

# The Use and Impacts of Bank Support on U.K. SMEs

by

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## Abstract

This paper examines an under-investigated area in relationship banking, i.e. the use of bank advice/support and its impacts on the financial conditions of small and medium sized enterprises (SMEs). The findings indicate that the characteristics of businesses and entrepreneurs, amongst other factors, have determinant effects on the use of bank support by SMEs, when they make financial decisions. SMEs can significantly alleviate the severity of their financial problems by using bank support more fully, through developing long-term relationships with banks as primary network partners. It further recognises the value of advice from banks being a substitute for entrepreneurial human capital, especially when bankers use 'private information' to determine the nature and level of financial and non-financial assistance that they are prepared to supply to their clients.

**Keywords:** Relationship banking, SME, bank support, human capital, financial problems

## 1. Introduction

Commercial banks are the primary suppliers of financial products to small and medium size enterprises (SMEs) (Mach and Wolken, 2006), providing a wide range of financial services to their SME customers, such as support and advice on financial issues. From the demand side, the use of bank advice has been found to fill gaps in internal staff or management expertise to develop new internal procedures or processes (Robson and Bennett, 2000). This aspect can also be seen from the perspective of SMEs periodically having and recognising weaknesses of insufficient human capital and using bank-client relationships accordingly. From the supply side, the provision of advice by banks is not subject to strict regulatory control (Bennett and Robson, 1999) and has been argued that it can draw on the basis of the trust and confidence clients have in them, their approachability and the information flow to the clients as a result of banks' financial dealings with customers (Han and Benson, 2010). Extant literature has suggested that the use and provision of support, or advice by bankers, is often a form of 'institutional trust' which is developed through long term relationship banking.

In the research area of SME finance, extensive studies have been pursued to investigate lending by banks to SMEs from three major aspects: banks (e.g. Devaney and Webber, 2002; Craig and Thomson, 2003), SME borrowers (e.g. Fraser, 2009), and the relationship between banks and SME customers (e.g. Akhavein *et al.*, 2004; Petersen and Rajan, 2002). 'Relationship lending' is critical to the financing of SMEs and its importance has been extensively confirmed by extant research into the funding of entrepreneurial ventures. Much of the available research data provided to date, in this area, has derived from four approaches. Firstly, it has reviewed the impacts of the

duration of the relationships between banks and SMEs, on the availability of bank finance (e.g. Ono and Uesugi, 2009) and its cost (e.g. Berger and Udell, 1995). Secondly, it has sought to examine the way in which banking relationships have impacted on the provision of SME finance through 'business characteristics' (e.g. Han et al., 2009a) and entrepreneurial 'demographic profiles' (e.g. Cavalluzzo et al, 2002). Thirdly, there has been a concentration upon the level of embeddedness of the relationship between banks and their clients (e.g. Kang et al., forthcoming). Fourthly, it has examined the role played by the market conditions for SME finance, e.g. market concentration (Han *et al.*, 2009b).

Most empirical studies employ materials from the US, historically having had a geographically fragmented banking system and despite the merger and acquisition process in banking sector undergoing internationally, and particularly in the US, this remains very fragmented by international standards and different from the UK<sup>1</sup>. In contrast, the UK has a generally centralised banking system. In the case of UK SME finance the big-4 banks<sup>2</sup> are the main banks for 78% of SMEs and in Scotland they have 95% of the market (Fraser, 2005). Even though there is less empirical evidence on small firm relationship banking in UK, it has been reported that relationship banking is equally important for UK SMEs in terms of alleviating financial problems, for instance (Han, 2008). In a research project on small business credit market discrimination, Fraser (2009) reports that there is no ethnic discrimination in UK markets and the ethnic differences in the availability and price of small business finance can be interpreted by variations in non-ethnic risk factors.

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<sup>1</sup> We appreciate an anonymous referee for raising this point.

<sup>2</sup> They are Barclays PLC, HSBC Holdings PLC, Lloyds Banking Group PLC. and Royal Bank of Scotland Group PLC.

It has been widely accepted that small firms make great contributions to regional economic development and the creation of jobs. It has also been noticed that small firms are more likely to raise external capital locally because of the high transaction costs incurred. Therefore, geography plays an important role in small business finance in terms of costs of private information collection, monitoring and etc. For example, local financial development enhances the probability of business start-up and promotes growth (Guiso et al., 2004) and the highly centralised UK banking system may well introduce spatial bias in the flows of capital to SMEs (Klagge and Martin, 2005). In Italy, because of the concentration of bank decisional centres, the functional distance between banks and local firms has been widened and as a result, it makes local borrowers' financial constraints more binding (Alessandrini et al. 2009).

Moreover, the geography in SME finance also has strong implications on economic rent creation and the problem of asymmetric information (e.g. Degryse and Ogena, 2005) which is essential to gaining an understanding the financial behaviour of small businesses, generally supposed to be 'informationally opaque'. Theoretically, with the problem of asymmetric information, small business borrowers would be either credit rationed (Stiglitz and Weiss, 1981) or offered a 'menu of contracts' (Bester, 1985). The empirical implications of asymmetric information theory for small business finance are, firstly, creditworthy small businesses may under invest, if they cannot raise the capital they need and/or at a price they can afford. Secondly, because of information asymmetries, non-creditworthy small businesses may over invest if their loan applications are mistakenly approved by lenders. It has been widely recognised that relationship lending could help to alleviate the problem of asymmetric information (e.g. Petersen and Rajan, 1994). In particular, the relationships between banks and their SME customers have been

understood as, and studied in, the following three aspects: (1) length of the relationship (e.g. Petersen and Rajan, 1994), (2) distance between banks and borrowers (e.g. Degryse and Ogena, 2005), (3) embeddedness of the relationship (e.g. Uzzi and Lancaster, 2003, from the side of banks), (4) concentration of the relationships (e.g. Detragiache et al, 2000; Han *et al.*, 2008), and (5) communication approaches between banks and their SME customers (e.g. Han and Greene, 2007). However, there is an under-investigation of the impacts of external assistance provided, especially that of bank support, via relationship banking. It has been well reported that financial constraints have a major impact on the ‘survivability’ of SMEs and ultimately may be a significant causal factor of their ultimate failure (Saridakis et al., 2008).

