An empirical Examination of discouraged borrowers in the UK

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ABSTRACT

This paper investigates the differences between small and medium sized firms (SMEs) that apply for funding and those that are discouraged from applying for funding - so-called discouraged borrowers. The dynamics and determinants of borrower discouragement, together with its impact on the activities of SMEs are also investigated. Data from the Longitudinal Small Business Survey suggests that one in ten SMEs (9.3%) can be classified as being a discouraged borrower or as many as half a million UK SMEs could be discouraged borrowers. Micro SMEs (employing between 1-9 employees) reported the largest levels of borrower discouragement compared to larger SMEs. Service sector SMEs are less likely to be discouraged borrowers compared to manufacturing counterparts. Discouraged borrowers can be found across all the regions throughout the UK, however, London stands out as the region with the greatest overall level of discouraged borrowers (15.7% in 2015). More generally the regions exhibiting higher levels of borrower discouragement are more peripheral in nature. Discouragement also varies strongly in terms of a firm's future growth-orientation, with growth-oriented SMEs substantially more likely to be discouraged borrowers than non-growth-oriented counterparts. At a more personal level, the biggest single factor shaping the overall intensity of borrower discouragement is risk aversion. The unwillingness of entrepreneurs to take on additional risk was one of the critical factors explaining their (self-imposed) borrower discouragement. Another was fear of rejection and concerns with the prevailing economic conditions.

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1. INTRODUCTION

This report investigates the differences between small and medium sized firms (SMEs) that apply for funding and those that are discouraged from applying for funding - so-called discouraged borrowers. The dynamics and determinants of borrower discouragement, together with its impact on the activities of SMEs are also investigated.

Small and medium-sized enterprises (SMEs) play a central role within modern economies by bringing innovation, employment opportunities, investment which in turn stimulate economic growth (Beck and Demirguc-Kunt, 2006; Storey, 2016). Research in the UK has found that the UK's 5.5million SMEs collectively account for 73% of all net private sector job creation in the UK, creating over two million jobs created since 2010 (Nesta, 2017). As a consequence, understanding and monitoring the supply of finance to small firms has become a recurring topic within the literature related to small business lending as well as being a key concern for policymakers tasked with monitoring developments in the financial services industry and overseeing enterprise development (Berger, 2015; Udell, 2015).

Despite their crucial economic importance to the economy, certain inherent characteristics of new and small firms make it problematic for them to access the financial resources required to fund current and future growth (Garnsey, 1998). In particular, SMEs lack informational transparency (Berger and Udell, 1998; Cassar, 2004). They do not have audited financial statements or publicly visible contracts with staff and suppliers (Carpenter and Peterson, 2002). As such, SMEs are less able to convey their creditworthiness and growth prospects to potential investors (Berger and Udell, 1998). Moreover, the small fixed asset base of most SMEs means that they lack sufficient collateral, which can be pledged against any prospective loans in order to offset inherent informational asymmetries (Avery et al, 1998). Overall, this informational opacity and lack of collateral leads to the credit rationing of SMEs (Jaffee and Russell, 1976; Stiglitz and Weiss, 1981).

Access to finance varies across SMEs with smaller firms (with shorter credit histories and lower levels of collateral to set against loans) facing the most onerous credit constraints (Berger and Udell, 1998; Berger, 2015). These SMEs tend to rely on friends and family and their own internal resources (and or bootstrapping techniques) to fund day-to-day operations and longer term investments. As SMEs grow, they gain access to intermediated debt finance from banks and finance companies, or equity finance from business angels and venture capitalists (Cosh et al, 2009). Moreover, prior evidence suggests that that innovative SMEs encounter significant difficulties in obtaining finance (Lee and Brown, 2017), especially in the presence of credit rationing (Lee et al, 2015. Hall (2002) notes that the market for financing innovation shares many characteristics of the "lemons model" because investors have difficulty differentiating good projects from bad (Akerlof, 1970; Brealey et al, 1977).

For the most part, prior academic research has closely investigated the characteristics of SMEs who apply for credit (but are denied) to fund future growth (Berger and Udell, 1998; Berger, 2015; Udell, 2015). SMEs that require finance, but who do not apply for fear of rejection, have been largely overlooked. Levenson and Willard (2000) label these firms as *discouraged borrowers.* The term discouraged borrowers is defined as "*a good firm, requiring finance, that chooses not to apply to the bank because it feels its application will be rejected"* (Kon and Storey 2003, p.47).

There are strong empirical grounds for investigating discouraged borrowers given that it may lead some creditworthy SMEs to unnecessarily forgo credit, with potentially negative implications for their future growth and resultant job creation, innovation and economic growth. Indeed, prior evidence suggests that creditworthy SMEs are often deterred from applying for finance. Prior evidence from the US suggests that borrower discouragement is prevalent across SMEs (Levenson and Willard, 2000; Han et al, 2009). Moreover, one-third of discouraged borrowers would have received credit had they applied (Cole and Sokolyk, 2016). In the UK, the limited evidence available to date suggests that 50% of UK SMEs classified as discouraged borrowers would in fact have received a loan had they applied (Cowling et al, 2016). Overall, these estimates suggest that between one-third to half of all discouraged borrowers could be labelled "inappropriately discouraged" (Freel et al, 2012). As a consequence, an

investigation of the determinants and dynamics of borrower discouragement across UK SMEs is highly salient for a range of interested parties such as entrepreneurs, small business managers, banks and policy makers.

In this report, we investigate the underlying differences between SMEs that apply for funding and those that are discouraged from applying for funding. We also investigate the evolution of borrower discouragement and how this impacts on SMEs' activities. Our investigation proceeds in five stages as follows:

Stage 1: we describe borrower discouragement patterns in the UK from a longitudinal perspective across different types of SMEs in terms of size, region and orientation.

Stage 2: we investigate the underlying factors driving borrower discouragement from a static and dynamic perspective, based on a careful analysis of appropriate literature related to credit constraints and SME lending.

Stage 3 and 4: we investigate the determinants of the main reasons for being a discouraged borrower and their intensity.

Stage 5: we investigate the impact of borrower discouragement (and intensity of discouragement) on firm future intentions.

The results of our investigation suggest that borrower discouragement varies across different types of SMEs (especially by firm size). Moreover, the prevalence of borrower discouragement also varies by geographical region, industry sector and the business orientation of SMEs (with growth-oriented firms being particularly susceptible to discouragement). Moreover, borrower discouragement varies through the limited time period covered within the study.

The rest of this report is structured as follows. Section 2 provides a discussion of definitional issues. In section 3, provide a brief review of relevant literature. Section 4 describes the data set used and the research methods adopted. In section 5, we present the results of our empirical analysis.

2. DISCOURAGED BORROWERS: DEFINITIONAL ISSUES

A key question to address before undertaking our empirical investigation is to ascertain the precise meaning of discouragement so that we clearly delineate what we mean by a discouraged borrower. The most widely accepted and commonly used definition of discouraged borrowers is attributable to Kon and Storey (2003). The authors define a discouraged borrower as *'a good firm, requiring finance, that chooses not apply to the bank because it feels its application will be rejected'* (Kon and Storey, 2003, p. 34). Discouraged borrowers self-impose credit constraints. Within this definition, discouraged borrowers are strictly limited to bank borrowers. However other researchers have extended the concept of borrower discouragement to include both debt and equity finance under the term of discouraged finance seekers (Xiang et al, 2015). While this seems a logical extension of the concept, especially given the blurring between debt and equity finance within the pecking order of funding preferences facing SMEs (Brown et al, 2017), most empirical studies use borrower discouragement in terms of the fear of being rejected after applying for bank funding.

While most empirical studies adopt the Kon and Storey's definition of borrower discouragement, one element which it fails to address are the underlying causal factors fostering discouragement. This is important because the causal factors shaping discouragement are likely to be heterogeneous. Indeed, the decision making processes surrounding whether to access external capital or not are likely to be mediated by a host of different factors including personal wealth, historical borrowing experiences, personal credit ratings, risk propensity, social and relational connections (Avery et al, 1998). However, central to the concept of discouragement is the notion of uncertainty experienced by entrepreneurs whether to undertake entrepreneurial acts like accessing finance (McMullen and Shepherd, 2006). This suggests that important cognitive, attitudinal and behavioural factors are fundamentally important to understand the nature of borrower decision making. It therefore means that different factors weight more heavily for some types of entrepreneurs than others, suggesting that borrower discouragement is a highly multi-faceted and individualised concept where entrepreneurial assessments of the viability for pursuing and obtaining external

financing are likely to vary considerably across entrepreneurial actors (Neville et al, 2017).

Overall, there appear to be a complex set of inter-related factors shaping discouragement within SMEs (Freel et al, 2012). However, owing to this pervasive borrower heterogeneity, perhaps unsurprisingly, within the literature there is some definitional ambiguity in relation to the precise nature of the underlying causes of discouragement. Kon and Storey (2003) focus heavily on the application costs facing firms. These include financial costs (where owing to a lack or incomplete credit history, entrepreneurs may incur substantive costs in collecting and transmitting additional pieces of information required by a bank); in-kind costs (including additional time required to complete application documentation and liaise with the bank); and psychic costs (including the discomfort which many entrepreneurs experience in passing on information about themselves to a third party).

Recent evidence suggests that trust in institutions may also play a fundamental role in fostering borrower discouragement. According to Tang et al (2017) a firm with a high level of trust in a loan manager should be more encouraged to apply for bank funding (Tang et al, 2017). Indeed, a sizeable body of evidence suggests that strong relational proximity between lenders and SMEs enables the transfer of soft information improving credit availability (Lehmann and Neuberger, 2001; Hernández-Cánovas and Martínez-Solano, 2010; Berger, 2015). The importance of trust as a factor shaping discouragement has been thrown into sharp focus following the global financial crisis. Evidence suggests that the levels of trust between SMEs and banks has been exacerbated by the increasing emphasis placed on personal guarantees and onerous bank covenants, which makes borrowers extremely reluctant to approach banks for loans (Brown and Lee, 2017). The decline in relationship banking more generally may be further exacerbate these problems. Table 1 below outlines the technical definition used within a selection of empirical studies examining discouraged borrowers, which have been published since 2010. This variation hinges on the different definitional issues utilised within surveys that have investigated borrower discouragement.

The range and scope of definitions of borrower discouragement are broader and

more inclusive in some survey questionnaires and studies of discouragement than others. While in most surveys the main focus of the question is on whether SMEs enact self-imposed credit constraints for fear of rejection, in others the issue of the cost of finance is also included as a reason for discouragement (Chakravarty and Xiang 2013; Cowling et al, 2016). While the issue of cost of finance is broadly consistent with the original concept of discouragement proposed by Kon and Storey (2003), this issue of credit restrictions based on the price of finance are clearly pushing the boundaries of the original concept. Given this, it can be difficult to distinguish between SMEs who really need finance and those who do not need finance (Xiang et al, 2015). Moreover, in some studies factors behind borrower discouragement hinge upon issues such as collateral requirements and corruption (Chakravarty and Xiang 2013). Clearly, the concept of discouragement appears to be used both differentially and quite capaciously throughout the literature. This may account for some of the sizeable discrepancies between the levels of discouragement detected within the empirical literature on borrower discouragement. This clearly indicates that considerable caution should be exercised when comparing the empirical findings across different studies of discouraged borrowers.

It also suggests that the definitions surrounding discouragement and how it is examined need to be clearly articulated and delineated when exploring the concept empirically. Towards that end, the main definition used in this study measures whether SMEs in the sample had a need for finance in the last 12 months, but did not apply for fear of rejection (i.e. discouraged borrower). Owing to the nature of the data source interrogated during this study, we are able to further unpack the determinants of discouragement by examining issues such as the fear of rejection, cost of credit, past credit history, prevailing economic conditions, knowledge of financial sources and the time associated with applying. An investigation of these underlying causal factors is absent within the literature.

