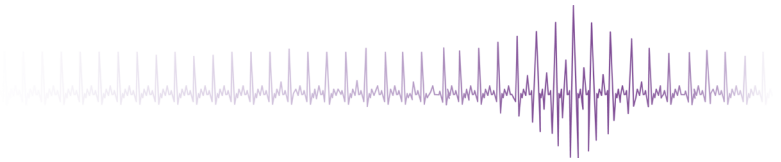
The University of Strathclyde is a charitable body, registered in Scotland, with registration number SC015263





List of Tables and Figures

- Table 3.1:** (page 8)
Entrepreneurial attitudes among non-entrepreneurial individuals in the Scottish, UK and Arc of Prosperity adult population samples, 2002 to 2014 (% agree with statement)
- Table 3.2:** (page 10)
Scottish and benchmark TEA rates, 2013 and 2014
- Table 3.3:** (page 11)
Entrepreneurial activity in the Scottish and UK adult population samples, 2002 to 2014 (% agree with statement)
- Table 3.4:** (page 13)
Entrepreneurial aspirations in the Scottish, UK and Arc of Prosperity nations adult population samples, 2002 to 2014 (% agree with statement)
- Table 3.5:** (page 14)
Prevalence of training in starting a business at school and after completing school by age group for the four UK home nations
- Table 3.6:** (page 15)
Prevalence of training in starting a business at school and after completing school by stage in the entrepreneurial process for the four UK home nations
- Table 4.1:** (page 19)
Entrepreneurial attitudes among non-entrepreneurial respondents in Scottish local authority regions, 2003 to 2014 combined database (% of respondents aged 18-64 who are not nascent or existing business owner-managers)
- Table 5.1:** (page 22)
Effect of a family business background on entrepreneurial attitudes in Scotland, 2012 to 2014
- Table 5.2:** (page 22)
Effect of a family business background on entrepreneurial attitudes in UK, 2012 to 2014
- Table 5.3:** (page 23)
Effect of a family business background on entrepreneurial intention and activity in Scotland, 2012 to 2014
- Table 5.4:** (page 23)
Effect of a family business background on entrepreneurial intention and activity in the UK, 2012 to 2014
- Table 6.1:** (page 26)
Percentage of nascent entrepreneurs mentioning different expected sources of funding for their new business in Scotland, 2006 to 2014
- Table 6.2:** (page 26)
Percentage of nascent entrepreneurs mentioning different expected sources of funding for their new business in the UK, 2006 to 2014
- Table 6.3:** (page 28)
Relationship of informal investor with entrepreneur in their most recent start-up business investment in Scotland, 2003 to 2014
- Table 6.4:** (page 28)
Relationship of informal investor with entrepreneur in their most recent start-up business investment in the UK, 2003 to 2014
- Table 6.5:** (page 28)
Median investment amount by an informal investor in their most recent start-up business investment in Scotland and the UK, 2003 to 2014
- Figure 3.1:** (page 9)
National 2014 TEA rates for 29 sovereign innovation-driven nations and Scotland, ordered by TEA rate
- Figure 3.2:** (page 12)
Two-year moving average TEA rates of Scottish and UK adults aged 18 to 29, 30 to 49 and 50 to 64, from 2002 to 2014
- Figure 3.3:** (page 14)
TEA rates among males and females in Scotland, the UK, and Arc of Prosperity countries for 2002 to 2014
- Figure 4.1:** (page 16)
Total early-stage Entrepreneurial Activity rates for the four NUTS2 regions of Scotland, 2002 to 2014 combined database
- Figure 4.2:** (page 17)
Total early-stage Entrepreneurial Activity (TEA) rate estimates for Scottish local authorities, combined 2003 to 2014 database, and average official new enterprise births, 2004 to 2013
- Figure 4.3:** (page 18)
The spectrum of entrepreneurial intention and activity in Scottish Local authority areas, 2003 to 2014 combined database
- Figure 5.1:** (page 24)
Combined effect of education level and family business background on early-stage entrepreneurial activity rates, by gender, for Scotland 2008 to 2014
- Figure 6.1:** (page 25)
Percentage of early-stage (i.e. nascent and new) and established entrepreneurs who thought that there were adequate sources of external start-up funding in their region, by home nation from 2003/04 to 2013/14
- Figure 6.2:** (page 25)
Percentage of early-stage and established entrepreneurs who did not know if there were adequate sources of external start-up funding in their region, by home nation from 2003/04 to 2013/14
- Figure 6.3:** (page 27)
Informal Investment rate in Scotland, UK and Arc of Prosperity nations, 2002-2014 (% of respondents aged 18-64 who invested in someone else's new business in the last three years)



Foreword

After several years of improvement in Scotland's rate of entrepreneurial activity, this report demonstrates how much we have still to travel to achieve the Scottish Government's vision of "a world-leading entrepreneurial and innovative nation". But we are on the right track, and Team Scotland is working.

The Hunter Centre is playing its part, through research such as this 14th GEM Scotland report, and through its education and knowledge exchange, including the training we do for the Talent Scotland Graduate Placement Programme and GAP, our new Growth Advantage Programme for SME owners in partnership with Breakthrough, Santander's SME support programme.

Through our work, we come face to face with the people behind the statistics in this report. People like our recent BA Business Enterprise graduates Jennifer Hope and Rebecca Pick. After graduating in 2013, Jennifer spun out "The Wee House Company" from her father's construction business. She has just won the Association of Scottish Businesswomen's 'Young Inspiring Businesswoman' Award for 2015. Rebecca registered her business Pick Protection in March 2014, graduated earlier this year with a 1st class BA Honours in Business Enterprise from Strathclyde Business School, won first prize in the UK Santander Universities Entrepreneurship

Undergraduate Award, secured angel funding from Gabriel Investments and is now launching her first product.

Entrepreneurship is fundamentally about people creating a future for themselves rather than waiting around for someone to decide their future for them. This report confirms that having a family business background does help, as does education. But the strongest effect on the chances that someone in Scotland will be an early-stage entrepreneur is whether they know someone else who is an early-stage entrepreneur. As someone who researches social networking among entrepreneurs, this finding comes as no surprise to me, but it does reinforce the need for Team Scotland to ensure that Scotland's entrepreneurial ecosystem is well connected to ensure that aspiring entrepreneurs can find the contacts, advice and funding they need.

The GEM Scotland report series would not have been possible without the generous endowment of Sir Tom Hunter, whose vision and support over 15 years led to the creation of what we believe to be the largest academic entrepreneurship centre in Europe.

Professor Eleanor Shaw

Head, Hunter Centre for Entrepreneurship and Vice-Dean Enterprise & Knowledge Exchange, Strathclyde Business School



Introduction

Global Entrepreneurship Monitor (GEM) presented the results of its sixteenth annual survey on entrepreneurship in January 2015. In 2014, more than 206,000 individuals were surveyed across 73 economies and 3,936 national experts on entrepreneurship from 73 economies participated in the survey. The rising number of participating countries and consistent conceptual framework, surveying tools and applied methodology contributed to build the biggest database on entrepreneurship in the world. GEM participant economies represented 72.4% of the world's population and 90% of the world's GDP, enabling GEM to feature different profiles of entrepreneurship according to region and economic development stage.

The GEM survey generates a variety of relevant primary information on different aspects of entrepreneurship and provides harmonized measures of individuals' attributes and their activities in different phases of venturing (from nascent to start-up, established business and discontinuation). GEM also tracks highly ambitious entrepreneurship (by identifying aspirations to grow among owner-managed businesses and the presence of entrepreneurial employee activity).

The Entrepreneurial Process

GEM views entrepreneurship as a process rather than as an event. An important manifestation of entrepreneurship (though not the only one) is new business activity. GEM collects data on the proportion of individuals

in an economy who are expecting to start a business, are actively trying to start a business, are running their own young business, are running their own established business, and who have recently closed a business.

Nascent entrepreneurs are those individuals, between the ages of 18 and 64 years, who have taken some action towards creating a new business in the past year. In order to qualify in this category, these individuals must also expect to own a share of the business they are starting and the business must not have paid any wages or salaries for more than three months.

New business owners are individuals who are active as owner-managers of a new business that has paid wages or salaries for more than three months, but less than 42 months.

One of the principal measures in GEM is 'total early-stage entrepreneurial activity' (TEA), the proportion of people who are involved in setting up a business or owners-managers of new businesses. In addition to those individuals who are currently involved in the early stages of a business, there are also many individuals who have owned and managed a business for a longer time. These individuals are included in GEM's estimates of the number of established business owners (EBO).

GEM can also measure other forms of entrepreneurial activity, including social entrepreneurial activity and employee entrepreneurial activity (intrapreneurship).



Key Findings of GEM 2014 Global Report¹

Entrepreneurial Attributes

GEM uses the World Economic Forum's Global Competitiveness Index Report's classification of three economic development levels: factor-driven, efficiency-driven and innovation-driven economies, and the United Nations classification of global regions. GEM provides insights on several individual attributes (perception of opportunities to start a business, perception of one's skills to start a business, fear of failure and start-up intentions), which - within a specific context defined by entrepreneurship framework conditions - lead to entrepreneurship activities.

Individuals in factor-driven economies expressed a more positive attitude towards entrepreneurial measures - such as perceived opportunities to start a venture and perceived capabilities to do so - in comparison to those in efficiency-driven and innovation-driven economies. The same holds for entrepreneurial intentions. Fear of failure is highest among individuals in innovation-driven economies.

Individuals in African economies are most likely to report there are good opportunities for starting a business in their local area, that they have the skills to start a business and that they intend to start a business in the next three years, and are least likely to report fear of failure.

In the European Union, individuals from countries with long-term economic problems

do not differ much from others in skills perception, but were least likely to perceive opportunities. EU economies show the lowest social values towards entrepreneurship, such as whether starting a new business is a desirable career choice, whether starting a successful new business confers high social status and whether you often see stories in the media about successful new businesses.

Entrepreneurial Activity

Total early-stage Entrepreneurial Activity (TEA) includes individuals in the process of starting a business and those running new businesses less than 3½ years old. As a percentage of the adult population, these rates tend to be highest for the factor-driven economies, and decline with increasing levels of GDP per capita. The main reason for this stylized fact is that higher levels of GDP yield more and better job opportunities. Among innovation-driven economies the highest TEA rates are found in Qatar (16.4%), Trinidad & Tobago (14.6%), the United States (13.8%), Australia (13.1%) and Canada (13.0%). Japan, with 3.8%, and Italy, with 4.4%, have the lowest share of early-stage entrepreneurs among their respective adult populations.

Among global regions, the highest TEA rates are found in African economies, for example Cameroon (37.4%), Uganda (35.5%) and Botswana (32.8%). European economies have the lowest TEA rates (7.8% in EU economies, 6.0% in non-EU European economies).

Factor-driven and efficiency-driven economies have higher proportions of early-stage

What's new in GEM Scotland 2014?

1. GEM Scotland 2014 has fifteen years of data to draw on, with around 2000 individuals aged between 16 and 80 interviewed each year.
2. Chapter 4 presents the pattern of entrepreneurial attitudes and activity across local authorities in Scotland.
3. Chapter 5 demonstrates the surprisingly strong connection between family and entrepreneurship.
4. Chapter 6 shows how finance for start-up ventures has changed since the great recession.



entrepreneurs driven by necessity, while more early-stage entrepreneurs in innovation-driven economies are driven by opportunity and a desire to be independent or improve their income.

In contrast to TEA rates, entrepreneurial employee activity (EEA) increases with GDP per capita. While it is rare in many African countries, it is higher than the TEA rate in Norway and Denmark.

