IS THERE ETHNIC DISCRIMINATION IN THE UK MARKET FOR SMALL BUSINESS CREDIT?

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Abstract

A large scale survey of UK small business finances is analyzed for evidence of ethnic discrimination in the credit market. A summary analysis of credit outcomes (loan denials, loan interest rates and discouragement) reveals large differences across ethnic groups with Black and Bangladeshi businesses, in particular, experiencing poorer outcomes than White and Indian businesses. Econometric analysis indicates that ethnic differences in denial rates and interest rates can be explained by variations in non-ethnic risk factors such as missed loan repayments and overdraft excesses. This suggests there is no ethnic discrimination in credit markets. However ethnicity appears to influence whether business owners felt discouraged from applying for loans even after controlling for differences in loan application costs and risk. This suggests some ethnic groups may be affected by misperceptions of ethnic discrimination. The implications of these findings for UK policy are discussed.

Key words: Ethnic discrimination, small firms, debt finance, government policy.

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1. Introduction

An Ethnic Minority Business (EMB) Taskforce was established by the UK Government in June 2007 to promote the start-up and growth of businesses by ethnic minority entrepreneurs. An important part of the Taskforce's remit is to investigate the reasons for poorer credit outcomes amongst EMBs; in particular, to investigate the reasons underlying their higher loan denial rates, finance gaps, interest payments and discouragement, compared to White owned firms, reported in Fraser (2007). The aim of this paper is to examine the risk factors which underlie variations in credit outcomes and test whether the poorer credit outcomes of EMBs are due to ethnic discrimination. This analysis will help inform policy-makers as to the appropriate responses to deal with the financial issues faced by EMBs.

There are longstanding concerns about access to finance amongst all types of small firms due to capital market imperfections (Bolton, 1971; Wilson, 1979; Graham, 2004). An important reason for these imperfections is that finance providers may find it hard to assess the creditworthiness of small firms due to information asymmetries. This problem could result in viable businesses failing to receive adequate credit i.e., credit-rationing. However, the empirical relevance of credit-rationing is questioned by some authors (Parker, 2002) and recent empirical evidence suggests the majority of small firms are well supplied with finance (Fraser, 2005). Developments in lending technologies may be partly responsible for this apparently healthy situation. In particular, developments in small business credit scoring have reduced the costs of lending to small firms and improved the accuracy of risk assessments (Bank of England, 2004; Berger et al, 2005).

Set against this sanguine general picture of small business finances is the evidence of significantly poorer credit outcomes amongst EMBs. This raises the question of whether the divergence in outcomes is due to ethnic discrimination or whether it reflects differences in creditworthiness across ethnic groups. In response to claims of ethnic discrimination, bankers point to the objectivity and fairness of credit scoring (BBA, 2005). Indeed, anti discrimination legislation prevent the use of ethnicity, gender, disability or religious beliefs in determining credit scores. However scoring techniques are often

used as a complement to relationship lending, involving close contact between the business owner and a loan officer, which introduces the possibility for credit assessments to be tainted by personal prejudices.

Using data from the UK Survey of SME Finances (UKSMEF) we are able to test for ethnic discrimination in the small business credit market by comparing credit outcomes across ethnic groups holding the creditworthiness of the loan applicant constant. The analysis is based on three credit outcomes: loan denials; loan interest rates; and discouragement. The last 'outcome' (although 'non-outcome' would perhaps be a more precise, if clumsier, description) refers to businesses which did not apply for loans, not because they lacked credit demands, but because they believed they would be rejected (Kon and Storey, 2003). One reason why EMB owners may feel discouraged is because they fear prejudice from finance providers (Blanchflower et al, 2003). Comparisons of discouragement across ethnic groups, controlling for loan application costs, risk and other reasons for discouragement, therefore allows perceptions of ethnic discrimination amongst EMB owners to be tested.

The remainder of the paper is structured as follows. In Section 2 there is a review of the limited literature on access to finance amongst EMBs and the existing evidence for ethnic discrimination in credit markets. A discussion of small business lending technologies, and how they might give rise to ethnic discrimination, is given in Section 3 in order to motivate the empirical analysis of loan denials and interest rates. There is also a discussion of the theoretical literature and empirical evidence on discouraged borrowers which motivates the analysis of discouragement. In Section 4 the data source, UKSMEF, is discussed briefly along with a summary analysis of the data comparing credit outcomes and risk factors across ethnic groups. The econometric analysis of credit outcomes, and the results of the tests for ethnic discrimination and perceptions of discrimination, is reported in Section 5. The paper concludes with a review of the findings and policy implications.

2. Literature review

Several studies have reported that EMBs, and Black owned businesses in particular, face greater problems in accessing finance than White owned businesses. Jones et al (1994), who conducted a study of 403 small businesses in 15 localities in the UK, found that 60% of the Asian businesses had sought a bank loan versus around 40% of the African-Caribbean and White owned businesses. Around 40% of the African-Caribbean loan applicants reported encountering problems in obtaining loans (either rejection or loan conditions which the applicant felt were unreasonable). About a third of the Asian applicants reported similar problems. However, only 20% of the White applicants reported problems with obtaining loans. African-Caribbean businesses were also more likely than Asian or White owned businesses to rely on non-market sources of finance at start-up (50% versus 30-40%).

Curran and Blackburn (1993) (who interviewed 76 EMBs from the Greek-Cypriot, Bangladeshi and African-Caribbean communities) also found that African-Caribbean start-ups were more likely than other ethnic groups to rely on non-market sources of finance. Indeed almost 70% of this ethnic group relied on personal savings whereas the figure amongst Greek-Cypriots and Bangladeshi start-ups was between 50% and 60%. These authors also found that 1 in 2 of the African-Caribbean businesses said they found it very difficult to raise finance for expansion whereas only 1 in 10 of the Greek-Cypriot and Bangladeshi businesses reported similar levels of difficulty.

Smallbone et al (2003) conducted a large scale telephone survey of EMBs (856 businesses from the African-Caribbean, Indian, Pakistani, Bangladeshi and Chinese communities) supplemented with a sample of 1,350 WBs. These authors found that African-Caribbean business owners were the most likely to have formal management training or qualifications but, despite these skills, also had the lowest rate of access to bank finance at start-up (21% versus 49% of Chinese owned start-ups). In addition, African-Caribbean businesses had the least success in obtaining external finance in the 12 months prior to interview (62% versus 88% of Bangladeshi owned businesses).