Table 1: Survey Definitions of Discouraged Borrowers

Study	Data Source	Technical Definition of Discouraged Borrowers
Gama et al 2017	EDRB and World Bank Group's Business Environment and Enterprise Performance Survey (2008/09 BEEPS)	"if it does not apply for a loan for different reasons, such as tough loan prices or loan contract procedures or fear of rationing, that is, the scale of discouragement as a function of bank screening errors, application costs, and the difference in interest rates between the bank and other money lenders" (p. 35)
Moro et al 2017	ECB Survey on the access to Finance of SMES (SAFE)	"did not apply due to anticipated rejection" (p. 122)
Neville et al 2017	US Federal Reserve Board's Survey of Small Business Finances (SSBF)	"During the last three years, were there times when the firm needed credit, but did not apply because it thought the application would be turned down" (p. 21)
Tang et al 2017	Bespoke Survey in Hanan and Guangdong province, China	"Have you decided not to apply for a loan anticipating a bank rejection" (p. 529)
Rostamkalaei 2017	UK SME Finance Monitor	"thought they would be turned down, that is was not the right time to borrow, or that banks were not lending" (p.398)
Cole and Sokolyk 2016	US Federal Reserve Board's Survey of Small Business Finances (SSBF)	"is a firm that did not apply for a loan during the previous 3 years because the firm feared rejection, even though it needed credit" (p. 47)
Cowling et al 2016	UK SME Business Barometer Surveys	"demand for but not applying for any finance either because the firm feared rejection or the owner thought the finance was too expensive" (p. 1054)
Mac an Bhaird et al 2016	ECB Survey on the access to Finance of SMES (SAFE)	"With respect to banks' loans (either new or renewal): did you apply for them over the past 6 months, or not? 1. Applied. 2: No, because of possible rejection" (p. 49)
Chakravarty and Xiang 2013	World Bank Enterprise Surveys	"as firms with a need for a loan who nevertheless choose to not apply for a bank loan because (1) the loan procedure was too complicated; (2) interest rates were too high; (3) collateral requirement were too high; and (4) there was corruption in allocation" (p. 67)
Freel et al 2012	UK biennial survey by the Federation of Small Businesses	"in the past two years has the fear of rejection stopped you from seeking a bank loan for your business" (p. 407)

3. LITERATURE

Relative to the wider SME access to finance literature, to date the academic literature on discouraged borrowers has been relatively modest. However, there are strong grounds for examining this under-researched group of SMEs for both policy and academic perspectives. In terms of the former, while constituting a relatively small sub-set of the SME sector, discouraged borrowers represent a significant number of firms. In one early UK study, Fraser (2004) finds that 8% of SMEs could be classified as discouraged borrowers. This level of borrower discouragement corresponds with the figure of approximately 8.1% of the total UK small business population in 2005 (Freel et al, 2012). However, since the global financial crisis, the prevalence of borrower discouragement appears to have declined to 2.65% of SMEs (Cowling et al, 2016).[1] Second, SMEs are more likely to report discouragement than rejection (Levenson and Willard, 2000). Twice as many SMEs are discouraged from making a loan request as were rejected (Freel et al, 2012).

Why are discouraged borrowers an important topic of interest from an academic perspective? At the heart of Kon and Storey's (2003) theory regarding the existence of discouraged borrowers is asymmetric information in terms of unobservable borrower quality. Under perfect information, every good borrower would obtain the finance they required. However, under imperfect information, some firms may incur such a high effective cost of capital that the return is not sufficient to cover the costs of borrowing. While in some cases this means that riskier discouraged borrowers self-ration (Han et al, 2009), in other cases, informational asymmetries mean that some "good" borrowers do not apply for finance for fear of rejection – even if in fact they would be successful if they had applied.

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[1] Again, the use of different operational classifications of discouragement may explain the magnitude of some of these differences.

While clearly economically important, our knowledge of borrower discouragement remains partial and incomplete. Key omissions in the evidence base exist along a number of different dimensions. In terms of entrepreneurs, an important area for further investigation regards the "cognitive aspects" of borrower discouragement (Mac and Bhaird et al, 2016). What differentiates discouraged borrowers from less risk-averse entrepreneurs from undertaking applications? Clearly, perceptions of lending restrictions are based around economic uncertainty, which in turn are related to particular sudden significant events such as the global financial crisis (Lee et al, 2015) or other economic shocks like Brexit (Brown et al, 2018). Other factors associated with debt finance, such as personal guarantees and bank covenants, may also cultivate borrower discouragement across SMEs (Brown and Lee, 2017). Time constraints facing entrepreneurs may also influence borrower discouragement. Entrepreneurs with limited time are unwilling to engage in a time-consuming loan application process (Parker, 2002).

So what types of individual characteristics are likely to lead to discouragement? (Table 2 provides a summary). The results of prior research suggest that the likelihood of borrower discouragement varies by various demographic factors (Vos et al, 2007). Ethnic minorities (Fraser, 2009; Neville et al 2017), female entrepreneurs (Moro et al, 2017), older, less well-educated and those with low levels of personal wealth being relevant determinants of borrower discouragement (Cole and Sokolyk, 2016). Gender appears a strong predictor of borrower discouragement with female entrepreneurs almost twice as likely to be discouraged borrowers relative to male counterparts (Freel, 2012). Serial entrepreneurs are also much more likely to be discouraged borrowers (Freel et al, 2012). Using instrumented credit scoring techniques (and a data set drawn from Dun and Bradstreet), Han et al (2009) find that borrowers with an above average or high credit risk have a higher propensity to be discouraged borrower. However, the latter finding has been challenged somewhat by other studies (Rostamkalaei, 2017).

Table 2: Characteristics and Impact of Borrower Discouragement

Entrepreneurial Characteristics	Firm-Level Characteristics	Potential Impacts*
Older	Young	Underinvestment
Female	Small	Lower growth
Ethnic minorities	Knowledge-intensive/service-sector	Lower employment
Low levels of human capital	Non-family-owned firms	Reduced innovation
Serial Entrepreneurs	Fewer sources of banking relationships	Increased take-up of costlier or unsuitable sources of finance
Poor credit history	Trust-based banking relationship	Increased reliance on equity rather than debt sources of finance
	Urban location	

*Some of these impacts are speculative and require empirical verification

What firm-level characteristics are likely to be associated with borrower discouragement? A number of studies have also examined the nature of the firms exhibiting discouragement (see Table 2 for a brief summary). The results of this research strongly suggest that larger and older firms are less likely to be discouraged (Freel et al, 2012; Chakravarty and Xiang 2013; Cowling et al, 2016; Mac an Bhaird et al, 2016; Rostamkalaei, 2017). The corollary being that younger and smaller firms are much more likely to be discouraged borrowers (Han, et al, 2009). These results hold irrespective of geographic location and research methods utilised (Chakravarty and Xiang 2013; Mac an Bhaird et al, 2016). In other words, in line with theoretical expectations, the smallest most informationally opaque firms encounter the greater levels of discouragement (Berger and Udell, 1998). Beyond firm size and age there has been much less empirical evidence on the specific nature of firm-level characteristics fostering discouragement. In one of the few studies to examine these traits, Freel et al, 2012 find that non-family owned and high-tech service sector firms had a higher likelihood of being discouraged borrowers. Other studies have shown that discouraged borrowers have fewer sources of finance (Freel et al, 2012; Cole and Sokolyk, 2016; Cowling et al, 2016). A non-urban location was another factor commonplace in explaining discouraged borrowers (Gama et al, 2017). Interestingly, a recent study in China finds that borrowers with high levels of trust in their banks are less likely to be discouraged borrowers (Tang et al, 2017).

While evidence exists on borrower heterogeneity and discouragement, to date literature has failed to specifically probe the type of firms likely to be discouraged

according to the specific nature of the business. While new and small firms are more likely to be discouraged what other traits are indicative within this cohort? To date, the literature has largely overlooked the innate characteristics of these firms in terms of their sectoral focus, geographic location or business orientation (e.g. growth orientation, export focus, innovativeness etc).

Finally, what are the outcomes of discouragement in terms of firm behaviour such as future growth and investment intentions? Reduced access to capital is likely to have implications for the future investment and growth of discouraged borrowers (Mac an Bhaird et al, 2016). In terms of the longer-term impact of borrower discouragement, recent evidence by Ferrando and Mulier (2017) (using the European Central Bank Survey on the Access to Finance of Enterprises) suggests that borrower discouragement has a sizeable negative impact on SMEs. The authors find that investment growth was 4.7% lower for the average discouraged borrower relative to their non-discouraged counterpart in the two-years following the date when a firm was discouraged from seeking finance. Recent UK evidence suggests that 55% of discouraged borrowers would have obtained loans had they applied (Cowling et al, 2016).[2] This lack of funding for discourage borrowers could result in sub-optimal levels of investment within the UK economy of the order £1.5 billion, resulting in '*fewer jobs created, lower economic growth, and lower profits for banks and entrepreneurs*' (Cowling et al, 2016, p. 1069).

Clearly, this indicative evidence alludes to the potential "scarring effects" incurred by discouraged borrowers. Some authors note how these residual effects may therefore be "self-perpetuating" (Mac an Bhaird et al, 2016, p. 54) with attendant problems in terms of dampening effects on entrepreneurial investment and action. However, owing to the cross-sectional nature of the studies examining discouraged borrowers, thus far no evidence exists to test how these firms progress and how borrower discouragement evolves over time. Due to the binary nature of the responses produced in most SME surveys, the data available does not allow research to distinguish between SMEs that are slightly discouraged from those that are innately discouraged (Neville et al, 2017). In other words, previous research has failed to unpack the level or intensity of discouragement

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[2] Evidence in the US estimates one in three firms would have obtained credit (Cole and Sokolyk, 2016).

within SMEs. This is important because discouragement may lead to firms substituting banks' sources of finance with other alternatives sources (Xiang et al, 2015). For example, some entrepreneurs may seek riskier sources of finance such as credit cards or equity finance. Indeed, one recent study finds that the majority of start-ups using equity crowdfunding are discouraged bank borrowers (Brown et al, 2017). These outcomes of discouragement have important, but (as yet) largely under-reported, ramifications for the capital structure of these firms.

4.   DATA AND METHODOLOGY

Data and Definitions

The sources of data utilised in the current study is the panel element of the Longitudinal Small Business Survey (LSBS). The LSBS is a large-scale telephone survey of owners and managers, commissioned by the Department for Business, Energy, and Industrial Strategy (BEIS). The survey was conducted by BMG Research Ltd between July 2015 and January 2015 (Year 1), when 15,502 businesses were interviewed, and August 2016 and January 2017 (Year 2), when 9,360 were interviewed. The current study is uses the longitudinal panel element, which comprises SMEs that were interviewed in both years. This amounts to 7,075 SMEs (including SMEs with Zero employees for at least one year) for a total of 14,558 observations. Our sample allows us to have a longitudinal tracking element, establishing a 'panel' of SMEs that are re-surveyed in two consecutive years. This allows a detailed analysis of how combinations of factors affect SME performance through time.

The LSBS encompasses detailed information on SMEs ranging from the basic demographic to various economic variables, including information on business orientation and business models. Observing SMEs over time allows us to trace the dynamics of borrower discouragement, and thus construct our dependent variable.

A detailed definition of all the variables used in the analysis is reported in Table 3. The key dependent variable used in the analysis is binary in nature and measures whether SMEs in the sample had a need for finance in the last 12 months, but did not apply (discouraged borrower). This group of SMEs represent 9.3% of our sample. Importantly, the nature of the survey instrument allows us to

explore possible reasons for borrower discouragement. These include: 'You don't want to take on additional risk' (28.8% of the discouraged sample) as a main reason for discouragement; followed by 'You thought you would be rejected' (14.9%) and 'You thought it would be too expensive.' Around 30% of the discouraged borrowers stated any of the following as main reasons for discouragement: '*You didn't know where to find the appropriate finance you needed', 'Poor credit history'* and '*The decision would have taken too long/too much hassle'.* We also include a variable capturing the intensity of discouragement that counts the number of reasons (ranging from 0 to 8) for discouragement that a single SME disclosed in the survey.

