About GEM

The 2016 Global Entrepreneurship Monitor (GEM) study in brief:

- GEM is the world’s largest study of entrepreneurship.
- In 2016, GEM was conducted in 64 economies.
- GEM interviewed over 200,000 adults globally, including 2,000 in Australia.
- GEM is different from other studies in that by surveying the adult population it identifies entrepreneurs at the very earliest stages of new business creation.
- GEM measures annually the levels and characteristics of entrepreneurial activity, social attitudes, aspirations and framework conditions for entrepreneurship in each economy.
- The GEM study has been conducted annually since 1999 and has collected data from across 100 countries, with over 2.6 million observations.
Key findings

Overall, the 2016 Global Entrepreneurship Monitor (GEM) data provides a positive picture of the entrepreneurial activity and climate in Australia:

- It was estimated that 14.6 percent of the Australian adult population (18–64 years old)\(^1\) were actively engaged in starting and running new businesses in 2016. This equates to 2.2 million early-stage entrepreneurs.

- With a Total Early-stage Entrepreneurial Activity (TEA) of 14.6 percent, Australia’s level of entrepreneurial activity is amongst the highest of all developed economies,\(^2\) a little above the USA (12.6 percent) but below Canada (16.7 percent) and Estonia (16.2 percent).

- Australia ranks #1 amongst developed economies for Entrepreneurial Employee Activity (EEA) in established firms, with an estimated 9.0 percent of the adult population engaged in developing or launching new products, a new business unit or subsidiary for their employer. This equates to about 1.4 million Australians involved in EEA. Australia’s EEA of 9.0 percent is well above countries like the USA and the UK (both 7.0 percent) and the average of developed economies (5.1 percent).

- Australia’s profile of start-up activity (TEA) is particularly strong in the senior age groups. With 11.5 percent of 55-64 year olds engaged in early stage entrepreneurship, Australia ranked #1 amongst developed economies, on par with Canada (10.7 percent) but substantially higher than both the USA (7.3 percent) and the developed economies average (5.9 percent).

- Informal investment is strong in Australia, with the prevalence of business angels at 4.1 percent of the population. This equates to about 0.6 million informal investors financing entrepreneurial ventures in Australia. This level is on par with the USA (4.2 percent) but above the GEM average for developed economies of 3.4 percent. However, at just over AU$75,000, the average amount invested is well above both the USA (AU$21,000) and the developed country average (AU$48,000).

- Female TEA is comparatively high. At 11.5 percent it is third amongst developed economies, behind Estonia (11.7 percent) and Canada (13.3 percent). Of the 2.2 million Australians engaged in starting new businesses, 39 percent or 860,000 were women.

- Australia outperforms most other developed economies on most indicators that represent the quality and economic impact of its business start-ups, including growth aspirations, number of opportunity-driven start-ups and innovativeness:

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1 GEM statistics are reported for “working-age” adults aged 18–64 unless otherwise stated. While some entrepreneurial activity is present for youth under 18 and seniors over 65 the prevalence is substantially lower.

2 By developed economies (or countries) we refer to innovation-driven economies (rather than factor-driven or efficiency-driven economies) according to the World Economic Forum’s Global Competitiveness Index classification for economic development levels.
- Some 3.5 percent of adults, or 525,000 new businesses, expect to create at least six new jobs in the next five years. This compares favourably to the developed economies’ average (2.2 percent) or benchmarks like the UK (2.5 percent) but less than in the USA (4.3 percent).

- Similarly, the prevalence of innovative start-ups is relatively high in Australia compared with the UK and other innovation-driven nations. In Australia 5.2 percent of adults report they are starting businesses selling products or services that no or few other businesses sell. This is almost 1.8 times the developed economies’ average (2.9 percent) and compares favourably with benchmarks like the UK (2.9 percent) and higher than in the USA (4.7 percent). However, Australia’s prevalence of innovative start-ups falls a little behind those of Estonia (5.6 percent) and Canada (6.8 percent).

- Similar to other developed economies, the vast majority of new ventures are based on the desire to take advantage of perceived opportunities, with only 2 percent of new ventures in Australia started through necessity.

- Perceived opportunities and capabilities for new business start-ups remain strong in Australia. Some 49 percent of Australians perceive that there are good opportunities to start a business and about 52 percent believe they possess the skills to do so. This is considerably above the average for developed economies (41 percent and 44 percent respectively), but are slightly lower than in the USA (57 percent 55 percent) and Canada (59 percent and 54 percent) but higher than in the UK (42 percent and 48 percent).

- Despite the positive features of Australia’s entrepreneurship profile several aspects of the 2016 GEM findings raise particular concerns:
  - While female participation in entrepreneurship is comparatively high and ranked fourth across developed economies, the Female TEA of 11.5 percent is substantially lower than the Male TEA of 17.7 percent.
  - Fear of failure in Australia remains slightly above the average of developed economies. Some 43 percent of Australians who report good opportunities to start a business also report that fear of failure would prevent them from doing so. This is a little above the advanced economies average of 40 percent and well above countries such as the USA (33 percent).
  - Our relatively high rates of entrepreneurship do not translate to youth entrepreneurship. Youth TEA (18–24 year olds) at 9.4 percent appears to be about on par with some other benchmark countries such as the USA (10.7 percent), and substantially stronger than the average of developed nations (7.6 percent). It is nonetheless well behind other nations such as Canada (14.6 percent) and The Netherlands (18.8 percent).
  - The discontinuation rate, those who have terminated a business, dropped from 4.5 percent in 2015 to 3.5 percent in 2016. While the rate of business discontinuation ranks Australia somewhat high at 9th amongst the 27 developed economies. This is not surprising given our
relatively high level of TEA (ranked 3rd) and business ownership (ranked 2nd). Moreover, research from the Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE) conducted by the Australian Centre for Entrepreneurship Research (ACE) at the Queensland University of Technology (QUT) indicates that disastrous failures are minimal.3

- International orientation is below average for Australian early-stage entrepreneurs, most likely due to the geographic distance to international markets. About 14.9 percent of early-stage Australian entrepreneurs expect to generate more than a quarter of their revenue from international markets, compared to 25.3 percent as the average for developed economies. However, this group is dominated by European countries that have easy access to international markets.

