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Unpacking New Firm Exit

by

George Saridakis, Julian Frankish and David J. Storey

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Abstract

This paper unpacks new firm exit in a novel way. It theorises that, even after controlling for a wide range of human capital and other factors access to, and the management of, an overdraft facility powerfully influences the exit chances of a new firm. It then unpacks exits, distinguishing between new firms that exit leaving no debts (pure exiters) and those that exit leaving a debt (defaulters). A second distinction is between those exiting in the short- and the longer-run. Using a bank-based dataset, comprising nearly 6,000 new businesses in England and Wales tracked over a decade it shows that, although there are similarities, financial management plays an important, but very different, role in explaining exit across the four groups. Overall, new firms with an overdraft have lower exit rates than those without, but the reverse is the case for defaulters. A second finding is that, although exceeding the terms of an overdraft enhances short-run survival, it lowers survival in the longer-run. These results highlight the powerful insights provided by private information held by the the bank that is not normally available to academic researchers.

Keywords: *Entrepreneurial finance, New venture, Exit, Firm performance, Human capital, Loans and Overdrafts.*

Introduction

The core characteristic that distinguishes small from large, and new from well-established firms is that, in both instances, the former have considerably higher exit rates than the latter[1]. This implies that comparing the performance of small with large, and new with well-established firms by observing only those currently trading, can be misleading. This is because a considerably higher proportion of the firms that are currently new and small, will exit in future years, compared with those that are well-established and large (Frankish et al., 2013). Succinctly put, firm exit is as central to examining the performance of new and small firms as the Prince of Denmark is to a performance of Hamlet (Lopez et al., 2017).

The focus of this paper is on the exit of new firms, the current state of knowledge upon which has recently been helpfully summarised by Soto-Simone et al. (2020). They conclude that work to date has focussed heavily on the link between firm exit/survival and the talents, skills, and awareness of the business owner.

Although the current paper takes account of these dimensions, its central contribution is to distinguish between the different types of exit – referred to as 'unpacking'. Its theoretical contribution is to highlight two novel dimensions of exit. The first is between 'pure' exits and defaulters (i.e., firms exiting with default). The former occurs when the decision to exit has no negative financial implications for any third-parties, whereas defaults occur when business owners leave significant unpaid debts. The theory-based case for the distinction is that defaulters impose a considerably greater cost on society than 'pure' exiters. The second distinction is between short- and longer-run exits. This is important because the latter group are much more likely to have accumulated losses than those that exit very quickly.

To contextualise these differences, Storey (1994) draws a threefold theoretical distinction, namely: (i) characteristics observable prior to the business starting to trade (e.g., business owner's personal characteristics), (ii) characteristics observable when the business starts (e.g., legal form, sector, location), and (iii) characteristics observable only when the business is trading (proxied by various financial variables such as sales turnover volatility and overdraft facility and behaviour). Crucially for our purposes, the latter information is available only to the bank. Drawing upon it enables its role in explaining exit to be compared with the public or survey-based information that is more normally relied upon by external parties, such as academics.

[1] Hart and Oulton (1994) show that each doubling of employment size reduces exit rates by 5% for firms with up to 500 workers.

Our empirical contribution draws upon a large data set that is a representative sample of all new firms in England and Wales founded in 2004[2]. It is a bank-based cohort, where every financial transaction by each new firm is tracked continuously throughout the firm's lifespan for a period of up to 10 years, or until it exits, if sooner. The only self-reported data used was provided by the enterprise owner(s) when they applied for account facilities. It must be strongly emphasised that inclusion in the dataset is based on the provision of account facilities only; it does not necessarily imply that the bank provided finance. The new firms are not required to have employees to be included here. Since approximately 40% exit[3] within two years, it is critical that they are tracked as soon as they have begun to trade, and not some significant period of time later when they have reached a minimum size and their exit rates have reduced substantially (Yang and Aldrich, 2017).

This unique dataset enables us to make four novel empirical contributions. The first is to highlight the magnitude of new firm exit; second, to show the weak explanatory role played in all forms of exit by the founder/founding team, once other factors are included; third, the major role played by financial management skills; fourth the very different roles played by bank finance in explaining both short- and longer-run exits, and in the distinction between pure exits and defaulters. In short, the paper demonstrates that exit is an unsatisfactory single 'catch-all' for new enterprises that no longer trade.

The rest of the paper is structured as follows. It begins by justifying and defining the different 'types' of exit. This is followed by a section that reviews prior work on exit, and uses this to formulate hypotheses regarding the different factors expected to influence exit rates both in general, and in the four sub-groups. The data used for testing these hypotheses are then presented, followed by the statistical framework. The findings are set out in full, and their implications for both theory development and for practitioners are covered in a final section.

Unpacking Exit

For many decades the received wisdom on business exits was that these were synonymous with failure, and that 'incompetent management was responsible for nearly 90% of these failures' (Bruno and Leidecker, 1988:51). Exit was viewed as a clearly undesirable outcome.

[2] Our findings therefore will be expected to differ from sub-groups of new firms such as IPOs, exporters, innovators etc.

[3] Exit is defined to occur when there are no payments through the business bank account for a period of up to six months and further enquiries conclude that the firm has not switched to another bank while continuing to trade.

Studies published in the last decade have, however, made a more nuanced case for exit, by distinguishing between different 'types' of exits on the grounds that each type has different consequences for the business owner(s) and for society more widely. (Khelil, 2016; Headd, 2003; Levie et al., 2011). For some, the decision to exit is voluntary, providing an opportunity to harvest the wealth created by the enterprise, either by retiring or by selling the firm (Cumming and Li, 2013); for others it is an involuntary, costly, and emotionally scarring experience (Shepherd, 2013). A further distinction can be drawn between those firms where the financial losses are borne by external parties – such as employees, local suppliers and those providing finance – and those where the owner(s) bear the loss in full. Finally, a case has been made that exit can be beneficial for an owner on the grounds that this experience enhances the performance of any subsequent business they establish (Fontana and Nesta, 2010).

The typology of exits proposed in this paper is of interest to a formal financial institution providing finance to a new firm. Exit is defined as the closure of a business bank account. A distinction is made between new firms that exit leaving no debts ('pure exiters'), and those that exit leaving a debt ('defaulters'). 'Pure' exiters do so because their owners perceive better uses for their time and talents (Gimeno et al., 1997). Exit may be in the form of a business sale, but it is much more likely to be so the owner(s) can participate in alternative forms of employment, unemployment, or exit from the labour force (Parker, 2018). By contrast, defaulters leave debts behind them, which may range from small unpaid credit accounts to filing for personal bankruptcy, being disqualified from trading, or even to serving a custodial sentence for fraud.

A second important distinction is between those exiting in the short-run and those who exit in the longer-run. The case for this distinction is that, at start-up, the new firm is particularly likely to have problems generating cash flow generally and predictable cash flow in particular (Lundmark et al., 2020). It is therefore heavily dependent on being able to access a bank overdraft, which can be considered as a financial buffer against cash flow vicissitudes. This dependency is assumed to decline in the longer-run when profits have accumulated, generating an internal financial buffer.

Derivation of hypotheses

This section groups into three the factors that have been used to explain the exit of new and small firms. These are the pre-start factors, the at-start factors, and the post-start factors (Storey, 1994).

Key pre start up factors

Human capital (proxied by age, experience and education) is a key building block for theories of new and small firm performance (Soto-Simone et al., 2020), which view successful business ownership and management as being more likely among individuals with high human capital. Human capital is commonly captured in measures of founder age, prior experience, formal education and gender.[4]

Older individuals are more likely to have acquired the range of skills needed to ensure a new firm survives. However, the link between the age of the founder(s) and exit is usually theorised as having an inverted U-shape, peaking at around 55 years of age (Cressy, 1996). Two forms of prior experience are identified as influential on new firm survival: prior sectoral experience and prior business ownership experience. New firms started by owner(s) with prior sectoral experience have been shown to have lower exit rates than those started by individuals without such experience (Cole and Sokolyk, 2018). The evidence is less clear for new firms started by those with prior business ownership experience. Wang and Chugh (2014) make a case, based on entrepreneurial learning, that prior business ownership lowers exit rates. However, entrepreneurial learning is incompatible with a Gambler's Ruin model of new firm performance, as documented by Schneck et al. (2021). Furthermore, if prior business owners are actually recidivists rather than learners, it implies that their business is *more* likely to exit/close than if they were an otherwise similar individual with no prior ownership experience. Empirical evidence in support of recidivism is provided by Metzger (2007), Rocha et al. (2015), and Cole and Sokolyk (2018). However, Yang and Aldrich (2012) found no support for this relationship in line with Schneck et al. (2021).

[4] Other 'pre-start' factors on new firm exit are also controlled and examined. The first is whether the new firm is owned by more than a single individual. This is theorised to reduce all forms of exit rates on the grounds that teams provide a greater diversity of skills than the single individual. Empirical support for this is provided by Reynolds and White (1997) and Korosteleva and Mickiewicz (2011). There are also controls for whether the owner uses any sources of advice prior to starting the business. The positive case is that the collection of information is likely to reduce the risk and so lower all forms of exit. The alternative case is that the diversity of circumstances faced by a new business owner makes it unlikely that advice can be tailored towards specific actions that lower the risk of exit.

Evidence concerning the impact of founders educational qualifications on exit is also mixed (Coad et al., 2013). This is because highly educated owner(s), although they are likely to earn more than the less well-educated individual as a business-owner, are also likely to earn more as an employee (Stam et al., 2010). The alternative case is that those with educational qualifications have more employment options, and are less likely to see business ownership as a convenient temporary 'bolt-hole' than those with fewer qualifications. This could be reflected in differences between short- and long-life exits.

The impact of the founder's gender on firm survival has been widely theorised. Although it does not emerge from all studies (Kepler and Shane, 2007; Saridakis et al., 2014) the balance of evidence points to female under-performance on a number of dimensions that includes exit (Justo et al., 2015). This is primarily on the grounds that female owners have higher risk-aversion and less relevant human capital which reduces access to funding.

However, most prior empirical works have only made the binary distinction between male- and female-owned businesses, whereas many new ventures have both male and female owners. The case for a lower exit rate for joint-gender new firms builds upon that for having multiple owners, i.e., they bring different skills/talents and attitudes to risk to the venture. Kenge (2016), for example, argues that combining a risk-averse woman (acting to reduce over-optimism) with a male's preferential access to funding explains why business owned by mixed genders perform better than those exclusively owned by either males or females.