Our estimable model defined below includes a number of control variables related to the demographic and managerial characteristics of the SMEs in our sample. Firm size is measured by the logarithm estimating the number of employees reported by the company to be currently on payroll, excluding owners and partners, across all sites of the firm. Growth orientation is a dummy variable and captures if a SME aims to grow sales in the next 3 years. We observe that 52% SMEs are growth oriented. To control for the age a binary variable is adopted taking the value of 1 if SME are mid-age and mature (more than 11 years in the business) and 0 otherwise. This group of SMEs represents 43.4% of our sample. 70% of all SMEs in the sample are located in urban areas and 21.5% stated that, compared with the previous 12 months, turnover had decreased. 82% of the SMEs generated a profit in the last financial year. Majority-led by women businesses represent 21.4% of our sample and are defined as businesses controlled by a single woman or having a management team composed of a majority of women. 4.2% of our sample is defined as Minority Ethnic Led. 85.9% of SMEs in our sample are family owned business, that is one which is majority owned by members of the same family. 21.7% of SME used information or advice in the last 12 months.

We include as additional control variables specific types of self-reported business capabilities (tasks that SMEs carry out when running a business, and how capable the SME is at executing these) measured using a scale between 1 (very poor) and 5 (very strong): (i) Capability of the business for people management (mean value 3.13), (ii) Capability of the business for developing and implementing a business plan and strategy (mean value 2.57), (iii) Capability of

the business for accessing external finance (mean value 1.92) and (iv) Capability of the business for operational improvement (mean value 2.77). This suggests that our sample of SMEs is dominated by firms with strong capabilities for people management.

Finally, we also include a set of variables related to future intentions (plans) of SMEs over the next 3 years, which are measured using binary variables. In particular, SMEs were asked about their plans to do any of the following over the next three years: (i) Increase the skills of the workforce (46.8% of SMEs), (ii) Increase the leadership capability of managers (23.7% of SMEs), (iii) Develop and launch new products/services (32.7% of SMEs), (iv) Introduce new working practices (31.0% of SMEs) and (v) Sell to overseas markets that are new for your business (21.5% of SMEs). This suggests that a substantial proportion of SMEs has plans to increase the skills of the workforce compared to the other categories. Plans to sell to new overseas seem somewhat less relevant for SMEs in our sample.

Table 3. Description of Variables & Descriptive Statistics

Variable	Details	Obs.	Mean (survey weighted)	St. Dev.
Discouraged Finance Seeker				
Discouraged borrower	SMEs had a need for finance in the last 12 months but did not apply	14,305	0.093	0.290
Main reason for discouragement	(a) You thought you would be rejected	1,283	0.149	0.352
	(b) You thought it would be too expensive	1,283	0.129	0.331
	(c) You don't want to take on additional risk	1,283	0.288	0.448
	(d) Now is not the right time because of economic conditions	1,283	0.077	0.264
	(e) You didn't know where to find the appropriate finance you needed	1,283	0.100	0.296
	(f) Poor credit history	1,283	0.105	0.303
	(g) The decision would have taken too long/too much hassle	1,283	0.104	0.302
	(h) Other	1,329	2.790	1.545
Intensity of discouragement	Number of reasons mentioned by SMEs as a cause of discouragement	14,305	0.259	0.937
SME characteristics				
Firm Size	Ln (1+number of employees excluding owners and partners across all sites)	14,504	0.422	0.871
SME Growth oriented	SME aim to grow sales in the next 3 years	14,504	0.520	0.500
Age of business	Mid-age and mature (More than 11 years)	14,476	0.434	0.496
Urban	SME located in an urban area (categorization provided by LSBS Survey)	14,481	0.705	0.456
Turnover Change (decreased)	Compared with the previous 12 months, SME turnover in the past 12 months decreased.	14,079	0.215	0.411
Profit	Taking into account all sources of income in the last financial year, SME generated a profit or surplus.	13,865	0.820	0.384
Female-led	More than 50% of the business is owned by female	14,106	0.214	0.410
Minority Ethnic Led	Whether business is MEG-led	13,989	0.042	0.200
Family owned	SME is a family owned business, that is one which is majority owned by members of the same family	14,326	0.859	0.348
External advice/information	Whether SME used information or advice in the last 12 months	14,395	0.217	0.412
Business capabilities				
People Management (*)	Capability of the business for people management	5,320	3.139	0.792
Business plan and strategy (*)	Capability of the business for developing and implementing a business plan and strategy	7,119	2.575	1.096
Accessing External Finance (*)	Capability of the business for accessing external finance	5,376	1.922	1.382
Operational improvement (*)	Capability of the business for operational improvement	6,983	2.771	1.032
Future intentions				
Skills of workforce	Increase the skills of the workforce over the next three years	14,504	0.468	0.499
Leadership of the management	Increase the leadership capability of managers over the next three years	14,504	0.237	0.425
Develop new products	Develop and launch new products/services over the next three years	14,504	0.327	0.469
New working practices	Introduce new working practices over the next three years	14,504	0.310	0.462
Sell to overseas	Sell to overseas markets that are new for your business over the next three years	14,504	0.215	0.411

Note: Business capabilities are on a scale of 1 to 5 where 1 is very poor for doing these, and 5 is very strong. Longitudinal weights using 2016 as a reference period are used to calculate the means.

Methodology

The present study utilises the first two waves (2016 and 2017) of a unique

nationally representative dataset from the Longitudinal Small Business Survey (LSBS) that follows SMEs over time. This allows us to exploit the longitudinal element of the survey and thus dynamic patterns of borrower discouragement on specific sub-groups of the SME population across UK regions. In order to provide empirical evidence on discouragement, we will conduct the empirical analysis in three stages:

1st Stage: We explore various types of discouragement across different types of SMEs in terms of size, region and orientation, with a focus on the dynamic effects over time (from wave 1 to wave 2). The analysis includes tabulations of transition probabilities between different levels of discouragement.

2nd Stage: We estimate a probit model to investigate the contribution of our explanatory variables to the probability of an SME being a discouraged borrower and transitions from not being discouraged in t-1 to being discouraged in t. We also explore the determinants of remaining discouraged over the time. The estimable model is as follows:

$$\Pr(y = 1|X) = \Pr(y^* > 0|X) = \Pr(\epsilon > -X'\beta) = \Phi(X'\beta)$$

with an unobservable component (ϵ) that follows a normal distribution ($\Phi(\epsilon)$), and ($X'\beta$), which includes observable characteristics that modify an SME's utility depending on the unknown parameters (β). As potential determinants of borrower discouragement we include a wide range of independent variables which are expected to affect SME behaviour. These include firm size, firm age, location, entrepreneur characteristics, industry characteristics, ownership characteristics. In addition, our empirical approach use lagged independent variables to mitigate endogeneity concerns arising from potential reverse causality. The equation is estimated using maximum-likelihood techniques.

3rd Stage: we investigate the characteristics of SMEs that contribute in explaining the main reasons for borrower discouragement. We estimate a multinomial probit model for a categorical dependent variable with *k* outcomes that have no natural ordering (i.e. main reasons for borrower discouragement). The probability that SME i is in one of the following k states is as follows:

$$\Pr(\text{k is main reason for discouragement for SME}_i) = \Pr(v_{i1k} \leq 0, \dots, v_{i,J-1,k} \leq 0)$$
$$= \Pr(\epsilon_{i1} \leq -z_i\gamma_1, \dots, \epsilon_{i,J-1} \leq -z_i\gamma_{J-1})$$

$K = 1$ You thought you would be rejected

$K = 2$ You thought it would be too expensive

$K = 3$ You don't want to take on additional risk

$K = 4$ Now is not the right time because of economic conditions

$K = 5$ You didn't know where to find the appropriate finance you needed

$K = 6$ Poor credit history

$K = 7$ The decision would have taken too long/too much hassle

$K = 8$ Other

The model is estimated by maximum likelihood, using robust standard errors clustered at the SME level.

4th Stage: we explore the characteristics of SMEs that contribute to explaining the intensity of discouragement. A Zero-inflated Poisson (zip) regression is used to model number of reasons provided by SMEs for discouragement. However, given that non-discouraged SMEs represent a substantial proportion of our sample, the distribution of this variable has an excess of zero counts. Moreover, theory suggests that the excess zeros are generated by a separate process from the count values and that the excess zeros can be modelled independently. Thus, the zip model has two parts, comprising a Poisson count model and the logit model for predicting excess zeros. We now have a selection bias that must be accounted for in the modelling process. The zip model maximizes the log-likelihood lnL, using robust standard errors clustered at the SME level, defined by

$$lnL = \sum_{j \in S} w_j \ln\left[F(\varepsilon_j^\gamma) + \{1 - F(\varepsilon_j^\gamma)\} \exp(-\lambda_j)\right] + \sum_{j \notin S} w_j \left[ln\{1 - F(\varepsilon_j^\gamma)\} - \lambda_j + \varepsilon_j^\gamma y_j - \ln(y_j)\right]$$

where w_j are the weights, F is the inverse of the logit link (or the inverse of the probit link if probit was specified), and S is the set of observations for which the outcome $y_j = 0$.

5th Stage: The empirical investigation of the impact of discouragement (and intensity of discouragement) on firm future intentions is carried out by employing probit models where the dependent variable is equal to one if the SME i has the plans over the next three years to: (a) Increase the skills of the workforce; (b) Increase the leadership capability of managers; (c) develop and launch new products/services; (d) Introduce new working practices; and (e) Sell to overseas markets that are new for your business. The probit model is specified as follows:

$$\Pr(\textit{Future intentions}_{i,t} \neq 0 \mid X_{it}) = f\, \Phi(DIS_{it-1} + X_{it-1}\beta + v_{it}) \ (1)$$

for $i = 1,\ldots,n$ panels, where $t = 1,\ldots,n_i, v_i$ are i.i.d., $N(0,\sigma_v^2)$, and Φ is the standard normal cumulative distribution function. DIS is a measure of discouragement of SME i, which is an indicator variable that takes the value of 1 if the SME i is "discouraged" from applying for funding and zero otherwise. We also control for the other SME characteristics and market conditions (X) which are relevant for explaining SMEs outcome variables.

5.   FINDINGS

Following prior research on discouraged borrowers in the US (Cole and Sokolyk, 2016), we investigate the underlying differences between SMEs that apply for funding and those that are discouraged from applying for funding. However, we augment prior literature by investigating the dynamics of borrower discouragement and the resultant impact on SMEs. In order to do this, we first examine observable firm-level characteristics of discouraged borrowers before investigating selected personal "cognitive" factors of entrepreneurs/business owners mediating discouragement.

Discouragement patterns in the UK from a longitudinal perspective

Figure 1 shows the percentage of SMEs (by firm size category) that had a need for finance in the last 12 months, but which did not apply. **A** higher proportion of micro and small SMEs (9.7%) were discouraged borrowers compared to medium-sized SMEs (6.8%) and SMEs with no employees (8.4%) in 2016. Moreover, the proportion of SMEs reporting being discouraged borrowers decreased between 2015 and 2016 across all firm size categories.

Figure 1. Percentage of SMEs had a need for finance in the last 12 months but did not apply (by firm size)
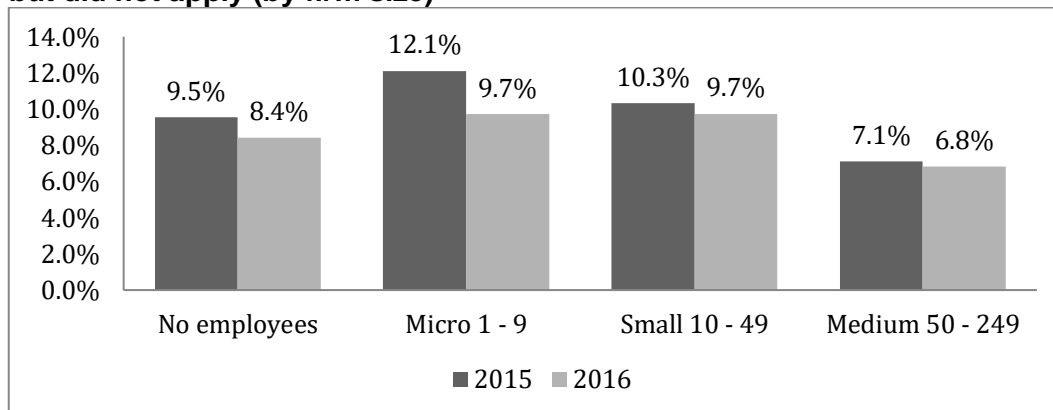
Note: Sample weights for the year under analysis are used to calculate the means.