An important finding in Smallbone et al (2003) was to show that there is greater variation in access to finance between ethnic minority groups than between EMBs in aggregate and White owned businesses. Indeed, in contrast to African Caribbean businesses, there was convergence regarding (favourable) access to bank loans at start-up between Asian and White-owned businesses. This led the authors to conclude:

'For policy makers, this raises the question of whether or not it is useful and/or appropriate to treat EMBs as a category from a finance and business support standpoint. One of the implications for public policy makers is to recognize that access to finance issues are greater in some ethnic minority communities than in others…' (Smallbone et al, 2003, p. 308/9)

A crucial problem with the previous studies is that they were unable to control for the creditworthiness of the business and its owner: poorer credit outcomes amongst Black owned businesses may have nothing to do with the owner's ethnicity but reflect greater risk. Indeed, a review of the evidence on ethnic minority finances, reported in Bank of England (1999), found no evidence that finance providers were engaging in ethnic discrimination. However, the report recognised (mistaken) perceptions amongst EMBs of unfair/prejudicial treatment by finance providers. The report gave the following possible explanations for these misperceptions:

Differences in default risk/creditworthiness - Finance providers make lending decisions on the basis of an assessment of the risk that the borrower will not repay the loan (default risk). Increased risk of non-repayment is associated with a higher cost of borrowing, shorter loan maturities, the offering of smaller loans than requested or, if the risk is too high, the outright denial of credit. To the extent that EMBs are riskier than White owned businesses then this will be reflected in loan amounts and conditions which *appear* more favourable to White businesses but which reflect risk differentials not ethnicity.

An important factor which may explain risk differentials between ethnic groups relates to the sectors in which groups are concentrated. To the extent that EMBs are concentrated in sectors with high failure rates (retail, catering and transport) they are less attractive to

(risk-averse) lenders regardless of the business owner's ethnicity. The report also suggested differences in business planning and experience/family background may underlie ethnic variations in credit outcomes. In this regard it would be expected that higher rates of business planning and a background in entrepreneurship would improve access to finance. The relative success of some Asian groups in obtaining bank finance may reflect greater backgrounds in running a business (e.g., through having a self-employed parent/family member). However, the report also highlights evidence that Black owned firms are more likely to write business plans which seems at odds with their poorer credit outcomes.

Lack of collateral/location in deprived areas - Due to lack of information relating to the borrower's creditworthiness, lenders may require borrowers to post collateral on loans which can be liquidated in the event of default (see e.g., Bester, 1985). The report highlights collateral shortages (home ownership) amongst Caribbean and Bangladeshi entrepreneurs as a possible explanation for poorer access to finance amongst these ethnic groups. The collateral issue is closely related to the greater tendency of Caribbean and Bangladeshi businesses to be located in deprived inner city areas. Deprivation may create further obstacles for EMBs through skills shortages, higher levels of crime and poorer health/access to health care.

Information issues - The Bank of England report identifies the problem of poor information flows between lenders and EMBs. This is a problem which is exacerbated by a lack of data on EMBs. Cultural and language barriers are further obstacles to the free flow of information. Information deficiencies/poor communications are likely to make EMBs appear riskier to lenders (objectively worsening access to finance) and worsen misperceptions amongst EMBs that they are being discriminated against.

Despite these non-ethnic explanations, the Bank of England report left open the possibility that, even after taking into account risk and information issues, there is a residual element of ethnic discrimination in the credit market. There are two potential forms of ethnic discrimination which are distinct in an economic, if not legal, sense:

Taste discrimination (Becker, 1971): In this case all ethnic groups have the same distribution of repayment probabilities (conditional on all observable characteristics). However the finance provider (whose agents belong to the majority group) sets a higher repayment probability threshold for ethnic minorities on account of an irrational dislike for individuals from ethnic minority groups ('prejudice'). Assuming the repayment threshold for White owned firms has been set to maximize profits, the consequence of setting a higher threshold for EMBs (given they have the same risk distribution as White firms) is that the finance provider will miss out on viable lending opportunities. The price of prejudice is therefore lower profits. Competition provides a possible market solution to discrimination in this case since prejudiced finance providers would go out of business.

Statistical discrimination: In this case the distribution of repayment probabilities (conditional on observable characteristics) varies across ethnic groups. The stipulation of a higher threshold for some ethnic groups may therefore be a rational response to the lower average repayment probability of the group not prejudice. Specifically, a higher threshold may be set with the rational aim of equalizing average repayment probabilities, conditional on loan approval, across ethnic groups. Nonetheless there will be some EMBs, with the same repayment probability as White owned firms, who are denied finance due to the greater average risk of their ethnic group (but not due to an irrational dislike for individuals from their ethnic group: see Blanchflower et al, 2003).

The two forms of discrimination are not independent. For example years of poor access to finance in the past, caused by taste discrimination, could increase the average risk amongst minorities leading to subsequent statistical discrimination. In that case seemingly rational grounds for discrimination in the present would disguise a legacy of past prejudice. To avoid this kind of outcome anti-discrimination legislation[i] does not distinguish between taste and statistical discrimination; all forms are illegal. In the context of credit markets, any difference in loan denial rates or borrowing costs across ethnic groups, which could not be attributed to characteristics other than ethnicity, would contravene race relations legislation.

We have to look to the US for a rigorous test of ethnic discrimination (based on disaggregated ethnic groupings) in small business credit markets which controls

extensively for the creditworthiness of the borrower (Blanchflower et al, 2003). These authors employ a legalistic definition of ethnic discrimination covering any disparity in loan denial rates/interest charges which cannot be attributed to non-ethnic risk factors. Using data from the 1993 and 1998 National Survey of Small Business Finances, the authors estimate models for loan denials and interest charges using dummy variables for ethnicity (Black, Hispanic, Asian/Pacific Islander and Native American) to test for ethnic discrimination (with an extensive set of controls for business/owner characteristics, credit ratings and credit histories). The study finds that Black owned firms are, ceteris paribus, about 25 percentage points more likely than White owned firms to be denied a loan and pay, on average, over a percentage point more in interest charges. The authors interpret these findings as pointing to actual discrimination in US small business credit markets, at least in the time periods analyzed. Perceptions of discrimination amongst Black owned firms are also high: these firms are about 26 percentage points more likely than White owned firms not to apply for loans for fear of rejection (with the data also indicating that perceived prejudice underlies these fears). In this case, these perceptions would seem justified given the evidence of actual discrimination in the credit market.

3. Theory and methods

The purpose of this section is to motivate the empirical analysis of credit outcomes (loan denials, interest charges and discouragement) which forms the basis of this paper. We begin this section with a discussion of the main credit assessment techniques used by finance providers in allocating and pricing small business loans. This will help to motivate the explanatory variables, appearing in the models for loan denials and interest rates to allow ceteris paribus comparisons between ethnic groups, and explain how ethnic discrimination could potentially arise with different lending technologies. After this the factors affecting discouragement are discussed along with some possible explanations for ethnic variations in discouragement. The section concludes with a discussion of the econometric methods used to estimate the models.

Small business lending technologies

External debt providers require information relating to the borrower's default risk in order to allocate and price loans. However, information in the market for small firms' credit may be imperfect and asymmetric with entrepreneurs being typically better informed about their chances of success/failure than outsiders (see e.g., Berger and Udell, 1998)[ii]. This information gap arises because small firms are recognised as being more informationally opaque than large firms (due to insufficient track and/or financial records) and the collection of private information relating to the firm and entrepreneur is costly (Ang, 1991). In this context, equilibrium credit rationing may arise where the finance provider is unable to verify the ex-ante default risk of the firm (leading to an adverse selection problem: Stiglitz and Weiss, 1981) or, for example, whether the entrepreneur will sustain an optimal level of effort after receiving finance (a moral hazard with hidden action problem: Watson, 1984). Under information asymmetries finance providers may require collateral on loans so that the entrepreneur bears the uncertainty of the venture. Whilst entrepreneurs with viable business plans may be willing to offer collateral (Bester, 1985), those with insufficient wealth may be unable to do so leading to financial constraints on the start-up and growth of promising (i.e., positive net present value) new ventures (Evans and Jovanovic, 1989). Insofar as EMBs are more informationally opaque than White owned businesses (due to finance providers having less experience in lending to EMBs and therefore less/poorer quality data about these businesses), and to the extent that ethnic minority entrepreneurs are less wealthy than their White counterparts, the problem of financial constraints may affect EMBs disproportionately (see empirical evidence in the previous and later sections).