By analysing the 2004 U.K Survey of SME Finances with 2500 sample firms, this paper examines the use of bank support services and their impacts, via relationship banking, on the lessening, or otherwise, of the severity of financial problems encountered by UK-based SMEs prior to the ongoing and unresolved EU funding crisis. This paper contributes to the literature in a number of ways. Firstly, by complementing the existing literature on the use and the effectiveness of the available public support programmes, such as Business Link, we investigate the use and impacts of assistance from the private sector – banks. Secondly, our empirical results reinforce the importance of the level and quality of an entrepreneur’s human capital on the financial health of small business. We thus highlight the important role played by bank support to compensate for the lack of sufficient human capital. Thirdly, contributing to the literature in relationship banking, this paper offers evidence that the favourable relationship effects in alleviating SME financial problems are much stronger for bank support users, rather than non-users.

The remainder of this paper is as follows: Section 2 reviews literature on information asymmetries and relationship banking. Section 3 develops research hypotheses by examining the extant literature on external assistance and the observed relationships between banks and their SME clients. Section 4 describes the methodology and data employed. Section 5 presents the findings. Section 6 concludes and considers the implications for overcoming the inertia of entrepreneurs in both seeking and responding to advice available from professional business advisors.

## **2. Asymmetric Information and Relationship Banking**

Asymmetric information is central to gaining a greater understanding of the particular relationships between banks and their SME clients. The asymmetry occurs because bank lenders are generally assumed to have less meaningful information, about the individual small business, than the borrower(s). Meanwhile, existing literature has also acknowledged that the converse may be the case for new businesses, where lenders are supposed to have more information than the new entrepreneurs, on the prospects of the businesses. This is because new entrepreneurs many have a tendency towards being over-optimistic about their prospects (Fraser and Greene, 2006). The majority of existing studies, however, have focused on the case where banks have less information than borrowers when making lending decisions. Especially, it has been recognised that the asymmetric information is more serious in smaller businesses than in larger firms (Ang, 1991).

The empirical implications of asymmetric information are important. Firstly, creditworthy small business borrowers may under invest if they cannot raise the capital

they need and/or at a price they should pay. Secondly, non-creditworthy small business borrowers may over invest if their loan applications are mistakenly approved by lenders because of the problem of information asymmetries. Theoretical models have been developed to capture the empirical implications of asymmetric information, such as the capital rationing model (Stiglitz and Weiss, 1981), signalling model (Bester, 1985) and sorting by signally and self-selection paradigm (Han et al., 2009a). It has been argued that banks may alleviate information asymmetries by collecting private information about the borrowers and use the information collected in their lending decision makings (Diamond, 1991). Hence, relationship banking would reduce information asymmetries and lower the costs of lending for banks (Chakravarty and Scott, 1999).

Through the services and products used by small business borrowers, banks can collect information which is not directly available, from financial statements for instance. It has been generally accepted that relationship banking has strong impacts on the problems associated with information asymmetries. The value of relationship banking, in terms of alleviating the problem of asymmetric information, varies over the nature of lending institutions (Berger and Udell, 2002), the nature of the relationship (Lehmann and Neuberger, 2001) and the credit market conditions (Han et al, 2009b). It has also been acknowledged that relationship banking is playing a less important role for large firms than it was because of financialisation (Deeg, 2010). Such impacts are still not clear for relationship banking of SMEs. However, it has been widely accepted that financialisation has changed business financing behaviour. For example, when there is a demand for finance, non-financial businesses tend to choose external finance, rather than adjust their production (Milberg, 2008). It has been found that financial expenses take a greater fraction of profit for non-financial firms over the last 50 years (Orhangazi, 2008).

Recognising the issue of asymmetric data there are some ‘industry practices’ deployed by some borrowers, including the providing of ‘private information’ to bankers and leaving them to make the decision to support the request for funds (sometimes with conditions), or to reject the application. Smith and Smith (2000) discuss the use of ‘signals’ to support the validity of bank client requests for assistance. They define a signal as a credible demonstration that obviates the need to convey the information itself. Bankers recognise such signals as helpful and will use screening techniques, developed by their banks, as means of averting the risks of ‘adverse selection’. Smith and Smith (2000) further postulate that signalling works in a way that is convincing and still preserves the value of the information. This could involve soliciting ‘reassuring statements’ from the bank’s client(s) to confirm that they are very committed to the project for which they are requesting bank support.

### **3. Hypothesis Development**

Pivotal to information asymmetries has been a general conceptual awareness of the importance of the relationships, between banks and SMEs, in financing information-opaque ventures. Indeed, a generally accepted belief is that highly embedded and long-term relationships play a key role in private information acquisition (Han et al., 2009b) and capital provision for SMEs (Ono and Uesugi, 2009). Hence, empirical research has used length of relationship as a (reverse) proxy for the degree of asymmetric information between banks and ‘informationally opaque’ SME borrowers. However, there is no clearly unequivocal evidence supporting the role of embedded banker-SME client relationships, in reducing the cost of SME finance. Indeed, empirical evidence has shown



that 'relationship lending' can reduce the cost of SME finance (Berger and Udell, 1995) by improving the quality of information exchanged between lenders and borrowers. Nevertheless, private information acquisition based on relationship-lending may yield (economic) 'bank rents' and as a result lending rates may increase with the length of relationship (Degryse and Ongena, 2005). Mixed effects of relationship lending have also been found in financing small businesses in Belgium (Degryse and Cayseele, 2000). For example, it has been found that in Belgium, small business borrowers were charged higher rates on loans over the length of relationship, but they were less likely to be required to secure the loans by collateral. In the U.K., consistent evidence is available from an earlier study (Binks and Ennew, 1997) which examined the nature of the relationship between banks and SMEs in the U.K. and argued that relationship lending encourages information flow, serving as an alternative to heavy reliance on collateral-backed lending decisions. More recent empirical studies, by analysing U.K. data, have also indicated that length of relationship does not impact the probabilities of being denied (Fraser, 2009) but reduces the severity of financial problems faced by SMEs (Han, 2008).