The industry sectors, where SMEs were more likely to report being discouraged borrowers in 2016 were: ABDE – primary (13.8%); J - Information & Communication (12.7%); F - construction (10.4%); and P - Education (15.1%). SMEs operating in: M – professional and Scientific; and S - other services (5.4%) sectors were the least likely to be discouraged (Figure 2).

Figure 2. Percentage of SMEs had a need for finance in the last 12 months but did not apply (by sector)

Note: Sample weights for the year under analysis are used to calculate the means.

The distribution by broad grouped sectors shows that discouraged firms are more likely to be operating in: ABCDEF – Production and construction sectors (10.3%); and PQRS – Other services (9.2%). Manufacturing stands out as a sector showing very high levels of borrower discouragement in 2015 (14.8%), albeit there are strong temporal changes between 2015-2016. Borrower discouragement among SMEs is lower and less likely in services (JKLMN – Business services); and GHI – Transport, retail and food service/ accommodation sectors (Figure 3).

Figure 3. Percentage of SMEs had a need for finance in the last 12 months but did not apply (by broad sectors)

Note: Sample weights for the year under analysis are used to calculate the means.

With respect to the geographic distribution of SME borrower discouragement. There is significant clustering of discouraged firms are located in either London (12.9%), North West (13.2%), South-West (9.5%) and Scotland (9.5%) in 2016 (Figure 4). Between 2015 and 2016, the volume of borrower discouragement declined in eight regions and increased in the remaining four between 2015-2016.
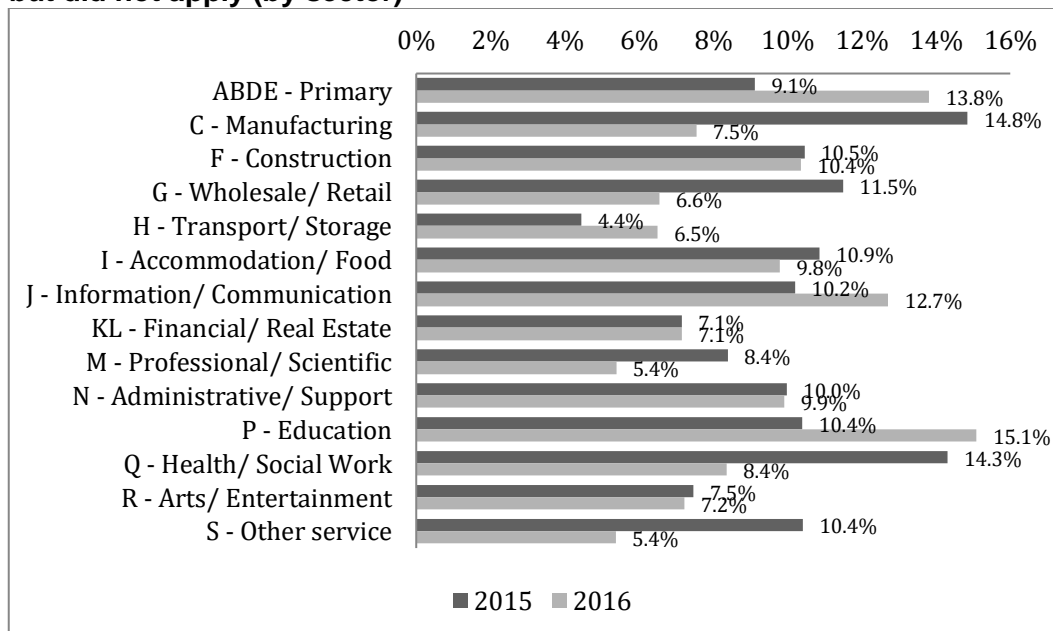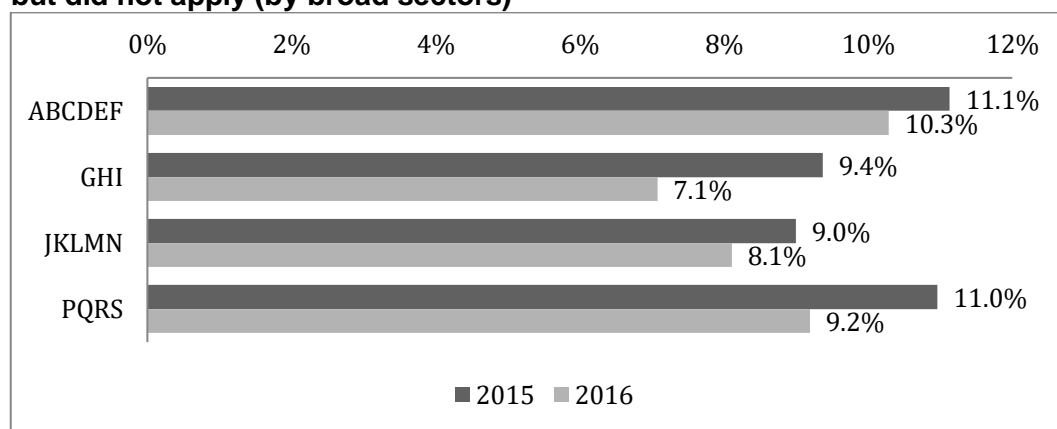
Figure 4. Percentage of SMEs had a need for finance in the last 12 months but did not apply (by regions)

Note: Sample weights for the year under analysis are used to calculate the means.

With respect to the legal status, the distribution of discouragement shows that these firms can be take of forms of companies (9%) and sole proprietorship (8.3%) in 2016 in broadly equal measure. Interestingly, we find that Partnerships experienced a large increase borrower discouragement in the period 2015 – 2016 from 6.6% to 11% (Figure 5).

Figure 5. Percentage of SMEs had a need for finance in the last 12 months but did not apply (by SME legal status)
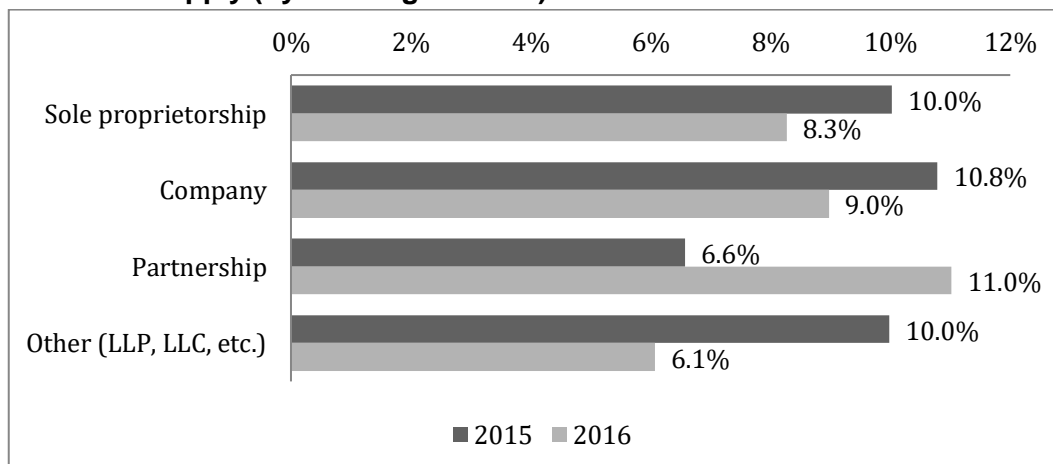
Note: Sample weights for the year under analysis are used to calculate the means.

Our analysis also examined the important issue of growth-orientation within the sample of SMEs. This reveals quite a marked difference in terms of the level of discouragement, with growth-oriented SMEs (in terms of the declared future strategic intentions) significantly more likely to be discouraged borrowers than non-growth-oriented SMEs. However, over the analysed period, the level of discouragement decreased for growth oriented SMEs (Figure 6).
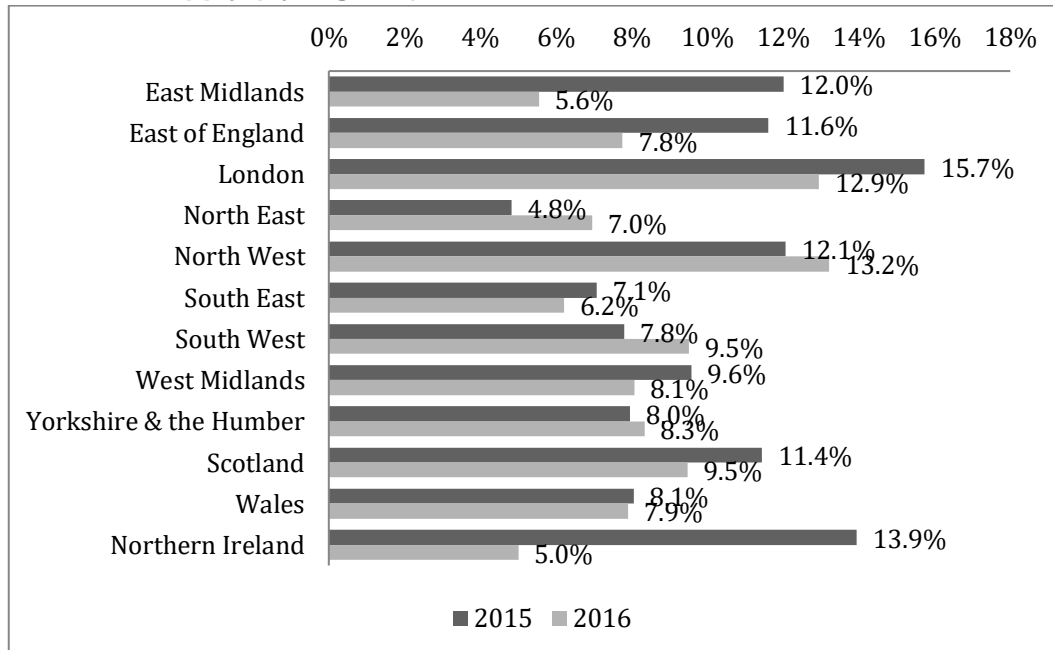
Figure 6. Percentage of SMEs had a need for finance in the last 12 months but did not apply (by SME aim to grow sales)
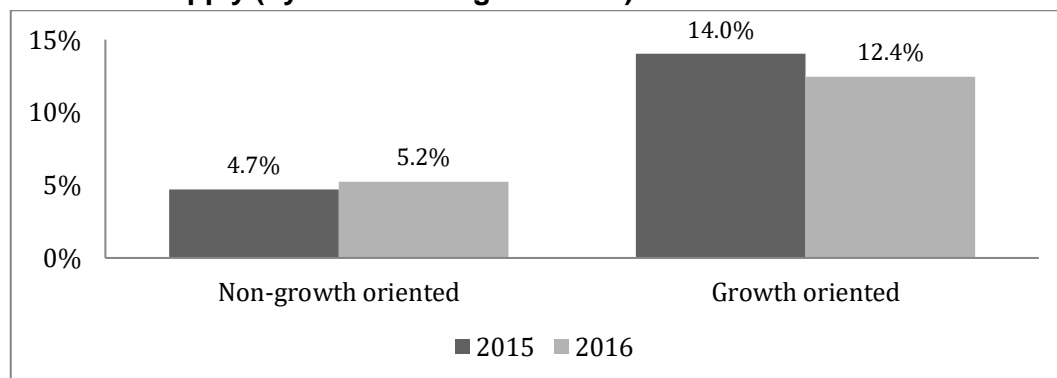
Note: Sample weights for the year under analysis are used to calculate the means.