Entrepreneurial Aspirations

North American early-stage entrepreneurs stand out with optimistic expectations of high growth in job creation (18.2% of early-stage entrepreneurs expect to employ at least 20 people in five years). Non-EU economies (with 6.6%), African economies (6.8%) and Latin American and Caribbean economies (7.5%) have the lowest employment growth expectations. In the group of EU economies, only 3.2% of early-stage entrepreneurs in Greece and 4.4% in Spain expect to have high creation of new jobs, while growth expectations are highest in Eastern European countries.

Entrepreneurship Ecosystems (Entrepreneurship Framework Conditions)

Since its inception, GEM has proposed that entrepreneurship dynamics can be linked to conditions that enhance (or hinder) new business creation. In GEM's methodology these conditions are known as Entrepreneurial Framework Conditions (EFCs). The EFCs can be considered an essential part of the puzzle of understanding business creation and growth. The state of these conditions directly influences the existence of entrepreneurial opportunities, entrepreneurial capacity and preferences, which in turn determines business dynamics.

By collecting information through interviewing national experts on EFCs (access to finance, government policies, government entrepreneurship programme, entrepreneurship education, R&D transfer, commercial and legal infrastructure, market openness, physical infrastructure and cultural and social norms), GEM captures judgments of at least 36 key informants (experts) in each country regarding their national entrepreneurship ecosystems. UK informants gave the state of R&D transfer to new and growing firms their lowest rating. In 13 of the 23 other EU countries, the lowest rating went to primary and secondary education.

¹ This section is extracted with permission from the Summary of the GEM 2014 Global report, available at www.gemconsortium.org

Summary Highlights for GEM Scotland 2014

- Opportunity perception and skills self-perception in Scotland rose significantly in 2014, but fear of failure remained high.
- The Scottish Total Early-Stage Entrepreneurial Activity (TEA) rate at 5.5% was between the third and fourth quartile of innovation-driven countries in 2014, with similar rates to other Arc of Prosperity countries but significantly below the UK rate of 8.6%. The subdued rate for Scotland may have been affected by the timing of the survey, which was in the two months preceding the independence referendum. The longer term trend suggests that early-stage entrepreneurial activity rates across the UK remain higher than rates before the great recession.
- Edinburgh and remote rural local authority areas tend to have high TEA rates while local authority areas west of Glasgow have the lowest rates. In part, this reflects Scotland's industrial heritage, with former heavy industrial and mining regions showing less favourable attitude, intention and activity rates. The capital city and remote rural areas show the most positive mix of entrepreneurial attributes and activity.
- A family business background can confer a wide range of benefits that increase the propensity of people in Scotland - and particularly women and men without qualifications - to engage in entrepreneurial activity. It increases skills and opportunity perception while reducing fear of failure, it provides more role models and funding, and it seems to increase the chances that an early-stage entrepreneur will be growth oriented, particularly if the business is a spinoff of an existing family business.
- Perceptions of availability of external business start-up funding seem to have improved since the great recession in Scotland (though not in England), and frequency of informal investment has increased, but the median investment in start-ups has declined. This is partly a consequence of changing sources of funds but also possibly lower start-up costs.
- Many of the attributes that distinguish early-stage entrepreneurs from others are not easily altered by government policy: attributes like age, gender, household income, education level, migrant status and family business background. But significant attributes that policy might be able to influence are knowing a start-up entrepreneur, perceiving opportunities, and perceived media reporting of successful new businesses.

Entrepreneurial Business Attitudes, Activity and Aspirations in Scotland: 2014 Update

This chapter reports measures of entrepreneurial attitudes, activity and aspirations in Scotland in 2014. Where relevant, comparisons are made with the UK, Arc of Prosperity countries, and other innovation-driven, high income nations, and with measures in previous years¹. A significant minority of UK households use only mobile phones and do not have fixed line telephones². To reflect this, in 2014, 21% of the GEM sample across the UK consisted of mobile-only households. In 2014, for the first time since records began, the TEA rate of mobile-only households at 10.0% was significantly higher than that of other households (8.0%).

Entrepreneurial Attitudes

Table 3.1 displays historical trends of entrepreneurial attitudes among the non-entrepreneurially-active population – those who were not nascent, new or established business owner-managers. Opportunity perception and skills self-perception rose significantly in 2014, but fear of failure remained high. Opportunity perception is higher in Arc of Prosperity countries with the exception of Ireland. Non entrepreneurially-active individuals in Arc of Prosperity countries (again, with the exception of Ireland) tend to be less likely than those in Scotland and the UK generally to agree they have the skills,

Table 3.1: Entrepreneurial attitudes among non-entrepreneurial individuals in the Scottish, UK and Arc of Prosperity adult population samples, 2002 to 2014 (% agree with statement)

Source: GEM UK and Global Surveys

Note: 2009 AOP estimates exclude Ireland; AOP estimates after 2010 exclude Iceland, 2013 estimate excludes Denmark

Year	Know who business is (years)			Good opportunity to start business (months)			Have skills to start business			Fear would start business (see)		
	Scot	UK	AOP	Scot	UK	AOP	Scot	UK	AOP	Scot	UK	AOP
2002	19	21	46	23	26	44	37	41	36	40	37	33
2003	23	22	50	34	32	41	41	43	34	37	35	36
2004	26	24	43	33	33	43	47	46	36	36	36	36
2005	25	25	44	29	35	52	42	46	36	33	36	36
2006	25	25	43	34	34	52	45	45	36	33	37	39
2007	23	24	44	36	36	55	39	44	35	31	38	34
2008	20	24	43	33	27	41	41	44	36	34	38	35
2009	22	23	45	21	23	40	40	44	34	34	35	34
2010	27	31	38	25	27	42	44	47	37	43	36	35
2011	28	28	36	25	28	49	38	37	31	38	41	40
2012	26	27	33	27	31	45	37	39	30	43	43	41
2013	27	26	32	29	33	43	35	37	30	37	41	41
2014	25	26	32	38	37	47	39	40	30	40	42	41



knowledge and experience to start a business, but more likely to agree that they know an entrepreneur, although the gap has narrowed in the past few years.

In 2014, the proportion of working age Scots who thought that starting a business was a good career move rose significantly from 49% to 55%, close to the UK average of 58%. (In 2012, the equivalent estimate for both the Scottish and UK samples was 50%.) Scotland ranked 13th in comparison with 26 innovation-based countries on this score, above Ireland (49%) and Finland (41%) but similar to Norway (58%). Agreement in Scotland and the UK with the statement "you will often see stories in the public media about successful new businesses" rose significantly from 51% to 61% in Scotland and the UK, ranking them 11th in comparison with 25 innovation-driven countries; this is a big improvement in ranking since 2012 when Scotland, with the UK,

ranked third last. However, they were still behind Ireland (76%) and Finland (67%). The proportion of Scottish working age adults who agreed that those successful at starting a new business have a high level of status and respect remained at 79%, the same as the UK. Scotland ranked fourth-highest on this measure among 26 innovation-driven countries, below Finland (84%) and Norway (83%) and similar to Ireland (77%).

Entrepreneurial Activity

In 2014, representative samples of the working age population (aged 18-64) were surveyed by GEM teams in 70 countries, the same as 2013. Figure 3.1 shows the estimates of Total early-stage Entrepreneurial Activity (TEA) in each of the 29 innovation-driven (high income) sovereign nations participating in GEM2014, plus Scotland, ordered by TEA rate³. TEA measures the proportion of nascent and new business owner/managers

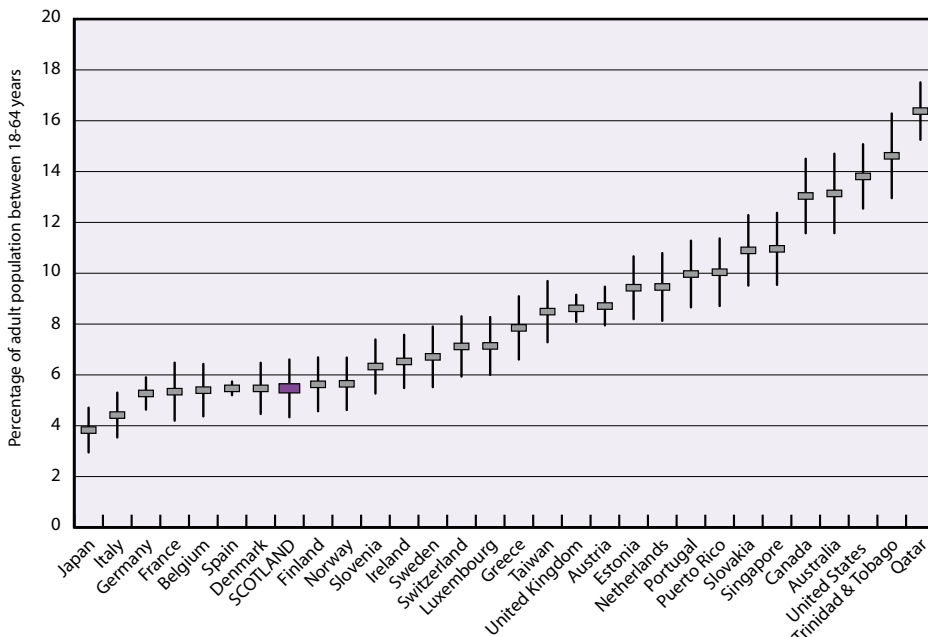


Figure 3.1: National 2014 TEA rates for 29 sovereign innovation-driven nations and Scotland, ordered by TEA rate

Source: 2014 GEM UK and Global Surveys



in the population of working age adults. In "innovation-driven" nations such as Scotland, stimulating innovation and entrepreneurship should be a focus of government attention, according to the World Economic Forum⁴.

If the vertical bars on either side of the point estimates for TEA for any two countries do not overlap, they have statistically different TEA rates⁵. Figure 3.1 shows that the Scottish TEA rate at 5.5% was between the third and fourth quartile of innovation-driven countries in 2014, with similar rates to other Arc of Prosperity countries but significantly below the UK rate of 8.6%. No innovation-driven country had a significantly lower TEA rate than Scotland in 2014, while all the first and second quartile countries had TEA rates statistically higher than those of Scotland.

Table 3.2 benchmarks the TEA rate for Scotland for 2014 against the UK, "Arc of Prosperity" (AOP) nations that participated in 2013 and

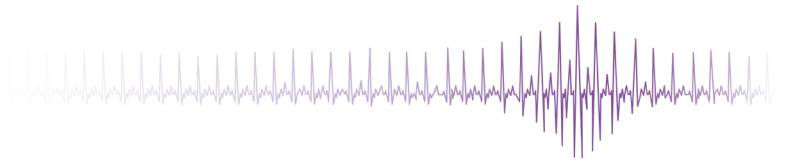
2014 (Finland, Ireland, and Norway) and 23 high income/innovation-driven sovereign nations that participated in GEM in 2013 and 2014. The TEA rate in Scotland was down from 6.8% to 5.5%. While this drop was not statistically significant, it brought the Scottish TEA rate significantly below the UK rate of 8.6%. The Scottish TEA rate consistently remained below the UK rate between 2000 and 2012, and under-performed the average AOP rate until 2012. While in 2013, Scotland had essentially the same TEA rate as its benchmarks for the first time since records began, in 2014 it declined to relative levels last seen in 2010.

