

Enterprise in Scotland: Insights from Global Entrepreneurship Monitor

Report for Scottish Enterprise : Research & Policy

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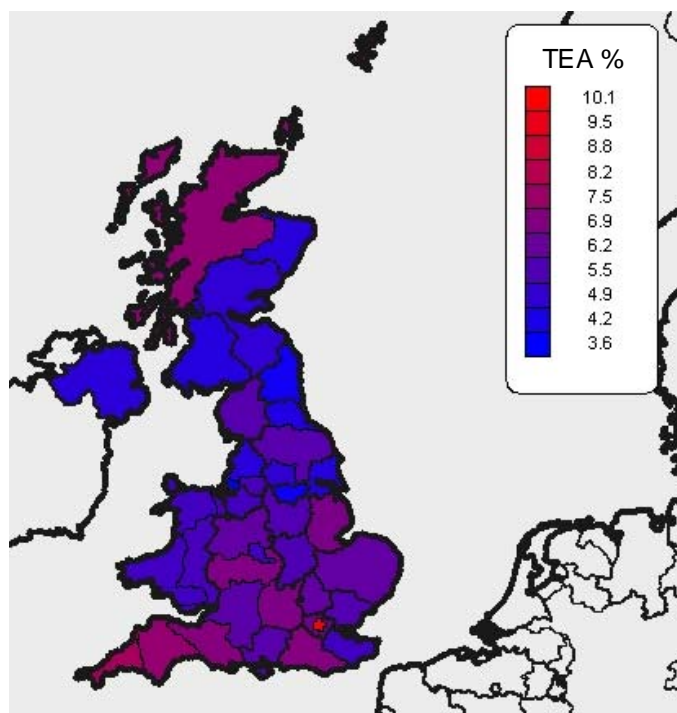


Table of Contents

Glossary	2
Executive Summary	3
Section 1 Global Entrepreneurship Monitor and GEM Scotland	5
Section 2 Total Early-stage Entrepreneurial Activity (TEA) in Scotland from 2000 to 2007	7
Section 3 Strengths and weaknesses of entrepreneurship in Scotland: evidence from GEM	9
Section 4 Entrepreneurial behaviour in Scotland: Determinants and barriers	11
Section 5 Types of entrepreneurship in Scotland	23
Section 6 Entrepreneurship in Scotland compared with other regions of the UK and other similar small countries	27
Section 7 Implications and recommendations	29
References	31
Appendix 1	32

Glossary

ESTBUS Established Business Owner/Manager rate. This measures the proportion of individuals in the working age (18-64) population that run their own business that has been paying wages for more than 42 months (3½ years).

Established business owner/managers Owner/managers of new businesses that have been paying wages for more than 42 months.

GEI Global Entrepreneurship Index. A new index that combines a set of interactions between entrepreneurship attitudes, activity and aspirations and relevant environmental measures.

GEM Global Entrepreneurship Monitor. An international research effort aimed at understanding the link between entrepreneurship and economic development.

GERA Global Entrepreneurship Research Association. An association of GEM national teams and institutional sponsors – the body that runs GEM.

HEA High-expectation Entrepreneurial Activity rate. GEM's measure of ambitious entrepreneurship. The proportion of nascent entrepreneurs and new business owner/managers in the working age (18-64) population who expect their new business to employ at least 20 people in 5 years time.

Intenders Individuals who expect to start a business in the next three years, but who are not actively trying to start right now.

Nascent entrepreneurs Individuals who are actively trying to start a business. The business must not have been paying wages for three months or more.

New business owner/managers Owner/managers of new businesses that have been paying wages for more than 3 months and not more than 42 months (3½ years).

Non entrepreneurially-active or “no” for short Individuals who do not intend to start a business, are not actively trying to start a business, and are not running their own business

TEA Total early-stage Entrepreneurial Activity, GEM's main measure of entrepreneurial activity at the working age (18-64) population level. This measure combines the percentage of individuals actively trying to start a business and the proportion of owner/managers of new businesses that are less than 3½ years old.

Executive Summary

Global Entrepreneurship Monitor (GEM) has developed into one of the world's leading social science research consortia. Between 2000 and 2007, entrepreneurial activity has been measured in 60 different countries, including the UK and, as a region of the UK, Scotland. Data on individual entrepreneurial attitudes, activity and aspirations is gathered through surveys of adults according to strict protocols. This report draws on eight years of survey data, comprising a total of around 16,000 respondents in Scotland (some 2,000 per annual cohort) and around 190,000 respondents in the UK during the period 2000 to 2007.

Total early-stage Entrepreneurial Activity, GEM's main measure of entrepreneurial activity at the working age population level, has fluctuated around 6% in the UK and 5% in Scotland. This measure combines the percentage of individuals actively trying to start a business and the proportion of owner/managers of new businesses that are less than 3½ years old. There is no overall evidence of a long term trend of rising or declining TEA rates in either the UK or Scotland between 2000 and 2007. The data do not demonstrate that Scotland performs particularly badly relative to the UK in terms of the nascent entrepreneurship rate or new business owner/manager rate, either.

Entrepreneurial behaviour is widely distributed across the population. However, those with any form of entrepreneurial intention or activity are significantly more likely to be males. There is greater attrition among female owner/managers than among male owner/managers. The stock of business owner/managers may be becoming more educated over time. The more established the entrepreneurial activity, the higher the household income, on average. Those who intend to start a business in the next three years (intenders) are slightly more likely to be students than the background population.

Migrants and immigrants provide one third of total early-stage entrepreneurial activity in Scotland - around double what would be expected based on their proportion in the background population. In-migrants do not migrate in order to start businesses; however they may start businesses in order to stay where they are. Immigrants seem to have greater difficulty than regional in-migrants in starting in the first few years of arrival in a region. However, immigrants are relatively rare in Scotland. The apparent difficulty in translating intention and action into actual business ownership among ethnic minority individuals may be due to the immigrant status of most ethnic minority individuals rather than their ethnicity.

Nascent entrepreneurs and new business owners are more likely to have shut down a business in the past year than other groups. Most business closures are not caused primarily by financial problems.

There is no evidence that non-entrepreneurially active individuals in Scotland have less experience in starting a business than people across the UK.

Half of non-entrepreneurially active people cite financial concerns as the main barrier to startup, with lack of interest the next most frequently mentioned barrier. There is virtually no difference between Scottish and UK-wide samples on entrepreneurial attitude variables such as opportunity perception, skills-self-perception, knowing an entrepreneur and fear of failure. There are no substantial differences between groups at different stages of the entrepreneurial process in perception of cultural norms towards entrepreneurship, or between the Scottish and UK-wide samples.

High-expectation Entrepreneurial Activity (HEA) in Scotland over the 2002 to 2007 period was 0.9, around the same as the 1.2 estimate for the UK, and in proportion with the difference in TEA rates between Scotland and the UK. The HEA rate of graduates is double that of non-graduates, in both the UK (1.7% versus 0.9%) and Scotland (1.5% versus 0.6%), and this difference is statistically significant.

Scotland appears to be in the third quartile of regions. Scotland's relatively modest TEA rate masks the fact that one of its sub-regions has one of the highest TEA rates in the UK. The TEA rate for the Highlands and Islands is 7.2, very similar to that of three other geographically isolated, agricultural NUTS2 regions in the South West of the UK. Scotland's TEA rate is around four-fifths of the UK rate and less than two-thirds of the average rate among Arc of Prosperity countries.

TEA in Scotland and in its sub-regions is about where one would expect them to be, given Scotland's demographic profile and business stock. However, further research on the interaction between entrepreneurship and environment could reveal actionable bottlenecks to productive entrepreneurship in Scotland.

Section 1 Global Entrepreneurship Monitor and GEM Scotland

Introduction

The concept of an annual international monitor of entrepreneurial activity was conceived in 1997 by scholars at Babson College and London Business School. Since then, **Global Entrepreneurship Monitor (GEM) has developed into one of the world's leading social science research consortia.** GEM's focus is on entrepreneurship and economic development. For ten years, it has collected and harmonized data on entrepreneurial attitudes, activity and aspirations and on the environment for entrepreneurship in a wide range of countries, and on a regional basis in a small group of countries, including Germany, Spain, and the United Kingdom. **Between 2000 and 2007, entrepreneurial activity was measured in 60 different countries,** including 28 members of the OECD. Although some countries have only been measured once, 13 countries participated every year from 2000 to 2007. The UK has participated throughout this period, as has Scotland as a region within the UK.

GEM takes a broad view of entrepreneurship and focuses on how the entrepreneurial attitudes, activity and aspiration of individuals interact with environment to affect economic development. This is achieved through annual Adult Population Surveys and National Expert Surveys, and by harnessing data from other sources. **By focusing on individuals and environments, GEM differs from other entrepreneurship datasets that measure new and small firms.** Another difference is that GEM views entrepreneurship as a process, and tries to capture different phases of this process, from attitudes to intentions to active attempts to start a business (nascent entrepreneurship) to new business owner/management to established business owner/management to exit. The aspirations of nascent, new and established entrepreneurs, in relation to issues such as innovation, competitiveness and growth, are also measured.

Data on individual attitudes, activity and aspirations is gathered through surveys of adults according to strict protocols. In most countries, random samples of households are contacted by trained operatives of market research companies by fixed line telephone. Individuals within the household are selected at random, for example by the "next birthday" method in which the person who answers the phone is asked to be put through to the individual in the household whose birthday will be next. In countries where regional samples are taken, like the UK, a stratified sampling approach is adopted. Weights are then applied to the consolidated dataset to ensure it matches the population profile. In the case of the UK, the dataset is weighted by age group, gender, ethnic minority status (white/other) and region. After data collection, to reduce design effects caused by oversamples of areas smaller than Government Office Regions (GORs), for example borough or council areas, cases from these areas are sampled randomly in proportion to their contribution to their GOR population and these subsamples are used in calculation of GOR and national measures. The minimum national sample size permitted by GEM is 2000 adults between the ages of 18 and 80. This generates core samples of around 1,000 to 1,700 18 to 64 year olds, depending on country demographics. Larger sample sizes produce narrower confidence intervals, or estimate ranges.

For Scotland, with sample sizes of 18-64 year olds of between 1,600 and 1,900, the estimate range for GEM's main measure of entrepreneurial activity, TEA, or Total early-stage Entrepreneurial Activity, is approximately plus or minus one percent. This is sufficient to detect substantial changes in overall entrepreneurial activity from year to year, although it is not enough to permit more fine-grained tracking of activity among segments

of the population, such as young people or women, without merging of annual cohorts to create larger sample sizes.

The Hunter Centre for Entrepreneurship at the University of Strathclyde, through its leadership of GEM UK and sponsorship of the costs of GEM data collection, has unique access within Scotland to the GEM international databases. This report draws on eight years of survey data, comprising a total of around 16,000 respondents in Scotland (some 2,000 per annual cohort) and around 190,000 respondents in the UK during the period 2000 to 2007. A pooled database of around 180,000 respondents to the 2002 to 2007 UK GEM surveys was created and harmonised to provide data at the NUTS 2 level, enabling comparison of Scottish NUTS 2 areas to other UK NUTS 2 areas.

Annual GEM reports for Scotland for the years 2000 to 2006 are available at www.strath.ac.uk/huntercentre/research/gem

Section 2 Total Early-stage Entrepreneurial Activity (TEA) in Scotland from 2000 to 2007

GEM's principal measure of entrepreneurial activity is a composite measure of the proportion of working age individuals who are actively trying to start a business for themselves or for their employer plus the proportion of working age individuals who both own, in whole or in part, and manage their own new business, without double counting. "New business" is defined as having paid wages for at least 3 months but not more than 3½ years. This measure is called Total early-stage Entrepreneurial Activity, or TEA for short. This is a smoothed measure; it is unlikely to display radical changes in the short term because it is capturing people who are engaged in a process. More precise, snapshot measures such as the proportion of individuals who started a business within the past 12 months would require much larger sample sizes in Scotland or other European countries to measure accurately, simply because their prevalence is so low (around 1% of the working age population). TEA is a compromise between measurability, coverage of a multi-dimensional phenomenon and cost.

Figure 1. TEA as part of the entrepreneurial process

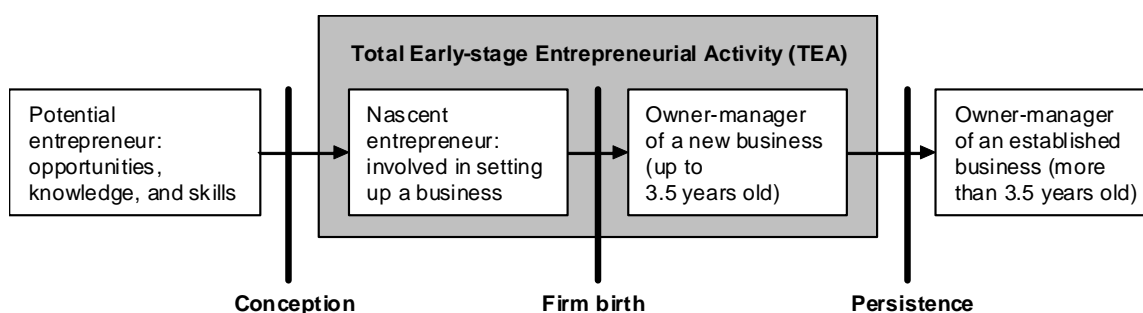


Figure 2, below, and Table 1 (in Appendix 1) chart point estimates and 95% confidence intervals (vertical lines above and below the point estimates) for TEA for Scotland and the UK for each year from 2000 to 2007, for adults of working age (18 to 64 years). Figure 2 also displays Scottish TEA as a % of UK TEA for each year, as vertical shaded bars. All samples are weighed to reflect age and gender of the background population and, from 2002, to reflect ethnic minority contribution to the population by age group.¹

Broadly, the data suggest that **TEA rates have fluctuated around 6% in the UK and 5% in Scotland**. Taking the sampling error into account, these rates have been remarkably stable, and justify pooling of the data even though sample sizes for the UK (but not for Scotland) have increased considerably over this period. **There is no overall evidence of a long term trend of rising or declining TEA rates in either the UK or Scotland**.²

¹ It should be noted that while the Scottish sample is a random sample, and the 95% confidence intervals are a reasonable estimation of sampling error, the UK sample is a weighted complex sample of random samples of different UK regions. Thus the 95% confidence intervals are probably underestimates of sampling error, that is, they do not fully take the design effects of the sample design into account. Nevertheless, the very large sample size and stratified random sample design would suggest that the C.I. intervals are unlikely to be substantially wider than shown. Previous research (Levie, 2007) has found that design effects in annual GEMUK samples make little difference to CI intervals.

² Note: the UK samples in 2000 and 2001 did not sample within Northern Ireland. The relative contribution of Northern Ireland to the overall UK rate was checked and found to be negligible.

While Scottish TEA appeared to be rising as a proportion of UK TEA from 2000 to 2005, TEA rates for 2006 and 2007 cast doubt on this apparent trend.