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1. Introduction and background

Most policymakers and academics agree that entrepreneurship is critical to the development and wellbeing of society. Entrepreneurs create jobs. They drive and shape innovation, thereby speeding up structural changes in the economy, and by introducing new competition they contribute indirectly to increased productivity and overall economic activity. Entrepreneurship is thus a catalyst for economic growth and national competitiveness.

In 2016 GEM conducted its 18th annual survey of the rate and profile of entrepreneurial activity around the globe. GEM interviewed over 182,000 adults aged 18–64 in 64 economies, spanning diverse geographies and a range of development levels. ACE participated as the Australian GEM partner, surveying 2,000 Australian adults.4

This report provides a summary of entrepreneurship in Australia as measured by GEM, and benchmarks this against other countries. We compare the level of entrepreneurship in the population across different phases of the entrepreneurial process, and provide a profile of some key characteristics of entrepreneurs and the businesses they are starting. We also report on some of the institutional and framework conditions that support entrepreneurship.

1.1 The GEM research approach5

Figure 1 illustrates the GEM conceptual model of the institutional environment and its impact on entrepreneurship. As this figure shows, two sets of conditions—basic requirements and efficiency enhancers—are foundation conditions that influence the way a society functions and contributes to the wellbeing of its people. These conditions have been adopted from the World Economic Forum’s (WEF) Global Competitiveness Report.6 It is important to note that, while they are framework conditions that impact economic activity more generally, they are critical to entrepreneurship because without a solid institutional foundation the entrepreneurship-specific factors cannot function effectively.

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4 Note this is a relatively small survey sample, and thus the results may be associated with large standard errors.


The entrepreneurship-specific conditions are represented in nine entrepreneurship framework conditions (EFCs). Information on these is collected through a national expert survey (NES) conducted by GEM national teams. The framework conditions, or institutional environment, are of critical significance to the study of entrepreneurship because they can represent circumstances that entrepreneurs must navigate and levers that policymakers can address. This initial conceptual framework evolved into the GEM conceptual framework shown in Figure 1 using the findings of GEM surveys over the years.

A major revision of this GEM conceptual framework was to focus on better understanding the ‘Entrepreneurship Profile’, as shown in Figure 2. Since the GEM survey’s early beginnings, the understood assumption of mutual relationships among attitudes, aspirations and activities was in-built in the conceptual framework, without spelling out the exact nature of these relationships. In the revised GEM conceptual framework (shown in Figure 2), these assumptions have been explicated to better investigate and test the characteristics of the assumed relationships between social values, personal attributes and various forms of entrepreneurial activity. In all conceptual frameworks the basic assumptions have remained unchanged:
Entrepreneurial activity is not a heroic act of an individual, which would be undertaken regardless of the environment in which the activity is performed.

Entrepreneurial activity is a result of the interaction of an individual’s perception of an opportunity and capacity (motivation and skills) to act upon this AND the distinct conditions of the respective environment in which the individual is located.

GEM recognises that an economy’s prosperity is highly dependent on a dynamic entrepreneurship sector. This holds true across all stages of new venture development, yet the rate and profile of entrepreneurs varies considerably. Figure 3 illustrates the GEM measures across phases of entrepreneurial activity, with an added emphasis on profile factors.
1.1.1 Phases of entrepreneurship

GEM represents entrepreneurship as occurring in distinct phases. However, because the conditions impacting entrepreneurship in different societies are diverse, complex and interdependent it is difficult to specify that one phase necessarily leads to another. For example, a society with many potential entrepreneurs may have a low rate of entrepreneurial activity due to particular environmental constraints. Consequently, the arrow connecting the phases (Figure 3) is shown as being uneven to remind us that the relationship is not definitive.

Given these challenges, it is therefore important to focus not just on one single indicator but to look at patterns across all phases in order to assess the state of entrepreneurship in an economy. For example, an economy with a low number of established business owners may also have few individuals starting new businesses and therefore a low supply of entrepreneurs that could otherwise become business owners. At the same time, a lot of start-up activities accompanied by a relatively low number of established businesses could point to either a lack of sustainability of these start-ups or environmental constraints that make it difficult to stay in business over time.

The phases specified in Figure 3 begin with potential entrepreneurs: those that see opportunities in their area and believe they have the capabilities to start businesses. Other beliefs include the extent to which potential entrepreneurs are undeterred by fear of failure when they recognise opportunities. In addition, the influence that broader society can have on the perception of entrepreneurship as a career choice, the status of entrepreneurs in society and how they are represented in the media all need to be considered.
The cycle continues through to the intent to start a business. This is followed by nascent activity, represented as those who are in the process of starting a business. These new ventures are generally seen as being less than three months old. New business owners are former nascent entrepreneurs who have been in business more than three months, but less than three and a half years. Together, nascent and new entrepreneurs compose total entrepreneurial activity (TEA).