Given these potentially contradictory impacts, there is no clearly unequivocal evidence of the tangible values of the dyadic relationship. Nonetheless, intuition suggests that longer relationships between banks and SMEs should impact favourably on the financial situation of the business.

**H1:** Longer relationships with banks reduce the probability of facing financial problems by SMEs.

Apart from the length of relationship, the embeddedness of the relationship between banks and borrowers has been recognised to play an important role in private information collection. When businesses and banks are connected by arms-length network dyadic ties (a low level of embeddedness), businesses tend to transfer public knowledge. In contrast, they tend to transfer private knowledge (information) when they are linked via embedded ties (high level of embeddedness) (Uzzi and Lancaster, 2003). Indeed, with 'arms-length' relationships, market transactions are mediated by both the cost of search and the actual cost of goods and services (Uzzi, 1997). There is also ample evidence that an 'arms-length' relationship is not highly valued in the bank-customer nexus (Uzzi, 1999; Uzzi and Lancaster, 2003). From a historical perspective, a contrast is often drawn between 'relationship banking' and 'transaction banking'. In a system dominated by relationship banking, banks invest a great deal of resources in the collection and monitoring of private information and maintain a close, long-term relationship with business clients. Whereas, in transaction banking, banks treat each loan as a separate transaction and deal with it on its own merits (Baker and Collins, 2003).

**H2:** The favourable effects of relationship banking on reducing SME financial problems increase over the level of embeddedness of the relationship with bankers.

Bankers, seemingly, are strongly committed to client relationship development by being observed to be actively involved with facilitating the improvement of clients' financial decision-making. Important aspects include the formal provision of support, including 'specialist advice' to their SME clients. Even in a financial system, dominated by transaction banking, banks are often willing to provide support and advice for financially distressed business clients. There is some interesting debate, in the literature, whether

such 'distressed clients' actually reflect and respond to the advice given by their banks. However, a longitudinal study, of the period 1946-1963, revealed that nearly half of the distressed business clients received bank advice and intervention in terms of independent investigation and advice on: financial structure, change in management and business details (Baker and Collins, 2003). Binks and Ennew (1997) reported that more than 60 per cent of small businesses in the U.K. are willing to provide information to their bank manager and are positively inclined to discuss excess borrowings in advance. By conducting cluster analysis they found that such businesses were more inclined to appreciate the importance of many aspects of bank services, as well as being more positive in their perceptions of bank service quality. In addition, they were less constrained (more open) in their relationship with their bank. Basu (1999) also found that a large proportion of Asian entrepreneurs approached banks for advice in creating their business in the U.K. and half of them found bank advice to be useful. Also available is the evidence that there is a weak, or even negative correlation, between taking start up counselling and launching/running a business in the future (Dahlqvist et al, 2000; Basu, 1999). This may result from 'self-selection' behaviour of entrepreneurs (Davidsson, 2002).

**H3:** 'Distressed clients' are more likely to use bank support which will reduce the financial difficulties they have.

Trust theory (Ali and Birley, 1998) indicates that 'trust' (being reliable and honest) plays an important role in the development and maintenance of bank and SME client lasting 'portfolio relationships'. As the level of trust increases, the relationship strengthens, and the likelihood of trustworthy behaviour increases (Howorth and Moro, 2006). This 'trust begets trust' hypothesis has also been applied by researchers to gain a deeper

understanding of electronic business transfers and online behaviour, where the importance of 'trust' (Tapscott et al, 2000) has been recognised as both a barrier to electronic commerce (Gefen, 2000) and 'a significant antecedent of customers' willingness to engage in transaction with 'web-merchants' (Yousafzai et al, 2003, p. 847).

**H4:** The likelihood of using bank support increases over the embeddedness of the banker-client relationship.

The importance of entrepreneurial demographics and business characteristics in the use of external assistance has also been acknowledged by existing research. It has been found that the use of external advice is highly associated with business size, growth, innovation activities (Cosh and Hughes, 1998) and the ethnicity of entrepreneur (Basu, 1999). Existing literature has acknowledged that the financial constraints faced by SMEs, in terms of availability and cost of finance, are significantly influenced by business size (Han, 2008), stage of business cycle (Berger and Udell, 1998), industry (Petersen and Rajan, 1995), information transparency (Petersen and Rajan, 2002) and organisation type (Avery et al, 1998). Equally, the human capital of an entrepreneur engaged within his/her SME also has a strong impact on the financial issues of the business. These demographic factors contain ethnicity (Cavalluzzo et al, 2002), experience in business (Cressy, 1996), personal wealth (Burke et al, 2000; Evans and Jovanovic, 1989) and so on. In banking literature, this is referred as the 'sorting-by-observed-risk' paradigm (Berger and Udell, 1990). The above aspects are ones of 'resource heterogeneity' that is addressed within the 'Resource Based View' (RBV) of strategic thinking. The RBV being defined by Barney and Hesterly (2010, p.95) as '*An economic theory that suggests that firm performance is a function of*

*the types of resources and capabilities controlled by firms. Resources and capabilities can be categorised into: financial, human and organisational resource categories.'*

More specifically, Fraser (2009) finds that there is no ethnic discrimination in UK SME capital markets, in terms of availability and costs of borrowing. Instead, the variation can be explained by non-ethnic factors, such as credit history, of the entrepreneurs and business borrowers. In an investigation of relationship banking and financial constraint, Han (2008) reports that characteristics of entrepreneurs and businesses play an important role in the determination of financial conditions. For example, bigger firms and firms managed by more experienced owner/managers are less likely to face financial problems. The demographics of entrepreneurs are also found to be important for the use of service and advices available for SMEs. For example, men and black and minority ethnic entrepreneurs are more likely to use family and friends for advice, while women are more likely than men to use Business Link (Scott and Irwin, 2009). Therefore, we derive the following hypotheses to be tested empirically.