Finance providers have developed several lending technologies, for allocating and pricing loans, with the purpose of reducing information asymmetries and improving the efficiency of small business credit markets. These technologies can be divided broadly into two groups: transactions lending and relationship lending (see Berger and Udell, 2002). Transactions lending relies on the gathering and processing of 'hard' data about the firm/entrepreneur or the availability of collateral (asset based lending). Relationship lending, on the other hand, relies mainly on 'soft' information, such as the character and

trustworthiness of the entrepreneur, which is gathered over time through a relationship between the firm/entrepreneur and a loan officer at the bank (Berger and Udell, 2002).

Credit scoring is a form of transactions lending which has grown in importance for small business lending since the mid 1990s (see Allen et al, 2004; Bank of England, 2004). Credit scoring involves the development of statistical models, using large samples of data on past borrowers, to predict the probability of default. Applicants' data can be fed later into the model to arrive at a credit score which then forms the basis for lending decisions. Typically the data used to predict defaults relates to financial ratios (encompassing profitability, leverage and liquidity) and information on credit histories/financial delinquency (see Allen et al, 2004, for an international survey of credit scoring models). Credit scoring has a long history in consumer lending but its application to small business loans is relatively recent. Previously, the utility of credit scoring for small businesses was questioned due to the heterogeneity of small businesses (suggesting models with poor predictive power) and the limited availability of financial data for these firms (Rutherford, 1994/1995). In this regard, the key innovation was by Fair Isaac and Company (FICO) in the 1990s, who noted that personal information about the small business owner (e.g., income, personal assets, home ownership, outstanding debts and previous loan defaults/delinquencies – Mester, 1997) is highly predictive of the firm's repayment likelihood. However, anti-discrimination legislation prohibits the use of data on the applicant's gender, race or religion to determine credit scores. Empirical evidence suggests that credit scoring may have increased the availability of finance to small firms (Berger et al, 2005)

Another scoring technique which is widely used by banks is behavioural scoring. This approach uses information about the performance of the applicant's current account (debit/credit turnover, overdraft excesses, returned cheques etc.) to predict loan repayment probabilities. Again, the use of information about the performance of the owner's personal current account may be a useful complement/substitute to/for data on the business account. As with credit scoring, behavioural scoring does not use information on the gender, ethnicity or religion of the applicant: in principle, businesses with the same financial ratios, credit histories and account performance would receive the same score, and hence have the same access to finance and pay the same interest

rates, regardless of the owner's gender, ethnicity, or religion. However, statistical discrimination on ethnicity could enter indirectly into scoring systems insofar as postcodes, which may be used in credit/behavioural scoring models, are strongly associated with ethnicity[iii]. Equally, credit/behavioural scoring is often used as a complement to expert systems which involve the judgement of a loan officer about the entrepreneur's ability and willingness to repay the loan based on the five Cs (capacity, character, capital, collateral and conditions – see e.g., Greenbaum and Thakor, 2007). This introduces the possibility for loan officers' views on ethnicity to enter the credit evaluation.

Relationship lending predates the recent trend towards transactional loans but remains an important lending technology for small firms. Under relationship lending, loan decisions are based on proprietary information about the firm/owner which is gathered over time through the firm/owner's various dealings with the finance provider. In contrast to transactions lending, relationships can produce soft information e.g., about the character and reliability of the business owner, which may be a useful complement or substitute where hard data is sparse or missing.[iv]

Relationships have two dimensions: duration and concentration. Over time finance providers are able to accumulate information about the capacity and reliability of the firm/owner in meeting its financial obligations (e.g., through the repayment history on previous loans or management of a current account). Equally, relationships which are concentrated in a single finance provider, which supplies the firm with several products at the same time, increases the precision and rate of flow of information to the finance provider. Concentration also generates stronger incentives for finance providers to invest in relationships (Han et al, 2008a).

In theory, relationship lending improves the availability of finance (by reducing information gaps/lending costs) and may reduce the cost of borrowing depending on the degree of competition in the credit market (information monopolies allow finance providers to extract rents from the relationship so that borrowing costs may not fall as much lending costs: see e.g., Rajan, 1992). Empirical research suggests that longer and more concentrated banking relationships increase the availability of finance (Petersen

and Rajan, 1994), lower interest rates (Berger and Udell, 1995) and reduce collateral requirements (Berger and Udell, 1995).

Relationship lending relies on the development of close ties between a loan officer, acting as the finance provider's agent, and the small business owner. This creates an agency problem between the finance provider/principal and the loan officer/agent (Berger and Udell, 2002). Therefore, in principle there is scope for the loan officer's credit assessment to be influenced by the ethnicity of the business owner even if this is at odds with the anti-discrimination policies of the finance provider. Arguably the 'human element', which lies at the fore of relationship lending, increases the likelihood of ethnic discrimination compared with instances where arm's length scoring methods are employed (Cavalluzzo et al, 2002; Blanchflower et al, 2003).

Discouraged borrowers

So far the discussion has been in terms of the factors which affect the availability of finance and borrowing costs amongst businesses which have applied for loans. However, there has been increasing attention, amongst academics and policy makers, on small business owners who decide not to apply for finance in the first place, despite having viable business plans, because they believe they will be turned down by the finance provider. These individuals are known as discouraged borrowers (Kon and Storey, 2003). Discouraged borrowers exist because: i) there are costs (both financial and non-financial) associated with making loan applications; and ii) finance providers may make errors when screening applications, due to information asymmetries, such that viable businesses may be denied finance (Kon and Storey, 2003). If application costs and/or screening errors are sufficiently high then viable businesses may feel discouraged from applying for market finance, opting to use non-market finance instead, even though the value of the business would be higher if they were able to obtain market finance. In other words discouragement may, like loan denials, lead to financial constraints. In fact, some empirical studies indicate that incidences of discouragement are more prevalent than loan denials (Levenson and Willard, 2002) suggesting discouragement may be a greater issue for financial constraints amongst small firms.