The latest official statistics of registered enterprise births in Scotland were issued in November 2014 for 2013. The official statistics show increases of 5% in 2010, 9% in 2011, 3% in 2012 and a jump of 24% in 2013. In contrast, business start-up estimates from the Committee of Scottish Clearing Banks, based on new business bank account openings,

	TEA		% change	Scottish TEA as a % of other TEA rates	
	2013	2014		2013	2014
Scotland	6.8	5.5	-19%		
UK	7.3	8.6	18%	93%	64%
23 High income/ innovation-driven nations (like-for-like)	7.9	7.9	0%	86%	70%
3 Arc of Prosperity nations (like-for-like)	6.9	5.9	-14%	99%	93%

Table 3.2: Scottish and benchmark TEA rates, 2013 and 2014

Source: 2013 and 2014 GEM UK and Global Surveys



have shown year on year declines every year from 2008 to 2013, with a 1% increase in 2014. The correlation coefficient between registered enterprise births and the TEA rate each year from 2004 to 2013 was 0.69, while the correlation between registered enterprise births and the business start-up estimates from the Committee of Scottish Clearing Banks for the same period was -.38. (A correlation coefficient of 1.0 would be found if two series of numbers had a straight-line relationship with

each other while a correlation coefficient of 0.0 would indicate that they have no straight-line relationship.)

Table 3.3 shows trends in four different entrepreneurial activity rates in Scotland, the UK and Arc of Prosperity countries. A smaller proportion of people in Scotland expected to start a business in the next three years or were engaged in early-stage entrepreneurial activity than across the UK.

Item	I expect to start a business in the next 3 years (%)			Total early-stage Entrepreneurial Activity (TEA) rate (%)			Established Business Owner-manager (EBO) rate (%)			I have shut down a business in the last 12 months (%)		
	Scot	UK	AOP	Scot	UK	AOP	Scot	UK	AOP	Scot	UK	AOP
Sample												
2002	5.9	6.7	11.9	5.0	5.4	8.0	4.4	5.6	7.7	1.3	1.7	2.2
2003	6.8	8.0	10.9	5.6	6.4	7.9	5.3	5.7	7.4	1.4	2.0	2.3
2004	6.5	8.6	11.4	5.0	5.8	7.6	4.8	4.7	6.5	1.6	1.8	2.1
2005	6.2	8.7	11.7	5.7	6.0	7.9	4.1	5.1	7.1	1.6	1.9	2.3
2006	5.8	7.9	11.1	4.1	5.8	7.6	4.2	5.3	6.9	1.6	2.0	2.2
2007	5.6	6.8	11.5	4.6	5.5	7.9	3.9	5.8	7.5	1.3	2.0	2.4
2008	5.1	6.8	10.6	4.5	5.5	7.6	5.5	6.0	7.2	1.2	2.1	2.9
2009	4.3	6.2	10.5	3.6	5.8	7.2	4.8	5.8	7.6	1.2	2.2	1.7
2010	6.0	7.3	10.6	4.2	6.5	6.9	6.5	6.2	7.5	1.0	1.2	2.4
2011	9.8	9.8	9.1	6.2	7.6	6.3	5.2	6.5	7.1	0.7	1.6	1.7
2012	8.5	11.3	5.5	6.9	9.8	6.1	5.2	7.0	6.4	1.2	1.0	1.1
2013	6.4	8.1	10.1	6.8	7.3	6.9	5.0	6.5	6.8	1.0	1.4	1.4
2014	5.8	8.6	7.9	5.5	8.6	5.9	5.8	5.9	7.3	0.8	1.4	1.3

Table 3.3: Entrepreneurial activity in the Scottish and UK adult population samples, 2002 to 2014 (% agree with statement)

Source: GEM UK and Global Surveys

Note: Numbers in bold denote significant differences between Scottish and UK samples in the same year. Ireland did not participate in GEM in 2009, Iceland did not participate after 2010 and Denmark did not participate in 2013.



Figure 3.2 shows the two-year moving average TEA rates for 2002 to 2014 for three age groups: 18 to 29, 30 to 49 and 50 to 64 years. Moving averages are shown to smooth out random year-to-year fluctuations in small age group samples in the Scottish sample. This reveals a plateauing of activity at all age levels at a higher level than before the great recession except for 50 to 64 year olds across the UK, which have continued to increase activity since the start of the great recession.

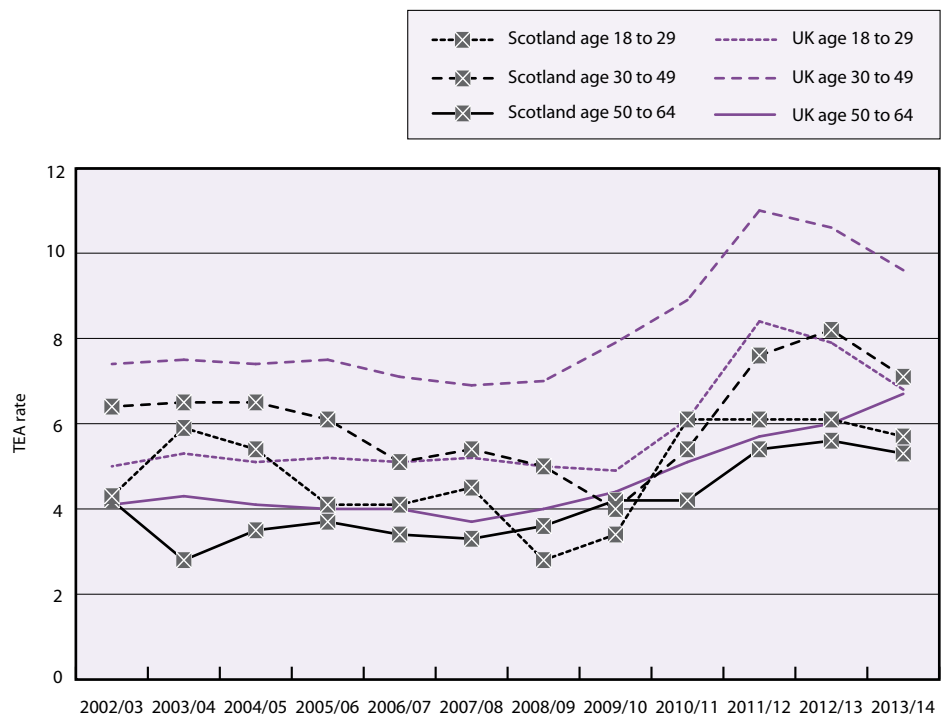


Figure 3.2: Two-year moving average TEA rates of Scottish and UK adults aged 18 to 29, 30 to 49 and 50 to 64, from 2002 to 2014

Source: GEM UK surveys 2002 to 2014



Entrepreneurial Aspirations

Table 3.4 shows estimates of how aspirational Scots early-stage entrepreneurs are compared with their peers in the UK and Arc of Prosperity countries. Equivalent data for three measures of entrepreneurial aspiration are available for nine years. On each of these, the measures for Scotland do not appear very different from those of the UK or AOP countries.

Item	High Job Expectation (% of TEA entrepreneurs expect at least ten jobs and growth >50% in five years)			New Product Market (% of all TEA entrepreneurs)			High or Medium technology sectors (% of all TEA entrepreneurs)		
	Scot	UK	AOP nations	Scot	UK	AOP nations	Scot	UK	AOP nations
2006	9.1	19.8	16.2	18.0	22.0	23.8	7.4	9.3	9.5
2007	18.0	16.5	16.2	22.9	19.7	24.2	5.3	9.4	9.3
2008	11.2	15.2	19.8	20.0	22.0	25.0	13.7	12.0	10.1
2009	14.4	17.6	18.1	18.9	25.8	35.8	15.0	8.3	3.5
2010	21.2	14.4	17.4	36.1	25.0	33.6	9.1	13.5	7.5
2011	21.8	17.3	18.1	38.0	39.2	35.3	3.0	10.8	8.6
2012	16.2	17.1	16.7	38.3	32.1	33.3	7.5	8.1	8.5
2013	17.5	15.9	14.6	25.9	26.3	23.1	7.6	4.8	8.7
2014	10.7	17.4	15.9	19.1	24.7	31.2	4.4	8.3	9.3
Average 2006 to 2014	15.6	16.8	17.0	26.4	26.3	29.5	8.1	9.4	8.3

Table 3.4: Entrepreneurial aspirations in the Scottish, UK and Arc of Prosperity nations adult population samples, 2002 to 2014 (% agree with statement)

Source: GEM UK and Global Surveys

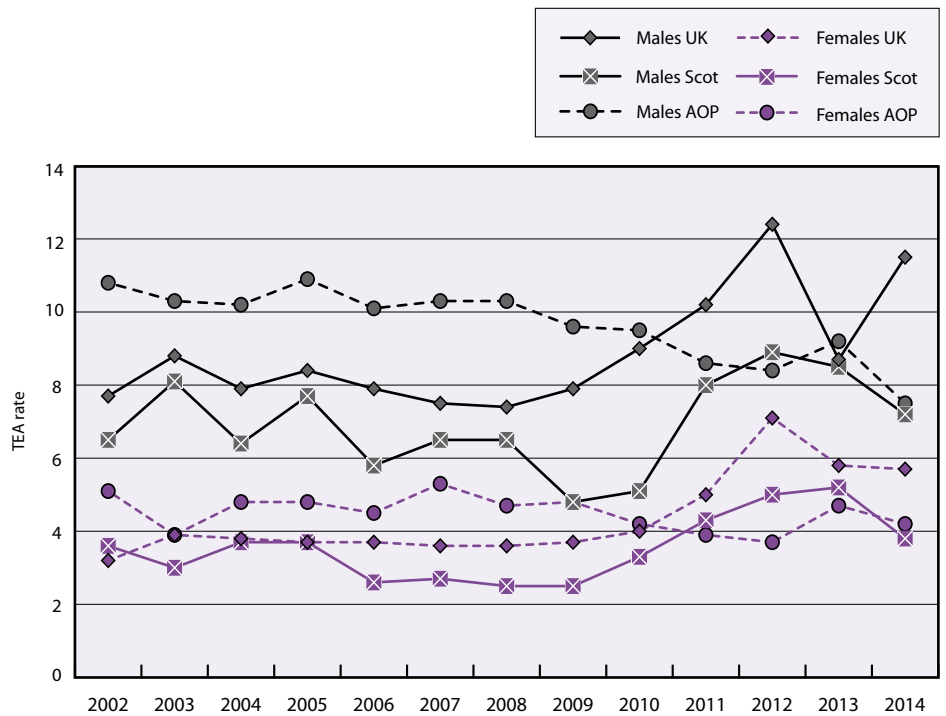


Figure 3.3: TEA rates among males and females in Scotland, the UK, and Arc of Prosperity countries for 2002 to 2014
 Source: GEM UK surveys 2002 to 2014

Male and Female Entrepreneurial Activity

In 2014, the TEA rate among working age males was 7.2%, significantly lower than the UK rate of 11.5% in UK, and among working age females was 3.8% (5.7% in UK). Figure 3.3 compares the trend over time in male and female TEA rates in Scotland, the UK and

participating Arc of Prosperity countries. Until recently, males and females in Scotland had lower TEA rates than AOP countries. In 2014, there was no difference in TEA rates between Scotland and the AOP average for both males and females. However, the "gender gap" in TEA rates remained.

Table 3.5: Prevalence of training in starting a business at school and after completing school by age group for the four UK home nations
 Source: GEM UK survey 2014

Note: Numbers in bold in a row denote significant differences in prevalence across the row.