**H5a:** Large firms and male and ethnic-minority entrepreneurs are more likely to use bank support.

**H5b:** Large firms and firms owned by more experienced entrepreneurs are less likely to have financial problems.

In summary, the use of bank support and its impacts on the reduction of financial problems faced by SMEs are determined by the length and embeddedness of

relationships between banks and their SME clients and the characteristics of entrepreneurs and their businesses.

#### **4. Data and Methodology**

To examine the use of bank support and its impacts on the severity of the financial problems faced by SMEs through relationship banking, empirical evidence is drawn from the 2004 U.K. Survey of SME finances. This is the first representative survey of SME finance in the U.K. to offer a close analysis of businesses with fewer than 250 employees, demographics of their owners and access to external finance. The survey was conducted amongst a representative sample of 2500 SMEs, representing around 3.6 million small and medium sized enterprises, in the U.K. private sector in 2004. This survey has been widely used in the recent empirical research on SME finance, such as Fraser (2009), Han (2008) and Han and Benson (2010).

This survey was conducted in the U.K. by Warwick Business School and IFF Research Ltd. by Computer Assisted Telephone Interview (CATI) in 2004. It is comparable with the U.S. Survey of Small Business Finances (SSBF) carried out by the Federal Reserve and Small Business Administration, as both of the surveys employed similar data collection approaches, e.g. sampling, and asked similar questions. In particular, the U.K. survey collected data relating to (1) the relationships between small businesses and their finance providers, (2) the types of finance used, (3) credit terms and conditions, (4) start-up finance, (5) rejection experience, (6) income and balance sheet information and (7) business owners' human and financial capital. Detailed information about the survey and general findings are available from Fraser (2005).

Fundamentally, the survey collected information on the use of bank support and the severity of the financial problems of obtaining sufficient finance and the cost of finance. Table 1 lists the main external sources of support and advice used by SMEs when they make financial decisions and their usefulness, rated and reported by the respondents, ranging from 1 (no help) to 10 (vital help). Nearly 70 per cent of SMEs use external support and advice mainly from accountants, bank managers, friends/business associates and business advisors. Other sources include solicitors, customers, trade associations, and government agencies and so on. Indeed, the need of support and advice provided by external sources is perceived helpful for SMEs, ranging from 6.77 (business advisor) to 7.73 (friends/business associates) out of 10. From the survey, we do not know if a sample firm obtains advice/support from accountants internally or externally. Coming after the accountant, the bank manager is the second most frequently used external source of support and advice, from the survey's findings.

**Table 1 around here please**

The definitions of the variables, and summary statistics, are reported in Table 2. A 'typical' firm in the sample was family-owned, 26 years old and had 26 employees. It was owned by a 51 years old male owner, who had 20 years of experience. As the other dependent variable, 50% of the firms are facing financial problems. Existing research has highlighted the impacts of the demographics of the entrepreneur, business characteristics, relationships with banks, and use of different sources of finance on the financial situation of SMEs. This paper follows this approach and groups the independent variables into similar categories.

**Table 2 around here please**

The principal interest of this study is to examine the determinants of use of bank support and its impacts on the lessening of financial problems faced by SMEs by conducting empirical analysis on the available observations. Correlation matrix is shown as below.

**Table 3 around here please**

To justify our regression modules in the following empirical analysis, we explicitly consider the possible multicollinearity problem by Variance Inflation Factor (VIF) test<sup>3</sup> on all of the empirical models conducted in the next session. The highest is 2.93 which is lower than the maximum acceptable value of 5 and therefore there is no multicollinearity problem in our empirical models.

## **5. Empirical Results**

### ***5.1. The Use of Bank Support/Advice***

Table 4 reports the estimation results of three Logistic models and the probabilities modelled are SUP\_BANK=1. Therefore, any factor with a positive coefficient points to a higher likelihood of using bank support. Model 1 includes control variables (region and industry) and business characteristics only with 1783 samples involved. Model 2 adds entrepreneurial demographics with 1584 samples involved and Model 3 also considers the relationship between SMEs and banks as well as the banking market conditions

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<sup>3</sup> Results are available from the authors upon request.



defined as locations: whether locates in cities or not (Han et al., 2009b). First measurement is the length of the relationship which has been widely used in existing literature (e.g. Petersen and Rajan, 1994) and another is whether ‘clients’ have used overdrafts in recent 3 years, according to Berger and Udell (2002). Moreover, there is a third measurement as the type of bank, i.e. if the bank is a big-4 bank. Big-4 refers to the four biggest commercial banks in U.K., including Lloyds TSB, HSBC, RBS and Barclays in 2004. We use this proxy because it is plausible that small ‘relationship oriented’ banks are more likely to offer bank support to SMEs than large ‘arm-length’ banks. The results suggest that the use of bank support is fundamentally determined by the characteristics of business, entrepreneur (**H5a**) and the type of the bank which provides the majority of financial services to the business.