On the issue of ethnicity, research in the US (Cavalluzzo et al, 2002; Blanchflower et al, 2003) and the UK (Fraser, 2007) indicates that ethnic minority business owners are significantly more likely to report discouragement than White business owners. This may reflect: i) higher application costs due to non-ethnic factors (e.g., inexperience, lack of financial skills, type of business etc.); ii) informed perceptions of actual ethnic discrimination; or iii) *misperceptions* of ethnic discrimination (due possibly to poor communications/information issues between finance providers and EMB owners: see Bank of England, 1999). Indeed, if EMBs are more likely to be denied loans, than otherwise similar White owned businesses, then their owners may rationally decide not to expend effort on loan applications since the chances of obtaining finance are stacked against them. In this case the likely explanation for higher discouragement rates amongst EMBs is well perceived ethnic discrimination in the credit market. However, if EMBs are no more likely to be denied loans than otherwise similar White owned businesses, then misperceptions of ethnic discrimination may underlie discouragement. In either case, perceptions/misperceptions of ethnic discrimination may represent an additional psychic cost amongst ethnic minorities.

A proper interpretation of the role of ethnicity in explaining discouragement therefore requires analysis of loan denials and/or interest charges to distinguish actual from misperceived discrimination. Analysis of discouragement is insightful nonetheless since, when analyzed with other finance outcomes, it can flag up issues with misperceptions of ethnic discrimination that may be present even in the absence of actual discrimination.

Analytical framework

We test for ethnic discrimination in the UK small business credit market by analyzing ceteris paribus differences in loan denials and interest charges across ethnic groups. As in Blanchflower et al (2003) we use a legalistic definition of discrimination such that any ethnic variation in loan denials/interest charges which is not attributable to non-ethnic risk factors points to discrimination. A similar analysis of discouragement is used to test for perceptions/misperceptions of ethnic discrimination.

The loan denial and interest rate equations include explanatory variables relating to the firm's creditworthiness. Following from the previous discussion of small business lending technologies, the variables relate to information which is used in transactions lending (principally, asset based lending and credit/behavioural scoring) and which capture the strength of financial relationships. These variables include: business and owner characteristics; owner's wealth (availability of collateral); financial delinquency (missed loan repayments and unauthorized overdraft excesses); financial ratios; sector; and relationship variables (e.g., length of relationship and number of finance providers). Dummy variables for the owner's ethnicity (or ethnicity of the majority of owners where there is more than one owner) are included with the other explanatory variables to test for ethnic discrimination. The interest rate equation (which relates to interest paid on the firm's main loan) includes additional controls for the characteristics of the main loan (loan amount, term, purpose, collateral requirements and whether the interest rate is fixed or variable).

The key variables in explaining discouragement relate to application costs and information asymmetries. In this regard the discouragement equation includes: business and owner characteristics (relating to the financial/non-financial costs of loan applications); sources of financial advice (which are expected to reduce the financial/non-financial costs of loan applications); loan fees (as an additional financial cost in obtaining the loan); and relationship variables (longer/more concentrated relationships being expected to reduce information asymmetries). Additional variables are included to control for risk (financial delinquency, owner's wealth/availability of collateral and sector). It is important to control for risk since ethnic variations in discouragement may mask underlying differences in creditworthiness. On the issue of risk and discouragement, Han et al (2008b) have shown evidence with US data that high risk borrowers are more likely to be discouraged than low risk borrowers. This suggests discouragement may be an efficient self-rationing mechanism (i.e., risky businesses self-select out of the loan pool). Dummy variables for the owner's/majority owners' ethnicity (capturing a potential additional source of psychic costs) are included alongside the other variables to test for perceptions/misperceptions of ethnic discrimination.

A key variable relating to firm risk which appears in each of the models is financial delinquency. This is an endogenous variable since less talented entrepreneurs (an unobserved quantity) are more likely to be delinquent and also experience poorer credit outcomes (implying correlation between the unobserved components of delinquency and credit outcomes). Full Information Maximum likelihood (FIML) is therefore used to estimate the models for credit outcomes with endogenous financial delinquency. This involves estimating: a bivariate probit model for loan denials; and a two equation 'treatment effects' model, with an endogenous binary 'treatment' (financial delinquency), for interest rates (see Maddala, 1983 pp 120-125, Models 6 and 5 respectively, for the likelihood functions and identification conditions for these models). A bivariate probit model is also used to estimate discouragement with endogenous delinquency.

In the loan denial/interest rate models identification is achieved by including variables for sources of financial advice in the financial delinquency equation but excluding them from the credit outcome equation. The motivation for this identification scheme is that financial delinquency is related to poor financial management which may be alleviated by using external advice (see e.g., Mole, 2002; Mole et al, 2008 for the role and impact of business advice on small firms). On the other hand the sources of financial advice used by the applicant do not directly form part of lenders' risk assessments (only indirectly to the extent that a lack of/poor advice increases the likelihood of financial delinquency). Regarding discouragement, identification is achieved by excluding financial ratios (relating to risk) from the discouragement equation (but including them in the delinquency equation). The motivation here is that discouragement is more related to application costs and information asymmetries than financial ratios (the role of risk in discouragement being captured by financial delinquency).

4. Data and summary analysis

The data used in this analysis come from two UKSMEF sources: the data for White owned firms comes from UKSMEF 2004 (see Data Archive: SN 5326); and the data for EMBs comes from the UKSMEF Ethnic Minority Booster Survey 2005 carried out on behalf of the DTI/Small Business Service. UKSMEF 2004 and the Ethnic Minority Booster Survey are based on large and representative samples of independent private-

sector SMEs with up to 250 employees and a turnover of less than €50m located in the UK. The fieldwork for both surveys was conducted by telephone and involved 20-25 minute interviews with the firm's owner-manager (amongst sole traders) or Finance Director (amongst companies). Respondents were asked detailed questions about: the characteristics of the business and its owner (including the owner's net worth); the types and amounts of finance which the business uses; instances of financial rejection and discouragement; and their banking relationships. The main survey achieved a response rate of over 35% and the booster survey a rate of 42%. The breakdown of sample sizes by ethnic group across the two surveys is: 2,373 White firms; 202 Indian firms; 202 Pakistani firms; 103 Bangladeshi firms; 203 Black Caribbean firms; and 200 Black African firms[v].

Table 1 reports summary statistics by ethnic group for credit outcomes, financial delinquency and other factors relating to the creditworthiness of the business/owner. This table shows there are wide variations in credit outcomes across ethnic groups. In particular Bangladeshi and Black owned firms are several times more likely to be denied loans than Indian and White owned businesses (20.6%-36% versus 7.3%-8.2%). Interest rates on loans also appear to be higher for Pakistani, Bangladeshi and Black owned firms (7.4%-7.8%) compared to Indian and White owned firms (6.8%). Incidences of discouragement seem much higher for all EMBs compared to White owned businesses: notably around 40% of Black owned businesses did not apply for loans because they feared rejection compared to only 4.2% of White owned firms. One explanation for these credit outcomes are ethnic differences in financial delinquency rates. Notably here more than half of Black African firms (55.7%) exceeded their overdraft limit or missed loan repayments versus about 1 in 4 (23.3%) White owned firms.

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Other key findings in Table 1 are the shorter financial relationships amongst Pakistani, Bangladeshi and Black owned firms compared to Indian and white firms (3.3-5.7 years versus 10.1-14.5 years). These differences are explained by the young ages of Pakistani, Bangladeshi and Black owned firms compared to Indian and White firms (6.0-8.3 years versus 14.2-18.7 years). The owners of Pakistani, Bangladeshi and Black firms also have less business experience than Indian and White business owners (8.4-

12.2 years versus 18.1-20.2 years). These findings suggest the possibility that EMBs (excluding Indians) may experience financial constraints due to short business track records. Also the availability of collateral (business and personal assets/net worth) is much less for Bangladeshi and Black firms compared with other ethnic groups indicating another potential source of financial constraints for these firms.