		England	Wales	Scotland	N.Ireland
Age 18-29	Received training at primary or secondary school	16.0%	14.6%	16.2%	30.1%
	Received training after completing school education	14.1%	11.7%	12.0%	16.8%
Age 30-49	Received training at primary or secondary school	7.2%	7.4%	5.0%	11.0%
	Received training after completing school education	11.2%	13.4%	11.1%	14.1%
Age 50-64	Received training at primary or secondary school	3.7%	3.8%	3.4%	4.9%
	Received training after completing school education	12.7%	13.7%	15.5%	11.0%



Training in starting a business

In 2014, all respondents to the UK GEM survey were asked if they had ever had training in starting a business at primary or secondary school, and if they had ever had training in starting a business after completing their school education. The proportion of Scottish respondents who stated they had had training in starting a business in school was 7.3% (UK 8.6%). This is the same rate as in 2008 when this question was last included in the GEM survey (7.4%, UK: 8.2%) Table 3.5 shows that among the younger and middle age groups, Northern Ireland had significantly more trained individuals than Scotland, but there was no significant difference among the older age groups by nation. Younger adults are much more likely to recall receiving training. Surprisingly, there has been no change in the proportion of young adults reporting having had training in starting a business in school (17.2% in 2008) or after school (13.1% in 2008).

Table 3.6 shows that those who intend to start a business are more likely to have received training in starting a business at primary or secondary school than individuals at other stages of the entrepreneurial process. In the case of those having received training in starting a business after completing school, those who are not engaged in entrepreneurial activity have significantly lower levels. This suggests that training at school raises the likelihood of intention, but training after school, which is mainly voluntary, increases the likelihood of action.

Conclusion

In 2014, the TEA rate in Scotland reverted to levels typical of the early 2000s, while the UK rate maintained its high levels. The GEM survey was conducted mainly in July and August, and nascent and new activity may have been subdued by uncertainty in the months immediately before the independence referendum in September.

- 1 "Arc of Prosperity" is a term used by the Scottish Government to describe five small, high income, independent nations that surround Scotland in an arc from Ireland to the west, Iceland to the North, and Norway, Finland and Denmark to the east.
- 2 According to an Ofcom Survey in Q1 2014, 16% of adults in the UK lived in households that were mobile-only. Source: The Communications Market 2015, Ofcom.
- 3 Comparison of Scotland with factor-driven or efficiency-driven countries is less useful because their environments are so different.
- 4 Porter, M.E. and Schwab, K. (2008), *The Global Competitiveness Report 2008-2009*, Geneva, Switzerland: World Economic Forum.
- 5 "Statistical significance" refers to a calculation of where the range within which the average value of 95 out of 100 replications of the survey would be expected to lie. This range is shown in Figure 3.1 by vertical bars on either side of each data point. The length of the vertical bars is a function of the sample size, the smaller the sample size, the lower the length. If the 'confidence intervals' (denoted by the vertical bars) of two national TEA rates do not overlap, the difference between the TEA rates is not statistically significant at the 0.05 level. Reference in this report to significant differences implies statistically significant difference at the 0.05 level.

		No intention or activity	Intend to start	Early-stage	Established
England	Received training at primary or secondary school	7.8%	17.0%	12.8%	4.9%
	Received training after completing school education	9.5%	27.6%	20.6%	28.0%
Wales	Received training at primary or secondary school	7.1%	15.7%	12.2%	8.2%
	Received training after completing school education	9.4%	32.9%	31.4%	24.9%
Scotland	Received training at primary or secondary school	6.6%	19.6%	7.2%	9.2%
	Received training after completing school education	9.8%	39.7%	20.3%	30.0%
N.Ireland	Received training at primary or secondary school	13.4%	30.0%	16.7%	7.1%
	Received training after completing school education	10.9%	27.7%	39.9%	23.3%

Table 3.6: Prevalence of training in starting a business at school and after completing school by stage in the entrepreneurial process for the four UK home nations
Source: GEM UK survey 2014

Note: Numbers in bold in a row denote significant differences in prevalence across the row.

The Location of Entrepreneurial Activity in Scotland

In this chapter we examine entrepreneurial attitudes and activity across 4 NUTS2 (European) regions and 32 local authorities of Scotland.

Figure 4.1 shows the point estimates and 95% confidence intervals for TEA for the four NUTS2 (European) regions in Scotland, using the combined 2002 to 2014 database (21,044 individuals aged 18-64). The Highlands and Islands area appears to have a higher TEA rate than South Western Scotland. Compared to the period up to the great recession, the Scottish NUTS2 regions appear to have come

closer together in early-stage entrepreneurial activity¹. The Highlands and Islands NUTS2 area has a similar TEA rate (6.5%) to many other rural regions of the UK, but lower than remote rural regions such as Devon (7.6%)², Cornwall and Scilly Isles (8.8%) and Dorset and Somerset (7.3%). By contrast, South Western Scotland's TEA rate (4.5%) is the second lowest in the UK, higher only than Merseyside (4.1%). Like South Western Scotland, North Eastern Scotland (5.3%) and Eastern Scotland (5.4%) are in the bottom quartile of NUTS2 regions, with Northern Ireland (5.4%) and regions in North East England.

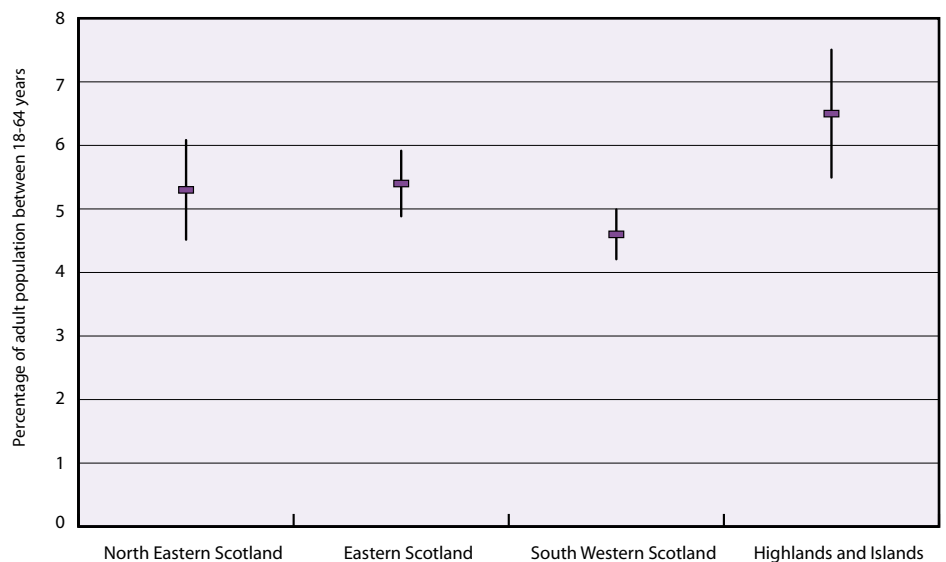


Figure 4.1: Total early-stage Entrepreneurial Activity rates for the four NUTS2 regions of Scotland, 2002 to 2014 combined database
 Source: 2002 to 2014 GEM Scotland adult population survey



NUTS2 areas combine large cities and rural regions, and they may mask important differences at smaller geographical levels. Data is available on the home local authority of respondents from 2003 to 2014: a total of 19,501 individuals aged 18-64. Because of the small size of some local authorities, estimates at local authority level for some authorities are subject to a wide degree of error. However, they do build a reasonably consistent pattern of activity across Scotland, as Figure 4.2 shows. TEA rates tend to be lower west of Glasgow (East and West Dunbartonshire and Inverclyde) and highest in remote rural areas except for the Northern Isles.

Figure 4.2 also shows the pattern of official new enterprise births (registrations for VAT or as an employer) averaged over the 2004 to

2013 period for comparison. The correlation with TEA rates is a moderate 0.45. Note that the TEA rates are based on the home address of the entrepreneur, not of the business. While almost two-thirds (62%) of Scottish early-stage entrepreneurs in 2014 ran their business in or from the home, only 56% of them were registered. Only 55% of established business owners in Scotland in 2014 based their business at home, but 85% of them were registered. The pattern of registered business location might differ from that presented here, because as the business gets established and registered it may move out of the home and, possibly, to a neighbouring local authority area. There is, for example, some evidence in the GEM data of commuting by established business owners from Aberdeenshire into Aberdeen.

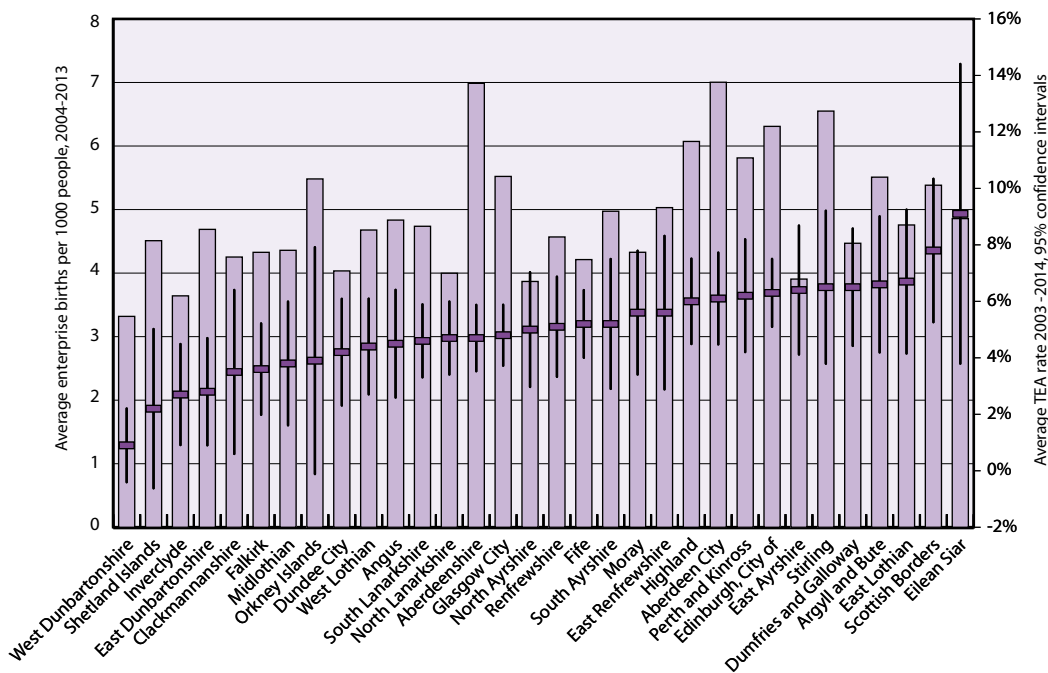


Figure 4.2: Total early-stage Entrepreneurial Activity (TEA) rate estimates for Scottish local authorities, combined 2003 to 2014 database, and average official new enterprise births, 2004 to 2013



Figure 4.3 shows the spectrum of estimates of entrepreneurial intention and activity along five levels from no intention to established business owner manager for each of the Local Authority regions for the combined 2003 to 2014 database. Remote rural areas stand out as having the highest proportion of entrepreneurially inclined individuals, with the lowest proportion occurring north and south of the Clyde.

