

# Alternatives to Commercial Lending in the SME Business Market

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*The views expressed within this report are those of the authors and should not be treated as Government policy.*

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# 1 Executive Summary

*This is a research report investigating potential issues in the UK debt-lending market and estimating the impact of potential corresponding solutions, which inevitably can involve some discussion of policy. Nonetheless, it is mostly concerned with estimating the effects of those solutions as a research exercise.*

The Great Financial Crisis (GFC) marked a turning point in debt-lending markets. Stricter prudential regulation and higher funding costs have led financial institutions to tighten their credit supply, especially for small and medium enterprises (SMEs), and to increase rejection rates. This environment has then culminated in the discouragement of SMEs from applying for finance.

The contrast between the pre- and post GFC periods might be so large that it potentially gives the impression that the challenges faced by SMEs seeking bank finance only started in 2008. However, they are longstanding and the adequacy of, most notably, long term capital supply has been subject of discussion for almost 100 years as evidenced for instance by the Macmillan Gap, a term coined from the 1931 Macmillan Committee, which pointed out SMEs' difficulty of raising long-term finance for values between £5,000 to £200,000 (Merlin-Jones, 2010).

This report reviews an extensive literature on debt-lending markets and business finance in order to lay out identified market failures in the UK and then estimate the impact which potential solutions could have in market outcomes and aggregate variables. This quantitative analysis includes a model of the impact of relationship with main bank on SME discouragement, the prediction of the impact of other countries' bank systems on UK lending and a macro structural model of higher lending on investment, output and other aggregate variables. To further inform our analysis, we have conducted semi-structured interviews with SMEs and financial institutions, to have a deeper understanding of their situation. This qualitative research provides insight into perceptions and behaviours rather than quantifiable findings from a statistically representative sample. Semi-structured interviews are used to explore the nuance of views and to explore topics of interest in greater depth. They are not designed to be statistically representative but do offer crucial additional information and context to support quantitative data.

Specifically, we answer the following research questions:

- Are there any market failures that are occurring in the business lending market that the commercial banking system and current public interventions are not addressing? What gaps in the market are there? What gaps are not being effectively addressed? Are there any risks that are not being addressed?
- Based on international comparisons, are there alternative, commercial and non-commercial approaches that could better address market gaps and market failures in SMEs seeking finance in the UK?
- What are the characteristics of those approaches that make them distinct from the current UK model (e.g. transactional versus relationship-based approaches to lending decisions)?
- What changes would be needed in the UK SME lending landscape for such alternative ap-

proaches to be effective?

- What analytical framework can be established to assess additionality of the alternative approaches in the UK compared to the counterfactual of the current commercial banking system continuing?

Examined evidence suggests that the UK market was concentrated at least until 2015, albeit with decreasing levels, which is illustrated by the rising market share of challenger banks and alternative lenders. This should be at least in part be due to various measures implemented by the Competition and Markets Authority (CMA) and the British Business Bank (BBB) in order to incentivise competition. Contributing to concentration are entry barriers including size advantages, regulatory obstacles such as capital requirements, demand preferences and relative unawareness of all existing financial products and lenders, and lower information levels on borrowers by new lenders than established incumbents.

Policies and measures implemented to incentivise competition include, for instance, new bank licenses, the Commercial Credit Data Sharing, Open Banking, the BBB Finance Hub, the ENABLE Funding programme and the Bank Referral Scheme, and their effects should be evaluated over time. Our market engagement with financial institutions indicates that, while aimed at the main industry problems, some of those measures can be improved. Nonetheless, it can already be observed that the market share in total gross bank lending of the largest five banks to SMEs in the UK has declined from about 60 per cent in 2012 to just above 40 per cent in 2024. The extent to which this represents higher competition, however, depends on the substitutability between the financial products offered by new and incumbent lenders. If new lenders provide financial products which can fund the same needs of businesses as financial products supplied by incumbents, then businesses can switch financial providers, depending of course on price and terms and conditions offered. However, if new lenders offer types of finance not useful to most businesses, then incumbents will maintain a high market share. The impact in the market of new lenders also depends on whether they target previously under-served SMEs (and compete with each other there). Nonetheless, we conclude that the current UK market concentration looks similar to that of other countries included in this report.

The report also identified a demand gap for finance caused by various contributing factors such as high risk-aversion of financial institutions, information asymmetry between lenders and SMEs, imperfect information by SMEs, banks' compensation scheme and market incentive structure, which, in particular, cause banks to withdraw financial support during downturns. Based on the literature and our market engagement, the imperfect information found suggests an unfulfilled SME demand for financial advice and support.