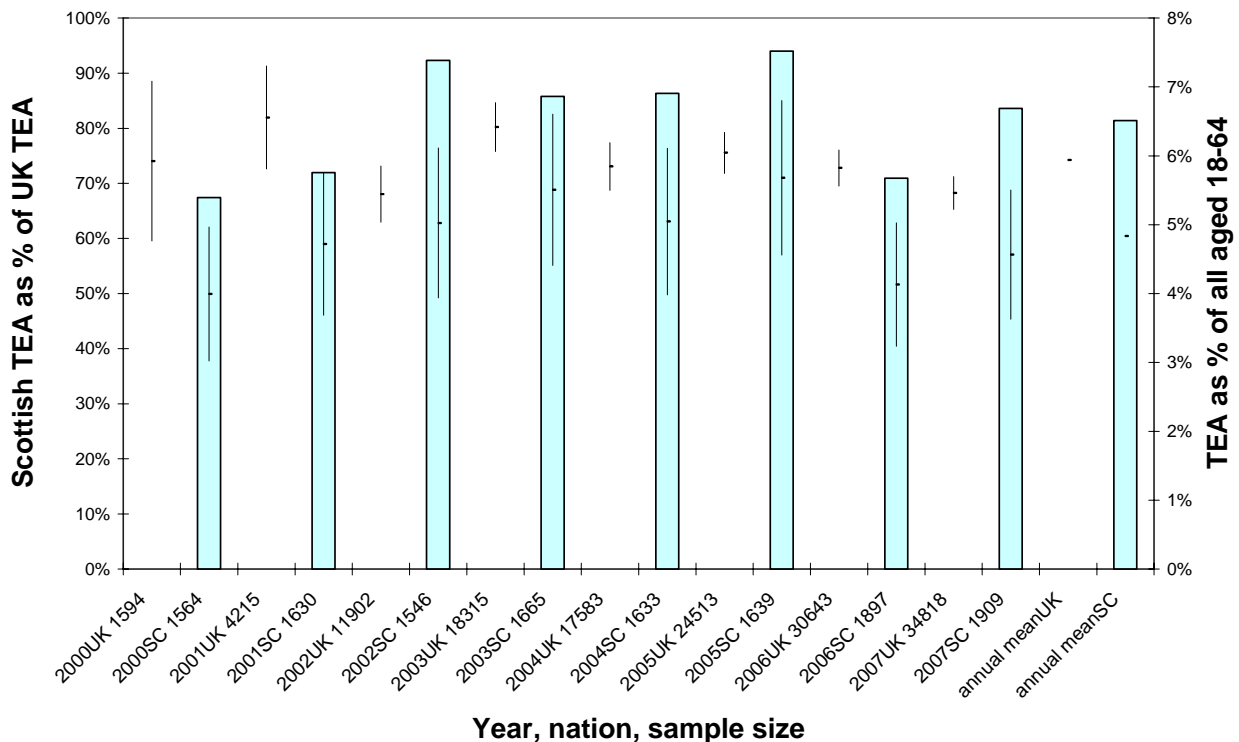
Because small changes may be masked by small annual samples, annual Scottish data were pooled and grouped as follows to uncover trends (if any) during this period:

(2000 2001) (2002 2003) (2004 2005) (2006 2007)

(2000 2001 2002 2003) (2004 2005 2006 2007)

It can be seen from Figure 2 that point estimates of TEA for Scotland for adjacent pairs or quartets of samples are quite similar. For 2000/01 and 2006/07, the pooled estimate is around 4.4, while for 2002/03 and 2004/05 the pooled estimate is around 5.4. Even with these pooled samples, there is no statistically significant difference between the higher and lower TEA annual estimates. Similarly, pooled estimates for 2000 to 2003 and 2004 to 2007 are similar at around 4.8. Given the lack of an overall trend in UK or Scottish TEA rates in this time series, it would appear appropriate to pool the data to generate a sufficiently large sample for further analysis. The same applies to the UK. However, in the case of the UK, the large increase in sample size over time means that earlier years will have little impact on the overall results, while later years will exert a large effect. In addition, the lack of regional identification in the 2000 and 2001 data means that regional or sub-regional analysis is not possible for those years.

Figure 2. Total early-stage Entrepreneurial Activity (TEA) rate estimates for the UK and Scotland from 2000 to 2007, showing Scottish rates as a % of UK rates (blue bars)



Summary of findings for Section 2

Total early-stage Entrepreneurial Activity, GEM's main measure of entrepreneurial activity at the working age population level, has fluctuated around 6% in the UK and 5% in Scotland. This measure combines the percentage of individuals actively trying to start a business and the proportion of owner/managers of new businesses that are less than 3½ years old. There is no overall evidence of a long term trend of rising or declining TEA rates in either the UK or Scotland between 2000 and 2007.

Section 3 Strengths and weaknesses of entrepreneurship in Scotland: evidence from GEM

In this section, the time series for TEA is broken out into nascent entrepreneurial activity and new business owner/manager rates, and comparison made to UK data. Figure 3 (and Table 2 in appendix 1) show rates of nascent entrepreneurship, defined as the percentage of adults aged 18-64 who were actively trying to start a business, in the UK and Scotland, and Scottish nascent entrepreneurship as a percentage of the UK rate. The overall pattern and proportion is very similar to that of TEA rates in Figure 2, with the Scottish rate around 80% of the UK rate and no clear temporal trend.

The nascent entrepreneurship rate is not equivalent to the number of startup attempts, because around half of nascent entrepreneurs report that their business will have multiple owners. In addition, this measure is likely to underestimate short gestation (under one year) nascent entrepreneurship attempts and overestimate long gestation nascent entrepreneurship attempts. US experience suggests that up to a third of nascent entrepreneurs picked up in random cross-sectional surveys may be "hobby" nascent entrepreneurs who, seven years later, will still be in startup mode (Reynolds, 2007, p.56). To date, GEM surveys have not asked nascent entrepreneurs how long they have been actively trying to start a business, or asked new business owner/managers how long it took them to start the business, or asked non entrepreneurially active individuals if they had started and stopped trying to start a business in the past year. Asking these questions could reveal more about the dynamics of nascent entrepreneurship.

Figure 4 (and Table 3 in appendix 1) shows rates of new business owner/managers in Scotland and the UK. This measure is defined as the percentage of business owner/managers who started their business within the last 42 months, where startup is defined as the business having made a profit or the owners having drawn wages for at least 3 months. Again, the overall pattern is similar to that of TEA. Note that, as with nascent entrepreneurship, this is not a measure of new business starts, but of the stock of business owner/managers of businesses that are three and a half years old or less.

The data do not demonstrate that Scotland performs particularly badly relative to the UK in terms of either the nascent entrepreneurship rate or new business owner/manager rate. Both rates were around four-fifths of the UK rate over the eight year period as a whole, although relative rates fluctuated from year to year, mainly it would appear due to sampling error, given the very low rates of these activities in the population.

Figure 3. Nascent entrepreneurship rate estimates and 95% confidence intervals for the UK and Scotland from 2000 to 2007, showing Scottish rates as a % of UK rates (shaded vertical bars)

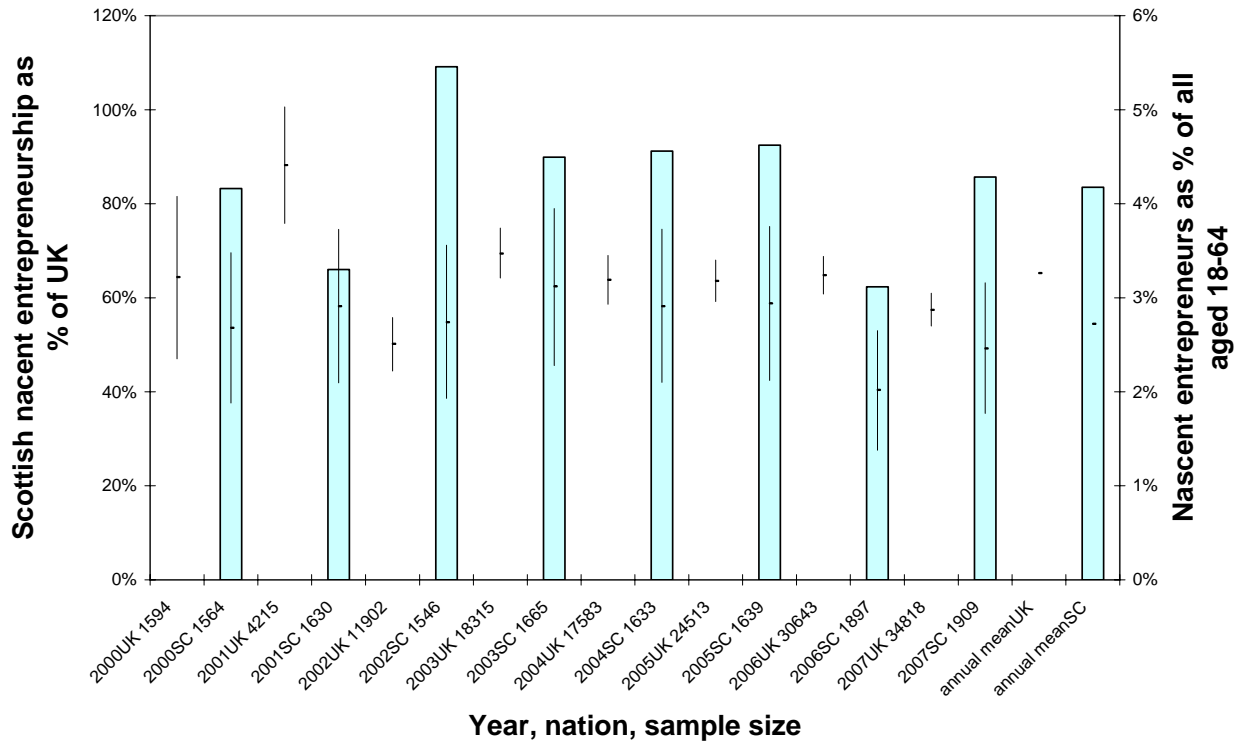
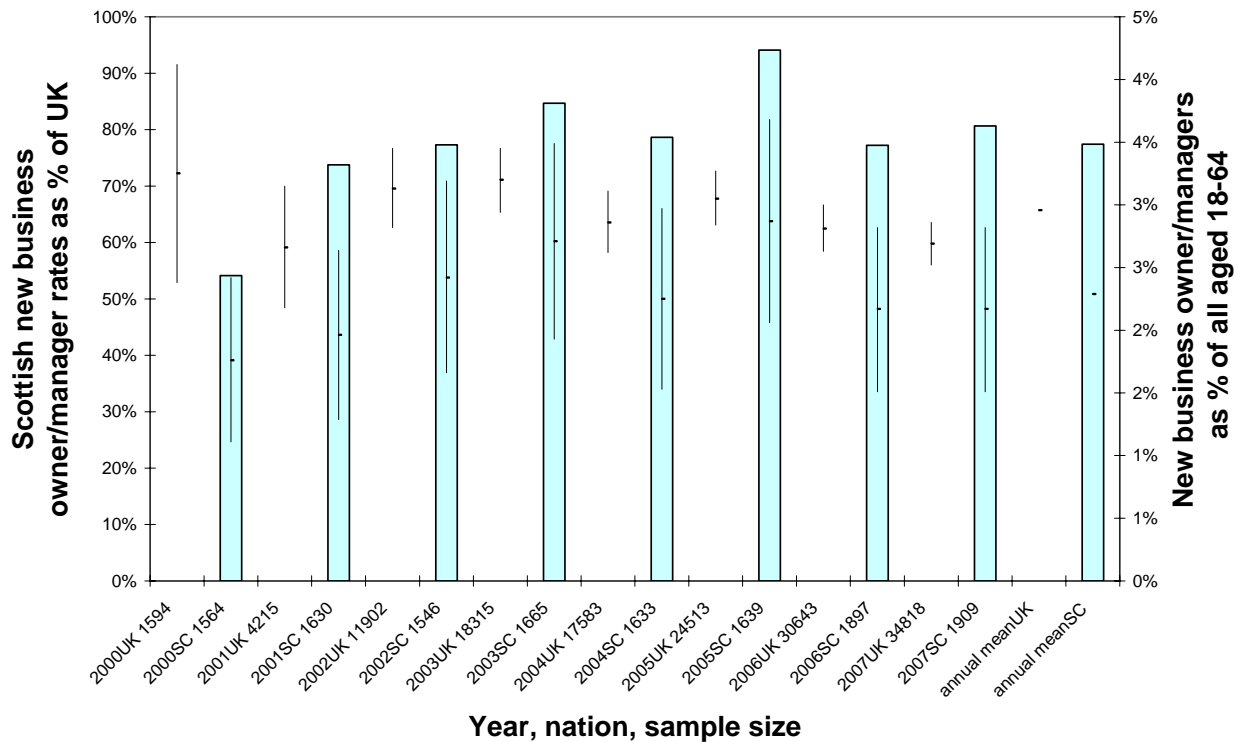


Figure 4. New business owner/manager rate estimates for the UK and Scotland from 2000 to 2007, showing Scottish rates as a % of UK rates (shaded vertical bars)



Summary of Findings for Section 3

The GEM data do not demonstrate that Scotland performs particularly badly relative to the UK in terms of the nascent entrepreneurship rate or new business owner/manager rate. As with TEA, the Scottish rate is around 80% of the UK rate.

Section 4 Entrepreneurial behaviour in Scotland: Determinants and barriers

Exploring the main determinants of entrepreneurship behaviour in Scotland is a significant challenge. There are many possible effects at many levels, including individual, family, local, regional, national, and state (UK) levels. Recent research by the GEM UK team suggests that when individual level effects are controlled for, regional (NUTS 1) effects wash out. (Hart et al., 2007).

To address this objective, the full Scottish GEM database from 2002 to 2007 was pooled, and univariate analysis of those at various stages of entrepreneurial activity in Scotland with the following variables (tables are in appendix 1):

Demographics

Gender:	Table 4
Age:	Table 5
Education:	Table 6
Income:	Table 7
Employment status:	Table 8
Origin:	Table 9
Ethnicity:	Table 10

Past history

Recently closed down a business:	Table 11
Invested in someone else's business in past 2 years:	Table 12
Run a business before	

The stages investigated were: no entrepreneurial activity (not active), intend to start a business within the next three years (intenders), activity trying to start a business (nascent entrepreneurs), running their own new business (new entrepreneurs) and running their own established business (established entrepreneurs.)

Gender

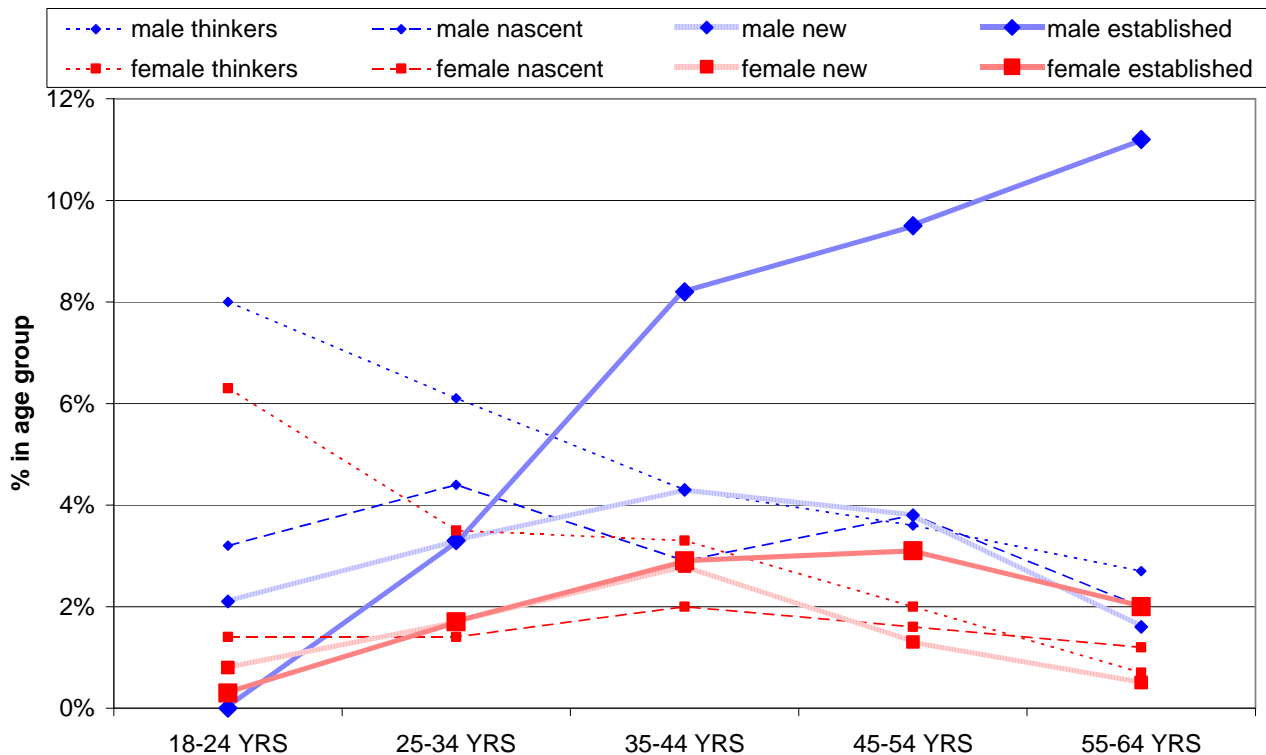
Those with any form of entrepreneurial intention or activity are significantly more likely to be males (table 4). The gender imbalance is highest among nascent entrepreneurs and established owner/managers. This gender difference even holds when we control for Scottish-born graduates who are in full-time jobs (table 4a). Thus the gender difference is not solely accountable for by differences in occupation, education or origin.