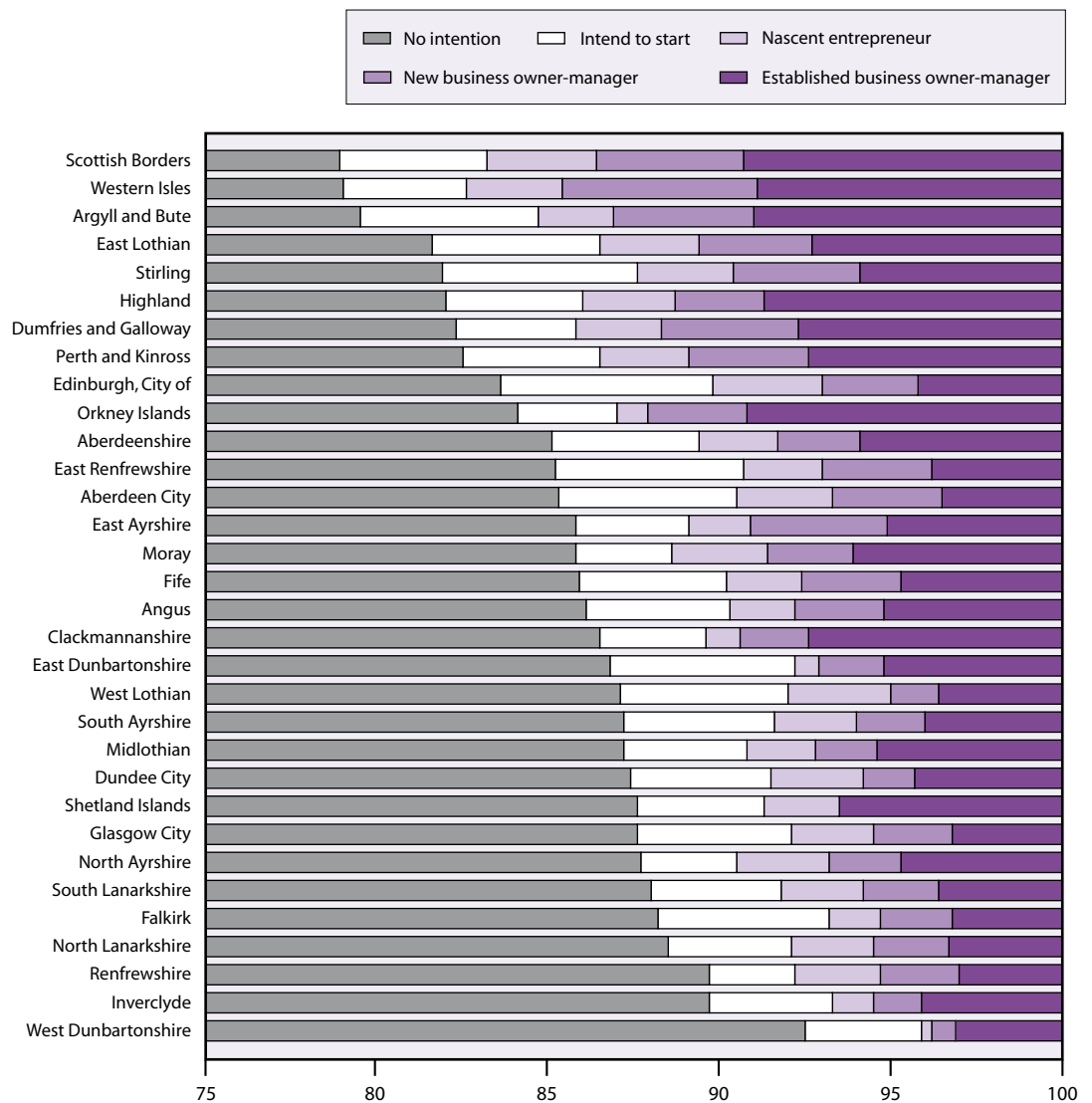


Figure 4.3: The spectrum of entrepreneurial intention and activity in Scottish Local authority areas, 2003 to 2014 combined database

Source: 2003 to 2014 GEM Scotland database

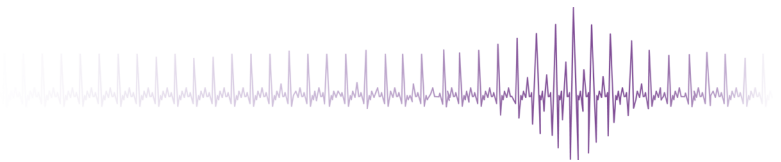


Table 4.1 shows the point estimates for each Local Authority area for key GEM measures of entrepreneurial attitudes for the non-entrepreneurially active respondents in the combined 2003 to 2014 sample. It shows that a higher proportion of non-entrepreneurial individuals in Edinburgh and a lower proportion in Dundee know someone who started a business in the last two years than the average for Scotland. Opportunity perception is higher in Aberdeen, Aberdeenshire and Edinburgh than almost all other local authorities, and it is also relatively high in Orkney and Shetland. There are no significant differences across the Scottish local authorities in fear of failure. Entrepreneurial skills self-perception is relatively high in Edinburgh and some rural local authority regions and relatively low west of Glasgow and in Dundee. There is a moderate, highly significant linear correlation between skills self-perception among the non-entrepreneurially-active population and TEA rates across Scottish local authorities ($r=.61$, $p=.000$, $n=32$). Social perceptions of entrepreneurship also vary across Scottish local authorities, but they do not correlate significantly with TEA rates, and there is no common pattern.

Table 4.1: Entrepreneurial attitudes among non-entrepreneurial respondents in Scottish local authority regions, 2003 to 2014 combined database (% of respondents aged 18-64 who are not nascent or existing business owner-managers)

Note: Percentages in bold are significantly different from the Scottish average.

	Know someone who started a business in past 2 years	Good opportunities for starting a business in the next 6 months	Fear of failure would prevent me from starting a business	I have the skills, knowledge and experience to start a business	Most people consider that starting a business is a good career choice	Those successful at starting a business have a high level of status and respect in society	You will often see stories about people starting successful new businesses in the media
Aberdeenshire	25.7%	44.4%	40.0%	43.3%	48.0%	76.5%	56.6%
Angus	22.3%	28.0%	42.7%	42.4%	45.4%	75.5%	50.4%
Argyll and Bute	25.5%	27.6%	40.4%	47.4%	50.8%	73.7%	51.6%
City of Aberdeen	23.7%	43.2%	39.2%	38.1%	52.8%	78.0%	56.9%
Clackmannanshire	23.0%	32.3%	36.5%	36.9%	54.2%	76.0%	51.5%
Dumfries and Galloway	21.2%	22.0%	35.9%	45.8%	48.6%	78.1%	53.6%
Dundee City	19.9%	25.1%	40.7%	34.7%	53.9%	73.5%	47.1%
East Ayrshire	23.8%	18.8%	44.7%	38.7%	51.6%	74.6%	50.1%
East Dunbartonshire	25.7%	33.3%	36.7%	37.5%	50.1%	73.8%	53.6%
East Lothian	25.8%	29.1%	39.6%	45.7%	43.0%	69.2%	51.9%
East Renfrewshire	28.2%	33.6%	36.8%	33.5%	47.0%	76.2%	54.6%
Edinburgh, City of	31.1%	41.0%	43.3%	43.2%	49.1%	75.5%	51.0%
Falkirk	25.0%	26.4%	43.8%	37.3%	59.9%	76.1%	51.9%
Fife	25.5%	30.1%	41.9%	40.6%	53.4%	77.1%	53.5%
Glasgow City	24.5%	28.3%	41.6%	37.4%	54.7%	79.9%	51.3%
Highland	23.6%	31.7%	37.7%	42.4%	52.0%	79.6%	51.2%
Inverclyde	21.3%	24.3%	40.8%	33.5%	52.7%	77.4%	58.2%
Midlothian	26.1%	24.2%	36.6%	35.9%	54.8%	78.7%	52.1%
Moray	27.8%	25.9%	46.2%	39.6%	46.7%	73.6%	53.5%
North Ayrshire	29.7%	20.2%	37.5%	42.6%	53.7%	76.1%	51.9%
North Lanarkshire	22.7%	23.3%	38.4%	36.7%	54.6%	79.7%	49.0%
Orkney Islands	28.0%	53.1%	32.0%	44.4%	51.4%	89.1%	67.2%
Perth and Kinross	24.7%	29.9%	39.6%	45.8%	49.7%	73.5%	52.5%
Renfrewshire	25.1%	24.4%	38.2%	38.9%	57.6%	81.3%	54.7%
Scottish Borders	30.3%	26.7%	35.1%	42.6%	55.1%	72.6%	59.3%
Shetland Islands	36.4%	45.1%	46.3%	38.8%	52.7%	79.4%	64.3%
South Ayrshire	29.0%	26.6%	42.2%	41.2%	50.5%	68.8%	44.4%
South Lanarkshire	23.8%	20.8%	39.0%	35.7%	49.9%	76.4%	52.5%
Stirling	20.9%	30.0%	41.8%	45.5%	50.3%	73.1%	56.2%
West Dunbartonshire	23.3%	17.7%	42.8%	36.9%	54.3%	79.2%	52.4%
West Lothian	23.5%	31.3%	39.7%	36.3%	46.1%	74.2%	50.0%
Western Isles	18.3%	22.2%	39.4%	45.2%	53.0%	85.7%	50.3%
Scotland	25.2%	30.0%	40.2%	40.1%	51.5%	76.6%	52.5%
UK	24.9%	31.6%	39.2%	43.3%	53.2%	74.6%	52.3%



Edinburgh and remote rural regions of Scotland tend to have a higher proportion of in-migrants and immigrants, who have higher rates of entrepreneurial activity than life-long residents. There is a linear correlation ($r=0.649$, $p=.000$, $n=32$) between the proportion of in-migrants and immigrants in these regions and the regional TEA rate. There is an even stronger correlation between the proportion of migrants and entrepreneurial skills self-perception ($r=.723$, $p=.000$, $n=32$). In fact, just two variables, the proportion of migrants (positive) and opportunity perception (negative) together "explain" half of the variability in TEA rates across Scottish local authorities³. Migrants are least likely to settle in former heavy industrial areas where opportunity perception is low, and are more frequent in Edinburgh where opportunity perception is high and remote rural areas where opportunity perception (with the

exception of the Northern Isles) is low, but other economic opportunities may be even lower. The difference between these opportunity-poor rural areas and the former industrial areas is the skills and opportunity levels of migrants, who start despite the perceived lack of opportunities.

In summary, this chapter has demonstrated differences in entrepreneurial intentions and activity across Scotland. Edinburgh and remote rural regions tend to have high rates of entrepreneurial activity while regions west of Glasgow have the lowest rates. In part, this reflects Scotland's industrial heritage, with former heavy industrial and mining regions showing less favourable attitude, intention and activity rates. The capital city and remote rural areas show the most positive mix of attitude, intention and activity rates.

1 See GEM Scotland report 2007/08, Chapter 5, Figure 5.1.

2 Estimates for other UK NUTS2 regions are based on averaging annual estimates from 2002 to 2014, because sample sizes differed in England each year.

3 Linear regression, adjusted $r^2 = .484$; $F=15.557$, $p=.000$

In this chapter, family businesses are defined using a GEM measure that was developed with the Raymond Family Business Institute: "an existing business that the respondents and one or more family members, including by blood, marriage, or adoption, together own and control more than 50% of the business". The proportion of new business owner-managers who are family business owners has significantly declined across the UK since the start of the great recession. For the combined three year period 2006 to 2008, 17% of nascent entrepreneurs, 18% of new business owner-managers and 24% of established business owner-managers were running family businesses in Scotland¹ (UK: 21%, 17%, 21%). For the most recent three year period, 2012 to 2014, the equivalent estimates are 18%, 12% and 19% for Scotland and 21%, 10% and 18% for the UK.

Family businesses often spin off new businesses. In 2006 to 2008, 25% of nascent business entrepreneurs, 11% of new business owner/managers and 17% of established business owner/managers in Scotland reported their business was developed by or separated from an existing business controlled within

their family. The equivalent percentages for the UK were 20%, 10% and 13%. For the most recent three year period, 2012 to 2014, the equivalent estimates are 20%, 14% and 17% for Scotland and 17%, 11% and 11% for the UK.

