Global Entrepreneurship Monitor

United Kingdom 2016 Monitoring Report

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Disclaimer

This report is based on data collected by the GEM consortium and the GEM UK team; responsibility for analysis and interpretation of the data is the sole responsibility of the authors.

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Executive Summary

Background

The Global Entrepreneurship Monitor (GEM) research consortium tracks rates of entrepreneurship across multiple phases in 65 economies, making it the world's most authoritative comparative study of entrepreneurial activity in the general adult population. In the UK in 2016, 10,011 adults aged 18 to 80 participated in the GEM survey.

This monitoring report for the UK compares GEM measures of entrepreneurial attitudes, activity and aspirations in the UK, France, Germany and the United States. It also compares the results for the four home nations of the UK.

Entrepreneurial Activity

Total early-stage Entrepreneurial Activity or TEA (the sum of the nascent entrepreneurship rate and the new business owner-manager rate - without double counting) in the UK in 2016 was 8.8%.

The 2016 UK TEA rate was significantly higher than 2015, and again exceeded the previous long-run rate of around 6% which prevailed until 2010.

The TEA rate of 8.8% in the UK compares favourably to France (5.3%) and Germany (4.6%) but is lower than that of the US (12.6%); the gap with the US is due largely to differences in the nascent entrepreneurship rate rather than the new business owner rate.

TEA rates in 2016 were similar across the home nations of England (9.2%), Wales (7.6%), and Scotland (7.3%). The rate in Northern Ireland at 6.3% was significantly lower than in England and the UK average.

More than four-fifths of those involved in early-stage entrepreneurial activity in the UK were opportunity-motivated. The opportunity TEA rate was up significantly from 5.3% in 2015 to 7.4% in 2016. The necessity rate fell from 1.6% to 1.2%.

Employees can also be engaged in entrepreneurial activity on behalf of their employers; this is measured through the Entrepreneurial Employee Activity (EEA) Rate. In 2016 the UK's rate was 5.5%, which was not significantly different to 2015 (6.4%). Considering both TEA and EEA together provides a more comprehensive picture of entrepreneurial activity in a nation.

A recent study[1] by the World Economic Forum (WEF) and GEM Global showed that the UK, one of Europe's strongest economies, was ranked relatively high in terms of employee entrepreneurial activity (intrapreneurship) compared to Germany and France and underlines the advantage that is already well known in terms of start-up rates. This is important for future growth as the study also demonstrated a correlation between intrapreneurship rates and economic competitiveness: every 2.5% increase in a country's intrapreneurship rate correlates to a 1 point increase in competitiveness as measured by the World Economic Forum's global competitiveness data.

Entrepreneurial Activity Types

In total, just over 1 in 5 individuals of working age in the UK were engaged in some type of entrepreneurial activity or intended to start a business within the next three years. This is similar to 2015 and, again, higher than the historical trend.

- 11.1% of working age adults expected to start a business within the next 3 years compared to 8.1% in Germany, both rates were lower than those in France (17.2%) and the US (16.4%).

- 5.1% of the adult population in the UK were actively trying to start a business (*nascent entrepreneurs*), compared with 2.9% in Germany, 3.1% in France and 8.9% in the US.

- 3.8% of the working age adult population were owner-managers of a business that was 3 to 42 months old (*new business owner-managers*). This was similar to the US rate of 4.0% and higher than the German rate of 1.7% and the French rate of 2.3%.

- The 2016 UK rates of start-up, nascent and new business ownership were all up significantly on 2015.

- 6.2% of the UK adult population owned

and managed a business older than 42 months (*established business owner-managers*). This was unchanged from 2015, and lay between the rates for France (4.3%) and the US (9.2%). The German rate was similar to the UK at 7.0%.

- 1.6% of working age people in the UK discontinued a business (either through closure or sale) in the past 12 months. Discontinuations of businesses in the US (2.0%), France (1.5%) and Germany (1.1%) were also similar.

Demographics

In 2016 the male TEA rate rose significantly from 9.5% to 12.0%; there was no significant change in the female TEA rate of 5.7%. However, the ratio of female to male early-stage entrepreneurship does vary across the UK regions so care needs to be taken using the often repeated statement that 'women are half as likely as men to be starting their own business in the UK' – this is not the case in the West Midlands, for example, where the ratio is 74%,

In 2016, for the first time, there were no significant differences in the TEA rates across all age groups in the UK. The rate for both the youngest (18-24) and oldest (55-64) age groups were up significantly on their 2015 figures to 8%.

Immigrants, regional in-migrants and returning migrants continue to be more entrepreneurial than the resident population. In 2016 the TEA rate for immigrants was 10.9%, that for returning migrants 11.8%, and that for regional in-migrants 10.1%; all were significantly higher than the rate for the life-long resident population (7.5%).

Immigrants and regional in-migrants are also engaged in more opportunity entrepreneurship than the resident population; there is no difference in the necessity rates.

Attitudes and Aspirations

Attitudes of non-entrepreneurial individuals to entrepreneurship remained relatively upbeat in 2016. A significantly higher share than in 2015 felt they had the skills, knowledge and experience to start a business although start-up opportunity perception remained unchanged.

Around 80% of the non-entrepreneurial population believe that entrepreneurs have a high status in society, however, there remains a 20 percentage point gap between that share and those that believe starting a business is a good career choice.

Around 1 in 5 UK early-stage entrepreneurs have high job expectations, a higher share than their European counterparts but fewer than in the US where it is 1 in 3. The rate of established business owners with high job expectations is lower across all countries; just 4% in the UK and fewer than 1 in 10 for all comparator nations.

1 World Economic Forum (WEF) and GEM Global (2016) "Europe's Hidden Entrepreneurs: Entrepreneurial Employee Activity and Competitiveness in Europe". www3.weforum.org/docs/WEF_Entrepreneurship_in_Europe.pdf

1 INTRODUCTION

1.1 SCOPE OF REPORT

This report compares Global Entrepreneurship Monitor (GEM) measures of entrepreneurial attitudes, activity and aspiration in the UK to France, Germany and the United States (US). It also summarizes entrepreneurial attitudes, activity and aspiration across the four nations of the UK and reports on business start-up funding expectations.

1.2 GEM: HISTORY, PURPOSE AND MEASURES

The Global Entrepreneurship Monitor (GEM) research consortium has been measuring entrepreneurial activity of working age adults across a wide range of countries in a comparable way since 1998. In 2016 the study conducted surveys in 65 sovereign nations and represented the world's most authoritative comparative study of entrepreneurial activity in the general adult population.

GEM's primary focus is on the study of three areas:

- To measure differences in the level of entrepreneurial activity between countries
- To uncover factors leading to appropriate levels of entrepreneurship
- To suggest policies that may enhance the national level of entrepreneurial activity.

The 2016 GEM global study was based on an analysis of adult population survey (APS) results from 65 economies and more than 182,000 adults across the world. The core of the APS is identical in each country and asks respondents about their *attitudes* towards entrepreneurship, whether they are involved in some form of entrepreneurial *activity*, and if so what their *aspirations* for their business are. The global GEM Executive 2016 Report was published in February 2017[2] and can be downloaded from www.gemconsortium.org.

From the APS survey, we examine individual entrepreneurs at three key stages:

- Nascent entrepreneurs (NAE): The stage at which individuals begin to commit resources, such as time or money, to starting a business. To qualify as a nascent entrepreneur, the business must not have been paying wages for more than three months.
- New business owner-managers (NBO): Those whose business has been paying income, such as salaries or drawings, for more than three, but not more than forty-two, months.
- Established business owner-managers (EBO): Those whose business has been paying income, such as salaries or drawings, for more than forty-two months.

In addition, we measure general intention to start a business by asking individuals if they expect to start a business within the next three years (FUT). Finally, we ask individuals if they have sold, shut down, discontinued or quit a business, in the past year (BC). It is important to understand that the main subject of study in GEM is entrepreneurs rather than the businesses that they run. GEM measures

2 Herrington, M. and Kew, P. (2017) Global Entrepreneurship Monitor 2016/17 Global Report. London: Global Entrepreneurship Research Association.

the entrepreneurial activity of people from intention to exit. The first two stages of active business development, the nascent entrepreneur stage and the new business owner-manager stage, are combined into one index of Total early-stage Entrepreneurial Activity, or TEA[3], which is represented in Figure 1 below.

As much of this entrepreneurial activity is pre-start-up or includes very small new businesses that do not have to register for VAT, TEA rates will not necessarily match with published official statistics on business ownership and, indeed, should not be interpreted as such. Rather, GEM enables the measurement of the *propensity* of individuals in particular countries to be entrepreneurial *given* the current social, cultural and economic framework conditions that exist there.

The methodology, sample sizes and weighting systems used for the GEM UK 2016 adult population survey are explained in more detail in Appendix 1. An important change in the sample design was introduced in 2010 when 10% of respondents in each Government Office Region (GOR) were selected at random from households which had mobile phones but not fixed phone landlines. In 2016 the proportion of mobile-only households in the survey (20%) were larger than the OfCom latest estimates for the UK (15%), to account for the higher mobile phone use of some hard to reach individuals, such as young men. This change from a purely landline sampling methodology may be responsible for some of the apparent rise in the point estimates for many UK GEM measures since 2009. Once again in 2016 there are no significant differences between landline only data and the full sample which includes mobile only households. Consequently, in this report, comparisons with other countries and time-based trends within the UK are made using the full sample (landline and mobile only households). See Appendix 1 for further details on the implications of the growth in mobile only households for the GEM survey.

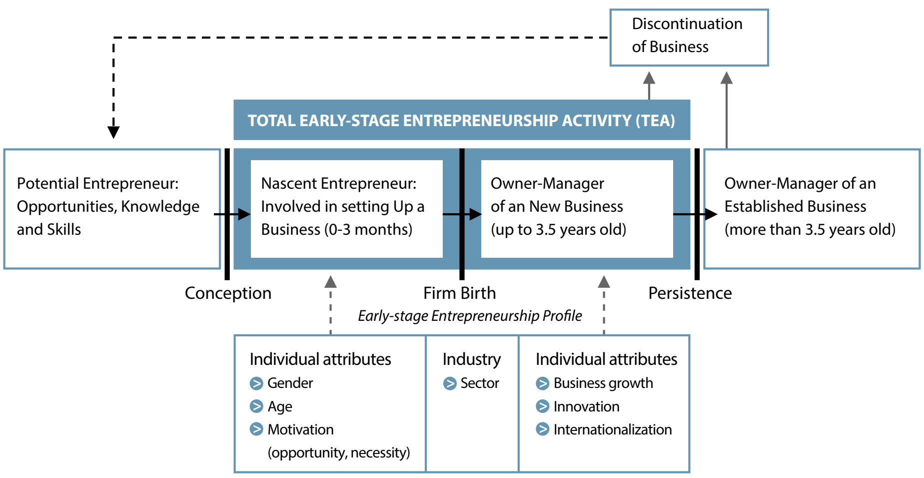
3 TEA is calculated in an identical way in each country. A telephone and/or face-to-face survey of a representative sample of the adult population in each country is conducted between May and September. Respondents are asked to respond to three questions that are the basis of the TEA index:

1) "are you, alone or with others, currently trying to start a new business independently of your work?",

2) "are you, alone or with others, currently trying to start a new business as part of your work?", and

3) "are you, alone or with others, currently the owner or manager of a business?" Those who respond positively to these questions are also asked filter questions to ensure they are actively engaged in business creation as owners and managers, how long they have been paying wages to employees, and other questions about cost and time to start up, sources of finance and numbers of jobs created.A distinction is made between two types of entrepreneurs: nascent entrepreneurs (those whose businesses have been paying wages for not more than three months) and new business owner-managers (those whose businesses have been paying salaries for more than three months but not more than 42 months).The TEA index is the proportion of nascent entrepreneurs and new business owner/managers (minus any double counting, i.e. those who respond positively to both are counted once) in the working age population.

Figure 1: The Entrepreneurial Process and GEM Operational Definitions
(Source: Herrington and Kew, 2017, pg.15)



2.1 ENTREPRENEURIAL ATTITUDES IN THE UK AND BENCHMARK COUNTRIES IN 2016

At least some of the difference in entrepreneurial activity rates between countries may be explained by differences in attitudes of the population towards entrepreneurship. Some researchers have suggested that individuals who are already entrepreneurs may feel compelled to provide positive answers in the APS thus Table 1 compares attitudes in 2016 in the UK, France, Germany and the US for that portion of the working age (18-64) population who are not already nascent entrepreneurs or business owner/managers.

Points of note include the following:

- The rate of awareness of a recent start-up entrepreneur has increased significantly in the UK from 25.8% to 28.4% over the year. As a result the gap between the rate in the UK and those in both Germany and the US has widened; the UK rate is now 10 percentage points higher than in Germany.
- More than half of the non-entrepreneurial working age population in the US perceived that there were good start-up opportunities in the next 6 months. The rates in the European comparator countries were substantially lower, with the rate in France half that of the US.
- The start-up skills perception rate in the UK was up significantly from 37.5% in 2015 to 41.1% in 2016. The rates in both Germany and the US remained relatively stable. As a result the gap in skills perception between the UK and US has narrowed to 6 percentage points.
- Fear of failure among those who perceived start-up opportunities remained unchanged in the UK over the year. The rate in the US actually increased, from 32.8% to 37.0%, narrowing the gap considerably between the UK and US.

Table 1: Attitudes towards entrepreneurship in the UK, France, Germany and the US in 2016 – percentage of working age population who are neither nascent entrepreneurs nor existing business owner/managers, who expressed an opinion and agreed with the statement at the top of the column

(Source: GEM APS 2016)

	I know someone who has started a business in the last 2 years	There are good start-up opportunities where I live in the next 6 months	I have the skills, knowledge and experience to start a business	Fear of failure would prevent me starting a business (for those who agree there are good start-up opportunities)
United Kingdom	**28.4**	**37.9**	**41.1**	**39.6**
France	29.9	26.1	31.7	41.2
Germany	18.9	34.9	31.4	46.4
United States	23.1	53.9	46.8	37.0

2.2 ENTREPRENEURIAL ATTITUDES IN THE UK IN 2014-2016

Estimates of changes in attitudes towards entrepreneurship by gender among the non-entrepreneurially active working age population are shown in Table 2; Figure 2 (next page) shows the trend from 2002. There are a number of interesting points; whilst a significantly higher share of non-entrepreneurs in 2016 know someone who has started a business recently, and a significantly higher share also felt they had the skills, knowledge and experience to start up, there was no change over 2015 or 2016 in the share that thought there would be good start-up opportunities in their local area within the next six months.

Also, there is still a wide divergence between the 78% of the non-entrepreneurial population in the UK who think that successful business founders have a high status in society, and the 58% who think that most people would agree that starting a business is a good career choice. This is despite the fact that three-fifths of the non-entrepreneurial working age population say they see stories about people starting successful new businesses in the media.

The UK is not unique in this respect and a similar gap is observed in Germany, Switzerland, Luxembourg, Finland and Ireland. These countries contrast with Spain, Portugal and Greece where the proportions of the non-entrepreneurial population who agree that starting a business is a good career choice are as high as those who regard successful business founders as having a high status in society[4]. This pattern may be due to different perceived

4 Global Entrepreneurship Monitor (GEM): 2016/2017 Global Report. www.gemconsortium.org

Table 2: Entrepreneurial attitudes in the UK among households in 2014, 2015 and 2016 (% non-entrepreneurially active respondents aged 18-64 expressing an opinion and agreeing with the statement)
(Source: GEM UK Adult Population Survey (APS) 2014, 2015, 2016)

	2014	2015	2016	2014	2014	2015	2015	2016	2016
	All	All	All	Male	Female	Male	Female	Male	Female
I personally know someone who has started a business in the last two years	24.7	25.8	28.4	26.9	22.7	28.4	23.4	30.0	26.9
There will be good start-up opportunities where I live in the next six months	36.8	37.6	37.9	40.4	33.4	42.4	33.2	41.9	34.2
I have the skills, knowledge and experience to start a business	38.4	37.5	41.1	46.9	30.9	44.9	30.8	48.0	35.0
Fear of failure would prevent me from starting a business (for those who agree there are good start-up opportunities)	43.0	39.5	39.6	38.5	48.0	36.8	42.6	36.7	42.8
Most people consider that starting a business is a good career choice	57.3	57.5	58.2	58.1	56.5	57.9	57.1	59.5	57.0
Those successful at starting a business have a high level of status and respect in society	78.4	79.8	77.7	79.1	77.7	79.0	80.4	77.5	77.9
You will often see stories about people starting successful new businesses in the media	58.8	59.9	59.9	60.3	57.4	61.9	58.0	59.4	60.4

opportunity costs of starting a business versus being an employee. For example, in countries with persistently high unemployment, the option of starting a business may appear to be relatively more attractive. Cultural difference in trust between employer and employee might also affect the relative attractiveness of starting a business.