Age

The age distribution of individuals with entrepreneurial intention or activity is different to the general population (table 5). Intenders are more likely to be younger and less likely to be older, while nascent and new entrepreneurs are less likely to be older but not more likely to be younger. Established business owner/managers are more likely to be older than the background population. Figure 7 shows that female intention rates decline across the age groups in line with, but at lower levels than, male intention rates. Nascent and new entrepreneurial activity rates, and female established business owner/manager rates, increase and then decrease with age. Only male established business owner/manager rates increase with age. This suggests that **there is greater attrition among female**

owner/managers than among male owner/managers. The attrition rate, defined as the ratio of those who have shut down a business in the past 12 months to the stock of new and established business owner/managers is 17% or 1 in 6 among males and 31% or 1 in 3 among females, supporting this conjecture.

Figure 7 Entrepreneurial intention and activity rates by gender and age group in Scotland



Education

Entrepreneurial intention and activity varies by education level (table 6). Compared to the background population, intenders are more likely to be graduates and less likely to have basic or no educational qualifications. Nascents are more likely to be graduates and less likely to have no qualifications. New entrepreneurs are more likely to have a higher degree and less likely to have no qualifications. Established business owner/managers have the same profile as the general population. This suggests that **the stock of business owner/managers may be becoming more educated over time**. Attrition rates for graduates and for non-graduates are exactly the same at 22%. This would support this conjecture.

Income

Entrepreneurial intention and activity varies by household income (table 7). Intenders are generally representative of the background population. **The more established the entrepreneurial activity, the higher the household income**, on average. Of course, income may be a consequence of as well as an effect on entrepreneurial activity.

Employment Status

Not surprisingly, entrepreneurial intention and activity varies by employment status (table 8). Those with entrepreneurial intention and activity are less likely to be retired, while new and established owner/managers are more likely to be working full or part-time. What is less intuitively obvious is the finding that **intenders contain slightly more students than**

the background population. 6.7% of students in Scotland intend to start a business in the next 3 years. This is the highest proportion of any occupation group. Across the UK, 8.6% of students intend to start a business. In Scotland, only 5.4% of the unemployed intend to start a business in the next 3 years compared with 9.1% across the UK. These differences are not statistically significant.

Origin

Entrepreneurial intention and activity varies by origin (table 9). Scottish-born individuals have lower intention and nascent and new activity rates than would be expected on the basis of their proportion in the background population. UK-born migrants to Scotland have higher nascent and new entrepreneurship rates, while immigrant entrepreneurs have higher intention and nascent rates. **Migrants and immigrants provide one third of total early-stage entrepreneurial activity in Scotland - around double what would be expected based on their proportion in the background population.** Across the UK, regional migrants and immigrants contribute two-thirds of entrepreneurial activity, but this is only around 10 percent more than would be expected based on their proportion of the population (see Table 9a).

There is no evidence of greater entrepreneurial intention among regional migrants than one would expect given their distribution in the population. Their contribution to new entrepreneurial activity is also greater than their contribution to nascent entrepreneurial activity. One possible reason for this may be employment opportunity costs and perceptions of the sunk costs of regional immigration. Regional migrants may be attracted to an area by employment opportunities, not by self-employment intentions. If they experience regret in their employment choice or lose their job, they may decide relatively quickly to become self-employed rather than return whence they came. Figures 8, 9 and 10 illustrate this. In-migrants have a steadily declining rate of new business activity the longer they have been in a region. There is no “spike” in activity in the first period or two of in-migration, suggesting that **in-migrants do not migrate in order to start businesses.** However, they may well start businesses in order to stay where they are.

Immigrants, on the other hand, appear to have difficulty in translating their high rate of intention and nascent activity into new businesses in their early years in a new region. Figures 8 and 9 illustrate this by showing the intended, nascent and new entrepreneurship rates for the UK by time in region, for in-migrants and immigrants. Immigrants have twice the initial rate of intended entrepreneurship rate and a smaller but consistently higher rate of nascent entrepreneurial activity than in-migrants, irrespective of time in region. Immigrants however have significantly lower new business owner/manager rate than regional in-migrants in the first 5 years in a region, then have significantly higher rate for the next five years, before settling to similar rates. This pattern appears to be stable across years and suggests that **immigrants have greater difficulty in starting in the first few years of arrival in a region** (see Levie, 2007 for further discussion of this phenomenon).

There is remarkably little useful international population level data on the entrepreneurial behaviour of migrants. Partly this is because of the conflation of origin and ethnicity, and partly because insufficient attention has been paid to the role of regional migrants versus immigrants. For example, Reynolds and White (1997) found that in Wisconsin, migrants took some time (at least 5 years) to settle in before starting businesses. But it is not known whether these were regional migrants or immigrants. Work such as that by Saxenian (2006) is restricted to the very special case of Silicon Valley, which is by no means representative of the US in general. But in Silicon Valley and in the US it would appear that immigrant status is not a predictor of nascent entrepreneurial activity (Kim et al., 2003; Saxenian, 2006, p.81).

Figure 8: Intended entrepreneurship rates for regional in-migrants and immigrants in the UK, by time in region

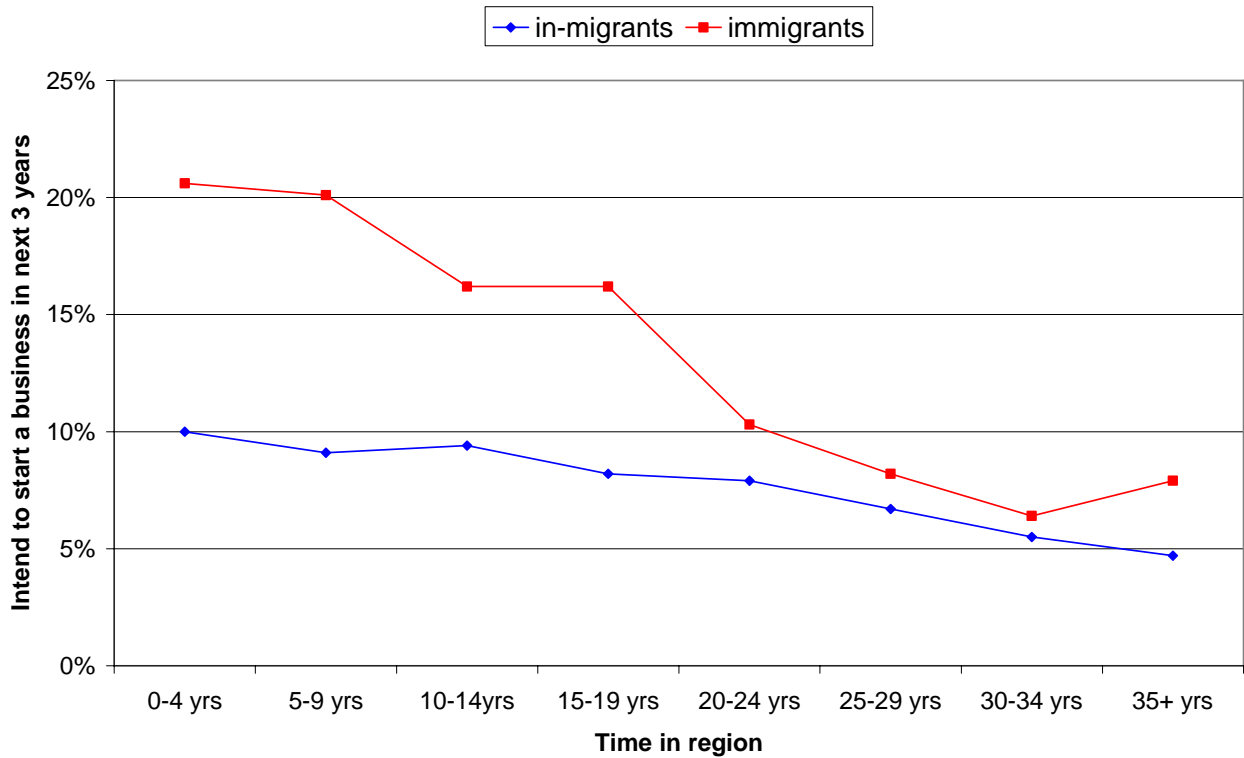


Figure 9: Nascent entrepreneurship rates for regional in-migrants and immigrants in the UK, by time in region

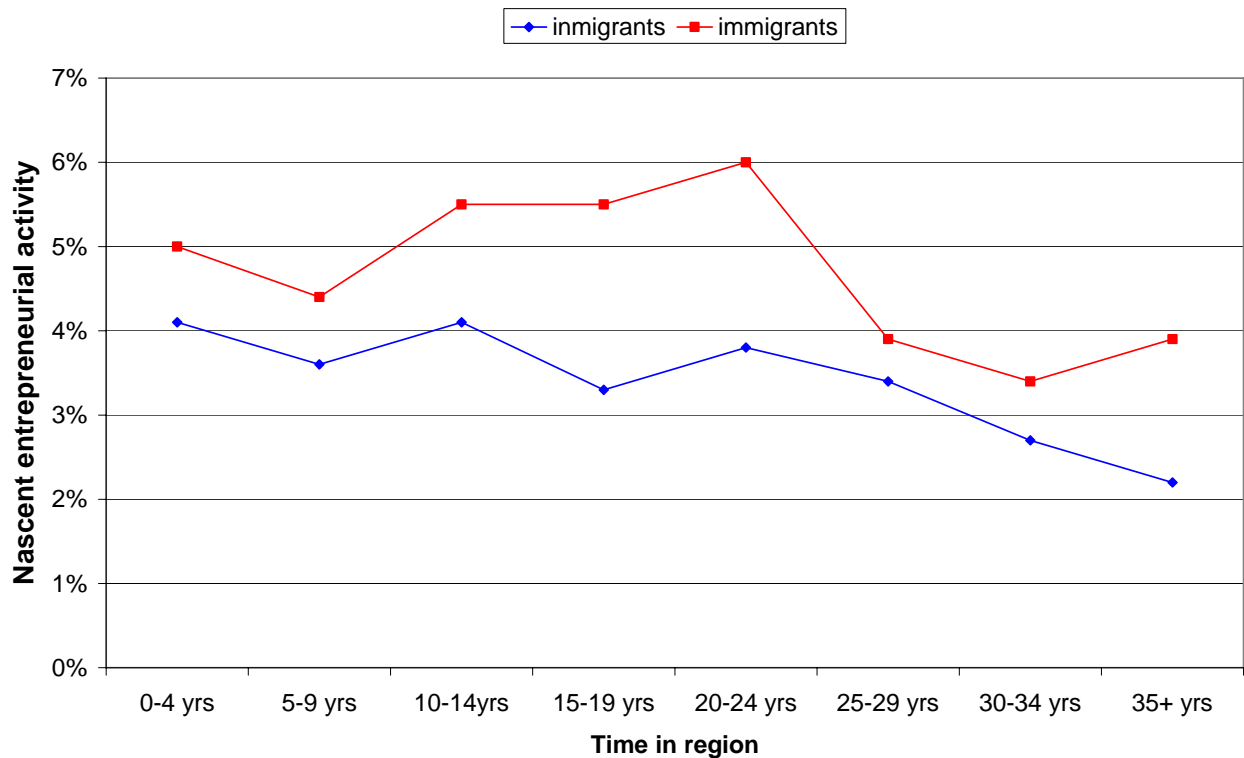
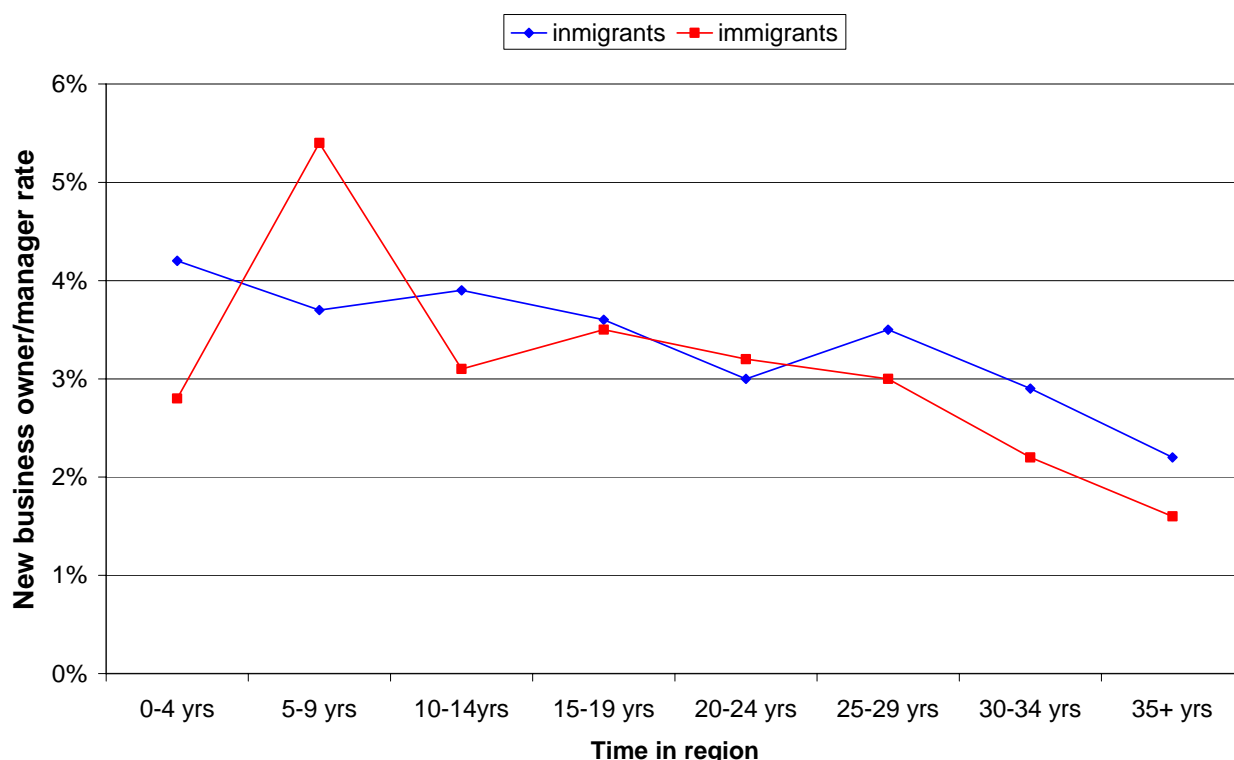


Figure 10 New business owner/manager rates for regional in-migrants and immigrants in the UK, by time in region



Ethnicity

Ethnic minorities are overrepresented among intenders and nascent entrepreneurs (table 10). This is not followed through into actual business ownership. 24% of immigrants to Scotland in the GEM sample are ethnic minorities compared with 1% of life long residents and regional in-migrants, but 63% of ethnic minority individuals in the Scottish sample were immigrants. The spike in new business owner/manager rates among immigrants after 5 years in a region is significant in both white and non-white groups in the UK-wide sample, where non-whites form 52% of all immigrants. Thus **the apparent difficulty in translating intention and action into actual business ownership among ethnic minority individuals may be due to the immigrant status of most ethnic minority individuals rather than their ethnicity**. The sample in Scotland, which has far fewer immigrants as a proportion of its population, is too small to detect such patterns.