Additional phases include established business ownership as well as business discontinuation. Business discontinuation may have positive outcomes given that experienced entrepreneurs may go on to start another business, use their expertise and resources to benefit entrepreneurs in some other way (by financing, advising or other forms of support), or contribute through employment activity.

1.1.2 Profile of entrepreneurship

A key differentiator of the GEM study is that it recognises that it is simply not enough to study the numbers of entrepreneurs and to compare these numbers with other economies. The profiles of entrepreneurship — the individuals participating in this activity and the emerging ventures they start — differ considerably across economies and need to be taken into account.

Firstly, the full potential of a society’s emerging entrepreneurs is more likely to be realised when entrepreneurship is seen to be inclusive; that is, when it is available to all people in a society, including women and young people. Secondly, entrepreneurs will differ in terms of the sector in which they start businesses (consumer, extractive, manufacturing, business services, etc.). Finally, entrepreneurs impact society in a number of ways, including through their innovativeness, their international reach and their growth ambitions.

2. Global snapshot of entrepreneurship

The 2016 GEM study interviewed over 182,000 adults aged 18–64 years in 64 economies. The interviewees spanned a broad range of diverse geographies and development levels.

TEA is the primary barometer of the level of entrepreneurial activity assessed by the GEM study. Based on this study the scale of global entrepreneurship is clearly evident. GEM estimates that 12.3 percent of the adult population across the 64 participating countries were early-stage entrepreneurs actively engaged in starting and running new businesses in 2016. Of these, it is estimated:

- 37 percent of early-stage entrepreneurs are female.
- 59 percent of early-stage entrepreneurs expect to create at least one new job in the next five years.
- 22 percent of early-stage entrepreneurs expect to create six or more new jobs in the next five years.

7 Survey data from Japan and Turkey were not completed in time for inclusion in the report.
In Australia we estimate that there were 2.2 million early-stage entrepreneurs actively engaged in starting and running new businesses in 2016. This represents 14.6 percent of the adult population aged 18–64. Of these, it is estimated:

- 39 percent of early-stage entrepreneurs are female.
- 63 percent of early-stage entrepreneurs expect to create at least one new job in the next five years.
- 24 percent of early-stage entrepreneurs expect to create six or more new jobs in the next five years.

2.1 Entrepreneurship and stage of economic development

Since entrepreneurship tends to play a different role in each individual economy depending on the stage of economic development that each economy is at, GEM groups the participating economies into three groups based on the WEF’s *Global Competitiveness Report.* This classification is based on, and takes into account, important economic characteristics, such as Gross Domestic Product (GDP) per capita and the share of exports comprising primary goods. The three groups are:

- **Factor-driven economies:** these are the least developed economies dominated by subsistence agriculture and extraction businesses, with a heavy reliance on labour and natural resources.
- **Efficiency-driven economies:** these are developing economies accompanied by industrialisation and an increased reliance on economies of scale, with capital-intensive, large organisations being more dominant.
- **Innovation-driven economies:** these are more advanced economies in which businesses are increasingly knowledge-intensive, with an expanding service sector.

Figure 4 compares the TEA for all 64 countries that participated in the GEM study in 2016. It is clear that TEA rates vary between the three categories of economies, with higher average levels of entrepreneurial activity observed in factor-driven and efficiency-driven economies than for innovation-driven economies.

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Figure 4: Total early-stage entrepreneurial activity (TEA) in 64 participating economies, GEM 2016

A key difference in the characteristics of entrepreneurship between economies with different levels of development can be observed by comparing the primary motivations of the entrepreneurs. Entrepreneurs may be pushed into starting a business out of necessity because they have no other work options and need a source of income (necessity-driven entrepreneurship). On the other hand, they may be pulled into starting businesses because they recognise opportunities and choose to pursue them (opportunity-driven entrepreneurship). GEM also refers to improvement-driven opportunity entrepreneurship, which is when individuals start businesses to improve their incomes or independence in their work.

Figure 5 clearly illustrates the differences in the motivations typically driving entrepreneurship at different levels of economic development. Entrepreneurs in factor-driven economies tend to be driven equally by necessity and opportunities for improvement. With greater economic development levels necessity decreases as a motivator, while improvement-driven opportunity motives increase.

Figure 5: Percentage of necessity-driven vs. improvement-driven entrepreneurship by level of economic development


Innovation-driven economies such as the UK and the USA provide the most relevant group of countries against which to benchmark Australia. Throughout
this report we will mainly compare Australia with the other innovation-driven economies.

3. Entrepreneurship trends: recovery from the GFC

To examine the impact of economic cycles on entrepreneurship rates we examined trends over the period 2006 to 2016. Figure 6 illustrates the trends in overall TEA for Australia and counterpart innovation-driven economies from 2006 to 2016. The innovation average is calculated for innovation-driven countries that have regularly participated in GEM over this period (six or more of the ten years) and are dominated by European nations.

Figure 6: Early-stage entrepreneurial activity (TEA) 2006 – 2016


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ACE joined the GEM consortium as the Australian partner in 2010. Australia did not participate in GEM over the period 2007 to 2009. Australian data are only available for 2006 (data collected by Swinburne University of Technology), 2010 and 2011, 2014 and now 2015.

Specifically, the countries include Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, Korea (South), Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, the UK and USA.
It is clear that entrepreneurship rates vary differently over time in different parts of the world. These changes are largely driven by changing economic conditions. In the years for which data are available, it can be seen that Australia follows similar trends to the USA. The USA had a sharp drop in TEA in 2009 and 2010. This clearly reflects the effects of the global financial crisis (GFC) at this time.\(^1\) By 2011, however, entrepreneurial rates in the USA had recovered; Australia exhibits a similar trend. Although it seems that the GFC had a substantial impact on new business entry we know from the CAUSEE research project\(^2\) that the GFC had little effect on those already engaged in early-stage entrepreneurial activity.