A substantial proportion of SMEs state that they "don't want to take on additional risk" as a main reason for being discouraged (27.4% in 2015 and 29.8% in 2016), followed by "it would be too expensive" (15.2%) and "you thought you would be rejected" (12.2%). Figure 7 provides a full summary.

Figure 7. Main reasons for borrower discouragement
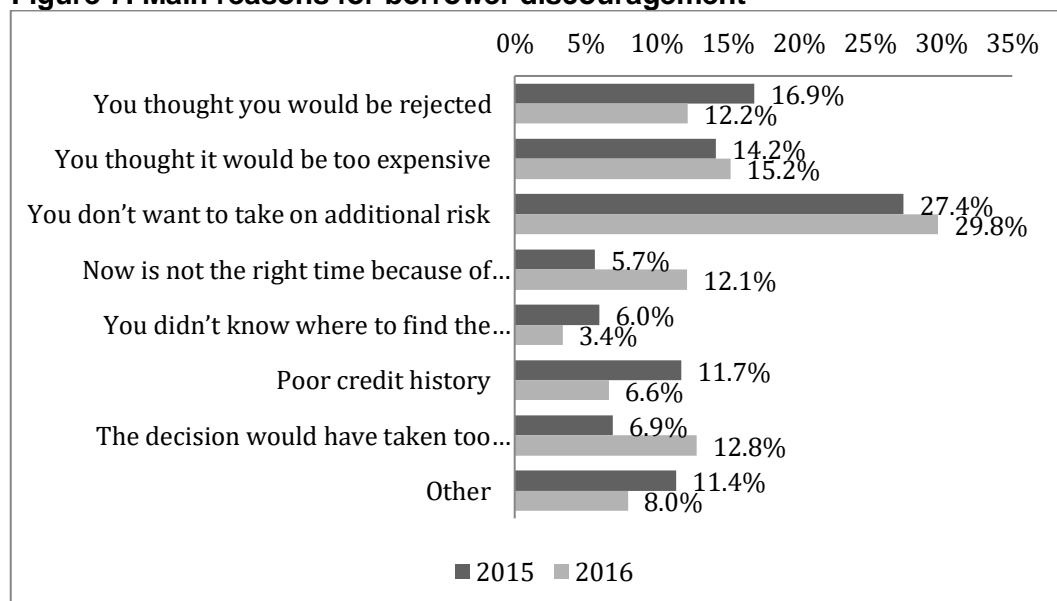
Note: Sample weights for the year under analysis are used to calculate the means.

We aggregate the main reasons for borrower discouragement into five categories (Figure 8) as follows: D=1 (Pessimistic outlook): You thought you would be rejected or You thought it would be too expensive, D=2 (Risk averse): You don't want to take on additional risk or Now is not the right time because of economic conditions, D=3 (Lack of motivation): You didn't know where to find the appropriate finance you needed or The decision would have taken too long/too much hassle, D=4: Poor credit history, D=5 Other. We find that risk aversion is one of the main reasons for discouragement in 2016 (41.9%).

Figure 8. Main reasons for discouragement (grouped categories)
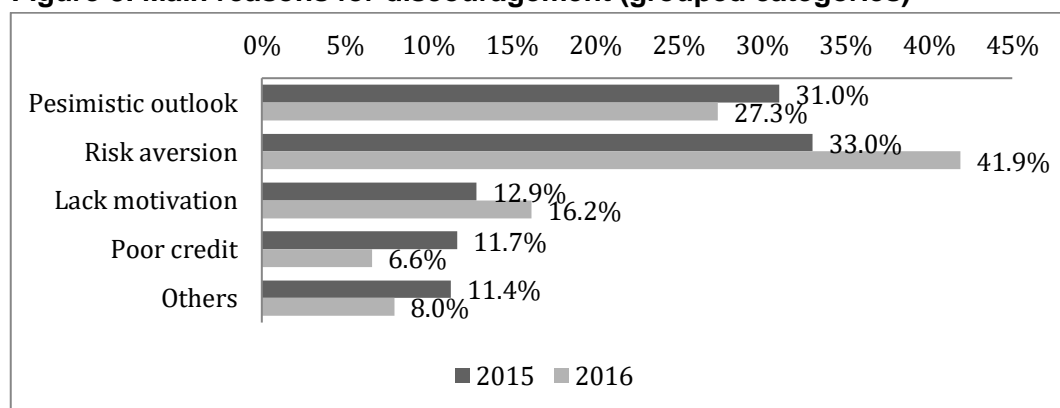
Note: Sample weights for the year under analysis are used to calculate the means.

We then assess the intensity of discouragement by aggregating the number of reasons provided by SMEs regarding why they are discouraged borrowers. The results of this analysis suggests that a large proportion of SMEs named one reason (25.9%) and three reasons (20.6%) for discouragement in 2016. Given three reasons for discouragement has also increased substantially in the period 2015 – 2016 (from 15.1.% to 20.6%) that contrast with the reduction observed in those SMEs naming a single reasons.

Figure 9. Intensity of discouragement (count of the number of reasons about why the SME did not apply for finance in the last 12 months)
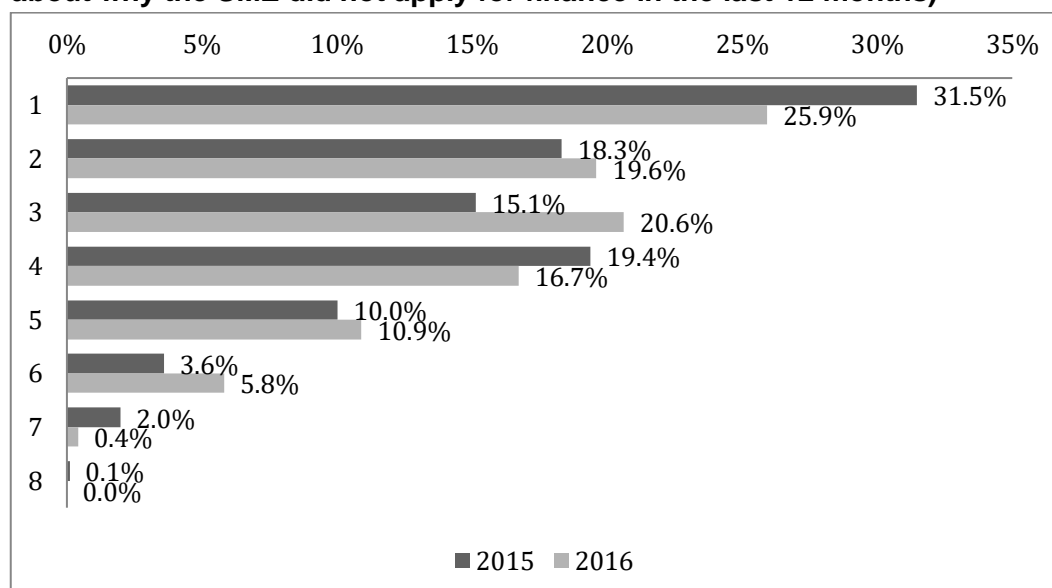
Note: Sample weights for the year under analysis are used to calculate the means.

We exploit the longitudinal nature of the data to gauge the magnitude of persistence in discouragement by looking at the transition probabilities between survey waves. Table 4 displays the average probability of staying within the same category of discouragement (entries in the main diagonal) and the average probability of changing across categories between time period t (rows) and t−1 (columns). We find that the probability to stay in the category (Discouraged) is 30.23%. It means that SMEs discouraged in t − 1 have a chance of almost 30% to stay discouraged in the next time period (t), whereas not discouraged SMEs have a chance of 93.5% to remain in the same category in the next year. A second interesting observation is that it is a very rare phenomenon that SMEs switch from not discouraged to discouraged. Only 6.51% percent of individuals in the sample are observed to switch between these two categories.

Table 4. Average transition probabilities of discouragement between states (year-by-year)

	No Discouraged (ND)	Discouraged (D)	%
No Discouraged (ND)	93.49	6.51	100
Discouraged (D)	69.77	30.23	100
Total (%)	91.15	8.85	100

Discouragement from a static and a dynamic perspective

Table 5 reports the results of estimating the probit regression models. Model 1 (first column) summarises the factors affecting the probability of being discouraged. This model represent the most complete coverage of the dataset, including over 3500 observations (as not all firms answered all questions our sample size is slightly restricted). The results highlight a number of interesting findings. SME size, growth orientation, having financial losses, the business owner belongs to an ethnic minority group, having low business capabilities for accessing external finance, and being located in Scotland have a positive influence on the propensy of being a discouraged borrower.

Model 2 (second column) summarises the factors affecting the probability of switching from no-discouraged in t-1 to discouraged in t. The results suggest that SME size, growth orientation, a decrease in turnover, having financial losses, the business owner belonging to an ethnic minority group, having low business capabilities for accessing external finance and business strategic planning, being family owned, not having a "company" legal status and being located in Scotland has a positive influence on propensy of switching from being a non-discouraged borrower to a discouraged borrower.

Model 3 (third column) summarises the factors affecting the probability of staying a discouraged borrower. The results suggest that having financial loses, having low business capabilities for accessing external finance, and having a "company" legal status and not being located in Wales has a positive influence on propensy of remaining a discouraged borrower (i.e. persistence of discouragement).

Table 5. Marginal effects for discouragement behaviour - Maximum likelihood estimates of probit regressions

	$\begin{cases} 1 = D_t \\ 0 = ND_t \end{cases}$	$\begin{cases} 1 = ND_{t-1} \to D_t \\ 0 = ND_{t-1} \to ND_t \end{cases}$	$\begin{cases} 1 = D_{t-1} \to D_t \\ 0 = D_{t-1} \to ND_t \end{cases}$
Size $_{t-1}$: Ln (1+number of employees)	0.023***	0.026***	0.016
	(2.63)	(3.40)	(0.59)
Growth oriented $_{t-1}$	0.082***	0.072***	0.070
	(6.02)	(5.84)	(1.01)
Business age $_{t-1}$:11+	-0.016	-0.015	0.050
	(-0.97)	(-1.01)	(0.82)
Location: Urban area	-0.022	-0.019	-0.022
	(-1.35)	(-1.26)	(-0.39)
Turnover change: Decreased	0.032	0.042**	-0.055
	(1.48)	(1.97)	(-0.92)
Makes surplus $_{t-1}$	-0.090***	-0.062**	-0.176***
	(-3.64)	(-2.53)	(-2.94)
Female led $_{t-1}$	0.027	0.011	0.060
	(1.31)	(0.55)	(0.90)
Minority Ethnic Led $_{t-1}$	0.149**	0.190**	0.041
	(2.16)	(2.28)	(0.46)
Family owned $_{t-1}$	0.027	0.038***	-0.013
	(1.59)	(2.78)	(-0.22)
External advice/information $_{t-1}$	0.017	0.018	-0.029
	(1.02)	(1.14)	(-0.58)
Capabilities: People Management	-0.006	0.006	-0.031
	(-0.58)	(0.61)	(-0.89)
Capabilities: Business plan and strategy	-0.007	-0.014*	0.018
	(-0.83)	(-1.90)	(0.61)
Capabilities: Accessing External Finance	-0.021***	-0.011*	-0.060***
	(-3.12)	(-1.80)	(-2.98)
Capabilities: Operational improvement	-0.009	-0.012	0.013
	(-0.96)	(-1.44)	(0.39)
Legal status: Sole proprietorship	-0.031	-0.094	0.109
	(-0.61)	(-1.62)	(1.59)
Legal status: Company	-0.037	-0.111**	0.255***
	(-0.88)	(-2.15)	(5.06)
Legal status: Partnership	-0.039	-0.088	0.030
	(-0.85)	(-1.59)	(0.44)
Region: Scotland	0.059*	0.050*	0.224*
	(1.95)	(1.90)	(1.81)
Region: Wales	-0.039*	-0.003	-0.223***
	(-1.71)	(-0.12)	(-3.67)
Region: Northern Ireland	0.001	0.019	-0.124
	(0.02)	(0.47)	(-1.51)
N	3589	3141	416
Wald test	103.10***	103.98***	53.91***
Log pseudolikelihood	-351.11052	-249.27022	-74.175847
Pseudo R2	0.1195	0.1471	0.1670

Notes: ND and D refer to no-discouraged and discouraged borrower respectively. Sectoral dummies are included in all specifications. Reported figures are marginal effects. z-Scores are reported in parenthesis. Omitted Categories: Age (0 - 10), Region (England), Legal (Other). ***, ** and * refer to the significant level of 1%, 5% and 10%, respectively. Standard errors clustered at SME level.