Interestingly, in view of the credit outcomes, Black African businesses are the most likely to have a qualified finance professional in charge of the firm's finances (89.5% versus 64.7% of White firms) and their owners are the most likely to have a postgraduate degree (37.9% versus 7.0% of White firms). Two financial ratios pertaining to profitability and leverage (return on assets and debt ratio respectively) are included in the analysis. The summary analysis of these ratios suggests that Black firms are the most profitable whilst White firms have the lowest leverage (implying lower risk). Data limitations preclude the inclusion of a liquidity ratio in the analysis.

We finish this section with a brief discussion of some additional results from the survey which complement the findings reported in Table 1 (these results are not reported in Table 1: see Fraser, 2007 for further details). Analysis of self-reported problems with finance indicates that 11% of Bangladeshi businesses, 16% of Black Caribbean businesses and 24% of Black African businesses report critical problems with finances (in terms of access and/or cost) compared with just over 1% of White firms. Black owned firms are also the most likely to report finding sources of finance their main problem at start-up (around 35% reporting this versus 10% of White firms). This latter result is perhaps surprising in view of the finding that Black owned firms are also the most likely to write business plans at start-up (80% having business plans versus 58% of White start-ups). In terms of deprivation, which may create further obstacles for EMBs, analysis of indices of multiple deprivation[vi] indicate that EMBs as whole tend to be located in significantly more deprived areas than White businesses. However, amongst EMBs, Bangladeshi and Black Caribbean firms are subject to the greatest deprivation.

Regarding the use of non-market sources of finance, all EMB groups are more likely to use friends and family finance than White firms (this source being used by 19% of Indian firms; 36% of Pakistani firms; 48% of Bangladeshi firms; 27% of Black Caribbean firms;

36% of Black African firms; and 6% of White firms). For some ethnic groups (e.g., Black owned firms) this usage may reflect poorer access to market sources of finance; other groups (e.g., Indian and Pakistani firms) may simply be utilizing social capital to access a cheaper source of finance (Basu and Parker, 2001). Also, for over 67% of Black African firms, personal savings was their main source of start-up finance compared to 52% of White firms.   Again this points to problems with accessing external finance amongst Black African firms.

Finally, on the issue of differences in information asymmetries across ethnic groups, Black owned firms are the most likely to report that their main bank has a very poor understanding of their business (about 17% versus 5% of White firms).   Also Black owned firms tend to be the least satisfied with their financial relationships over all aspects of service (availability of finance; bank charges; range of services; service efficiency; staff competence; and levels of understanding of their business).   This qualitative evidence points to problems with information/communications between Black firms and their banks which could lead to perceptions/misperceptions of discrimination.

In summary, the findings in Table 1, and the additional results reported in Fraser (2007), suggest Black owned and Bangladeshi firms have the poorest credit outcomes whereas White and Indian firms have the best outcomes (with Pakistani firms somewhere in the middle).   There appear to be a number of possible explanations for these differences based on creditworthiness and information issues.   We proceed in the next section to disentangle ethnicity from non-ethnic risk factors in order test whether ethnic discrimination plays an independent role in explaining credit outcomes.

5. Econometric analysis

Loan denials

Table 2 shows marginal effects from the joint estimation of financial delinquency and loan denials using a bivariate probit model. The estimates for the delinquency equation (column 1) indicate that larger (business assets) and older (business age) firms are less likely to be delinquent suggesting financial difficulties are a bigger problem at an early

stage in the life-cycle of the firm. Human capital is also highly significant with postgraduate qualified owners being 10 percentage points less likely to miss loan repayments/exceed agreed overdraft limits than owners with no qualifications. Also firms with a qualified individual in charge of the finances (financial qualification) are over 8 percentage points less likely to be delinquent (significant at the 10% level). Financial ratios are strongly associated with delinquency: more profitable firms (return on assets) and those with less borrowing (debt ratio) are less likely to be delinquent. Public and private sources of financial advice also appear to reduce instances of delinquency overall (although notably Business Link users are slightly more likely to be delinquent, possibly because these firms only sought advice after running into problems). Looking across the UK, businesses located in Scotland are almost 10 percentage points less likely to be delinquent than the rest of the country.

Even after controlling for an extensive array of non-ethnic risk factors Black African firms are almost 50 percentage points more likely to miss loan repayments/exceed agreed overdraft limits than White owned firms. This is surprising given the reported higher human capital levels (postgraduate degrees) and financial skills of Black African owners (see Table 1) and, perhaps, calls into question the quality/relevance of these qualifications. Also cultural differences may play a role here. A report for the Insolvency Service (INSS, 2007), carried out by Middlesex University, suggests ethnic minority groups were less likely to petition their own bankruptcy than White individuals due in part to cultural differences (e.g., stigma of bankruptcy) and the wider reaching impact of bankruptcy where extended families are reliant on proceeds from the business. The consequence here is that EMBs may be more likely to continue trading despite being insolvent which would lead inevitably to delinquency. In this regard it is interesting to note that almost 8% of Black African firms in the sample are trading despite being insolvent (i.e., have fewer assets than liabilities) versus just over 2% of White firms. For comparison 4% of Indian, Pakistani and Black Caribbean firms and 13% of Bangladeshi firms (based on a small sample) are also insolvent.

The key factor explaining loan denials (Table 2, column 2) is financial delinquency: businesses which missed loan repayments/exceeded agreed overdraft limits are almost 30 percentage points more likely to be denied loans than non-delinquents. Also, older

businesses are less likely to be denied loans; on the other hand neither the length of relationship with the main finance provider nor the concentration of financial relationships ('multiple finance providers') appears to influence loan denials. This suggests that finance providers are able to obtain sufficient information on the firm's creditworthiness from its track record with previous creditors and other fixed claim holders without needing an especially close relationship with the firm (Petersen and Rajan, 1994). The main result for loan denials is the absence of a role for ethnicity after controlling for the firm's creditworthiness.   This indicates that differences in creditworthiness, not ethnic discrimination, underlie variations in loan denial rates across ethnic groups.

<div align="center">INSERT TABLE 2 ABOUT HERE</div>

Loan interest rates

Results from the joint estimation of financial delinquency and loan interest rates are reported in Table 3. The marginal effects for financial delinquency (column 1) are not discussed since they are broadly similar to those reported in the loan denial model. The marginal effects for interest rates (column 2) shows that the use of multiple finance providers is associated with an almost 2.5 percentage point reduction in the interest rate on the firm's main loan. This suggests concentrated financial relationships introduce a hold-up problem (Boot, 2000) i.e., the information monopoly from concentrated relationships allows finance providers to set uncompetitive loan terms (see Rajan, 1992; Han et al, 2008a). Also the use of more than one financial product is associated with a lower interest rate on the main loan reflecting the greater bargaining power of the borrower in these instances. In the context of market concentration/competition, firms which use one of the Big 4 banks (RBSG/NatWest, Lloyds-TSB, HSBC or Barclays) may expect to pay an extra 0.7 of a percentage point in interest compared to users of one of the smaller banks (by comparison, see Cruickshank, 2000; Competition Commission, 2002 which raised the issue of uncompetitive bank account charges amongst the Big 4).