In 2016 males still tend to have more positive entrepreneurial attitudes than females in several important respects (Table 2). The gap is particularly marked in skills self-perception, with almost half of males believing they have the skills, knowledge and experience to start a business compared to just over one third of females. The latter also have a higher fear of failure rate and a lower share perceiving start-up opportunities. There have been incremental changes in these rates over time but taken together, the trends support the view that females continue to possess a differing set of attitudes to entrepreneurship compared to males.

The trend in perceptions of good start-up

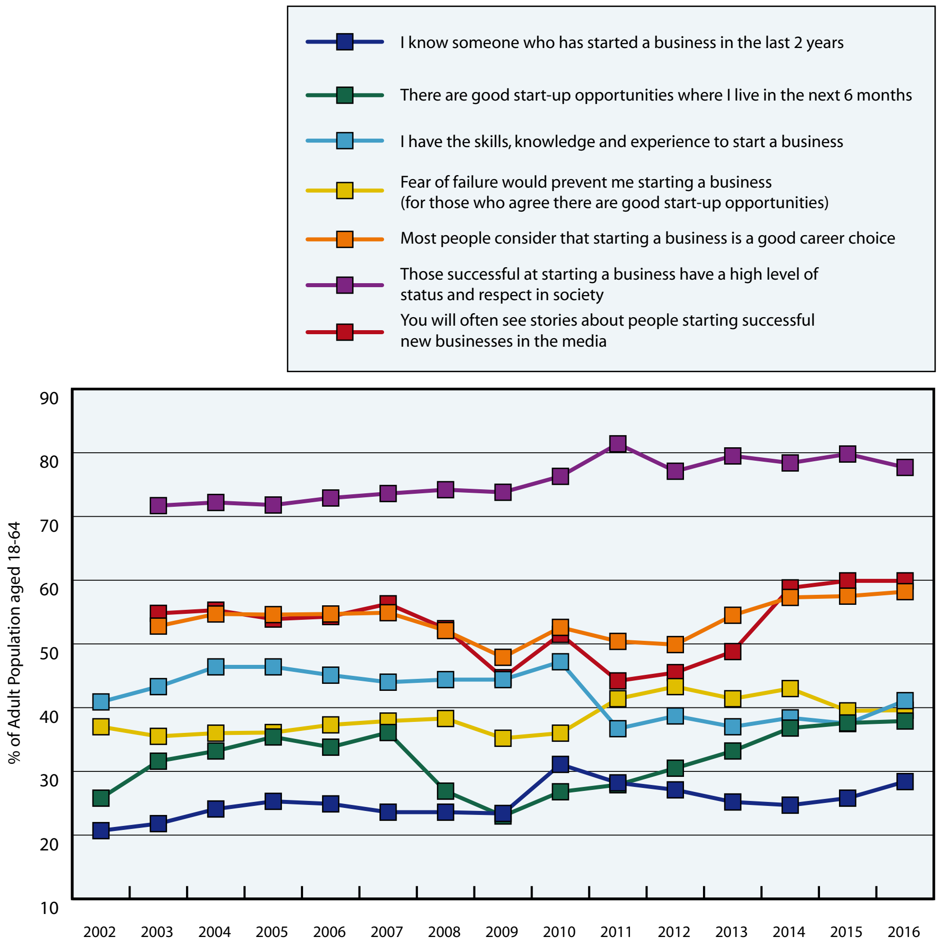


Figure 2: Entrepreneurial attitudes in the UK, 2002-2016: (% non-entrepreneurially-active respondents aged 18-64 expressing an opinion and agreeing with the statement)
(Source: GEM UK APS 2002-2016)

opportunities in the local area in the next 6 months have been similar for males and females over time with a drop between 2007 and 2009 and a slow revival (Figure 3). In 2016 both have returned to pre-recession rates. However, the gender gap, which narrowed during the recession but widened again after 2011, remains.

Fear of failure amongst females has been consistently higher than males across the same period; and a 6 percentage point difference remained in 2016.

2.3 ATTITUDES TOWARDS ENTREPRENEURSHIP IN THE UK HOME NATIONS

The self-reported attitudes towards entrepreneurship of the non-entrepreneurially active working age population in the four UK home nations are presented in Table 3 for 2016. The key findings are as follows:

- The item "I personally know someone who has started a business in the last two years" may reflect the prevalence of new business start-up in a nation as well as the amount of networking by individuals. In

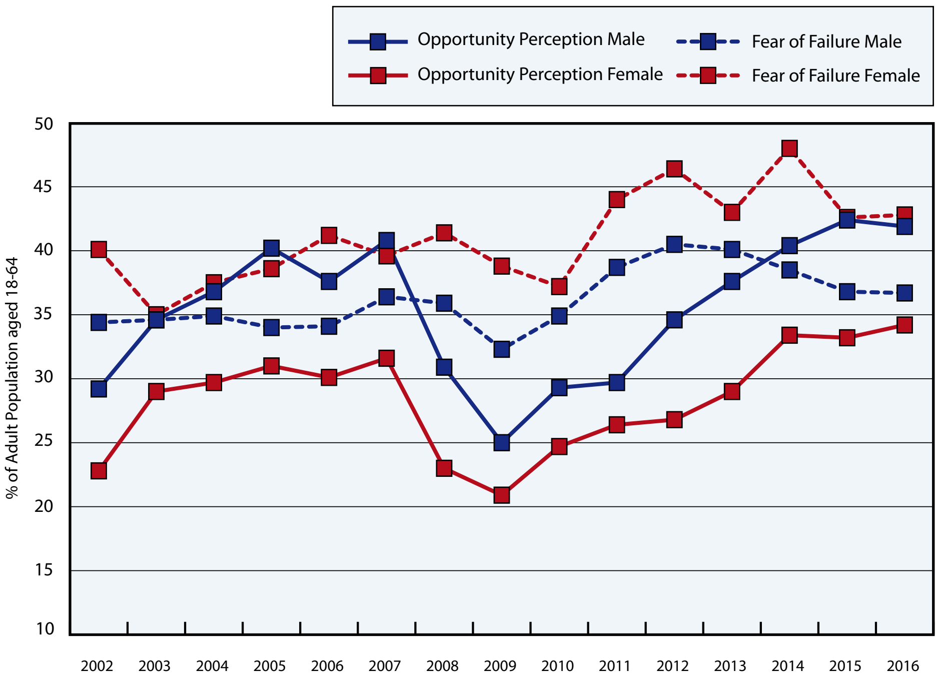


Figure 3: Male and female attitudes towards Good Opportunities and Fear of Failure (% non-entrepreneurially-active respondents aged 18-64 expressing an opinion and agreeing with the statements "There are good start-up opportunities where I live in the next 6 months"; "Fear of failure would prevent me from starting a business")

(Source: GEM UK APS 2002-2016)

2016 around one quarter of the non-entrepreneurial population agreed with the statement; there were no significant differences across the four UK nations.

- Around two-fifths of the non-entrepreneurially active population in England reported that there were good start-up opportunities in their local area in the next 6 months, significantly higher than in Wales, Scotland and Northern Ireland, where less than one-third reported good opportunities.[5]
- The proportion of non-entrepreneurially active respondents who thought they had the skills to start a business was significantly lower in Northern Ireland than in England but there were no significant differences in the fear of failure rates.
- Similar shares of non-entrepreneurial individuals in the home nations, just under 60%, agreed that "most people consider that starting a business is a good career choice".
- More than three-quarters of non-entrepreneurial individuals agreed that "those successful at starting a business have a high level of status and respect in society"; the rates in Wales and Northern Ireland were just significantly higher than in England.
- Despite the significantly lower opportunity perception and skills perception in Northern Ireland it had a significantly higher share of non-entrepreneurs who agreed "you will often see stories about people starting successful new businesses in the media" than the other home nations. This may in part be due to media spill-over from the Republic of Ireland, which scored relatively high on this measure in 2016 (71.5).

5 The 2004-2016 home nation data for the 'Good Opportunities' attitude variable in the GEM UK pooled dataset is included in the Appendix (Table 3c)

Table 3: Perceptions of entrepreneurship among non-entrepreneurially active individuals in the UK Home Nations, 2016
(Source: GEM UK APS 2016)

	England	Wales	Scotland	Northern Ireland	United Kingdom
I know someone who has started a business in the last 2 years	28.5	26.1	28.0	27.4	**28.4**
There are good start-up opportunities where I live in the next 6 months	39.3	29.9	32.5	28.2	**37.9**
I have the skills, knowledge and experience to start a business	41.7	38.4	38.0	37.2	**41.1**
Fear of failure would prevent me from starting a business (for those who agree there are good start-up opportunities)	39.6	38.4	38.3	44.3	**39.6**
Most people consider that starting a business is a good career choice	58.5	57.3	56.3	56.2	**58.2**
Those successful at starting a business have a high level of status and respect in society	77.3	80.7	79.4	81.5	**77.7**
You will often see stories about people starting successful new businesses in the media	60.1	56.8	58.5	65.6	**59.9**

3.1 ENTREPRENEURIAL ACTIVITY IN THE UK AND BENCHMARK COUNTRIES

GEM views entrepreneurship as a process in which individuals become increasingly engaged in entrepreneurial activity. Figure 4 illustrates the proportion of respondents by stage of entrepreneurial activity in the UK over the period 2002 to 2016. In this figure, individuals who engaged in more than one stage of the process at a time are included **in their most established stage** (see Figure 4b in Appendix for gross rates for each stage).

In the UK in 2016, more than one fifth of working age individuals were either engaged in entrepreneurial activity or intended to start a business within the next three years; this 20% share was first observed in 2011. The nascent entrepreneurship rate climbed to 4.7%, the highest on record. The rates of both new and established business ownership also increased on the year; as a result around 10% of the sample in 2016 were existing business owner-managers. Intention to start a business also maintained its rate of over 7%, as in 2015.

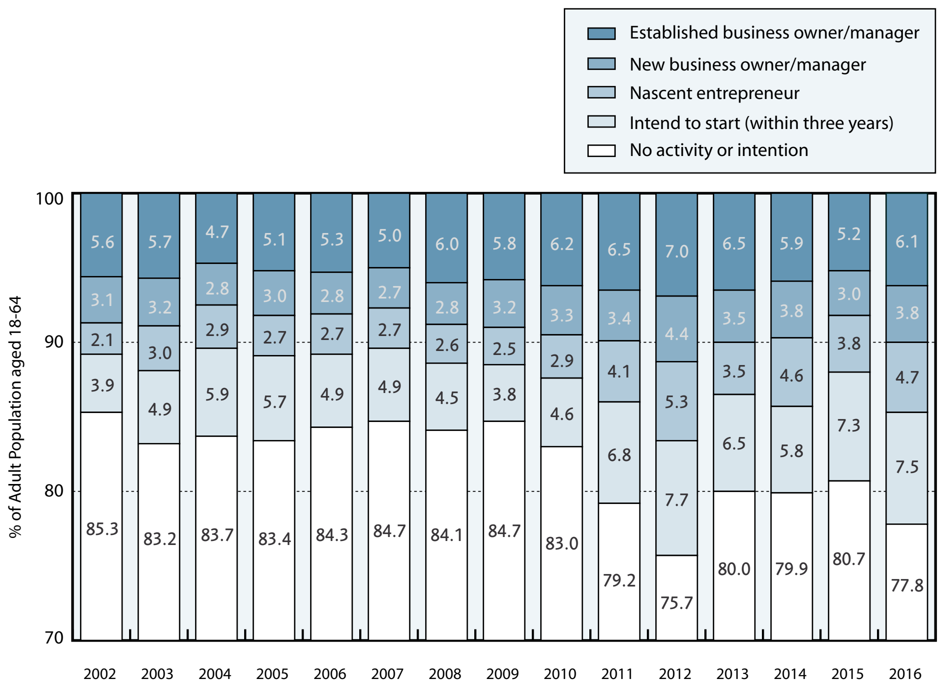


Figure 4: Participation in Entrepreneurship in the UK by most established stage of entrepreneurial activity, 2002 to 2016
(Source: GEM UK APS 2002 to 2016)

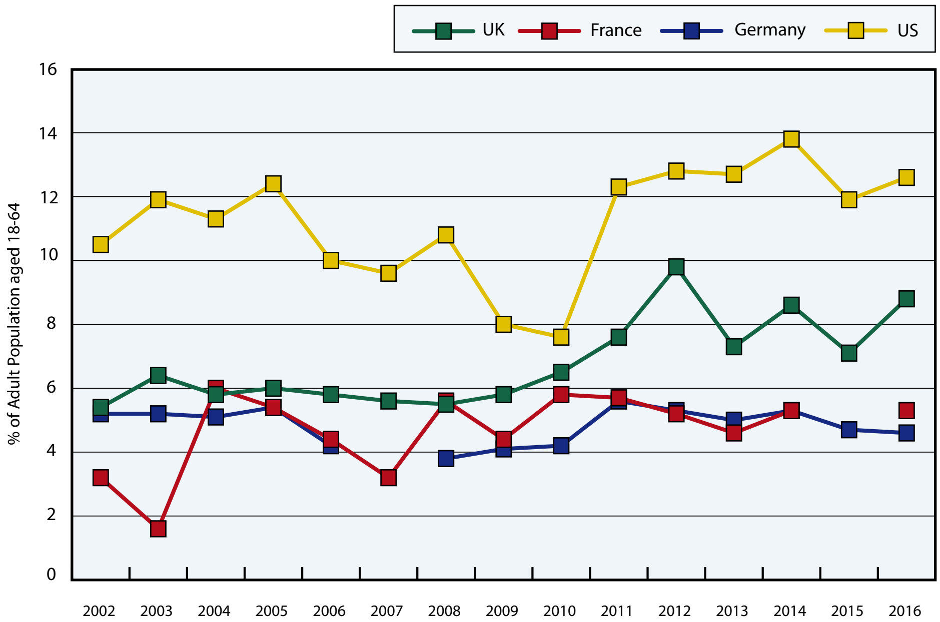


Figure 5: Total early-stage Entrepreneurial Activity (TEA) in the UK, France, Germany and US (2002-2016)
(Source: GEM Global APS 2002-2016)

Total early-stage Entrepreneurial Activity (TEA) is the sum of the nascent entrepreneurship rate and the new business owner/manager rate. The trends in TEA rates between 2002 and 2016 for the UK, France, Germany and the US are shown in Figure 5. For the UK and US there appeared to be a break in the long-run trend around 2011, with both moving to a higher average TEA rate thereafter. The UK rate has been volatile in recent years and in 2016 was up significantly on the year (8.8% compared to 7.1%). Likewise the US also saw a small increase in 2016 whilst the rates in France and Germany have been relatively stable

TEA rates by age group for the UK, France Germany and the US are shown in Figure 6. TEA rates of different age groups were more similar in the UK than in the other countries in 2016, due in part to the continuation of a long term relative increase in third age entrepreneurial activity in the UK (see

Figure 6: Total early-stage Entrepreneurial Activity (TEA) in the UK, France, Germany and the US by Age Group 2016
(Source: GEM APS 2016)

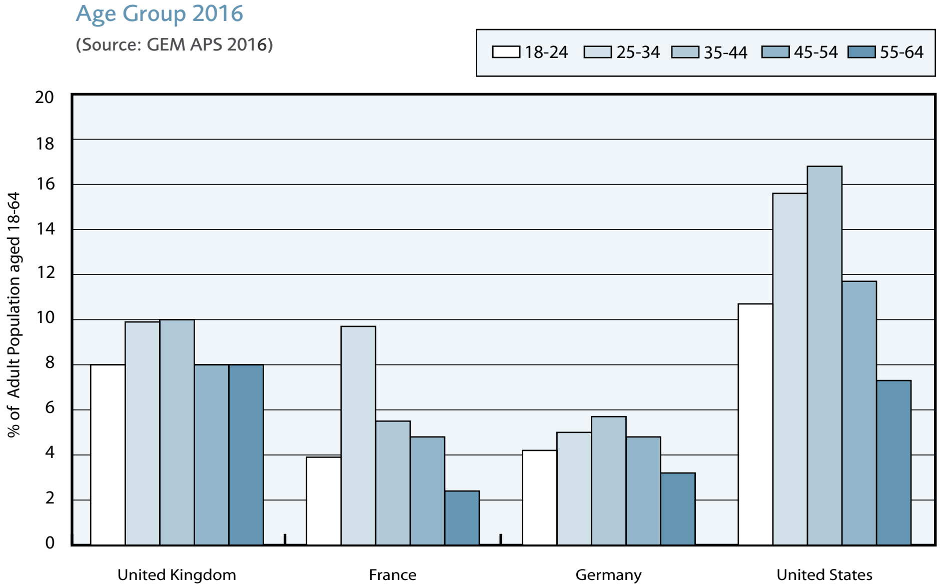


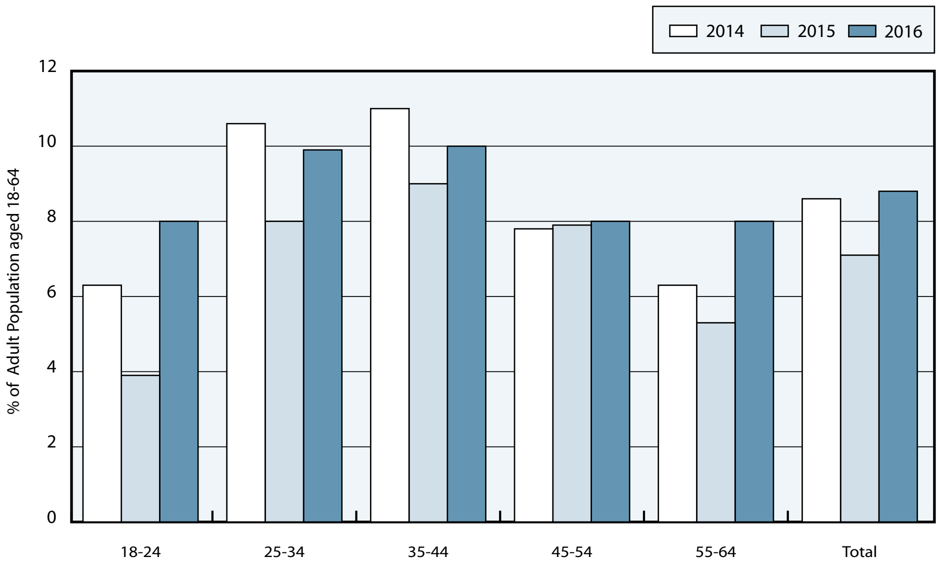
Table 10 in Appendix 2). Rate estimates for young people in the UK tend to be more volatile, and they were relatively high in 2016 in the UK, as Figure 7 shows. As a result, UK TEA rates for both the youngest and oldest age groups were around twice the rates in France and Germany in 2016. TEA rates in France were notably higher among those aged 25-34; in the US this peak extended to those aged 25-44.