The determinants of the main reasons for being a discouraged borrower

Table 6 presents the results of the effects of SME characteristics on the main reported reasons for borrower discouragement. We adopt a multinomial model where the base category is not being a discouraged borrower. This Table 6 reports the marginal effects of selecting one of the eight reasons as the main reason (K) for borrower discouragement: K=1, You thought you would be rejected; K=2, You thought it would be too expensive; K=3, You don't want to take on additional risk; K=4 Now is not the right time because of economic conditions; K=5, You didn't know where to find the appropriate finance you needed; K=6, Poor credit history; K=7, The decision would have taken too long/too much hassle; and K=8, Other reasons.

The results suggest that SME size increases the probability of considering the following as K=1, K = 6 and K = 8 as the main reasons for borrower discouragement. Growth orientation is associated with a higher probability of choosing K= 1, K = 4, K = 6 and K = 7 as the main reasons for borrower discouragement. Being located in a rural area increases the probability of consider K=1 as the main reason for borrower discouragement. A financial loss also is associated to a higher probability of choosing K= 1, K = 2 and K = 6 as the main reasons for borrower discouragement. SMEs with ethnic minority managers are also associated with a higher probability of choosing K = 1 as the main reason for borrower discouragement, but lower probabilities of choosing K= 5, K = 6 and K = 8. Family owned SMEs are associated with a higher probability of choosing K= 2 and K = 8 as the main reasons for their discouragement. We also find that lower capabilities for accessing external finance tend to increase the probability of choosing K=1 and K = 6 as main reasons for borrower discouragement. Sole proprietorship and company status are associated to higher probabilities of choosing K = 2, K = 4, K = 6 and K = 7. An analysis by geographic region suggests that SMEs located in Scotland tend to have a higher probability of choosing K=2 as the main reason for borrower discouragement.

Table 6. Marginal effects for main reasons to discouragement behaviour - Maximum likelihood estimates of multinomial logit regression

K=1: You thought you would be rejected, K=2: You thought it would be too expensive, K=3: You don't want to take on additional risk, K=4 Now is not the right time because of economic conditions, K=5: You didn't know where to find the appropriate finance you needed, K=6: Poor credit history, K=7: The decision would have taken too long/too much hassle, K=8: Other.

	$Pr(K=1)$	$Pr(K=2)$	$Pr(K=3)$	$Pr(K=4)$	$Pr(K=5)$	$Pr(K=6)$	$Pr(K=7)$	$Pr(K=8)$
Size $_{t-1}$: Ln (1+number of employees)	0.011***	-0.001	0.003	-0.000	-0.001	0.002**	-0.000	0.004**
	(2.99)	(-0.23)	(1.01)	(-0.22)	(-0.60)	(2.03)	(-0.09)	(2.37)
Growth oriented $_{t-1}$	0.025***	0.002	0.026***	0.009***	0.002	0.004***	0.010*	0.007
	(4.22)	(0.62)	(3.58)	(2.92)	(1.40)	(3.86)	(1.88)	(1.44)
Business age $_{t-1}$:11+	0.000	-0.003	-0.007	-0.003	-0.003	-0.003	0.009	-0.008
	(0.03)	(-0.84)	(-1.01)	(-0.54)	(-0.92)	(-1.07)	(1.55)	(-1.46)
Location: Urban area	-0.021**	-0.009	-0.002	-0.002	-0.000	0.002	0.005	0.001
	(-2.14)	(-1.55)	(-0.31)	(-0.28)	(-0.12)	(0.75)	(0.97)	(0.09)
Turnover change: Decreased	0.002	0.004	0.034**	-0.003	-0.002	-0.004***	-0.008*	0.012
	(0.21)	(0.70)	(2.44)	(-0.50)	(-0.90)	(-4.38)	(-1.81)	(1.16)
Makes surplus $_{t-1}$	-0.022**	-0.019**	-0.004	-0.005	-0.006	-0.011***	-0.016	-0.010
	(-2.36)	(-2.34)	(-0.40)	(-0.79)	(-1.02)	(-3.19)	(-1.57)	(-1.23)
Female led $_{t-1}$	0.001	0.009	-0.005	0.018	0.004	-0.002	-0.005	0.008
	(0.14)	(1.55)	(-0.64)	(1.49)	(0.82)	(-1.18)	(-1.06)	(0.91)
Minority Ethnic Led $_{t-1}$	0.086**	0.019	0.008	0.029*	-0.003**	-0.004***	0.004	-0.010**
	(2.41)	(1.25)	(0.42)	(1.76)	(-2.41)	(-4.32)	(0.50)	(-2.02)
Family owned $_{t-1}$	0.005	0.009**	0.002	0.003	0.000	0.002	0.002	0.009**
	(0.53)	(2.03)	(0.22)	(0.71)	(0.10)	(0.79)	(0.44)	(2.09)
External advice/information $_{t-1}$	-0.006	-0.007*	0.006	0.011*	0.002	0.001	0.008	0.002
	(-0.92)	(-1.87)	(0.77)	(1.79)	(0.82)	(0.48)	(1.43)	(0.39)
Capabilities: People Management	-0.001	-0.001	0.004	-0.002	0.001	-0.001	-0.003	-0.005
	(-0.31)	(-0.40)	(0.77)	(-0.55)	(0.54)	(-0.80)	(-0.76)	(-1.04)
Capabilities: Business plan and strategy	0.004	-0.003	-0.002	0.004	-0.001	-0.000	0.000	-0.005*
	(1.07)	(-1.39)	(-0.40)	(1.39)	(-1.32)	(-0.13)	(0.08)	(-1.79)
Capabilities: Accessing External Finance	-0.011***	0.000	-0.003	0.000	-0.000	-0.003**	-0.003	0.000
	(-3.40)	(0.16)	(-0.83)	(0.07)	(-0.52)	(-2.47)	(-1.42)	(0.13)
Capabilities: Operational improvement	-0.002	-0.000	-0.005	0.002	-0.002	0.000	-0.001	-0.002
	(-0.59)	(-0.08)	(-0.89)	(0.61)	(-1.48)	(0.12)	(-0.34)	(-0.80)
Legal status: Sole proprietorship	-0.035	0.013*	-0.034	0.003	-0.016	0.005	0.000	-0.017
	(-0.64)	(1.85)	(-1.11)	(0.60)	(-0.83)	(0.78)	(0.36)	(-0.67)
Legal status: Company	-0.049	0.008*	-0.044	0.010***	-0.016	0.004***	0.015***	-0.004
	(-1.03)	(1.85)	(-1.47)	(2.89)	(-0.95)	(3.71)	(4.22)	(-0.18)
Legal status: Partnership	-0.043	0.005	-0.024	0.000	-0.018	0.000	0.003	-0.001
	(-0.93)	(0.76)	(-0.73)	(0.18)	(-1.03)	(0.40)	(1.03)	(-0.02)
Region: Scotland	-0.017***	0.040***	0.021	-0.004	0.014	0.001	0.012	-0.005
	(-3.08)	(2.70)	(1.07)	(-0.69)	(1.27)	(0.20)	(1.04)	(-0.82)
Region: Wales	-0.014**	-0.007***	0.024	-0.010***	-0.003	-0.004***	-0.013***	-0.011***
	(-2.16)	(-2.75)	(1.11)	(-3.65)	(-1.58)	(-3.85)	(-4.49)	(-2.63)
Region: Northern Ireland	-0.021***	0.009	0.007	0.024	-0.003*	-0.004***	-0.008	0.006
	(-4.77)	(0.56)	(0.35)	(1.22)	(-1.74)	(-3.85)	(-1.54)	(0.39)
Sector: GHI	0.006	0.007	-0.017	0.004	-0.005	0.007*	-0.002	-0.004
	(0.61)	(1.53)	(-1.46)	(0.45)	(-0.74)	(1.88)	(-0.28)	(-0.52)
Sector: JKLMN	0.008	0.001	-0.013	-0.003	-0.006	0.000	0.008	-0.007
	(0.94)	(0.18)	(-1.15)	(-0.38)	(-0.99)	(0.33)	(1.02)	(-0.82)
Sector: PQRS	-0.017**	0.019	-0.021**	-0.007	-0.003	0.007	0.006	-0.006
	(-2.40)	(1.33)	(-2.00)	(-1.02)	(-0.45)	(1.48)	(0.77)	(-0.63)
N				3575				
Log pseudolikelihood				-492.84116				
Pseudo R2				0.2076				

Notes: Reported figures are marginal effects. Z-scores are reported in parenthesis. Omitted Categories: Age (0 - 10), Region (England), Legal (Other). ***, ** and * refer to the significant level of 1%, 5% and 10%, respectively. Standard errors clustered at SME level.

We extend the analysis of the main reasons for borrower discouragement by aggregating them to five categories: D=1 (Pessimistic outlook), You thought you would be rejected or You thought it would be too expensive; D=2 (Risk averse), You don't want to take on additional risk or Now is not the right time because of economic conditions; D=3 (Lack of motivation), You didn't know where to find the appropriate finance you needed or The decision would have taken too long/too much hassle; D=4, Poor credit history; and D=5, Other reasons. The results presented in Table 7 are in line with our previous findings. Firm size, growth orientation, being located in a rural area, having financial losses and a manager belonging to an ethnic minority, lower capabilities accessing external finance and not being located in England tend to increase the probability of being discouraged because of a pessimistic outlook (D=1). We also find that growth orientation, a decrease in turnover, asking for advice/information and operating in sector ABCDEF (rather than PQRS) tend to increase the probability of being discouraged because of risk aversion (D=2). Growth orientation, being located in England (rather than Wales or Northern Ireland) are important determinants of discouragement associated to lack of motivation (D=3). We also find that larger SMEs, growth oriented, increased turnover, with financial losses, SMEs with managers who are not from ethnic minorities, lower capabilities for accessing external finance and has a "company" legal status tend to have a higher probability of naming "poor credit score" as the main reason for borrower discouragement. Finally, we find that any other reasons for borrower discouragement are partially explained by the size of the SME and from being under family ownership.

Table 7. Average marginal effects of discouragement on Future Intentions (business plan to do over the next three years) – Probit regression.