The trend in TEA across all innovation-driven countries also shows a decline in 2009 and 2010, with recovery in 2011. However, across all these nations the depth of the decline was nowhere as severe as in the USA.

To provide further insight into the variations in entrepreneurial activities with changes in economic conditions we investigated trends in TEA for opportunity-driven versus necessity-driven motivated business from 2006 to 2016 (see Figures 7 and 8). Economic downturn generally impacts on entrepreneurial activity in two ways. Firstly, there may be fewer attractive business opportunities for potential entrepreneurs to exploit, so we can expect opportunity-motivated entrepreneurial activity to decline. Secondly, softer economic conditions lead to higher unemployment and fewer possibilities for paid employment. As a result, we can expect necessity-motivated entrepreneurship rates to increase as more individuals are pushed towards starting new businesses and self-employment as a way to generate sufficient income.

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\(^1\) GEM data are collected in May and June, so the 2006 to 2008 figures represent the situation prior to the Lehman Brothers’ collapse (September 2008), which signalled the beginning of the GFC.

Figure 7: Opportunity-driven motive total early-stage entrepreneurial activity (TEA) 2006-2016

What impact did the GFC have on entrepreneurial activity relating to opportunity-driven entrepreneurship? Here we see trends very similar to the overall TEA rates in Figure 7. Opportunity-driven entrepreneurship dropped sharply in the USA in 2009 and 2010, but had rebounded strongly by 2011. This drop was extreme, falling to 4.8 percent in 2010 — approximately half of the 2008 level of 9.5 percent.

Opportunity-driven TEA showed a similar trend for all innovation-driven economies (which are dominated by European countries), falling in both 2009 and 2010 on average. However, the strength of the drop was much less severe. Opportunity-driven TEA fell by only 1.3 percentage points from 2008 to 2010, or to 75 percent of the 2010 levels.

For Australia, although we do not have data available for 2007 to 2009, it is clear that we closely track the USA for all years. Hence, it appears that, in terms of opportunity entrepreneurship, Australia too was affected by the GFC in 2010 (and presumably 2009), but had made a good recovery by 2011.

The impact of the GFC for necessity-driven entrepreneurship was entirely different (see Figure 8). In the USA, the prevalence of necessity-driven entrepreneurship rose dramatically in 2009 and 2010. At 2.8 percent of the adult population in 2010, this is 215 percent of the 2008 level of 1.3 percent. The level of necessity entrepreneurship remained relatively high in the USA through 2013, with a strong recovery in 2014 dropping back to a prevalence of 1.9 percent and then to 1.7 percent in 2015 and 1.4% in 2016.
For the innovation-driven economies there was, on average, no clear impact of the GFC on necessity-driven entrepreneurship. Prevalence rates of necessity-driven entrepreneurship have increased very gradually and evenly over the period 2008 to 2016, from 1.1 percent of the adult population to 1.6 percent.

The impact of the GFC on necessity-driven entrepreneurship in Australia is somewhat unclear due to the missing years of data. Most likely there has been a small increase post-GFC, with levels at 1.5 percent in 2010 and 1.6 percent in 2011, compared with 1.3 percent in 2006. However, with missing data between 2007 and 2009 it is highly speculative whether this small increase is associated directly with the GFC.

We note that the 2014 data indicates a strong increase in the prevalence of necessity-driven entrepreneurship, rising to 2.3 percent of the adult population. While this seemed to have recovered in 2015 to an approximately historically-average level of 1.6 percent, 2016 again shows a rise to 2.4 percent.

4. Australia’s level of entrepreneurial activity: phases

In this section we compare the rate of individual participation in entrepreneurship in Australia with that in other countries. We therefore present the findings for various phases of entrepreneurship: potential entrepreneurs who have intentions to found a business, those early-stage entrepreneurs who are actually starting and running a new business, owners of established businesses, individuals who disengaged from their businesses, and informal investment by business angels.

4.1 Total Early-Stage Entrepreneurial Activity

Table 1 shows the percentage of individuals in the adult population of each economy that are engaged in the various phases of entrepreneurship. We have distinguished between individuals who are in the process of starting a business (nascent entrepreneurship); those operating a new business, which is up to three and a half years old (baby business ownership); those operating an established business; and individuals with discontinued businesses. The nascent entrepreneurship rate combined with the new business ownership rate forms the TEA within an economy.
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<th>New business ownership rate Rank/27</th>
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Figure 9 compares the TEA for all 27 innovation-driven economies. With 14.6 percent of the adult population in 2016 involved in the process of setting up a business or owning a newly-founded business (TEA rate), Australia ranks third (behind Estonia and Canada) among the innovation-driven (developed) economies, and slightly ahead of the USA. Compared with 2015, the Australian TEA rate has increased by 1.8 percent.

Figure 9: Total early-stage entrepreneurial activity (TEA) in 27 innovation-driven economies, 2016


Figure 10 compares Australia with the USA and UK more fully, along with the averages for factor-, efficiency- and innovation-driven economies in regards to nascent, baby businesses, established businesses and discontinuance rates.
We see that Australia is approximately the same in terms of nascent new firms (i.e. firms in the start-up phase; 8.8 percent) when compared to the USA (8.9 percent), but considerably ahead in terms of young businesses (6.2 percent versus 4.0 percent). However, the 8.8 percent nascent prevalence rate is higher than the average reported among all innovation economies of 5.5 percent.