Other key factors affecting loan interest rates relate to the characteristics of the loan. In particular: fixed rate loans are cheaper than variable rate loans (by 1.25 percentage points); loans for developing new products and services (which are riskier since the

outcome of the project is uncertain and may not generate tangible assets to offer as collateral) are more expensive than other types of loan (by 1.6 percentage points); and loans for land purchase (which are less risky since they are secured on a valuable tangible asset) are cheaper compared to other loans (by 1.5 percentage points). However, as with loan denials, the owner's ethnicity has no role in itself in explaining loan interest rates. Again this suggests the absence of ethnic discrimination with loans priced according to risk and factors affecting competition.

<center>INSERT TABLE 3 ABOUT HERE</center>

Discouragement

Marginal effects from a bivariate probit model for the joint determination of financial delinquency and discouragement are reported in Table 4. Turning immediately to the determinants of discouragement (column 2), the first key finding is that risky borrowers (financial delinquents) are more likely to be discouraged than low risk borrowers. This supports previous evidence, using US small firms' data, that discouragement is an efficient self-rationing mechanism (i.e., risky firms are more likely to self-select out of the loan pool: Han et al, 2008b). The use of financial advice is associated with a lower likelihood of discouragement suggesting that advice reduces the non-financial costs of loan applications (e.g., by helping business owners to overcome difficulties in writing applications). Advice from public sources may also help to reduce the financial costs of loan applications e.g., where free advice on loan applications/business planning is provided or the business receives a grant.

Interestingly, Black Caribbean firms are 1.3 percentage points more likely to report discouragement than otherwise similar White owned businesses. This suggests that Black Caribbean firms experience an additional psychic cost in making loan applications possibly due to perceptions of ethnic discrimination. However, these perceptions would seem unfounded given the previous evidence that there is no actual ethnic discrimination in the credit market. There is also weaker evidence of discouragement amongst Indian firms who are about 0.4 percentage points more likely to report discouragement than otherwise similar White firms (significant at the 10% level).

<center>INSERT TABLE 4 ABOUT HERE</center>

6. Conclusions and policy implications

This paper has looked at the issue of ethnic discrimination in the UK small business credit market using UKSMEF data. Summary comparisons have shown much poorer credit outcomes for EMBs than White owned businesses with the poorest outcomes amongst Black and Bangladeshi firms. Econometric analysis using UKSMEF data has provided the first rigorous ceteris paribus comparisons of credit outcomes across ethnic groups in the UK. The analysis of loan denials and interest rates points to differences in creditworthiness, not ethnic discrimination, as the probable explanation for poorer EMB credit outcomes. In particular Black African firms are significantly more likely to miss loan repayments and/or exceed their agreed overdraft limit and this behaviour seems to largely account for their much higher loan denial rates.

The increasing use of credit and behavioural scoring offers a possible explanation for the apparent absence of ethnic discrimination in the UK compared to the US (recalling the US study, Blanchflower et al, 2003, relates to data from 1993 and 1998 before small business credit scoring was prevalent in both the US and UK). This explanation implies the UK credit market would also manifest ethnic discrimination were it not for the remoteness between borrowers and loan officers engendered by scoring systems. However, differences in racial tolerance may also explain the discrepancies between the US and UK. The history of Black-White relations in the US is complex: it began with slavery and continued with legalized discrimination which was practiced across American society (including in the credit market) until well within living memory. Indeed, it took until the 1960s, and the rise of the American Civil Rights Movement, before Blacks were placed on an equal legal footing with Whites. The racial divisions, which are still present in US society, are a legacy of the institutionalized prejudice in its past.

In one regard, there is consistency between the US and UK, in that Black firms appear particularly susceptible to discouragement. We found that, even after controlling for loan application costs, information asymmetries and risk, Black Caribbean firms are still more likely not to apply for loans due to fears of rejection than White owned firms. However, whilst discouragement amongst US Black firms appears well founded, due to the evidence of actual ethnic discrimination, discouragement amongst UK Black firms seems

to be based on misperceptions of discrimination (since there is no evidence of actual discrimination here). These misperceptions may be aggravated by the information issues between Black firms and their banks which were highlighted in this paper. Ironically, these misperceptions may not be helped by the use of arm's length scoring methods in credit assessments since the reasons for rejection are not usually made clear to the applicant in these cases.

The analysis highlights a number of issues for policy-makers. Firstly, an improvement in information flows from finance providers to businesses about the criteria used to make credit assessments (and, ex post, the reasons for rejection) would help tackle misperceptions of discrimination. In particular, finance providers may need to communicate more clearly the adverse consequences of financial delinquency for future borrowing. Equally, finance providers may need to invest more in their relationships with Black firms given the generally higher levels of dissatisfaction with service amongst these firms and the simmering discontent that may ensue in this situation.

However the key issue for policy-makers is tackling the factors underlying financial delinquency which seems to explain much of the ethnic variations in loan denial rates. This paper has highlighted some of these factors: lack of financial skills and advice; poor financial performance; and ethnicity/cultural differences. On a positive note, targeting EMBs for assistance with skills and advice may help to reduce delinquency rates thereby improving access to finance. Addressing cultural differences on the other hand, which seems to be the main reason for delinquency amongst Black African firms, is a much harder proposition.

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Table 1: Variable definitions and summary statistics (means/percentages) by ethnic group

Variable	Definition	White	Indian	Pakistani	Bangladeshi	Black Caribbean	Black African
Endogenous Variables							
Loan denial	Whether business was denied any loans outright (1/0).	8.2%	7.3%	12.2%	20.6%	29.0%	36.0%
Discouragement	Whether owner felt discouraged from applying for any loans (1/0).	4.2%	9.2%	20.9%	30.9%	38.9%	43.8%
Interest rate	Interest rate on largest business loan (%).	6.8%	6.8%	7.4%	7.8%	7.6%	7.6%
Financial delinquency	Whether business exceeded overdraft limit or failed to make any loan repayments. (1/0)	23.3%	26.8%	29.4%	34.7%	40.6%	55.7%
Exogenous variables							
Financial relationships							
Relationship length	Length of relationship with main finance provider (years).	14.5	10.1	5.7	3.3	5.1	4.4
Multiple finance providers	Whether business has 3 or more finance providers (1/0).	66.9%	52.3%	36.7%	38.2%	40.8%	36.0%
Multiple financial products	Whether business uses 3 or more financial products (1/0).	93.9%	85.3%	75.5%	67.7%	65.8%	64.1%
Loan fees	Fees paid to obtain largest business loan (£).	2,403.8	3,123.0	1,762.1	1,794.8	742.9	904.7
Big 4	Whether business uses a Big 4 bank (RBSG, Lloyds TSB, HSBC or Barclays) (1/0)	78.6%	89.9%	88.5%	97.1%	89.5%	88.2%