H1: *Other than owner age and gender, human capital proxies will not significantly influence either the scale or the nature of new firm exits.*

At-start factors: legal form, location and sector

Three potentially important influences on exit are in place when the new firm begins to trade. These are location, sector and legal form, and each might be expected to influence the scale and type of exit. Location influences the availability of resources, and the nature of competition, with exit rates in urban areas being higher than in rural areas (Renski, 2011). However, being located close to a core supplier or marketplace – even if this is in an urban location – can lower exit rates (Fontana and Nesta, 2010). The sectors where entry is easiest, in the sense of requiring the least human and financial capital, are also those where competition is most fierce and where it is most difficult to differentiate the product or service on offer. Examples include hairdressers or vehicle repairers (Fotopoulos and Louri, 2000). In

contrast, other sectors have both low entry and exit rates (Disney et al., 2003). We therefore control for both location and sector.

Thirdly, there is long-established evidence that limited companies have lower exit rates compared with partnerships which, in turn, have lower exit rates than sole proprietorships (Harhoff et al., 1998). This clarity applies to exits in aggregate, but a different picture may emerge when exits are unpacked.

The key factor influencing new firms to choose limited company status is the enhanced credibility this gives the enterprise in its dealings with customers and finance providers (Gutiérrez and Ortín-Ángel, 2017). It improves the new firm's capacity to obtain bank funding, thereby providing it with a financial buffer that can even out cash flow variations and improve its chances of survival. However, this debt has to be repaid at some point and it can become a burden in the medium-term. Limited company status may therefore be a double-edged sword. A further complication is that some businesses choose limited company status specifically to protect their owners against personal debt, so if there is a relationship, it is likely to be less clear among defaulters than for all exits.

H2: *Limited company status lowers exit rates, particularly in the short-run, but those choosing it are more likely to default in the medium-term.*

Post-start factors: finance and financial management

The marketplace for small firm finance is widely recognised as opaque, with suppliers having highly imperfect information on the quality of those seeking funding (Berger and Udell, 1998). This opacity is even greater for new firms without a 'track record'. Suppliers or banks therefore use a range of metrics to gauge the quality of applicants for funding, which include the pre- and at-start-up factors discussed above. However, once the firm starts to trade, the bank acquires exclusive access to information on the firms' cash flow that can be used to monitor performance. We theorise that the variables captured in a bank-based account information system influence all forms of exit. The case is now made for how this impact varies both between short- and longer-life new firms, and between defaulters and pure exiters.

New firms, as theorised by Lundmark et al. (2020), can be considered as having access to a pool of cash – referred to as a financial buffer – which, once drained, leads to exit. The buffer comprises revenue from sales but also access to owner/family wealth, together with any external borrowing. This implies that sales revenue, generated shortly after

start-up (referred to as 'early wins') is expected to lower both exit and default rates because it supplements the financial buffer. Its impact is expected to be particularly influential in the short-run.

Unfortunately, payments from customers to a new firm are frequently episodic. Even a single payment – possibly trivial to the payee – can have a major impact on the cash-flow of a new enterprise and hence on its survival or exit (Ebben and Johnson, 2011). For this reason continuous and reliable payments are preferred to those that are spasmodic and unpredictable. This implies that new firms with a volatile sales pattern are more likely to both exit and default. Again the impact is expected to be more powerful in the short-run when the financial buffer is smaller.

Bank funding can, in some cases, be a significant contributor to the financial buffer of a new firm, either in the form of an overdraft or a term loan. The overdraft provides funding, up to a specified amount, in return for repayments at specific times[5]. In the UK, access to a modest overdraft is rarely initially refused[6]. This implies that access to an overdraft lowers exits by evening out the vicissitudes of cash flow, particularly in the short-run when financial buffers are small. However, an inability to repay the overdraft on demand reduces these benefits for the longer-established new firm.

Since the overdraft is a fixed sum that can be drawn upon, in full or in part, without requiring permission from the bank, its usage varies between firms. Some use it only occasionally, whereas others incorporate it routinely into all forms of financial planning. Although it is fixed, the bank may allow temporary borrowing in excess of the agreed limit, but only with its permission and normally at a much higher interest rate. This 'unauthorised borrowing' is taken to reflect poor cash management and implies the enterprise is at a higher risk of exit and of default. In short, the link between exit and access to/or use of an overdraft is ambiguous. However, borrowing in excess of the limit is expected to increase the likelihood of all forms of exit and default.

A further distinction can be drawn between the new firm that very occasionally slips into overdraft excess and one that persistently exceeds the specified limit, and so incurs high interest rates. Persistently spending time in overdraft excess clearly reflects weak cash

[5] The term overdraft has a different meaning in the United States where it refers to the account holder bringing the account balance below zero. In the UK, however, it is an unsecured short-term loan that was in 2004 ulilised by 53% of SMEs.

[6] Evidence for this is provided by Cole and Sokolyk (2018) who find those accessing business bank credit at start-up perform better than those that do not. However, the accumulation of the interest plus capital can impose a longer-run financial burden on the firm that it is unable to discharge, making it more at-risk than firms without an overdraft.

management. This leads, in both the short- and long-term, to exit and/or default. This implies that time spent 'in excess' increases the likelihood of all forms of exit and default.

Finally, a term loan is provided for a fixed time-period, normally for capital equipment purchases. Those taking a term loan are therefore likely to be seeking expansion. However, the bank is not fully able to monitor how these funds are used. If funding is in fact used to supplement the cash buffer rather than for investment, then new firms with term loans would be less likely to exit in the short-run. However the dangers observed above with the overdraft are expected to be higher for those with term loans if the anticipated expansion fails to materialise. This implies that bank funding in the form of term loans lowers exits and pure exits, but increases the likelihood of defaults in the longer-run.

The above discussion of the role of finance and financial management on the nature of exit is captured in our third hypothesis:

H3: *The effects of finance and financial management variables on new firm survival will differ between 'pure' exiters and defaulters and between new firms with different trading life.*

Data

This paper uses a sample of start-up businesses drawn from the customer records of Barclays Bank, which in 2004 had a customer base of just over 500,000 businesses or just over 20% of enterprises in England and Wales with sales of less than £1 million. The entire sample opened a business current (payment) account in March, April or May 2004, with each account being recorded as its first account with Barclays. Appendix A provides detailed information about the data collection and sample approach.

Briefly turning to the key definitions, a new firm is defined as one that has opened a new business bank account and has received payments for third-party sales in either the opening or the following month. Prior to the provision of account facilities, owner(s) answered three groups of questions. These covered the owner's (1) educational attainment, (2) previous business experience and (3) sources of business advice (if any) used prior to start-up. These provide the only self-reported data used in the analysis.

Exit is defined as the closure of the bank account, although not all cases of exit were accompanied by the prompt closure of accounts. In these instances, a protracted period – six months – of no activity (not receiving third party income) saw the date of exit assigned to the start of that period. Further cleaning was required to eliminate those cases where the bank

account closed with Barclays but moved to another finance provider. Finally, following exit, a further investigation was undertaken to identify the defaulters, a term we define shortly.

There were 6,671 new businesses that initially met the sample conditions. These represented about one in four of all start-ups with Barclays during the first three months of 2004 and approximately one in 20 of all new ventures in England and Wales over that period. Our regression analysis, however, is of 5,589 cases where there was full information on all variables. Every financial transaction made by each new venture in the sample was then tracked and compiled on a monthly basis until it either ceased trading ('exit') or had been in operation for ten years, i.e. until March-May 2014.

Four characteristics of the data merit emphasis. First, it covers all sectors – apart from financial services – and accurately documents the start of trading, with all new ventures starting in the second quarter of 2004. Second, although only 18% of the (raw) sample survived for the whole period, every financial transaction made by the non-survivors is, like that of the survivors, documented in full throughout the firm's life-span. Third, inclusion is not dependent on being either registered with the government or having employees. It is solely based on acquiring access to a business bank account – but not necessarily bank funding. Fourth, because of the extensive procedures set out earlier, both the nature and the timing of an exit are documented.

The benefits and implications of using bank data to capture new business activities are as follows. We reiterate that these new firms were seeking account facilities, without which it is (virtually) impossible to trade in England and Wales. Our data are therefore not limited to those seeking loans or other financial services. Second, coverage is more extensive than, for example, public datasets in the UK where a minimum sales threshold is required for inclusion[7]. Third, the metric of firm performance used is sales rather than employment, which tends to be used in public databases. Employment is an imperfect measure for defining new firms because many trade, often for years, without employing anyone other than the owner[8]. Furthermore, the decision by the business owner to take on their first employees can be seen as an event of seismic importance, whereas a modest increase in sales is less so. Employment is therefore a 'clunky metric' in a new firm context. Fourth, applicants seeking to gain access to a new business bank account must be truthful and transparent since this information will be externally verified. This is not the case when responses to surveys are provided voluntarily and indeed, such responses frequently undergo no independent verification. Fifth, the account

[7] Bank data identifies 500.000 new businesses in 2004, compared with 190,000 VAT registrations.
[8] Coad et al. (2017) show that only 6% of Danish firms had taken on an employee within 3 years of start-up.

opening date is precise, so avoiding the problem encountered by many studies of 'new ventures', which may include many well-established enterprises that are likely to have considerably higher survival rates than the businesses that can be truly described as new[9]. Sixth, in parts of Europe[10] multiple banking is common, implying that that the financial records of a new firm could be spread across several banks. In the UK this is rare, particularly for a new firm. Thus, the records held by a single bank will capture in full the finances of a UK business (Hernández-Cánovas and Köeter-Kant, 2010).

Defining and measuring exits and defaults

Exit is defined as the closure of the bank account with Barclays, subject to the provisos noted above. Default, however, occurs when the new firm contravenes its repayment schedule with the bank; it is therefore, a subset of exits. Defaults are captured by two metrics. The first is 'a material incidence of lending arrears' and the second is where the account is moved to a recovery unit and the bank seeks to recover the arrears. The latter is much more likely to take place when the lending is secured and when the sums involved are such that they are worthwhile pursuing. Both metrics are combined in our definition of defaults, although we recognise the latter is more financially significant.

The temporal pattern of Exits and Defaults is shown in Figure 1. This plots overall exit rates and exit rates without default (pure exiters) on the left hand side, and exit rates with default (defaulters) on the right for each year after start-up. Of the initial full sample of new firms, 16% had exited by the end of Year 1 and a further 24% by the end of Year 2. This is the peak exit year for all exits. In all subsequent years exits continued, but at decreasing rates so that, by the end of Year 10, the annual exit rate was approximately 8.5%. This confirms the Cressy (1996) findings of an inverted U-shape with aggregate exit rates peaking in Years 2-3, followed by a monotonic decline. Overall, 82% exit within a decade (66% exit without default and 16% exit with default).

