

Who are business owners and what are they doing?

Jonathan Cribb, Helen Miller and Thomas Pope

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Abstract

Business owners have been the fastest-growing part of the UK labour force since at least 2000. Between 2000–01 and 2015–16, the number of employees grew by 15%, while self-employment (including those operating as a sole trader or as a partner in a partnership) grew by 25% and the number of directors of companies with at most two directors more than doubled. The number of new businesses created in the UK between 2007–08 and 2015–16 was higher than in any other OECD country.

This is an important labour market trend and is often hailed as a success because small businesses and start-ups are commonly viewed as the engines of growth. This is questionable in light of evidence that the UK has a long tail of low-productivity firms. However, to date, our understanding of business owners has been limited because they are not well captured in traditional survey data sources. Learning more about this group is crucial for understanding labour market trends better and informing public policy as it relates to business owners.

In this report, we use the universe of business owners' administrative tax records provided by HM Revenue and Customs (HMRC) to learn more about business owners and their businesses than has previously been possible using survey data. Specifically, using these data, this report documents the numbers, characteristics, incomes and business activities of business owner-managers in the UK. We track the same business owners over time – something that has not been possible before – and use this to analyse patterns of business start-up and closure and to explain substantial falls in sole trader incomes since 2008

Keywords: self-employment, business ownership, entrepreneurship

JEL classification: L26, J21, J31

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Preface

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Executive summary

Business owners have been the fastest-growing part of the UK labour force since at least 2000. Between 2000–01 and 2015–16, the number of employees grew by 15%, while self-employment (including those operating as a sole trader or as a partner in a partnership) grew by 25% and the number of directors of companies with at most two directors more than doubled. The number of new businesses created in the UK between 2007–08 and 2015–16 was higher than in any other OECD country.

This is an important labour market trend and is often hailed as a success because small businesses and start-ups are commonly viewed as the engines of growth. This is questionable in light of evidence that the UK has a long tail of low-productivity firms. However, to date, our understanding of business owners has been limited because they are not well captured in traditional survey data sources. Learning more about this group is crucial for understanding labour market trends better and informing public policy as it relates to business owners.

In this report, we use the universe of business owners' administrative tax records provided by HM Revenue and Customs (HMRC) to learn more about business owners and their businesses than has previously been possible using survey data. Specifically, using these data, this report documents the numbers, characteristics, incomes and business activities of business owner-managers in the UK. We track the same business owners over time – something that has not been possible before – and use this to analyse patterns of business start-up and closure and to explain substantial falls in sole trader incomes since 2008.

Key findings

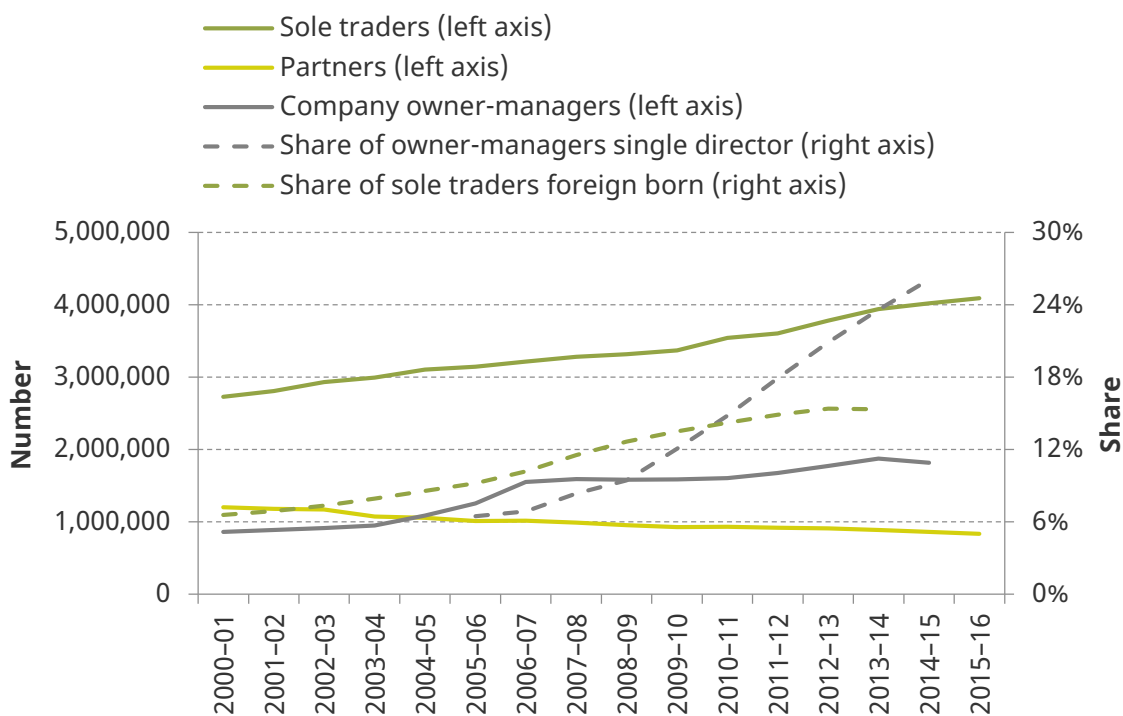
Number of business owners

- **In 2015–16, there were 4.9 million people operating through self-employment, up from 3.9 million in 2000–01 (Figure E.1).** Growth is driven entirely by sole traders; the number of partners (owners of multiple-owner unincorporated businesses) has been falling. The number of foreign-born sole traders more than doubled between 2007–08 and 2013–14, and accounted for one-third of net growth in the sole trader population over that period.
- **In 2014–15, there were 1.8 million company owner-managers, up from 0.9 million in 2000–01 (Figure E.1).** All of the growth in this population since 2007–08 is accounted for by owner-managers of one-director companies; this is the fastest-growing legal form.

Business owners' characteristics

- **Business owners are disproportionately men and, on average, are older than employees.** Almost 70% of owners of single-owner businesses are men. The majority of businesses with two partners or directors have one male and one female partner or director respectively; it is highly likely that such configurations reflect a high prevalence of spouses as business partners.

Figure E.1. Number of business owners



Note: Company owner-managers are directors of companies with one or two directors. ‘All business owners’ include sole traders, partners and company owner-managers; see Appendix A for precise definitions. We have data on company owner-managers up to 2014-15. The share of sole traders who are foreign born is shown up to 2013-14 (the latest year for which we have those data). ‘Share of owner-managers single director’ shows the share of company owner-managers (directors of one- or two-director companies) who are directors of one-director companies from 2005-06.

Source: Data for business owners from authors’ calculations based on HMRC administrative data sets. Number of employees from the Labour Force Survey; ONS series MGRZ.

- **Combining business and employment activity is common but not new.** One-quarter of the self-employed also have some income from employment, but this share has been remarkably stable over time (it was 25%, 24% and 25% in 2000-01, 2007-08 and 2015-16 respectively).

Business owners’ incomes

- **Average sole trader incomes are very low and have been falling.** The mean annual taxable income (from all sources) of sole traders was £21,000 in 2015-16 (£10,000 below that of employees) and 36% have taxable income below £10,000. The income sole traders derive from their business (profit) is even lower on average (£12,100) and has fallen by £3,300 (21%) in real terms since 2007-08.
- **Partners are significantly over-represented in the top 1% of all income tax payers.** 7% of all partners are in the top 1% of income tax payers and together they earn 60% of all partnership income. This is an extremely top-heavy distribution of income, reflecting both the very high incomes of some partners and the very low incomes of many others.
- **Company owner-managers have higher average incomes than the self-employed and retain income in their companies.** Mean annual taxable income of owner-

managers is £43,000, and 2% are in the top 1% of taxpayers. Many owner-managers are earning more income each year than they take out of their companies (i.e. more than their personal taxable income suggests), because they are incentivised by the tax system to, and do, retain profits within the company.

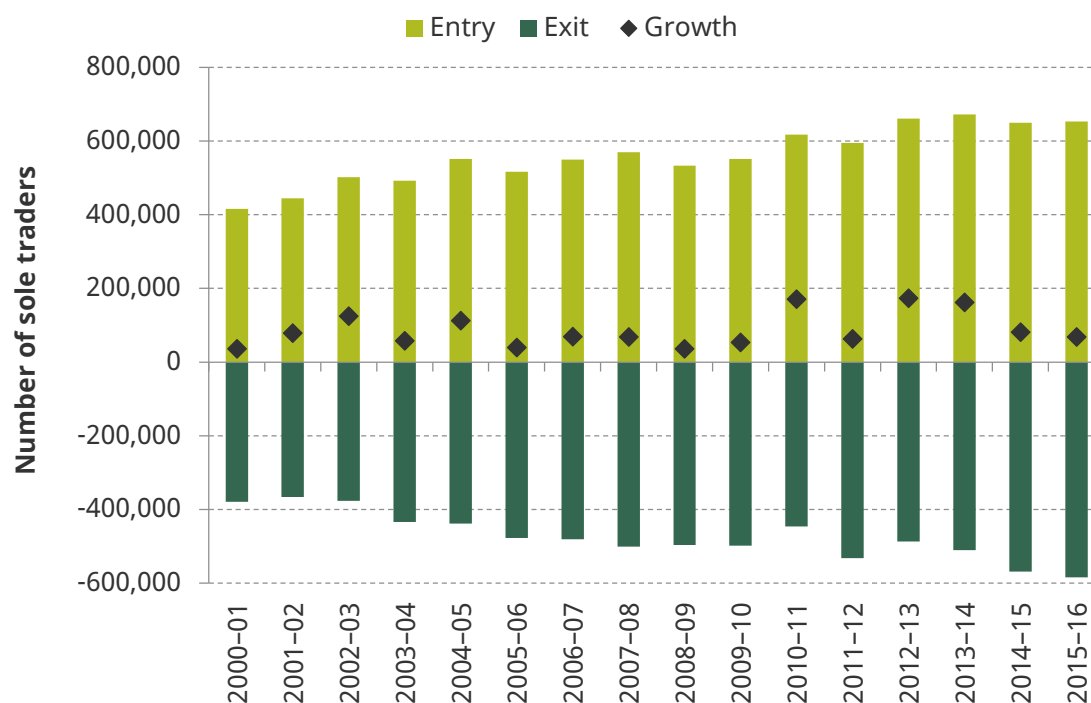
Investment and employment

- **Employment and investment among sole traders is low.** 23% of sole traders have total business costs of less than £1,000 and 70% have total business costs below £10,000. Most sole trader businesses are not employing anyone else and less than a quarter make any use of deductions for capital investment.
- **Owner-managed companies have higher costs than sole traders on average, but contain a wide range of business models.** There is substantial variation in the business costs of owner-managed companies: 25% have costs below £10,000 and 21% have costs above £100,000. There are systematic differences across industries that likely reflect different business models; costs are lower in business services, financial services and the medical industry, where business income is more likely to predominantly reflect a return to the owner-manager's labour.

Business start-up and closure

- **Rates of entry and exit are high, especially for sole traders.** For example, between 2014–15 and 2015–16, the sole trader population grew by almost 70,000, but this was the net effect of 650,000 sole traders starting up and 580,000 exiting (Figure E.2). Rates

Figure E.2. Entry, exit and net growth in sole trader population



Note: 'Entry' in any financial year is the number of sole traders in business in that year who were not in business the year before. 'Exit' shows the number who were in business the year before but not in the current year. The diamonds show the net effects of entry and exit.

Source: Authors' calculations based on HMRC administrative data sets.

of entry and exit have been high since at least the turn of the millennium, and imply a fluid transition between business ownership and other labour market statuses.

- **Many more people will have tried their hand at business ownership at some point than are currently business owners.** Between 2011–12 and 2015–16, 6 million people were sole traders for at least one year, and only 2.4 million were sole traders in all five years.
- **Most new sole trader businesses close relatively quickly.** 20% of newly set-up sole traders are not trading after their first year; 60% have ceased trading by year 5 and 80% have ceased after 12 years.
- **A minority of sole trader business ‘closures’ represent incorporation.** The tax advantages to incorporation are higher for higher-income sole traders. Around 30% of company owner-managers had sole trader income in at least one year prior to their company being established, but this only represents 10% of sole trader closures since 1997–98.
- **All else equal, sole traders who are aged 35–54, have been trading for longer, and have higher profits and/or sales are more likely to keep trading for an extra year.**

The fall in sole trader profits since 2008

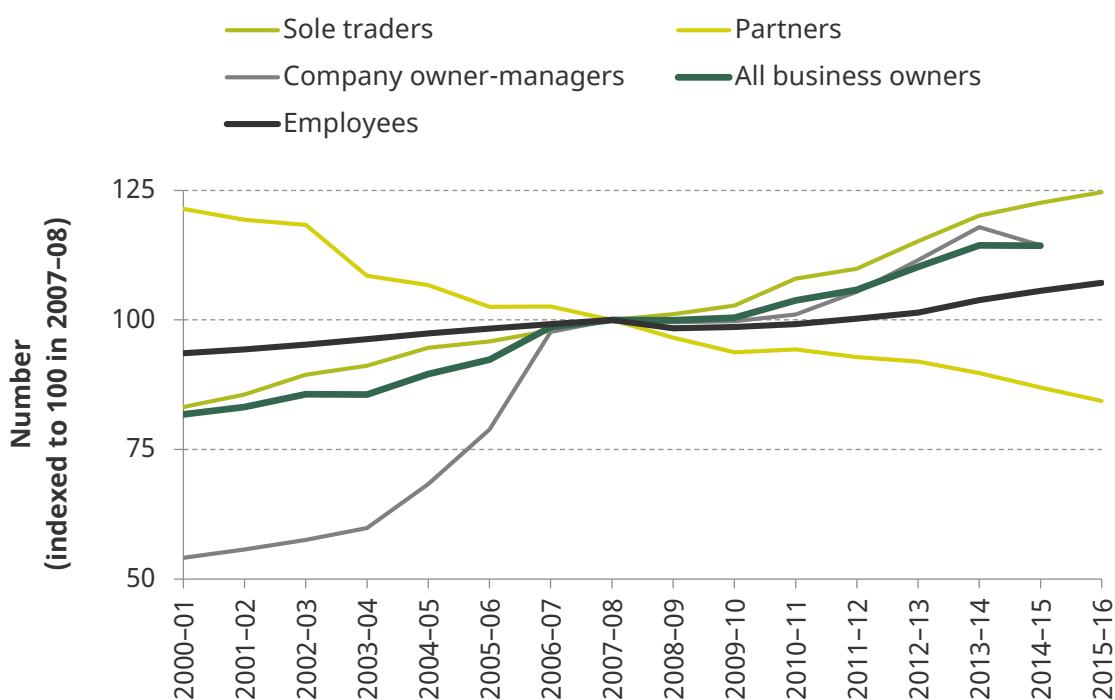
- **Aggregate profit of all sole traders fell 2% in real terms between the financial crisis and 2015–16, despite there being 25% (800,000) more sole traders.** This resulted from very large falls in average sole trader profits. These falls in profit are consequential: they represent falling living standards for individuals and households, and falling value added from the sole trader sector of the economy.
- **A higher fraction of sole traders have very low profits than before the financial crisis; the fraction with profits over £40,000 has halved.** 14% of sole traders have profits of between £0 and £2,000, up from 12% in 2007–08. 4% have profits above £40,000, down from 7% in 2007–08.
- **Large falls in average profits are explained by ‘stayers’ – those who remain in self-employment – rather than by new entrants or those who exit.** Falls in average profit were largest in the period 2007–08 to 2011–12; over these four years, mean (median) profits fell by 23% (16%). During this period, both entrants and those who exited had lower-than-average profit (pulling the average down and up respectively) but this was also true before the recession. What stands out between 2007–08 and 2011–12 is that the profits of ‘stayers’ fell by £2,500 (16%), when ordinarily – both before and after this period – the profits of stayers rise over time.