Our baby business ownership rate (i.e. operational young businesses) of 6.2 percent is ahead of the USA, which stands at 4.0 percent. Australia’s established business prevalence at 11.3 percent is also higher than the USA (9.2 percent). One explanation is that while more Americans are attempting to start new businesses than Australians, they are less successful on average in getting these businesses up and running. This suggests that Australian nascent entrepreneurs may be more efficient at establishing a new firm during the start-up process than USA nascent entrepreneurs. In fact, in the group of innovation-driven economies, our baby business ownership rate is ranked number two (after Canada, 6.9 percent) and well ahead of the average of 3.7 percent.

### 4.2 Established business ownership and discontinuance

Australia’s rate of established business ownership is estimated to be 11.3 percent, about 1.7 times higher than the international average for advanced economies of 6.7 percent. Within the last year, the established business ownership rate in Australia has increased from 8.7 percent in 2015.
Starting or running a business is risky and it is inevitable that some firms will go out of business. In 2016 the rate of discontinued businesses in Australia was 3.5 percent of the adult population. As a percentage of both established and new businesses ownership this was 20.0 percent, well below the average of innovation-driven economies at about 29 percent (see Table 1). In that sense the relatively high rate of discontinuances simply reflects the healthy renewal or churn of the business population in Australia. Indeed, many business closures are not failures but successful business exits or result from better alternative opportunities for the founders. Other research conducted in Australia by ACE\textsuperscript{13} has identified that Australia has very few closures that could be considered to be disastrous.

The estimated Australian discontinuation rate appears to have dropped from 4.5 percent in 2015 to 3.5 percent in 2016.

4.3 Informal investment

In order for venturing activity to thrive there must be sufficient money available to finance new businesses. Most of the initial money usually comes from the founders of the businesses themselves, or other informal investors including family, friends, neighbours, work colleagues and strangers; some comes from lending institutions, primarily banks; and in very rare instances from formal investment by venture capitalists. GEM specifically examines funding from entrepreneurs themselves, informal investors and venture capitalists.

The prevalence rate of informal investors among the adult population of the innovation-driven economies in 2016 is about 3.4 percent, with an average investment in US dollars of US$55,900 (approx. AU$75,000) (see Figure 11). Australia’s rate of informal investment is about 4.1 percent, slightly behind the USA at 4.2 percent, and considerably ahead of the UK at 2.0 percent. However, the average amount invested by Australian informal investors (US$55,900) is above that of both the US (US$16,200) and the UK (US$36,200).

4.4 Potential entrepreneurs

Arguably, every individual has the potential to become an entrepreneur. Some of them will venture into entrepreneurship while others — for various reasons — will not. It is therefore important to understand the influence of an individual’s perception of abilities as well as the perception of societal attitudes towards entrepreneurship, which together impact an individual’s vocational choice. Table 2 shows that the percentage of individuals in the adult population of each economy differs in terms of individual intentions, abilities and beliefs about entrepreneurship.
Table 2: Perceptions of entrepreneurial opportunities, abilities and intentions across innovation-driven economies

<table>
<thead>
<tr>
<th>Economy</th>
<th>Perceived opportunities</th>
<th>Perceived capabilities</th>
<th>Fear of failure</th>
<th>Entrepreneurial intentions</th>
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<td>Score</td>
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Entrepreneurial intentions are defined by the percentage of individuals who expect to start a business within the next three years (those already entrepreneurially active are excluded from this measure). Perceived opportunities reflect the percentage of individuals who believe there is occasion to start a venture in the next six months in their immediate environment. Perceived capabilities reflect the percentage of individuals who believe they have the required skills, knowledge and experience to start a new venture. The measure of fear of failure (when it comes to starting one’s own venture) only applies to those who perceive opportunities.
Social values play a key role in determining whether individuals are behaving entrepreneurially or not. In GEM, social values are captured through three dimensions:

- if most people consider starting a new business a desirable career choice
- if those individuals who are successful at starting a new business enjoy a high level of status and respect in society
- if media attention to entrepreneurship (by promoting successful ventures) contributes or not to developing an entrepreneurial culture in a country.

4.4.1 Intentions, abilities, and beliefs

Entrepreneurial intentions represent the percentage of individuals who expect to start a business within the next three years. Given that intentions generally precede behaviour, entrepreneurial intentions are an important measure of potential entrepreneurship in a society. Figure 12 presents the percentage of those currently not engaged in early-stage entrepreneurial activity who expect to found a business in the next three years. With 12.3 percent of the non-entrepreneurial adult population expressing such an intention, Australia is slightly lower than the average of 15.4 percent for all innovation-driven economies. Importantly, while entrepreneurial intentions in Australia have fallen from 12 percent in 2011 to 10 percent in 2014, the average across innovation-driven economies has exhibited an increase from 10 percent to 12 percent over the same period. However, entrepreneurial intentions in Australia increased in 2015 to 14.4 percent and then dropped to 12.3 percent in 2016, while the average across innovation-driven economies continued an increase from 11.6 percent to 15.4 percent over the same period.

Figure 12 also gives an overview of individual perceptions of opportunities, abilities and beliefs related to entrepreneurship among the general population. Approximately 49.3 percent of Australians perceive good founding opportunities exist for a start-up venture and 52.3 percent believe that they have the necessary skills to start a business. Both measures are above the average of comparative innovation-driven economies (41.3 percent and 43.8 percent respectively) including the UK (42.3 percent and 48 percent), but slightly lower than the USA (57.3 percent and 55 percent).

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One point of concern is that 42.9 percent of non-entrepreneurial Australians reported perceived fear of failure as a reason that they wouldn’t start their own firm. This is about ten percentage points higher than the USA and UK (33.3 percent and 35.2 percent respectively) and three percentage points higher than the innovation-driven average (39.8 percent).