Slightly different patterns emerge when a distinction is drawn between defaulters and all exiters. Defaulters peak in Year 3 at about 4.8%, when the all-exit rate was about 22.5%, implying that, in that year, defaulters were just above 1:5 of all exits. However, by Year 10 [2014], defaulters were less than 1:6 of all exits, implying that, although the exit rates of both

[9] For example, the 'new ventures' examined by Hmieleski and Baron 2009 were, on average, more than five years old.
[10] Most notably in Italy (Cosci and Meliciani, 2002; Detragiache, Garella, and Guiso, 2000).

groups fell, they did so at different rates. Finally, the impact of the GFC[11] is reflected in rates rising for defaulters, but not for exits as a group. This underlines the importance of distinguishing between defaulters and pure exiters and of examining the determinants of exit in different time periods.

[Figure 1 about here]

Definitions, descriptions and correlations

The definitions and descriptive statistics of all variables are shown in Table 1 below. We also provide summary statistics by type of exit in Table B1 in Appendix B, which shows significant differences in a number of characteristics such as human capital, ownership structure, and financial variables. For example, when comparing pure exiters with defaulters, we find that the latter group comprises younger and less experienced business owners, who are likely to have sought advice from a solicitor, and who hold and make use of overdrafts. A comparison between all exiters and survivors highlights differences in business owner's age, legal form, and ownership structure (with female ownership being more prevalent in their structure), as well as in access and the use of financial facilities such as overdrafts. Table B2 in Appendix B provides correlations between dependent and independent variables.

[Table 1 about here]

[11] A small proportion of the firms that default do not exit (about 1% of the total defaulted firms); for this graph, these firms are not considered as exiters. Most of the defaulters exit during the year of default (87%) and about 12% exit in the following or subsequent years. For the latter group, we consider the year of exit rather than the year of default.

Statistical model: the discrete time proportional hazard model

Since our data was interval censored we estimated a hazard rate between *t* and *t*+1 using a complementary log-log model (see Jenkins, 2005). The cloglog model is a time discrete model, which fits the data analogously to continuous time proportional hazard models (e.g., Cox model), and allows us to deal with right censoring bias.[12] Specifically, we analysed the determinants of the risk of firm exit (using a dummy that equals to one if the firm fails and zero otherwise) by estimating a duration model of the probability of firm exit in *t+1* conditional on survival up to time *t*. We assumed that firm *j* exited between *t* and *t*+1 with probability $Pr\ (y_{jt}=1) = \lambda_{j,}$ and that it survived with probability $Pr\ (y_{jt}=0) = 1-\lambda_{j}$. Additionally we assumed that this probability was a function of covariates (*x*) and thus, the hazard rate can be expressed as follows:

$$\lambda_{jt} = \beta_0 + \sum_{i=1}^{k} \beta_i x_{ijt} \tag{1}$$

Considering the discrete nature of the data, we estimated the parameters using a complementary log-log specification:

$$\log[-\log(1-\lambda_{jt})] = \beta_0 + \beta_1 x_{1jt} + \beta_2 x_{2jt} + ... + \beta_k x_{kjt} \tag{2}$$

implying

$$\hat{\lambda}_{jt} = 1 - \exp[-\exp(x'\beta_{jt}')] \tag{3}$$

where it is the estimated hazard rate of firm exit. Also, we estimate separate models for firms exiting without default and firms exiting with default by constructing separate exit variables to denote failure without default (equal to one if a firm exits without default and zero otherwise) and failure with default (equal to one if a firm exits with default and zero otherwise) as discussed in Ferreira (2020). The model controls for a number of individual and firm characteristics (*x*) such as education, age, ownership structure, business support and advice, financial indicators, industry and region. Time dummies are also included in all models. We report the exponentiated coefficients and corresponding (robust) standard errors. Given our modelling approach, the exponentiated coefficients can be interpreted as hazard ratios equivalent to exp(*x*)-1. A coefficient above one implies a proportionally larger hazard, and a coefficient below one implies a proportionally smaller hazard.

[12] Information about exit is provided in yearly intervals making this approach more appropriate than using a Cox proportional hazard model (see Jenkins, 2005; Ferreira and Saridakis, 2017) .

Empirical results

Table 2 presents our key findings.[13] It has three main columns, each of which has three sub-columns. The first main column, Column I, shows the results for All Exits (i.e., firms that exit, whether with or without history of default); the second, Column II, shows the results for Pure Exits that occur without any cost to an external party (i.e., it considers only those firms that exit without having experienced a default); Column III shows the results for Defaulters (i.e., those exiting with debts). Each of the three main columns also has three sub-columns. The first comprises all exits; the next two columns distinguish between short-run exits (where the business ceased operations before the end of Year 3) and those that exited at some point between Years 4 to 10, which are longer-run exits. These sub- and full-sample estimates also act as a robustness check of the findings. We incorporate these into Table 2 by presenting the exponentiated coefficients for the exit and default models.

The rows of Table 2 assign the independent variables to three groups: pre-, at-, and post-start, as theorised earlier. The first sub-column of Column I is the baseline position where all exits are compared with all survivors.[14]

All exits compared with all survivors

An examination of the pre-start variables shows, in line with our expectations in H1, that exit rates are lower amongst middle-aged owners, and higher amongst new firms owned by either a male or a female. The other human capital variables play little role. In line with H2, choosing to start up as a limited company clearly lowers exit rates compared with other legal forms. Regarding the other at-start variables, there are both spatial and sectoral factors influencing exits.

However, it is the post-start factors – derived exclusively from the transactions observed in the business bank account(s) – that provide the most consistently powerful explanations of exit. Exit, overall, is higher among new firms with high sales volatility, and also where the bank provides either loans/overdrafts or both. In terms of the management of this finance, exit is, as expected, lowered by overdraft use, even when this is used 'in excess'.

[13] The data has been expanded to include information about the firm for each day of survival. We include time dummies in all models, which provides information about the shape of the baseline hazard. Our models are estimated using 5,589 firms corresponding to 24,260 observations.

[14] We also estimate the model as a probit. The conclusions drawn from the probit model are similar to those discussed here, and emphasise the role played by financial variables but also by age, gender and legal form.

What reverses this result is that overall exit rates increase when the firm spends long periods 'in excess'. This implies that bank funding generally lowers exit, but its mismanagement is a strong signal of future exit.

Overall, the evidence comparing survivors with non-survivors is in line with Hypotheses H1 to H3.

[Table 2 about here]

Pure exits compared with defaulters

We now discuss the findings for pure exiters and firms that exit with default[15] by comparing the first sub-column of Column II in Table 2 with the first sub-column of Column III. Amongst the pre-start factors, new firms with middle-aged owners are less likely to be either pure exiters or defaulters than those in either the younger or the older age groups.On gender, it will be recalled that the baseline position was a business owned by both male(s) and females. Our results point to gender having an insignificant influence on default; however new firms that are owned either solely by male(s) or solely by female(s), compared with the baseline position, are more likely to be pure exits. We also find a significant association between ownership numbers and pure exit. However, in contrast with all, or pure, exits those with higher education qualifications are less likely to default. Of the remaining at-start variables, defaulters are more likely than pure exiters to report having used a solicitor before beginning to trade. This was also the case for those using non-family or private or public advice prior to start-up, suggesting that identifiable human capital characteristics are somewhat more strongly linked to defaulters than is the case for all exits.

Of the at-start factors, the first sub-column of Column I, for all exits, shows a powerful role for legal form, with limited company status lowering exit rates significantly. However, when the pure exiters are separated from the defaulters, as in the first sub-columns of Columns II and III respectively, it can be seen that this applies only to the former. New firms starting as a partnership are more likely to exit than sole owners, but they are less likely to default. These findings clearly support the importance of the distinction drawn in

[15] We find similar conclusions when we estimate a multinomial logit model. In this model, the dependent variable consists of three categories: exit without default, exit with default, and survivors. Age, gender, ownership, and financial variables are significant for both types of exit. However, legal form is associated with pure exiters but not with defaulters. In contrast, education is found to be statistically significant for the latter only.

H2. There are also some notable spatial and sectoral variations, but we now turn to the role played by the post-start variables.

The first sub-column of Column II shows that, for pure exiters, survival is lowered by high sales volatility; having, and using, an overdraft also enhances survival. Both findings are in line with expectations. What is more surprising is that, amongst the pure exiters, even those that exceed their borrowing limits are more likely to survive than those staying within them; it is only the firms that outrun their limits persistently, and for lengthy periods of time, that have lower survival rates.

These findings can then be compared with the first sub-column of Column III which shows the characteristics of defaulters. Here, sales volatility, which is so important for pure exiters, is not statistically significant. The key characteristic of defaulters is that even holding a loan or overdraft, lowers survival rate – the reverse of the finding for the pure exiters. The only characteristic they share with the pure exiters is that they are (considerably) more likely to exit if they persistently, and for long periods of time, fail to comply with the bank's terms and conditions.

In short, there are striking differences between pure exiters and defaulters, most notably in their management of bank funding. Pure exiters demonstrate more cash management skills and appear to use funds to avoid leaving debts behind them. This is not the case for the defaulters. The evidence makes clear the case for distinguishing between the two groups and provides strong support for H3.

Short and longer run exiters

A short-run exit is defined to occur by the end of Year 3, whereas a longer-run exit is one that survives beyond the end of Year 3 but exits before the end of Year 10.[16]

The baseline position is the first sub-column of Column I which shows all exits. This is compared with the second and third sub-columns of Column I, which distinguish between short- and longer-run time spans, respectively. The significant pre-start variables are broadly

[16] We have also estimated two separate probity models that compare short-lived firms with survivors and long-lived firms with survivors. These models are broadly in line with the results obtained from the cloglog model for exiters. In both cases, we find that age decreases the probability of exit and, as with the cloglog model, education is found to be more closely associated with short-lived exit. Gender plays a similar role to that discussed in the cloglog model. Legal form is found to be linked to firm survival, with being a limited company increasing the probability of short-term, but not long-term, survival, but it is the financial variables that are found to be the significant predictors of firm failure. Finally, we experimented with creating an index that takes the value of 1 if the firm exits within the first 3 years, 2 if the firm exits before the end of year 10 and 3 if the firm survives, and estimated the model as an ordered probit. The importance of these variables in explaining firm survival remains robust.

similar across all three sub-columns, i.e., age and gender, with the other human capital variables being not significant. Of the at-start variables, firms exiting in the short-run are significantly less likely to have chosen limited company as their legal form, but this is not the case among those exiting in the longer run. It implies that the choice of legal form has a clear short-run effect, but that this declines with time.