1. Introduction

Business owners have been the fastest-growing part of the UK labour force since at least 2000. Growth has been particularly strong among incorporated businesses; the number of directors of companies with only one or two directors has doubled since 2000-01 (Figure 1.1). Overall growth in the number of new businesses created since 2007 is higher in the UK than in any other OECD country (OECD, 2016).¹

In this report, we use the universe of business owners' tax records to shed new light on the population of people who both own and manage a business – a group we refer to as business owner-managers. Business owner-managers in the UK operate in one of two broad legal forms. The majority (73%) are *unincorporated* – also referred to as self-employed or, more specifically, 'sole traders' ('partnerships') when there is a single (more than one) owner. The remainder are *incorporated*, meaning they operate through a company. Companies encompass everything from single-person companies to multinationals. In what follows, we focus on companies with either one or two directors and refer to these and to sole traders as 'closely held'.

Figure 1.1. Growth in the UK labour force since 2000-01



Note: Company owner-managers are directors of companies with one or two directors. 'All business owners' include sole traders, partners and company owner-managers; see Appendix A for precise definitions. We have data on company owner-managers up to 2014-15.

Source: Data for business owners from authors' calculations based on HMRC administrative data sets. Number of employees from the Labour Force Survey; ONS series MGRZ.

¹ Growth measured as a percentage change.

We study the self-assessment tax records of all business owner-managers. For individuals running companies, we also use a match between the personal tax records of the owners and the corporate tax records of the company to construct a complete picture of individuals' income and business activities. These data, which have only recently been made available by HM Revenue and Customs (HMRC), allow us to learn more about business owners than was previously possible using survey data. Specifically, we can say much more about the precise legal forms in which people operate, the amount and source of income generated and the activities of the business. We are also able to track individuals over time (from 1997–98 to 2015–16) and therefore to study the nature of changes in the population. Appendix A describes the data.

The rapid growth in business ownership in the UK is often held up as a success story – for example, in the UK's 2017 Industrial Strategy (HM Government, 2017). More broadly, small business is regularly described as the 'engine of growth and employment' and this view has been used to support widespread tax breaks for business owners relative to employees (Adam, Miller and Pope, 2017). Our results challenge this narrative.

The business owner-manager population has always encompassed a large variety of business models that span the entire income distribution. People using a business legal form (rather than being employees of another company, for example) include everyone from taxi drivers, plumbers and local shop owners, to IT consultants, doctors and lawyers, to those running genuinely innovative businesses that will go on to grow and employ others. However, to the extent that it is possible to describe the stereotypical closely held business, it is one that is likely to survive for less than five years, that creates an income much below the average for employees and that neither invests nor employs others.

Sole traders have particularly low incomes: mean income in 2015–16 was £21,000 – over £10,000 lower than for employees. After excluding income from employment, investments and pensions, mean income from business activities alone (i.e. business profit) is just £12,100. Mean profits have fallen by 21% since 2007–08 and remarkably – given that the number of sole traders has grown by 800,000 – the aggregate profit of sole traders was lower in 2015–16 than it was in 2007–08. The finding that most self-employed businesses create low profits is in line with evidence that the UK has a long tail of low-productivity businesses (Andrews, Criscuolo and Gal, 2016).

The growth in sole traders and large falls in mean incomes are not confined to the so-called 'gig economy'.² Self-employment has been growing faster than employment since 1999–2000 and mean profits started falling from 2002–03; the rise of digital platforms is more recent. Growth in business ownership and falls in income are also widespread across industries (not only in those associated with 'gig' work).

More broadly, recent trends in sole trader income are not explained by changes in the characteristics of businesses that enter or exit self-employment. Annual entry and exit are very high. For example, between 2014–15 and 2015–16, 650,000 sole traders started trading and 580,000 stopped (such that the net increase in sole traders was around 70,000). 60% of sole traders have ceased trading within five years. In principle, these patterns mean that the characteristics of the self-employed can change quickly. However,

² Broadly, this refers to people who operate through a business structure (usually self-employment) rather than through an employment contract, perform work that can be broken down into separate tasks ('gigs') and use digital platforms to be matched with customers. Uber is a well-known example of this.

the overall fall in profits of the self-employed since the recession was driven by sharp falls in profits among those that remain in business. There are some very high-income individuals within the business owner-manager population. Notably, partnerships are over-represented at the top of the income distribution: 7% of all partners are in the top 1% of income tax payers and together they earn 60% of all partnership income. The mean income of partners in the financial services industry is £308,000, with 37% of partners in that industry in the top 1% of taxpayers.

Incomes are also higher on average for those running companies; mean income for a company owner-manager is £43,000, and 2% are in the top 1% of taxpayers. Many owner-managers are earning more income each year than they take out of their companies (i.e. more than their personal taxable income suggests), because they retain profits within the company, often in order to reduce tax liability.

Across all closely held businesses, investment and employment are low on average. For example, less than a quarter of sole traders make any use of deductions for capital investment in plant and machinery. There is more variation within the population of company owner-managers. A significant minority have substantial costs, including substantial investments. There are systematic differences across industries that likely reflect different business models; costs are lower in business services, financial services and the medical industry, where business income is more likely to predominantly reflect a return to the owner-manager's labour.

Many of the patterns we see, including how businesses are organised and how income is taken, are related to the UK tax structure (Adam, Miller and Pope, 2017). Broadly, lower tax rates for business owners relative to employees provide a strong incentive to operate through a business structure. For higher-income individuals, there is a particularly strong tax incentive to incorporate because doing so allows income to be taken in the form of dividends or capital gains, which are taxed at lower rates than employment or self-employment income. The corporate form, which requires greater reporting of activities, also facilitates income splitting between spouses and income shifting across time, both of which can be used to further reduce tax liability.

Although those working in professional services, including partners within large firms, do not represent what many imagine as business owners, they reflect a substantial share of that group. These individuals also benefit from the lower taxes that are levied on the self-employed. For example, a job performed by a partner earning £308,000 (the average income in financial services) would attract over £20,000 more in income tax and National Insurance contributions if it were instead performed by an employee.³

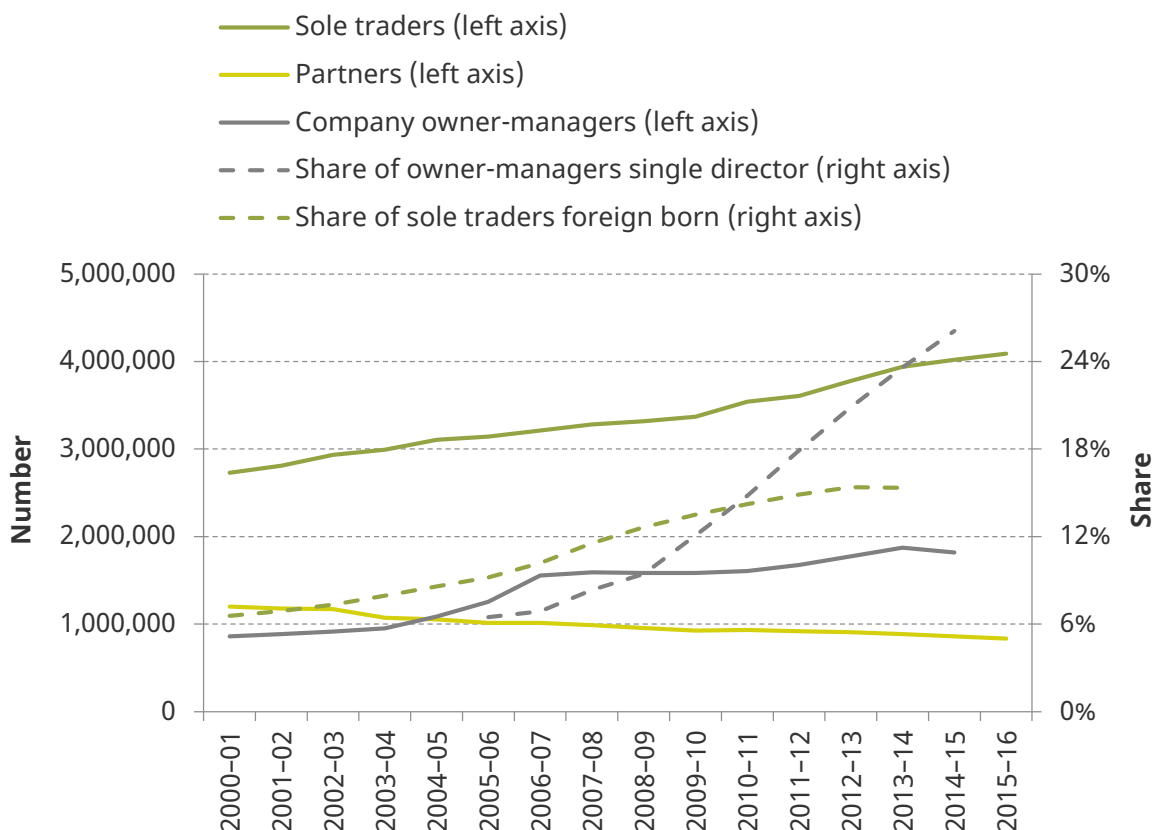
³ This calculation assumes that the total income generated and paid out is the same for the partner and the employee. This means partnership income of £308,000 equates to a salary plus employer National Insurance contributions of £308,000 for the employee.

2. Business owners and their activities

In 2015–16, there were 4.9 million people operating through self-employment, up from 3.9 million in 2000–01. Sole traders are the largest group of business owners (4.1 million) and have been growing faster than employees since 1999–2000. In contrast, there are actually fewer partners in 2015–16 than there were in 2007–08. In 2014–15, the most recent year of corporate data, there were 1.8 million company owner-managers (from companies with either one or two directors), up from 0.9 million in 2000–01 (see Figure 2.1). The fastest-growing legal form is company owner-managers with a sole director (most of whom also have only one shareholder) – these businesses have accounted for all of the growth in owner-managed companies since 2005–06, when a legal change made being a one-director company possible.

In this chapter, we examine the key characteristics of business owners in different legal forms, including how much they earn, which industries they operate in and the extent to which they invest in their businesses.

Figure 2.1. Number of business owners



Note: See note to Figure 1.1. The share of sole traders who are foreign born is shown up to 2013–14 (the latest year for which we have those data). ‘Share of owner-managers single director’ shows the share of company owner-managers (directors of one- or two-director companies) who are directors of one-director companies from 2005–06 (when a legal change made it possible to be a one-director company).

Source: Authors’ calculations using HMRC administrative data sets.

2.1 The characteristics of business owners

Business owners are disproportionately older males and increasingly foreign born

Table 2.1 sets out the characteristics of employees and business owners in different legal forms. On average, business owners are more likely than employees to be male. This is

Table 2.1. Characteristics of business owners

Legal form	Number in latest year	% male	Average age	% foreign born	% with income from other employment	% with more income from employment than from business
Employee	26.6m	51%	40	16%	N/A	N/A
Self-employed	4.9m	66%	47	14%	25%	18%
<i>of which:</i>						
Sole trader	4.1m	67%	46	15%	25%	18%
Partner	830,000	60%	53	9%	25%	18%
<i>of which:</i>						
In two-person partnership	570,000	58%	53	8%	25%	19%
Company owner-manager	1.8m*	72%	50	11%	13%	N/A
<i>of which:</i>						
Director of one-director company	470,000*	75%	48	17%	12%	N/A
Director of two-director company	1.3m*	70%	48	9%	13%	N/A

*Company owner-manager data are based on the subsample of directors where the personal record of the director is matched to the corporate record of the company. In 2013–14, this is 760,000, of whom 190,000 are directors of one-director companies. The exception to this is ‘number in latest year’, which refers to the total number of company owner-managers in 2014–15

Note: For employees, sole traders and partners, figures refer to 2015–16 except for % foreign born, which refers to 2013–14 (the most recent year for which we have this information). For company owner-managers, all figures refer to 2013–14. Appendix A explains how we measure whether business owners have employment income.

Source: Data on employees from Labour Force Survey (Office for National Statistics, Social Survey Division, and Northern Ireland Statistics & Research Agency, Central Survey Unit, 2017). Data on business owners from authors’ calculations based on HMRC administrative data sets.

particularly true for those operating as sole traders or sole company directors. The proportion of business owners who are female is significantly higher in businesses with two partners or directors. This is because **more than 70% of two-person partnerships and more than half of two-director companies have one male and one female partner or director respectively**; the vast majority of other two-person businesses have two male owners. It is highly likely that such configurations reflect a high prevalence of spouses as business partners.⁴ There can be tax advantages to spouses (or family members) operating as business partners because it can allow a couple to use two personal allowances (the amounts that can be earned tax free) and to reduce the amount of income subject to higher tax rates by splitting income across the partners.

The average age of an employee is 40 and almost 40% are under 35. Business owners are older on average. For example, the average age of a sole trader is 46 and only 24% are under 35. The older age structure of business owners, combined with the ageing population, has been identified as one driver of increased numbers of self-employed workers in the UK (Tatomir, 2015). Among the 650,000 people setting up a sole trader business in 2015–16, the average age was 37 – a number which has been stable over time and which implies that many people spend time as employees before starting a business.