The trend in UK TEA rates by age group for the most recent three years is shown in Figure 7. The most significant changes were for the youngest and oldest age groups, with the rate for 18-24 year olds up from 3.9% in 2015 to 8.0% in 2016, and the rate for 55-64 year olds up from 5.3% to 8.0%. There are no significant differences in the TEA rates across all age-bands in 2016 with the youngest and oldest now having similar rates to those in the 25-44 age groups – traditionally the most entrepreneurial[6].

6 More detailed data on the long-term TEA rates by broad age-band (18-29, 30-49, 50-64) are provided in Appendix Table 11, along with the male and female rates for 50-64 year olds (Appendix Table 12) and opportunity and necessity rates for 50-64 year olds (Appendix Table 13).

Figure 7: Total early-stage Entrepreneurial Activity (TEA) in the UK by Age Group (2014 to 2016)

(Source: GEM APS 2014, 2015, 2016)



In addition to TEA, GEM measures the proportion of established business owner-managers (EBO) in the working age population. Established business owner-managers have owned or managed a business for more than 42 months. GEM also measures the proportion of individuals of working age who, in the last 12 months, closed down a business which did not continue under a different form of ownership.

The ratio of established business ownership to early-stage entrepreneurship gives a proxy measure of transition rates and can be interpreted as a proxy survival measure. The ratio of closure to business ownership (new plus established) gives a proxy of entrepreneurial dynamism or "churn". The 2016 data for these metrics for the UK, France, Germany and the US are given in Table 4. The business churn rate is similar for all countries; the proxy early-stage survival rate is however twice as high in Germany as the others due to a higher rate of established business ownership than early-stage business ownership.

In the UK the start-up, nascent and new business ownership rates are all up significantly on 2015. There were no such increases in the US and Germany although the established business ownership rates for both increased.

In general, the UK measures of entrepreneurial activity are typically higher than Germany but lower than the US. Table 4 shows, however, that in 2016 the rates of new business ownership are actually quite similar between the UK and US, at 4%, around double that of the European competitors.

Table 4: Measures of entrepreneurial activity in the UK, France, Germany and the US, 2016
(Source: GEM Global APS 2016)

	I expect to start a business in the next 3 years	Nascent Entrepreneurial Activity rate (paying wages for 3 months or less)	New Business Owner-manager rate (4-42 months)	Nascent + New business owner-manager rate	Established Business Owners (>42 months)	Business closure rate (business closed in the last 12 months that has not continued)	Proxy early-stage business survival rate	Proxy business churn rate
	(FUT)	(NEA)	(NBO)	(TEA)	(EBO)	(BC)	(EBO/TEA)	BC/(NBO+EBO)
United Kingdom	**11.1**	**5.1**	**3.8**	**8.8**	**6.2**	**1.6**	**0.7**	**0.2**
France	17.2	3.1	2.3	5.3	4.3	1.5	**0.8**	**0.2**
Germany	8.1	2.9	1.7	4.6	7.0	1.1	**1.5**	**0.1**
United States	16.4	8.9	4.0	12.6	9.2	2.0	**0.7**	**0.2**

3.2 OPPORTUNITY AND NECESSITY-BASED ENTRY INTO ENTREPRENEURSHIP

Different people may have different motivations to enter into entrepreneurial activity. For example, in some cases, the motivation to start a business may be based on necessity, that is, there are no better alternatives for work. Others may be motivated to start a business by opportunity, or the potential for new market creation. GEM identifies early-stage entrepreneurs according to their original motivation to start: opportunity or necessity. Most early-stage entrepreneurs can be classified into either of these two groups. This is a rather simplistic classification and the GEM UK team were involved in a study for BEIS in 2014 which sought to develop a more sophisticated framework and we report on this in Table 5 (page 19)[7].

Opportunity-motivated early-stage entrepreneurship rates (Opportunity TEA) and Necessity-driven early-stage entrepreneurship rates (Necessity TEA) for the UK, France, Germany and the US are presented in Figure 8. In all countries, levels of necessity TEA were considerably lower than levels of opportunity TEA, and were broadly the same in the UK, Germany and the US. In the UK over four-fifths of those involved in early-stage entrepreneurial activity were opportunity-motivated, at 7.4% of the working age adult population. Just 1.2% were identified as necessity-driven entrepreneurs.

7 Stephan et al., (2015) "Understanding the Motivations for Entrepreneurship", BIS Research Report No. 212, March 2015). www.gov.uk/government/uploads/system/uploads/attachment_data/file/408432/bis-15-132-understanding-motivations-for-entrepreneurship.pdf

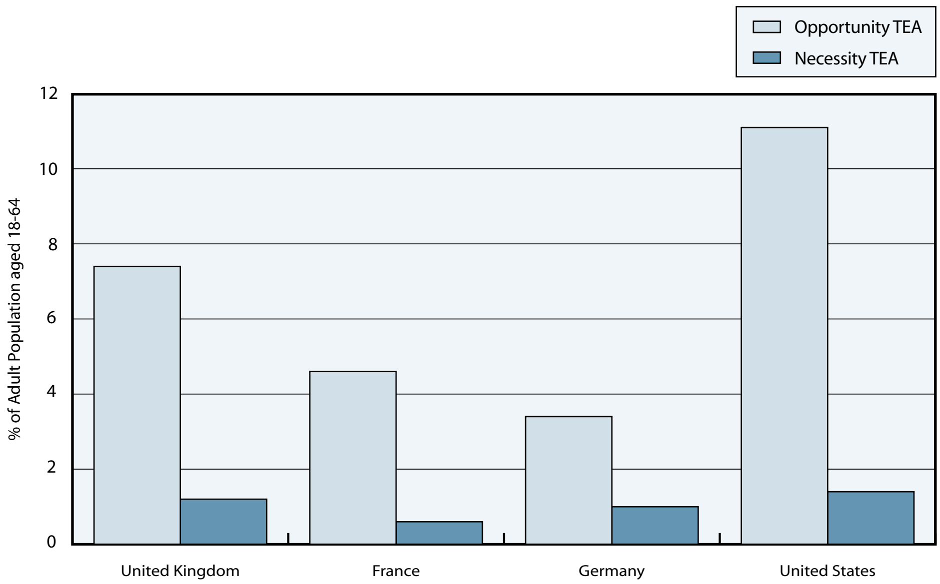


Figure 8: Necessity and opportunity TEA rates in the UK, France, Germany and the US in 2016
(Source: GEM APS 2016)

Compared to 2015, opportunity TEA rose in the UK and US and whilst necessity TEA fell; the opposite occurred in Germany. Figure 9 shows that the increase in opportunity TEA in the UK was driven by both nascent and new business owners. The decline in necessity TEA was, however, driven only by the fall amongst new business owners.

Following the work of Stephan *et al.*, (2015) we developed a more detailed investigation of the motivations of early-stage entrepreneurs in the 2016 survey and found that having freedom, greater flexibility, challenging oneself and fulfilling a personal vision were the most popular

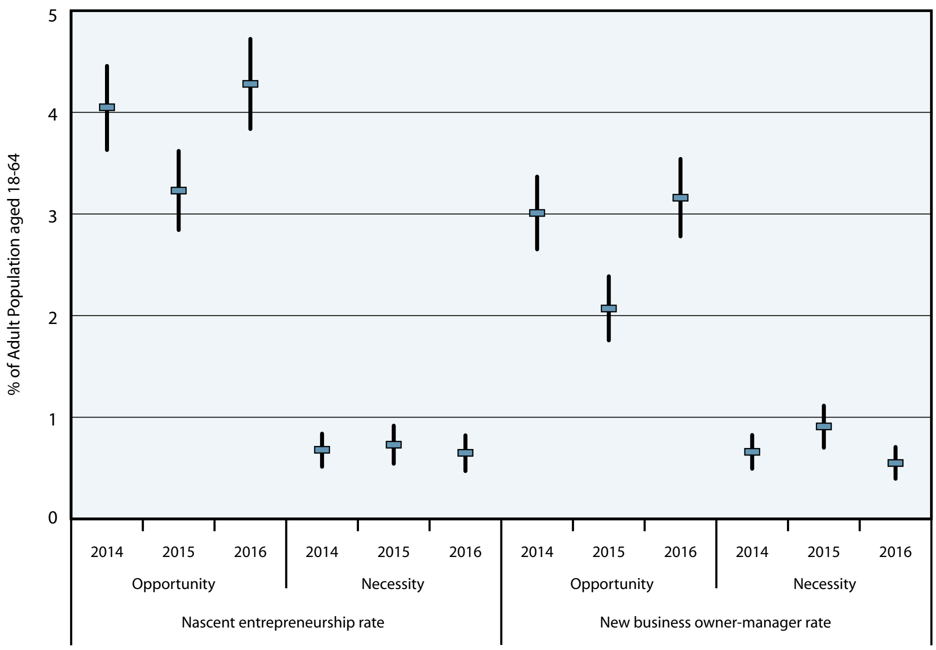


Figure 9: Necessity and opportunity nascent and new business owner-manager rates in the UK showing 95% confidence intervals, 2014, 2015 and 2016
(Source: GEM UK APS 2014, 2015, 2016)

motivations (Table 5). The data also reveals two important differences between male and female TEA entrepreneurs. Women are significantly more likely to cite 'greater flexibility for my personal and family life' and the desire for 'freedom to adapt my own approach to work' than men. This is an important development in the GEM UK survey which will be continued in subsequent annual surveys as we seek to move away from a simple Opportunity/ Necessity classification of all motivations. Unfortunately, the sample size for Necessity early-stage entrepreneurs is too small to be disaggregated into these 8 motivation categories.

	Male	Female
	%	%
To have greater flexibility for my personal and family life	71.0	85.4
To have considerable freedom to adapt my own approach to work	80.5	97.2
To earn a larger personal income	65.2	69.2
To have a chance to build great wealth or a very high income	65.8	59.6
To fulfil a personal vision	74.0	84.2
To challenge myself	75.8	83.5
To continue a family tradition	21.6	19.8
To follow the example of a person that I admire	38.4	38.5

Table 5: Motivations for starting a business by gender 2016 (percentage of TEA entrepreneurs stating the motivation was fairly or very important)
(Source: GEM UK APS 2016)

3.3 MALE AND FEMALE ENTREPRENEURIAL ACTIVITY COMPARED

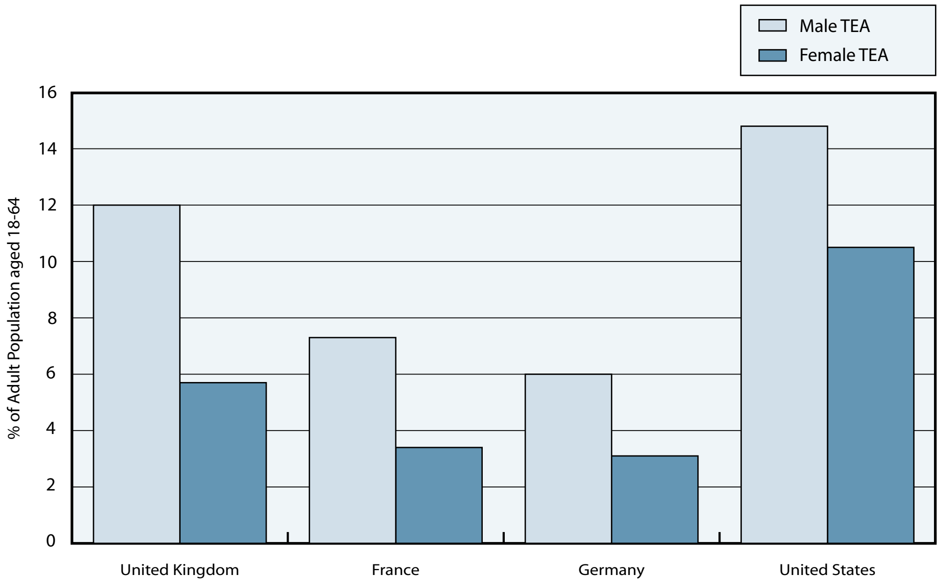


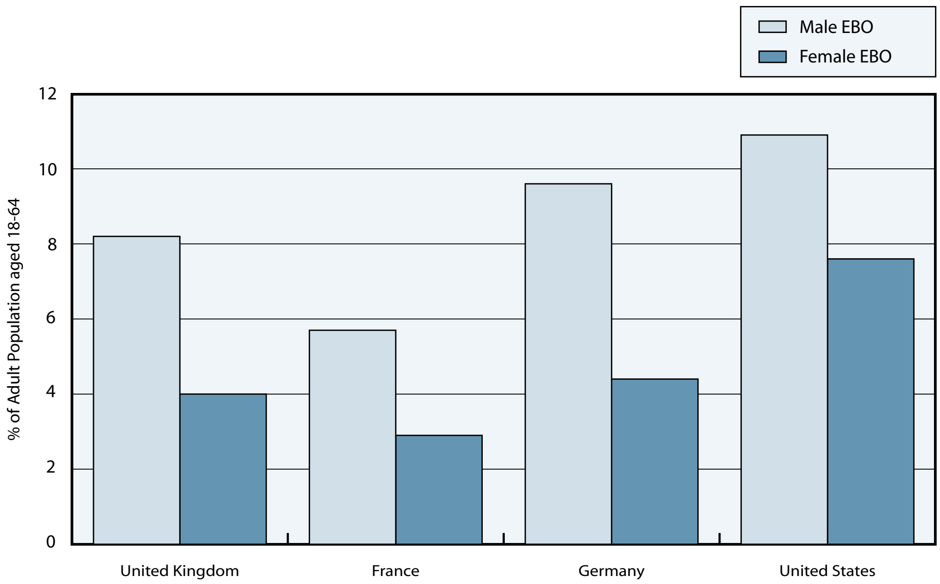
Figure 10: Total early-stage entrepreneurial activity by gender in the UK, France, Germany and the US in 2016
(Source: GEM Global APS 2016)

In the UK the female TEA rate in 2016 was 5.7%, which was not significantly different to the rate in 2015. In contrast, the 2016 male rate of 12.0% was up significantly on the previous rate of 9.5%.

TEA rates by gender for the UK, France, Germany and the US are shown in Figure 10. In most high income countries, males are around twice as likely to be early-stage entrepreneurs as females, and this was the case for the UK and France in 2016, both with a ratio of 47%, and Germany at 52%. In the US the female TEA rate was around 70% of the male rate.

Comparing female rates, the UK female early-stage entrepreneurial activity rate remained at just above half the US rate in 2016 (54% compared with 51% in 2015). In contrast, for males, the gap between the US and UK narrowed considerably. The US male TEA rate was largely unchanged at 14.8% in 2016 while the UK male TEA increased from 9.5% to 12.0%, resulting in the UK to US male ratio closing in from 65% to 81%.