Of the post-start financial variables, sales volatility lowers survival for both the short- and longer-run exiters. Second, the use of an overdraft lowers short-run exit, but has no significant longer-run impact. Even when the overdraft is used 'in excess', it lowers exit in the short run, but has no significant effect in the longer-run. Both findings are in line with our view of bank funding as a key contributor to the financial buffer from which new firms can draw in order to better manage cash flow in their early years. They also provide support for H3, and make a case for distinguishing between short- and longer-run exits. A third finding is that for both short- and longer-run exiters, time spent in overdraft excess increases exit rates. Clearly, although dipping into an overdraft – even occasionally to excess – enhances survival, spending extended periods in excess reflects weak cash management skills. This is the case in both the short- and the longer-run.

An examination of the first sub-column of Column III shows how defaulters differ between those defaulting in the short-run and those defaulting in the longer-run – the second sub-column. Amongst the pre-start variables, although middle-aged founders are less likely to be defaulters – confirming earlier results – this finding is not statistically significant for those defaulting in the longer-run. These results are paralleled by the education variables. Short-run defaulters are less likely to have high education qualifications, but this becomes non-significant for longer-run defaulters. The other human capital factors follow the non-significant pattern observed in Columns I and II.

Of the at-start factors, legal status appears less influential in explaining defaults, whether these be short- or longer-run, than in explaining pure exits. Turning now to the role of the post-start factors amongst defaulters, the short/longer-run distinction points to few differences. Holding an overdraft or term loan considerably increases default rates for both short- and longer-run defaulters. Once again, it appears to be the management of liquidity, rather than access to it, that is the key, since both longer- and short-run defaulters are characterised by exceeding limits and by frequently being 'in excess'.

Robustness checks

We further examined the above models using a discrete time hazard model of firm exit with firm-level frailty (see Wienke, 2010) to control for unobserved heterogeneity ('frailty') (For an excellent review of the potential consequences of unobserved heterogeneity and the ways that this can be handled within the discrete (and continuous) survival analysis see Jenkins, 2015: 81-90). [17] The findings from the models discussed earlier (see Table 2) are presented using a random-effects version of the cloglog in Table B3 in Appendix B.[18] The results are broadly in line with those presented above, although frailty has an important effect on the magnitude of some of the parameters.

Also, we estimated the exit model by including all defaulters in it. We then created a time-period dummy to capture the effect of the GFC (taking the value of one in Years 4-6 and zero otherwise, see Figure 1). We expected to find that both these variables have deteriorating survival rates. We also included an interaction term between the crisis and the default variable.

The results from this model are presented in Table 3. We find the crisis dummy to be positive and statistically significant with an exponentiated coefficient equal to 1.76. This suggests that the crisis increased the mean exit probability by 76% (exp (0.567)-1). Similarly, the default variable carries a positive and statistically significant coefficient (coeff. 2.635), suggesting an increase in the probability of firm collapse. Finally the interaction terms are found to be positive and statistically significant, suggesting an increase in defaults during the crisis.

Conclusions and interpretations

Reviewing the key findings

This paper has documented the scale and nature of new firm exits. It shows that almost half of new firms exit within three years, and 82% exit within a decade. Exit, however, comprises a number of outcomes that range from a highly profitable sale through to personal bankruptcy and a custodial sentence for fraud, with the vast bulk of exits falling between these two (very

[17] The xtcloglog stata programme is used to estimate the model, assuming a normal distribution and treating the duration time as a discrete variable (see Jenkins, 2015: 84-86). For application in continuous time duration models, see Huynh et al. (2012).

[18] Also, we experiment by estimating the overall models using lagged values of the overdraft variable. This was done to address any potential concerns related to simultaneity between the overdraft variables and the performance variable (captured by exit and default). However, the conclusions regarding the effect of overdaft on exit and default remains unchanged. Future research should provide further insights into this statistical issue.

rare) extremes. It is therefore vital to 'unpack' exits into different groups that are of interest to researchers and practitioners.

The first distinction is between exits where creditors are paid in full (the so called 'pure exiters') and those where creditors remain unpaid. The latter are called defaulters and they constitute approximately 1 in 4 of all new firm exits. A second distinction is between short- and longer-run exits. Confirming earlier work, short-run exit rates are very high – peaking in Year 2, but they decline with time. By Year 10, annual exit rates are less than one-third of their Year 2 peak.

The paper then demonstrates that these distinctions are important because different factors explain short- versus longer-run exits and defaulters versus pure exiters. The factors are grouped into three: those observable prior to start- up, those observable when the firm starts to trade, and those only observable once the business has begun to trade.

With the modest exception of age and gender, the pre-start factors exercise little influence over any form of exit. However, the at-start factors – legal form, sector and location – do play a role, with the choice of legal form being powerful. It enhances early period survival, perhaps by signalling credibility; that being said, it is also associated with higher default in the longer-run.

The most powerful influences on all forms of exit only become clear once the firm has started to trade. These capture the owners' access to, and management of, finance. One variable – time spent in excess of the overdraft limit – has the same significant impact on all forms of exit, but all other variables have different signs and significance when applied to different forms of exit. For example, sales volatility is positively associated with pure exits but not with defaulters; bank funding in any form lowers pure exit rates but raises default rates. Exceeding overdraft limits lowers exit rates in general, but not for defaulters.

Implications and future directions

This section offers our view on the implications of these results for providers of finance –the bank – and also for the research community.

The analysis points to the modest role played by identifiable human capital – the pre-start factors – in the exit of a new business. The bank is therefore wise to provide account facilities for all, and to then use post-start information to determine its provision of finance. The more challenging dimension for the bank is the distinction between pure exiters and defaulters. Ideally, the bank would like a simple red flag, such as slow repayment or exceeding an overdraft limit, to ensure it can avoid continuing to fund a new firm that is

likely to default. However, this is problematic because both the pure exiters and the defaulters are characterised by slow and sporadic repayment patterns. This suggests the bank needs to devise a more sensitive metric that captures only the defaulters. Being able to distinguish between those exits where the default is 'material' and other more modest defaults would have been helpful here, but we did not have access to this data.

A second challenge for the bank is to correctly interpret the overdraft signal. Ambiguity stems from the finding that having an overdraft lowers pure exit, but it raises the default risk in both the short-and the long-run. To begin to address this issue requires data on successful and unsuccessful applicants; it also requires the identification of discouraged borrowers, i.e., good borrowers who would have received finance but who did not apply because they expected to be rejected (Kon and Storey, 2003).

Our findings have major implications for the research community that is unable to access the private information used in the paper. The risk of being unable to fully capture, from a representative sample of new ventures, both their performance and the factors influencing that performance, is considerable because of omitted variable bias. For example, human capital, learning, family and access to advice play only a very modest role indeed in explaining any form of exit, once private financial information is also included. However, these variables are widely used in the literature concerned with explaining the performance of new firms (Soto-Simeone, Sirén and Antretter, 2020). Being unable to include financial variables, which this study has shown to be the dominant influence on both exits and defaulters, has to raise questions over the reliability of research on new firms that omits these key characteristics.

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Figure 1. New Venture Exit and Default Rates (%): Years 1-10.

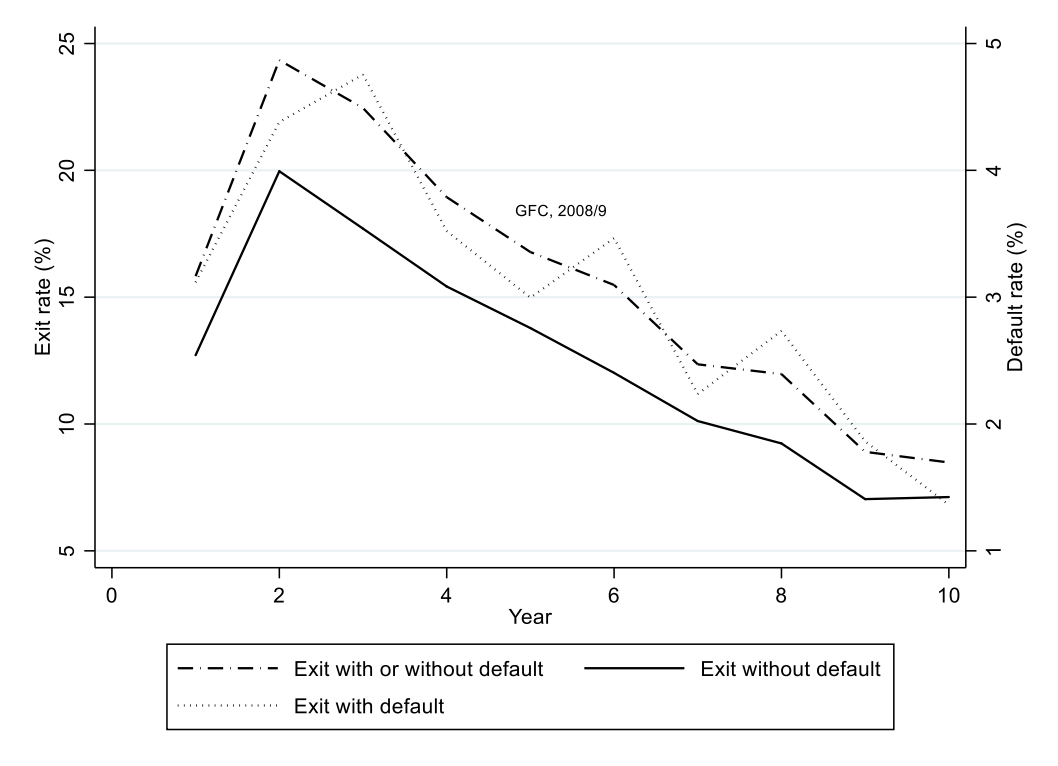


Table 1. Description of the variables and summary statistics.