	Model 1	Model 2	Model 3	Model 4	Model 5
Discouraged borrower $_{t-1}$	0.154***	0.077***	0.073**	0.096***	0.046
	(4.03)	(2.64)	(2.04)	(2.68)	(1.72)
Size $_{t-1}$: Ln (1+number of employees)	0.100***	0.074***	0.036***	0.059***	0.006
	(9.21)	(12.11)	(4.84)	(8.08)	(1.05)
Business age $_{t-1}$:11+	-0.076***	-0.037**	-0.077***	-0.067***	-0.019
	(-3.42)	(-2.29)	(-3.91)	(-3.46)	(-1.25)
Location: Urban area	-0.030	0.043**	-0.004	0.002	0.013
	(-1.23)	(2.57)	(-0.19)	(0.10)	(0.79)
Turnover change: Decreased	-0.061**	-0.068***	-0.011	-0.038	0.003
	(-2.25)	(-3.87)	(-0.45)	(-1.61)	(0.17)
Makes surplus $_{t-1}$	0.037	0.017	-0.030	-0.047	-0.049**
	(1.19)	(0.81)	(-1.08)	(-1.62)	(-2.24)
Female led $_{t-1}$	0.068**	-0.011	0.036	0.051*	0.011
	(2.32)	(-0.54)	(1.33)	(1.89)	(0.50)
Minority Ethnic Led $_{t-1}$	-0.043	0.070	0.020	0.115**	0.039
	(-0.80)	(1.50)	(0.40)	(2.15)	(0.89)
Family owned $_{t-1}$	-0.029	0.001	-0.007	0.014	-0.001
	(-1.00)	(0.03)	(-0.28)	(0.61)	(-0.07)
External advice/information $_{t-1}$	0.157***	0.121***	0.133***	0.130***	0.079***
	(6.11)	(5.76)	(5.45)	(5.55)	(4.05)
Legal status: Sole proprietorship	-0.139*	-0.168***	0.077	-0.043	0.069***
	(-1.75)	(-2.90)	(1.60)	(-0.70)	(4.23)
Legal status: Company	-0.000	-0.043	0.177***	0.038	0.160***
	(-0.01)	(-0.75)	(3.82)	(0.65)	(9.42)
Legal status: Partnership	0.003	-0.062	0.079	0.074	0.060***
	(0.04)	(-1.01)	(1.53)	(1.15)	(3.07)
Region: Scotland	-0.039	-0.022	-0.030	-0.004	0.060
	(-0.88)	(-0.74)	(-0.71)	(-0.11)	(1.44)
Region: Wales	0.065	-0.006	0.022	0.016	-0.036
	(0.92)	(-0.12)	(0.34)	(0.27)	(-0.92)
Region: Northern Ireland	0.006	0.076	-0.021	0.077	0.048
	(0.10)	(1.34)	(-0.34)	(1.16)	(0.88)
Sector: GHI	-0.041	-0.026	0.014	-0.092***	0.011
	(-1.31)	(-1.36)	(0.50)	(-3.40)	(0.58)
Sector: JKLMN	0.063**	0.044**	0.066**	-0.006	0.054***
	(2.10)	(2.02)	(2.53)	(-0.21)	(2.81)
Sector: PQRS	0.080**	0.086***	0.066*	-0.013	0.045*
N	6552	6552	6552	6552	6552
Wald Chi2	303.89***	481.40***	184.55***	224.58***	170.71***
Pseudo R2	0.1103	0.1474	0.0657	0.0740	0.0708
Log pseudolikelihood	-4014.72	-2882.11	-3583.61	-3549.65	-2486.85

Notes: The dependent variables for each model are as follows: Model 1: Increase the skills of the workforce, Model 2: Increase the leadership capability of managers, Model 3: Develop and launch new products/services, Model 4: Introduce new working practices and Model 5: Sell to overseas markets that are new for your business. Reported figures are marginal effects. Z-scores are reported in parenthesis. Omitted Categories: Age (0 - 10), Region (England), Legal (Other). ***, ** and * refer to the significant level of 1%, 5% and 10%, respectively. Standard errors clustered at SME level.

Intensity of discouragement

One of the advantages of the LSBS is that apart from reporting SMEs' main reason for borrower discouragement, it also asks SMEs to disclose all of the reasons that could drive their discouragement. We use this information to build a new variable called discouragement intensity ranging from 0 to 8, which reflects the number of reasons for discouragement. We use a Zero-inflated Poisson regression to analyse the determinants discouragement intensity across the distribution.

Our results suggest that firm size, growth orientation, financial losses, female and minority ethnic group ownership, sole proprietorship and company legal status are associated with higher levels of borrower discouragement intensity. Lower capabilities in people management and accessing external finance are associated with higher borrower discouragement intensity. However, SMEs operating in the GHI sector (compared to ABCDEF sectors) tend to report more than five reasons for borrower discouragement intensity.

The impact of borrower discouragement on future intentions of the SMEs over the next 3 years

In Table 8 and 9, we present the results of the impact of discouragement on the future intentions of SMEs. Our results suggest that being a discouraged borrower increases the probability that SMEs have business plans to do the following over the next three years: (i) Increase the skills of the workforce; (ii) Increase the leadership capability of managers; (iii) Develop and launch new products/services; and (iv) Introduce new working practices. Similar results are found for borrower discouragement intensity. The results of the impact of (intensity) discouragement on exporting behaviour (intention to sell to overseas markets that are new for your business) were statistically insignificant.

In terms of control variables, SMEs which are larger, young, increased turnover, female led and seek external advice and information are more likely to have plans to increase the skills of their respective workforce. Plans to increase the leadership capability of managers are also associated with larger, younger and urban SMEs. Increase turnover, seeking advice / information, and operating in

sectors JKLMN and PQRS (compared to ABCDEF) are also more likely to increase the leadership capability of managers. Plans to develop and launch new products/services are positively affected by firm size, the propensity to seek external advice and information, have a company legal status and operate in sectors JKLMN and PQRS (compared to ABCDEF). Larger, younger, and female and minority ethnic led SMEs are more likely to have business plans to introduce new working practices.

Table 8. Average marginal effects of discouragement on Future Intentions (business plan to do over the next three years) – Probit regression.

	Model 1	Model 2	Model 3	Model 4	Model 5
Discouraged borrower $_{t-1}$	0.154***	0.077***	0.073**	0.096***	0.046
	(4.03)	(2.64)	(2.04)	(2.68)	(1.72)
Size $_{t-1}$: Ln (1+number of employees)	0.100***	0.074***	0.036***	0.059***	0.006
	(9.21)	(12.11)	(4.84)	(8.08)	(1.05)
Business age $_{t-1}$:11+	-0.076***	-0.037**	-0.077***	-0.067***	-0.019
	(-3.42)	(-2.29)	(-3.91)	(-3.46)	(-1.25)
Location: Urban area	-0.030	0.043**	-0.004	0.002	0.013
	(-1.23)	(2.57)	(-0.19)	(0.10)	(0.79)
Turnover change: Decreased	-0.061**	-0.068***	-0.011	-0.038	0.003
	(-2.25)	(-3.87)	(-0.45)	(-1.61)	(0.17)
Makes surplus $_{t-1}$	0.037	0.017	-0.030	-0.047	-0.049**
	(1.19)	(0.81)	(-1.08)	(-1.62)	(-2.24)
Female led $_{t-1}$	0.068**	-0.011	0.036	0.051*	0.011
	(2.32)	(-0.54)	(1.33)	(1.89)	(0.50)
Minority Ethnic Led $_{t-1}$	-0.043	0.070	0.020	0.115**	0.039
	(-0.80)	(1.50)	(0.40)	(2.15)	(0.89)
Family owned $_{t-1}$	-0.029	0.001	-0.007	0.014	-0.001
	(-1.00)	(0.03)	(-0.28)	(0.61)	(-0.07)
External advice/information $_{t-1}$	0.157***	0.121***	0.133***	0.130***	0.079***
	(6.11)	(5.76)	(5.45)	(5.55)	(4.05)
Legal status: Sole proprietorship	-0.139*	-0.168***	0.077	-0.043	0.069***
	(-1.75)	(-2.90)	(1.60)	(-0.70)	(4.23)
Legal status: Company	-0.000	-0.043	0.177***	0.038	0.160***
	(-0.01)	(-0.75)	(3.82)	(0.65)	(9.42)
Legal status: Partnership	0.003	-0.062	0.079	0.074	0.060***
	(0.04)	(-1.01)	(1.53)	(1.15)	(3.07)
Region: Scotland	-0.039	-0.022	-0.030	-0.004	0.060
	(-0.88)	(-0.74)	(-0.71)	(-0.11)	(1.44)
Region: Wales	0.065	-0.006	0.022	0.016	-0.036
	(0.92)	(-0.12)	(0.34)	(0.27)	(-0.92)
Region: Northern Ireland	0.006	0.076	-0.021	0.077	0.048
	(0.10)	(1.34)	(-0.34)	(1.16)	(0.88)
Sector: GHI	-0.041	-0.026	0.014	-0.092***	0.011
	(-1.31)	(-1.36)	(0.50)	(-3.40)	(0.58)
Sector: JKLMN	0.063**	0.044**	0.066**	-0.006	0.054***
	(2.10)	(2.02)	(2.53)	(-0.21)	(2.81)
Sector: PQRS	0.080**	0.086***	0.066*	-0.013	0.045*
N	6552	6552	6552	6552	6552
Wald Chi2	303.89***	481.40***	184.55***	224.58***	170.71***
Pseudo R2	0.1103	0.1474	0.0657	0.0740	0.0708
Log pseudolikelihood	-4014.72	-2882.11	-3583.61	-3549.65	-2486.85

Notes: The dependent variables for each model are as follows: Model 1: Increase the skills of the workforce, Model 2: Increase the leadership capability of managers, Model 3: Develop and launch new products/services, Model 4: Introduce new working practices and Model 5: Sell to overseas markets that are new for your business. Reported figures are marginal effects. Z-scores are reported in parenthesis. Omitted Categories: Age (0 - 10), Region (England), Legal (Other). ***, ** and * refer to the significant level of 1%, 5% and 10%,

respectively. Standard errors clustered at SME level.

Table 9. Average marginal effects of discouragement on Future Intentions (business plan to do over the next three years) – Probit regression.

	Model 1	Model 2	Model 3	Model 4	Model 5
Discouraged Intensity $_{t-1}$	0.057***	0.025***	0.026**	0.033***	0.011
	(4.80)	(3.20)	(2.43)	(3.23)	(1.59)
Size $_{t-1}$: Ln (1+number of employees)	0.100***	0.074***	0.037***	0.059***	0.006
	(9.23)	(12.17)	(4.85)	(8.12)	(1.05)
Business age $_{t-1}$:11+	-0.079***	-0.039**	-0.079***	-0.069***	-0.020
	(-3.59)	(-2.37)	(-4.01)	(-3.56)	(-1.30)
Location: Urban area	-0.028	0.044***	-0.003	0.003	0.013
	(-1.14)	(2.61)	(-0.15)	(0.15)	(0.81)
Turnover change: Decreased	-0.064**	-0.070***	-0.013	-0.040*	0.003
	(-2.40)	(-3.97)	(-0.52)	(-1.72)	(0.16)
Makes surplus $_{t-1}$	0.042	0.018	-0.027	-0.044	-0.051**
	(1.36)	(0.85)	(-0.99)	(-1.52)	(-2.29)
Female led $_{t-1}$	0.069**	-0.011	0.036	0.051*	0.011
	(2.35)	(-0.53)	(1.32)	(1.90)	(0.49)
Minority Ethnic Led $_{t-1}$	-0.039	0.073	0.022	0.118**	0.041
	(-0.72)	(1.56)	(0.44)	(2.20)	(0.94)
Family owned $_{t-1}$	-0.031	-0.000	-0.008	0.013	-0.002
	(-1.07)	(-0.00)	(-0.32)	(0.57)	(-0.09)
External advice/information $_{t-1}$	0.158***	0.121***	0.133***	0.130***	0.079***
	(6.12)	(5.75)	(5.44)	(5.55)	(4.05)
Legal status: Sole proprietorship	-0.146*	-0.171***	0.074	-0.047	0.068***
	(-1.86)	(-2.95)	(1.54)	(-0.76)	(4.17)
Legal status: Company	-0.003	-0.044	0.177***	0.037	0.161***
	(-0.03)	(-0.77)	(3.79)	(0.63)	(9.41)
Legal status: Partnership	0.003	-0.063	0.079	0.074	0.060***
	(0.04)	(-1.01)	(1.53)	(1.15)	(3.07)
Region: Scotland	-0.040	-0.022	-0.030	-0.004	0.061
	(-0.91)	(-0.74)	(-0.72)	(-0.11)	(1.46)
Region: Wales	0.066	-0.006	0.022	0.016	-0.035
	(0.93)	(-0.13)	(0.35)	(0.27)	(-0.88)
Region: Northern Ireland	0.005	0.076	-0.021	0.076	0.050
	(0.08)	(1.35)	(-0.35)	(1.16)	(0.91)
Sector: GHI	-0.043	-0.028	0.013	-0.093***	0.010
	(-1.36)	(-1.43)	(0.48)	(-3.47)	(0.53)
Sector: JKLMN	0.059**	0.041*	0.064**	-0.009	0.052***
	(1.96)	(1.90)	(2.45)	(-0.33)	(2.70)
Sector: PQRS	0.079**	0.085***	0.065*	-0.015	0.044
N	6550	6550	6550	6550	6550
Wald Chi2	307.47***	479.28***	184.74***	224.23***	170.37***
Pseudo R2	0.1138	0.1482	0.0667	0.0756	0.0702
Log pseudolikelihood	-3998.97	-2879.21	-3579.81	-3543.60	-2488.42

Notes: The dependent variables for each model are as follows: Model 1: Increase the skills of the workforce, Model 2: Increase the leadership capability of managers, Model 3: Develop and launch new products/services, Model 4: Introduce new working practices and Model 5: Sell to overseas markets that are new for your business. Reported figures are marginal effects. Z-scores are reported in parenthesis. Omitted Categories: Age (0 - 10), Region (England), Legal (Other). ***, ** and * refer to the significant level of 1%, 5% and 10%, respectively. Standard errors clustered at SME level.