The higher percentage of nascent entrepreneurs reporting a family business as an incubator than existing entrepreneurs suggests that either family businesses are particularly prolific incubators of spinoffs, or that family business spinoffs have higher attrition than other start-ups. The latter possibility is supported by the finding that in the combined 2006 to 2008 sample, 21% of new business owners who reported their business as a family spinoff also said they had closed down a business in the last 12 months, compared with 7% of new business owners whose business was not a family business spinoff (and 11% versus 5% in the 2012 to 2014 period). These differences are statistically significant. However, there is no significant difference in the percentage of new business owner-managers of family and non-family businesses who have closed down a business in the last 12 months in either of these periods.



Table 5.1: Effect of a family business background on entrepreneurial attitudes in Scotland, 2012 to 2014

Source: Combined GEMUK APS 2012, 2013 and 2014 (estimates in bold show significant differences within a column.)

	Know someone who started a business in past 2 years	Good opportunities for starting a business in the next 6 months	Have knowledge, skills to start a business	Fear of failure would prevent me starting a business (among those who see opportunities)
Parents did not run a business	27.0	31.6	38.3	40.1
Parent ran a business	37.0	36.8	46.8	32.5
Worked in parent's business	38.8	44.1	64.9	28.8

On average over the combined 2008 to 2014 period, 26% of working age adults in Scotland had at least one parent who ran their own business (30% in UK), and 10% (11% in UK) actually worked in their parent's business. Table 5.1 and 5.2 show the effect of a family business background, and the additional effect of having worked in a business that was run by either of one's parents, in Scotland and the UK. For both Scotland and the UK, a family business background significantly increases

the likelihood that an individual knows someone else who has started a business in the last two years, the likelihood that an individual believes that there will be good opportunities to start a business in the local area in the next six months, the likelihood that an individual believes that they have the skills, knowledge and experience to start a business, and it significantly lowers fear of failure, conditional on seeing opportunities. In all cases, the effect is stronger if the individual has worked in the family business.

Table 5.2: Effect of a family business background on entrepreneurial attitudes in UK, 2012 to 2014

Source: Combined GEMUK APS 2012, 2013 and 2014 (estimates in bold show significant differences within a column.)

	Know someone who started a business in past 2 years	Good opportunities for starting a business in the next 6 months	Have knowledge, skills to start a business	Fear of failure would prevent me starting a business (among those who see opportunities)
Parents did not run a business	26.2	34.0	40.6	37.8
Parent ran a business	38.0	44.1	51.5	40.2
Worked in parent's business	44.6	46.7	65.4	30.1



	I expect to start a business in the next 3 years (%)	Nascent Entrepreneurship rate (%)	New Business owner-manager rate (%)	Total early-stage Entrepreneurial Activity (TEA) rate (%)	Established Business Owner-manager (EBO) rate (%)	I have shut down a business in the last 12 months (%)
Parents did not run a business	5.7	2.5	2.8	5.3	4.5	1.3
Parent ran a business	9.9	3.5	4.8	8.3	4.4	0.9
Worked in parent's business	11.4	8.1	4.8	12.3	12.7	1.6

Tables 5.3 and 5.4 show the effect of a family business background on entrepreneurial intention and activity. The effect is significant across all measures except for business closure, and as with attitudes, the effect is stronger if the individual worked in the family business.

In Scotland and across the UK, those with a family business background show a greater tendency to aspire to create a significant business organization. For the 2012 to 2014 period, the proportion of individuals in Scotland who were early stage entrepreneurs and expected to employ at least 20 people in 5 years' time was 0.5% for those with no family business background, 0.8% for those who did not work in their parent's business, and 1.6% for those who did (UK: 0.7%, 1.2%, 1.6%). While early-stage family business entrepreneurs seemed no more growth oriented than their non-family counterparts

(11% versus 10%), those who ran spinouts of family businesses were significantly more likely to be growth-oriented than those who were not (17% versus 10%). In keeping with this, median total start-up funding for the businesses of nascent entrepreneurs who have worked in their parent's family business is about double that of those who have not: £20,000 compared with £10,000 (based on pooling the 2008 to 2014 database). This difference is also found between nascent entrepreneurs of family spinouts (£25,000) versus others (£10,000)².

Sixteen per cent of immigrants to Scotland had worked in their parents' family business, compared with only 9% of those born in Scotland (or born elsewhere in the UK). This partly explains the higher TEA rates of immigrants.

Male early-stage entrepreneurs in Scotland were significantly more likely to export if they have a

Table 5.3: Effect of a family business background on entrepreneurial intention and activity in Scotland, 2012 to 2014

Source: Combined GEMUK APS 2012, 2013 and 2014 (estimates in bold show significant differences within a column.)

Table 5.4: Effect of a family business background on entrepreneurial intention and activity in the UK, 2012 to 2014

Source: Combined GEMUK APS 2012, 2013 and 2014 (estimates in bold show significant differences within a column.)

	I expect to start a business in the next 3 years (%)	Nascent Entrepreneurship rate (%)	New Business owner-manager rate (%)	Total early-stage Entrepreneurial Activity (TEA) rate (%)	Established Business Owner-manager (EBO) rate (%)	I have shut down a business in the last 12 months (%)
Parents did not run a business	6.8	4.0	3.3	7.2	5.6	1.7
Parent ran a business	12.5	5.2	5.0	9.9	6.8	1.8
Worked in parent's business	18.7	8.8	5.4	14.0	11.1	2.1



family business background: 48.7% of those with no family business background exported, 67.2% for those who did not work in their parent's business exported, and 73.2% for those who did, exported (females: 38.0%, 38.8%, 45.0%).

Figure 5.1 shows the interaction between family business background and education for males and females on TEA rates in Scotland, using the combined 2008 to 2014 database on over 10,700 individuals. Among women, the differences in TEA rates between the highest and lowest levels of family business engagement are statistically significant for each education level. Figure 5.1 suggests that, in Scotland, the legacy of working in a family business brings the TEA rate of women up to the rate of men who have worked in a family

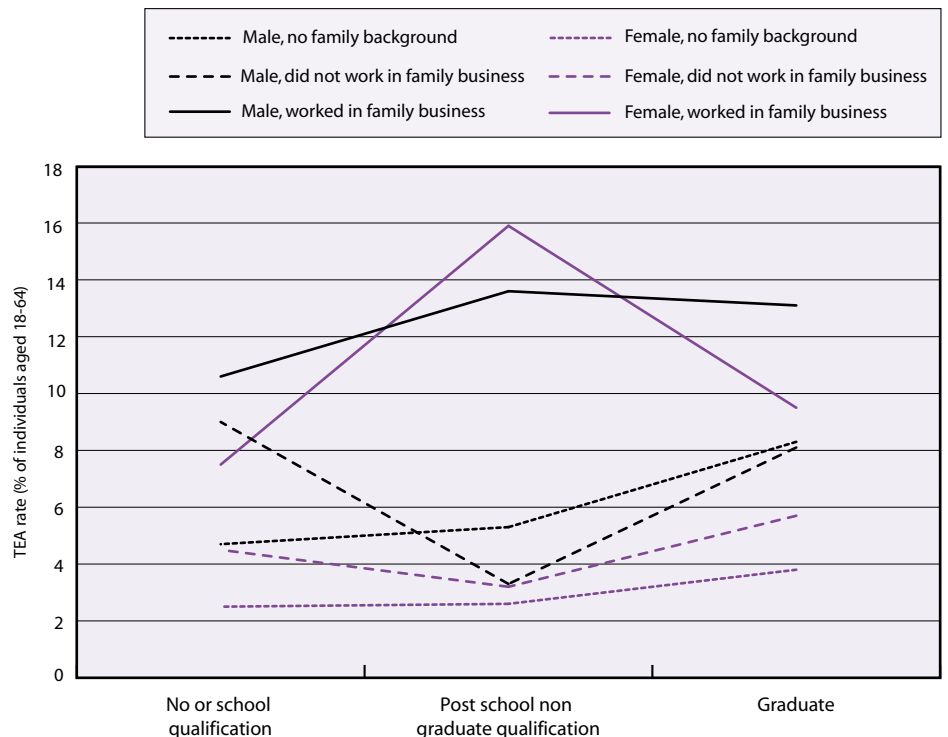
business (their overall average TEA rates at 9% and 12% are not statistically significant).

In the UK as a whole, women who worked in a family business have the same rate as men who did not have a family business background (8%). Among both men and women in Scotland and across the UK, TEA rates rise with level of education. However, having a family business background, even when one has not worked in the family business, seems to lift TEA rates significantly among those with least educational qualifications in Scotland, from 4% to 7%. This effect is not apparent across the UK. Multivariate logistic regression analysis on the unweighted sample confirmed the interaction effect of education level and family business background in the Scottish sample suggested in Figure 5.1³.

In conclusion, a family business background can confer a wide range of benefits that increase the propensity of people in Scotland - and particularly women and men without qualifications - to engage in entrepreneurial activity. It increases skills and opportunity perception while reducing fear of failure, it provides more role models and funding, and it seems to increase the chances that an early-stage entrepreneur will be growth oriented, particularly if the business is a spinoff of an existing family business. The entrepreneurial advantage of a family business background seems to be robust, and not an artefact of demographic differences (for example age, gender, education or income) or differences in attitudes⁴.

- 1 If nascent entrepreneurs expected the business to be a family business within five years, they were categorised as family business nascent entrepreneurs.
- 2 This estimate excludes the years 2010 and 2011.
- 3 Further details are available from the author.
- 4 See Chapter 8.

Figure 5.1: Combined effect of education level and family business background on early-stage entrepreneurial activity rates, by gender, for Scotland 2008 to 2014
Source: Combined GEMUK APS 2008 to 2014



This chapter considers the funding of start-up ventures in Scotland, comparing with benchmark nations where data permits.

Figure 6.1 shows the proportion of early-stage (i.e. nascent and new) and established entrepreneurs who thought that there were adequate sources of external start-up funding in their region, by home nation from 2003/04 to 2013/14. The long term pattern is of an increase in perception of external funding availability in Wales, Scotland and Northern Ireland from a lower base than England, but little change in perceptions in England. This pattern may reflect growing effort by regional governments in the UK to encourage and provide additional sources of start-up funding following the withdrawal of much bank funding from 2008, contrasted with major disruption and reorganisation of business support in England following the abolition of Regional Development Agencies.

Figure 6.2 shows the proportion of early-stage and established entrepreneurs who did not know if there were adequate sources of external start-up funding in their region, by home nation from 2003/04 to 2013/14. This shows an increase over time, especially since the onset of the great recession. This steady increase over time in the percentage of entrepreneurs who do not know suggests they are becoming less connected and/or less concerned with sources of start-up finance than in the past.