Variable	Description	Mean	Std. Dev.	Min	Max
Dependent variables					
Firm exit	Enterprise exits	0.784	0.411	0	1
Pure Exiters		0.632	0.482	0	1
Defaulters	Enterprise incurs a material incidence of lending arrears	0.152	0.358	0	1
Independent variables					
Age (under 25)	Mean age of owners at start-up by age band.				
25-34		0.305	0.461	0	1
35-44		0.352	0.478	0	1
45-54		0.199	0.400	0	1
55-64		0.072	0.258	0	1
65+		0.010	0.098	0	1
Education (<NVQ2)	Highest level of educational attainment by owner(s).				
NVQ2		0.325	0.468	0	1
NVQ3		0.167	0.373	0	1
NVQ4+		0.280	0.449	0	1
Ownership (Both)	Gender ownership				
Male only		0.666	0.472	0	1
Female only		0.184	0.388	0	1
Owners in excess	Owners in excess of the minimum for chosen legal form.	0.168	0.374	0	1
Family business experience	Family previous business experience	0.636	0.481	0	1
Past business owner	Previous business owner	0.729	0.445	0	1
Enterprise agency support	Advice/support (prior to start-up), Enterprise Agency/Business Link	0.102	0.303	0	1
Support from an accountant	Advice/support, Accountant	0.368	0.482	0	1
Support from solicitor	Advice/support, Solicitor	0.051	0.220	0	1
Support from college	Advice/support, College	0.040	0.196	0	1
Support from Barclays start right seminar	Advice/support, (Barclays) Start Right Seminar	0.007	0.083	0	1

Support from princess trust	Advice/support, Princes Trust	0.010	0.101	0	1
Support from family	Advice/support, Family/friends	0.291	0.454	0	1
Other support	Advice/support, Other source(s)	0.062	0.240	0	1
Legal form (Sole trader)	Legal form of business.				
Company		0.395	0.489	0	1
Partnership		0.130	0.336	0	1
Region (London)	Region				
East Midlands		0.072	0.258	0	1
East of England		0.159	0.366	0	1
North East		0.038	0.190	0	1
North West		0.066	0.249	0	1
South East		0.128	0.334	0	1
South West		0.100	0.300	0	1
West Midlands		0.093	0.290	0	1
Yorkshire and The Humber		0.062	0.240	0	1
Wales		0.063	0.244	0	1
Industry (Other)	Industry				
Agriculture		0.010	0.101	0	1
Manufacturing		0.050	0.218	0	1
Construction		0.151	0.358	0	1
Retail		0.173	0.378	0	1
Transport		0.027	0.163	0	1
Accommodation		0.090	0.286	0	1
Information		0.061	0.240	0	1
Real estate		0.037	0.188	0	1
Professional		0.074	0.261	0	1
Administrative		0.148	0.355	0	1
Education		0.008	0.086	0	1
Health		0.018	0.131	0	1
Arts		0.034	0.182	0	1

Mean sales turnover	Turnover after start-up	139583.6	678891.2	68	3.20E+07
Mean sales turnover volatility	Volatility of turnover (SD of monthly turnover/mean monthly turnover)	0.898	0.584	0.014	3.464
Holding of overdraft limit and/or term loan	Holding of overdraft limit and/or term loan with bank	0.415	0.493	0	1
Use of approved overdraft	Use of approved overdraft limit	0.324	0.468	0	1
Mean proportion of approved overdraft used (%)	Average maximum proportion of approved overdraft limit	7.644	15.181	0	84.428
Use of overdraft in excess of limit	Use of overdraft in excess of limit	0.660	0.474	0	1
Mean proportion of time spent in excess of overdraft limit (%)	Proportion of time spent in excess of overdraft limit	7.083	12.782	0	100

Observations: 5,589.

Table 2. Results of the discrete time proportional hazard model.

Model:	I) Firm exit			II) Pure Exiters			III) Defaulters		
	All	Short-lived	Long-lived	All	Short-lived	Long-lived	All	Short-lived	Long-lived
Variables	Exp (b)	Exp (b)	Exp (b)	Exp (b)	Exp (b)	Exp (b)	Exp (b)	Exp (b)	Exp (b)
Age (under 25)									
25-34	0.918	0.913	0.924	0.899	0.921	0.861	0.950	0.872	1.253
	(0.061)	(0.080)	(0.096)	(0.065)	(0.090)	(0.095)	(0.148)	(0.163)	(0.373)
35-44	0.766***	0.759***	0.777**	0.752***	0.793**	0.696***	0.799	0.645**	1.201
	(0.051)	(0.068)	(0.082)	(0.055)	(0.079)	(0.077)	(0.128)	(0.128)	(0.359)
45-54	0.680***	0.658***	0.706***	0.692***	0.707***	0.662***	0.638**	0.524***	0.938
	(0.049)	(0.064)	(0.079)	(0.055)	(0.076)	(0.078)	(0.116)	(0.121)	(0.304)
55-64	0.691***	0.629***	0.772**	0.714***	0.694***	0.720**	0.567**	0.402***	0.996
	(0.060)	(0.075)	(0.100)	(0.066)	(0.090)	(0.098)	(0.135)	(0.130)	(0.389)
65+	1.019	1.017	0.999	0.977	1.072	0.831	0.983	0.546	2.152
	(0.167)	(0.216)	(0.265)	(0.171)	(0.243)	(0.239)	(0.486)	(0.403)	(1.646)
Education (<NVQ2)									
NVQ2	0.940	0.955	0.925	0.989	1.004	0.979	0.770***	0.821	0.718**
	(0.040)	(0.057)	(0.057)	(0.047)	(0.067)	(0.067)	(0.077)	(0.109)	(0.107)
NVQ3	0.948	0.919	0.970	1.014	0.983	1.041	0.711***	0.721**	0.711*
	(0.047)	(0.063)	(0.071)	(0.056)	(0.075)	(0.083)	(0.087)	(0.117)	(0.135)
NVQ4+	1.005	1.018	0.976	1.075	1.125	1.010	0.720***	0.646***	0.780
	(0.048)	(0.066)	(0.068)	(0.056)	(0.081)	(0.077)	(0.084)	(0.105)	(0.134)
Ownership (Both)									
Male only	1.375***	1.430***	1.299***	1.416***	1.469***	1.347***	1.190	1.195	1.126
	(0.081)	(0.119)	(0.109)	(0.090)	(0.134)	(0.121)	(0.198)	(0.274)	(0.279)
Female only	1.539***	1.505***	1.550***	1.648***	1.636***	1.636***	1.021	0.935	1.094
	(0.104)	(0.142)	(0.152)	(0.119)	(0.167)	(0.172)	(0.193)	(0.243)	(0.310)
Owners in excess	1.076	1.106	1.035	1.111*	1.103	1.116	0.896	1.110	0.694
	(0.061)	(0.089)	(0.083)	(0.068)	(0.096)	(0.095)	(0.139)	(0.238)	(0.156)

Family business experience	1.031	1.043	1.012	1.058	1.073	1.035	0.913	0.920	0.898
	(0.034)	(0.048)	(0.049)	(0.039)	(0.054)	(0.055)	(0.075)	(0.101)	(0.111)
Past business owner	1.041	1.014	1.084	1.041	1.013	1.089	1.088	1.063	1.175
	(0.038)	(0.051)	(0.059)	(0.042)	(0.056)	(0.064)	(0.104)	(0.134)	(0.179)
Enterprise agency support	1.043	1.124	0.938	1.085	1.184**	0.962	0.906	0.923	0.877
	(0.055)	(0.080)	(0.075)	(0.062)	(0.092)	(0.084)	(0.124)	(0.168)	(0.182)
Support from an accountant	1.020	1.020	1.013	1.047	1.067	1.019	0.899	0.834	0.926
	(0.035)	(0.049)	(0.050)	(0.039)	(0.056)	(0.054)	(0.079)	(0.101)	(0.122)
Support from solicitor	1.027	1.086	1.001	0.953	1.005	0.938	1.515**	1.626**	1.478
	(0.076)	(0.111)	(0.109)	(0.078)	(0.114)	(0.113)	(0.263)	(0.378)	(0.396)
Support from college	0.883	0.991	0.792*	0.838*	1.030	0.683***	0.974	0.795	1.106
	(0.073)	(0.112)	(0.098)	(0.078)	(0.127)	(0.100)	(0.180)	(0.228)	(0.281)
Support from Barclays start right seminar	1.147	1.154	1.149	1.267	1.377	1.140	0.847	0.630	1.370
	(0.206)	(0.265)	(0.320)	(0.240)	(0.321)	(0.351)	(0.386)	(0.414)	(0.822)
Support from princess trust	1.127	0.994	1.380	1.112	0.846	1.594**	1.227	1.630	0.665
	(0.168)	(0.203)	(0.298)	(0.184)	(0.201)	(0.363)	(0.391)	(0.596)	(0.449)
Support from family	0.984	0.964	1.016	0.966	0.937	1.006	1.125	1.136	1.144
	(0.035)	(0.047)	(0.053)	(0.038)	(0.051)	(0.058)	(0.096)	(0.131)	(0.151)
Other support	1.115*	1.082	1.115	1.037	1.026	1.020	1.509***	1.337	1.692**
	(0.070)	(0.093)	(0.104)	(0.073)	(0.098)	(0.108)	(0.217)	(0.272)	(0.357)
Legal form (Sole trader)									
Company	0.813***	0.746***	0.922	0.794***	0.730***	0.909	0.872	0.844	0.946
	(0.035)	(0.044)	(0.055)	(0.037)	(0.048)	(0.060)	(0.088)	(0.119)	(0.140)
Partnership	1.305***	1.281***	1.303***	1.440***	1.419***	1.437***	0.671**	0.620**	0.703
	(0.074)	(0.097)	(0.112)	(0.088)	(0.117)	(0.132)	(0.107)	(0.132)	(0.173)
Region (London)									
East Midlands	0.787***	0.777***	0.768***	1.234***	1.189*	1.341***	1.189	1.139	1.345
	(0.054)	(0.074)	(0.077)	(0.088)	(0.117)	(0.141)	(0.190)	(0.243)	(0.322)
East of England	0.811***	0.837**	0.750***	1.000	0.951	1.058	0.793*	0.795	0.805
	(0.053)	(0.075)	(0.073)	(0.056)	(0.076)	(0.085)	(0.105)	(0.144)	(0.158)