The number of sole traders who are foreign born has more than doubled since 2007–08 (from 220,000 to 580,000 in 2013–14), with growth in this population accounting for one-third of the substantial net increase in the overall size of the sole trader population over that time (Figure 2.1). In 2013–14, 15% of sole traders were born abroad, compared with 9% of partners and 11% of owner-managers. All of these are lower than the 16% of employees who were born abroad.⁵

Business owners operate in all industries

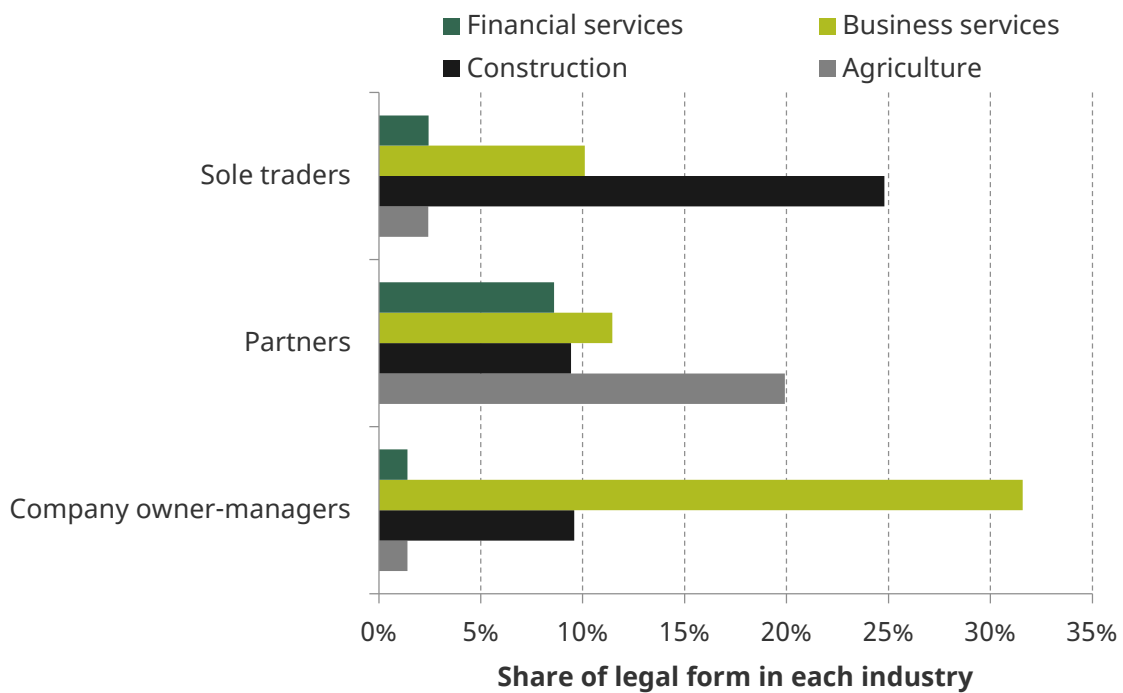
Business owner-managers are found in all sectors of the economy. There are, however, some types of business forms that are more common in some industries. Figure 2.2 shows the most common industries in which business owners operate:

- 25% of all (and 40% of male) sole traders are based in construction – a category including independent trades’ people and contractors working on large projects.
- 20% of partners are based in agriculture, while almost 10% are based in financial services. In part, this reflects industry norms. Partly for historical reasons, farms and many hedge funds, accounting firms and legal practices often operate as partnerships.
- Business services – including, among others, accountants, lawyers and consultants – make up around 30% of company owner-managers.⁶

⁴ In principle, tax records can be used to determine whether business partners reside at the same address. We do not have access to this information.

⁵ We identify foreign-born people based on the sequencing of National Insurance numbers. Ordinarily, an NI number would be assigned at the age of 16, or at the point when the person moves to the UK to work. If the NI number sequencing indicates that someone has received their NI number after the age of 16, we assign them as foreign born. We do not know from these data where they were born. 2013–14 is the most recent year for which we have information on NI number for the full population of self-assessed taxpayers.

⁶ Industry shares are very similar for both one-director companies and two-director companies. Details are provided in Appendix Table B.3.

Figure 2.2. Share of business owner-managers in selected industries

Note: The full set of industries is shown in Appendix Table B.3. Industries shown here account for 40% of sole traders, 49% of partners and 44% of company owner-managers. Data for sole traders and partners are for 2015–16; data for owner-managers are for 2014–15.

Source: Authors' calculations based on HMRC administrative data sets.

The shares in Figure 2.2 have been stable over time, and look similar to the industry shares in 2007–08 and 2003–04.⁷

Combining business and employment income is common but not new

One-quarter of the self-employed also have some income from employment (i.e. excluding their business) in a given year. Around 18% of the self-employed record income from employment that is greater than the income they receive from their business. Company owner-managers are half as likely to have employment income beyond that they pay themselves from their company.

The prevalence of people splitting their labour market time between their own business and a job in a third-party company (either or both of which may be part time) is consistent with the types of working practice commonly described in relation to the 'gig economy'. For example, people may supplement a main job with additional income earned by working on a self-employed basis through an online platform.⁸ However, **the proportion of sole traders who also record employment income has been remarkably stable since the early 2000s** (it was 25% in 2000–01, 24% in 2007–08 and 25% in 2015–16). To the

⁷ Details are provided in Appendix Tables B.1–B.3.

⁸ It should be noted that receiving income from a business separately from employment within a year could reflect work across both forms at (roughly) the same time, or it could reflect employment in a tax year prior to starting a business (or after dissolving the business), or both.

extent that there has been growth in the gig economy, it therefore cannot be clearly seen in the propensity of business owners to earn income from multiple sources.

2.2 Business owners' incomes

From HMRC tax records, we measure owners' annual taxable income. This will be net of tax-deductible business expenses, including deductions for investment and the costs of employing others (we return to these in Section 2.3) and deductions of pension contributions for owner-managers.⁹ Below we consider both total income from all sources (i.e. including employment, investment and pension incomes where present) and, where possible, income that comes purely from an individual's own business.

For comparison, the mean (median) taxable income of UK employees – as measured by the Department for Work and Pensions (DWP)'s Family Resources Survey – in 2015–16 was £31,200 (£22,700). A taxable income of over £170,000 puts a taxpayer in the top 1% of all UK income tax payers (roughly the top 0.6% of UK adults).¹⁰

As shown in Table 2.2, the median total income of the self-employed (£14,000) is much lower than that of employees, though because of a relatively small number of very high earners, the mean income of the self-employed is similar to that for employees (£30,000). Owner-managers earn more than employees at the mean and median.

Average sole trader incomes are very low and have been falling

On average, sole traders have particularly low average incomes: median income from *all sources* (including employment) in 2015–16 was just £13,000, with 36% (1.5 million people) earning below £10,000 and therefore below the personal allowance (such that no income tax would be due) – compared with only 15% of employees who had income below £10,000. There are very few sole traders in the top 1% of income tax payers.

Note and source to Table 2.2

Note: For employees, sole traders and partners, statistics refer to 2015–16. For owner-managers, statistics refer to 2013–14. In 2013–14, an individual needed £159,000 to be in the top 1% of taxpayers; in 2015–16, they needed £170,000. The 'share of taxable income of group accruing to top 1% of taxpayers' is calculated as the share of total taxable income of the group that is received by people with taxable income above £170,000 (£159,000 for owner-managers) – i.e. people who are in the top 1% of taxpayers. In the case of profit (business income), we measure the share of total profit received by people in the top 1% of taxpayers overall (i.e. even if they would not be in the top 1% of taxpayers on the basis of their profit alone).

Source: Data on employees from authors' calculations using the Family Resources Survey (Department for Work & Pensions, National Centre for Social Research and Office for National Statistics, Social & Vital Statistics Division, 2017). Data on business owners from authors' calculations based on HMRC administrative data sets.

⁹ Employer pension contributions (which can be made by company owner-managers but not the self-employed) are the most tax-advantaged form of saving in the UK, because National Insurance contributions are neither levied at the point when the contribution is made nor when it is withdrawn in retirement. We do not observe these contributions in tax data.

¹⁰ Only 58% of adults paid income tax in 2015–16.

Table 2.2. Taxable incomes in different legal forms, most recent year

Legal form	Mean (median) taxable income	Share with taxable income below £10,000	Share with income high enough to be in top 1% of income tax payers	Share of taxable income of group accruing to top 1% of taxpayers
Employee	£31,200 (£22,700)	15%	-	-
<i>of which:</i>				
<i>Income from employee earnings only</i>	£30,100 (£21,900)	17%	-	-
Self-employed	£30,000 (£14,000)	34%	1.7%	32%
<i>of which:</i>				
Sole trader	£21,000 (£13,000)	36%	0.6%	13%
<i>of which:</i>				
<i>Income from business only (profit)</i>	£12,100 (£8,000)	60%	0.2%	8%
Sole trader in business for four years	£24,000 (£15,000)	31%	0.9%	15%
Partner	£74,000 (£23,000)	21%	7.0%	59%
<i>of which:</i>				
<i>Income from business only (profit)</i>	£43,000 (£9,000)	53%	4.2%	60%
Partner in financial services	£308,000 (£108,000)	5%	36.8%	86%
Company owner-manager*	£43,000 (£34,000)	14%	2.0%	17%
<i>of which:</i>				
Single-director company owner-manager*	£40,000 (£34,000)	16%	1.3%	13%

*Company owner-manager data based on the subsample of directors where the personal record of the director is matched to the corporate record of the company. In 2013-14, this is 760,000, of whom 190,000 are directors of one-director companies.

Note and source: See previous page.

Figure 2.3. Median sole trader profit across industries, 2007–08 and 2015–16



Note: Industry medians in 2007–08 and 2015–16 shown as diamonds. Median profit across all sole traders is shown as a cross (the median was £8,650 in 2007–08 and £8,000 in 2015–16). If an industry lies below the dashed 45° line, median profit was greater in 2007–08 than in 2015–16. All figures are displayed in 2015–16 prices by adjusting for inflation using CPIH, a variant of the Consumer Prices Index that includes owner-occupied housing costs.

Source: Authors’ calculations based on HMRC administrative data sets.

The incomes that sole traders derive from their business (profits) – excluding income from employment, investments and pensions – are even lower. Median profits in 2015–16 were £8,000 and, after adjusting for CPIH inflation,¹¹ have fallen by 7.3% since the 2007–08 recession (when the median sole trader income was £8,650 in 2015–16 prices). These falls are widespread; Figure 2.3 shows that real median profits in 2015–16 are significantly lower in almost every industry than they were in 2007–08. The fall at the mean is even more dramatic – mean profits in 2015–16 were £12,100, £3,300 (21%) lower than in 2007–08. The patterns of low (and declining) incomes hold for those who have been in self-employment for at least four years; we return to this in Chapter 4.

The figures presented here will be underestimates of sole trader profits to the extent that business profits *reported* on tax returns are below actual profits as a result of avoidance or evasion. The self-employed have more opportunities than employees to under-report their business incomes (which are rarely subject to third-party checks) or to overstate their business expenses (e.g. by deducting expenses that, to some extent, were for personal use).¹²

¹¹ CPIH is a variant of the Consumer Prices Index that includes owner-occupied housing costs.

¹² Under-reporting of business owners’ income is also a problem in household surveys. For example, the Family Resources Survey (FRS) attempts to elicit the reported (on the tax return) taxable income of the self-employed. In the administrative data used here, we observe this directly. The FRS also does not distinguish between sole traders, partners and company owner-managers.

Evidence based on HMRC audit data suggests that 60% of those declaring sole trader income under-report the amount of tax due – and therefore their incomes (Advani, 2017). However, most of those who under-report are found to owe less than £1,000 in additional tax. Scaling up incomes to take this into account would still leave sole traders with disproportionately low incomes relative to employees. Evidence from audit data may not capture all evasion (e.g. audits will not capture all cash-in-hand payments). However, HMRC reports, based on internal analysis, that under-reporting among business taxpayers is becoming less prevalent, such that the accuracy of reporting should not be driving the recent falls in income (HM Revenue and Customs, 2018).

Partners are over-represented in the top 1% of taxpayers

Partners have much higher income, on average, than sole traders. There is also more variation within this type of business. For example, mean income for partners (£74,000) is much higher than that for employees, while the median (£23,000) is similar to that for employees. This variation is explained by a stark divide between low-income partnerships (which are disproportionately based in agriculture and retail) and high-income partnerships (which are disproportionately based in business and medical services). This is especially apparent when looking at income from partnerships only – 53% of partners received less than £10,000 from their business, but 4% received enough to put them in the top 1% of taxpayers on the basis of this income alone.¹³

Partners as a whole are, overall, significantly over-represented in the top 1% of all income taxpayers: **7% of all partners are in the top 1% of income tax payers and together they earn 60% of all partnership income.** This is an extremely top-heavy distribution of income, reflecting both the very high incomes of some partners and the low incomes of others. The partners in financial services partnerships (which include hedge funds) have particularly high average incomes. The mean (median) income for those working in financial services partnerships is £308,000 (£108,000), with 37% of partners in this industry in the top 1% of UK taxpayers.

Owner-managers have higher average incomes than the self-employed and retain incomes in their companies

The mean (median) annual taxable income from all sources of owner-managers is £43,000 (£34,000) – higher than employees' taxable incomes and significantly higher than for sole traders. Given that the tax advantages of incorporation are greater at higher income levels, we would expect higher-earning business owners to be more likely to operate as company owner-managers than through self-employment. The large number of high-earning partnerships in financial and business services industries, including accounting and law, is largely dictated by industry norms. Based on the amount of income that owner-managers withdraw from their companies each year, 2% are in the top 1% of taxpayers – a disproportionate share, but less extreme than the 7% of partners.

¹³ The difference between mean total income and mean partnership profit of partners is predominantly accounted for by employment income (£44,000 at the mean among the 25% of partners with some employment income), dividend incomes (£32,000 at the mean among the 27% of partners with some dividend income) and pensions (£13,000 at the mean among the 29% of partners with some pension income). Median income is much higher than median profit (£23,000 versus £9,000) because those with very low partnership profit are disproportionately likely to have pension and/or employment income.

Many owner-managers are earning more income each year than they take out of their companies (i.e. more than their personal taxable income suggests), because they can retain profits within the company. There are tax advantages to retaining income and drawing it out at a later date.¹⁴ In other work, also using the HMRC tax records, Miller, Pope and Smith (2019) find that owner-managers earning above the higher-rate threshold (the point at which the marginal income tax rate increases by 20 percentage points) tend to retain significant sums in their companies. For example, for owner-managers generating total profits of £150,000 (i.e. total company income net of costs – except director wages – and corporation tax), average retained earnings are £50,000 (i.e. in a year in which £150,000 is earned, average personal taxable income is £100,000). The amount of retained earnings is increasing in the total income of the company. This means that personal taxable income will understate the earnings of owner-managers relative to the self-employed (who are not able to retain income in the business vehicle in the same way).