Figure 11: Established business ownership by gender in the UK, France, Germany and the US, 2016
(Source: GEM APS 2016)



Comparing Figures 10 and 11, the gap in participation rates between males and females in 2016 was broadly the same for established business owner-managers (EBO) as it was for early-stage entrepreneurs (TEA) at just under 50%. This is in contrast to 2015 when the female EBO rates were around 60%

of males; the gap widened in 2016 due to an increase in male EBO and an unchanged female EBO.

The female to male ratios in Germany and France are similar to the UK for both early-stage and established entrepreneurs. The US differs in that the ratios across the two measures are remarkably similar; female early-stage entrepreneurship is 71% that of males and female established business ownership is 69% that of males.

The trend in female TEA rates in each of the nations is shown in Figure 12. In 2016 rates in the UK and US reverted to those seen around 2011-12. At around 6% and 10% respectively, both lie above their previous long-run average. The rate in France has settled at around 3.5% since 2011 while the rate in Germany has remained at this level throughout.

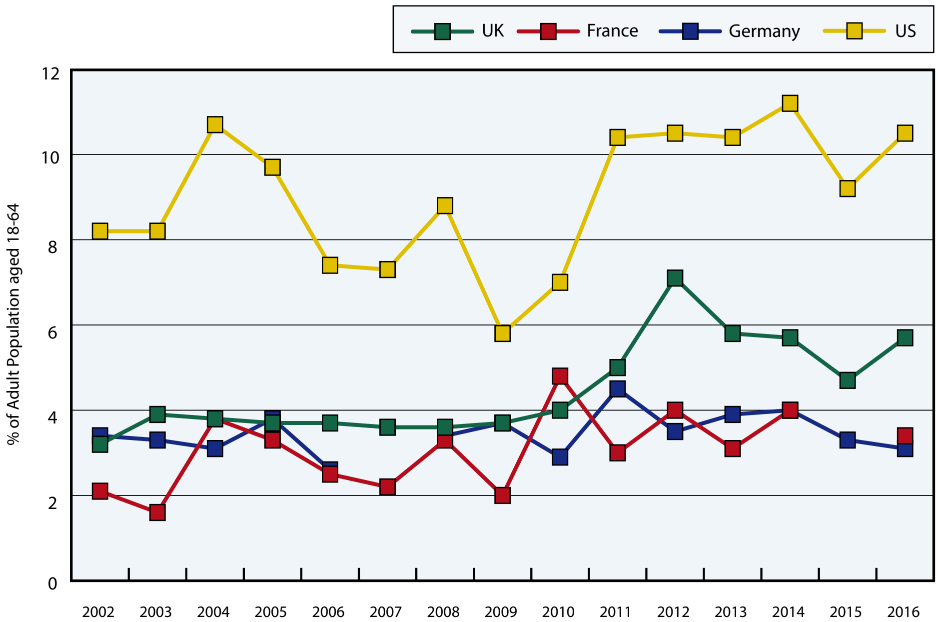


Figure 12: Female early-stage Entrepreneurial Activity in the UK, France, Germany and the US, 2002-2016
(Source: GEM APS 2002-2016)

3.4 ENTREPRENEURIAL ACTIVITY IN THE UK HOME NATIONS

Table 6 displays different measures of entrepreneurial activity in the four home nations of the UK for 2016. Together, these measures allow us to assess the degree of entrepreneurial dynamism and stability across its constituent parts.

The overall TEA rate in the UK was significantly higher in 2016 than 2015; likewise the nascent and new business owner rates were up on 2015. The rates within the individual home nations, however, were not significantly higher than in 2015.

As in several previous years, the TEA rate in Northern Ireland in 2016 was significantly lower than the rates in in England and the UK, driven by the lower nascent rate. Northern Ireland, along with Wales, also had significantly lower rates of intentions to start a business than in England and the UK. There were no differences across the home nations in terms of established business ownership.

Table 6: Measures of Entrepreneurial Activity in the UK Home Nations, 2016

(Source: GEM APS 2016)

	I expect to start a business in the next 3 years	Nascent Entrepreneurial Activity rate (paying wages for 3 months or less)	New Business Owner-manager rate (4-42 months)	Nascent + New business owner-manager rate	Established Business Owners (>42 months)	Business closure rate (Business closed in the last 12 months that has not continued)	Proxy early-stage business survival rate	Proxy business churn rate
	(FUT)	(NEA)	(NBO)	(TEA)	(EBO)	(BC)	(EBO/TEA)	BC/(NBO+EBO)
England	11.5	5.3	4.0	9.2	6.3	1.7	0.7	0.2
Wales	8.6	4.4	3.5	7.6	5.2	1.3	0.7	0.1
Scotland	9.9	4.4	3.1	7.3	5.9	1.4	0.8	0.2
Northern Ireland	6.2	3.6	2.8	6.3	5.9	0.6	0.9	0.1
United Kingdom	**11.1**	**5.1**	**3.8**	**8.8**	**6.2**	**1.6**	**0.7**	**0.2**

TEA rates in the home nations were relatively stable during the mid to late 2000s; there was somewhat of a break in the long-run trend in 2011 after which the rates have become more volatile (Figure 13). Scotland's TEA rate appeared to be particularly affected by the recession; the other home nations did not experience the same decline. In 2016 the rates are again on an upward trend and all are above their previous long-run average.

TEA rates may be expected to vary based on the extent of deprivation in an area, due to the differing start-up opportunities available. Figure 14 displays TEA rates by Index of Multiple Deprivation quintiles, where the first quintile refers to the most deprived area, and the fifth quintile the least deprived. Despite the apparent variation in entrepreneurial activity across the quintiles for all home nations, the differences are not statistically significant either within or between nations.

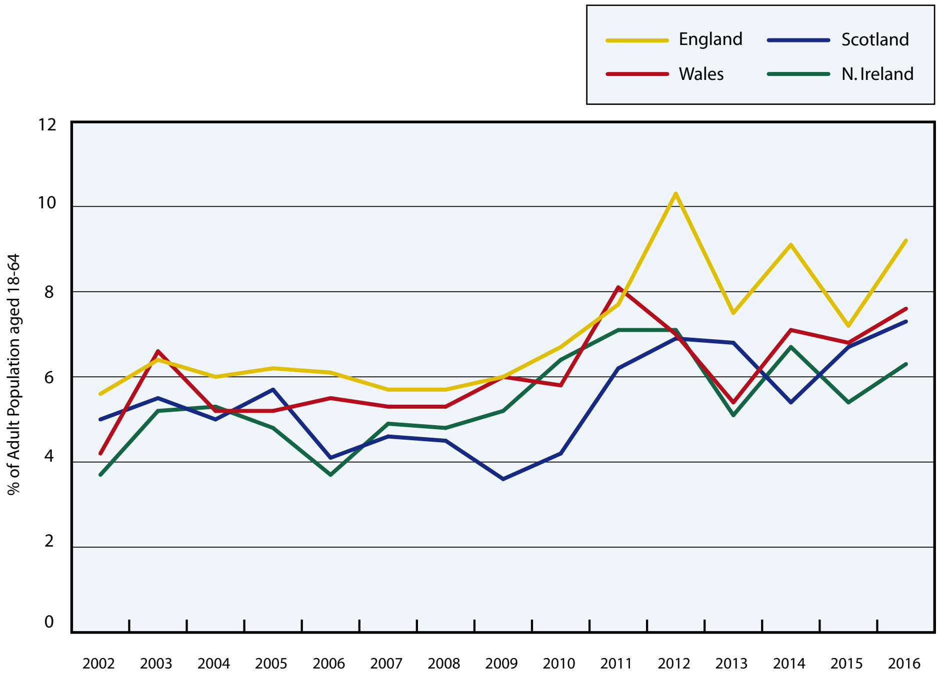
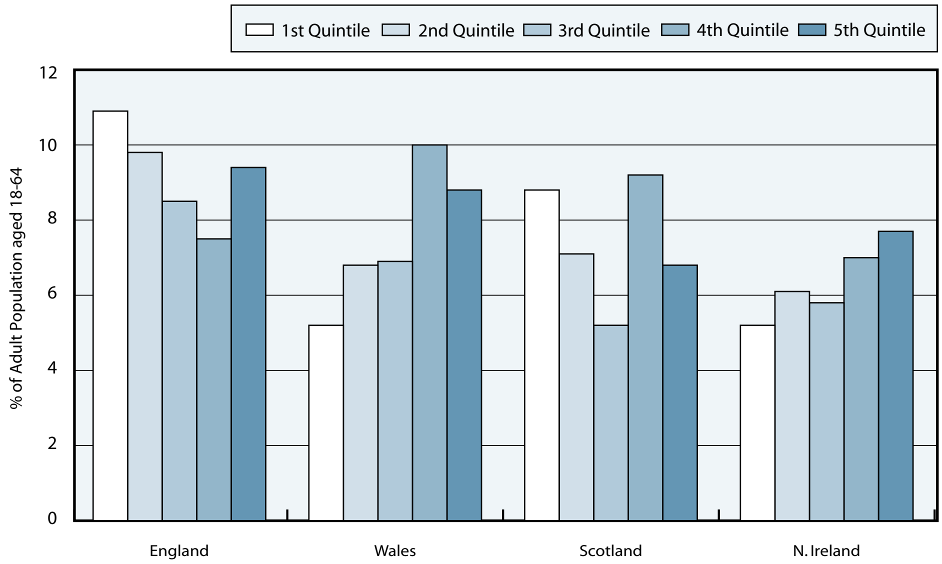


Figure 13: Total early-stage Entrepreneurial Activity in the UK Home Nations, 2002-2016
(Source: GEM UK APS 2002-2016)

Figure 14: Total early-stage Entrepreneurial Activity in the UK Home Nations by Index of Multiple Deprivation 2016
(Source: GEM UK APS 2016)



8 Expressing the female TEA rates as a proportion of the economically active population rather than the working age population, as shown here, does not alter the results. In the UK the respective rates expressed as a share of the economically active population are 6.2% for females and 12.9% for males.

9 Caution should be taken in interpreting annual changes in ratios such as these. Margins of error may be larger in ratio measures.

The female early-stage entrepreneurial activity rate in the UK in 2016 was 5.7% compared to 12.0% for males; there were no significant differences in the female rates across the home nations. Females did, however, have significantly lower TEA rates than males in all home nations except Northern Ireland, as Figure 15 shows[8].

Unlike in previous years Northern Ireland actually had the highest female to male TEA ratio at 62%[9] the gap narrowing due to the higher female rate combined with an unchanged, and relatively low, male rate. The UK female to male ratio was 47% whilst the ratios in both Wales and Scotland were above the UK average at 61% and 55% respectively.

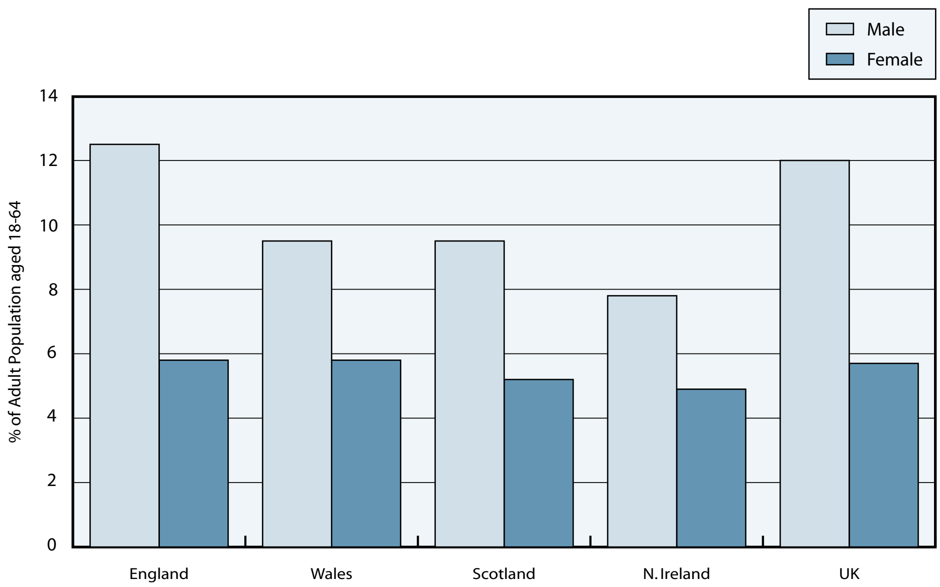


Figure 15: Male and Female Total early-stage Entrepreneurial Activity in the UK Home Nations, 2016
(Source: GEM UK APS 2016)

Combining data from the 2013-16 GEM UK annual surveys to analyse the female to male TEA rates in all the UK regions[10] reveals great variation in the ratios of female to male rates (Figure 16). The West Midlands has the highest ratio with 74 female entrepreneurs per 100 male entrepreneurs which is driven by a lower than average male TEA rate, and a higher than UK average female rate. In the North West, where there are just 33 female entrepreneurs per 100 male entrepreneurs, there is a particularly low female TEA rate, although the male rate is also lower than the UK average.

There has been a general upward trend in female entrepreneurship activity in the UK home nations particularly since 2011 (Figure 17). In 2016 the rates of female entrepreneurship were significantly higher than those recorded in 2002 in all home nations excluding Scotland. In fact, 2016 saw Northern Ireland's highest female TEA rate on record. The rate in Wales moved back towards its previous peak whilst 2016 saw an upwards swing in England reversing the trend in recent years.

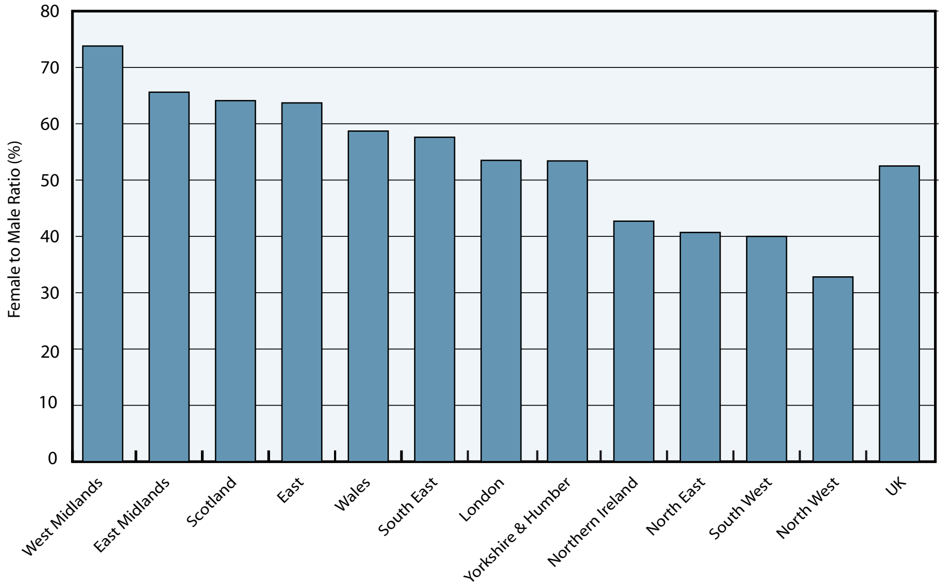
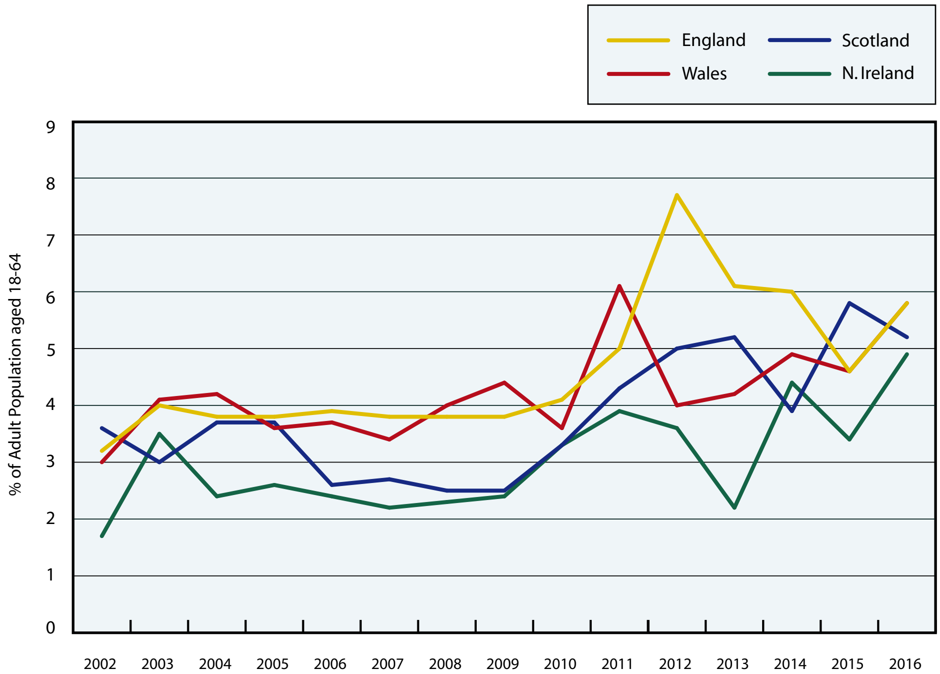


Figure 16: Female to Male Entrepreneurship Ratio in the UK regions (combined over 2013-16)
(Source: GEM UK APS 2013-2016)

Figure 17: Female Total early-stage Entrepreneurial Activity in the UK Home Nations, 2002-2016
(Source: GEM UK APS 2002-2016)



10 Combining data over several years provides more robust samples for disaggregation by gender at the regional level than annual level data.