North East	0.919	0.972	0.821	1.218**	1.255*	1.175	0.760	0.827	0.699
	(0.089)	(0.129)	(0.117)	(0.113)	(0.162)	(0.160)	(0.172)	(0.247)	(0.243)
North West	0.841**	0.869	0.779**	1.014	1.014	1.025	0.939	0.995	0.848
	(0.069)	(0.098)	(0.093)	(0.078)	(0.108)	(0.113)	(0.145)	(0.210)	(0.193)
South East	0.800***	0.883	0.707***	0.980	1.041	0.952	0.909	1.002	0.795
	(0.057)	(0.086)	(0.075)	(0.059)	(0.087)	(0.085)	(0.126)	(0.184)	(0.173)
South West	0.821***	0.867	0.741***	1.044	1.032	1.052	0.790	0.950	0.633*
	(0.061)	(0.089)	(0.082)	(0.069)	(0.094)	(0.101)	(0.125)	(0.194)	(0.163)
West Midlands	0.865*	0.883	0.836	1.116*	1.107	1.165	0.784	0.764	0.813
	(0.065)	(0.092)	(0.092)	(0.074)	(0.103)	(0.111)	(0.126)	(0.167)	(0.197)
Yorkshire and The Humber	0.834**	0.924	0.734**	0.938	1.021	0.878	1.272	1.290	1.253
	(0.070)	(0.105)	(0.092)	(0.075)	(0.109)	(0.107)	(0.195)	(0.267)	(0.289)
Wales	0.798***	0.857	0.730**	0.995	1.071	0.953	0.895	0.829	1.005
	(0.067)	(0.099)	(0.091)	(0.078)	(0.116)	(0.110)	(0.152)	(0.194)	(0.254)
Industry (Other)									
Agriculture	0.760*	0.697	0.864	0.852	0.725	1.019	0.316*	0.626	
	(0.121)	(0.159)	(0.194)	(0.143)	(0.181)	(0.232)	(0.189)	(0.375)	
Manufacturing	0.951	0.893	1.021	1.076	0.968	1.221	0.528***	0.697	0.373***
	(0.079)	(0.105)	(0.121)	(0.097)	(0.126)	(0.155)	(0.119)	(0.203)	(0.132)
Construction	0.941	0.932	0.959	1.019	1.042	1.015	0.708**	0.651**	0.768
	(0.058)	(0.080)	(0.086)	(0.070)	(0.099)	(0.102)	(0.101)	(0.131)	(0.160)
Retail	1.224***	1.205**	1.253***	1.275***	1.234**	1.344***	1.000	1.102	0.850
	(0.072)	(0.095)	(0.108)	(0.084)	(0.110)	(0.130)	(0.127)	(0.187)	(0.165)
Transport	1.255**	1.386**	1.024	1.420***	1.491***	1.242	0.733	1.073	0.385**
	(0.131)	(0.190)	(0.169)	(0.161)	(0.225)	(0.220)	(0.185)	(0.329)	(0.171)
Accommodation	1.544***	1.444***	1.653***	1.675***	1.607***	1.755***	1.014	0.897	1.130
	(0.105)	(0.133)	(0.168)	(0.127)	(0.164)	(0.199)	(0.159)	(0.195)	(0.253)
Information	0.917	0.815*	1.064	0.964	0.870	1.094	0.724	0.613	0.784
	(0.072)	(0.089)	(0.120)	(0.082)	(0.103)	(0.134)	(0.154)	(0.187)	(0.250)
Real estate	0.663***	0.677***	0.658***	0.738***	0.753*	0.737**	0.317***	0.384**	0.247***

	(0.065)	(0.092)	(0.093)	(0.077)	(0.109)	(0.111)	(0.106)	(0.168)	(0.130)
Professional	0.800***	0.701***	0.904	0.859*	0.761**	0.973	0.559***	0.487**	0.633
	(0.060)	(0.076)	(0.094)	(0.070)	(0.089)	(0.110)	(0.119)	(0.161)	(0.181)
Administrative	1.050	1.020	1.090	1.097	1.047	1.174*	0.841	0.955	0.702*
	(0.063)	(0.084)	(0.095)	(0.073)	(0.097)	(0.113)	(0.117)	(0.176)	(0.150)
Education	0.629**	0.552*	0.698	0.617**	0.601	0.635	0.912	0.406	1.354
	(0.127)	(0.169)	(0.188)	(0.138)	(0.194)	(0.199)	(0.423)	(0.414)	(0.721)
Health	0.850	0.957	0.730	1.049	1.134	0.962	0.071***	0.170*	
	(0.110)	(0.164)	(0.146)	(0.140)	(0.202)	(0.195)	(0.071)	(0.172)	
Arts	0.911	0.972	0.855	0.981	1.056	0.922	0.693	0.805	0.527
	(0.085)	(0.124)	(0.119)	(0.100)	(0.148)	(0.139)	(0.168)	(0.247)	(0.225)
Mean sales turnover	1.000	1.000	1.000*	1.000	1.000	1.000*	1.000	1.000*	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mean sales turnover volatility	1.552***	1.426***	1.716***	1.665***	1.500***	1.878***	0.918	0.948	0.842
	(0.046)	(0.053)	(0.080)	(0.051)	(0.059)	(0.091)	(0.083)	(0.106)	(0.129)
Holding of overdraft limit and/or term loan	0.797***	0.783***	0.855*	0.640***	0.605***	0.711***	2.342***	2.105***	3.401***
	(0.045)	(0.060)	(0.072)	(0.042)	(0.055)	(0.067)	(0.299)	(0.331)	(0.783)
Use of approved overdraft	0.829***	0.708***	0.931	0.811**	0.662***	0.913	0.863	0.819	0.931
	(0.057)	(0.073)	(0.089)	(0.066)	(0.083)	(0.101)	(0.113)	(0.150)	(0.187)
Mean proportion of approved overdraft used (%)	1.000	0.995*	1.003	0.999	0.996	1.000	1.004	0.993	1.011***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.005)	(0.003)
Use of overdraft in excess of limit	0.675***	0.502***	0.974	0.602***	0.428***	0.889**	3.532***	3.007***	5.139***
	(0.025)	(0.025)	(0.055)	(0.024)	(0.024)	(0.053)	(0.600)	(0.621)	(1.639)
Mean proportion of time spent in excess of overdraft limit (%)	1.015***	1.014***	1.017***	1.005***	1.005***	1.008***	1.037***	1.029***	1.048***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Constant	0.095***	0.308***	0.109***	0.082***	0.237***	0.097***	0.004***	0.022***	0.003***
	(0.014)	(0.047)	(0.019)	(0.013)	(0.040)	(0.018)	(0.002)	(0.009)	(0.001)
Log-likelihood	-10631.04	-4902.33	-5605.04	-9,436.56	-4,311.25	-5,002.12	-2,814.78	-1,457.25	-1,308.92

N	24,260	9,821	14,439	24,260	9,821	14,439	24,260	9,821	13,973

Robust standard errors are in parentheses.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 3. Results of the discrete time proportional hazard model with crisis dummy and default.

Model:	I	II	III	IV
Variables	Exp (b)	Exp (b)	Exp (b)	Exp (b)
Crisis	1.762***		1.702***	1.648***
	(0.179)		(0.172)	(0.167)
Default		13.948***	13.948***	
		(0.872)	(0.872)	
Default*Crisis				17.613***
				(1.829)
Default*(1-Crisis)				12.565***
				(0.923)
Age (under 25)				
25-34	0.918	0.923	0.923	0.920
	(0.061)	(0.067)	(0.067)	(0.066)
35-44	0.766***	0.762***	0.762***	0.762***
	(0.051)	(0.056)	(0.056)	(0.055)
45-54	0.680***	0.710***	0.710***	0.709***
	(0.049)	(0.055)	(0.055)	(0.055)
55-64	0.691***	0.711***	0.711***	0.710***
	(0.060)	(0.065)	(0.065)	(0.065)
65+	1.019	0.974	0.974	0.972
	(0.167)	(0.165)	(0.165)	(0.163)
Education (<NVQ2)				
NVQ2	0.940	0.987	0.987	0.984
	(0.040)	(0.044)	(0.044)	(0.044)
NVQ3	0.948	0.989	0.989	0.985
	(0.047)	(0.052)	(0.052)	(0.052)
NVQ4+	1.005	1.042	1.042	1.042
	(0.048)	(0.052)	(0.052)	(0.052)
Ownership (Both)				
Male only	1.376***	1.337***	1.337***	1.338***
	(0.081)	(0.082)	(0.082)	(0.082)
Female only	1.540***	1.525***	1.525***	1.527***
	(0.104)	(0.107)	(0.107)	(0.107)
Owners in excess	1.076	1.080	1.080	1.081
	(0.061)	(0.064)	(0.064)	(0.064)
Family business experience	1.031	1.053	1.053	1.052
	(0.034)	(0.037)	(0.037)	(0.037)
Past business owner	1.041	1.028	1.028	1.026
	(0.038)	(0.039)	(0.039)	(0.039)
Enterprise agency support	1.043	1.040	1.040	1.043
	(0.055)	(0.061)	(0.061)	(0.061)
Support from an accountant	1.020	1.042	1.042	1.038
	(0.035)	(0.037)	(0.037)	(0.037)
Support from solicitor	1.027	0.963	0.963	0.966
	(0.076)	(0.073)	(0.073)	(0.074)

Support from college	0.883	0.853*	0.853*	0.849*
	(0.073)	(0.072)	(0.072)	(0.071)
Support from Barclays start right seminar	1.147	1.285	1.285	1.289
	(0.206)	(0.246)	(0.246)	(0.244)
Support from princess trust	1.127	1.086	1.086	1.096
	(0.168)	(0.180)	(0.180)	(0.179)
Support from family	0.984	0.986	0.986	0.988
	(0.035)	(0.037)	(0.037)	(0.037)
Other support	1.115*	1.068	1.068	1.063
	(0.070)	(0.070)	(0.070)	(0.070)
Legal form (Sole trader)				
Company	0.813***	0.757***	0.757***	0.758***
	(0.035)	(0.034)	(0.034)	(0.034)
Partnership	1.305***	1.308***	1.308***	1.310***
	(0.074)	(0.081)	(0.081)	(0.080)
Mean sales turnover	1.000	1.000	1.000	1.000
	(0.000)	(0.000)	(0.000)	(0.000)
Mean sales turnover volatility	1.553***	1.592***	1.592***	1.591***
	(0.046)	(0.049)	(0.049)	(0.049)
Holding of overdraft limit and/or term loan	0.796***	0.665***	0.665***	0.667***
	(0.045)	(0.041)	(0.041)	(0.041)
Use of approved overdraft	0.829***	0.788***	0.788***	0.788***
	(0.057)	(0.059)	(0.059)	(0.059)
Mean proportion of approved overdraft used (%)	1.000	1.001	1.001	1.001
	(0.002)	(0.002)	(0.002)	(0.002)
Use of overdraft in excess of limit	0.675***	0.642***	0.642***	0.642***
	(0.025)	(0.024)	(0.024)	(0.024)
Mean proportion of time spent in excess of overdraft limit (%)	1.015***	1.002	1.002	1.003
	(0.001)	(0.002)	(0.002)	(0.002)
Constant	0.095***	0.167***	0.098***	0.099***
	(0.014)	(0.020)	(0.015)	(0.015)
Test of equality of the interaction coefficients (*p*-value)				0.000
Industry dummies	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes
Log-likelihood	-10,631.2	-9,697.49	-9,697.49	-9,692.57
N	24,260	24,260	24,260	24,260

Robust standard errors are in parentheses.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Appendix A

[Online]

Appendix B

Table B1. Summary statistics by type of exit.