**Table 4 around here please**

Firstly, the embeddedness of relationship could be measured either by the duration of the relationship, or scope of the relationship (Degryse and Cayseele, 2000). Table 4 shows that the coefficient of length of relationship between a bank and SME clients is positive yet statistically insignificant. However, the coefficient of whether the firms has used an overdraft in recent 3 years is significantly positive. The seeking of bank support is strongly motivated by the demand of external finance and therefore a main reason of using bank support is finance-oriented. Thus, **H4** is supported by the measurement of scope of relationship.

Secondly, Model 1 reports that larger businesses and those in need of finance have a higher likelihood of using bank support. Larger businesses need more support from

banks because of their bigger number of transactions with banks (**H5a**). The latter finding suggests that small businesses with financial problems, e.g. those sought new finance or discouraged from borrowing, are more likely to use bank support, supporting **H3**. Following the finding above and **H3**, one could argue that SMEs managed by such entrepreneurs are more likely to have financial problems and thus they are more inclined to use bank support. We conducted correlation analysis and rejected this argument, as the Spearman correlation coefficients between the probability of facing financial problems and these demographic factors are small. One possible reason for this can be that the behaviour of a SME in seeking external support mimics that of its owner. This is especially pertains to the smaller businesses which are often dominated by a single or a small number of principal individuals. The link between behaviour (e.g. payment technologies) and certain demographics of individuals (e.g. age, gender, education) has been highlighted by existing research (e.g. Carow and Staten, 1999; Mantel, 2000). By analysing a U.S. small business dataset, Han and Greene (2007) found that characteristics of entrepreneurs do have a strong impact on the likelihood of online loan application behaviour of small businesses in the U.S. Moreover, the firm size in Model 1, gender of owner in Model 2 and 3, owner ethnic group in Model 2 are all statistically significant. Therefore, **H5a** is supported.

Model 3 also shows that the coefficient of 'BIG\_FOUR' is positive and statistically significant at a 1% level. This result suggests that SMEs whose main bank is one of big-four, i.e. the biggest four commercial banks in the U.K., have higher probability of using assistance/support from bank managers, than those using financial services from smaller banks. There are two possible reasons behind this finding. Firstly, supply of banking services heavily concentrate in the big-four in the U.K. For example, in the U.K., 59% of

SMEs have just one main provider of finance and big-four are the main bank to 78% of SMEs (Fraser, 2005). Secondly, SMEs are inclined to use banking services from large banks which provide more comprehensive services and wider networks.

### ***5.2. Impacts of bank support on the severity of financial problems faced by SMEs***

Because of the cross-sectional nature of the data and the causal relationship between SME financial problems and use of bank support, we cannot directly test the impacts of bank support on the severity of financial problems faced by SMEs. One possibility to overcome such problem is to use instrumental variables which affect financial conditional only through bank support. However, such instruments are not available from the data and we assume the same set of variables determine both the use of bank support and the financial conditions of SMEs. In other words, we cannot simply put the bank support variable on the right hand side of the model. Instead, we follow the theory of relationship banking (e.g. Berger and Udell, 1995; Uzzi, 1999) to examine how SMEs benefits from the use of bank support through relationship banking. Indeed, we expect that the favourable effects of relationship banking on the financial condition of SMEs, which have been observed in existing literature, e.g. Petersen and Rajan (1994) and Berger and Udell (1995), will be further enhanced by the use of bank support. As a result, we run three models on all samples (Model 4), non-users (Model 5) and users (Model 6) respectively. The probability of having financial problems by SMEs is measured by a binary variable whether facing financial problem (1) or not (0) and self-reported by the respondent. The basic logistic (Logit) model has been adopted. Any explanatory variable with a positive coefficient points to a higher probability of having financial problems.

**Table 5 around here please**

The first part of Table 5 reports the results of an logit model with all samples (Model 4) and shows that the probability of having financial problems faced SMEs are mainly determined by three factors: the characteristics of business, those of entrepreneurial and the relationship characters between SMEs and banks.

Empirical literature suggests that start-up businesses may have more problems in access finance than more established businesses, because they are more risky and informationally opaque (Berger and Udell, 1998). In comparison, our results (Table 5) show that start-up businesses are less likely to have financial problems. Table 5 shows such effect is inclined to occur on the users of bank support services since the odds ratio of start-up business Model 4 (all samples) is 0.5163 while the odds ratio of start-up business of bank support users (Model 6) is 0.0594. The relationship between the starting up and probability of facing financial problems among non-users of bank support service is not statistically significant. Indeed, this result reflects that with the development of the business, in terms of starting up for example, a SME will still face the continuing problem of raising funds as business progresses and therefore could experience tougher financial conditions.

From the views of the effect of firm characteristics, a firm's performance affects its probability to suffer financial problems. From Table 5, the coefficient of profits/total assets is inversely related with the probability of suffering financial problems. It means firms earning more profits will be less likely to be financially constrained. Capital structure also plays significantly a role, leading to financial problems. From Model 4 and Model 5, implications could be drawn that firms with higher financial leverage will be

more likely to get financial problems. However, Model 6 also indicates that firms' capital structure does not play such role if the firm is a user of banking support service.

As for the characters of entrepreneurs, the factors of gender (female), (young) age of the owners have favourable effects on the reduction of probability of facing financial problems for non-users (Model 5) and users (Model 6) respectively in Table 5, being consistent to intuition. Moreover, for all the samples (Model 4 to Model 6), if the owner is more experienced, his/her business will be less likely to suffer from financial problems. Such findings are consistent with existing literature, which emphasises the important role played by the human capital (Cressy, 1996) and personal financial capital (Ang, *et al.*, 1995) of the entrepreneur. It suggests that human capital (e.g. experience in business) has strong impacts on the probability of facing financial problems by the business. For example, SMEs managed by more experienced entrepreneurs are less likely to face financial problems and these favourable effects are statistically significant for all samples and non bank users and bank users. There are two important implications to draw from these findings. Firstly, it suggests that the characteristics of entrepreneurs have strong impacts on the financial situation of their business, supporting **H5b**. Secondly, for entrepreneurs and small business owner managers, business experience plays a more important role to overcome financial problem than education.