Business discontinuation

Nascent entrepreneurs and new business owners are more likely to have shut down a business in the past year than other groups (table 11). Only 1.3% of the Scots population shut down a business in the past twelve months on average between 2002 and 2007; almost one third of them were either nascent entrepreneurs (15.9%) or new entrepreneurs (13.4%). This proportion is six times higher than the average proportion of nascent and new entrepreneurs in the population during this period (2.6% and 2.4%). This shows that a significant recycling of entrepreneurial experience (if not expertise) goes on in the economy. **UK-wide 2007 GEM data suggests that the reasons for business closure are many and that only 25% of closures (27% in 2006) are connected with financial problems with the business**. In Scotland, only 9% (13% in 2006) gave financial reasons as a reason. The most frequent reasons were personal reasons (30%, 46%), another job or business opportunity (30%, 12% [job offer only]), and retirement (18%, 6%). These figures should be treated with caution as only 23 individuals in Scotland responded

to this question in 2007 and only 31 did so in 2006, and the wording of some choices was slightly different in both years.

Informal investment

Informal investors are more prevalent among those with entrepreneurial intent or activity than among the population at large (table 12). New entrepreneurs were most likely to have been informal investors in other people's businesses.

Prior experience of running a business

This information is only available for the 2007 dataset. Only 7.9% of those with no entrepreneurial activity in Scotland had started a business that they had owned and managed in the past, compared with 22.4% of "intenders". This difference was significant (Chisquare continuity corrected = 13.53, $p=.000$) and close to the UK-wide estimate of 10.4% "nos" and 22.0% "intenders". Thus **there is no evidence that non-entrepreneurially active individuals in Scotland have less experience in starting a business than people across the UK** generally. 29.7% of nascents in Scotland had experience of owning and running a business before, while 20.5% of new and 21.8% of established business owner/managers had owned and run a business before their current business. This compares to 32.4% of UK nascents, 23.7% of new UK and 20.6% of established UK business owner/managers.

Despite these significant differences in demographics and past history of entrepreneurship across groups with different entrepreneurial intention and activity, attempts to predict entrepreneurial behaviour using these variables at the individual level have generally been unsatisfactory. This is partly for technical reasons; entrepreneurial activity rates in Scotland are so low that they constitute "rare events", and methods such as multinomial regression have difficulty predicting rare events. Another reason is simply that **entrepreneurial behaviour is widely distributed across the population**. There are many weak but significant differences in proportion, but none stand out as strong predictors of activity. For example, 21% of male in-migrant non-graduates aged 25-44 in fulltime employment and earning £50,000 or more are engaged in total early-stage entrepreneurial activity in Scotland. (The equivalent TEA rate for this group in the UK is 17%). While this is a highly entrepreneurial cluster, it only constitutes 0.4% of the Scottish and UK working age population, and contributes only 8% of all total early-stage entrepreneurs. There is at least low level entrepreneurial activity in all demographic combinations of working age individuals.

Perceived barriers to entrepreneurship among non-entrepreneurial population

For several years, data on perceived barriers to entrepreneurship among non-entrepreneurs (avoiders) have been collected by GEM UK. A comparison of the Scottish and UK results is provided in Table 13 (in appendix 1) for 2007, alongside the Scottish results for 2006, 2005 and 2004. Generally, UK and Scottish results have been very similar and stable over time. However in 2007 a significantly higher proportion of the Scottish sample expressed lack of interest in starting a business than either the UK sample or previous Scottish samples, while the proportion of the UK sample who cited fear of debt rose significantly. These are not large rises however and it remains to be seen whether they mark a trend or are short term gaps in sentiment.

Overall, Table 13 shows that, when asked about **barriers**, the unprompted answers **tend to be dominated by financial concerns, followed by lack of interest**. Only around one tenth of avoiders cite lack of skill, fear of failure, or not having an idea/lack of opportunities when unprompted. Across the UK, lack of finance as a reason declined with age,

irrespective of household income and gender. This may reflect the savings and credit-worthiness of respondents. In Scotland, younger females earning less than £50,000 tend to be most likely to cite financial barriers.

Since around half of all non entrepreneurially-active individuals cited lack of finance as the most important barrier to starting their own business, it is worth considering whether this sentiment is based on fact, or an excuse, or a genuine but mistaken belief. It is perhaps less embarrassing to blame an external factor such as lack of finance than an internal one such as lack of ideas. There is also some evidence to suggest that poorer people who are not entrepreneurially-active overestimate the cost of startup and are less likely to appreciate how costs can be minimized through bootstrapping (Allinson et al., 2005). The median expected cost of startup among the Scottish nascent entrepreneurs in the pooled GEM database was only £10,000.

Table 14 in appendix 1 shows the percentage of nascent entrepreneurs who expect to supply all of the startup funding for the business, and for those who do not, where they expect to get the additional funding from. It shows that approximately half of entrepreneurs in Scotland and across the UK expect to fund the startup themselves. The next most frequently mentioned source is banks and other financial institutions followed by government programmes. Informal sources of funding are less frequently mentioned. This fits with cross-national GEM measures, which demonstrate that frequency of informal investment appears to be abnormally low in the UK.

Attitudinal variables

- Fear of failure
- Skills, knowledge and experience to run a business
- Opportunity perception
- Know a new entrepreneur

Figures 11, 12, 13 and 14 show differences in entrepreneurial attitudes by groups of differing entrepreneurial intention and activity. They show that those with no entrepreneurial intentions are half as likely to know a recent startup entrepreneur, to agree there are good opportunities for starting a business in the local area, and to agree they have the skills, knowledge and experience to start a business, and they are twice as likely to agree they would not start a business in case it might fail. There is an element of inevitability about this result as individuals who have just disclosed they are starting or running a new business would be unlikely to admit otherwise. Perhaps more interesting is that **there is virtually no difference between Scottish and UK-wide samples on these attitudinal variables.** This would refute the idea that Scots have an inherently anti-entrepreneurial attitude. Males tend to have more positive entrepreneurial attitudes than females, and fear of failure and opportunity perception show a curvilinear (inverted U shape) association with age, while skills perception increases with age.

Figure 11. Proportion of groups of differing entrepreneurial intention and activity who know someone who started a business in the last two years, showing 95% confidence intervals

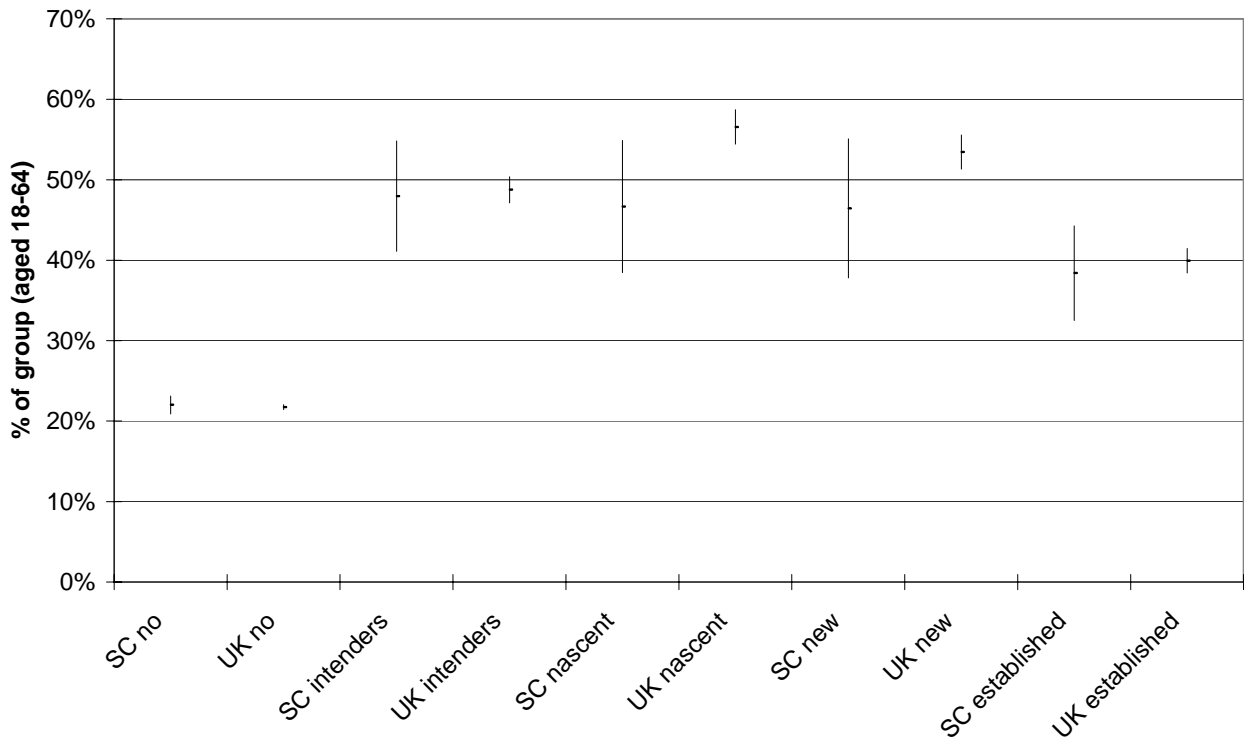


Figure 12. Proportion of groups of differing entrepreneurial intention and activity who expressed an opinion and who agree there are good opportunities for starting a business in their local area, showing 95% confidence intervals

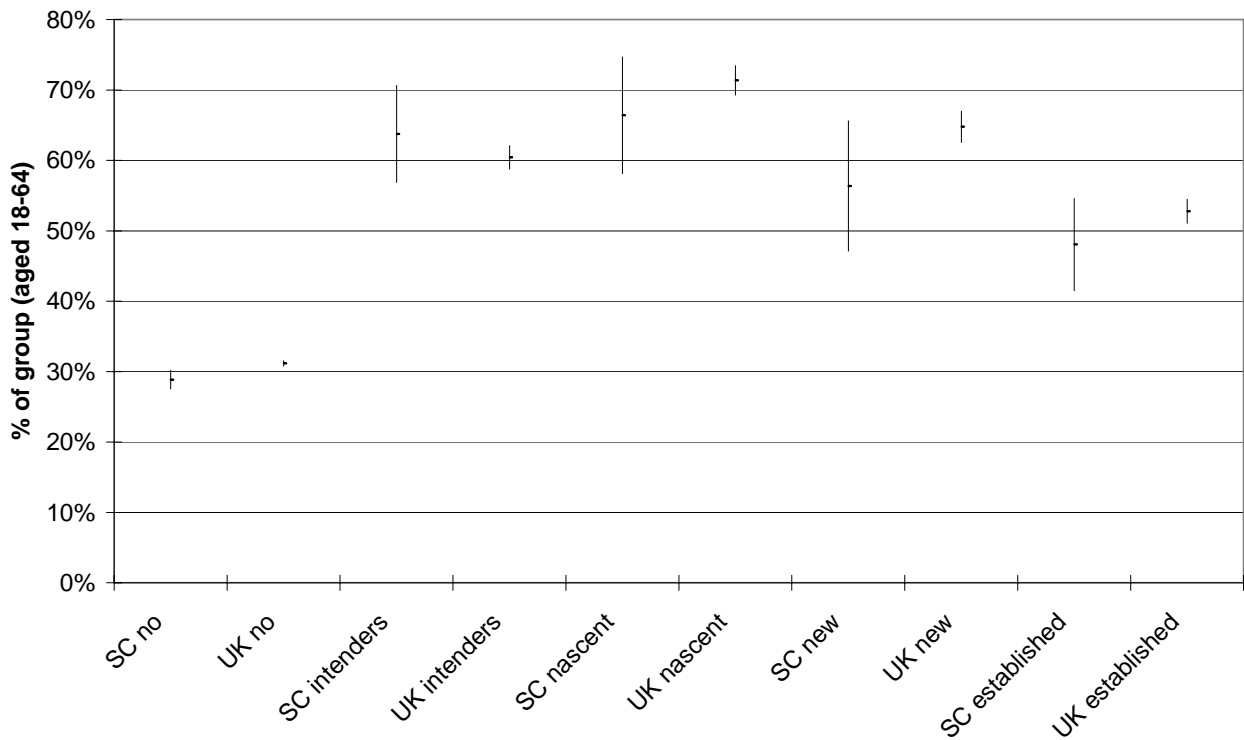


Figure 13. Proportion of groups of differing entrepreneurial intention and activity who agree they have the skills, knowledge and experience to start a business, showing 95% confidence intervals