2.3 Investment and employment by closely held business

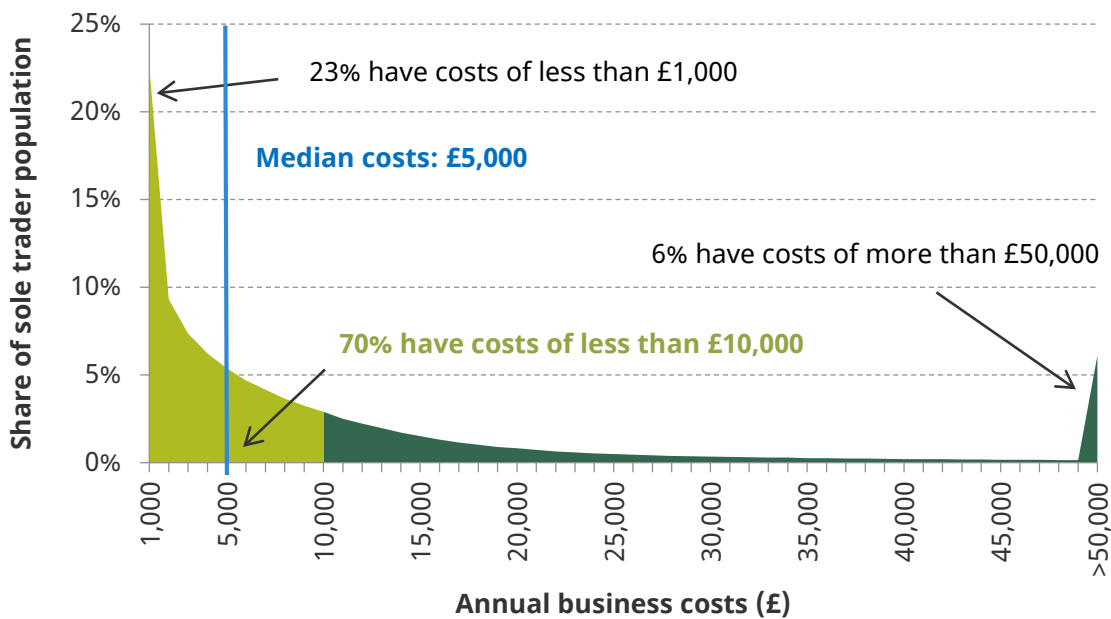
Closely held businesses span a wide variety of activities. Some, such as tradespeople or IT consultants, operate businesses that are effectively used to sell their own labour. Of these, some will contract directly with customers while others will contract through intermediaries (including the online platforms in the ‘gig economy’). At the other end of the spectrum, some businesses, as well as employing the owner(s), employ many other people. Some do a large degree of investing, may be taking significant risks, innovating and seeking to grow out of being ‘closely held’ into larger and more profitable businesses. This section shows that only a minority of closely held businesses employ others or invest significant sums in their business.

Investment and employment are low among sole traders

We have shown above that, on average, sole traders generate low profits from their businesses. Low profits could, in principle, arise because a business has high sales and high costs, which could include investing in machinery or other capital assets, covering expenses such as travel costs, purchasing material inputs or hiring other workers. This may be more likely for businesses that are starting out and investing (and accepting low profits) in order to grow. However, we find that most have low costs and very few make substantial capital investments.

Figure 2.4 shows the distribution of costs among the sole trader population. Almost 1 million sole traders (23% of the total) had total business costs below £1,000 in 2015–16, of whom 300,000 had no costs at all; a further 2 million had business costs below £10,000. Costs are low for most sole traders regardless of industry. With the exception of hotels – an industry in which only a small minority of sole traders are based – at least 40% of sole traders in every industry have total costs below £10,000.

¹⁴ Owner-managers pay tax at the personal level only when income is withdrawn from the company. Most owner-managers pay themselves a small salary and take the rest of their income in the form of dividends. Retaining income in a company and paying out dividends at a later date can reduce tax liability if the marginal tax rate on dividends is expected to be lower in the future (e.g. if incomes are lower in the future). The lowest tax liability can be achieved by taking income in the form of capital gains when a company is sold or dissolved because most owner-managers will be eligible for a preferential 10% rate on capital gains (‘entrepreneur’s relief’).

Figure 2.4. Distribution of business costs among sole traders, 2015–16

Note: Business costs calculated as the difference between sales and profits. Sole traders are grouped into £1,000 bins based on business costs. The light green area represents the 70% of sole traders who have costs below £10,000. The dark green area represents the 30% of sole traders with costs above £10,000.

Source: Authors' calculations based on HMRC administrative data sets.

For the most part, costs reflect material or other variable inputs, rather than employment or investment. (As a point of reference, the wage cost to employ someone for just 16 hours per week for a year at the minimum wage (£6.70) would have been around £5,500 in 2015–16 – above the total costs for more than half of sole trader businesses.)

Deductions for qualifying expenditure on plant and machinery (i.e. investment, including purchases of laptops and other machinery used in a business) are recorded separately on the tax form.¹⁵ In 2015–16, less than a quarter of sole traders made use of these deductions; conditional on making an investment, the amount was less than £2,000 in 80% of cases and these deductions were a small fraction of total costs (less than 6% of total costs on average among those making use of them). In other words, plant and machinery investment does not appear to be an important activity for most sole trader businesses.

A minority of sole trader businesses do have substantial business costs. For example, of the 11% of sole traders with annual sales above £50,000, over 90% have costs of more than £10,000. In part, larger costs reflect that these are larger businesses, but this group also has costs that are, on average, bigger relative to their sales; 71% have costs that exceed half of their sales, compared with only 34% of sole traders overall (Table 2.3). This suggests that these bigger sole trader businesses are not only selling the owner's own labour but also undertaking a wider set of business activities, including purchasing significant inputs and possibly employing others. It is notable, however, that even among

¹⁵ Capital allowances determine how quickly the cost of an asset purchase can be deducted from profits. The annual investment allowance (AIA) allows 100% of investment costs to be deducted up to a particular limit (currently £1 million). As a result, virtually all sole traders' capital expenditure will be covered by the AIA and will be fully deducted from profits in the year the cost is incurred.

Table 2.3. Sole traders' business costs

	All sole traders		Those with sales above £50,000	
	2007-08	2015-16	2007-08	2015-16
Number of sole traders	3.3 million	4.1 million	591,000	450,000
Number (share) with total business costs below £1,000	558,000 (17%)	926,000 (23%)	4,000 (0.6%)	4,000 (0.8%)
Number (share) with total business costs below £10,000	1,944,000 (59%)	2,846,000 (70%)	31,000 (5%)	28,000 (6%)
Number (share) with total costs above 50% of sales	1,301,000 (40%)	1,382,000 (34%)	413,000 (70%)	318,000 (71%)
Number (share) making a loss (costs bigger than sales)	262,000 (8%)	290,000 (7%)	38,000 (6%)	24,000 (5%)
Number (share) reporting using capital allowances	1,639,000 (50%)	847,000 (21%)	494,000 (84%)	238,000 (53%)
25 th , 50 th and 75 th percentile size of capital allowances if used	£419, £1095, £2578	£270, £736, £1876	£814, £2180, £4670	£486, £1400, £4130

Note: Costs calculated as the difference between sales and profits. A sole trader makes a loss if costs are bigger than sales. Capital allowances (deductions for plant and machinery capital expenditure) are reported separately on the tax form. The percentiles of capital allowance size are conditional on capital allowances being greater than zero.

Source: Authors' calculations based on HMRC administrative data sets.

this higher-cost group, deductions for investment are mostly small. Only half make any use of capital allowances, and for those who do they still only account for 5% of total costs on average.

A minority of sole traders make a trading loss, meaning that costs exceed sales (Table 2.3). These loss-making businesses are disproportionately likely to be in their first or second year of trading, and deductions for plant and machinery investment make up a greater share of their costs. In general, those sole traders making losses do not do so consistently. This indicates that some sole traders will have substantial initial costs (of which capital investment is a part) relative to their sales before becoming more profitable once more established as a business.

Table 2.3 also shows that sole trader costs have fallen since 2007-08. There were 800,000 more sole traders in 2015-16 than in 2007-08, but there were actually *fewer* with costs exceeding £10,000. There was also a substantial drop (from 50% to 21%) in the share of sole traders making use of deductions for plant and machinery investment. The more cost-intensive group of sole traders with sales above £50,000 is much smaller, both in

absolute terms and as a share of the sole trader population, than it was in 2007–08. We return to the changes since 2008 in Chapter 4.

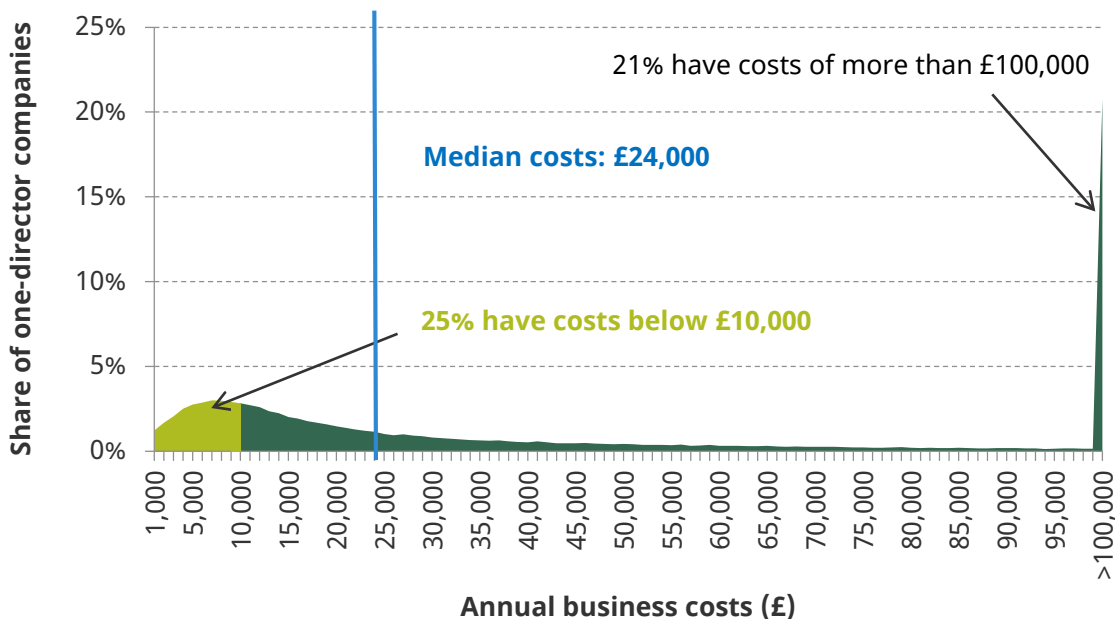
Owner-managed companies have higher costs than sole traders on average, but contain a wide range of business models

We showed above that company owner-managers have much higher incomes than sole traders. We also find that they have higher business costs.

Unlike sole traders, a part of owner-managed companies' deductible costs is salaries that are paid to the owner-managers. In order to compare these businesses on a like-for-like basis, Figure 2.5 shows the distribution of business costs excluding director salary for the subset of companies with one director and one shareholder and where the corporate tax record is matched to the personal tax record of the director (which allows us to identify director salary).¹⁶

Owner-managed companies have much higher costs on average than sole traders: median costs are £24,000, more than four times higher than for the median sole trader. But Figure 2.5 also shows that there is a lot of variation among the owner-managed company population; 25% of owner-managed companies have business costs below £10,000, while 21% have costs of over £100,000.

Figure 2.5. Distribution of business costs among one-director companies excluding director salary, 2013–14



Note: Based on the 106,000 single-director companies, matched to the director tax record, where the director has only one employment schedule in 2013–14. Costs are exclusive of director salary and are measured as the difference between sales and corporate profit plus director salary. The light green area represents the 25% with costs below £10,000. The dark green area represents the 75% with costs of more than £10,000.

Source: Authors' calculations based on HMRC administrative data sets.

¹⁶ See Appendix A for details.

Figure 2.6. Average business costs (excluding director salary) for one-director companies across industries



Note: Based on the 106,000 single-director companies, matched to the director tax record, where the director has only one employment schedule in 2013–14. Costs are exclusive of director salary and are measured as the difference between sales and corporate profit plus director salary. Each diamond represents an industry. Data are for 2013–14.

Source: Authors’ calculations based on HMRC administrative data sets.

This variability reflects not only differences in company size, but also differences in business models. For some owner-managed companies, the main (or only) business input will be the labour of the owner-manager. Others will have large material, capital and (non-director) salary costs.

Figure 2.6 shows evidence that owner-managers in different industries operate different business models on average. For example, companies operating in construction, hotels, wholesale and retail, and taxis have higher costs (both in absolute terms and relative to sales), whereas companies operating in business services, finance and the medical industry – all sectors in which the main input is more likely to be owner-manager labour – have much lower costs.

Even in those industries where costs are much higher, deductions for plant and machinery investment are mostly a small share of overall costs, as is the case for sole traders. Also in line with the trend among sole traders, the share of owner-managed companies using capital allowances has fallen from 69% in 2007–08 to 53% in 2014–15. However, there are some owner-managed companies making substantial capital investments and the distribution is highly skewed: among the 53% of owner-managed companies making some use of these deductions, the median size of deduction was only £2,000, but the mean was over £15,000.

3. Business start-up and closure

Considering the number of people working for their own business in any given year (as in the previous chapters) understates the fraction of people who own a business at some point. This is because of the large amount of ‘churn’ in the business population: businesses are started and closed all the time. In what follows, we examine the frequency with which business owners start and close their businesses. We show that the ‘churn’ in the sole trader population in particular is high; the number of people operating as a sole trader at any point over a five-year period is much higher than the number in any one year. We set out some of the determinants of business closure, including whether individuals exit self-employment to incorporation or start new businesses in future years.

Annual entry and exit of sole traders is high relative to net growth

Figure 3.1 shows the net additional number of sole traders added to the population each year (the diamonds); the positive annual additions reflect the growth in the sole trader population shown in Chapter 1. This net effect is the result of a very large number of business start-ups and exits. For example, **between 2014–15 and 2015–16, the population grew by almost 70,000, but this was the net effect of 650,000 sole traders starting up and 580,000 exiting.**

This pattern (of large entry and exit) has been a feature of the sole trader population since at least the turn of the millennium. While the numbers of people entering and exiting have

Figure 3.1. Entry, exit and net growth in sole trader population



Note: ‘Entry’ in any financial year is the number of sole traders in business in that year who were not in business the year before. ‘Exit’ shows the number who were in business the year before but not in the current year. The diamonds show the net effects of entry and exit.

Source: Authors’ calculations based on HMRC administrative data sets.

increased over time, this mainly reflects the fact that the sole trader population is bigger than it used to be. **The entry and exit rates of sole traders have been relatively stable over time:** each year, around 15–18% of the previous year’s sole trader population enter and 13–15% exit (shown in Appendix Figure B.1). This rate of churn for sole traders is higher than that for other business owners. While the time series are somewhat noisier, in recent years around 10% of partners and 11% of owner-managed companies have exited each year.¹⁷ Given that they have the highest levels of churn and form the largest share of business owners, for the remainder of this section we focus on the entry and exit of sole traders.

The high rates of entry and exit in the sole trader population mean that, **in the five years from 2011–12 to 2015–16, almost 6 million people were sole traders at some point,** compared with there being only 4 million sole traders in 2015–16 alone. In contrast, because relatively few people stay in business for a long time, **only 2.4 million sole trader businesses traded for all five years between 2011–12 and 2015–16.**

A key implication of this ‘churn’ is that sole traders are a rapidly changing set of people. We showed in Section 2.1 that the average age of sole traders starting up is 37, implying that many of them would have been employees first and not self-employed for their whole career. The picture painted by Figure 3.1 is of an even more fluid transition between sole tradership and other economic activities. It suggests that many people will try their hand at business ownership, often for only a short time.