	A: Pure Exiters	B: Defaulters	C: Survivors	A - B	A - C	B - C
Variable	Mean	Mean	Mean	P-value	P-value	P-value
Independent variables						
Age (under 25)						
25-34	0.314	0.349	0.249	0.058	0.000	0.000
35-44	0.332	0.379	0.390	0.011	0.000	0.621
45-54	0.197	0.140	0.247	0.000	0.000	0.000
55-64	0.078	0.044	0.072	0.000	0.500	0.005
65+	0.011	0.007	0.008	0.273	0.435	0.751
Education (<NVQ2)						
NVQ2	0.317	0.329	0.344	0.531	0.087	0.456
NVQ3	0.170	0.151	0.171	0.164	0.940	0.218
NVQ4+	0.290	0.231	0.286	0.001	0.795	0.004
Ownership (Both)						
Male only	0.651	0.728	0.666	0.000	0.336	0.003
Female only	0.209	0.163	0.125	0.001	0.000	0.019
Owners in excess	0.146	0.158	0.242	0.381	0.000	0.000
Family business experience	0.635	0.637	0.637	0.907	0.929	0.974
Past business owner	0.714	0.751	0.758	0.024	0.002	0.748
Enterprise agency support	0.105	0.101	0.094	0.752	0.257	0.573

Support from an accountant	0.365	0.357	0.382	0.639	0.315	0.250
Support from solicitor	0.046	0.066	0.056	0.027	0.179	0.337
Support from college	0.033	0.053	0.051	0.018	0.014	0.811
Support from Barclays start right seminar	0.008	0.009	0.002	0.738	0.001	0.027
Support from princess trust	0.011	0.015	0.005	0.349	0.024	0.027
Support from family	0.297	0.309	0.262	0.512	0.019	0.023
Other support	0.059	0.080	0.055	0.041	0.546	0.026
Legal form (Sole trader)						
Company	0.352	0.406	0.515	0.003	0.000	0.000
Partnership	0.147	0.079	0.116	0.000	0.005	0.004
Region (London)						
East Midlands	0.076	0.077	0.055	0.964	0.007	0.053
East of England	0.160	0.134	0.173	0.051	0.288	0.014
North East	0.040	0.031	0.034	0.147	0.299	0.667
North West	0.062	0.090	0.062	0.009	0.971	0.023
South East	0.127	0.110	0.144	0.155	0.145	0.021
South West	0.102	0.081	0.109	0.054	0.505	0.035
West Midlands	0.097	0.072	0.094	0.012	0.717	0.073
Yorkshire and The Humber	0.055	0.084	0.064	0.006	0.293	0.096
Wales	0.062	0.065	0.067	0.740	0.502	0.826
Industry (Other)						
Agriculture	0.011	0.004	0.012	0.004	0.757	0.019
Manufacturing	0.049	0.041	0.059	0.301	0.208	0.066
Construction	0.145	0.147	0.172	0.893	0.033	0.132
Retail	0.170	0.227	0.145	0.000	0.041	0.000
Transport	0.027	0.035	0.022	0.220	0.377	0.091
Accommodation	0.098	0.105	0.054	0.584	0.000	0.000
Information	0.068	0.042	0.056	0.002	0.117	0.168

Real estate	0.034	0.021	0.055	0.028	0.004	0.000
Professional	0.071	0.048	0.099	0.008	0.004	0.000
Administrative	0.151	0.146	0.139	0.727	0.330	0.673
Education	0.006	0.006	0.013	0.986	0.038	0.080
Health	0.019	0.002	0.025	0.000	0.216	0.000
Arts	0.036	0.032	0.031	0.544	0.374	0.888
Mean sales turnover	107938.4	133510.0	236697.5	0.144	0.000	0.000
Mean sales turnover volatility	0.988	0.860	0.659	0.000	0.000	0.000
Holding of overdraft limit and/or term loan	0.291	0.713	0.571	0.000	0.000	0.000
Use of approved overdraft	0.216	0.574	0.464	0.000	0.000	0.000
Mean proportion of approved overdraft used (%)	5.065	13.075	11.384	0.000	0.000	0.030
Use of overdraft in excess of limit	0.587	0.951	0.671	0.000	0.000	0.000
Mean proportion of time spent in excess of overdraft limit (%)	5.919	18.175	2.682	0.000	0.000	0.000
Observations	3535	849	1205			

Exit without default means that the firm fails without having reported a default whereas exit with default includes firms that fail with reporting a default (that year or before that year). Survivors includes firms that have not experienced any form of exit. We test the equality of the means between groups (A), (B) and (C). We find that the null hypothesis of equal means is rejected in several cases; *p*-values of the test statistic of means between the groups are provided in the last three columns.

Table B2. Correlations between dependent and independent variables.

Variables	Overall exit	Pure Exiters	Defaulters
25-34	0.0643*	0.0252	0.0397*
35-44	-0.0418*	-0.0537*	0.0242
45-54	-0.0630*	-0.0071	-0.0627*
55-64	-0.0013	0.0331*	-0.0460*
65+	0.0073	0.0146	-0.0112
NVQ2	-0.0218	-0.0211	0.0033
NVQ3	-0.0051	0.0096	-0.0187
NVQ4+	-0.0069	0.0288*	-0.0467*
Male only	-0.0003	-0.0415*	0.0554*
Female only	0.0795*	0.0854*	-0.0236
Owners in excess	-0.1036*	-0.0795*	-0.0119
Family business experience	-0.0009	-0.0017	0.0013
Past business owner	-0.0339*	-0.0449*	0.0215
Enterprise agency support	0.0142	0.0129	-0.001
Support from an accountant	-0.0153	-0.006	-0.0095
Support from solicitor	-0.0114	-0.0315*	0.0292*
Support from college	-0.0282*	-0.0448*	0.0279*
Support from Barclays start right seminar	0.0335*	0.0193	0.0124
Support from princess trust	0.0279*	0.0085	0.0206
Support from family	0.0335*	0.0166	0.0161
Other support	0.0148	-0.0117	0.0327*
Company	-0.1288*	-0.1170*	0.0096
Partnership	0.0214	0.0660*	-0.0642*
East Midlands	0.0342*	0.023	0.0082
East of England	-0.0206	0.0038	-0.0287*
North East	0.0098	0.0199	-0.0155
North West	0.0084	-0.0224	0.0397*
South East	-0.0248	-0.004	-0.0231
South West	-0.0149	0.0072	-0.0267*
West Midlands	-0.002	0.0209	-0.0304*
Yorkshire and The Humber	-0.0051	-0.0333*	0.0389*
Wales	-0.0084	-0.009	0.0025
Agriculture	-0.0107	0.0121	-0.0286*
Manufacturing	-0.0212	-0.0053	-0.0172
Construction	-0.0299*	-0.0218	-0.0049
Retail	0.0387*	-0.012	0.0605*
Transport	0.0154	-0.0026	0.0212
Accommodation	0.0658*	0.0396*	0.0222
Information	0.0126	0.0356*	-0.0334*
Real estate	-0.0511*	-0.0179	-0.0345*
Professional	-0.0507*	-0.0127	-0.0409*
Administrative	0.0121	0.0117	-0.0019

Education	-0.0350*	-0.0239	-0.008
Health	-0.0294*	0.0114	-0.0489*
Arts	0.01	0.0127	-0.0055
Mean sales turnover	-0.0750*	-0.0612*	-0.0038
Mean sales turnover volatility	0.2142*	0.2033*	-0.0277*
Holding of overdraft limit and/or term loan	-0.1654*	-0.3311*	0.2552*
Use of approved overdraft	-0.1567*	-0.3017*	0.2257*
Mean proportion of approved overdraft used (%)	0.1805*	-0.1195*	0.3673*
Use of overdraft in excess of limit	-0.0114	-0.2029*	0.2594*
Mean proportion of time spent in excess of overdraft limit (%)	-0.1292*	-0.2229*	0.1514*

*Statistically significant at the 5% level or better.

Table B3. Results of the discrete time proportional hazard model (Frailty model).

Model:	I) All exits			II) Pure exits			III) Defaulters		
	All	Short-lived	Long-lived	All	Short-lived	Long-lived	All	Short-lived	Long-lived
Variables	Exp (b)	Exp (b)	Exp (b)	Exp (b)	Exp (b)	Exp (b)	Exp (b)	Exp (b)	Exp (b)
Age (under 25)									
25-34	0.811	0.745	0.920	0.760	0.810	0.847	0.928	0.776	1.337
	(0.119)	(0.134)	(0.106)	(0.135)	(0.141)	(0.105)	(0.152)	(0.300)	(0.469)
35-44	0.552***	0.485***	0.749**	0.501***	0.609***	0.665***	0.756	0.413**	1.254
	(0.090)	(0.089)	(0.089)	(0.093)	(0.109)	(0.086)	(0.128)	(0.167)	(0.436)
45-54	0.446***	0.366***	0.686***	0.423***	0.511***	0.634***	0.594***	0.249***	0.990
	(0.082)	(0.072)	(0.086)	(0.085)	(0.099)	(0.086)	(0.116)	(0.116)	(0.369)
55-64	0.433***	0.308***	0.746**	0.428***	0.469***	0.691**	0.513**	0.158***	0.947
	(0.091)	(0.073)	(0.107)	(0.100)	(0.107)	(0.107)	(0.133)	(0.102)	(0.427)
65+	1.112	1.057	1.039	1.077	1.231	0.832	0.999	0.361	3.048
	(0.401)	(0.469)	(0.311)	(0.475)	(0.519)	(0.271)	(0.522)	(0.508)	(2.611)
Education (<NVQ2)									
NVQ2	0.881	0.878	0.927	0.967	0.987	0.983	0.776**	0.714	0.718*
	(0.081)	(0.102)	(0.064)	(0.107)	(0.114)	(0.075)	(0.083)	(0.194)	(0.133)
NVQ3	0.808*	0.690***	0.978	0.926	0.865	1.058	0.695***	0.496**	0.705
	(0.090)	(0.096)	(0.080)	(0.120)	(0.117)	(0.094)	(0.094)	(0.169)	(0.162)
NVQ4+	1.023	1.025	0.988	1.245*	1.263*	1.025	0.704***	0.429***	0.811
	(0.101)	(0.130)	(0.076)	(0.151)	(0.157)	(0.086)	(0.089)	(0.140)	(0.173)
Ownership (Both)									
Male only	1.862***	2.102***	1.327***	2.184***	1.977***	1.381***	1.188	1.305	1.149
	(0.266)	(0.344)	(0.127)	(0.349)	(0.318)	(0.143)	(0.210)	(0.576)	(0.329)
Female only	2.288***	2.447***	1.600***	3.219***	2.574***	1.702***	0.995	0.707	1.081
	(0.395)	(0.458)	(0.181)	(0.630)	(0.475)	(0.209)	(0.204)	(0.359)	(0.367)
Owners in excess	1.110	1.179	1.030	1.205	1.154	1.119	0.898	1.107	0.658