Central to this work are the concepts of centralised versus decentralised banking. We follow [Mayer et al. \(2021\)](#) in defining the latter “as one that provides relationship-based banking services to its customers by operating in close proximity to them and via a business model that relies on cultivating and utilizing the strong relationship it establishes with its customers to gather and build soft information” which is then used in lending decisions. Relationship banking is also often associated with business financial advice and support. Centralised banking on the other hand uses mostly “hard” information (which can be expressed in numbers), such as credit scores,

to evaluate borrowing applications. This assessment is in general performed via risk models and the analysis of customer data by bank's staff located in a central area, who therefore do not come into contact with the client. This is the system prevalent in the UK.

The characteristics of a relationship approach have the potential of reducing the information asymmetry between borrowers and lenders, improving businesses' knowledge about the finance market (thus reducing imperfect information), as well as increasing the success rates of lending. Moreover, relationship-based lenders also tend to present more unwavering finance provision than their centralised counterparts, for instance, being observed to maintain lending during macroeconomic downturns while centralised institutions withdraw finance (see Section 4.6). This could help diminish SMEs debt aversion by reducing their perceived borrowing risk, especially when providing personal guarantees. The increased competition, with the entrance of non-bank lenders, might not solve this issue as existing (but limited) evidence suggests that non-bank lenders are even more likely than banks to reduce lending in times of economic distress.

Our interviews with SMEs and financial institutions have also demonstrated the importance of relationship banking and financial advice in helping SMEs communicate with lenders about their businesses and make the right financial choice for them.

Given the literature review and the results of our interviews, we have estimated the impact of a strong relationship with the main bank in improving the probability of SME applying for finance and have evaluated the expected effect of relationship banking in the UK on the probability of bank lending to businesses, on the resulting overall amount lent to businesses, and on macroeconomic aggregates such as investment and output.

On the finance application side, using the SME Finance Monitor (SMEFM), we estimate a probability model of not applying for finance and of being successful. Our estimates demonstrate the importance of a good relation with businesses' main bank. A strong relation with the main bank has an estimated impact on reducing non-participation higher than the impact of having lower risk rating, reducing the probability of non-participation by 10 percentage points. Analogously, a strong relation with the main bank increases the probability of application success. Moreover, we show the high inefficiency of non-participation, where most non-participant businesses have a probability of application success higher than 50 per cent. This exemplifies the existing potential for increased lending just from tackling discouragement.

The implementation of a network of relationship lending in the UK could take this further by improving banks' willingness to and conditions of lending, which would lead to higher business loans by not only increasing success rates of worthy finance applicants but also by encouraging more businesses to apply. This could take the form either of non-regulated or regulated financial institutions. The former could be non-depository lenders or deposit-taking lenders with sovereignty immunity. The latter, in particular, would encounter a few challenges to implementation and operation. Firstly, to start operating, the new fully regulated banks would need to meet initial capital requirements as well as have a banking platform. Secondly, maintaining their day-to-day and emergency liquidity would require some central institution. Lastly, these banks would have to generate enough income above costs and defaults in order to build up their equity and meet capital requirements.



In order to estimate the effect of implementing relationship banking in the UK, we use a probability model for the estimation of the finance gap in the current UK system relative to the UK under the German or the French systems, which include a large proportion of banks operating relationship banking. For this, we use the Survey on the Access to Finance of Enterprises (SAFE). This approach provides an indication of the potential effect on lending of the reform. To estimate the final effect on macroeconomic variables (e.g. output, consumption, investment), we construct a bespoke macro structural model.

Keeping in mind the assumptions and limitations described in Section 6.3.4, our results show that, between 2011 and 2019, lending could have been substantially higher in the UK under the German or French systems due to increases in demand and supply of loans. Under the assumption that loan value per business would remain the same, our estimates indicate that, on average, the former would have resulted in 50 per cent higher annual lending in this period. The latter would have caused about 2 times the actual levels. These are driven by statistically significant increases in the joint probabilities of businesses applying for finance and being accepted, for both SMEs and large businesses. For SMEs, the average joint probability of application and success moves from 11 per cent to 18 (27) per cent under the German (French) counterfactual. For large enterprises, it rises from 21 per cent to 33 (38) per cent under the German (French) counterfactual. If the average value of additional loans were to be lower, then total additional lending would be lower.

The effects on probabilities are used to calibrate our macroeconomic model. We estimate that, under the implementation of the German (French) system in the UK,

- Increase in GDP by 1 (2.1) per cent above baseline within first 5 years and rising further to 1.7 (3.5) per cent in long run.
- Increase in aggregate investment by 1.7 (3.5) per cent above baseline within first 5 years and rising further to 2.1 (4.4) per cent in long run.
- Impact on hours worked and employment neutral with no significant changes in the long run under the German counterfactual, but wages rise by 2.9 per cent under the French counterfactual.
- Both types of firms benefit, but large firms grow more relative to SMEs in response to the reform.

## 2 The UK Market

In this section, we define the UK debt-lending market, describing its main features and actors. The information gathered here forms the basis for the market failures identified in Section 3.