60% of sole-trading businesses close within five years

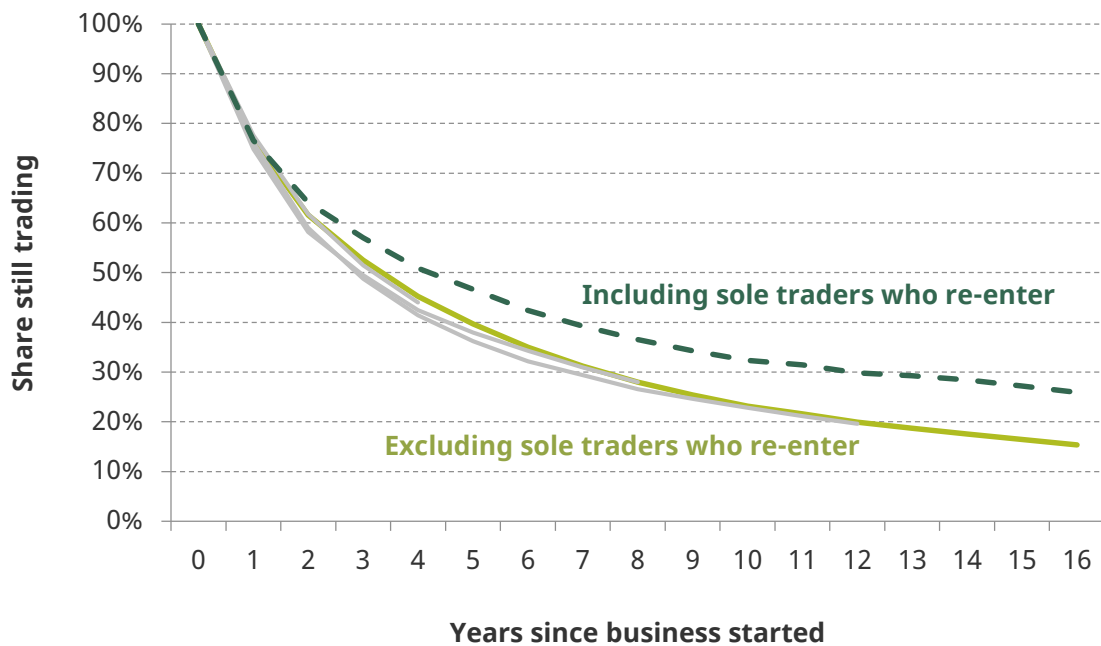
The tax records data are well suited to following sole traders during the life of their business. The light green line in Figure 3.2 uses the longitudinal aspect of the data to show what proportion of sole traders who started up (first appeared in the data) in 1999–2000 are still operating at the end of the first year and each additional year. The grey lines repeat this exercise for businesses started in later years and show very similar patterns.

Exit rates are high for new businesses: 20% of newly set-up sole traders are not trading after their first year; 60% have ceased trading by year 5 and 80% have ceased after 12 years.

Some sole traders exit in a year but subsequently return in later years (not necessarily to the same activity). These sole traders are excluded from the light green line but included in the dashed dark green line. Of the sole traders who started their business in 1999–2000, 26% were trading in 2015–16, but only 15% had been a sole trader for all 17 years. Re-entry is therefore fairly common. Indeed, people who have already been a sole trader account for a substantial fraction of the entry in Figure 3.1. Of the 650,000 people who entered in 2015–16, 190,000 (29%) had been a sole trader in at least one year between 1997–98 and 2013–14. However, even including those who re-enter shows that business closure rates are high: most sole traders exit within five years and do not return.

Sole-trading businesses could close as a result of business failure (recall that around 7% of sole traders record a loss each year). This is not necessarily a bad thing – it is better for unsuccessful business models to close if the owner would be better off as an employee or undertaking another activity. Some exits will reflect successful businesses that are closed

¹⁷ See Appendix Section B.2 for details.

Figure 3.2. Survival rates of sole traders

Note: Light green line shows share of sole traders starting up in 1999–2000 who trade for every year from then. The grey lines are equivalent series for those starting in 2003–04, 2007–08 and 2011–12 (they have therefore not been observed for as long). The dashed dark green series shows the share who are sole traders that many years after 1999–2000, but not requiring that they trade in all of the intervening years.

Source: Authors' calculations based on HMRC administrative data sets.

when, for example, the owner retires or can access a better opportunity, and some likely reflect that some sole traders are infrequently and temporarily doing work through self-employment but are not setting up businesses they intend to maintain.

Some exits from self-employment will represent incorporation. As set out in the introduction, there are tax advantages to incorporating that are increasing in taxable income. 30% of company owner-managers (of one- or two-director companies) had some self-employment income in at least one year before setting up their company.¹⁸ This suggests that, in at least some cases, self-employed businesses that close become incorporated businesses. This will, however, account for a small minority of overall exit from self-employment. There were around 1.8 million directors of owner-managed companies in 2014–15. If around 550,000 (30%) of them were previously self-employed, this still reflects less than 10% of the more than 6 million people who have exited self-employment since 1997–98, suggesting that the vast majority of 'exits' do not represent businesses switching legal form.

Which sole traders are most likely to keep trading?

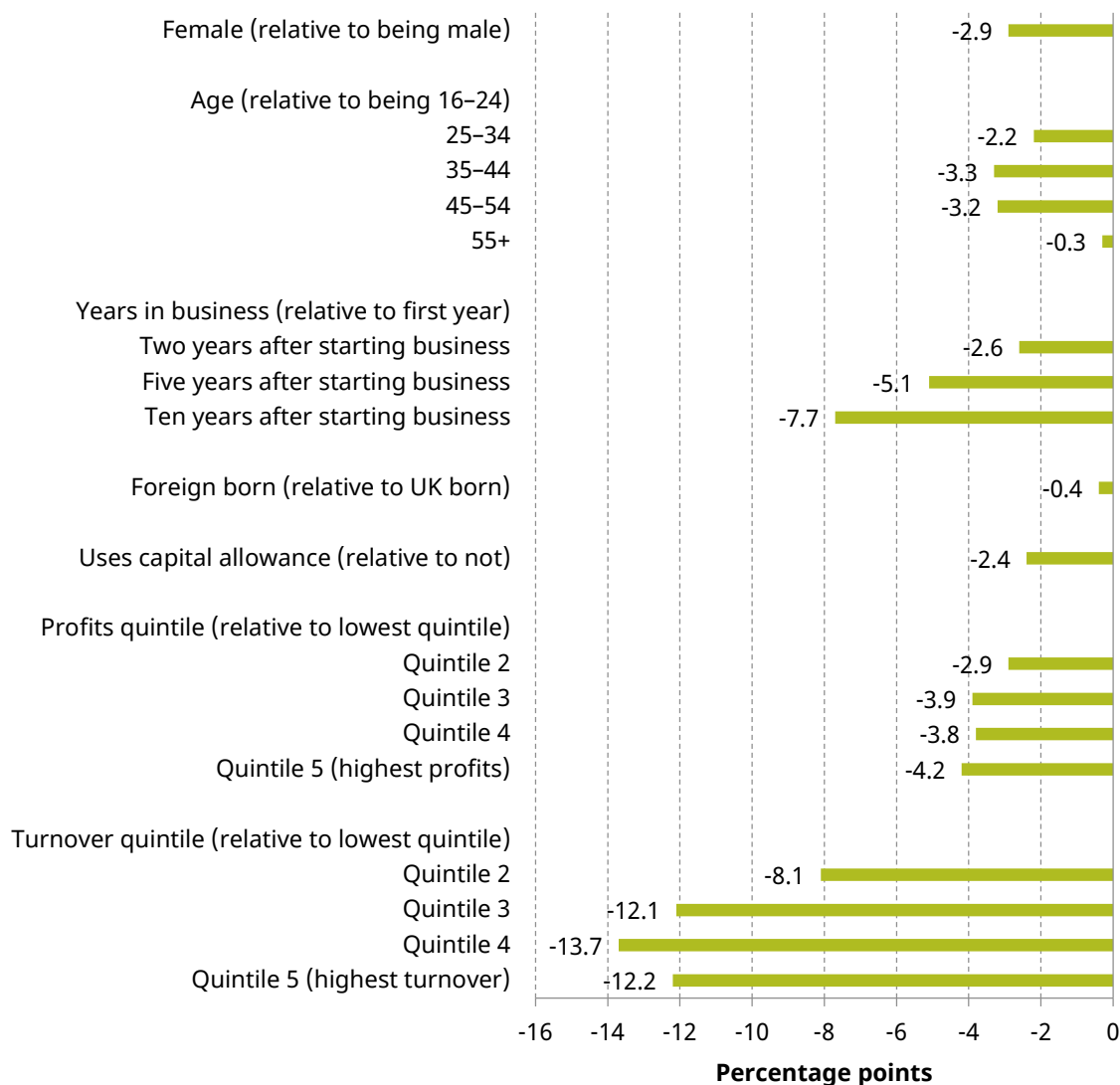
In order to understand better the potential drivers of business closure, we undertake analysis of which business owners' characteristics are most associated with business exit. We take the set of sole traders who start their business in 2003–04 and, for each year they

¹⁸ Details of the matched data are provided in Appendix A. Because we have a match between directors and their companies that only includes people who were a director in 2013–14, and because not all directors are matched, we cannot observe all transitions between sole tradership and company owner-management.

are in business, use regression analysis to estimate the relationship between different characteristics and the probability that a sole trader will have exited by the following year. We have undertaken similar analysis for other ‘cohorts’ of sole traders setting up business in other years, and the results are very similar.

Figure 3.3 presents the results for the most interesting characteristics; full results are given in Appendix Table B.4.¹⁹ On average, the probability of exit in any given year for the 2003–04 cohort is 15.5%; the ‘effect’ of each characteristic is relative to a baseline shown in

Figure 3.3. Relationship between characteristics of sole traders and probability of exiting business within the next year (percentage points)



Note: Full results are shown in Appendix Table B.4.

Source: Authors’ calculations based on HMRC administrative data sets.

¹⁹ We control for age, sex, number of years in business, industry, quintiles of profits, quintiles of turnover, region, whether the business owner uses an agent to fill in the tax return, whether they use capital allowances, whether they had employment income in their first year of trading, the quintile of employment income and whether they are foreign born.

parentheses and should be compared with the overall average probability of exit. For example, 25- to 34-year-olds are 2.2 percentage points less likely to close their business in any given year than are 16- to 24-year-olds.

Figure 3.3 shows that there a number of key insights into the determinants of business exit. First, **all else equal, the personal characteristics such as age and sex of the owner matter for whether or not the business keeps trading.** For example, women are around 3 percentage points less likely than men to close their business. Age is also important and has a 'hump-shaped' relationship in relation to business closure – those aged 35–54 are less likely to exit than those at the beginning or end of their careers. This is not surprising – we know that people are more likely to move between jobs when they are young (Topel and Ward, 1992), and those aged at least 55 may be more likely to stop trading because they retire. All else equal, foreign-born sole traders are about 0.4 percentage points less likely to close their businesses by the next year than are UK-born sole traders.

Second, **characteristics associated with a business being more 'established' are associated with that business being more likely to continue trading for another year.** Sole traders who have been in business for longer are considerably less likely to exit. All else equal, a business that has been operating for two years is 2.6 percentage points less likely to close by the next year than is a business that is in its first year of business. The relationship between duration in business and probability of closure continues: being in business for five years reduces the probability of closure in the next year by 5.1 percentage points, and for those with 10 years in business, by 7.7 percentage points – very large given that the average probability of exit in a given year is 15.5%. Businesses using capital allowances (i.e. deducting investment costs) are 2.4 percentage points less likely to close in the next year than are those that do not do so.

In addition, we find that, **all else equal, both the level of profits and the level of turnover are each, independently, important in determining the probability of business closure.** In both cases, the big difference in exit probability is between those with the very lowest profits or turnover (quintile 1) and those in the next quintile (2). Businesses in the second quintile of the profit distribution are 2.9 percentage points less likely to close than those in the bottom quintile, which is not that different from the difference between the highest and lowest profit quintiles (4.2 percentage points). Similarly, although to a much greater degree, low turnover is a strong predictor of business closure: having turnover in the second quintile of the distribution means that businesses are a substantial 8.1 percentage points less likely to close than are businesses with the lowest turnover. This suggests that, even more than profits, turnover is a very important determinant of business closure.

Conclusion

In summary, we have shown that the population of sole trader businesses (in particular) is a constantly changing population, with around 15% of firms closing each year and a slightly larger number entering. The corollary of this is that a much larger number of people are sole traders at some point of a five-year period than are sole traders in any particular year, but also that relatively few people are consistently sole traders over a whole five-year period.

The longitudinal tax records allow us to track businesses through their life and to estimate what the important drivers of business closure are. Some relationships are quite small: younger (and older) business owners are slightly more likely to close their business than are those closer to middle age. Other characteristics are much more striking: being in business for many years substantially reduces the probability of exit, whereas very low turnover substantially increases the probability of exit.

4. What drove the fall in sole trader profits since 2008?

In Chapter 2, we showed that average profits (i.e. the income from business activities only) for sole traders were far lower in 2015–16 than eight years earlier, prior to the Great Recession. Remarkably, the **falls in individual profits are so large that aggregate profits (i.e. taking total profit of all sole traders) have also fallen since 2008**, despite the fact that there are now 800,000 more sole traders (Figure 4.1).

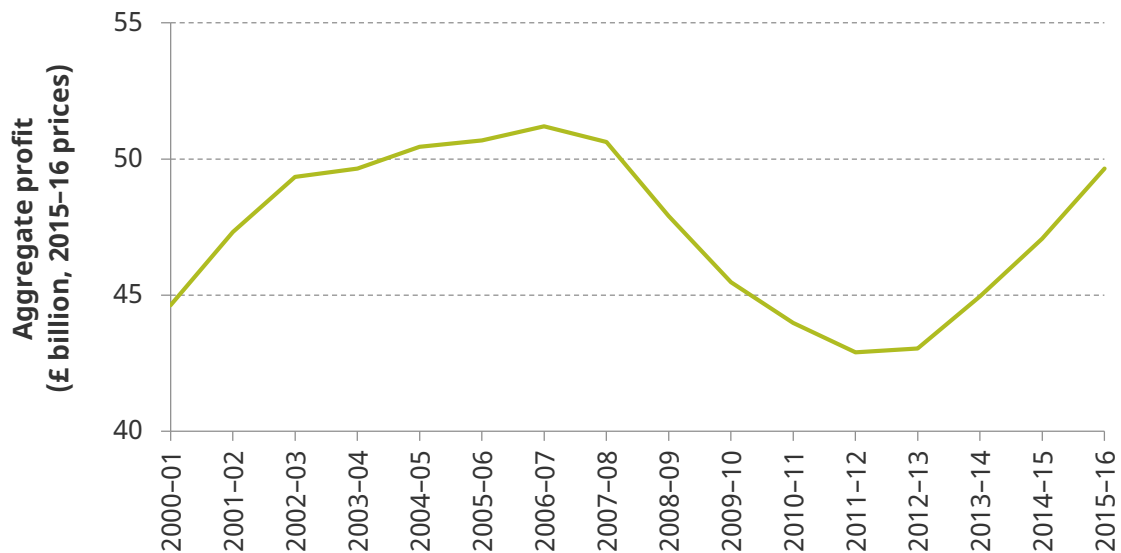
A fall in sole trader profits is consequential. From an individual or household perspective, declining profit implies a lower standard of living.²⁰ From an economy-wide perspective, declining profit implies that less value added is being created from this sector of the economy.