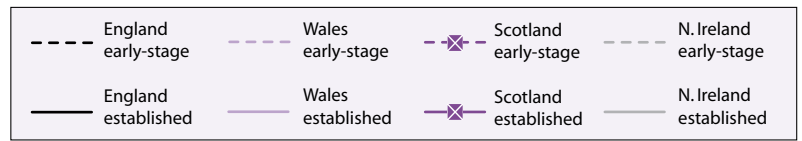
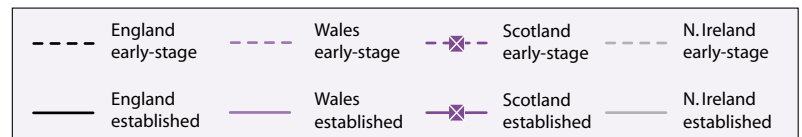


Figure 6.1: Percentage of early-stage (i.e. nascent and new) and established entrepreneurs who thought that there were adequate sources of external start-up funding in their region, by home nation from 2003/04 to 2013/14
Source: GEM UK APS, 2003 to 2014

Figure 6.2: Percentage of early-stage and established entrepreneurs who did not know if there were adequate sources of external start-up funding in their region, by home nation from 2003/04 to 2013/14
Source: GEM UK APS, 2003 to 2014





	2006	2007	2008	2009	2010	2011	2012	2013	2014
No funding needed	10	0	0	0	4	9	0	7	0
All funded by entrepreneur	66	52	45	62	50	46	51	30	68
None funded by entrepreneur	0	0	0	6	0	0	0	0	0
Family member	9	4	39	5	20	5	10	6	4
Friends, neighbours or work colleagues	5	14	32	6	8	18	11	23	4
A stranger	2	2	8	0	0	4	11	4	0
Banks or other financial institutions	20	40	35	23	29	12	25	22	11
Government programmes	11	23	29	16	19	18	24	19	8
Any other source	5	10	0	6	14	22	19	12	11

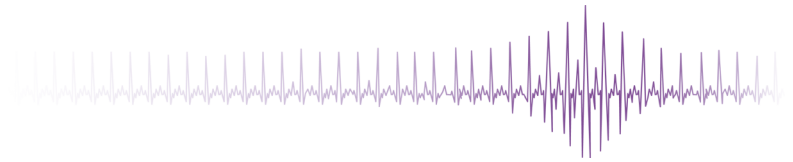
Table 6.1: Percentage of nascent entrepreneurs mentioning different expected sources of funding for their new business in Scotland, 2006 to 2014
Source: GEM Scotland APS, 2006 to 2014

In 2014, 35% of nascent entrepreneurs in the Scottish GEM sample (41% in the UK) were aware of start-up loans from the Start Up Loans Company, while 39% (39% in the UK) of those who intended to start in the next three years but had no current business ownership were aware¹. Only 1% of new business owner-managers (out of 324 sampled) and no nascent entrepreneurs (out of 420 sampled) in the UK had ever used crowdfunding to fund any business or proposed business. A similar very small proportion had tried crowdfunding but not succeeded.

Tables 6.1 and 6.2 show the percentage of nascent entrepreneurs in Scotland and the UK each year from 2006 to 2014 who expected to get funding from different sources. Expectations of external funding appear to have dropped over the past three years. On average over this period, 51% of Scottish entrepreneurs (50% across the UK) expected to fund all the start-up costs themselves. Sixty-six percent (63% in the UK) expected to fund at least half the costs. A further 4% (5% in the UK) expected to have no start-up costs. The median expected start-up cost in Scotland

Table 6.2: Percentage of nascent entrepreneurs mentioning different expected sources of funding for their new business in the UK, 2006 to 2014
Source: GEM UK APS, 2006 to 2014

	2006	2007	2008	2009	2010	2011	2012	2013	2014
No funding needed	5	4	5	5	10	6	0	5	0
All funded by entrepreneur	46	53	51	51	44	43	54	43	65
None funded by entrepreneur	3	2	2	4	9	5	0	1	0
Family member	10	14	16	11	9	5	16	5	14
Friends, neighbours or work colleagues	12	12	15	11	12	15	15	16	12
A stranger	5	4	4	4	1	2	6	5	2
Banks or other financial institutions	26	23	21	22	19	25	29	14	10
Government programmes	16	14	19	16	19	16	22	12	9
Any other source	8	8	6	10	5	7	17	10	10



was £12,000 (£10,000 in the UK) for the 2006 to 2008 triennial period and £10,000 in both successive triennial periods, with the median cost for those businesses fully funded by the entrepreneur being £10,000 (£8,000 in the UK) in the first triennial period and £5000 in the second and third triennial periods.

Turning from the demand side to the supply side, Figure 6.3 shows the percentage of 18-64 year olds who have invested in at least one new business in the last three years in Scotland, the UK, and Arc of Prosperity countries from 2002 to 2014. Rates were stable in Scotland at around one third of the average AOP rate until 2009, when they dropped significantly, then rose significantly in 2010 to twice their long run average and remained there. A similar pattern is evident in the UK, but not in other AOP countries (with the exception of Ireland).

This striking pattern is probably connected with the banking crises and consequent increasingly difficult credit market for start-up businesses in the British Isles in 2009, forcing start-up entrepreneurs to find alternatives, including informal investment.

Tables 6.3 and 6.4 (next page) show the nature of the relationship between individual investors and their start-up entrepreneur investees in Scotland and the UK from 2002-2004 to 2012-2014. Although the absolute numbers of investors are small, investment in friends and neighbours appears to be more frequent in the UK than in Scotland; investment in family appears to be more frequent in Scotland than in the UK, and investment in strangers has increased in both the UK and Scotland.

The overall median informal investment

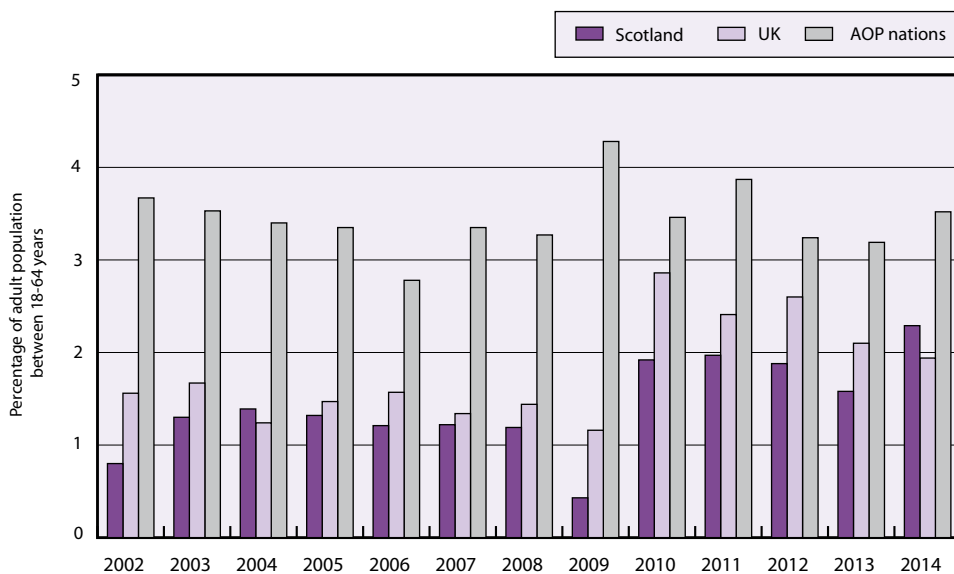


Figure 6.3: Informal Investment rate in Scotland, UK and Arc of Prosperity nations, 2002-2014 (% of respondents aged 18-64 who invested in someone else's new business in the last three years)

Source: GEM Global APS, 2002 to 2014



	2003 to 2005	2006 to 2008	2009 to 2011	2012 to 2014
Close family	59	43	60	51
Other relative	6	1	2	8
Work colleague	6	16	11	11
Friend/neighbour	27	34	20	19
Stranger	3	5	5	10
Other	0	0	2	0

Table 6.3: Relationship of informal investor with entrepreneur in their most recent start-up business investment in Scotland, 2003 to 2014

Source: GEM UK APS, 2003 to 2014

	2003 to 2005	2006 to 2008	2009 to 2011	2012 to 2014
Close family	51	45	43	48
Other relative	4	4	6	6
Work colleague	12	11	6	6
Friend/neighbour	29	34	37	30
Stranger	4	6	7	9
Other	1	1	0	1

Table 6.4: Relationship of informal investor with entrepreneur in their most recent start-up business investment in the UK, 2003 to 2014

Source: GEM UK APS, 2003 to 2014

Table 6.5: Median investment amount by an informal investor in their most recent start-up business investment in Scotland and the UK, 2003 to 2014

Source: GEM UK APS, 2003 to 2014

	2003 to 2005	2006 to 2008	2009 to 2011	2012 to 2014
Scotland	7000	5500	5000	5000
UK	8000	10000	6000	5000

in a new business from 2012 to 2014 was £5,000 in both Scotland and the UK. Table 6.5 suggests that median investment amounts have declined over time. The median amount invested over the period 2002 to 2014 in close family members was £5,000 (£7,000 in UK), other family members £5000 (£5000 in UK), work colleagues £12,000 (£15,000 in UK), friends and neighbours £3,000 (£5000 in UK) and strangers £10,000 (£15,000 in UK). The larger size of median investment in strangers and work colleagues suggest a more professional "business angel" type of investment relationship. On average across the three UK surveys from 2012 to 2014, 29% of close family members expected to get their money back within five years, compared with 59% to 66% in other groups, while 41% of close family members expected never to get their money back, compared with 25% to 28% in other groups.

In conclusion, perceptions of availability of external start-up funding seem to have improved since the great recession in Scotland (though not in England), and frequency of informal investment has increased, but the median investment in start-ups has declined. This is partly a consequence of changing sources of funds but also possibly lower start-up costs.

¹ The Start Up Loans Company was established in September 2012 with UK government funding to ensure the provision of affordable finance, free mentoring and support for those who cannot obtain funding from alternative sources. See www.startuploans.co.uk/about-us/



Scottish Entrepreneurship Policy and Programmes Review 2014

2014 was the year of the Scottish independence referendum, which took place in September. A survey of business members by the Federation of Small Businesses in April and May found that 38% thought that independence would mean their business operations or business plans would have to change¹.

In March, a new Scottish Framework and Action Plan for Women's Enterprise² was announced by the Scottish Government, with £50,000 for an Investing Women initiative and £35,000 to help establish five new women's enterprise ambassadors to act as role models and mentors for start-up and growth businesses, inspiring, motivating and connecting with female entrepreneurs.

In April the Scottish Government launched the Scotland CAN DO Action Framework³ setting out in detail current investment priorities for the Scotland CAN DO strategy for becoming a world-leading entrepreneurial and innovative nation, launched in November 2013.

In June, the Scottish Government launched an industrial strategy, noting that "whilst the number of private enterprises in March 2013 was the highest since 2000, the number of businesses operating in Scotland (as a proportion of the population) remains lower than in the UK"⁴. It proposed a Scottish Innovation Agency for an independent Scotland.

In July, the REAP Scotland report was released,

proposing a focus on five key themes to boost innovation-driven entrepreneurship in Scotland: effective connections, skills for growth, access to finance; the role of universities; and role models⁵.

In August 2014 leadership of the Scottish EDGE Fund passed to the Hunter Foundation and RBS, with an Advisory Board drawn from Scottish Government, Scottish Enterprise, Highlands & Islands Enterprise, Business Gateway, Entrepreneurial Scotland and The Prince's Trust.

In November, the Scottish Government revealed that the number of unregistered businesses had dropped by 8% to 168,490 in the year to March 2014, but the number of registered private sector enterprises rose by 4% from 160,050 to 166,525, for a total decrease of 2.4%, the first annual decrease in total business stock since 2006. The number of registered private sector enterprises operating in Scotland (including the number of medium-sized enterprises) was the highest since the current records began in 2000⁶.

Business Gateway, the network of local business advisors and common web-delivered business services run by Scottish local authorities and Scottish Enterprise, helped around 11,000 business start-ups in 2011/12. In the three successive accounting years, it helped around 10,000 business start-ups. However, with a reorientation to local marketing, it increased the number of enquiries from around 39,000 in 2010/11 to around 63,000 in 2014/15⁷.