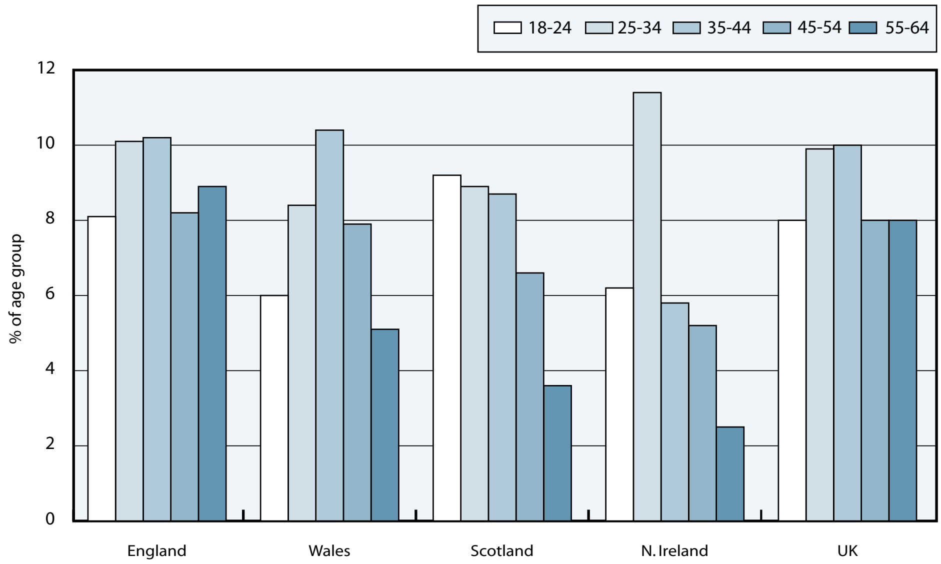


Figure 18: Total early-stage Entrepreneurial Activity in the UK Home Nations by Age Group, 2016
(Source: GEM UK APS 2016)

The entrepreneurial activity rates of different age groups across the home nations are shown in Figure 18. In the UK as a whole activity rates for both the youngest (18-24) and oldest age groups (55-64) were up significantly on 2015. As a result there were no significant differences between entrepreneurial activity rates for the oldest age group and all other ages in the UK in 2016; this was also the same in England. In Wales the TEA rates of 55-64 year olds were significantly lower than 35-44 year olds and in Scotland and Northern Ireland they were significantly lower than for those aged 25-34.

Grouping 18 to 29 year olds together and viewing the trend in their TEA rates, via rolling averages over 2002-04 to 2014-16, Figure 19 shows the increase in entrepreneurial activity which has occurred amongst the young particularly during and since the recession. This is most marked for Wales, although Scotland and England also have increasing rates from 2008-10 onwards. The rate in Northern Ireland increased more gradually but has also seen a spike in activity over 2014-16.

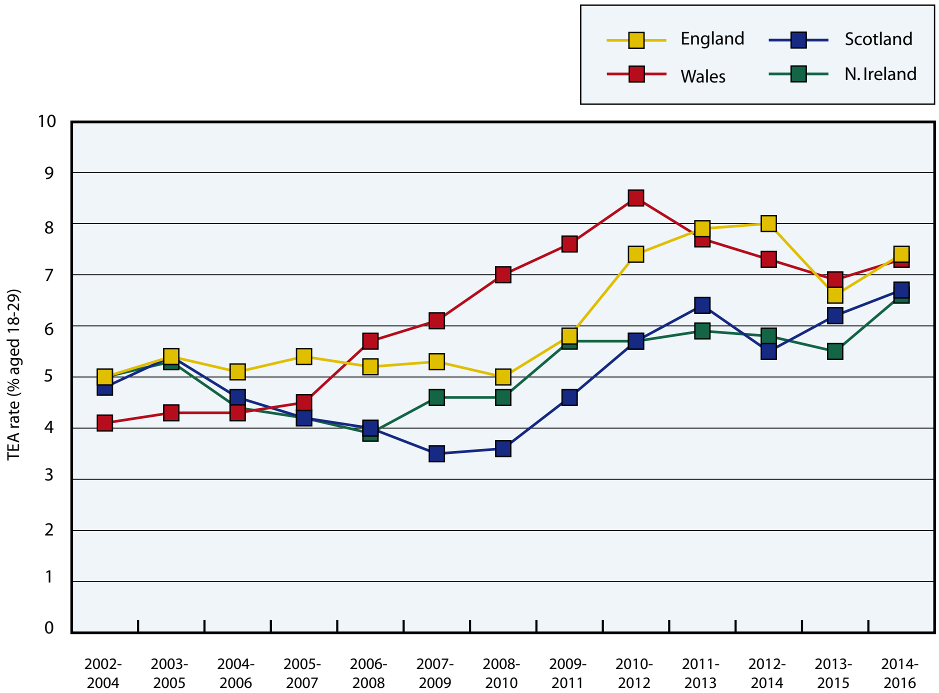


Figure 19: Trend in Total early-stage Entrepreneurial Activity in the UK Home Nations for 18 to 29 year olds, 3-year rolling averages 2002-04 to 2014-16
(Source: GEM UK APS 2002-2016)

3.5 ENTREPRENEURIAL ACTIVITY BY ETHNICITY AND RESIDENT STATUS

Continuing recent trends the TEA rate of the white ethnic population in the UK in 2016 was significantly lower than that of the non-white population, at 7.9% compared to 15.1% respectively (Figure 20). However, the significant increase in the overall TEA rate between 2015 and 2016 was driven by the increase in entrepreneurial activity of the white population, whose activity rate increased from 6.4% in 2015.

Examining entrepreneurial activity by migrant status (Figure 21) shows that there were significant increases in early-stage activity by both the UK life-long resident population and amongst UK-born regional migrants in 2016. In fact the rate for the latter in 2016 matches that of the immigrant rate, which, in 2015, was higher. The immigrant rate remains significantly above the rate for life-long residents.

As with the white ethnic group above, the increase in the UK TEA rate over the year was driven by these increases in activity by both the lifelong resident population and the regional in-migrant[11] population. The rate for immigrants is not significantly lower.

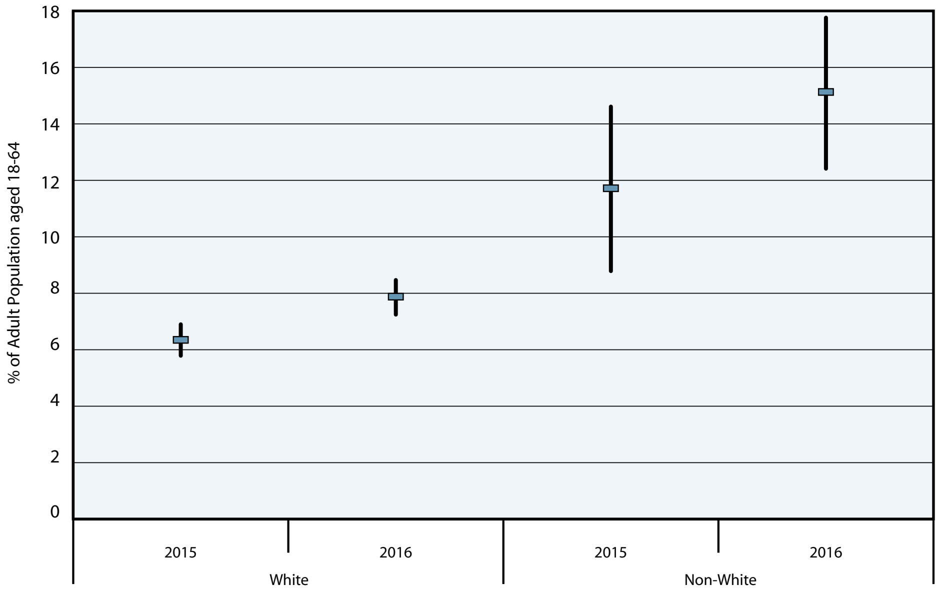
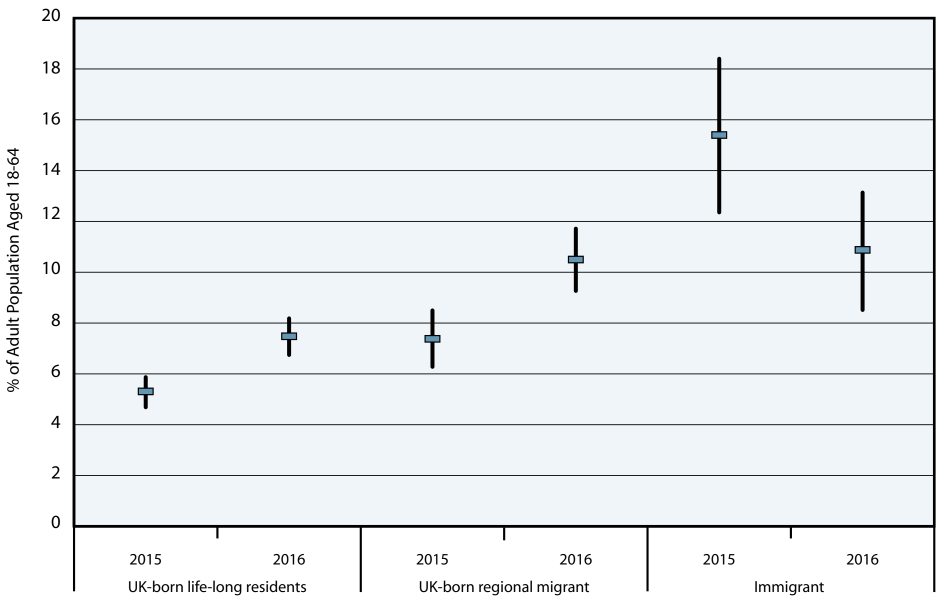


Figure 20: Total early-stage Entrepreneurial Activity Rate by White and Non-White Ethnic Status 2015 – 2016
(Source: GEM UK APS 2015, 2016)

Figure 21: Total early-stage Entrepreneurial Activity Rate by Migrant Status 2015 – 2016
(Source: GEM UK APS 2015, 2016)



11 Regional in-migrants are defined as those individuals that were born in the UK but now reside in a different region to that in which they were born.

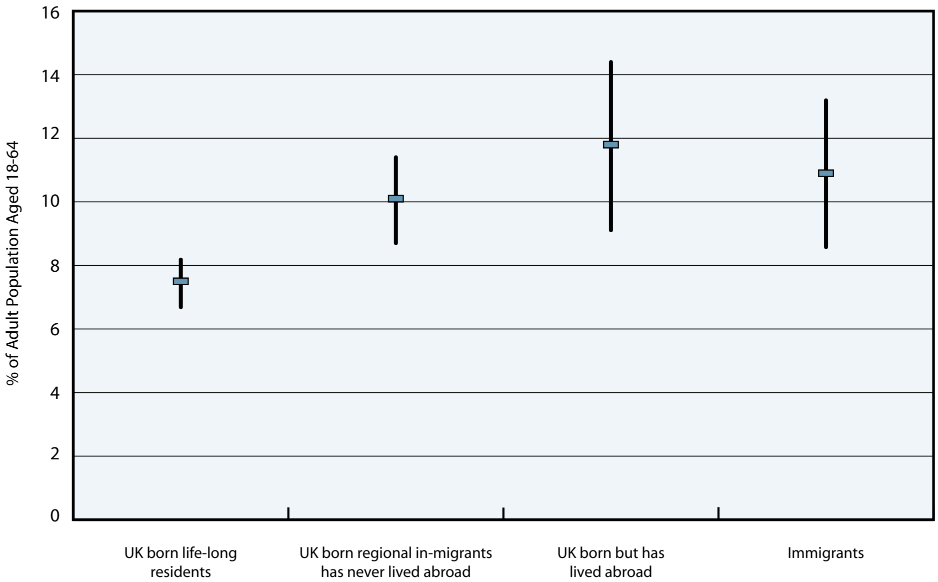


Figure 22: Total early stage Entrepreneurial Activity Rate by Migrant and Resident Status 2016
(Source: GEM UK APS 2016)

Since 2015 UK-born respondents have been asked if they had ever lived outside the UK. In 2016 the TEA rate for those who had lived outside the UK was significantly higher, at 11.8%, than the rate for life-long residents (7.5%) however it was not significantly different to the rate for regional in-migrants who had not lived outside the UK nor to the rate for immigrants (Figure 22). It appears, therefore, that those who have migrated in some way either regionally or as immigrants or returnee migrants, do appear to have higher levels of entrepreneurial activity than those who have lived in the UK all their lives.

Both immigrants and regional in-migrants are also more likely to see and act on business opportunities than life-long residents (Figure 23). There is no significant difference in the level of necessity entrepreneurship between the categories.

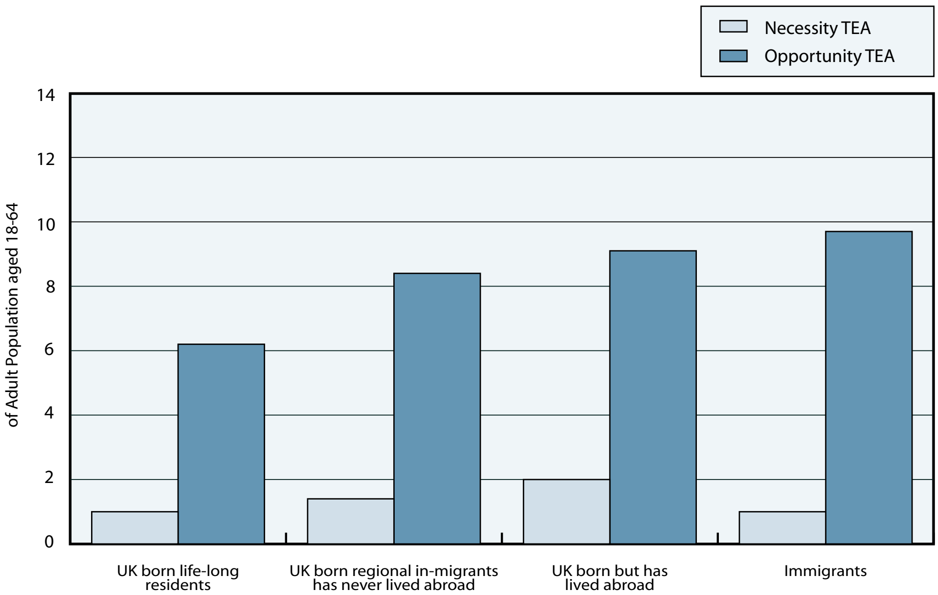


Figure 23: Necessity and Opportunity TEA by Migrant and Resident Status 2016
(Source: GEM UK APS 2016)

3.6 ENTREPRENEURIAL EMPLOYEE ACTIVITY

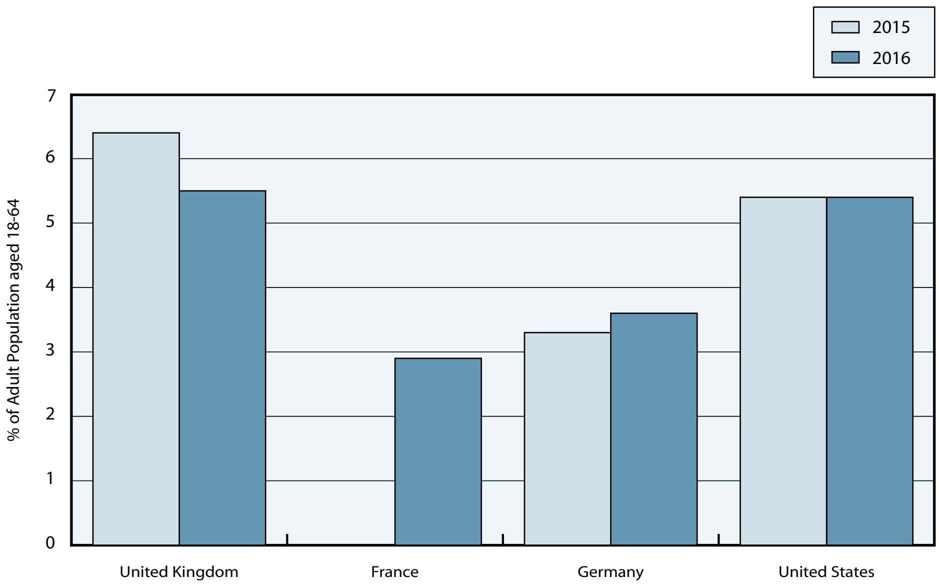
Whilst the TEA rate measures the extent to which the general population is engaged in the entrepreneurial process, it says nothing about the activities of employees on behalf of their employers. Instead this is measured by the entrepreneurial employee activity (EEA) rate which is defined as the proportion of employees aged 18-64 who play a leading role in the creation and development of new business activities for the organization in which they work, specifically those involved in developing or launching new goods or services or setting up a new business unit, a new establishment or subsidiary. Autonomy is a strong driver for all entrepreneurs to start their business and if this is increasingly provided in the workplace as the employee environment improves then higher levels of EEA should ensue[12]. A recent study[13] from the World Economic Forum (WEF) and GEM Global found that many European economies do not lack entrepreneurial activity at all. The findings go against the widely-held belief of the dismal state of entrepreneurship in Europe. Indeed, the report finds, what Europe lacks in early-stage entrepreneurship, it makes up for in intrapreneurship. Due to the risk- and opportunity-profiles that European economies offer, entrepreneurial individuals in Europe frequently choose to start new ventures or projects for their employers as employees rather than for themselves. Where this occurs, we observe a shift into intrapreneurship, also known as entrepreneurial employee activity (EEA).