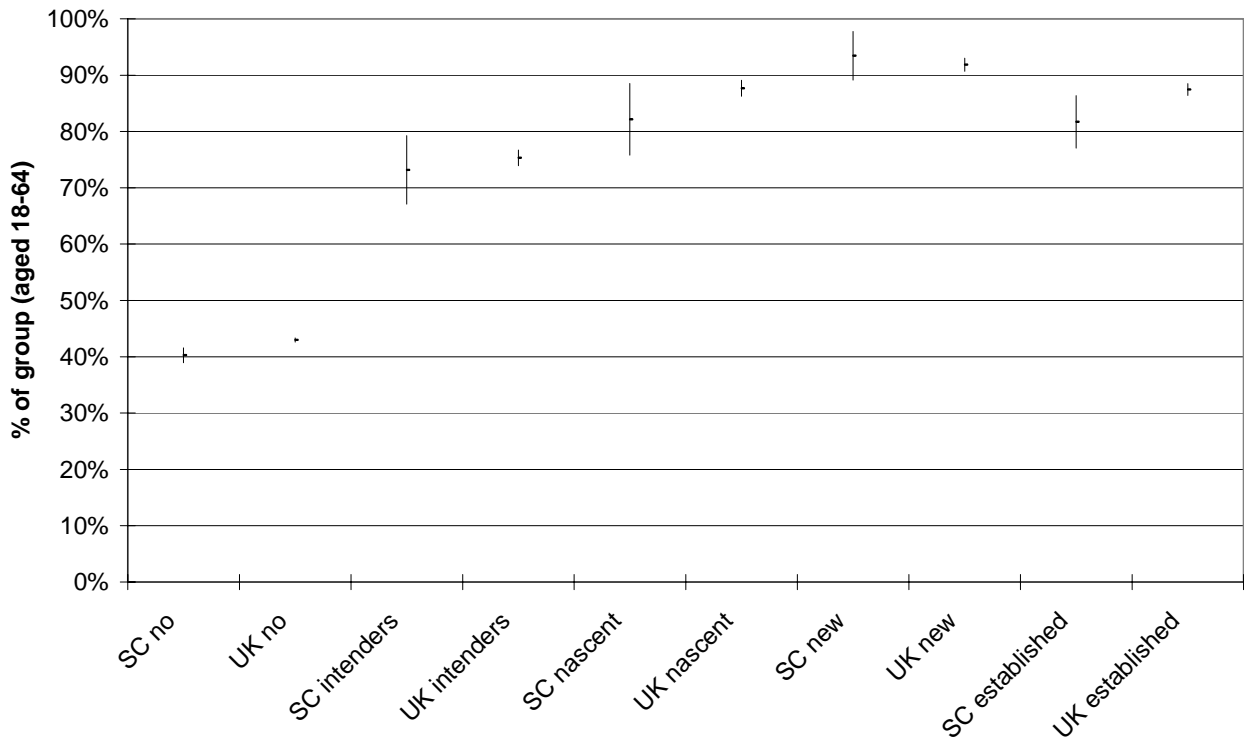
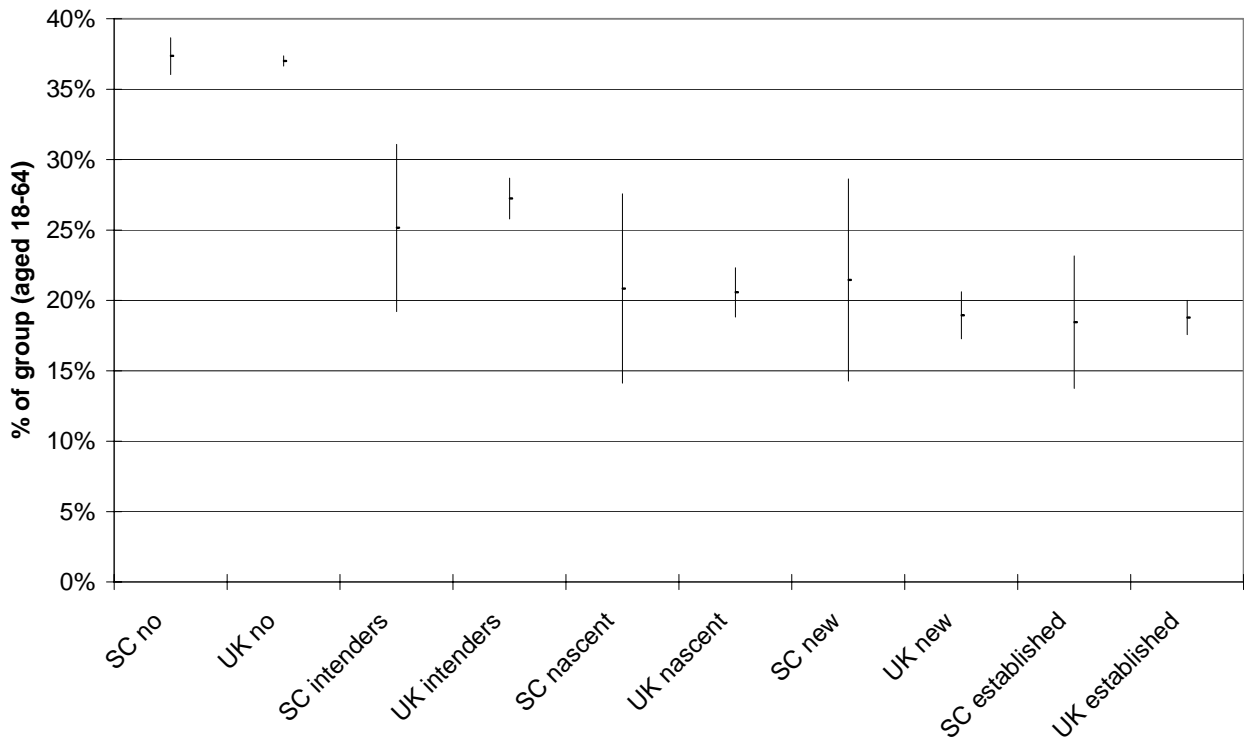


Figure 14. Proportion of groups of differing entrepreneurial intention and activity who agree that they would not start a business in case it might fail, showing 95% confidence intervals



Cultural norms variables

- Preference for equal standard of living for all
- Starting a new business seen as a desirable career choice
- Those successful in business have high status and respect
- Often see stories in the media about successful new businesses

Figures 15, 16, 17 and 18 show differences in cultural norms measures by groups of differing entrepreneurial intention and activity. They show that **there are no substantial differences between these groups in perception of cultural norms, or between the Scottish and UK-wide samples.** Only around half of people in each group thought that starting a business was generally perceived to be a good career choice. However, three-quarters of people agreed that successful startup entrepreneurs have high status. It appears that entrepreneurs do not have a uniquely different set of cultural norms.

Figure 15. Proportion of groups of differing entrepreneurial intention and activity who agree that, in the UK, most people would prefer that everyone had a similar standard of living, showing 95% confidence intervals

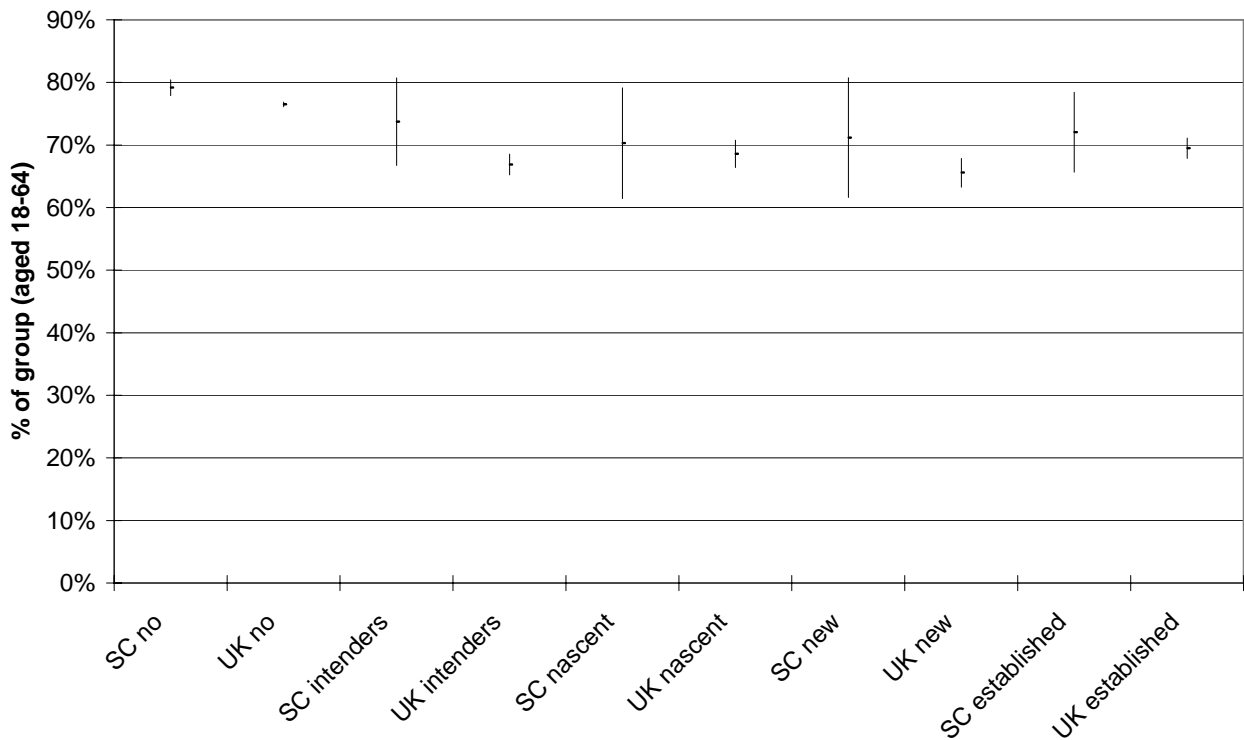


Figure 16. Proportion of groups of differing entrepreneurial intention and activity who agree that in the UK, most people would consider that starting a business is a desirable career choice, showing 95% confidence intervals

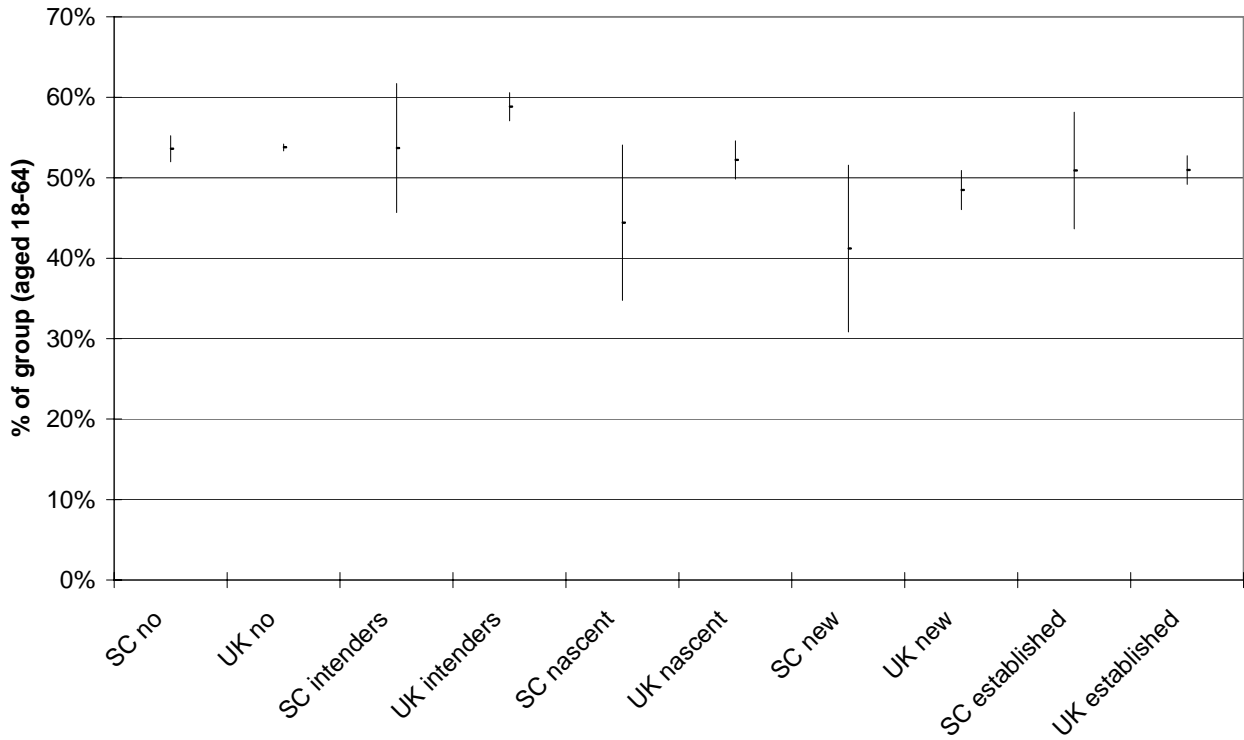


Figure 17. Proportion of groups of differing entrepreneurial intention and activity who agree that in the UK, those successful at starting a new business have a high level of status and respect, showing 95% confidence intervals

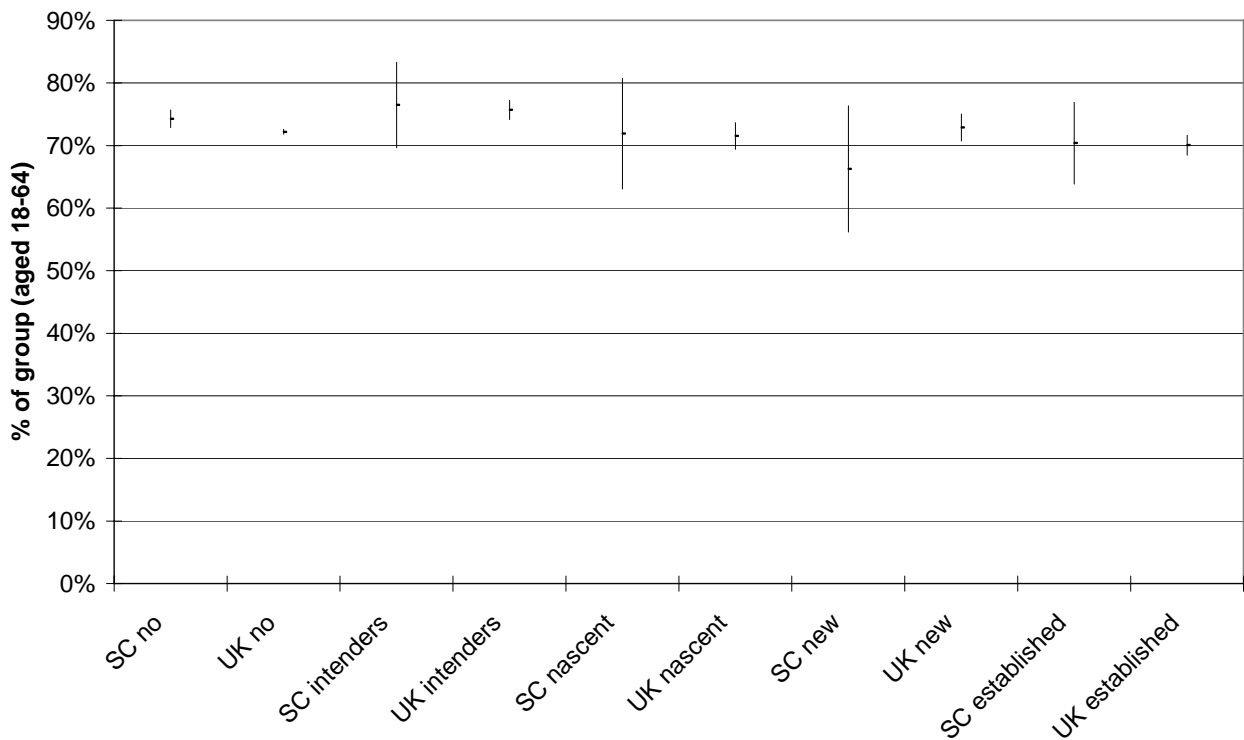
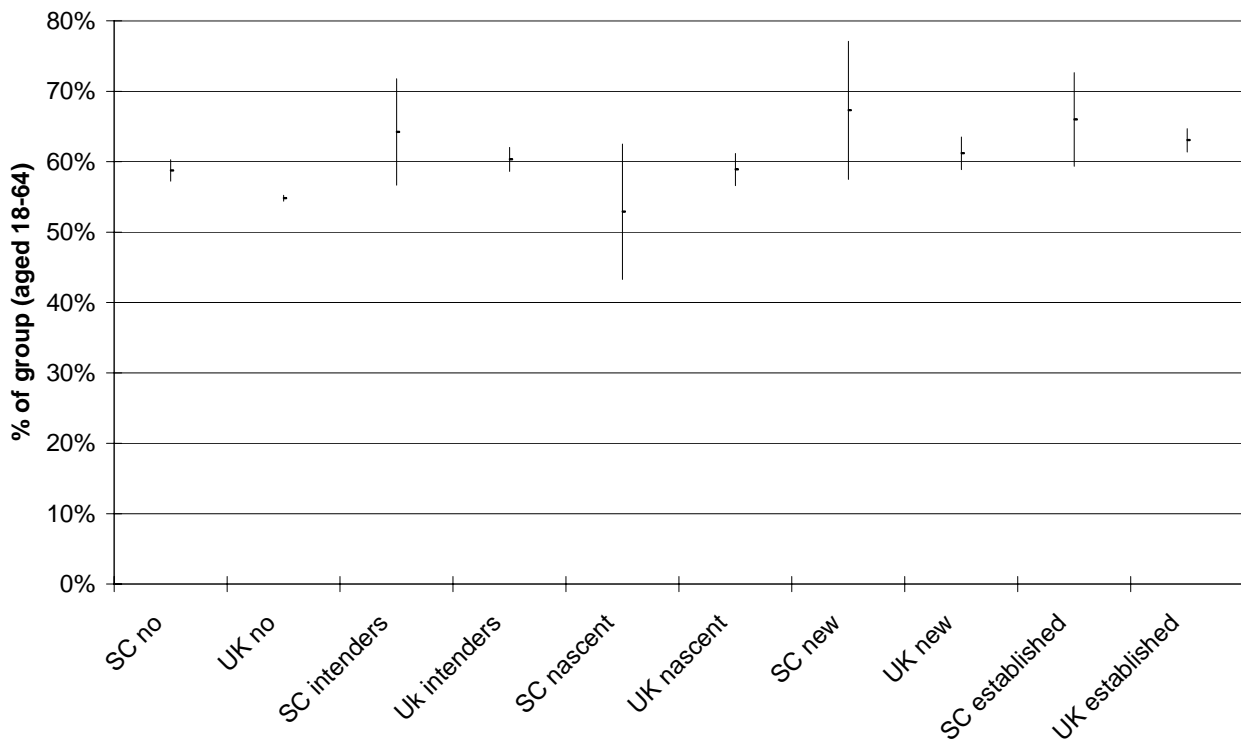


Figure 18. Proportion of groups of differing entrepreneurial intention and activity who agree that in the UK, you often see stories in the public media about successful new businesses, showing 95% confidence intervals



Summary of Section 4

Entrepreneurial behaviour is widely distributed across the population. However, those with any form of entrepreneurial intention or activity are significantly more likely to be males. There is greater attrition among female owner/managers than among male owner/managers. The stock of business owner/managers may be becoming more educated over time. The more established the entrepreneurial activity, the higher the household income, on average. Those who intend to start a business in the next three years (intenders) are slightly more likely to be students than the background population.