Scottish Enterprise reported an increase in sales of £1.3 billion among the 2000 businesses it worked with most intensively in 2013/14. The Scottish Investment Bank's total investment, including deals done through the Scottish Loan Fund, reached £32.4 million (the same as in 2012/13), leveraging a further £93.3 million (£60.4 million in 2012/13) in private sector investment into 111 companies (106 in 2012/13). SIB's investment portfolio comprised 254 companies in 2013/14. It worked with a total of 378 Scottish companies during 2013/14 to help them raise funding to grow their businesses, down from 460 in 2012/13⁸.

- 1 www.fsb.org.uk/News.aspx?loc=scotland&rec=8653
- 2 <http://news.scotland.gov.uk/News/New-support-for-women-in-business-9f2.aspx>
- 3 www.scotland.gov.uk/Resource/0044/00449131.pdf
- 4 www.gov.scot/Resource/0045/00453082.pdf, page 14
- 5 www.hie.co.uk/business-support/entrepreneurship/mit-reap/
- 6 www.gov.scot/Topics/Statistics/Browse/Business/Corporate/KeyFacts
- 7 Business Gateway Annual Review 2014/15, p.9
- 8 www.scottish-enterprise.com/about-us/what-we-do/investment/sib/sib-annual-review-2014



As the GEM Scotland survey was being conducted in July and August, the independence referendum result was too close to call. Many people waited for the outcome before making important decisions. This could have affected the TEA rate result, which shows a decline (which is not statistically significant) from an all-time high of 8.6% in 2013 to 5.5% in 2014.

It is perhaps more appropriate therefore this year to consider how the full set of GEM data can inform policy in Scotland rather than to focus on annual differences. The onset of the great recession marked a significant break in entrepreneurial activity across the UK. On average over the 2008 to 2014 period, around 6.4% of individuals in Scotland were early-stage entrepreneurs – around one in sixteen people. We can predict with 72% accuracy whether an individual in the database is an early-stage entrepreneur or not solely on the basis of

demographic and attitudinal characteristics; the home local authority does not “explain” any of the unexplained variability in the model.

The following list displays the effect of these characteristics, which are additive. So in a group of male 50 year old English graduates who worked in their parents' family business but who are not currently running an established business, all of whom know someone who started a business recently and see good opportunities to start a business, we might expect one in five of them to be early-stage entrepreneurs. Clearly, the effects that policy might be able to influence are knowing a start-up entrepreneur, perceiving opportunities, and media reporting of successful new businesses. These all fit with the REAP themes of effective connections, role models and the role of the universities - indeed, the education system more widely - in Scotland's entrepreneurial ecosystem.

Number of early-stage entrepreneurs for every 100 non entrepreneurs with the default characteristic for each variable modelled (base case, controlling for year effects)	2.5
Additional number of early-stage entrepreneurs for every 100 non entrepreneurs for people with the following characteristic	
Know someone who has started a business in the last two years (yes versus no)	+7.3
Age 45 to 54 (versus 18 to 24)	+2.3
High versus middle income (£100,000+ versus £17,500 to £99,000)	+2.2
Parents had a family business and worked in the business (versus no family business background)	+1.9
Perceiving good opportunities to start a business in the local area (yes versus no)	+1.8
Parents had a family business and did not work in the business (versus no family business background)	+1.8
Being male (versus female)	+1.7
Being a graduate (versus no or school-level qualifications)	+1.4
Born elsewhere in the UK (versus Scots born or migrant)	+1.0
Agree with statement “you will often see stories in the public media about successful new businesses”	+0.8
Graduate + did not work in the family business	+0.7
Vocational/other qualifications + did not work in the family business	-1.5
Established business owner-manager	-2.1



Appendix 1

The diagram below shows the latest version of the GEM model¹, which recognises that the nature and contribution of entrepreneurship may vary across countries with different levels of economic development, from "factor-driven economies", "efficiency-driven economies", and "innovation-driven economies"². The model suggests a comparative study of entrepreneurship of an economy such as Scotland should focus on other innovation-driven economies rather than factor- or

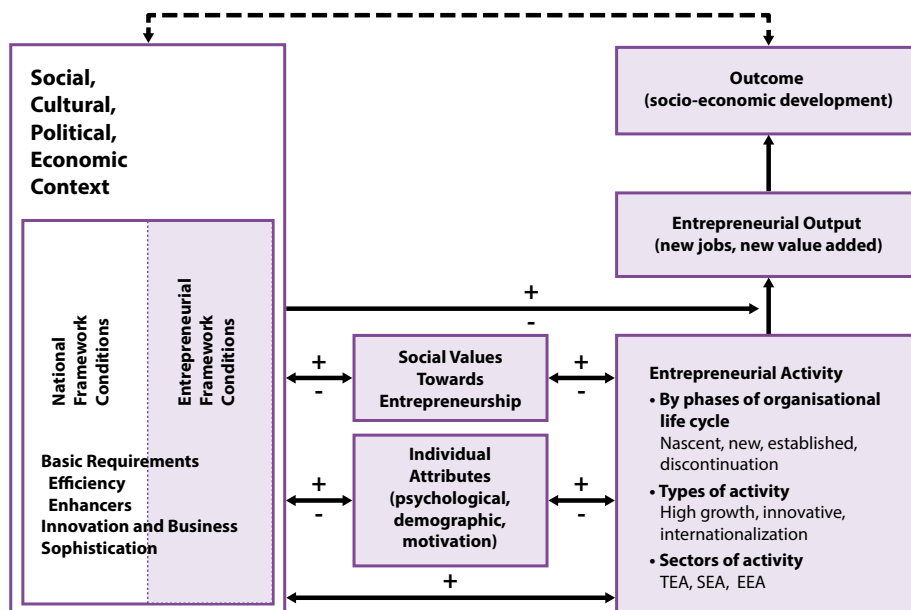
efficiency-driven economies.

The GEM model recognizes that entrepreneurship is multi-faceted, and may be expressed in different ways. Given the right institutional context (as represented by the left hand side of the diagram), entrepreneurial attitudes, activity and aspiration interact to contribute to national economic growth through the provision of new economic activity.

1 Singer, S., Amoros, J.E. and Moska, D. (2015) Global Entrepreneurship Monitor 2014 Global Report. GERA: London.

2 Phases of economic development are decided on the level of GDP per capita and the extent to which countries are factor-driven in terms of the shares of exports of primary goods in total exports. See www.weforum.org/reports/global-competitiveness-report-2014-2015

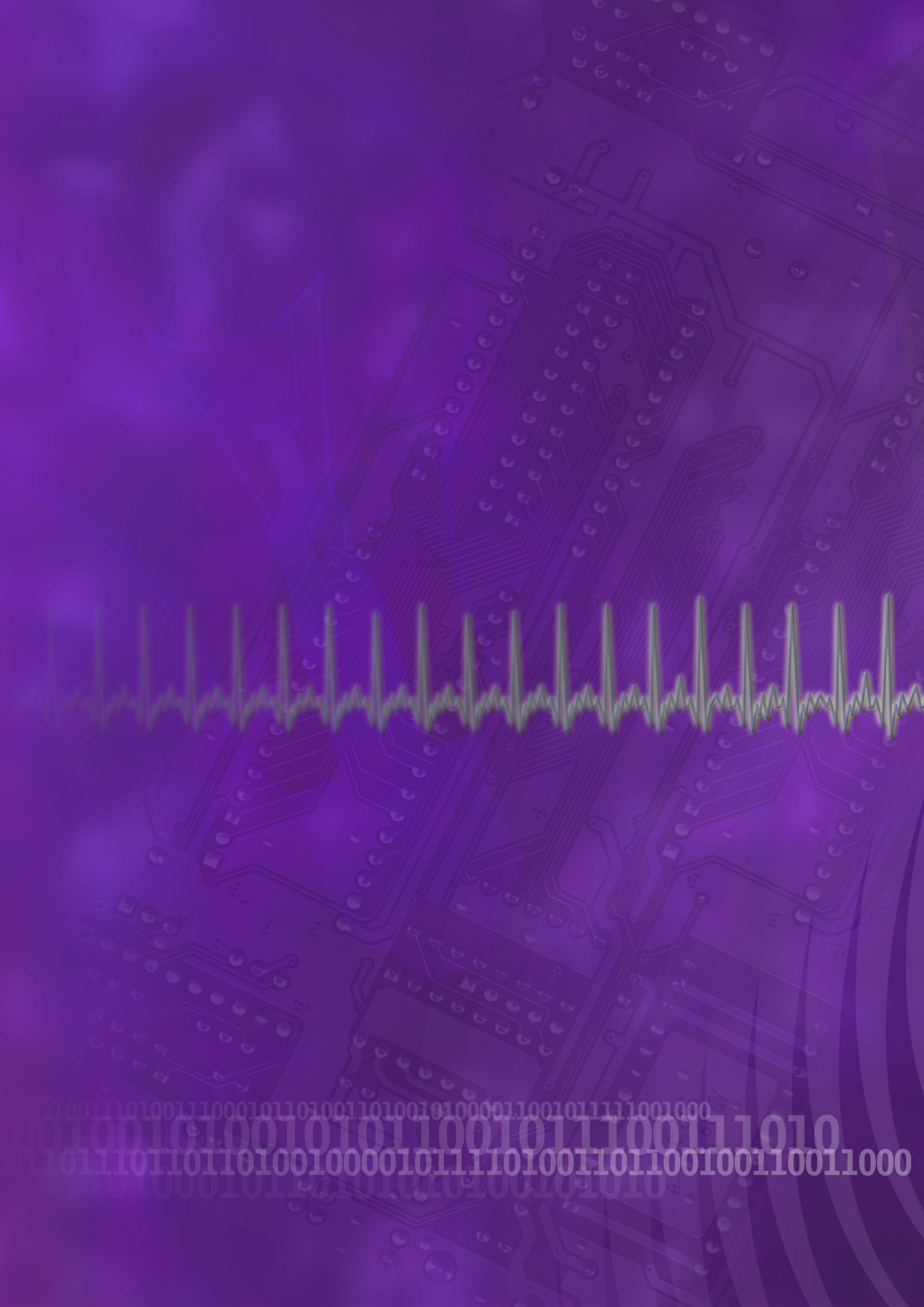
The GEM framework





Index of Special Topics covered in GEM Scotland reports, 2000 to 2014

Topic	Years covered
Young Entrepreneurs/Entrepreneurship and Age	2000, 2006, 2010, 2013
Financing Entrepreneurship	2000, 2003, 2004, 2010, 2014
Female Entrepreneurship/Women in Enterprise	2001, 2004, 2013
Entrepreneurship and Education/Entrepreneurship Training	2001, 2005, 2007/8, 2012
Location of Entrepreneurship	2001, 2004, 2007/8, 2014
High Potential/High Expectation Entrepreneurship	2002, 2005, 2013
Ethnic and Immigrant Entrepreneurship	2002, 2012
Country comparison: Scotland and Ireland	2002
Social Entrepreneurship	2003, 2005
University Spinouts	2003
Corporate Entrepreneurship/Employee Entrepreneurial Activity	2006, 2011
Business Closure	2006
Home-based Business	2007/8
Family Business and Entrepreneurship	2009, 2014
Motivation of Entrepreneurs	2009
Entrepreneurship in a Recession	2009
Repeat Entrepreneurs	2010
Entrepreneurship and Multiple Deprivation	2011
Start-up Challenges and Rewards	2011
Scotland's Innovation-based Entrepreneurship Ecosystem	2012



01100111010011100010110100110100101000011001011111001000
1010010100101011001011100111010
1011101101101001000010111101001101100100110011000