4.4.2 Social perceptions

Apart from the perception of skills and founding opportunities, the individual perception of societal attitudes can greatly influence entrepreneurial activity. Australia ranks approximately equal to the average of innovation-driven economies in terms of social perceptions of entrepreneurship as a good career choice, and that successful entrepreneurs attain high status in society. However, it appears that entrepreneurs in Australia receive considerably more positive media attention than the average of innovation-driven economies or the USA or UK (see Figure 13).
5. Entrepreneurial Employee Activity

The GEM consortium has also measured Entrepreneurial Employee Activity (EEA) since 2011. This choice acknowledges the fact that entrepreneurial activity is not restricted to new firms but can also take place in already established firms and organisations. Within these established organisations GEM identifies employees who play a leading role in the creation of new business activities in their firm. This includes a broad range of activities, such as developing or launching new goods or services, or setting up a new business unit, a new establishment or a subsidiary for their main employer.

Figure 14 shows the percentage of the adult population engaged in entrepreneurial activities as employees. Australia’s prevalence of employee entrepreneurship of 9.0 percent places us first amongst innovation-driven economies and is 1.8 times higher than the average for innovation-driven economies.

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What is even more revealing is a joint comparison of entrepreneurial activity in established organisations (the EEA rate) and new firms (the TEA rate) as displayed in Figure 15. This figure illustrates that Australia, which has the highest EEA rate, also has the third highest TEA rate. Hence Australia exhibits a relatively high level of entrepreneurial activity of various types.
6. Indicators of the impact of entrepreneurial activity

Businesses are different and so too is their impact on the national economy. This section profiles the potential impact of entrepreneurship in Australia by exploring several indicators on the size and quality of business ventures being started by Australian entrepreneurs, namely:

- the perceived job-creation potential of their businesses
- the perceived innovativeness of their business ideas
- the motivation of the entrepreneur for starting a new business
- the entrepreneur’s ambition to serve international markets.

6.1 Job growth expectations

Growth expectations measure how many employees the entrepreneurs expect to employ in five years. Research has shown that growth expectations are
indeed a good indicator of later actual firm growth. This measure can be interpreted as the expected direct contribution of new firms to job growth in Australia.

Figure 16 presents the TEA rate at three levels of growth expectations: 0 (no employment expectations), 1–5 (low growth expectations), and 6 or more employees (medium to high growth expectations).

Figure 16: Growth expectations of early-stage entrepreneurs, 2016

![Bar chart showing growth expectations of early-stage entrepreneurs in Australia, USA, and United Kingdom.](source)

Australia is generally well placed compared with other innovation-driven economies. Approximately 5.7 percent of the adult population start businesses that they expect to employ 1-5 employees—this is 1.9 times higher than the innovation-driven economies’ average and substantially higher than the USA (4.6 percent) and UK (2.6 percent). Furthermore, 3.5 percent expect medium–high growth (larger than 6 employees), which is higher than the UK (2.5 percent) and one-and-a-half that of the innovation-driven economies’ average (2.2 percent). However, this is substantially less than the USA (4.3 percent).

### 6.2 Innovativeness

Innovative businesses are regarded as agents of change as they introduce new products or services into the market, thereby fostering product variety for

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customers and contributing to national competitiveness. Therefore, an important dimension of innovativeness is the level of novelty from the perspective of the market and the industry. As such, GEM adopts a relative and context-dependent assessment of the innovativeness of the new business opportunity. GEM asks entrepreneurs whether their product or service is new to some or all customers and whether few or no other businesses offer the same product.

Figure 17 presents the rate of innovative early-stage entrepreneurial activity. With 5.2 percent of the adult population starting firms with innovative products that are new to some or all customers, Australia is about 1.8 times higher on average on both these metrics when compared to the average for innovation-driven economies (2.9 percent), the UK (2.9 percent) and is slightly ahead of the USA (4.7 percent). However, as shown, Australia lags behind and the international leader Canada (6.8 percent).

Figure 17: Innovative early-stage entrepreneurial activity, 2016


6.3 Motivation

Entrepreneurs have different motives for entering entrepreneurship. An important distinction is made between individuals who are pushed into entrepreneurship because they lack other job alternatives and individuals who are pulled into entrepreneurship because of lucrative business opportunities.

Exploring this distinction, Figure 18 shows the distribution of necessity-driven entrepreneurship (no better choices for work), opportunity-driven
entrepreneurship (taking advantage of a business opportunity) or improvement-driven opportunity (seeking greater independence or income by taking advantage of a business opportunity). On average, for each business started in Australia out of the necessity to earn a living due to a lack of alternatives for the founder, there are about six other businesses started where the founders specifically want to take advantage of a business opportunity in order to increase their personal income or enjoy greater independence. While this ratio is than in the USA and UK (11:1 and 7:1) but it is substantially higher than the average of other innovation-driven economies (3:1).

Figure 18: Motives of early-stage entrepreneurs, 2016


6.4 Internationalisation

Internationalisation measures the extent to which early-stage entrepreneurs sell to customers outside their domestic market. In general, serving international markets signals both high ambitions and international competitiveness of a country’s early-stage entrepreneurs.