Business characteristics							
Business assets	Assets owned by the business (£)	2,510,789	2,908,256	501,575	180,310	101,049	215,595
Employment	Number of employees	31.2	14.3	9.0	5.6	5.8	7.5
Business age	Age of business (years)	18.7	14.2	8.3	6.5	6.9	6.0
Owner characteristics							
Professional qualification	Whether owner's highest qualification is a professional qualification (1/0).	15.2%	15.6%	10.1%	4.4%	7.9%	15.0%
Postgraduate degree	Whether owner's highest qualification is a postgraduate degree.	7.0%	17.4%	21.6%	17.7%	13.2%	37.9%
Diploma	Whether owner's highest qualification is a diploma.	0.6%	0%	3.6%	1.5%	1.3%	2.6%
Apprenticeship	Whether owner's highest qualification is an apprenticeship.	0.6%	0.95	0%	0%	0.7%	0%
Financial qualification	Whether owner or finance director has a financial qualification (1/0).	64.7%	60.6%	76.3%	70.6%	56.6%	89.5%
Age	Age of owner (years)	49.8	47.1	39.6	38.1	44.0	43.9
Business experience	Total business experience of owner (years)	20.2	18.1	12.2	10.7	10.5	8.4
Net worth	Net worth (assets – liabilities) of owner (£)	472,775	555,679	423,562	208,096	137,593	265,312
Majority female owned	Whether 50% or more of the business is owned by females (1/0).	28.2%	20.2%	25.9%	11.8%	34.2%	32.7%
Financial ratios							
Return on assets	Profit/Business Assets	0.18	0.25	0.22	0.13	1.0	0.41
Debt ratio	Total business debt/Business Assets	0.04	0.36	0.27	0.33	0.30	0.26

Sources of financial advice							
Bank manager	Main source of advice is a bank manager (1/0).	21.6%	26.6%	23.0%	23.5%	17.8%	20.9%
Accountant	Main source of advice is an accountant (1/0).	38.3%	25.7%	25.9%	30.9%	23.0%	26.1%
Business Link	Main source of advice is Business Link (1/0).	0.7%	0.9%	0%	0%	5.9%	3.9%
Scottish Enterprise	Main source of advice is Scottish Enterprise (1/0).	0.1%	0%	0%	0%	0%	0%
Chamber of Commerce	Main source of advice is a Chamber of Commerce (1/0).	0.1%	0%	0%	0%	3.3%	1.3%
Trade Association	Main source of advice is a Trade Association (1/0).	0.1%	0%	0%	0%	0%	0%
Financial Advisor	Main source of advice is a financial advisor.	0.9%	0%	2.9%	0%	1.3%	0%
Auditors	Main source of advice is an auditor (1/0).	0.7%	1.8%	0%	0%	0%	0%
Internal sources	Main source of advice is internal (e.g., directors) (1/0).	0.3%	0%	0.7%	0%	0.7%	0.7%
Main loan characteristics							
Loan amount	Size of main loan (£).	315,352	391,898	340,231	157,925	78,630	60,983
Loan duration	Term of main loan (years).	9.5	12.1	11.4	10.6	7.5	7.8
Unsecured loan	Whether main loan required security (1/0).	46.6%	45.5%	42.1%	65.0%	71.7%	45.2%

Table 2: Determinants of financial delinquency and loan denials

	Financial Delinquency (marginal effects)	p-value[1]	Loan Denials (marginal effects)	p-value
Financial delinquency			0.297**	0.034
Financial relationships				
Log relationship length	0.001	0.909	-0.005	0.286
Multiple finance providers	0.042*	0.069	-0.002	0.827
Business characteristics				
Log business assets	-0.020**	0.047	-0.001	0.897
Log employment	0.051*	0.055	-0.014	0.235
Log business age	-0.030**	0.042	-0.012**	0.048
Partnership	0.018	0.687	-0.012	0.500
Ltd Liability Partnership	-0.081	0.110	-0.018	0.620
Ltd Liability Co.	-0.015	0.781	0.017	0.276
Owner characteristics				
Professional qualification	-0.021	0.639		
Postgraduate degree	-0.100***	0.000		
Diploma	0.456*	0.061		
Apprenticeship	-0.052	0.614		
Financial qualification	-0.083*	0.078		
Log business experience	0.023	0.216	0.013	0.122
Log net worth	-0.008	0.421	-0.006	0.258
Majority female owned	-0.005	0.843	0.019	0.146
Majority Indian owned	-0.010	0.855	0.029	0.290
Majority Pakistani owned	0.100	0.203	0.038	0.228
Majority Bangladeshi owned	0.106	0.365	0.000	0.997
Majority Black Caribbean owned	0.018	0.826	-0.008	0.788
Majority Black African owned	0.488***	0.000	0.050	0.405
Financial ratios				
Log return on assets	-0.029***	0.001	-0.001	0.787
Debt ratio	0.042**	0.021	0.000	0.998
Sources of financial advice[2]				
Bank manager	-0.037	0.444		

Accountant	-0.067	0.170		
Business Link	0.411*	0.081		
Scottish Enterprise	-0.138***	0.000		
Chamber of Commerce	-0.140***	0.000		
Trade Association	-0.139***	0.000		
Financial Advisor	-0.123***	0.000		
Auditors	-0.152***	0.000		
Internal sources	-0.141***	0.000		
Other	-0.144***	0.000		
No Advice	-0.068	0.124		
Region³				
East Midlands	-0.018	0.696	0.021	0.355
London	-0.041	0.328	0.002	0.928
North East	-0.005	0.927	-0.008	0.707
Northern Ireland	-0.018	0.748	-0.036***	0.010
North West	-0.045	0.278	0.002	0.938
Scotland	-0.098***	0.002	0.010	0.743
South East	-0.034	0.422	-0.021	0.201
South West	-0.040	0.364	-0.014	0.461
Wales	-0.033	0.520	0.015	0.563
West Midlands	-0.042	0.317	-0.005	0.823
Yorks and Humbs	-0.059	0.148	-0.015	0.459
Sector				
46 2 Digit SIC codes (p-value)		0.000		0.000
N=935				
$\rho = $ -0.740 (0.322)		χ^2 (*p*-value)=0.000		χ^2 (*p*-value)=0.000
L=-651.396				

Notes:
1. *p*-values from robust standard errors.
   '*, ** and *** denote significance at the
   10%, 5% and 1% levels respectively.
2. Base source of advice:
   friends/business associates
3. Base region: East of England