In this chapter, we document the changes in the average profits of the sole traders and show that they are driven predominantly by those businesses that continue trading rather than by any change in composition driven by the large growth in the sole trader population.

Average sole trader profits have fallen since the Great Recession

Figure 4.2 shows the profile of average sole trader profits, adjusted for inflation. The green lines adjust for household-level (CPIH) inflation – so show the real value of the profits of these companies to their owners. Even before the financial crisis, average profits were consistently falling, albeit slowly, from 2001–02 onwards. However, the big fall in

Figure 4.1. Aggregate sole trader profit

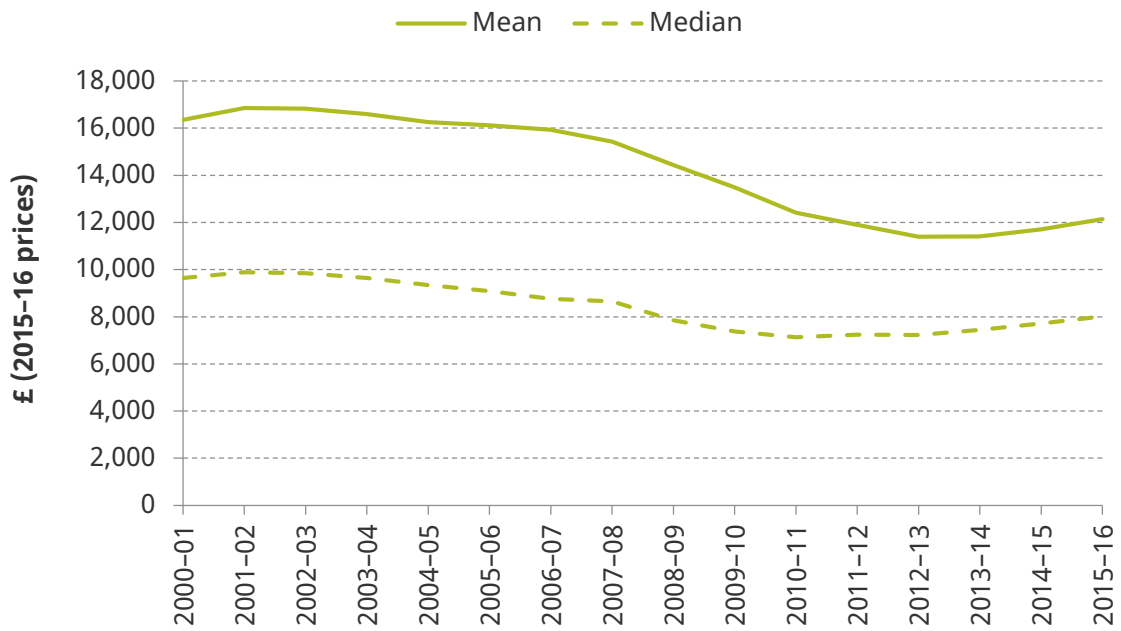


Note: Calculated by summing the profits of all sole traders who trade in each year. Deflated to 2015–16 prices using CPIH household inflation measure.

Source: Authors' calculations based on HMRC administrative data sets.

²⁰ In this chapter, we focus specifically on sole trader profits (income from their business). A similar picture emerges if we also include non-business income (i.e. income from employment, investment and pensions).

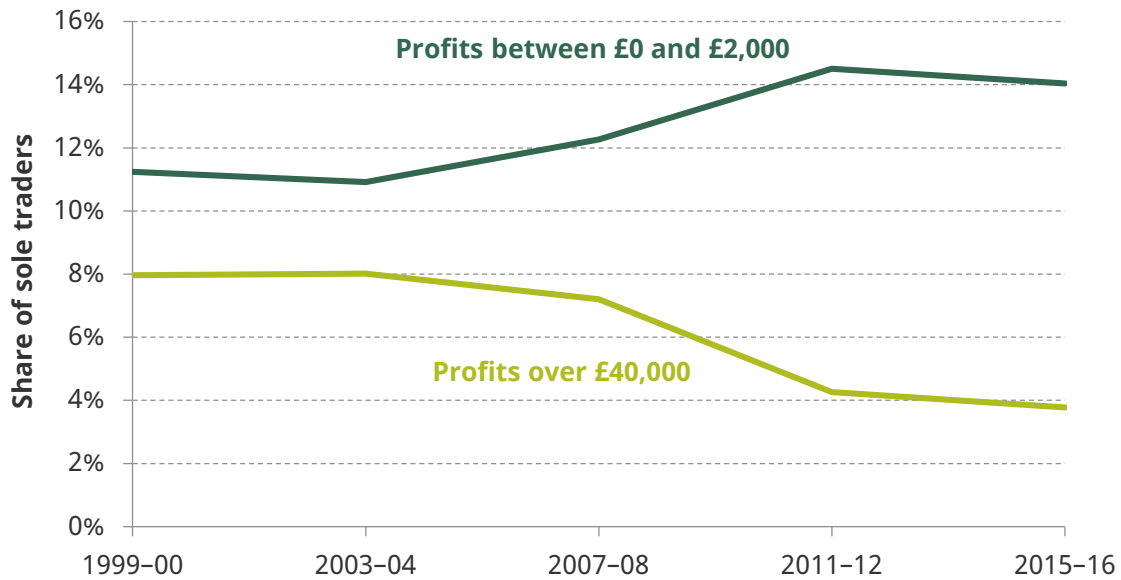
Figure 4.2. Average sole profit since 2000-01



Note: Series deflated using CPIH household inflation measure.

Source: Authors' calculations based on HMRC administrative data sets.

Figure 4.3. Share of sole trader population with profits between £0 and £2,000 and with profits over £40,000 (in 2015-16 prices) since 1999-2000



Note: Profits deflated to 2015-16 prices using CPIH.

Source: Authors' calculations using HMRC administrative data sets.

profits since 2007–08 was concentrated in the period to 2012–13. Over these five years, **mean profits fell by 26% and median by 16%**. By 2015–16, mean profits were still 21% below pre-recession levels, and median 7% below.²¹ Later in this section, we explain the fall in profits in the four years between 2007–08 and 2011–12.

Falls in average sole trader profits have resulted not only from the presence of more low-profit sole traders, but also from a fall in those with higher profits. This is shown in Figure 4.3: **since the early 2000s, there has been an increase in the proportion of sole traders with profits below £2,000 and a halving of the proportion with profits above £40,000.**

Declining profits are driven by sole traders who stayed in business

Given the high rates of entry into and exit out of the sole trader population documented in Chapter 3, it might not be surprising that average profits could change quickly. Only 59% of the sole traders with businesses in 2011–12 were also trading in 2007–08. In principle, it is possible that the 41% of sole traders who were ‘new’ by 2011–12 were lower-profit, perhaps because they were undertaking self-employment in a less intense way or because they were operating in less profitable industries. We find, however, that this is not the case. **The decline in profits seen over the period 2007–08 to 2011–12 does not reflect the compositional effect of low-profit businesses entering the sole trader population.**

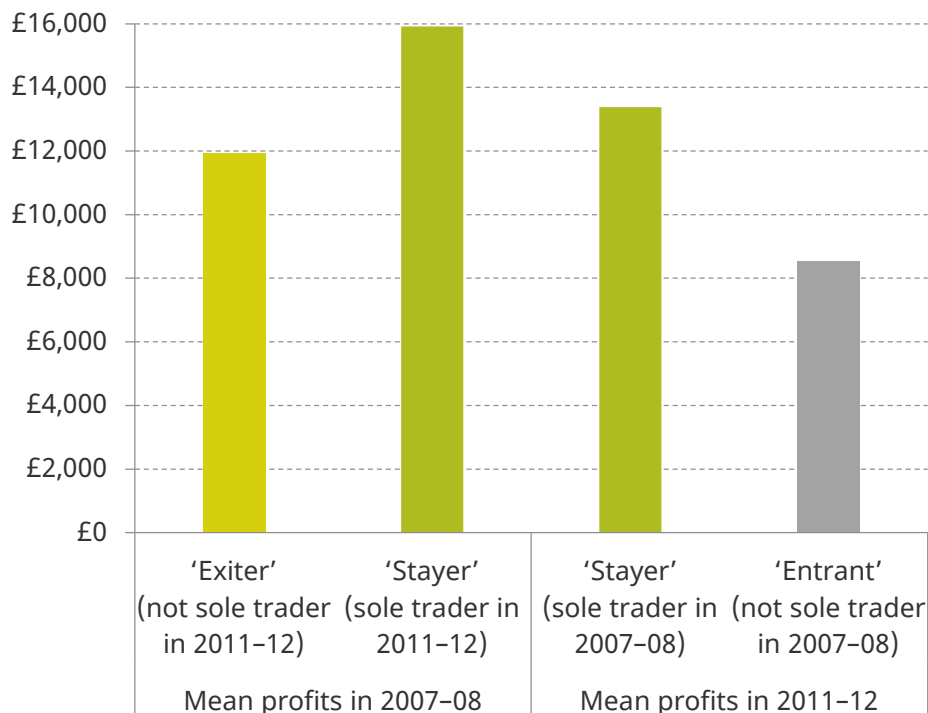
To explore this issue in more detail, Figure 4.4 shows how average (mean) sole trader profits vary between those who: were a sole trader in 2007–08 but were not in 2011–12 (‘exitters’); were not a sole trader in 2007–08 but were in 2011–12 (‘entrants’); and those who were sole traders in both 2007–08 and 2011–12 (‘stayers’). The figure shows the following:

- In 2007–08, those who would subsequently exit self-employment by 2011–12 had lower average profits than those who would remain (as would be expected and as we showed is more generally true in Chapter 3).
- Those who stayed in self-employment over the four years saw a fall in profits (by around £2,500 on average).
- In 2011–12, those who had entered self-employment since 2007–08 were lower-profit than either exitters or stayers. New businesses likely have lower profits for two reasons: initially, they may be underpricing their services to enter the market or be investing, both of which will depress profits. Given the high failure rate of new businesses, entrants will of course include a disproportionate share of businesses with unprofitable ideas.

How do the average profits for ‘exitters’, ‘stayers’ and ‘entrants’ in Figure 4.4 help us understand the drivers of the fall in profits seen in this period? First, the exit of lower-than-average-profit businesses pushed up overall average profit between 2007–08 and 2011–12. Second, the low profit of new businesses reduces overall average profit between these two years. However, we find that these effects are also present in ‘normal’ times

²¹ To think about changes in the real value added of businesses, we can alternatively adjust for a measure of economy-wide inflation (the GDP deflator). On this measure, the average profits of sole trader businesses fell by 23% (13%) at the mean (median) between 2007–08 and 2012–13. In the economy as a whole, gross value added per active labour market participant fell by only 4% over the same period.

Figure 4.4. Average profits in 2007–08 and 2011–12 of ‘exiters’, ‘entrants’ and ‘stayers’, 2015–16 prices



Note: Profits deflated using CPIH household inflation measure.

Source: Authors’ calculations based on HMRC administrative data sets.

(prior to the recession) and therefore are not unique to the period since the financial crisis.²² This means that these effects cannot explain the extraordinary falls in average profits between 2007–08 and 2011–12. **What is different about the post crisis period is the fall in profits among businesses that continued trading (the ‘stayers’).**

This is shown in Figure 4.5, which decomposes the change in profits across successive four-year periods into the contributions attributable to entrants, exiters and stayers.²³ While entrants dragged down mean profits (by 13 percentage points) between 2007–08 and 2011–12, this was also the case in the pre- and post-recession periods. Exiters made a slightly smaller contribution in the four years after the recession than in other periods. **The outstanding feature of the post-recession period is the falling profits of stayers, which dragged down mean profits growth by 12 percentage points.** In other years, stayers have seen rising profits and therefore contributed to growing mean profits.

Taking all characteristics of sole traders that are observed in tax data and considering how they have changed does not explain the decline in profits.²⁴ For

²² In Appendix Table B.5, we present the average profit of exiters, stayers and entrants in the time periods 1999–2000 to 2003–04, 2003–04 to 2007–08 and 2011–12 to 2015–16. In every period, exiters and entrants are lower-profit than average.

²³ The figure uses the techniques set out in Baily, Bartelsman and Haltiwanger (2001).

²⁴ Specifically, we undertake an Oaxaca-blinder decomposition, running a regression of profit based on characteristics (gender, age, region, industry, whether or not they are foreign-born and years since first trading) in 2007–08 and using the coefficients in this regression to predict profits in 2011–12 based on sole

Figure 4.5. Contribution of 'entrants', 'exitors' and 'stayers' to total real mean profit growth over different time periods



Note: The figure decomposes growth in profit between the role of exitors (those present at the start of the period but not the end), entrants (those present at the end of the period but not the start) and stayers (those present at both the start and the end of the period). Black diamonds indicate the total change in profit. Figures deflated using CPIH household inflation measure.

Source: Authors' calculations using HMRC administrative data sets.

example, 'stayers' are no more likely to have employment income alongside sole trader income in the four years after the recession, which is one indication that there has not been a change in the intensity of self-employment among stayers.

An outstanding and important question is the extent to which the fall in profitability of sole traders following the recession represents a permanent fall in productive capacity rather than a temporary fall in profitability as a result of, for example, temporarily weak demand. Profit growth of sole traders (including stayers) is positive in the four years following 2011-12, but sole traders' real incomes remain below their pre-recession level.

trader characteristics in that year. The predicted average in 2011-12 is only £300 lower than the average in 2007-08, when in reality average profit in that year was £3,500 lower than in 2007-08. This implies that compositional differences explain less than 10% of the change.

5. Conclusion

The business owner-manager population has grown rapidly, and much faster than the number of employees, since the turn of the century. They now number over 6½ million, up from 4.8 million in 2000–01. This growth has been incentivised by a tax system that taxes business owners less heavily than employees. This report has shed new light on this population and their activities.

Business owners are a diverse group that cannot be accurately summarised by a ‘one size fits all’ description. They operate in all sectors of the economy – they will include some ‘gig economy’ workers, but also, among others, partners in law firms, sole trader construction workers and company owner-manager IT consultants. They are over-represented at both the top and the bottom of the income distribution. A minority of closely held businesses have substantial costs, make large capital investments and will be employing others, but the majority have low costs and do not invest or employ others. In many cases, profits will mainly reflect a return to the owner-manager’s labour.