The findings are important for future potential growth in Europe, as those who innovate within organizations tend to create more jobs than those who start their own business. A correlation also exists between intrapreneurship rates and economic competitiveness: every 2.5% increase in a country's intrapreneurship rate correlates to a 1 point increase in competitiveness as measured by the World Economic Forum's global competitiveness data. But the news is not all good. The European results vary widely, and are worst in its industrial heartland. The UK, one of Europe's strongest economies, is the exception among large countries, coming in 5th overall and 3rd in intrapreneurship. But Germany (24th) and France (25th) appear near the bottom of the combined ranking, despite a moderate score in intrapreneurship. The three worst ranking countries overall are Greece (26th), Spain (27th) and Italy (28th).

12 See Stephan, U et.al., (2015) "Understanding Motivations for Entrepreneurship", BIS Research Paper No. 212, March 2015.

13 World Economic Forum (WEF) and GEM Global (2016) "Europe's Hidden Entrepreneurs: Entrepreneurial Employee Activity and Competitiveness in Europe". www3.weforum.org/docs/WEF_Entrepreneurship_in_Europe.pdf

Figure 24: Entrepreneurial Employee Activity (EEA) in the UK, France, Germany and the US 2015-2016
(Source: GEM APS 2015, 2016)



The EEA rate in the UK in 2016 was 5.5% which was similar to the US but significantly higher than the rates in France and Germany (Figure 24 previous page). Unlike the TEA rate which rose over the year, the UK's EEA rate in 2016 was not significantly different from the rate in 2015.

When taken together the EEA and TEA rates provide a fuller picture of the extent of entrepreneurial activity being undertaken in a nation as it covers the actions of entrepreneurial individuals as well as entrepreneurial employees within a business; the latter, as noted above,is found to be positively correlated with economic competitiveness. Figure 25 shows the TEA and EEA rates for the UK in 2015 and 2016. While TEA and EEA were very similar in 2015, the TEA rate was significantly higher than the EEA rate in 2016, due to an increase in early-stage entrepreneurial activity.

Not only does failing to take account of EEA miss a large part of entrepreneurial activity, it may well miss the most innovative and productive part. For example, in the 2016 survey, the median number of jobs that nascent entrepreneurs expected to create in the next five years was five, with a median of only two jobs for both new and established entrepreneurs. However, the median number of jobs that entrepreneurial employees expected to create in five years was 15. Similarly, 5% of early-stage entrepreneurs expected that at least a three-quarters of their sales will usually come from customers living outside the UK, compared with 13% of entrepreneurial employees. Some 24% of entrepreneurial employees but only 17% of early-stage entrepreneurs considered that all of their customers for their new business or project would find their products or services unfamiliar. Finally, 24% of entrepreneurial employees but only 12% of early-stage entrepreneurs believed that no other businesses offered the same products or services, as developed in their new business or project, to their potential customers.

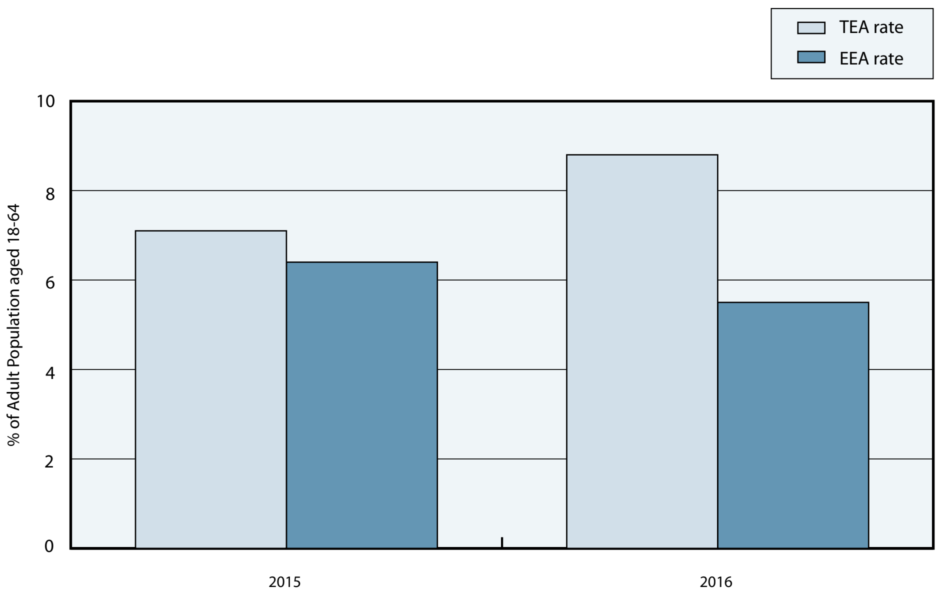


Figure 25: Total early-stage Entrepreneurial Activity (TEA) and Entrepreneurial Employee Activity (EEA) in the UK 2015-2016
(Source: GEM APS 2015, 2016)

4 ENTREPRENEURIAL ASPIRATION

The potential of entrepreneurial activity to promote regeneration and growth will reflect the types of business being established. If an entrepreneur expects to create a large number of jobs, or if the product market is new, then his or her potential contribution to growth and regeneration through entrepreneurship may be greater. The complex nature of the contribution of firms of different age and size to job creation in the UK has been highlighted in recent research[14].

To identify individuals who expect to create a relatively high number of jobs, GEM created a variable which measures the percentage of all early-stage entrepreneurs who expect to create more than ten jobs and have 50% or more growth in jobs in the next five years[15]. The results are illustrated in Table 7 for early-stage entrepreneurs (nascent and new business owners) and established business owner-managers. The table also shows the proportion of early-stage entrepreneurs and established business owner-managers who state they operate in new product markets[16], operate in "high" or "medium" technology sectors (according to OECD definitions), and have more than 25% of their export revenue[17] from outside the country.

The results show considerable variation in the entrepreneurial aspiration metrics across the selected countries. Around 1 in 5 (22%) UK early stage entrepreneurs had high job expectations compared to around 1 in 6 in both France and Germany; the US rate was higher at almost 1 in 3. The high expectation rates of established business owners were considerably lower than for early-stage entrepreneurs and showed less variation ranging from 2-7% for all countries; again the US had the highest share. Compared to 2015 there was a significant increase in the high job expectation rate for UK early-stage entrepreneurs but no difference for established business owners.

14 See, for example, Hart, M. and Anyadike-Danes, M. (2017) "High performing firms and job creation: a longitudinal analysis (1998-2013) ERC Insight Paper"; Enterprise Research Centre Insight Report, February

15 The OECD defines HGFs as: 'enterprises with average annualised growth in employees or turnover greater than 20 per cent per annum, over a three year period, and with more than 10 employees in the beginning of the observation period'. By contrast, the GEM measure is a measure of expected, not realised, growth and of 50% over five years.

16 Where the product is new to all or most customers and where there is little or no competition.

17 Note that this marks a change from previous years whereby the measure reported on the percentage of customers outside the country.

Table 7: Measures of entrepreneurial aspiration in the UK, France, Germany and US, 2016
(Source: GEM Global APS 2016)

	(% of TEA or EBO Entrepreneurs)							
	High Job Expectation: More than ten jobs and growth more than 50%		New Product Market		High or Medium tech sectors		Exporting: More than 25% of revenue outside the country	
	TEA	EBO	TEA	EBO	TEA	EBO	TEA	EBO
United Kingdom	**22.4**	**4.1**	**31.8**	**17.5**	**13.5**	**8.7**	**20.5**	**12.7**
France	17.5	2.9	33.9	27.1	7.8	9.8	20.2	15.5
Germany	15.6	2.2	24.7	9.0	8.9	5.2	21.5	6.1
United States	30.1	7.0	37.1	13.4	9.6	7.5	10.2	8.5

Around 1 in 3 early-stage entrepreneurs in the UK, France and the US were involved in new product markets compared to 1 in 4 in Germany. There was greater variation for established businesses ranging from just 9% of German established business owners to 27% in France. In contrast to 2015 the US had a lower share of established businesses in new product markets compared to the UK.

Compared to the US the UK also had a higher share of early-stage entrepreneurs in high or medium tech sectors (according to OECD definitions[18]) and in exporting. In the UK 1 in 5 early-stage entrepreneurs had more than 25% of sales outside the country compared to 1 in 10 in the US. The shares for established business owners were lower but the pattern held with the UK rate (13%) slightly higher than that in the US (9%) but the difference was not statistically significant.

In comparison to the European countries the UK also had a higher share of early-stage entrepreneurs involved in high and medium tech sectors although the rates for established business owners were quite similar. Exporting shares were also similar to France and Germany for early-stage entrepreneurs; the rates for established business owners were similar to France while Germany's rate was closer to that in the US.

The trend in the relative frequency of high job expectation TEA entrepreneurs for the UK, France, Germany and the US, is shown in Figure 26. It uses a three year rolling average presentation that smooths out fluctuations

18 GEM collects data for high, medium and low technology sectors according to OECD definitions and also asks if their technology was available one year ago, 2-5 years ago or longer than that. The latter set of variables have been reported in the past but these only give an indication of the novelty of the technology in the perception of the respondent. The measure in Table 6 uses OECD definitions of technology.

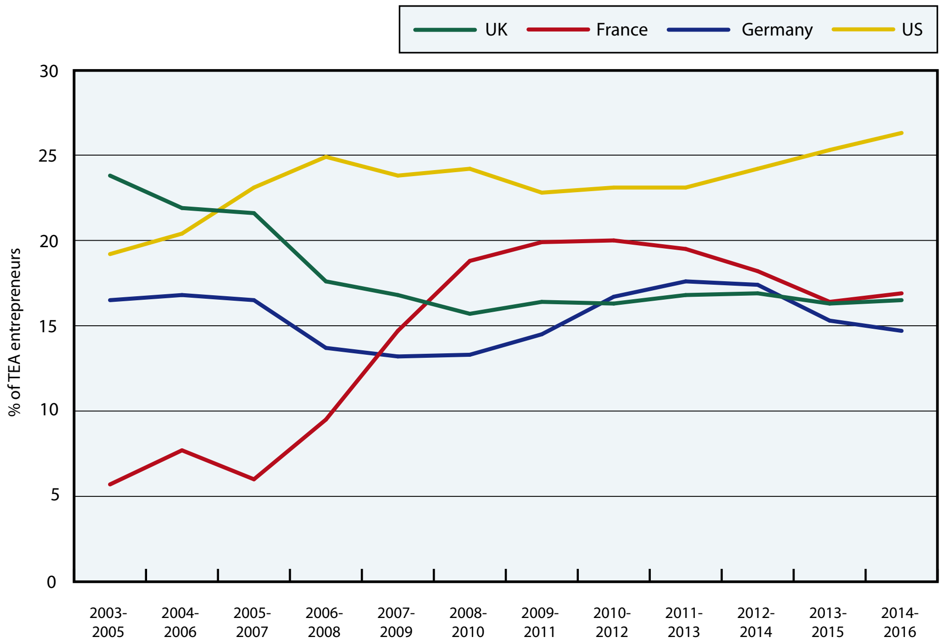


Figure 26: Relative frequency of high job expectation early-stage entrepreneurs in the UK, France, Germany and the US, three year rolling averages, 2003-2005 to 2014-2016

(Source: GEM Global APS 2003-2016)

from year to year due to small sample sizes. It demonstrates that the relative frequency of high job expectation among early-stage entrepreneurs in the UK has settled at around 16% since the recession, down from the peak rates of over 20% in the first half of the last decade. The US rate has also fluctuated at just under 25% since 2006-08, but in contrast to the UK, this is higher than the rates experienced over 2003-05. Germany experienced a lull in high expectation rates also around 2006-08 but by the end of the decade rates had returned to those observed pre-recession. France experienced the largest upswing in the rate during the mid-2000s with a high expectation rate average of around 18% since 2008-10. Despite recent trends, there is a prevailing separation between high expectation in the US and its European comparators.

The trend in relative frequency of high job expectation among established business owner-managers is shown in Figure 27 using the same method as for Figure 26. Note that the relative frequency of high job expectation among established business owner-managers in the UK is around one quarter less than that of early-stage entrepreneurs. Compared to the start of the period the trend in the UK and the US has been downward, with the rates converging with that of Germany at around 4% since the recession. The rate in France is around half that of the comparator countries with the gap showing no sign of closing.

As highlighted in Table 7 (previous page) the UK performs relatively well in a number of the entrepreneurial aspiration metrics in comparison with other countries. Focusing

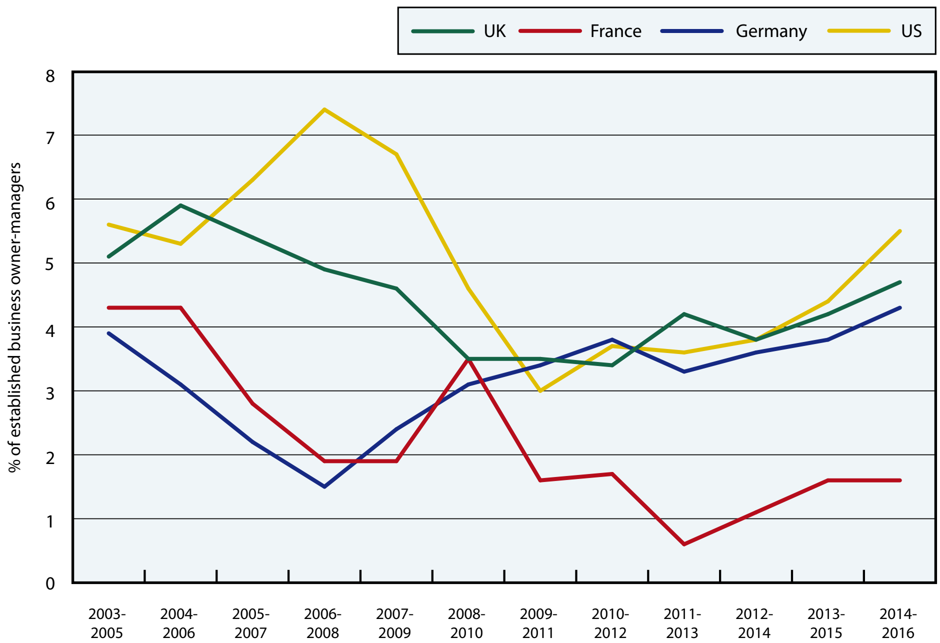


Figure 27: Relative frequency of high job expectation among established business owner-managers in the UK, France, Germany and the US, three year rolling averages, 2003-2005 to 2014-2016
(Source: GEM APS 2003-2016)

19 See ERC Conference Video by Jonathan Levie (2015) - https://youtu.be/CJAu2fUWWnc

specifically on these 'high value activities' Table 8 reports the share of early-stage and established businesses owners in the UK that are engaged in various combinations of high job expectation, new product markets and exporting activities (using a three year average). The majority of established business owners and around half of early-stage entrepreneurs do none of these activities. Of those that do, the shares are higher for early-stage business owners than established. Around one third of early-stage entrepreneurs undertake one of these activities compared to one fifth of established business owners and more than twice the number of early-stage entrepreneurs are engaged in either two or three high value activities compared to established business owners. The results suggest that early-stage entrepreneurs are more ambitious and innovative – or more naive, or both – than established entrepreneurs.

It is noticeable that while the share of ambitious early-stage entrepreneurs has risen in the US since the early 2000's, it has declined in the UK and stayed at this lower level. This appears to be because of a growing proportion of solo self-employed in the early-stage entrepreneurial population in the UK and a decline in this group in the US[19].