Another important result reported in Table 5 is that the probability of financial problems, facing by SMEs, is reduced when a longer relationship between a bank and a SME is developed, where the negative coefficient is statistically significant in all three models. Firstly, this result is consistent with empirical evidence that relationship banking improves the availability of finance (Petersen and Rajan, 1994) and reduces the cost of

finance (Berger and Udell, 1990; Peltoniemi, 2007). Thus, it supports **H1**. Secondly, the results suggest that the relationship effect increases over the embeddedness of the relationship between banks and SMEs. The embeddedness of relationship can be improved by more interactions and interventions between banks and their SME clients, in terms of providing support and advice, for instance, if the interactions involve considerable information collection. Table 5 shows that the relationship coefficient is statistically significant for both bank support users and non users. In particular, the odds ratio of the estimate of 'relationship' for bank support users is 0.75 while that of the non-users of bank support is 0.81. It means for the bank support users, relationship will value more on reducing financial problems, than the non-users. Therefore, it supports **H2**.

To present the favourable relationship effects on reducing financial difficulties, we plot the estimated probabilities of having financial problems (Figure 1) over the length of relationship developed between banks and SMEs. The estimation is based on the results of parsimonious models on the probability of financial problems (Models 5 and 6, Table 5). There are three important implications shown in the figures. Firstly, these figures show that bank support users always have lower (higher) likelihood of having (no) financial problems. Secondly, by developing longer relationships, the likelihood of having (no) financial problems decreases (increases). Finally, the favourable relationship effects on reducing financial difficulties are more significant, or have greater marginal effects, for bank support users than non users.

**Figure 1 around here please**

## **6. Summary, conclusions and implications**

This paper examines the use of bank support/advice and its impacts on the financial problems faced by SMEs. It contributes to literature in a number of beneficial ways. Firstly, as a complement to the existing literature on relationship banking which has been focused from the perspective of banks (e.g. Uzzi and Lancaster, 2003; Baker and Collins, 2003), as this paper studies the use and impacts of bank support from the perspective of small and medium sized businesses in the U.K. It also complements empirical political studies on the use and effectiveness of public support programme by examining the assistance provided by private sectors, the banks. Secondly, this paper further highlights the importance of the demographic characteristic of the entrepreneurs in taking up external assistance and in the determination of the financial conditions of their businesses. This is a unique characteristic which distinguishes small business finance from traditional corporate finance. Meanwhile, our results also suggest that there is a substitution relationship between external assistance (support and advice) and the human capital of the entrepreneurs engaged within their business. Thirdly, the empirical results of this paper suggest that the nature of relationship banking has strong impacts on the financial problems faced by SMEs. The use of bank support increases the level of embeddedness of the relationship between banks and their SME clients. Improved relationships can significantly reduce the probability of financial problems faced by SMEs. Finally, banks are very important institutions in national and regional economies and provide considerable critical support to small and medium sized enterprises. UK Government concern for the level of banking service efficacy is reflected in an

investigation, that was started in March 2000, by the Competition Commission (2002). The report came to a number of conclusions and put forward a number of specific recommendations for the monopolistic clearing banks to implement. The report recognised (*inter alia*) that the quality of service the SME sector receives from their banks and the terms on which it is provided are key factors in the success of this sector. Our survey data was captured in 2004 and may reflect the benefit, for some SME clients, from some of those recommendations implemented by the banks. This specific aspect cannot be specifically derived from our dataset, but some improvements in SME banking services will have improved in the intervening two years between 2004 and 2002. However, because of the cross-sectional nature of our data, we are not able to investigate the effects of the policy change and we call for a future research with panel data to further look at this issue.

The results revealed in this paper provide empirical evidence that banks do provide helpful support to their SME clients and such support significantly reduces the financial problems faced by SMEs. This study also reveals that the support, provided to SMEs from banks, is considered valuable by a high number of entrepreneurs. It implies that by seeking assistance from banks would possibly improve the ‘surviving ability’ of SMEs who face financial problems. We find the important role played by the human capital of the entrepreneur engaged within the businesses, in reducing the financial problems faced by SMEs, consistent with Cressy’s (1996) conclusion that small businesses failed because of the lack of human capital, rather than the lack of finance.

Our results also suggest that favourable effects of bank support work through relationship banking. This is consistent with the empirical evidence which suggests that



relationship banking would alleviate the asymmetric information problem between banks and SME customers. Through providing support and advice to their SME clients, bank managers, over time, increase the depth of embeddedness of the relationships with SME customers. Thus information quality is potentially improved in such a developing dyadic relationship, between banks and their clients. Our empirical data supports a view that relationship lending is highly beneficial from the banker-client perspective. In conclusion, SME proprietors should recognise the importance and value of the support they could receive from the banking community and should ensure they develop these pivotal trust-based network relationships within their relationship portfolio. Banks are known providers of considerable funding, as well as business advice to SMEs and therefore, for a SME, the ability to access external knowledge resources efficiently can become a competitive factor (Viljamaa, 2011). For policy makers, it is important to provide a greater level of business support for SMEs in difficulties, to lower the level of business failure. Our paper has disclosed the nature of service provided by banks, only in broad terms. It is conceivable that banks might move more into traditional consultancy areas such as providing advice on tax planning and retirement planning to SMEs. If this is the case then future academic research could study the levels of client satisfaction across clusters of expert services provided.

**Comment [L.Han1]:** Make sure this is correct. DONE

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**Table 1: The main external source of support and advice used by SMEs and its usefulness**

The usefulness of support/advice is reported by the respondents, ranging from 1 to 10, where 1 means no help and 10 means vital help.