Migrants and immigrants provide one third of total early-stage entrepreneurial activity in Scotland - around double what would be expected based on their proportion in the background population. In-migrants do not migrate in order to start businesses; however they may start businesses in order to stay where they are. Immigrants seem to have greater difficulty than regional in-migrants in starting in the first few years of arrival in a region. However, immigrants are relatively rare in Scotland. The apparent difficulty in translating intention and action into actual business ownership among ethnic minority individuals may be due to the immigrant status of most ethnic minority individuals rather than their ethnicity.

Nascent entrepreneurs and new business owners are more likely to have shut down a business in the past year than other groups. Most business closures are not caused primarily by financial problems. There is no evidence that non-entrepreneurially active individuals in Scotland have less experience in starting a business than people across the UK. Half of non-entrepreneurially active people cite financial concerns as the main barrier to startup, with lack of interest the next most frequently mentioned barrier. There is virtually no difference between Scottish and UK-wide samples on entrepreneurial attitudes or entrepreneurship-related cultural norms.

Section 5 Types of entrepreneurship in Scotland

This section considers different types of entrepreneurship in Scotland, including corporate versus independent startups, and high growth startups. Given the small annual sample sizes, only 2002 to 2007 pooled database is reported. Data on corporate entrepreneurship is only available for *nascent* corporate entrepreneurs. 2.2% of Scotland-based and 2.6% of UK-wide respondents aged 18-64 were starting independent ventures. 0.4% of Scottish and 0.5% of UK nascents were doing so for their employer, but in which they would have an equity stake. This is the GEM definition of corporate entrepreneurs.

Since nascent corporate entrepreneurs were rare in Scotland, we report trends from the UK. Patterns were similar in Scotland and the UK, but small numbers in Scotland prevented statistically significant differences in proportions from being detected. Significantly fewer female independent nascent entrepreneurs than male independent or male or female corporate nascent entrepreneurs stated that their product or service was new to all customers (12% versus 16% in all three other groups). However, female corporate nascents were more likely to report lower expected competition than all other groups (22% versus 31% for independent females and 35% for both male groups). Male corporate nascents were significantly more likely to report their business was based on technology that was less than a years old than male independent nascents (16% versus 11%), whereas female corporate nascents were not (13% versus 14%). Male and female independent nascents were significantly more likely to report no expected sales to customers outside the country than their corporate peers (54% versus 42% for males and 60% versus 53% for females). 11% of corporate male nascents expected 90-100% of sales to customers from outside the country, compared with 5% of male independent nascents, 1% of female corporate nascents and 4% of male independent nascents.

22% of Scottish and 21% of UK independent nascents but only 15% of Scottish and 8% of UK corporate nascents expected their business not to employ anyone in 5 years time. The total projected jobs for each group was sensitive to outliers. Including all outliers, the average jobs each nascent expected their venture to have created in 5 years time was 58 for corporates and 51 for independents, but if an upper limit of 999 was imposed, the average projected number of jobs was 21 and 11 (16 and 9 for Scotland, from a much smaller distribution of 39 corporates and 185 independents, compared to 548 corporates and 2639 independents across the UK).

New business owner/managers tended to be more conservative in their job projections, with an average of 17 jobs (6 if the upper limit of 999 was imposed) projected by in Scotland and 28 (10) in the UK.

The rate of **High-expectation Entrepreneurial Activity (HEA) in Scotland over the 2002 to 2007 period was 0.9, around the same as the 1.2 estimate for the UK.** HEA varied across the regions from a high of 1.6 in London to a low of 0.7 in Northern Ireland. In Scotland, high-expectation nascent entrepreneurs were significantly more likely to be selling to customers outside the country (59%) than non high-expectation nascent entrepreneurs (45%). They were not however more (or less) likely to be using new technology in their venture, or expecting their product or service to be new to most or all customers, or to expect either more or less competitors than non high expectation nascent entrepreneurs. High-expectation new business owner/managers did not have statistically significant differences on these measures, probably because of small sample sizes.

The HEA rate of graduates is double that of non-graduates, in both the UK (1.7% versus 0.9%) and Scotland (1.5% versus 0.6%), and this difference is statistically significant. However there were no substantial differences in industry sectoral choice of HEA graduates and non-graduates.

Summary of Section 5

High-expectation Entrepreneurial Activity (HEA) in Scotland over the 2002 to 2007 period was 0.9, around the same as the 1.2 estimate for the UK, and in proportion with the difference in TEA rates between Scotland and the UK. The HEA rate of graduates is double that of non-graduates, in both the UK (1.7% versus 0.9%) and Scotland (1.5% versus 0.6%), and this difference is statistically significant.

Section 6 Entrepreneurship in Scotland compared with other regions of the UK and other similar small countries

GEM Data is available for UK regions since 2002, although sample sizes are small for some years. Therefore pooled samples are used for regional comparisons.

Figure 19 shows the point estimates and 95% confidence intervals for Scotland and other GOR regions of the UK. **Scotland appears to be in the third quartile of regions**, with a significantly higher TEA rate than the North East, and significantly lower rates than five regions in the midlands and south. There are, however, at least two ways in which this picture is misleading. The first is the measure for London. Inner and Outer London have very different entrepreneurship rates. Outer London's TEA rate of 6.4 is similar to those of surrounding southern regions, while Inner London, as a world city, beats to a much faster drum with an TEA rate of over 10. The second is that **Scotland's relatively modest TEA rate masks the fact that one of its sub-regions has one of the highest TEA rates in the UK.** This is shown in Figure 20, which estimates TEA rates and 95% confidence intervals for all NUTS2 regions of the UK. **The TEA rate for the Highlands and Islands is 7.2, very similar to that of three other geographically isolated, agricultural NUTS2 regions in the South West of the UK.** These four regions also have high regional in-migration flows and an older population profile. The front cover of this report shows the regional entrepreneurship pattern on a map of the UK. The higher than average TEA rates in Inner London and the rural, isolated South-West and North-West of the UK can clearly be seen as cutting across the general south-east/north-west trend of declining regional TEA rates at the NUTS2 level.

Figure 19: Total early-stage entrepreneurial activity estimates for UK NUTS1 level regions, showing 95% confidence intervals, for pooled (2002 to 2007) GEM data.

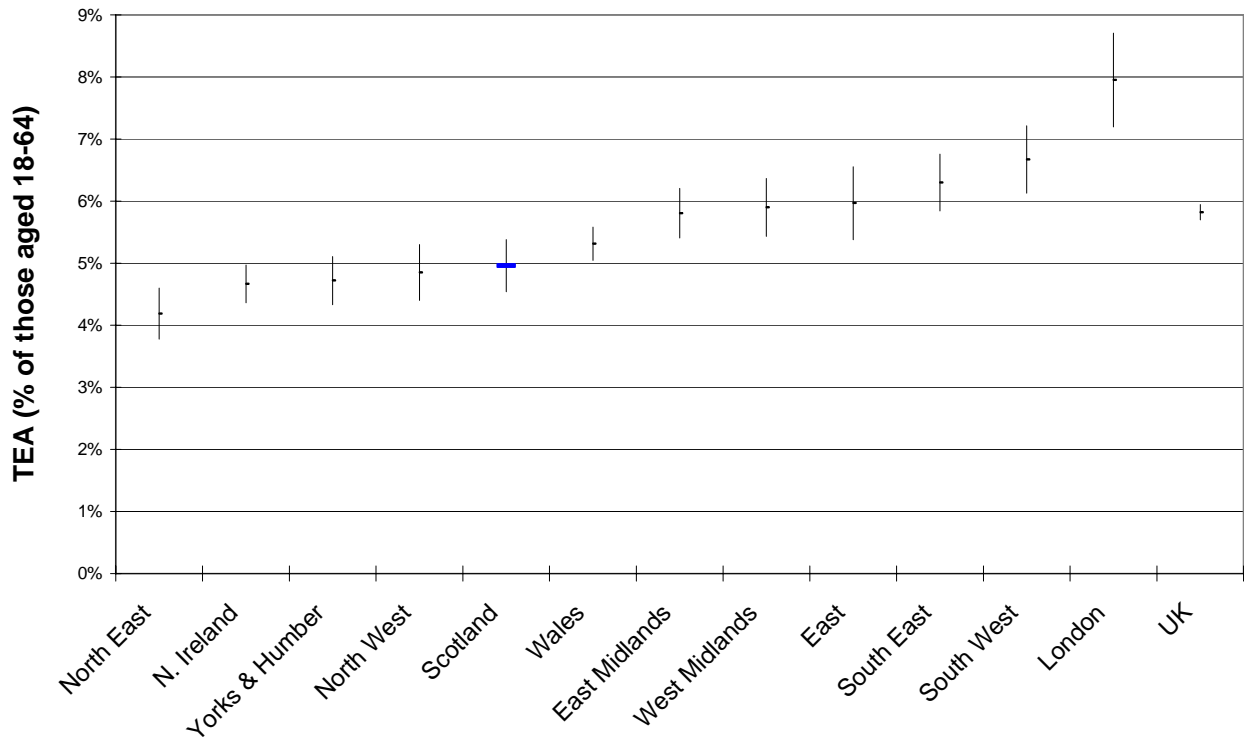
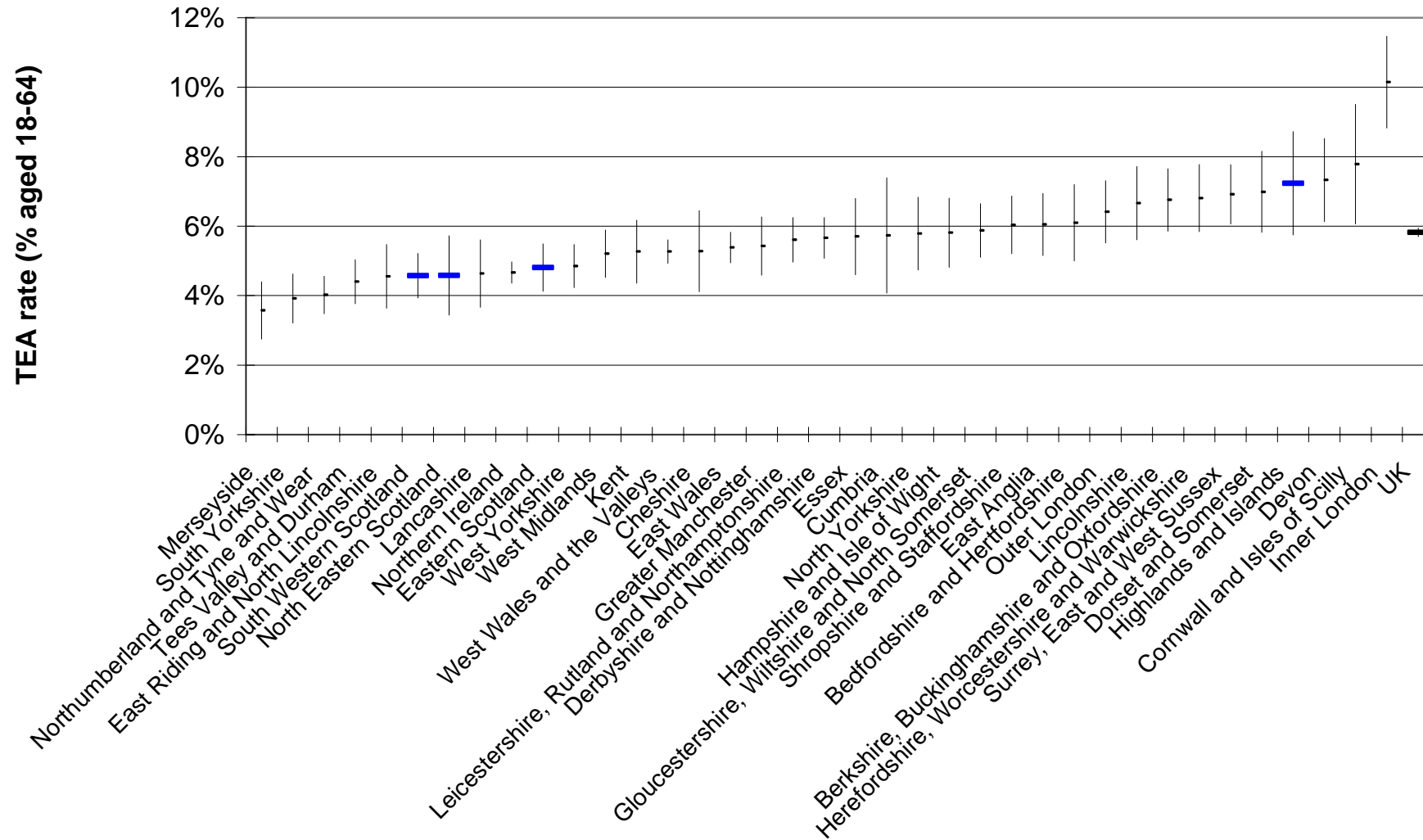


Figure 20: Total early-stage entrepreneurial activity estimates for UK NUTS2 level regions, showing 95% confidence intervals, for pooled (2002 to 2007) GEM data.



There are two strong predictors of TEA rates at the NUTS 2 subregional level: the established business owner/manager rate, which is a measure of the stock of experienced entrepreneurs in the region, and the proportion of regional migrants and immigrants. Inner London is something of an outlier, having a much lower than expected established business owner/manager rate, given its TEA rate. This can in part be explained by the very high proportion of immigrants and regional in-migrants in London, many of whom are short term residents.

The three other Scottish NUTS2 regions have similar rates to other post-industrial regions of the UK, such as Lancashire or Northern Ireland. Perhaps surprisingly, North East Scotland, despite its relative wealth, behaves more like its post-industrial peers than the wealthy home counties in entrepreneurial terms.

Initial linear regression analyses suggest that 83% of the variance in TEA rates across UK NUTS 2 regions can be explained by just three factors: the stock of established business owner/managers, the stock of migrants, and opportunity perception among the non-entrepreneurially active population. The last factor has a negative but small independent effect, suggesting that controlling for the pool of experienced business owner/managers and migrants, there may be some element of necessity entrepreneurship in some regions with high TEA rates, perhaps because of a reluctance to move away for employment elsewhere. As the Highlands and Islands have the seventh lowest opportunity perception rate, this is worth investigating further.