	High Value Activities	
(% of TEA or EBO entrepreneurs)	TEA	EBO
None of these activities	49.3	74.8
1 of these activities	35.1	20.6
2 of these activities	13.0	4.2
3 of these activities	2.6	0.5
Total	100.0	100.0

Table 8: Percentage of TEA and EBO entrepreneurs engaged in high value activities (high job expectation, new product markets, exporting), three year average 2014-2016
(Source: GEM APS 2014-2016)

5 ACTUAL SOURCES OF FUNDING FOR START-UPS

Obtaining funding remains a major issue for many start-up businesses, with just over half of nascent entrepreneurs reporting that they require external funding. Since 2006, GEM has tracked the mix of funds that nascent entrepreneurs expect to use. Table 9 shows these expected funding sources in 2015 and 2016[20]. Overall, the results suggest that just under half of all nascent entrepreneurs expected to self-fund in 2016 whilst 4% reported that no funding would be needed. This is broadly similar to the proportion (37%) of small businesses reporting that they do not intend to use external finance during 2016[21]. Of those expecting funding from elsewhere, banks and government programmes are most favoured followed by close family members. The share expecting funding from private investors or venture capital rose from 13% to 18% over the year whilst the share expected from friends and neighbours more than doubled. Around 6% expected to raise funds from online crowdfunding, similar to 2015.

These trends in higher rates of finance expected from family, friends and neighbours

20 Note that in 2015 there were changes to several of the categories for expectations in funding. As a result the data is not strictly comparable with previous years; Table 9 presents the data for 2015 and 2016, Table 9A in the Appendix presents the previous data from 2009-2014.

21 BRDC (2017) SME Finance Monitor Annual Report for the 2016 quarterly surveys.

Type of funding expected	2015	2016
No funding needed	4.8	3.8
All funded by entrepreneur	52.5	44.6
None funded by entrepreneur	1.0	1.4
Close family member (spouse, parent, sibling)	19.6	21.5
Other relatives, kin or blood relations	4.5	7.5
Employer or work colleagues	5.3	6.2
Private investor or venture capital	12.5	18.4
Friends or neighbours	4.9	12.5
Banks or other financial institutions	22.1	24.0
Government programmes, donations or grants	22.2	24.4
Online crowdfunding	7.9	6.0
Any other source	6.7	8.4

Table 9: Percentage of nascent entrepreneurs expecting funding from different sources 2015-2016
(Source: GEM UK APS 2015-2016)

22 For a discussion of the growing business angel market place in the UK see Wright, M., Hart, M and Fu, K (2015) "A Nation of Angels: assessing the impact of angel investing across the UK", Enterprise Research Centre Research Report, January 2015.

coincide with recent changes in informal investment, or investment by individuals in other people's new businesses in the last three years, as shown in Table 10[22]. The informal investment rate in 2016 stood at 3.2%, which is the highest since recording began in 1999. Investment into friends or neighbours' companies or those owned by close family were the most common investment choices at just under 40% each. The higher rate of investing in strangers' businesses, as observed since 2014, continued in 2016 at 16%. This may reflect recent increases in crowdfunding activity and angel investment in the UK. Some 12%, or one in eight informal investors, used an online platform to make their last investment.

Table 10: Percentage of individuals aged 18-64 who have invested in someone else's new business in the last 3 years, and the distribution of relationships to the latest investee, 2009-2016

(Source: GEM APS 2009-2016)

	2009	2010	2011	2012	2013	2014	2015	2016
Informal investment rate								
% aged 18-64 who have invested in someone else's new business in the last 3 years	1.2	2.9	2.4	2.6	2.1	1.9	2.3	3.2
Relationship of latest investee (% of latest investments)								
Close family member (spouse, parent, sibling)	41.0	37.0	50.2	57.5	46.8	40.3	38.0	37.3
Other relative, kin or blood relations	4.5	7.5	6.2	2.2	6.6	11.1	0.4	2.1
Work colleague	8.3	2.2	7.4	8.9	3.9	5.1	0.5	4.0
Friend or neighbour	35.5	48.5	28.4	23.4	38.7	25.5	39.2	38.4
A stranger with a good business idea	8.6	4.5	7.9	4.1	4.0	17.9	16.3	15.8
Other	2.1	0.4	0.0	3.8	0.0	0.1	5.7	2.4

6 CONCLUSION

Early-stage entrepreneurial activity in 2016 was up significantly on the previous year, and whilst annual trends have fluctuated recently the higher rate first observed in 2011 has prevailed. Indeed the rate of 8.8% in 2016 represents a step-up from the previous long run stable rate of 6%.

Notable amongst the increased early-stage activity rate in 2016 was the increase in rates for both younger and older people. In fact in 2016 there were no significant differences in TEA rates across all age-bands implying all ages were equally as likely to be engaged in early-stage entrepreneurial activity.

In 2016 more than one-fifth of working age individuals either intended to start a business within the next three years; were actively trying to start a business; or were running their own business. This proportion first increased to an equivalent rate of around 1 in 5 individuals in 2011 and again represents an increase on the previous long-run rate of 16%, or 1 in 6 working age individuals.

Attitudes of non-entrepreneurial individuals to entrepreneurship continued to strengthen in 2016 with a higher share reporting that they know someone that has started a business recently, and a higher share also confident that they have the skills, knowledge and experience to start up. The higher prevalence of entrepreneurs both in the media and more widely in the economy may be influencing these strong attitudes in favour of entrepreneurship. Likewise they may suggest that starting a business is now more desirable and achievable than it was in the previous decade resulting in the increased activity rates amongst both the younger and older generation.

With these higher long-run entrepreneurial rates in the UK, start-up funding becomes more important; and although just under half of entrepreneurs expected to self-fund, equal proportions expect funding from banks, government and family to be important sources of income. Indeed the continued increase in informal investment suggests that alternative sources including friends, angel investment and crowd-funding are becoming more commonplace in the face of more stringent formal channels.

Appendix 1

GEM UK Sampling and Weighting Methodology

GEM UK is one of the largest, longest-running national studies of entrepreneurial activity in the world, with over 200,000 individuals interviewed since monitoring began with a sample of 1,000 adults in 1998. In 2016, 10,011 adults aged 18-80 were interviewed. The distribution of respondents is not even across the UK. This is because the Hunter Centre for Entrepreneurship at the University of Strathclyde, Welsh Assembly Government, and Invest Northern Ireland chose to boost sampling in their region in order to have more detail about entrepreneurship in their area.

The raw sample of 10,011 was distributed across 12 geographic areas within which representative sub-samples of the population aged 18-80 were taken. These areas and the sample sizes are: South West: 316; South East: 544; East of England: 378; London: 596; West Midlands: 460; East Midlands: 315; Yorkshire & Humberside: 336; North East: 145; North West: 484; Wales: 2,950; Scotland: 1,991; Northern Ireland: 1,496.

According to OfCom[23], households in the UK which have access to a mobile phone but not to a fixed telephone landline has dropped slightly from 15% in Q1 of 2015 to 14% in Q1 of 2016. In 2016, 20% of the unweighted GEM sample across the UK consisted of mobile-only households. Meanwhile the decline in the proportion of households with a fixed telephone line has stabilised at around 84% between 2010 and 2016. Eurobarometer estimates[24] suggest that in 2014, 17% of UK households were "mobile-only". Whatever the true figure, it is clear that fixed line surveys are not fully representative of UK households, that the distribution of mobile-only households is different to that of fixed line households, and that these differences are not fixed but change over time. In 2010, sampling methods for mobile only households had advanced to a stage where it was felt that inclusion of this group was not only desirable but feasible (though at greater cost).

Every attempt is made to ensure that the results reported are as reliable and robust as possible. To do this, four sets of weights were calculated for the UK data:

- Weights for the whole UK that take the UK area sub-samples and the age, gender and ethnic minority proportion of the population of the UK (aged 18-64) into account, based on the latest available area estimates from the UK Office of National Statistics, typically mid-year estimates for the previous year.

- Sub-sample area weights that take into account the population distributions *within* GEM UK sub-sample areas by age, gender and ethnicity. These are used when we report comparisons between GEM UK sub-sample areas.

- Government Official Region (GOR) weights that create representative samples at the GOR level from all sub-samples within the same GOR.

- In addition, separate weights were constructed for England, based on balanced GOR samples for each English region, to develop a final "home nations" weight.

23 Source: Ofcom Facts and Figures. Available at http://media.ofcom.org.uk/facts/

24 See Special Eurobarometer 414, available at http://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_414_en.pdf

Appendix 2

Additional Tables and Data for Figures

Table 1b: Attitudes towards entrepreneurship in the UK, France, Germany and the US in 2016 – percentage of working age population (including the entrepreneurially active) who expressed an opinion and agreed with the statement at the top of the column

(Source: GEM Global APS 2016). These estimates are comparable with measures used in the 2007 GEM UK report)

	I know someone who has started a business in the last 2 years	There are good start-up opportunities where I live in the next 6 months	I have the skills, knowledge and experience to start a business	Fear of failure would prevent me starting a business
United Kingdom	**33.5**	**42.1**	**48.0**	**36.3**
France	33.2	28.6	36.3	40.4
Germany	22.4	37.6	37.4	44.3
United States	30.6	57.3	55.0	34.9

Table 2b: Entrepreneurial attitudes in the UK in 2014, 2015 and 2016 (% respondents aged 18-64 expressing an opinion and agreeing with the statement)

(Source: GEM APS 2014, 2015 and 2016. These estimates are comparable with measures used in the 2007 GEM UK report)

	2014	2015	2016	2014	2014	2015	2015	2016	2016
	All	All	All	Male	Female	Male	Female	Male	Female
I personally know someone who has started a business in the last two years	29.9	29.7	33.5	33.6	26.2	33.2	26.2	36.8	30.2
There will be good start-up opportunities where I live in the next six months	41.4	41.8	42.1	46.1	36.4	46.8	36.8	47.2	36.8
I have the skills, knowledge and experience to start a business	45.5	43.7	48.0	55.4	35.6	52.1	35.3	56.7	39.3
Fear of failure would prevent me from starting a business (for those who agree there are good start-up opportunities)	37.3	37.3	36.3	32.4	43.9	31.1	39.2	31.2	40.8
Most people consider that starting a business is a good career choice	58.0	58.0	58.6	58.9	57.2	58.6	57.5	59.9	57.2
Those successful at starting a business have a high level of status and respect in society	78.3	79.4	77.4	79.3	77.3	78.6	80.2	76.8	77.9
You will often see stories about people starting successful new businesses in the media	59.3	61.7	61.3	60.6	58.0	64.3	59.0	61.6	61.0

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I know someone who has started a business in the last 2 years	20.7	21.8	24.1	25.3	24.9	23.6	23.6	23.4	31.1	28.2	27.1	25.2	24.7	25.8	28.4
There are good start-up opportunities where I live in the next 6 months	25.8	31.6	33.2	35.4	33.8	36.1	26.9	23.0	26.8	27.9	30.5	33.2	36.8	37.6	37.9
I have the skills, knowledge and experience to start a business	40.9	43.3	46.4	46.4	45.1	44.0	44.4	44.4	47.2	36.7	38.7	37.0	38.4	37.5	41.1
Fear of failure would prevent me starting a business (for those who agree there are good start-up opportunities)	37.0	35.5	36.0	36.1	37.3	37.9	38.3	35.2	36.0	41.4	43.3	41.4	43.0	39.5	39.6
Most people consider that starting a business is a good career choice		52.8	54.7	54.6	54.7	54.9	52.1	47.9	52.6	50.4	49.9	54.5	57.3	57.5	58.2
Those successful at starting a business have a high level of status and respect in society		71.7	72.2	71.8	72.9	73.6	74.2	73.8	76.3	81.4	77.1	79.5	78.4	79.8	77.7
You will often see stories about people starting successful new businesses in the media		54.8	55.3	53.9	54.3	56.3	52.4	44.7	51.5	44.2	45.5	48.8	58.8	59.9	59.9

Figure 2: Entrepreneurial attitudes in the UK, 2002-2016: (% non-entrepreneurially-active respondents aged 18-64 expressing an opinion and agreeing with the statement)
(Source: GEM UK APS 2002-2016)

Figure 2b: Entrepreneurial Attitudes in the UK, 2002-2016 (percentage of working age population expressing an opinion and agreeing with the statement
(Source: GEM APS 2002-2016)

Note: These figures are calculated on the same basis as in GEM UK Report prior to 2008 – that is, for the 18-64 year sample overall and not solely the non-entrepreneurial adult population. However, due to revisions undertaken in the pooled UK GEM database there will be small differences between these figures and those published prior to 2008.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I know someone who has started a business in the last 2 years	23.9	24.6	26.6	27.7	27.3	25.7	25.8	26.5	33.6	32.4	32.7	29.2	29.9	29.7	33.5
There are good start-up opportunities where I live in the next 6 months	29.1	35.0	35.7	38.2	36.7	39.1	28.8	27.0	29.4	31.1	34.0	36.0	41.4	41.8	42.1
I have the skills, knowledge and experience to start a business	46.0	48.3	50.3	50.9	49.6	48.5	49.0	52.4	52.3	43.9	46.9	44.1	45.5	43.7	48.0
Fear of failure would prevent me starting a business	34.3	33.8	33.7	34.3	35.7	35.9	37.2	35.1	39.5	45.7	42.2	40.2	39.0	37.3	36.3
Most people consider that starting a business is a good career choice		51.7	54.3	54.3	54.4	54.7	51.7	48.1	52.1	49.8	49.9	54.6	58.0	58.0	58.6
Those successful at starting a business have a high level of status and respect in society		71.6	72.1	71.7	72.7	73.6	73.8	73.8	76.4	80.4	76.8	79.6	78.3	79.4	77.4
You will often see stories about people starting successful new businesses in the media		55.6	56.1	54.6	55.0	56.7	53.2	45.9	52.4	45.4	46.5	50.0	59.3	61.7	61.3

Table 3b: Entrepreneurial Attitudes in the UK regions in 2016 (percentage of working age population expressing an opinion and agreeing with the statement)
(Source: GEM APS 2016)

	England	Wales	Scotland	Northern Ireland	United Kingdom
I know someone who has started a business in the last 2 years	33.8	30.6	33.0	30.4	**33.5**
There are good start-up opportunities where I live in the next 6 months	43.5	33.1	36.9	30.6	**42.1**
I have the skills, knowledge and experience to start a business	48.7	44.7	44.6	43.6	**48.0**
Fear of failure would prevent me from starting a business	36.0	38.5	36.4	43.1	**36.3**
Most people consider that starting a business is a good career choice	58.9	57.8	57.1	55.6	**58.6**
Those successful at starting a business have a high level of status and respect in society	76.9	80.3	79.2	81.3	**77.4**
You will often see stories about people starting successful new businesses in the media	61.6	57.4	59.0	65.6	**61.3**

Table 3c: Good Opportunities for Start-up in the local area in next 6 months - in UK from 2002 to 2016 - percentage of non-entrepreneurially active working age population expressing an opinion and agreeing with the statement
(Source: GEM APS 2002-2016)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% change 2002-16	% change 2012-16
England	26.4	31.5	33.4	36.5	34.1	36.3	26.8	23.5	27.7	28.5	31.8	34.6	37.5	38.6	39.3	48.9	23.6
Wales	21.1	29.7	30.7	31.8	28.6	30.4	19.6	20.4	21.8	25.3	22.6	25.1	29.5	29.6	29.9	41.8	32.4
Scotland	23.3	34.1	33.4	28.6	33.6	36.1	33.1	21.2	25.4	28.2	26.6	29.1	38.1	34.6	32.5	39.5	22.2
N. Ireland	24.8	29.0	32.2	32.8	32.9	39.0	21.8	16.5	15.9	24.1	19.7	20.2	25.2	31.1	28.2	13.7	43.1
UK Average	**25.8**	**31.6**	**33.2**	**35.4**	**33.8**	**36.1**	**26.9**	**23**	**26.8**	**28.2**	**30.5**	**33.2**	**36.8**	**33.7**	**33.4**	**29.6**	**9.6**

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Opportunity Perception	Male	29.2	34.6	36.8	40.2	37.6	40.8	30.9	25.0	29.3	29.7	34.6	37.6	40.4	42.4	41.9
	Female	22.8	29.0	29.7	31.0	30.1	31.6	23.0	20.9	24.7	26.4	26.8	29.0	33.4	33.2	34.2
Fear of Failure	Male	34.4	34.6	34.9	34.0	34.1	36.4	35.9	32.3	34.9	38.7	40.5	40.1	38.5	36.8	36.7
	Female	40.1	35.0	37.5	38.6	41.2	39.6	41.4	38.8	37.2	44.0	46.4	43.0	48.0	42.6	42.8

Figure 3: Male and female attitudes towards Good Opportunities and Fear of Failure (% non-entrepreneurially-active respondents aged 18-64 expressing an opinion and agreeing with the statements "There are good start-up opportunities where I live in the next 6 months"; "Fear of failure would prevent me from starting a business")