	(0.130)	(0.183)	(0.091)	(0.171)	(0.175)	(0.106)	(0.143)	(0.441)	(0.176)
Family business experience	1.062	1.113	1.011	1.099	1.114	1.032	0.914	0.914	0.907
	(0.075)	(0.100)	(0.054)	(0.094)	(0.098)	(0.060)	(0.081)	(0.204)	(0.137)
Past business owner	1.068	1.033	1.086	1.062	0.998	1.100	1.083	1.227	1.139
	(0.083)	(0.102)	(0.066)	(0.101)	(0.096)	(0.073)	(0.108)	(0.303)	(0.201)
Enterprise agency support	1.205	1.435**	0.930	1.390**	1.493***	0.962	0.886	0.905	0.789
	(0.139)	(0.202)	(0.083)	(0.192)	(0.205)	(0.093)	(0.129)	(0.320)	(0.207)
Support from an accountant	1.056	1.065	1.013	1.141	1.144	1.017	0.904	0.745	0.974
	(0.076)	(0.099)	(0.055)	(0.100)	(0.104)	(0.060)	(0.084)	(0.176)	(0.150)
Support from solicitor	1.103	1.167	1.014	0.956	0.973	0.949	1.548**	2.411*	1.552
	(0.171)	(0.233)	(0.123)	(0.181)	(0.192)	(0.127)	(0.285)	(1.116)	(0.508)
Support from college	0.851	1.010	0.781*	0.797	1.081	0.667**	0.959	0.637	1.214
	(0.147)	(0.225)	(0.106)	(0.169)	(0.235)	(0.106)	(0.191)	(0.361)	(0.393)
Support from Barclays start right seminar	1.416	1.511	1.081	1.769	1.678	1.096	0.805	0.698	1.006
	(0.557)	(0.742)	(0.334)	(0.835)	(0.759)	(0.374)	(0.387)	(0.840)	(0.823)
Support from princess trust	1.394	1.186	1.494	1.208	0.768	1.740**	1.296	3.053	0.572
	(0.462)	(0.474)	(0.387)	(0.489)	(0.314)	(0.476)	(0.464)	(2.464)	(0.499)
Support from family	0.967	0.924	1.020	0.894	0.870	1.009	1.129	1.322	1.143
	(0.073)	(0.090)	(0.059)	(0.083)	(0.083)	(0.064)	(0.106)	(0.314)	(0.183)
Other support	1.169	1.085	1.135	1.003	0.963	1.030	1.548***	1.943	1.916**
	(0.160)	(0.190)	(0.120)	(0.167)	(0.165)	(0.121)	(0.245)	(0.797)	(0.538)
Legal form (Sole trader)									
Company	0.608***	0.519***	0.902	0.544***	0.568***	0.888	0.876	0.778	0.956
	(0.065)	(0.059)	(0.062)	(0.063)	(0.064)	(0.066)	(0.096)	(0.218)	(0.174)
Partnership	1.667***	1.702***	1.358***	2.362***	1.982***	1.513***	0.643**	0.365**	0.664
	(0.224)	(0.262)	(0.139)	(0.379)	(0.296)	(0.169)	(0.116)	(0.165)	(0.203)
Region (London)									
East Midlands	1.480***	1.463**	1.366***	1.644***	1.412*	1.372***	1.185	1.095	1.446
	(0.219)	(0.265)	(0.151)	(0.291)	(0.249)	(0.163)	(0.205)	(0.473)	(0.444)
East of England	0.879	0.831	1.015	0.948	0.906	1.066	0.771*	0.631	0.746

	(0.097)	(0.118)	(0.084)	(0.126)	(0.126)	(0.095)	(0.110)	(0.228)	(0.179)
North East	1.288	1.471	1.100	1.642**	1.561*	1.203	0.731	0.705	0.629
	(0.240)	(0.346)	(0.154)	(0.372)	(0.359)	(0.182)	(0.180)	(0.422)	(0.268)
North West	1.024	0.986	1.032	1.018	0.976	1.025	0.961	0.970	0.870
	(0.149)	(0.188)	(0.113)	(0.182)	(0.184)	(0.125)	(0.161)	(0.420)	(0.243)
South East	1.038	1.218	0.933	1.135	1.203	0.955	0.879	0.899	0.731
	(0.121)	(0.182)	(0.085)	(0.161)	(0.176)	(0.094)	(0.134)	(0.334)	(0.198)
South West	1.067	1.185	0.997	1.199	1.177	1.073	0.768	0.823	0.555*
	(0.138)	(0.196)	(0.099)	(0.188)	(0.191)	(0.115)	(0.133)	(0.342)	(0.180)
West Midlands	1.094	1.116	1.121	1.330*	1.287	1.180	0.752	0.514	0.775
	(0.142)	(0.187)	(0.111)	(0.211)	(0.209)	(0.126)	(0.133)	(0.227)	(0.226)
Yorkshire and The Humber	1.090	1.269	0.977	0.933	1.067	0.886	1.283	1.503	1.188
	(0.165)	(0.243)	(0.116)	(0.174)	(0.203)	(0.119)	(0.217)	(0.659)	(0.348)
Wales	1.028	1.135	0.975	1.183	1.244	0.970	0.848	0.556	0.971
	(0.156)	(0.220)	(0.113)	(0.219)	(0.236)	(0.125)	(0.161)	(0.273)	(0.303)
Industry (Other)									
Agriculture	0.522*	0.400**	0.864	0.606	0.508	1.043	0.317*	0.384	1.000
	(0.178)	(0.175)	(0.216)	(0.242)	(0.217)	(0.268)	(0.200)	(0.468)	(.)
Manufacturing	0.890	0.812	1.027	1.142	0.958	1.250	0.505***	0.527	0.280***
	(0.156)	(0.185)	(0.135)	(0.243)	(0.216)	(0.178)	(0.124)	(0.306)	(0.137)
Construction	0.860	0.863	0.949	1.042	1.107	1.006	0.688**	0.400**	0.742
	(0.113)	(0.145)	(0.094)	(0.166)	(0.183)	(0.110)	(0.108)	(0.165)	(0.190)
Retail	1.519***	1.628***	1.289***	1.767***	1.528***	1.398***	1.005	1.351	0.806
	(0.202)	(0.259)	(0.126)	(0.280)	(0.241)	(0.154)	(0.141)	(0.484)	(0.195)
Transport	1.804**	2.453***	1.057	2.357***	2.220***	1.289	0.784	1.490	0.364*
	(0.419)	(0.674)	(0.192)	(0.659)	(0.604)	(0.253)	(0.206)	(0.910)	(0.189)
Accommodation	2.343***	2.267***	1.794***	3.384***	2.473***	1.918***	1.018	0.816	1.183
	(0.413)	(0.424)	(0.239)	(0.686)	(0.457)	(0.279)	(0.172)	(0.350)	(0.343)
Information	0.806	0.621**	1.089	0.863	0.749	1.118	0.721	0.470	0.845
	(0.136)	(0.133)	(0.138)	(0.174)	(0.156)	(0.153)	(0.165)	(0.271)	(0.317)

Real estate	0.399***	0.350***	0.629***	0.467***	0.527**	0.716**	0.282***	0.127**	0.177***
	(0.092)	(0.095)	(0.100)	(0.115)	(0.137)	(0.118)	(0.103)	(0.106)	(0.119)
Professional	0.556***	0.416***	0.885	0.587***	0.545***	0.958	0.538***	0.284**	0.549
	(0.098)	(0.088)	(0.104)	(0.114)	(0.112)	(0.121)	(0.124)	(0.172)	(0.200)
Administrative	1.139	1.146	1.111	1.279	1.163	1.202*	0.859	0.937	0.664
	(0.146)	(0.187)	(0.109)	(0.202)	(0.188)	(0.130)	(0.131)	(0.360)	(0.178)
Education	0.333***	0.246**	0.667	0.264***	0.343**	0.611	0.846	0.299	1.079
	(0.141)	(0.138)	(0.197)	(0.130)	(0.186)	(0.207)	(0.431)	(0.491)	(0.756)
Health	0.705	0.864	0.690*	1.079	1.225	0.932	0.065***	0.056*	1.000
	(0.193)	(0.297)	(0.154)	(0.344)	(0.397)	(0.210)	(0.067)	(0.085)	(.)
Arts	0.875	1.086	0.829	1.044	1.220	0.905	0.675	0.708	0.448
	(0.176)	(0.275)	(0.131)	(0.256)	(0.301)	(0.153)	(0.175)	(0.437)	(0.225)
Mean sales turnover	1.000	1.000	1.000**	1.000	1.000	1.000**	1.000	1.000*	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mean sales turnover volatility	2.404***	2.331***	1.846***	3.259***	2.252***	2.051***	0.901	0.902	0.778
	(0.293)	(0.191)	(0.148)	(0.395)	(0.183)	(0.182)	(0.086)	(0.193)	(0.154)
Holding of overdraft limit and/or term loan	0.579***	0.525***	0.833*	0.318***	0.380***	0.682***	2.526***	5.242***	4.273***
	(0.079)	(0.079)	(0.080)	(0.054)	(0.059)	(0.074)	(0.384)	(1.877)	(1.466)
Use of approved overdraft	0.628***	0.462***	0.914	0.546***	0.481***	0.895	0.835	0.646	0.862
	(0.097)	(0.088)	(0.099)	(0.100)	(0.096)	(0.109)	(0.124)	(0.253)	(0.222)
Mean proportion of approved overdraft used (%)	0.999	0.991*	1.003	0.998	0.995	1.000	1.004	0.986	1.014***
	(0.003)	(0.005)	(0.002)	(0.004)	(0.005)	(0.003)	(0.003)	(0.010)	(0.005)
Use of overdraft in excess of limit	0.368***	0.197***	0.957	0.233***	0.196***	0.869**	3.530***	5.977***	5.683***
	(0.056)	(0.022)	(0.062)	(0.034)	(0.024)	(0.060)	(0.604)	(2.230)	(2.137)
Mean proportion of time spent in excess of overdraft limit (%)	1.034***	1.036***	1.020***	1.013***	1.009***	1.009***	1.043***	1.076***	1.065***
	(0.005)	(0.004)	(0.003)	(0.004)	(0.004)	(0.003)	(0.005)	(0.009)	(0.015)
Constant	0.634	0.385***	0.091***	0.642	0.226***	0.079***	0.004***	0.001***	0.001***
	(0.287)	(0.116)	(0.023)	(0.237)	(0.066)	(0.021)	(0.002)	(0.001)	(0.001)

Log-likelihood	-10,600.9	-4,863.55	-5,604	-9,385.25	-4,282.31	-5,001.06	-2,813.24	-1,448.23	-1,306.76
N	24,260	9,821	14,439	24,260	9,821	14,439	24,260	9,821	13,973

* $p<0.10$, ** $p<0.05$, *** $p<0.01$.