Table 3: Determinants of financial delinquency and loan interest rates

	Financial Delinquency (marginal effects)	p-value[1]	Loan interest rates (marginal effects)	p-value
Financial delinquency			-0.044	0.972
Financial relationships				
Log relationship length	0.002	0.866	0.025	0.803
Multiple finance providers	0.007	0.800	-2.393**	0.015
2 financial products			-3.841***	0.002
3 financial products			-4.010***	0.000
4 financial products			-3.958***	0.000
5 financial products			-3.256***	0.000
6 financial products			-3.244***	0.000
7 financial products			-3.402***	0.000
8 financial products			-3.467***	0.000
Big 4 bank			0.680**	0.036
Business characteristics				
Log business assets	-0.040***	0.002		
Log employment	0.040	0.175	-0.145	0.172
Log business age	-0.029*	0.073		
Partnership	-0.034	0.372		
Ltd Liability Partnership	-0.104***	0.000		
Ltd Liability Co.	-0.061	0.281		
Owner characteristics				
Professional qualification	-0.085***	0.004		
Postgraduate degree	-0.125***	0.000		
Diploma	0.897***	0.000		
Apprenticeship	-0.108***	0.000		
Financial qualification	-0.024	0.622		
Log business experience	0.005	0.826		
Log net worth	-0.005	0.651	-0.092	0.289
Majority female owned	0.041	0.231	0.208	0.466
Majority Indian owned	0.073	0.378	-0.093	0.843
Majority Pakistani owned	0.104	0.338	-0.019	0.972

Majority Bangladeshi owned	0.126	0.503	-0.015	0.983
Majority Black Caribbean owned	-0.019	0.815	0.527	0.564
Majority Black African owned	0.408*	0.071	0.697	0.541
Financial ratios				
Log return on assets	-0.024**	0.042	-0.001	0.992
Debt ratio	-0.006	0.754	0.136	0.456
Sources of financial advice[2]				
Bank manager	0.005	0.937		
Accountant	0.005	0.933		
Business Link	0.509*	0.088		
Chamber of Commerce	-0.107***	0.000		
Financial Advisor	-0.018	0.871		
Auditors	-0.107***	0.000		
Internal sources	-0.106***	0.000		
Other	-0.108***	0.000		
No Advice	-0.002	0.978		
Loan characteristics				
Log loan amount			0.205	0.234
Log loan duration			-0.129	0.350
Unsecured loan			-0.113	0.647
Fixed rate			-1.239***	0.000
Loan for new product/service			1.600**	0.019
Loan for land purchase			-1.509**	0.032
Region				
8 Government Office Regions plus Scotland, Wales and Northern Ireland (*p*-value)	0.799			0.193
Sector				
46 2 Digit SIC codes (p-value)	0.000			0.000
N=573				
$\rho = $ -0.027 (0.939)	χ^2 (*p*-value)=0.000		χ^2 (*p*-value)=0.000	
L= -1540.991				

Notes: See notes to Table 2

Table 4: Determinants of financial delinquency and discouragement

	Financial Delinquency (marginal effects)	p-value[1]	Discouragement (marginal effects)	p-value
Financial delinquency			0.043***	0.000
Financial relationships/loan application costs				
Log relationship length	0.005	0.647	8.280E-05	0.804
Multiple finance providers	0.041**	0.046	-0.001	0.264
Multiple financial products				
Log loan fees/business assets			0.001	0.105
Business characteristics				
Log business assets	-0.015	0.103	0.001	0.110
Log employment	0.047**	0.046	-0.001	0.309
Log business age	-0.019	0.124		
Partnership	0.005	0.900	-0.002*	0.054
Ltd Liability Partnership	-0.072*	0.087	-0.001	0.160
Ltd Liability Co.	-0.013	0.787	3.201E-04	0.741
Owner characteristics				
Professional qualification	-0.010	0.802		
Postgraduate degree	-0.094***	0.000		
Diploma	0.487**	0.019		
Apprenticeship	-0.060	0.404		
Financial qualification	-0.073	0.116		
Log age			0.003*	0.076
Log business experience	-0.019	0.124		
Log net worth	-0.008	0.341	-4.756E-04	0.051
Majority female owned	-0.006	0.816	0.001	0.418
Majority Indian owned	-0.015	0.757	0.004*	0.066
Majority Pakistani owned	0.085	0.241	0.004	0.148
Majority Bangladeshi owned	0.102	0.363	0.006	0.151
Majority Black Caribbean owned	0.006	0.934	0.013**	0.029
Majority Black African owned	0.445***	0.000	0.006	0.215

Financial ratios				
Log return on assets	-0.025***	0.001		
Debt ratio	0.038**	0.022		
Sources of financial advice[2]				
Bank manager	-0.008	0.875	0.002	0.221
Accountant	-0.036	0.453	0.003	0.135
Business Link	0.330	0.177	-0.001***	0.000
Scottish Enterprise	-0.125***	0.000	-0.001***	0.000
Chamber of Commerce	-0.126***	0.000	-0.001***	0.000
Trade Association	-0.126***	0.000	-0.001***	0.000
Financial Advisor	-0.099**	0.012	0.060**	0.013
Auditors	-0.139***	0.000	-0.002***	0.000
Internal sources	-0.128***	0.000	-0.001***	0.000
Other	-0.131***	0.000	-0.001***	0.000
No Advice	-0.062	0.130	-0.001	0.509
Region[3]				
East Midlands	-0.006	0.898	2.439E-04	0.903
London	-0.027	0.502	0.001	0.475
North East	0.013	0.805	-0.001	0.456
Northern Ireland	-0.030	0.531	-0.001	0.581
North West	-0.025	0.550	0.002	0.336
Scotland	-0.089***	0.001	0.006	0.128
South East	-0.024	0.563	-8.880E-05	0.956
South West	-0.033	0.437	-0.001	0.280
Wales	-0.009	0.861	4.903E-04	0.833
West Midlands	-0.020	0.645	-1.523E-04	0.933
Yorks and Humbs	-0.057	0.130	-0.004***	0.000

Sector		
46 2 Digit SIC codes (*p*-value)	0.000	0.000
N=921		
$\rho = -0.881^*$ (0.069)	χ^2 (*p*-value)=0.000	χ^2 (*p*-value)=0.000
L= -547.332		

Notes: See notes to Table 2.

Notes

[i] In the UK, the relevant legislation is the Race Relations Act 1976 and Race Relations (Amendment) Act 2000 (which extended the 1976 act to the police and other public authorities).

[ii] In contrast de Meza and Southey (1996) characterize entrepreneurs as being over-optimistic about their chances of success (see also Fraser and Greene, 2006). Bankers, on the other hand, can draw on their experience of lending to new ventures to make better informed judgements about whether the business will be successful (enough, at least, to repay the loan).

[iii] I am grateful to a participant at the 3rd ESRC/Small Business Service Seminar on Entrepreneurial Finance for pointing this out.

[iv] Relationship lending may be a suitable alternative for 'non-standard' businesses such as social enterprises for which scoring techniques may be inappropriate (due to the absence of hard data and/or their divergence from the mainstream business population for which the scoring system was developed).

[v] The Small Business Service decided not to collect data for Chinese owned firms since previous evidence suggested they have similar or even better access to external finance than White owned firms (see Smallbone et al, 2003). This saving allowed more resources to be devoted to problem groups i.e., Black owned firms which could then be disaggregated into Black Caribbean and Black African businesses (whereas previous studies have tended to treat Black firms as a homogenous group).

[vi] These indices are derived from a weighted average of 7 domains of deprivation based on: income; employment; health and disability; education, skills and training; housing and services; living environment; and crime. They are published by the Office of the Deputy Prime Minister.