Figure 21: Association between Total early-stage Entrepreneurial Activity and established business owner/manager rate in the UK at the NUTS 2 level

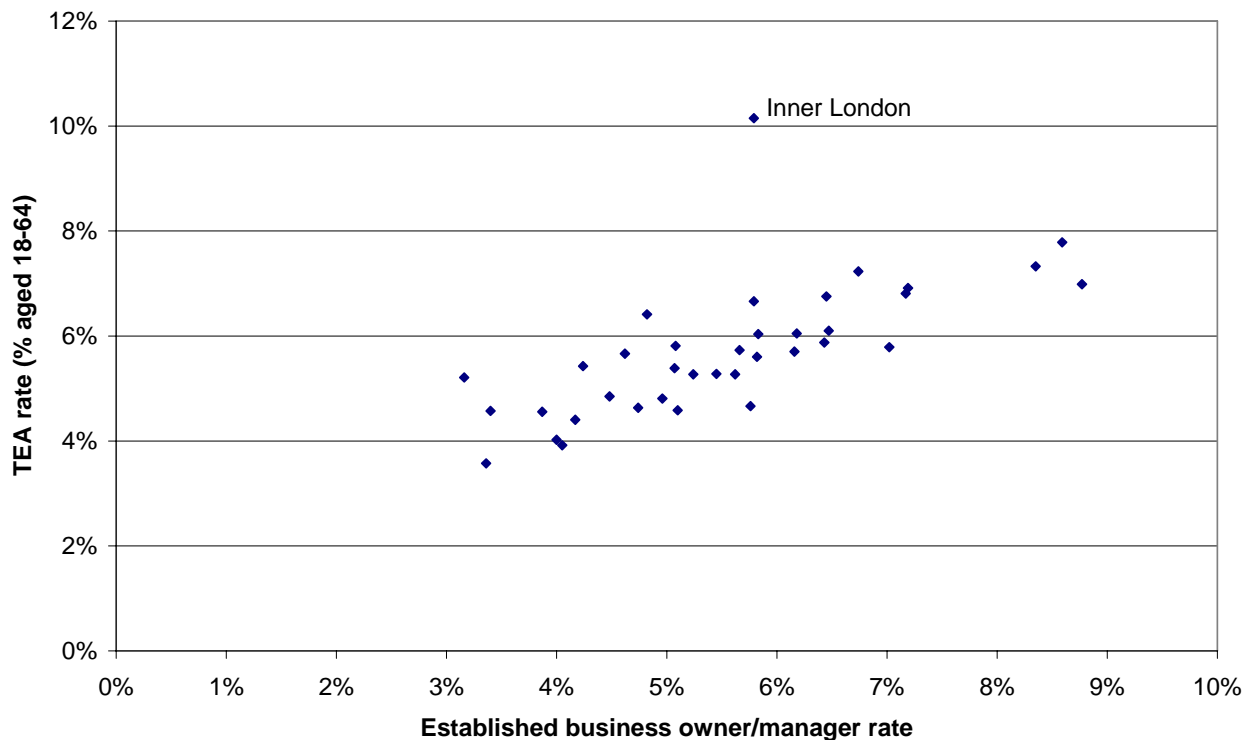
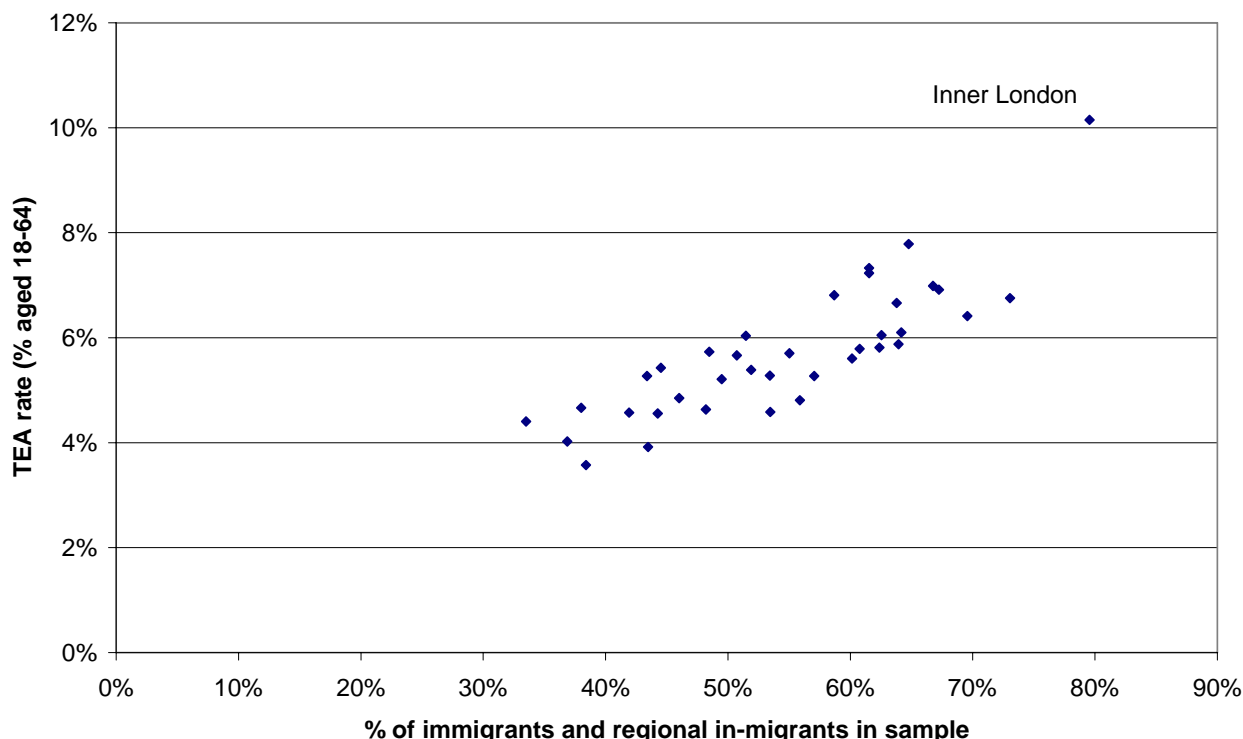


Figure 22: Association between Total early-stage Entrepreneurial Activity and the proportion of immigrants and regional in-migrants in the UK at the NUTS 2 level



Turning from regional to international comparisons, Table 15 (in appendix 1) shows the trend in TEA rates from 2000 to 2007 for Scotland, UK, Arc of Prosperity countries: Ireland, Iceland, Norway, Denmark, Sweden and Finland, and small developed countries: Belgium, Austria, Portugal, Israel and New Zealand for each year in which GEM data is available for these countries. It shows that **Scotland's TEA rate is around four-fifths of the UK rate and less than two-thirds of the average Arc of Prosperity rate**, though TEA rates range widely in Arc of Prosperity and indeed in other small countries.

Table 16 (in appendix 1) shows the established business owner/manager rates for each country and year in same way as for Table 15. The same pattern is apparent: the Scottish rate is 85% of the UK rate and 63% of the Arc of Prosperity average. TEA rates track established business owner/manager rates (ESTBUS) for good reason. It is the stock of experienced business owner/managers that provides role models and experienced human capital for business startup. Scotland lacks a stock of such business owners, and this could be because of its heavy large, nationalized industrial heritage and the high proportion of public sector employment in the workforce.

Summary of Section 6

Scotland appears to be in the third quartile of regions when measured by TEA. Scotland's relatively modest TEA rate masks the fact that one of its sub-regions has one of the highest TEA rates in the UK. The TEA rate for the Highlands and Islands is 7.2, very similar to that of three other geographically isolated, agricultural NUTS2 regions in the South West of the UK. Scotland's TEA rate is around four-fifths of the UK rate and less than two-thirds of the average rate among Arc of Prosperity countries.

Section 7

Implications and recommendations.

The GEM data as presented do not reveal a “silver bullet” for entrepreneurship policy. It appears that **TEA in Scotland and in its sub-regions is about where one would expect them to be, given Scotland’s demographic profile and business stock.** The data do raise some questions for further research, and these are considered in the following paragraphs. But the lack of strong guidance from the data on entrepreneurial attitudes, activity and aspirations suggests that an alternative approach to understanding entrepreneurship from a policy perspective might be worth exploring.

Very recently, a complex Global Entrepreneurship Index (GEI) was devised by Acs and Szerb (2008) and this index was briefly outlined in the 2008 GEM Executive Report (Bosma et al., 2009). This index is built from three sub-indices that measure the *interaction* of entrepreneurial attitudes, activity, and aspirations respectively with relative dimensions of the environment for entrepreneurship. At the national level, this new index could aid policymakers to pinpoint bottlenecks in the entrepreneurship/environment nexus that require remedial action if productive entrepreneurship is to increase. This is a much more sophisticated assessment than traditional GEM measures of activity such as TEA. It might be worth commissioning an effort that would replicate the design of the GEI but at the regional UK level. **A focus on the interaction between entrepreneurship and environment could reveal actionable bottlenecks in Scotland.**

This review of trends in the GEM data has revealed no clear pattern of change in entrepreneurial activity over the 2000 to 2007 period. While activity rates appeared to dip in 2006 relative to benchmark countries, the 2007 rates are close to the long-run average, as indeed are 2007 rates for most countries. In fact, TEA rates have been quite stable over the past 5 or six years. This in part may be due to the long term nature of the measures used. Individuals can remain nascent entrepreneurs for many years, and in fact the nascent entrepreneurship rate as currently measured is somewhat biased in favour of longer term nascents. The new business owner/manager rate measures owner/managers who have set up a business any time over the past three and a half years. So short term fluctuations tend to be smoothed out. Year-to-year fluctuations may be as much a consequence of sampling error caused by small sample sizes as of changes in underlying activity.

Overall, TEA rates in the three Scottish NUTS 2 regions that are within the Scottish Enterprise remit appear to be approximately where they should be, given their relatively low stock of established business owner/managers, which itself is a historical legacy. At first sight, North East Scotland should have a higher TEA rate than it has, since it is a relatively wealthy region and has the third highest opportunity perception rate of any NUTS 2 region at 40%. However, it has a relatively high proportion of industrial employment and this is negatively correlated with TEA rates. On the other hand, one might have expected South West Scotland, with its high rate of economic inactivity, to have a lower rate than it has. Further multivariate, multi-level analysis might shed further light on this. As South West Scotland has the lowest opportunity perception rate of any NUTS 2 region in the UK (27%), and the relationship between opportunity perception and entrepreneurial activity appears to be complex, this issue might be worth exploring further as well.

This review of trends in the GEM data has revealed significant patterns of difference in Total early-stage entrepreneurial activity across the UK and across Scotland, while demonstrating that entrepreneurial intention and activity is widely distributed across the

population in demographic terms. Some of the difference in activity between individuals can be accounted for by different life chances, but prediction rates using individual level variables are very poor. Further work could investigate this using more sophisticated multi-level analysis, examining individual, sub-regional and regional effects concurrently. Further sub-regional data, for example on distribution of public and private sector employment, might reveal more patterns.

A primary perceived barrier to business startup by those who are not engaged in entrepreneurial activity, especially among younger people, is access to finance. Whether this is real or perceived is an issue worth exploring further. The median expected cost of startup among the Scottish nascent entrepreneurs was £10,000. It would be interesting to test if the £1000 startup grant for young people has affected their perceptions of finance as a barrier.

The finding that regional in-migrants make a major contribution to entrepreneurial activity in Scotland is significant in the light of the attempts by the Scottish government to attract migrants. Given Scotland's low stock of indigenous established business owner/managers, it makes sense to welcome regional migrants to Scotland, not necessarily with a view to startup immediately, since they appear to be attracted by employment rather than self-employment opportunities, but because they have a high propensity to start after they arrive. Interestingly, while graduates in general have higher TEA rates than non-graduates, non-graduate male regional in-migrants aged 25-44 appear to have particularly high startup propensity. Thus narrow targeting of highly educated people might miss a significant segment of the entrepreneurial population.

One issue that has not been considered here is how this data related to VAT registrations and de-registrations, or to business bank account openings. It may be that VAT registration data relates to more substantial businesses with a greater financial requirement than the typical GEM entrepreneur. A comparative study of the effects on GEM startup data, business bank account opening data and VAT registration data at the regional (perhaps NUTS 2) level might be worth pursuing.

Summary of Section 7

TEA in Scotland and in its sub-regions is about where one would expect them to be, given Scotland's demographic profile and business stock. However, further research on the interaction between entrepreneurship and environment could reveal actionable bottlenecks to productive entrepreneurship in Scotland.

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Appendix 1

Table 1 Total early-stage Entrepreneurial Activity (TEA) rate estimates for the UK and Scotland from 2000 to 2007, with sample sizes (18-64 year olds only)

year, nation sample size	2000UK 1594	2000SC 1564	2001UK 4215	2001SC 1630	2002UK 11902	2002SC 1546	2003UK 18315	2003SC 1665
SC as % of UK		67.43%		71.96%		92.32%		85.80%
Upper bound 95% C.I.	7.08%	4.97%	7.30%	5.75%	5.85%	6.12%	6.77%	6.60%
Lower bound 95% C.I.	4.76%	3.02%	5.81%	3.69%	5.04%	3.93%	6.06%	4.41%
Mean estimate	5.92%	3.99%	6.56%	4.72%	5.44%	5.02%	6.42%	5.51%

	2004UK 17583	2004SC 1633	2005UK 24513	2005SC 1639	2006UK 30643	2006SC 1897	2007UK 34818	2007SC 1909	annual meanUK	annual meanSC
SC as % of UK		86.32%		94.00%		70.95%		83.61%		81.38%
Upper bound 95% C.I.	6.19%	6.11%	6.34%	6.80%	6.09%	5.03%	5.70%	5.50%		
Lower bound 95% C.I.	5.50%	3.98%	5.74%	4.56%	5.56%	3.24%	5.22%	3.63%		
Mean estimate	5.84%	5.05%	6.04%	5.68%	5.82%	4.13%	5.46%	4.57%	5.94%	4.83%

Table 2 Nascent entrepreneurial activity rate estimates for the UK and Scotland from 2000 to 2007, with sample sizes (18-64 year olds only)

year, nation sample size	2000UK 1594	2000SC 1564	2001UK 4215	2001SC 1630	2002UK 11902	2002SC 1546	2003UK 18315	2003SC 1665
SC as % of UK		83.23%		66.02%		109.16 %		89.91%
Upper bound 95% C.I.	4.08%	3.48%	5.03%	3.73%	2.79%	3.56%	3.74%	3.95%
Lower bound 95% C.I.	2.35%	1.88%	3.79%	2.09%	2.22%	1.93%	3.21%	2.28%
Mean estimate	3.22%	2.68%	4.41%	2.91%	2.51%	2.74%	3.47%	3.12%

	2004UK 17583	2004SC 1633	2005UK 24513	2005SC 1639	2006UK 30643	2006SC 1897	2007UK 34818	2007SC 1909	annual meanUK	annual meanSC
SC as % of UK		91.22%		92.45%		62.35%		85.71%		83.49%
Upper bound 95% C.I.	3.45%	3.73%	3.40%	3.76%	3.44%	2.65%	3.05%	3.16%		
Lower bound 95% C.I.	2.93%	2.10%	2.96%	2.12%	3.04%	1.38%	2.70%	1.77%		
Mean estimate	3.19%	2.91%	3.18%	2.94%	3.24%	2.02%	2.87%	2.46%	3.26%	2.72%

Table 3 New business owner/manager rate estimates for the UK and Scotland from 2000 to 2007, with sample sizes (18-64 year olds only)

year, nation sample size	2000UK 1594	2000SC 1564	2001UK 4215	2001SC 1630	2002UK 11902	2002SC 1546	2003UK 18315	2003SC 1665
SC as % of UK		54.15%		73.78%		77.32%		84.69%
Upper bound 95% C.I.	4.12%	2.42%	3.15%	2.64%	3.45%	3.19%	3.45%	3.49%
Lower bound 95% C.I.	2.38%	1.11%	2.18%	1.29%	2.82%	1.66%	2.94%	1.93%
Mean estimate	3.25%	1.76%	2.66%	1.96%	3.13%	2.42%	3.20%	2.71%