(Source: GEM UK APS 2002-2016)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Established business owner/manager	5.6	5.7	4.7	5.1	5.3	5.0	6.0	5.8	6.2	6.5	7.0	6.5	5.9	5.2	6.1
New business owner/manager	3.1	3.2	2.8	3.0	2.8	2.7	2.8	3.2	3.3	3.4	4.4	3.5	3.8	3.0	3.8
Nascent entrepreneur	2.1	3.0	2.9	2.7	2.7	2.7	2.6	2.5	2.9	4.1	5.3	3.5	4.6	3.8	4.7
Intend to start (within three years)	3.9	4.9	5.9	5.7	4.9	4.9	4.5	3.8	4.6	6.8	7.7	6.5	5.8	7.3	7.5
No activity or intention	85.3	83.2	83.7	83.4	84.3	84.7	84.1	84.7	83.0	79.2	75.7	80.0	79.9	80.7	77.8

Figure 4: Participation in Entrepreneurship in the UK by most established stage of entrepreneurial activity, 2002-2016

(Source: GEM UK APS 2002-2016)

Figure 4b: Participation in entrepreneurship in the UK by stage of entrepreneurial activity (percentage of working age population), 2002-2016

(Source: GEM UK APS 2002-2016

Note: individuals can be in more than one stage at a time; hence annual percentages do not total to 100)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Established business owner/manager	5.6	5.7	4.7	5.1	5.3	5.0	6.0	5.8	6.2	6.5	7.0	6.5	5.9	5.2	6.1
New business owner/manager	3.1	3.2	2.9	3.1	2.8	2.7	2.9	3.2	3.4	3.4	4.4	3.6	3.8	3.1	3.8
Nascent entrepreneur	2.5	3.5	3.2	3.2	3.2	3.0	2.8	2.7	3.2	4.2	5.7	3.8	4.9	4.0	5.1
Intend to start (within three years)	6.5	7.9	8.6	8.7	7.8	7.4	6.8	6.1	7.2	9.8	11.3	8.1	8.5	9.7	11.1
No activity or intention	85.3	83.2	83.7	83.4	84.3	84.7	84.1	84.7	83.0	79.2	75.7	80.0	79.9	80.7	77.8

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
United Kingdom	**5.4**	**6.4**	**5.8**	**6.0**	**5.8**	**5.6**	**5.5**	**5.8**	**6.5**	**7.6**	**9.8**	**7.3**	**8.6**	**7.1**	**8.8**
France	3.2	1.6	6.0	5.4	4.4	3.2	5.6	4.4	5.8	5.7	5.2	4.6	5.3		5.3
Germany	5.2	5.2	5.1	5.4	4.2		3.8	4.1	4.2	5.6	5.3	5.0	5.3	4.7	4.6
United States	10.5	11.9	11.3	12.4	10.0	9.6	10.8	8.0	7.6	12.3	12.8	12.7	13.8	11.9	12.6

Figure 5: Total early-stage Entrepreneurial Activity (TEA) in UK, France, Germany and US (2002-2016)

(Source: GEM Global APS 2002-2016)

Figure 6: Total early-stage Entrepreneurial Activity (TEA) in the UK, France, Germany and the US by Age Group (2016)

(Source: GEM Global APS 2016)

	18-24	25-34	35-44	45-54	55-64
United Kingdom	**8.0**	**9.9**	**10.0**	**8.0**	**8.0**
France	3.9	9.7	5.5	4.8	2.4
Germany	4.2	5.0	5.7	4.8	3.2
United States	10.7	15.6	16.8	11.7	7.3

Figure 7: Total early-stage Entrepreneurial Activity (TEA) in the UK by Age Group (2014-2016)

(Source: GEM APS 2014-2016)

	18-24	25-34	35-44	45-54	55-64	Total
2014	6.3	10.6	11.0	7.8	6.3	8.6
2015	3.9	8.0	9.0	7.9	5.3	7.1
2016	8.0	9.9	10.0	8.0	8.0	8.8

	Opportunity TEA	Necessity TEA
United Kingdom	**7.4**	**1.2**
France	4.6	0.6
Germany	3.4	1.0
United States	11.1	1.4

Figure 8: Necessity and opportunity TEA rates in the UK, France, Germany and the US in 2016
(Source: GEM Global APS 2016)

Figure 9: Necessity and opportunity nascent and new business owner-manager rates in the UK (showing means and 95% confidence intervals), 2014-2016
(Source: GEM UK APS 2014-2016)

	Nascent entrepreneurship rate						New business owner-manager rate					
	Opportunity			Necessity			Opportunity			Necessity		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
High	4.46	3.62	4.73	0.85	0.92	0.82	3.37	2.39	3.54	0.83	1.12	0.71
Low	3.63	2.84	3.84	0.51	0.54	0.47	2.65	1.76	2.78	0.49	0.70	0.39
Mean	4.05	3.23	4.28	0.68	0.73	0.65	3.01	2.07	3.16	0.66	0.91	0.55

	Male TEA	Female TEA
United Kingdom	**12.0**	**5.7**
France	7.3	3.4
Germany	6.0	3.1
United States	14.8	10.5

Figure 10: Total early-stage entrepreneurial activity by gender in the UK, France, Germany and the US in 2016
(Source: GEM Global APS 2016)

	Male EBO	Female EBO
United Kingdom	**8.2**	**4.0**
France	5.7	2.9
Germany	9.6	4.4
United States	10.9	7.6

Figure 11: Established business ownership by gender in the UK, France, Germany and the US, 2016
(Source: GEM Global APS 2016)

Figure 12: Female early-stage Entrepreneurial Activity in the UK, France, Germany and the US, 2002-2016
(Source: GEM Global APS 2002-2016)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
United Kingdom	**3.2**	**3.9**	**3.8**	**3.7**	**3.7**	**3.6**	**3.6**	**3.7**	**4.0**	**5.0**	**7.1**	**5.8**	**5.7**	**4.7**	**5.7**
France	2.1	1.6	3.8	3.3	2.5	2.2	3.3	2.0	4.8	3.0	4.0	3.1	4.0		3.4
Germany	3.4	3.3	3.1	3.8	2.6		3.4	3.7	2.9	4.5	3.5	3.9	4.0	3.3	3.1
United States	8.2	8.2	10.7	9.7	7.4	7.3	8.8	5.8	7.0	10.4	10.5	10.4	11.2	9.2	10.5

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
England	5.6	6.4	6.0	6.2	6.1	5.7	5.7	6.0	6.7	7.7	10.3	7.5	9.1	7.2	9.2
Wales	4.2	6.6	5.2	5.2	5.5	5.3	5.3	6.0	5.8	8.1	7.0	5.4	7.1	6.8	7.6
Scotland	5.0	5.5	5.0	5.7	4.1	4.6	4.5	3.6	4.2	6.2	6.9	6.8	5.4	6.7	7.3
N. Ireland	3.7	5.2	5.3	4.8	3.7	4.9	4.8	5.2	6.4	7.1	7.1	5.1	6.7	5.4	6.3

Figure 13: Total early-stage Entrepreneurial Activity in the UK Home Nations, 2002-2016
(Source: GEM UK APS 2002-2016)

	England	Wales	Scotland	N. Ireland
1st Quintile	10.9	5.2	8.8	5.2
2nd Quintile	9.8	6.8	7.1	6.1
3rd Quintile	8.5	6.9	5.2	5.8
4th Quintile	7.5	10.0	9.2	7.0
5th Quintile	9.4	8.8	6.8	7.7

Figure 14: Total early-stage Entrepreneurial Activity in the UK Home Nations by Index of Multiple Deprivation 2016
(Source: GEM UK APS 2016)

	Male	Female	Ratio Female to Male TEA
England	12.5	5.8	46%
Wales	9.5	5.8	61%
Scotland	9.5	5.2	55%
N. Ireland	7.8	4.9	62%
United Kingdom	**12.0**	**5.7**	**47%**

Figure 15: Male and Female Total early-stage Entrepreneurial Activity in the UK Home Nations, 2016
(Source: GEM UK APS 2016)

Figure 16: Female to Male Entrepreneurship Ratio in the UK regions (combined over 2013-16)
(Source: GEM UK APS 2016)

	Female to male ratio
West Midlands	**73.8**
East Midlands	**65.6**
Scotland	**64.1**
East	**63.7**
Wales	**58.7**
South East	**57.6**
London	**53.5**
Yorkshire & Humber	**53.4**
Northern Ireland	**42.7**
North East	**40.7**
South West	**40.0**
North West	**32.8**
UK	**52.5**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
England	3.2	4.0	3.8	3.8	3.9	3.8	3.8	3.8	4.1	5.0	7.7	6.1	6.0	4.6	5.8
Wales	3.0	4.1	4.2	3.6	3.7	3.4	4.0	4.4	3.6	6.1	4.0	4.2	4.9	4.6	5.8
Scotland	3.6	3.0	3.7	3.7	2.6	2.7	2.5	2.5	3.3	4.3	5.0	5.2	3.9	5.8	5.2
N. Ireland	1.7	3.5	2.4	2.6	2.4	2.2	2.3	2.4	3.3	3.9	3.6	2.2	4.4	3.4	4.9

Figure 17: Female Total early-stage Entrepreneurial Activity in the UK Home Nations, 2002-2016
(Source: GEM UK APS 2002-2016)

	18-24	25-34	35-44	45-54	55-64
England	8.1	10.1	10.2	8.2	8.9
Wales	6.0	8.4	10.4	7.9	5.1
Scotland	9.2	8.9	8.7	6.6	3.6
N. Ireland	6.2	11.4	5.8	5.2	2.5
United Kingdom	**8.0**	**9.9**	**10.0**	**8.0**	**8.0**

Figure 18: Total early-stage Entrepreneurial Activity in the UK Home Nations by Age Group, 2016
(Source: GEM UK APS 2016)

	2002-04	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14	2013-15	2014-16
England	5.0	5.4	5.1	5.4	5.2	5.3	5.0	5.8	7.4	7.9	8.0	6.6	7.4
Wales	4.1	4.3	4.3	4.5	5.7	6.1	7.0	7.6	8.5	7.7	7.3	6.9	7.3
Scotland	4.8	5.4	4.6	4.2	4.0	3.5	3.6	4.6	5.7	6.4	5.5	6.2	6.7
N. Ireland	5.0	5.3	4.4	4.2	3.9	4.6	4.6	5.7	5.7	5.9	5.8	5.5	6.6

Figure 19: Trend in Total early-stage Entrepreneurial Activity in the UK Home Nations, for 18 to 29 year olds, 3-year rolling averages 2002-04 to 2014-16
(Source: GEM UK APS 2002-2016)

	TEA rate			
	White		Non-White	
	2015	2016	2015	2016
High	6.91	8.50	14.64	17.83
Low	5.79	7.26	8.80	12.43
Mean	6.35	7.88	11.72	15.13

Figure 20: Total early-stage Entrepreneurial Activity Rate by White and Non-White Ethnic Status 2014-2016 (showing means and 95% confidence intervals)
(Source: GEM UK APS 2015, 2016)

Figure 21: Total early stage Entrepreneurial Activity Rate by Migrant Status 2015-2016 (showing means and 95% confidence intervals)
(Source: GEM UK APS 2015, 2016)

	TEA rate					
	UK-born life-long resident		UK-born regional migrant		Immigrant	
	2015	2016	2015	2016	2015	2016
High	5.93	8.22	8.48	11.73	18.40	13.19
Low	4.69	6.75	6.29	9.27	12.40	8.56
Mean	5.31	7.48	7.38	10.50	15.40	10.88

	UK-born life-long residents	UK-born regional in-migrants has never lived abroad	UK-born but has lived abroad	Immigrants
High	8.2	11.4	14.4	13.2
Low	6.7	8.7	9.1	8.6
Mean	7.5	10.1	11.8	10.9

Figure 22: Total early stage Entrepreneurial Activity Rate by Migrant and Resident Status 2016
(Source: GEM UK APS 2016)

	Necessity TEA	Opportunity TEA
UK-born life-long residents	1.0	6.2
UK-born regional in-migrants has never lived abroad	1.4	8.4
UK-born but has lived abroad	2.0	9.1
Immigrants	1.0	9.7

Figure 23: Necessity and Opportunity TEA by Migrant and Resident Status 2016
(Source: GEM UK APS 2016)

	2015	2016
United Kingdom	**6.4**	**5.5**
France		2.9
Germany	3.3	3.6
United States	5.4	5.4

Figure 24: Entrepreneurial Employee Activity (EEA) in the UK, France, Germany and the US 2015-2016
(Source: GEM Global APS 2015, 2016)

	2015	2016
TEA rate	7.1	8.8
EEA rate	6.4	5.5

Figure 25: Total early-stage Entrepreneurial Activity (TEA) and Entrepreneurial Employee Activity (EEA) in the UK 2015-2016
(Source: GEM APS 2015, 2016)

Figure 26: Relative frequency of high job expectation early-stage entrepreneurs in the UK, France, Germany and the US, three year rolling averages, 2003-2005 to 2014-2016
(Source: GEM Global APS 2003-2016)

	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14	2013-15	2014-16
United Kingdom	**23.8**	**21.9**	**21.6**	**17.6**	**16.8**	**15.7**	**16.4**	**16.3**	**16.8**	**16.9**	**16.3**	**16.5**
France	5.7	7.7	6.0	9.5	14.7	18.8	19.9	20.0	19.5	18.2	16.4	16.9
Germany	16.5	16.8	16.5	13.7	13.2	13.3	14.5	16.7	17.6	17.4	15.3	14.7
United States	19.2	20.4	23.1	24.9	23.8	24.2	22.8	23.1	23.1	24.2	25.3	26.3

Figure 27: Relative frequency of high job expectation among established business owner-managers in the UK, France, Germany and the US, three year rolling averages, 2003-2005 to 2014-2016
(Source: GEM Global APS 2003-2016)

	2003-05	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13	2012-14	2013-15	2014-16
United Kingdom	**5.1**	**5.9**	**5.4**	**4.9**	**4.6**	**3.5**	**3.5**	**3.4**	**4.2**	**3.8**	**4.2**	**4.7**
France	4.3	4.3	2.8	1.9	1.9	3.5	1.6	1.7	0.6	1.1	1.6	1.6
Germany	3.9	3.1	2.2	1.5	2.4	3.1	3.4	3.8	3.3	3.6	3.8	4.3
United States	5.6	5.3	6.3	7.4	6.7	4.6	3.0	3.7	3.6	3.8	4.4	5.5

Table 9a: Percentage of nascent entrepreneurs expecting funding from different sources 2009 to 2014
(Source: GEM UK APS 2009 to 2014)

Type of funding expected	2009	2010	2011	2012	2013	2014
No funding needed	5.0	10.3	6.2	4.4	6.0	7.3
All funded by entrepreneur	50.7	43.8	47.0	39.0	40.6	46.0
None funded by entrepreneur	3.9	8.5	4.9	6.7	1.1	1.6
Close family member (spouse, parent, sibling)	10.1	8.6	3.5	8.9	3.0	9.1
Other relatives, kin or blood relations	6.0	1.7	2.0	8.2	2.1	6.0
Work colleagues	6.8	5.0	10.1	8.3	5.8	5.7
A stranger	3.7	0.7	1.1	5.0	2.7	1.6
Friends or neighbours	4.5	6.9	2.5	5.6	6.1	4.9
Banks or other financial institutions	20.0	18.2	18.6	22.3	10.2	8.8
Government programmes	15.1	17.7	11.1	15.9	8.9	7.2
Any other source	8.8	5.0	7.2	13.2	8.2	8.2

Table 11: Total early-stage Entrepreneurial Activity by Age-band 2003-2016
(Source: GEM APS 2003-2016)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
18-29	5.9	4.8	5.5	4.8	5.4	5.0	5.0	4.9	7.4	9.4	6.4	7.3	6.0	8.7
30-49	7.8	7.2	7.6	7.3	6.8	7.0	7.1	8.8	9.2	12.9	8.1	10.8	8.3	9.3
50+	4.2	4.4	3.9	4.2	3.8	3.7	4.4	4.5	5.6	5.5	6.5	7.1	6.0	8.1

	Male		Female	
	2015	2016	2015	2016
High	10.24	12.82	4.63	6.34
Low	6.98	9.47	2.56	4.02
Mean	8.61	11.14	3.60	5.18

Table 12: Total early-stage Entrepreneurial Activity amongst the 50-64 Age Group 2015-2016
(Source: GEM APS 2015-2016)

Table 13: Necessity and Opportunity TEA amongst the 50-64 Age Group 2015-2016
(Source: GEM APS 2015-2016)

	Opportunity TEA				Necessity TEA			
	Male		Female		Male		Female	
	2015	2016	2015	2016	2015	2016	2015	2016
High	7.50	10.24	3.72	5.21	3.11	2.91	1.27	0.65
Low	4.72	7.23	1.89	3.12	1.39	1.37	0.29	0.04
Mean	6.11	8.74	2.80	4.17	2.25	2.14	0.78	0.35

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