Unlike the other dimensions of the impact of our early-stage entrepreneurs, Australian entrepreneurs rank below average with respect to international orientation. As illustrated in Figure 19, just 14.85 percent aim for a substantial share of revenue (>25 percent) from international markets, compared with an average of 25.3 percent for other innovation-driven economies. However, we
must keep in mind that innovation-driven economies in GEM are dominated by European countries. The USA, with two countries on its borders, performs even more poorly than Australia with only 10.2 percent of early-stage entrepreneurs pursuing ventures with over 25 percent of revenue outside the domestic market. Most likely the low percentage of early-stage venturing associated with substantial internationalisation objectives is due to the comparatively large distances between Australia and its closest international markets.

Figure 19: Percentage of early-stage entrepreneurs (TEA) by international orientation, 2016


7. Australia’s entrepreneurship profile

Entrepreneurs do not form a homogeneous group, differing between each other in many respects. Therefore, a simple count of entrepreneurs does not fully describe the diverse profile of entrepreneurship and its impact on the Australian economy. This section looks at two characteristics of Australia’s entrepreneurship profile:

1. **Industry**: the distribution of entrepreneurial activity across key economic sectors
2. **Inclusiveness**: the distribution of entrepreneurs by gender and age.

7.1 **Industry sector**

The distribution of early-stage entrepreneurs by industry is shown in Figure 20. In general the sectorial distribution of Australian businesses is comparable with
other innovation-driven economies. Most new Australian firms are retail-wholesale-transport (34 percent); professional services, information communications and technology (ICT) or finance (27 percent); or consumer-oriented (34 percent). This profile is similar to other innovation-driven economies. As Australia is rich in natural resources and agriculture, new primary production businesses (17 percent) are relatively common when compared to other innovation-driven economies (average 10 percent). However, Australia, at 4.8 percent, lags a little behind other innovation-driven economies in terms of the percentage of manufacturing start-ups (6.9 percent). That said, our start-up rate in manufacturing in relation to the size of the adult population is on par to the average for innovation-driven economies (0.71 vs. 0.85 percent) due to our relatively high TEA rate.

![Figure 20: Sector distribution of Total Early-stage Entrepreneurial Activity (TEA), 2016](source)

7.2 Inclusiveness

Inclusiveness refers to access to entrepreneurial opportunities within a society. If two individuals have equal skills and resources then access to entrepreneurial opportunities should ideally not be discriminated by individual characteristics such as gender and age.

7.2.1 Women’s participation in entrepreneurship

Figure 21 presents the TEA rate for the male and female adult population across the innovation-driven economies. Approximately 11.5 percent of adult females are involved in setting up a business or have recently done so. In absolute terms, Australia ranks third behind only Canada (13.3 percent) and
Estonia (11.7 percent) in terms of female entrepreneurship among the innovation-driven economies, which in itself is encouraging. However, we also observe a small but significant gender gap with a male TEA prevalence of 16.4 percent. Hence, female entrepreneurial participation in Australia is only 65 percent that of males. Although such a gender gap is commonly observed around the globe we also observe countries, such as Spain, where male and female entrepreneurial participation is approximately equal (albeit at a substantially lower level than in Australia).

Figure 21: Comparison of female and male early stage entrepreneurship (TEA) rates, 2016

![Image of bar chart comparing female and male TEA rates across different countries in 2016.]


7.2.2 Age distribution of early-stage entrepreneurship

As Figure 22 reveals, early-stage entrepreneurship is more common in the mid-career ages of 25–54 years than in either the younger or older age groups. This pattern is consistent across all parts of the globe.
Australia’s profile of start-up activity (TEA) is particularly strong in the older age groups. With 11.5 percent of 55-64 year olds engaged in early stage entrepreneurship, Australia ranked #1 amongst developed economies, just higher than Canada (10.7 percent) but substantially higher than both the USA (7.3 percent) and the developed economies average (5.9 percent). We also rank second in the 45-54 age bracket (16.1 percent) narrowly behind Canada (16.2 percent).

While entrepreneurial participation for older Australians is very strong, the same is not true for Australian youth. Comparing our TEA age profile with that of the USA, we see that entrepreneurial prevalence is substantially higher in Australia for the older age categories (45-54 and 55-64), similar in the mid age groups but lower than the USA for the younger 18-24 age group. In the youngest age bracket (18-24) at 9.4 percent entrepreneurial participation is substantially lower than some other countries such as Estonia (24.6 percent), The Netherlands (18.8 percent) and Canada (14.6 percent).
8. Australia’s institutional context (entrepreneurship framework conditions)

The GEM conceptual model presented in Section 1 identifies nine institutional or framework conditions, such as education and cultural support, which in turn impact the quantity and quality of entrepreneurial activity in each country. In order to assess these framework conditions each GEM national team interviewed four experts for each topic — 36 experts in total (see Table 3 for those who opted to be named in this report). Please note that the following analysis is based on a small and non-random sample, therefore the results are not representative and must be interpreted with care.

Figure 23 illustrates the following framework conditions: a) finance and entrepreneurship, b) general entrepreneurship policies, c) national regulation policies, d) government entrepreneurship programs, e) entrepreneurship education in primary and secondary schools, f) post-school entrepreneurship education, g) research and development (R&D) transfer, h) professional and commercial support for entrepreneurship, i) internal market dynamics (the level of change in markets from year to year), j) internal market burdens or entry regulation (the extent to which new firms are free to enter existing markets), k) access to physical infrastructure, and l) cultural support for entrepreneurship.