It is common to describe those who are active in the labour market as either ‘business owners’ or ‘employees’. But a quarter of business owners earn some employment income while running their business. Also, the rates of start-up and closure are high – 60% of new sole trader businesses close within five years – such that many more people have been, and will be, business owners during the course of their career than are currently. Most business owners will be employees before starting up and after closing.

While the business owner population has grown especially quickly since 2007–08, this growth has been accompanied by a decline in reported capital investment. Sole traders, who account for 90% of the net growth in business owners since 2007–08, have seen large falls in income. The falls have been so large that the aggregate profits of the sole trader population were actually lower in 2015–16 than they were in 2007–08, despite an 800,000 increase in the number of sole traders. These declines cannot be explained by the low profitability of new entrants. Instead, sole traders who stayed in business saw substantial declines in their profitability, and while average profits have recovered since 2011–12 they remain significantly below pre-crisis levels. These findings highlight that the ‘number of people running a business’ is a poor measure of the economic contribution of that sector.

Having a better understanding of the business owner population is important for public discourse and policymaking. A failure to appreciate the diversity of business owners may lead to poorly targeted policy. For example, tax breaks for the self-employed apply to both low-income sole trader contractors and high-income partners in law firms. It is difficult to think of the policy aim that would support a policy that simultaneously favoured such different groups. An often-stated justification for lower tax rates is that they can encourage entrepreneurship. However, even among company owner-managers, who tend to run larger businesses than the self-employed, many are not investing or employing others or, more broadly, engaged in activities that would be commonly recognised as ‘entrepreneurial’. Poorly targeted policies can not only lead to revenue loss for the government and create unfairness when similar individuals are treated very differently, but also make some people worse off by incentivising them to engage in less productive forms of work than they would otherwise.

This report has shown the benefits of using administrative tax data to study the UK population of business owners. We can say much more than was previously possible about the legal forms people use, the activities they engage in and the ways in which they take their income. However, it does not provide answers to all questions. With more data – particularly linked data – researchers could make greater progress in understanding the dynamics of businesses and the labour market. For example, further progress on linking tax records would make it possible to address important questions such as what drives individuals to move between different forms of economic activity, including employment, self-employment, company owner-management and non-employment.

Appendix A. Data from tax records

This report draws on administrative data from tax records provided by HMRC. It relies principally on the universe of self-assessed income tax records (available to researchers from 1997–98 to 2015–16) and the universe of corporation tax records (available to researchers from 2000–01 to 2014–15), which is also linked to companies' accounts. In addition, for a subset of our analysis on company owner-managers, we utilise a match between directors' personal tax records and the company's corporation tax record.

This appendix takes each data source in turn, sets out what information they provide and explains how we define different legal forms in the data.

A.1 Personal income tax data

The main data set used in this project is based on the universe of self-assessed income tax records for the fiscal years 1997–98 to 2015–16. Between 8 million and 11 million people submit self-assessment income tax forms each year (the majority of UK adults are not required to do so). All self-employed people (sole traders and partners) and all company directors are required to submit a self-assessment tax return. These data therefore cover the universe of people running their own business for the duration of their time running the business, but will only include a selected subset in periods beforehand or afterwards.²⁵ Each individual has a unique identifier in the data, based on their National Insurance number, which means that we can follow people over time.

Information on sole traders

We define a sole trader as a person who submits at least one self-employment self-assessment income tax page (SA103) and reports positive sales. This definition captures all people who actively trade as a sole trader in the fiscal year in question. It does not require that self-employment is their only, or even their main, source of income.²⁶

We make use of variables that are taken from the SA103 tax form to learn about sole traders' businesses. Specifically, we use reported turnover (sales), taxable profit (which is turnover net of allowable costs) and capital allowances (the subset of allowable costs that are deductions for plant and machinery investment).²⁷ We also utilise a Standard Industry Classification (SIC) code created by HMRC based on information reported on the tax form, converting a text-box description of the business industry into the appropriate SIC code.²⁸

²⁵ Other people who need to complete a self-assessment tax return include anyone earning over £100,000 and anyone earning income that is not taxed at source (e.g. property income, foreign income or income from trusts).

²⁶ In the small minority of cases where more than one page is submitted (i.e. the person has more than one self-employed business), the data take totals (at the individual level) for each variable.

²⁷ A more granular breakdown of costs (e.g. the amount spent on salary, debt interest, travel expenses etc.) is available for a subset of sole traders in each year with turnover above a threshold level (equal to the VAT threshold in recent years). This accounts for a small minority of sole traders, and so we do not utilise this information when describing the sole trader population here.

²⁸ In around 25% of cases, HMRC is unable to assign a business to an industry. In those cases, this information is missing.

Information on partners

We define a partner as a person who submits at least one partnership self-assessment income tax page (SA104). This definition captures all people who report being a partner in a partnership in the fiscal year in question (each partner in a partnership must submit an SA104 tax form).

Unlike for sole traders, the tax form does not provide information on the business activities (turnover and costs, including capital allowances) of the partnership. This information is provided to HMRC on the SA800 tax form (submitted at the partnership level, rather than by each partner). These data are not currently available to researchers.

The partnership (SA104) tax form does provide information on the partnership profits assigned to the partner and the industry in which the partnership is based, again utilising a SIC code created by HMRC based on information reported on the tax form. The data allow us to identify which partners are operating in the same partnership by providing a unique partnership identifier, so we can consider separately those partners operating in small partnerships (e.g. two-person partnerships) and those operating in much bigger ones.

Information on taxable incomes

Business owners do not only receive income from their business. We use variables based on the SA302 tax calculation form, which is derived from self-assessment forms by HMRC. It records an individual's total taxable income, broken down by income source. As well as self-employment (sole trader) and partnership profits, the data set also provides income from employment and directorships, dividends, pensions, interest, property, share schemes, trusts and estates and foreign income.

We measure whether a sole trader or partner is also an employee based on whether they have positive income from employment in the relevant fiscal year, and record them as having more employment income than income from their business if employment income is higher than self-employment (sole trader) and partnership profits respectively.

Information on individual characteristics

Based on information provided on the tax form, we have variables that capture basic demographic characteristics (age, gender and region). We are also able to identify people who are foreign born and who move to the UK after the age of 16.

To participate in the UK labour market (as an employee, a self-employed person, a company director or even someone eligible for unemployment benefits), a person requires a unique National Insurance (NI) number. For people residing in the UK on their 16th birthday, their NI number is issued then. A foreign national who works in the UK will have their NI number issued when they start working in the UK.

NI numbers are issued in sequence, meaning that, based on the first two characters of the NI number, it is possible to work out when it was issued. The data also provide information on age. **We say that an individual is foreign born if** they received their NI number after they were 16.

A.2 Company data

Our primary data set on companies is based on the CT600 corporation tax return, which must be submitted by companies at least once every 12 months. The data set used includes all accounting periods that finish in the tax years 2000–01 to 2014–15.

It is supplemented by information from company accounts from the Financial Accounting Made Easy (FAME) database provided by Bureau van Dijk. Snapshot information (i.e. information measured at a single point in time) about the company is successfully matched to companies submitting a CT600 return for 97% of corporate tax records across all years. The information we use from FAME in this report is the number of directors and number of shareholders (owners) a company has. This is measured at a single snapshot in time (2014–15 for those companies still active then; their final active year for those that have subsequently closed).

Defining owner-managed companies and company owner-managers

Conceptually, we consider an owner-managed company to be one in which a shareholder owner with a significant shareholding is also a director or manager with an active role in the day-to-day management of the business.

Based on the available data and for the purpose of this report, **we define an owner-managed company as** a company that has either one or two directors, and we observe it in a given year if the company submits a CT600 corporation tax return with an accounting period that ends in the relevant fiscal year. This accounts for over 60% of all companies in the UK, and these companies have accounted for almost all growth in the company population since 2000 (Office for Budget Responsibility, 2016, box 4.1).

We cannot observe in these data whether or not a director is also a shareholder. However, based on other data provided by Bureau van Dijk,²⁹ we know that in over 90% of cases the director of a one- or two-director company is also a shareholder (or, in the case of two-director companies with a single shareholder, that one of the directors is a shareholder).

Our definition of an owner-managed company is not conditional on the number of shareholders a company has. This is because information on the number of shareholders is missing in some cases (and is more often missing for companies that ceased trading before 2013–14). However, for companies where we do observe the number of shareholders, we see that the vast majority of owner-managed companies have one or two shareholders. The results we present about the characteristics of the owner-managed company population also hold if we restrict our attention to those with one or two shareholders only.

We define a company owner-manager as a director of an owner-managed company. When counting the numbers in this population, each two-director company counts as two company owner-managers. As discussed above, we do not know for sure whether or not the director is also a shareholder, but they will be in most cases. This will slightly

²⁹ Amadeus, a database of European companies' accounts. We use information on UK companies that filed accounts at some point between 2009 and 2013.

overestimate the number of company owner-managers to the extent that some people will be directors of multiple companies.³⁰

A.3 Match between personal and corporate records

The corporate data provide information on the universe of owner-managed companies, but do not provide information on company owner-managers. For this information, we utilise a match, undertaken by HMRC, between directors' tax records and companies' corporate records.

Specifically, HMRC attempted to match all company directors listed in company accounts for companies that filed accounts in the fiscal year April 2013 to April 2014 to the self-assessment income tax records based on (director) name, address and date of birth. Of the 4.5 million directors listed in company accounts, 3.3 million had a valid (non-missing) address and date of birth. Of those directors, 2.2 million were successfully matched to their self-assessment income tax record.³¹ 60% of companies with one or two directors in 2013–14 are matched to at least one director. The matched companies are broadly representative of the population as a whole.³²

When describing the characteristics of company owner-managers in the self-assessed income tax data, we select all matched directors of owner-managed companies and analyse their circumstances in 2013–14 (the year of the match). For these people, we have information on both the business activities of the company and the characteristics and incomes of the person.

Measuring the business activities of owner-managed companies

The CT600 corporate tax form provides similar information on companies to what the SA103 form does for sole trader businesses. We use reported turnover (sales), taxable profit (which is turnover net of allowable costs) and capital allowances (the subset of allowable costs that are deductions for investment).

Taxable profits and costs for the purposes of corporation tax are not comparable to sole trader business profits and costs. This is because part of the remuneration of company directors will often be in the form of salary (which is deducted for corporate profit), while there is no equivalent deduction from profit for sole traders and partners. In order to compare these businesses on a like-for-like basis in our analysis on business costs in Section 2.3, we focus on the subset of company owner-managers who are directors of one-director companies submitting only one employment self-assessment page (see below). We then deduct employment earnings of the director from business costs.³³

³⁰ Less than 10% of the matched directors (see Section A.3) of one- or two-director companies are directors of more than one such company.

³¹ Match rates are similar for directors of owner-managed companies and other companies with more directors.

³² This is based on comparisons of the distributions of profit, turnover and assets in 2013–14 for all companies with one or two directors and the subset where at least one director is matched. Companies with zero or negative profit are slightly less likely to be matched, but above this point the matched sample is similar to the population as a whole.

³³ This will be incorrect for the minority of cases where the director does not receive a salary from the company but does receive one from elsewhere.

Describing company owner-managers

We measure the characteristics of the subset of matched company owner-managers in the same way as for the self-employed in self-assessment income tax data (see above).

The only exception is identifying whether or not a company owner-manager also receives employment income from a source other than their business. Because a portion of director remuneration is in the form of salary, almost all owner-managers have employment income. An individual filling in a self-assessment tax return is required to file a separate 'employment' SA102 page for each employment. **We identify that an owner-manager has another source of employment income if** they submit more than one employment page, indicating that they have at least two sources of employment income.

Appendix B. Extra results and findings

B.1 Shares of business owners in different industries

Table B.1. Industry shares in 2003–04

Industry	Sole traders	Partners	Owner-managed companies
Agriculture	4%	4%	1%
Manufacturing	4%	17%	7%
Construction	25%	6%	9%
Wholesale and retail	8%	10%	10%
Hotels	3%	19%	3%
Transport excluding taxis	2%	10%	2%
Taxis	4%	2%	0%
Financial + professional services	4%	1%	1%
Business services	12%	7%	34%
Medical	2%	11%	0%
Other health, educational and social services	5%	3%	1%
Recreational services	6%	3%	2%
Hairdressing	3%	3%	1%
Domestic services	6%	2%	0%

Note: Industry is missing in some observations and they are not included here, so shares will not sum to 100%.

Source: Authors' calculations using HMRC administrative data sets.

Table B.2. Industry shares in 2007–08

Industry	Sole traders	Partners	Owner-managed companies
Agriculture	3%	13%	27%
Manufacturing	3%	4%	1%
Construction	24%	7%	6%
Wholesale and retail	6%	12%	10%
Hotels	2%	7%	10%
Transport excluding taxis	2%	1%	3%
Taxis	4%	0%	2%
Financial + professional services	3%	6%	0%
Business services	13%	10%	1%
Medical	2%	3%	34%
Other health, educational and social services	5%	2%	0%
Recreational services	5%	3%	2%
Hairdressing	3%	1%	2%
Domestic services	5%	2%	1%

Note: Industry is missing in some observations and they are not included here, so shares will not sum to 100%.

Source: Authors' calculations using HMRC administrative data sets.

Table B.3. Industry shares in 2015–16

Industry	Sole traders	Partners	Owner-managed companies	<i>of which:</i>	
				Two directors	One director
Agriculture	2%	20%	1%	2%	1%
Manufacturing	2%	3%	5%	6%	3%
Construction	25%	9%	10%	10%	8%
Wholesale and retail	6%	14%	10%	11%	8%
Hotels	2%	8%	3%	3%	3%
Transport excluding taxis	2%	2%	2%	2%	2%
Taxis	5%	1%	0%	0%	0%
Financial + professional services	2%	9%	1%	1%	1%
Business services	10%	11%	32%	32%	31%
Medical	3%	5%	1%	1%	2%
Other health, educational and social services	4%	2%	3%	3%	3%
Recreational services	6%	3%	2%	2%	2%
Hairdressing	4%	1%	1%	1%	1%
Domestic services	9%	4%	0%	0%	0%

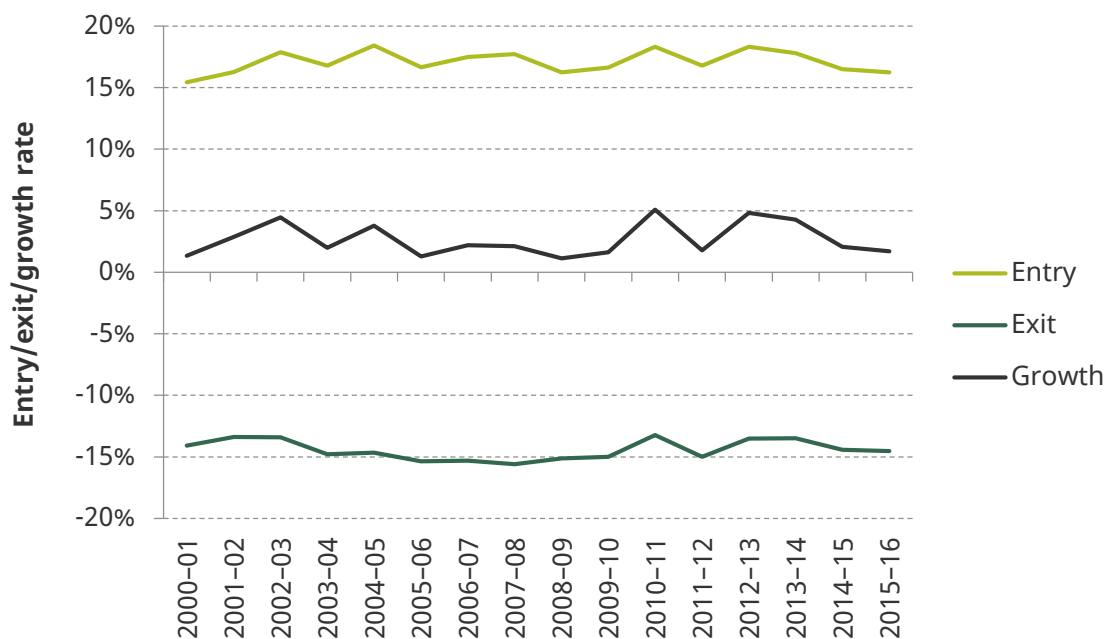
Note: Industry is missing in some observations and they are not included here, so shares will not sum to 100%.