	2004UK 17583	2004SC 1633	2005UK 24513	2005SC 1639	2006UK 30643	2006SC 1897	2007UK 34818	2007SC 1909	annual meanUK	annual meanSC
SC as % of UK		78.67%		94.10%		77.22%		80.67%		77.43%
Upper bound 95% C.I.	3.11%	2.97%	3.27%	3.68%	3.00%	2.82%	2.86%	2.82%		
Lower bound 95% C.I.	2.62%	1.53%	2.84%	2.06%	2.63%	1.51%	2.52%	1.51%		
Mean estimate	2.86%	2.25%	3.05%	2.87%	2.81%	2.17%	2.69%	2.17%	2.96%	2.29%

Table 4: Gender of those with no, nascent, new and established entrepreneurial activity in Scotland.

	no, intenders, nascent, new, established business owner/managers					
	no	intenders	nascent	new	established	Total
MALE	51.9%	64.1%	76.5%	68.1%	84.1%	55.2%
FEMALE	48.1%	35.9%	23.5%	31.9%	15.9%	44.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 4a: Gender of those with no, nascent, new and established entrepreneurial activity in Scotland who are in fulltime employment, graduates, and born in Scotland. (N = 1619)

	no, intenders, nascent, new, established business owner/managers					
	no	intenders	nascent	new	established	Total
MALE	46.1%	61.1%	66.8%	66.5%	75.3%	49.0%
FEMALE	53.9%	38.9%	33.2%	33.5%	24.7%	51.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5: Age of those with no, nascent, new and established entrepreneurial activity in Scotland.

	no, intenders, nascent, new, established business owner/managers					
	no	intenders	nascent	new	established	Total
18-24 YRS	13.1%	24.4%	11.9%	8.3%	0.4%	12.8%
25-34 YRS	19.8%	25.1%	24.2%	20.7%	10.9%	19.7%
35-44 YRS	24.3%	24.9%	25.4%	37.2%	29.6%	24.9%
45-54 YRS	22.7%	17.1%	25.8%	25.2%	31.6%	23.1%
55-64 YRS	20.1%	8.5%	12.7%	8.7%	27.5%	19.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6: Education of those with no, nascent, new and established entrepreneurial activity in Scotland.

	no, intenders, nascent, new, established business owner/managers					
	no	intenders	nascent	new	established	Total
Doctorate	0.9%	0.8%	2.2%	1.7%	0.7%	1.0%
Masters degree	6.6%	11.1%	10.2%	12.6%	10.1%	7.2%
Bachelors degree	22.4%	31.8%	30.7%	26.8%	25.6%	23.2%
A levels or equivalent	20.2%	24.0%	19.1%	20.3%	17.6%	20.2%
GCSE or equivalent	18.2%	11.6%	16.9%	15.6%	16.0%	17.7%
Vocational qualification	12.1%	12.4%	10.2%	14.3%	11.4%	12.1%
Other qualification	4.0%	3.2%	6.2%	3.0%	4.3%	4.0%
No formal qualifications	15.5%	5.1%	4.4%	5.6%	14.2%	14.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 7: Household income of those with no, nascent, new and established entrepreneurial activity in Scotland.

Household income	no, intenders, nascent, new, established business owner/managers					
	no	intenders	nascent	new	established	Total
up to £11,499	14.8%	13.9%	11.2%	5.9%	5.9%	14.1%
£11,500 to £17,499	14.3%	8.8%	16.2%	10.5%	7.0%	13.7%
£17,500 to £29,999	23.0%	26.0%	16.2%	22.4%	23.1%	22.9%
£30,000 to £49,999	20.7%	20.6%	24.9%	21.9%	21.3%	20.8%
£50,000 to £99,999	10.3%	14.7%	14.5%	23.2%	20.2%	11.4%
£100,000 or more	1.6%	2.9%	4.1%	3.4%	7.9%	2.0%
not applicable	0.9%	1.3%	0.4%		0.9%	0.9%
don't know	6.6%	5.9%	4.1%	7.2%	4.6%	6.4%
refused	7.9%	5.6%	8.3%	5.5%	9.0%	7.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8: Employment status of those with no, nascent, new and established entrepreneurial activity in Scotland.

Occupation	no, intenders, nascent, new, established business owner/managers					
	no	intenders	nascent	new	established	Total
Working 30 hrs or more fulltime	59.0%	59.5%	63.3%	77.3%	79.8%	60.5%
Working 8-29 hrs a week (p/time)	14.7%	16.1%	17.5%	19.4%	17.9%	15.1%
Not working - homemaker	5.6%	5.3%	1.7%	1.2%	1.1%	5.2%
Not working - retired	8.0%	2.9%	3.3%		0.6%	7.2%
Not working - student	3.8%	6.6%	4.2%	0.8%		3.6%
Not working - sick, disabled, other	4.4%	3.4%	4.2%		0.4%	4.1%
Not working - unemployed	4.5%	6.3%	5.8%	1.2%	0.2%	4.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9: Origin of those with no, nascent, new and established entrepreneurial activity in Scotland.

	no, thinkers, nascent, new, established business owner/managers					
	no	intenders	nascent	new	established	Total
Scotland	83.7%	73.8%	64.3%	67.8%	80.2%	82.3%
rest of UK	11.7%	14.5%	21.3%	24.0%	17.3%	12.6%
outside UK	4.6%	11.7%	14.3%	8.3%	2.6%	5.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9a: Origin of those with no, nascent, new and established entrepreneurial activity in the UK (2003 to 2007 data only).

	no, thinkers, nascent, new, established business owner/managers					
	no	intenders	nascent	new	established	Total
life-long residents of "this region of the UK"	44.9%	32.2%	33.3%	33.7%	40.4%	43.4%
in-migrants from other UK regions	44.4%	43.2%	49.0%	53.5%	50.8%	45.1%
immigrants from outside the UK	10.7%	24.6%	17.7%	12.7%	8.8%	11.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 10: Ethnicity of those with no, nascent, new and established entrepreneurial activity in Scotland.

	no, intenders, nascent, new, established business owner/managers					
	no	intenders	nascent	new	established	Total
white	98.3%	94.3%	92.6%	97.5%	98.1%	98.0%
nonwhite	1.7%	5.7%	7.4%	2.5%	1.9%	2.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 11: Proportion of those with no, nascent, new and established entrepreneurial activity in Scotland who shut down a business in the past year.

	no, intenders, nascent, new, established business owner/managers					
Shut down a business in past year	no	intenders	nascent	new	established	Total
NO	99.1%	97.2%	91.4%	93.8%	96.0%	98.5%
YES	0.9%	2.8%	8.6%	6.2%	4.0%	1.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 12: Proportion of those with no, nascent, new and established entrepreneurial activity in Scotland who have invested in someone else's business in the last two years.

	no, intenders, nascent, new, established business owner/managers					
Informal Investor	no	intenders	nascent	new	established	Total
NO	99.3%	96.6%	95.5%	93.0%	96.2%	98.8%
YES	0.7%	3.4%	4.5%	7.0%	3.8%	1.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 13. Biggest barriers to starting a business, expressed as a percentage of those with no entrepreneurial intention or activity.

Biggest barrier to starting a business: % avoiders suggesting barrier	SC 2007	UK 2007	SC 2006	SC 2005	SC 2004
N (number of avoiders aged 18-64)	1590	27626	1590	1364	1226
Getting finance for the business	48.2	47.3	52.4	52.6	50.2**
Lack of interest in starting a business	20.9	17.3	16.0	13.2	16.4
Fear of debt/loss of security/loss of income from current job	13.9	17.2	13.8	11.8	**
lack of skills/knowledge	12.3	12.4	11.2	9.2	11.4
Age	11.8	11.3	10.2	8.9	8.8
Not having an idea for a business	8.6	9.7	8.2	8.5	9.8
The time commitment it would require	8.3	10.8	10.0	9.4	9.9
The chance that the business might fail	7.6	7.8	6.1	5.4	6.6
Health	5.9	4.3	3.2	3.4	2.7
Don't know	3.7	3.9	2.9	4.6	4.2
Happy in current job/already employed/have a profession	3.1	2	2.2	2.4	2.6
Finding the right location/location (unspecified)/the area I live in is not good for business/just moved	2.1	1.4	2.2	2.6	
Complexity of process/regulations relating to starting a business/taxes/bureaucracy/government (unspecified)/red tape/paperwork	1.8	3	2.0	2.5	1.9
Lack of help/support/advice/guidelines	1.3	1.1	1.3	0.8	0.9
Not knowing how/unable to get hold of premises, equipment or staff/finding a property/accommodation/facilities/resources	1.3	1.2	2.2	2.2	0.8
Competition/competitive industry	1.3	1	0.9	0.9	0.9
Not thought about it	1.2	0.6	0.1	0.2	
Expenditure/costs (various, including premises, tax) /commitment (unspecified)	1.2	0.9	1.7	0.2	
Lack of customers/opportunity/finding the right customers	0.9	1	1.2	1.1	2.1
Finding the market/choosing the business/finding the suitable product	0.8	0.9	0.9	1.4	
Stress/pressures/worry/fear (unspecified)	0.7	0.5	0.2	0.1	
Lack of confidence/fear of the unknown	0.6	1.1	1.4	1.1	1.5
Don't want responsibilities/independence/working on my own/being my own boss/prefer to work for someone/personality/myself (unspecified)	0.5	0.6	0.6	0.2	
Having the right contacts/contacts (unspecified)/communications	0.4	0.5	0.6	0.0	
Nothing/no barriers	0.4	0.6	0.3	0.3	0.1
Not being able to promote idea/getting recognized/marketing/publicity/reputation	0.3	0.4	0.5	0.4	0.3
Bad experiences in the past/past experience	0.3	0.2	0.1	0.1	0.4
Lack of experience/experience	0.3	0.3	0.4	0.5	
lack of hard work/laziness	0.3	0.3	0.4	0.2	
The nature of my profession (inc. nurse, priest)/my background doesn't allow me to be self-employed	0.3	0.4	1.0	0.3	
Be happy with status quo/lifestyle/career/standard of living	0.2	0.3	0.1	0.1	
Refused	0.2	0.1	0.2	0.0	0.3
The economic climate at the moment	0.1	0.2	0.1	0.2	
Social prejudice/race/sex/social status	0.1	0.1	0.1	0.2	
Transport/travelling (unspecified)/don't have any transport	0.1	0.1	0.0	0.1	
Other	0.1	0.7	0.3	0.0	0.5
Language/communication barriers/non-citizens/cultural issues	0	0.1	0.3	0.1	

Note: In 2004, financial reasons including fear of debt were combined

Table 14. Expected sources of startup funding as reported by nascent entrepreneurs in Scotland and the UK, expressed as a percentage of nascent entrepreneurs

Source of funding	2007 SC	2007 UK	2006 SC	2006 UK	2005 SC	2005 UK	2004 SC	2004 UK	2003 SC	2003 UK	2002 SC	2002 UK	2001 SC	2001 UK
sample size	44	906	33	915	37	521	31	371	54	625	33	262	35	133
100% self-funding	56.8	59.7	72.7	51.9	48.6	48.0	51.6	47.4	52.2	46.0	33.3	52.3		
Close family	6.8	9.6	9.1	7.4					18.5	24.3			5.7	21.8
Other relatives	2.3	6.0	6.1	4.3					9.3	10.6			2.9	8.3
Work colleagues	11.4	7.3	0	8.7					1.9	10.9			2.9	12.1
A stranger	2.3	3.9	3.0	4.5										
Friends or neighbours	4.5	5.6	6.1	4.3					0	7.4			0	8.3
Banks or other financial institutions	34.1	20.0	18.2	22.7					33.3	45.3			23.5	43.9
Government programmes	18.2	10.7	12.1	14.5					20.4	23.0			17.6	28.0
Other	6.8	6.5	6.1	9.6					21.9	21.9			11.7	9.1

Table 15: Total early-stage entrepreneurial activity rates of Scotland, UK, Arc of Prosperity countries and other small developed countries, from 2000 to 2007

	TEA Index 2000	TEA Index 2001	TEA Index 2002	TEA Index 2003	TEA Index 2004	TEA index 2005	TEA index 2006	TEA index 2007	Average annual TEA rate	Scotland as % of average TEA rate
Scotland	4.0	4.7	5.0	5.5	5.0	5.7	4.1	4.6	4.8	100%
United Kingdom	5.9	6.6	5.4	6.4	5.8	6.0	5.8	5.5	5.9	81%
Scotland as % of UK	67%	72%	92%	86%	86%	94%	71%	84%	81%	
Arc of Prosperity countries										
Finland	6.0	6.6	4.5	6.9	4.4	5.0	5.0	6.9	5.7	85%
Denmark	6.1	7.2	6.6	5.9	5.3	4.8	5.3	5.4	5.8	83%
Norway	8.9	7.5	8.7	7.5	7.0	9.3	9.1	6.5	8.0	60%
Ireland		11.5	9.1	8.1	7.7	9.8	7.4	8.2	8.8	55%
Iceland			11.3	11.2	13.6	10.7	11.3	12.5	11.8	41%
AOP average	7.0	8.2	8.0	7.9	7.6	7.9	7.6	7.9	8.0	60%
Scotland as % of AOP average	57%	58%	62%	70%	66%	72%	54%	58%	60%	
Other small countries										
Belgium	4.4	4.2	3.0	3.9	3.5	3.9	2.7	3.2	3.6	134%
Austria						5.3		2.4	3.9	125%
Sweden	6.1	5.7	4.0	4.1	3.7	4.0	3.5	4.2	4.4	110%
Israel	6.1	5.1	7.1		6.7			5.4	6.1	80%
Portugal		6.8			4.0			8.8	6.5	74%
New Zealand		17.8	14.0	13.6	14.7	17.6			15.5	31%

Table 16: Established business owner/manager rates (proportion of owner/managers of businesses more than three and a half years old in the working age population) of Scotland, UK, Arc of Prosperity countries and other small developed countries, from 2000 to 2007

	ESTBUS Index 2002	ESTBUS Index 2003	ESTBUS Index 2004	ESTBUS index 2005	ESTBUS index 2006	ESTBUS index 2007	Average annual ESTBUS rate	Scotland as % of average ESTBUS rate
Scotland	4.4	5.3	4.8	4.1	4.2	4.6	4.6	100%
United Kingdom	5.6	5.7	4.7	5.1	5.3	5.8	5.4	85%
Scotland as % of UK		79%	93%	102%	80%	79%	79%	85%
Arc of Prosperity countries								
Finland	8.5	11.5	7.6	8.6	8.2	7.6	8.7	53%
Denmark	5.5	5.7	5.1	4.4	5.3	6.0	5.3	86%
Norway	6.3	6.1	6.3	7.3	6.0	5.9	6.3	72%
Ireland	8.0	6.7	6.5	8.1	7.8	9.0	7.7	60%
Iceland	10.4	7.3	7.3	7.3	7.4	8.8	8.1	56%
AOP average	7.7	7.5	6.6	7.1	6.9	7.5	7.2	63%
Scotland as % of AOP average	57%	71%	73%	58%	60%	62%	63%	
Other small countries								
Belgium	2.2	2.2	4.0	5.6	2.1	1.4	2.9	155%
Austria				3.8		6.0	4.9	93%
Sweden	6.8	5.4	6.0	6.3	5.0	4.7	5.7	80%
Israel	5.7		3.9			2.4	4.0	115%
Portugal			7.3			7.1	7.2	63%
New Zealand	11.0	11.1	9.6	10.8			10.7	43%