	Source of support		Usefulness of support	
	Frequency	Percent	Mean	Std. Dev.
accountant	914	36.6	7.71	1.97
bank manager	482	19.3	7.50	1.88
friends/business associates	111	4.4	7.73	2.56
business adviser	75	3.0	6.77	2.44
other sources	129	5.2	7.28	2.03
no advice or support used	678	27.1		
don't know/null	111	4.4		
<b>Total</b>	<b>2500</b>	<b>100.0</b>		

**Table 2: Variable Definition and Descriptive Statistics**

Total number of observations is 2500. Descriptive statistics for control variables are not reported here but available on request. Control variables include eleven dummies representing the region where sample firm headquarters, eight industry variables based on two-digit SIC code. Firm age has a range of zero to 504 and a mean around 27. Nearly 4% of the samples are older than 100 years and 11 firms are older than 200. One sample firm reported that the principle owner had 100 years of experience in business. To examine the influence of the ‘anomalies’, empirical models were run twice by including and excluding these outliers.

Variable	Definition	Min	Max	Mean	Median	Std. Dev.
<b>CHARACTERISTICS OF BUSINESS</b>						
SUP_BANK	Whether use bank support	0	1	0.20	0	0.40
TOTEMP	Total number of employees	1	240	26.16	10	39.60
LOGTOTEMP	Natural log value of one plus total number of employees	0.69	5.48	2.42	2.40	1.36
LEVERAGE	Gearing ratio: total liabilities / total business assets	0	9010000	577.43	0.31	19738.39
LOGLEVERAGE	Natural log value of one plus gearing ratio	0	13.71	0.40	0.27	0.77
FAM_BUS	Family business (0,1)	0	1	0.81	1	0.40
STARTUP	Startup business (0,1): =<2 years old	0	1	0.06	0	0.24
FAGE	Firm age in years	0	504	25.93	16	35.71
LOGFAGE	Natural log value of one plus firm age in years	0	6.22	2.81	2.83	0.99
NEED_FIN	In need of finance (0,1)	0	1	0.59	1	0.49
PROF	Profit/Total Assets	-25.44	81.05	0.23	0.10	1.98
<b>CHARACTERISTICS OF ENTREPRENEUR</b>						
OAGE	Principal owner age in years	18	85	50.90	51	10.42
LOGOAGE	Natural log value of one plus principal owner age in years	2.94	4.45	3.93	3.95	0.21

**Table 2: Continued**

Variable	Definition	Min	Max	Mean	Median	Std. Dev.
MALE	Principal owner's gender: male (0,1)	0	1	0.82	1	0.38
ETHNIC_W	Principal owner's ethnicity: white (0,1)	0	1	0.96	1	0.20
EDUC_AU	Education: above undergraduate degree (0,1)	0	1	0.23	0	0.42
EXP	Principal owner's experience in businesses in years	0	100	20.87	20	11.60
LOGEXP	Natural log value of one plus number of years of experience	0	4.62	2.90	3.04	0.70
<b>RELATIONSHIP BETWEEN BANK AND SME</b>						
RELATION	Length of relationship in years with main bank	0	99	16.16	12	15.57
LOGRELATION	Natural log value of one plus length of relationship	0	4.61	2.44	2.56	0.96
BIG_FOUR	The main bank is one of big-4 (0,1)	0	1	0.79	1	0.41
OVERDRA	Whether use overdraft in recent 3 years (0,1)	0	1	0.66	1	0.47
<b>MARKET CONDITIONS</b>						
MSA	Locate in cities (0,1)	0	1	0.28	0	0.45
<b>FINANCIAL PROBLEMS FACED BY SME</b>						
FINANPROB	Whether facing financial problem	0	1	0.50	0	0.50

**Table 3: Correlation Matrix**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1 FINANPROB	1.00																		
2 LOGTOTEMP	0.06*	1.00																	
3 FAM_BUS	-0.02	-0.30*	1.00																
4 STARTUP	0.03	-0.08*	-0.02	1.00															
5 LOGFAGE	-0.08*	0.19*	-0.03	-0.56*	1.00														
6 LOGOAGE	-0.09*	0.05*	0.03	-0.21*	0.35*	1.00													
7 MALE	0.03	0.18*	-0.09*	-0.11*	0.12*	0.10*	1.00												
8 ETHNIC_W	0.01	-0.01	-0.02	0.01	0.07*	0.07*	-0.03	1.00											
9 EDU_AU	0.06*	0.11*	-0.12*	-0.02	-0.02	-0.02	0.00	-0.07*	1.00										
10 LOGEXP	-0.09*	0.11*	0.05*	-0.29*	0.42*	0.60*	0.21*	0.04	-0.06*	1.00									
11 LOGRELATION	-0.10*	0.04*	0.04	-0.36*	0.55*	0.35*	0.10*	0.07*	0.00	0.42*	1.00								
12 BIG_FOUR	0.03	0.05*	0.00	0.00	0.00	0.00	0.04*	-0.04*	0.02	0.01	0.11*	1.00							
13 MSA	0.02	0.13*	-0.16*	0.00	-0.06*	-0.03	0.03	-0.13*	0.18*	-0.04*	-0.05*	-0.04*	1.00						
14 OVERDRA	0.19*	0.24*	-0.09*	-0.08*	0.07*	-0.02	0.09*	-0.02	0.04	0.08*	0.04	0.04*	0.03	1.00					
15 PROF	-0.05*	-0.04	0.04	-0.01	-0.01	-0.02	-0.01	0.00	-0.06*	-0.01	-0.02	0.00	-0.04	0.00	1.00				
16 LOGLEVERAGE	0.12*	0.11*	-0.09*	0.07*	-0.09*	-0.05*	0.00	-0.01	0.05*	-0.05*	-0.06*	0.03	0.06*	0.08*	-0.02	1.00			
17 SUP_BANK	0.08*	0.06*	-0.02	-0.02	0.03	-0.04*	0.07*	-0.03	0.00	-0.01	0.00	0.06*	-0.03	0.15*	-0.01	0.03	1.00		
18 NEED_FIN	0.19*	0.23*	-0.08*	0.11*	-0.12*	-0.12*	0.06*	-0.01	0.02	-0.08*	-0.25*	-0.01	0.03	0.26*	-0.02	0.09*	0.08*	1.00	

Note: \* denotes a statistical significance level of 5% or lower.