6. DISCUSSION

The empirical findings reported in this report draw on a large-scale sample of UK SMEs and enable us to augment the growing empirical evidence base relating to discouraged borrowers. In some respects, the results of the current study corroborate the much of extant body of existing evidence on discouraged borrowers. However, certain findings presented contrast with certain aspects of prior literature. Specifically, the results presented add subtle and important nuances to our understanding of the concept of borrower discouragement by reporting novel empirical findings related to the dynamics and persistence in the nature and intensity of borrower discouragement.

With one in ten SMEs (9.3%) classified as being a discouraged borrower, a key finding from this study is the fact that a significant number of UK SMEs deem themselves to be discouraged borrowers according to the definition utilised within this work. If we extrapolate this percentage figure to the overall SME population in the UK (i.e. 5.5m) it would suggest that the overall volume of discouragement in the country is significant (Nesta, 2017). Indeed, the inference from this study suggests that as many as half a million UK SMEs could be discouraged borrowers. This estimate accords with some prior research for the UK (Fraser, 2004; Freel, 2012), but greatly exceeds estimates produced since the onset of the global financial crisis (Cowling et al, 2016)[3]. The exact reason for these substantive discrepancies in the overall volume of discouragement reported across empirical studies may relate to different datasets utilised, time frames within which discouragement occurs and differences in the definitions of discouraged borrowers utilised (see section 2).

Assessing the extent of, and factors driving, discouragement was an important objective of this study. A key finding was that micro SMEs (employing between 1-9 employees) reported the largest levels of borrower discouragement compared to larger SMEs. This is a highly intuitive finding and one confirms findings from prior studies in both in the UK (Freel et al, 2012) and internationally (Chakravarty and Xiang 2013). Other demographic variables, such as industry sector, location

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[3] The very low level of discouragement reported by Cowling et al (2016) is an outlier compared to the broadly similar levels of discouragement detected in this and other UK studies (Fraser, 2004; Freel et al, 2012).

and corporate structure are also important determinants of borrower discouragement across SMEs. While the sectoral dynamics of discouragement are varied and complex, it is apparent that service sector SMEs are less likely to be discouraged borrowers compared to manufacturing counterparts. An important caveat to this was the high levels of borrower discouragement for SMEs specialising in information and communication technologies that often require greater levels of capital investments relative to other types of industries within the broader service sector. Moreover, these SMEs may also be deemed inherently risky by both entrepreneurs and lenders alike.

Due to the geographically disaggregated nature of the data, to our knowledge, this is the first analysis of borrower discouragement reporting spatial variations across the UK. The results of our empirical analysis highlighted that discouraged borrowers can be found across all the regions throughout the UK. However, SMEs in certain geographic areas are more prone to discouragement. Somewhat counterintuitively, London stands out as the region with the greatest overall level of discouraged borrowers (15.7% in 2015). There does not seem a simple explanation for this, and is an avenue for further research. What does seem much more intuitive is that the regions exhibiting higher levels of borrower discouragement are more peripheral in nature. These include Northern Ireland, Scotland and the North West of England. Potentially, this could be ascribed to the more difficult credit conditions facing SMEs located in peripheral regions more generally (Lee and Brown, 2017). What is also interesting from the results is the significant temporal variations in borrower discouragement over time. This was especially marked in the east Midlands and Northern Ireland.

Another novel finding of this study is the manner in which SME discouragement varies strongly in terms of a firm's future growth-orientation, with growth-oriented SMEs substantially more likely to be discouraged borrowers than non-growth-oriented counterparts. Over the two-year time period analysed, the level of borrower discouragement decreased for growth-oriented SMEs. This may be a sign that ambitious entrepreneurs adjust their growth projections downwards following a period of borrower discouragement. This also suggests that borrower discouragement may particularly impact high growth SMEs. This is an important extension to the literature because growth-oriented SMEs (so-called gazelles) are commonly viewed as making a disproportionately large impact on job

creation and productivity growth within the economy (Mason and Brown, 2013; Du and Temouri, 2015).

As noted in the Introduction, this study has also sought to unpack some of the key personal or cognitive determinants mediating borrower discouragement. Many of these are classic symptoms associated with entrepreneurial inaction. Indeed, the results of this study suggest that the biggest single factor shaping the overall intensity of borrower discouragement is risk aversion. The unwillingness of entrepreneurs to avoid additional risk was one of the critical factors explaining their (self-imposed) borrower discouragement. Another was fear of rejection and concerns with the prevailing economic conditions.

In terms of the personal factors shaping discouragement, a number of features are notable. First, the second greatest concern fostering discouragement was the view that the finance would be too expensive. This suggests that discouragement is associated with more than pure credit access but is also a question of entrepreneurs taking deliberative action to avoid expensive finance. This is a very important issue and suggests that high cost of credit may be a more substantial growth constraint than access to finance which has dominated the SME finance literature to date (Rostamkalaei and Freel, 2016). Second, another factor shaping borrower discouragement is the personal credit history of the entrepreneurs in question. This seemed to be a key issue for a large number of entrepreneurs (6.6% in 2016). Third, and perhaps more surprisingly was the fact that such a sizeable proportion of entrepreneurs cited the lack of speed as a source of discouragement (12.8% in 2016). This may explain why some SMEs seek more rapid sources of finance such as crowdfunding and peer-to-peer lending as a way of avoiding traditional sources of bank finance (Brown et al, 2017). Unfortunately, the absence of collateral was not one of the prompt questions included in the LSBS so we are unable to ascertain its role in fostering discouragement.

While most previous studies typically view discouragement as a binary issue between those who fear rejection and those who do not, previous research has failed to assess the strength or depth of discouragement. This seems a crucial omission owing to the multi-dimensional nature of the perceptual phenomenon. It is therefore notable that the vast majority of SMEs (75%) sampled in the current

study cite reasons additional to the fear of rejection for their discouragement. Indeed, the majority of firms cite three or more reasons underpinning their discouragement which emphasises the multi-dimensional nature of the concept. Significantly, our results suggest that size, growth orientation, financial losses, female and minority ethnic group ownership, sole proprietorship and company legal status are associated with the intensity of borrower discouragement.

Finally, in recognition of the dynamic nature of discouragement, we examined the potential impact of discouragement on the future strategic intentions of SMEs. On the face of it, the findings from this analysis perhaps paint a somewhat more positive picture of the consequences of discouragement than have been highlighted in prior literature. Indeed, our results suggest that being a discouraged borrower increases the probability that SMEs undertake plans to increase the increase the skills of the workforce and leadership capability of managers, develop and launch new products/services and introduce new working practices. Similar results were found for those SMEs with the highest levels of intensity of borrower discouragement. SMEs which are larger, younger, increased turnover, female led and seek external advice and information are more likely to have plans to increase the skills of the workforce.

7.   CONCLUSION AND POLICY IMPLICATIONS

This study represents an important addition to the small but growing body of literature around the concept of discouraged borrowers. It has strong relevance for academics and policy makers alike. In terms of the former, it answers calls for more research on the nature of discouragement in the post-recessionary environment (Cowling et al, 2016) and extends the nature of scientific inquiry into the complex firm level and personal factors which together coalesce to shape the nature of borrower discouragement across SMEs. Unpacking the nature and intensity of borrower discouragement within these SMEs is a useful starting point for further research on this topic.

A fundamental aspect of this project was to examine dynamics of discouragement and their impact on SMEs activities. The overall volume of borrower discouragement is significant and may affect around half a million SMEs. If roughly a third to a half of these UK SMEs could be deemed as

creditworthy "good borrowers" as other research suggests (Freel et al, 2012; Cowling et al, 2016), the potential negative impact of discouragement on the UK economy could be substantial. The study reveals how discouragement not only varies across different types of SMEs (especially by firm size), but also by geographical region, sector and business orientation. Moreover, temporal variations in borrower discouragement are marked across quite small periods of time covered within the study. Another innovative aspect of the preceding analysis was the attempt to gauge the intensity of discouragement. Given the importance of unpacking the true level of intensity of discouragement, further research could usefully further delineate and measure the full extent of discouragement.

In terms of the latter, important policy implications also emerge from this study. As others have noted borrower discouragement occurs to many SMEs for very good reason and prevents unduly risky entrepreneurial projects from being funded (Han et al, 2009). However, there are undoubtedly major negative consequences for the economy if good borrowers become discouraged for the wrong reasons such as having a misplaced fear of rejection, mis-perceived costs of finance, worries regarding the length of application process and the lack of knowledge of alternative or suitable sources of finance. In these instances, policy makers have a role to play in helping alleviate informational asymmetries to help aid the functioning of the credit market for SMEs more generally.

The results of this study suggest that there are useful lessons for UK policy makers both in terms of their targeting approaches and their concrete interventions. First, what this research reveals are that efforts by the British Business Bank may be formulated better if they are more strategically targeted towards SMEs most at risk of inappropriate discouragement. For example, growth-oriented SMEs in sectors such as manufacturing and ICT may warrant specially targeted policy measures. Micro firms rather than medium-sized enterprises also seem more prone to discouragement and may need specific targeting. Focusing efforts towards particular types of entrepreneurs such as women and ethnic minorities might also be another useful form of policy targeting. Organisations like the British Business Bank may wish to specifically target these types of entrepreneurs (and firms in these sectors) with information

on the types of interventions highlighted below.

In terms of policy instruments, as others have similarly argued (Cowling et al, 2016), greater promotion of existing tools such as the Enterprise Finance Guarantee scheme to those most affected by discouragement seem a worthwhile measure for adoption within UK policy frameworks. Financial instruments such as credit guarantee schemes are often cost-effective mechanisms for boosting investment by SMEs (Cowling and Siepel, 2013; Brown and Lee, 2018). This seems particularly important due to the low levels of awareness of schemes such as the EFG within the UK SME community. Indeed, less than a fifth of SMEs declare knowledge of the scheme, a figure considerably lower than for other UK programmes such as the start-up loans which is double this level[4]. Promotion of the scheme seems particularly compelling as recent research intimates that banks under-utilise (despite the state-backed guarantee) this scheme when undertaking lending to SMEs (Brown and Lee, 2017).

Given the importance of good informational links to banks to help allay informational asymmetries between banks and SMEs, the rapid decline of the UK's branch network poses policy makers with further significant challenges with respect to reducing future levels of discouragement. One innovative solution would be to develop a bespoke online informational service – akin to a public version of a price comparison website such as Money Supermarket.Com. This could potentially enable SMEs to gauge their true chances of obtaining finance and at what cost offered by different financial providers. Imaginative policy steps such as this could mitigate inappropriate discouragement whilst simultaneously helping to raise the levels of competition within the UKs' oligopolistic SME lending market. Potentially, such innovative policy proposals could also help reduce reliance on inappropriate (and costly) forms of SME finance such as credit cards and equity funding which some discouraged borrowers inevitable turn to in search of finance.

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[4] https://www.bdrc-group.com/wp-content/uploads/2017/09/BDRC_SME_Finance_Monitor_Q2_2017.pdf

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