Compared with the average for the various framework conditions among innovation-driven economies Australia scores relatively similarly on most dimensions. Australia scores relatively highly in only burdens or entry regulation (the extent to which new firms are free to enter existing markets). Australia scores relatively lower with respect to government entrepreneurship programs, entrepreneurial education post school and R&D transfer.
Figure 23: Expert ratings on entrepreneurship framework conditions, 2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Alan Jones</td>
<td>Startup Evangelist, BlueChilli</td>
</tr>
<tr>
<td>Alex McCauley</td>
<td>CEO, StartupAUS</td>
</tr>
<tr>
<td>Andrew Tulloch</td>
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<tr>
<td>Andy Lamb</td>
<td>CEO and Entrepreneur in Residence</td>
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<tr>
<td>Arthur Lau</td>
<td>Senior Policy Officer, Department of Industry, Innovation and Science</td>
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<tr>
<td>Brent Watts</td>
<td>Director, Innovation at QUT bluebox</td>
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<td>Brodie McCulloch</td>
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<td>Dr Buzz Palmer</td>
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<tr>
<td>Rob Shannon</td>
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9. Conclusions and policy implications

Overall, this report paints a positive picture of entrepreneurial conditions and activity in Australia. With 14.6 percent of the adult population involved in setting up a new business or owning a newly-founded business (TEA rate) in 2016, Australia is tracking higher than the USA (12.6 percent), with only Canada (16.7 percent) and Estonia (16.2 percent) having higher rates of entrepreneurship among the innovation-driven (developed) economies. This places us well ahead of the average of developed economies (12.3 percent) and countries like the UK (8.8 percent). The Australian prevalence of entrepreneurial activity is higher than in 2015 (12.8 percent).

The findings also indicate that it is not only independent entrepreneurship that is thriving in Australia. The rate of EEA—the number of employees leading innovative efforts for their employers—was very high. With an EEA prevalence of 9.0 percent of the adult population, Australia is ranked first amongst all 64 economies in the GEM study, substantially ahead of comparative countries such as the USA and UK.

The findings also suggest that not only is the quantity of entrepreneurial activity in Australia relatively high, but the quality is also strong by world standards. Compared with the average of developed economies, Australia has high levels of both innovative start-ups and high ambition business start-ups in terms of expected employees. What drives this high quantity and quality of entrepreneurship in Australia? The GEM findings suggest that it is a combination of both business opportunities and entrepreneurial skills. Approximately 49 percent of the Australian population identify opportunities for a start-up venture and 52 percent believe that they have the necessary skills to start a business—well above the average of other developed economies. The ‘visibility’ and desirability of entrepreneurship also appears to be positive in Australia, is comparable to and is likely to serve as a catalyst for the strong rates of entrepreneurial activity reported. A large majority (74.3 percent) of respondents reported positive media attention and a high status of entrepreneurship, which serve to provide successful role models for prospective entrepreneurs.

In 2015 we reported that necessity-driven entrepreneurship (2.3 percent necessity-based TEA) had risen from historic-average levels (approximately 1.6 percent). It is pleasing to note that in 2016 this prevalence has returned to the historic–average level (2.4 percent).

Despite these positive features of Australia’s entrepreneurship profile, several aspects of the 2016 GEM findings raise particular concerns.

First, while Australia’s female participation in entrepreneurship is comparatively high and ranked fourth across developed economies, the Female TEA of 11.5 percent remains considerably less than the Male TEA of 17.7 percent. This discrepancy is somewhat high, particularly in light of countries such as Spain and Greece that have almost equal male and female entrepreneurial participation (albeit at lower levels than Australia). It is important that the institutional environment in Australia continues to support and encourage female entrepreneurship, and works towards decreasing gender imbalance.
Second, fear of failure as a reason for not planning to start a business remains comparatively high in Australia, at 42.9 percent, compared with the average of other developed economies of 39.8 percent. While entrepreneurship prevalence continues to be comparatively strong in Australia, there may be opportunities to improve entrepreneurial participation. It is vital to ensure that the strong level of perceived entrepreneurial opportunities and capabilities of Australians continue to be successfully translated into new ventures. This presents policymakers, support agencies and educators with opportunities to provide skill and knowledge development that is specifically directed towards new venture start-ups.

Third, our generally high levels of entrepreneurial activity relative to benchmark economies do not seem to translate to youth entrepreneurship. For example, while TEA age is substantially higher in Australia compared to the USA for the older age categories, at 9.4 percent it is lower than the USA (10.7 percent) for the younger 18-24 age group. This is substantially lower than some other countries such as Estonia (24.6 percent), The Netherlands (18.8 percent) and Canada (14.6 percent). An earlier GEM report\(^\text{18}\) revealed that school-aged entrepreneurial education in Australia, although increasing, lags behind the global average and that this is likely to be a contributing factor to lower youth entrepreneurship rates in Australia.

Fourth, Australian entrepreneurship appears to compare poorly to other developed nations with respect to the level of international opportunities being pursued. Although this is undoubtedly due in part to our geographic isolation from international markets, it remains an open question as to why and how it can be improved. Given the greater focus on globalisation and reduction of trade barriers, improvement in the international orientation of Australia’s entrepreneurs may be possible.

Finally, in interpreting the findings of this report it is important that we acknowledge that most start-ups are of a modest nature in terms of overall growth expectations and innovativeness. The typical new firm starts small and remains small. We stress that since GEM is a study of the population of all businesses, the numbers of high-growth start-ups captured in the study are too small to make any direct assessment of high-growth ventures in Australia. Nonetheless, while the impact of a single new firm might be small, collectively they are crucial for the growth and development of our economy. Furthermore, the greater the overall pool of start-ups, the larger the number of high-potential start-ups. It is these high-potential start-ups that arguably have the greatest impact on the economy. To support this we are pleased to see that the indicators of high-potential entrepreneurship in Australia are positive. These indicators, including expected employment growth, innovativeness and opportunity versus necessity motivations of new businesses, all compared positively with other developed economies.

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