Source: Authors' calculations using HMRC administrative data sets.

B.2 'Churn' in different business owner populations

This section shows entry and exit (in absolute terms and as a share of the population) for the different groups of business owner-managers. Figure 3.1 presents the absolute numbers of entry and exit for the sole trader population.

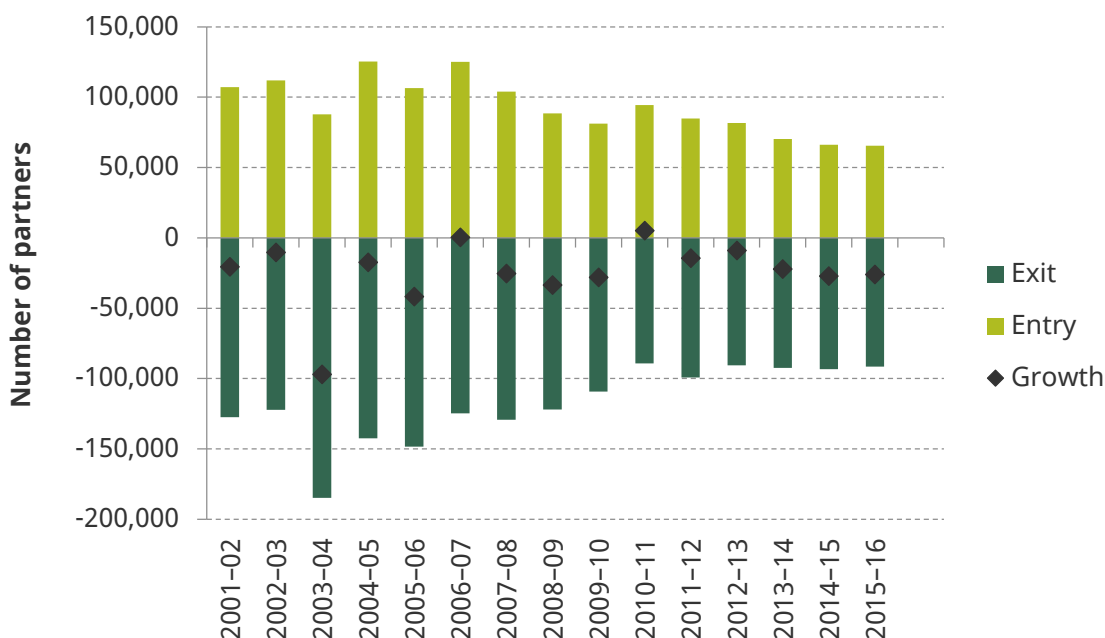
Figure B.1. Entry, exit and net growth rates of the sole trader population



Note: 'Entry' in any financial year is the number of sole traders in business in that year who were not in business the year before. 'Exit' shows the number who were in business the year before but not in the current year. Entry, exit and growth rates are calculated as the absolute values of entry, exit or growth divided by last year's population total.

Source: Authors' calculations using HMRC administrative data sets.

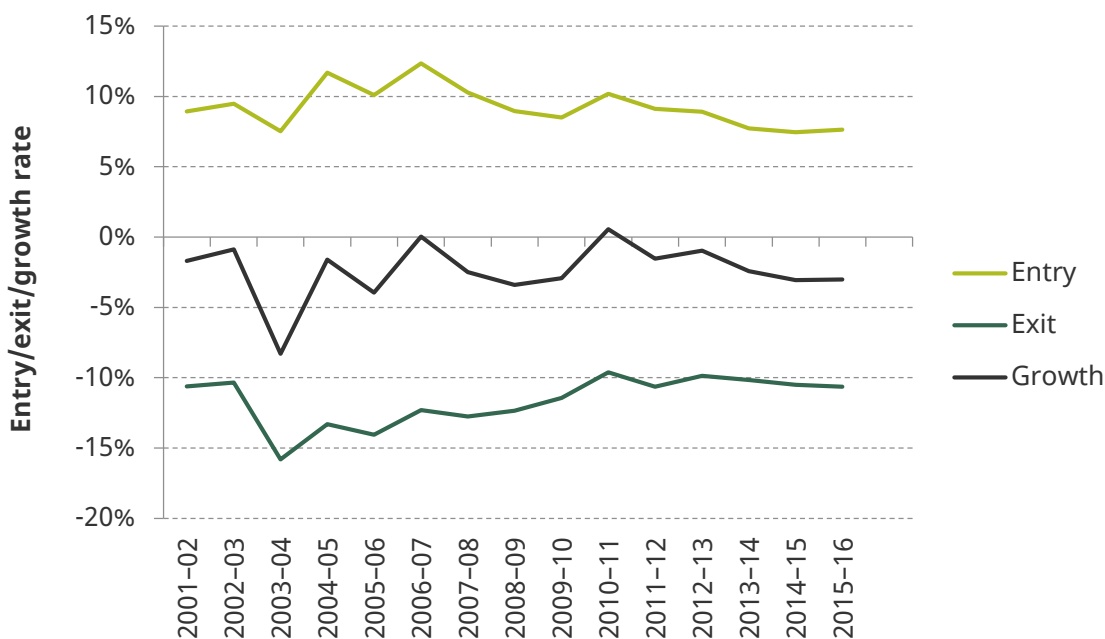
Figure B.2. Entry, exit and net growth in the partner population



Note: 'Entry' in any financial year is the number of partners in business in that year who were not in business the year before. 'Exit' shows the number who were in business the year before but not in the current year. The diamonds show the net effects of entry and exit.

Source: Authors' calculations using HMRC administrative data sets.

Figure B.3. Entry, exit and net growth rates of the partner population



Note: 'Entry' in any financial year is the number of partners in business in that year who were not in business the year before. 'Exit' shows the number who were in business the year before but not in the current year. Entry, exit and growth rates are calculated as the absolute values of entry, exit or growth divided by last year's population total.

Source: Authors' calculations using HMRC administrative data sets.

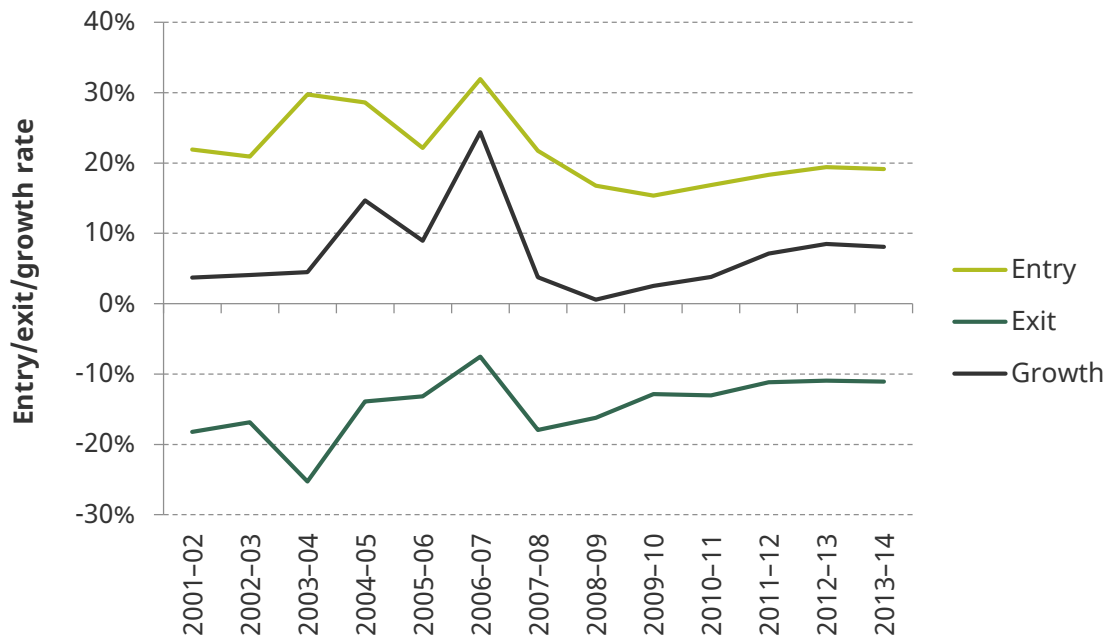
Figure B.4. Entry, exit and net growth in the owner-managed company population



Note: 'Entry' in any financial year is the number of owner-managed companies trading in that year that were not trading the year before. 'Exit' shows the number that were trading the year before but not in the current year. The diamonds show the net effects of entry and exit.

Source: Authors' calculations using HMRC administrative data sets.

Figure B.5. Entry, exit and net growth rates of the owner-managed company population



Note: 'Entry' in any financial year is the number of owner-managed companies trading in that year that were not trading the year before. 'Exit' shows the number that were trading the year before but not in the current year. Entry, exit and growth rates are calculated as the absolute values of entry, exit or growth divided by last year's population total.

Source: Authors' calculations using HMRC administrative data sets.

B.3 Regression results: probability of sole traders ceasing to trade next period

Table B.4. Relationship between business owner characteristics and the probability of the business ceasing trading: estimated by multivariate regression for businesses starting in 2003–04 (percentage points)

Variable	Coefficient
Years since business started (baseline: 0)	
1	0.9
2	-2.6
3	-2.5
4	-3.8
5	-5.1
6	-7.5
7	-6.2
8	-7.4
9	-7.9
10	-7.7
Female	-2.9
Age (baseline: 16–24)	
25–34	-2.2
35–44	-3.3
45–54	-3.2
55+	-0.3
Uses agent to fill in tax return	0.7
Uses capital allowances	-2.4
Profits quintile (baseline: lowest quintile)	
2	-2.9
3	-3.9
4	-3.8
5 (highest profits)	-4.2
Turnover quintile (baseline: lowest quintile)	
2	-8.1
3	-12.1
4	-13.7

Variable	Coefficient
5 (highest turnover)	-12.2
Has employment income in first year	-0.3
Employment income quintile (baseline: lowest quintile)	
2	0.5
3	0.5
4	0.1
5	0.2
Foreign born	-0.4
Number of observations	1,760,075

Note: Coefficients are the results of a linear regression with the dependent variable being a dummy variable that takes the value 1 if that year is the last year before the sole tradership ceases trading and 0 otherwise, and the independent variables shown in the table. 13 dummy variables for regions of the UK (plus Isle of Man and Channel Islands) and 12 industry dummies are included but not reported.

Source: Authors' calculations based on HMRC administrative data sets.

B.4 Average profits of 'entrants', 'exitors' and 'stayers' in different time periods

Table B.5. Change in average sole trader profit in four-year periods: profits of entrants, exitors and stayers

Period	Average profit, exiter	Average profit, stayer (period 1)	Average profit, stayer (period 2)	Average profit, entrant
1999-00 to 2003-04	£12,600	£16,700	£18,300	£11,600
2003-04 to 2007-08	£13,000	£17,000	£17,500	£10,500
2007-08 to 2011-12	£11,900	£15,900	£13,400	£8,500
2011-12 to 2015-16	£9,700	£12,300	£13,500	£9,100

Note: 'Exiter' is defined as a sole trader trading in the first year of the period but not the final year. 'Entrant' is defined as a sole trader trading in the final year of the period but not the first year. 'Stayer' is defined as a sole trader trading in both the first year and the final year of the period. Profits deflated to 2015-16 prices using CPIH.

References

- Adam, S., Miller, H. and Pope, T. (2017), 'Tax, legal form and the gig economy', in C. Emmerson, P. Johnson and R. Joyce (eds) *The IFS Green Budget: February 2017*, <https://www.ifs.org.uk/publications/8872>.
- Advani, A. (2017), 'Who does and doesn't pay taxes?', IFS Briefing Note no. BN218, <https://www.ifs.org.uk/publications/10003>.
- Andrews, D., Criscuolo, C. and Gal, P. N. (2016), 'The best versus the rest: the global productivity slowdown, divergence across firms and the role of public policy', OECD Productivity Working Paper no. 2016-05.
- Baily, M. N., Bartelsman, E. J. and Haltiwanger, J. (2001), 'Labor productivity: structural change and cyclical dynamics', *Review of Economics and Statistics*, vol. 83, pp. 420–33.
- Department for Work & Pensions, National Centre for Social Research and Office for National Statistics, Social & Vital Statistics Division (2017), Bespoke Version of the *Family Resources Survey, 2005–2016*.
- HM Government (2017), *Industrial Strategy*, White Paper, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf.
- HM Revenue and Customs (2018), *Measuring Tax Gaps 2018 Edition: Tax Gap Estimates for 2016–17*, <https://www.gov.uk/government/statistics/measuring-tax-gaps>.
- Miller, H., Pope, T. and Smith, K. (2019), 'Intertemporal income shifting and taxing owners of closely held companies', mimeo.
- OECD (2016), *Entrepreneurship at a Glance 2016*, OECD Publishing, Paris, https://doi.org/10.1787/entrepreneur_aag-2016-en.
- Office for Budget Responsibility (2016), *Economic and Fiscal Outlook: November 2016*, <https://obr.uk/efo/economic-and-fiscal-outlook-november-2016/>.
- Office for National Statistics, Social Survey Division, and Northern Ireland Statistics & Research Agency, Central Survey Unit (2017), *Quarterly Labour Force Survey, 1992–2017*, retrieved from <https://discover.ukdataservice.ac.uk/series/?sn=2000026>.
- Tatomir, S. (2015), 'Self-employment: what can we learn from recent developments?', *Bank of England Quarterly Bulletin*, 2015 Q1, pp. 56–66.
- Topel, R. and Ward, M. (1992), 'Job mobility and the careers of young men', *Quarterly Journal of Economics*, vol. 107, pp. 439–79.