**Table 4: Use of Bank Support**

The models employed are Logistic. The probability modelled is  $SUP\_BANK=1$ , i.e. bank is the main external source of support and advice used when SMEs face financial problems. Not reported here are the results of control variables (but available from the authors on request), including regional and industry dummies. Model 1 includes control variables (region and industry) and business characteristics. Model 2 adds entrepreneurial demographics and Model 3 also considers the relationships between SMEs and banks. \*\*\*, \*\*, and \* denote statistical significant level of 1%, 5% and 10% respectively.

	Model 1		Model 2		Model 3	
	Estimate	Std. Err.	Estimate	Std. Err.	Estimate	Std. Err.
CONSTANT	-2.0196***	0.3949	-0.3073	1.4148	-1.7037	1.4602
LOGTOTEMP	0.0985**	0.0500	0.0643	0.0554	0.0366	0.0570
FAM_BUS	0.0339	0.1590	-0.0499	0.1744	-0.0033	0.1777
STARTUP	-0.2311	0.4076	-0.2475	0.4188	-0.2378	0.4312
LOGFAGE	0.0405	0.0718	0.0455	0.0833	0.0764	0.0902
NEED_FIN	0.4374***	0.1308	0.4866***	0.1419	0.3110**	0.1494
PROF	-0.0049	0.0320	0.0305	0.1472	0.0845	0.1519
LOGLEVERAGE	0.0625	0.0712	0.1133	0.0753	0.1048	0.0775
LOGOAGE			-0.3177	0.3995	-0.1268	0.4079
MALE			0.4415**	0.2022	0.4048**	0.2054
ETHNIC_W			-0.5196*	0.3111	-0.5140	0.3184
EDUC_AU			-0.0799	0.1597	-0.0710	0.1639
LOGEXP			-0.0805	0.1340	-0.1440	0.1379
LOGRELATION					-0.0561	0.0886
OVERDRA					0.9877***	0.1755
BIG_FOUR					0.5130***	0.1992
MSA					-0.1685	0.1633
No. of Observations	1783		1584		1573	
Log Likelihood	-891.4679		-779.7912		-751.3765	
LR Chi2	40.70		50.87		97.23	
Prob>Chi2	0.0332		0.0137		0.0000	
Pseudo R <sup>2</sup>	0.0223		0.0316		0.0608	

**Table 5: Probabilities of having financial problems: restricted specifications**

The models employed are Logistic. The probability modelled is FINANPROBM=1, i.e. The firm has faced financial problems. Not reported here are the results of control variables (but available on request), including regional and industry dummies. Model 4 includes all the samples. Model 5 includes all of the firms seeking external source of support and advice from banks. Model 6 5 includes all of the firms not seeking external source of support and advice from banks. \*\*\*, \*\*, and \* denote statistical significant level of 1%, 5% and 10% respectively.

	<b>Model 4 (All Samples)</b>		<b>Model 5 (Non-users)</b>		<b>Model 6 (Users)</b>	
	Estimate	Std. Err.	Estimate	Std. Err.	Estimate	Std. Err.
CONSTANT	-0.7701	1.2065	-0.6681	1.3741	-5.4163*	3.2553
LOGTOTEMP	-0.0461	0.0478	-0.0697	0.0551	-0.0347	0.1211
FAM_BUS	0.1851	0.1505	0.1722	0.1756	0.3065	0.3749
STARTUP	-0.6611*	0.3688	-0.3312	0.4160	-2.8230**	1.0951
LOGFAGE	-0.0615	0.0770	-0.1268	0.0910	0.2035	0.1827
PROF	-0.6020***	0.1639	-0.3968**	0.1833	-1.2840***	0.4947
LOGLEVERAGE	0.3683***	0.1166	0.4655***	0.1461	0.1370	0.2435
LOGOAGE	0.2861	0.3372	0.2547	0.3815	1.6326*	0.9247
MALE	0.1239	0.1559	0.2979*	0.1765	-0.2137	0.4311
ETHNIC_W	0.3370	0.2852	0.4878	0.3498	0.1636	0.6537
EDUC_AU	0.1958	0.1337	0.2162	0.1543	0.3517	0.3471
LOGEXP	-0.3577***	0.1178	-0.3056**	0.1345	-0.7631**	0.3194
OVERDRA	0.9758***	0.1235	0.9970***	0.1382	0.4700	0.3882
LOGRELATION	-0.2047***	0.0737	-0.2153**	0.0883	-0.2817*	0.1677
BIG_FOUR	0.1507	0.1528	0.1167	0.1727	-0.1986	0.4349
MSA	0.0322	0.1323	0.0940	0.1514	-0.1921	0.3420
No. of Observations	1576		1196		320	
Log Likelihood	-1003.3339		-756.6151		-179.7127	
LR Chi2	176.55		144.30		63.97	
Prob>Chi2	0.0000		0.0000		0.0014	
Pseudo R <sup>2</sup>	0.0809		0.0871		0.1511	

Figure 1: Estimated Probabilities of Suffering Financial Problem over Length of Relationship Banking for SMEs  
 (Controlling other variables at mean value for continuous variables or median value for binary variables excluding length of relationship banking)