Given that SMEs are the main business group of interest to this report, it is useful to start with its definition. The term SME in Europe and the UK comprises organisations with fewer than 250 employees and a turnover of less than €50 million or a balance sheet total less than €43 million (FCDO, 2023). It includes the following subcategories:

| Business size | Headcount     | Turnover or balance sheet total                  |
|---------------|---------------|--------------------------------------------------|
| Medium sized  | less than 250 | less than or equal to €50 million or €43 million |
| Small         | less than 50  | less than or equal to €10 million                |
| Micro         | less than 10  | less than or equal to €2 million or €2 million   |

Given that the datasets used in this report do not present any information on businesses' balance sheet, our data analysis considers the SMEs definition based only on employment and turnover.

## 2.1 The Supply Side

Like in any other market, credit supply is generally shaped by the final objective or mission (e.g. profit maximisation) of a financial institution. The successful achievement of this mission relies on the ownership, governance, culture and leadership structures in place (Dodds, 2020). These shape the incentives affecting how financial institutions operate. Furthermore, the viability of different financial institutions is determined not only by their financial health, but also by the regulatory requirements under which they operate.

This subsection describes the main financial institutions in the UK. It seeks to understand their business models, accounting for their funding sources and costs and the factors determining their lending decision. The scope of this report mostly entails term loans and any potential substitute to these such as asset finance – in essence, finance which supports business growth. It does not consider inter-corporate lending nor equity capital.

### (Legacy) Retail Banks

Retail high street banks generally fund their lending from customer deposits, wholesale markets and capital (e.g. equity and retained earnings), of which the former represents the largest proportion of total funding. Wholesale funding, which tends to be more expensive, includes secured borrowing (e.g. securitisation), unsecured deposits from other banks and financial institutions or large companies, and the issuance of debt instruments like bonds, which are sold to investors. This type of funding is typically used when banks need to borrow in excess of their retail deposits or when they need quick access to large amounts of funding (Bank of England, 2014 Q4). Sometimes, government schemes are also alternative sources of funding, such as the Funding for Lending Scheme (FLS) launched by the Bank of England and the Government in July 2012 (CMA, 2016).

Banks are profit-seeking financial institutions and therefore their lending decisions are based on profit maximisation. Profits before tax are given by:

$$\text{profits} = \text{net interest income} + \text{other income} - \text{operating costs} - \text{impairment costs}$$

Net interest income is the difference between interest on banks' lending and their funding costs (FCA, 2018). Banks also raise revenue from non-interest sources, such as customer fees, investment banking, securities brokerage and mutual fund sales.

When choosing whether to provide finance to businesses and the conditions and terms of the

lending, banks consider different factors depending on the financial product in question. Those include nature and size of the borrowing and characteristics of the firm. Finance applications can be assessed by automated processes up to a low value threshold, such as £50 thousand as indicated in our market engagement. However, larger values require additional attention from bank analysts.

Lending high amounts is more attractive to banks as, not only there is lower information asymmetry between lender and large borrowers (who tend to borrow larger amounts), but also costs of funding and lending are similar across different loan values. Larger amounts lead to higher absolute interest which, coupled with the fact that larger businesses represent a lower risk investment, makes lending to large businesses more attractive, although interest rates to larger businesses tend to be lower. Furthermore, banks also evaluate the man-hours and costs devoted to the screening of loan applicants before the contract, the monitoring cost during the contract and the verification cost post-contract, against the overall fees and interest they receive.

Apart from processing costs of applications for small amounts which can be automated, these costs do not vary significantly across different clients, and thus economies of scale arise, whereby larger loans (associated with larger businesses) lead to higher profits. Furthermore, larger businesses might provide more opportunity for future cross-selling of other financial services and products, generating additional revenue streams.

Regulation also acts as a further disincentive for lending to SMEs. Banks must comply with capital requirements, measured as the ratio of bank capital over risk weighted assets, the Capital Adequacy Ratio (CAR). Loans to SMEs are in general deemed riskier than loans to large enterprises and households. Therefore, loans to SMEs receive higher weight, decreasing the CAR and making it harder for banks to meet the regulatory requirements. [Fatouh et al. \(2021\)](#) study the impact that banks' regulatory capital arbitrage had on SME lending after the GFC, under quantitative easing (QE). QE reduced the supply of gilts to the private sector, causing lower yields on gilts which passed through to lower yields of investment grade corporate bonds ([McLaren et al., 2014](#)). The latter became more attractive for large enterprises relative to bank borrowing. The resulting decline in bank loans demand by large enterprises led banks to seek alternative assets and, given the lower risk weights of household lending, banks chose to expand mortgages and decreased SME finance. [Fatouh et al. \(2021\)](#) estimate that Basel tiered risk weights resulted in a decline in SME lending of £52 bn between March 2009 and April 2013, whereas no capital requirements or a flat 8 per cent requirement (with no differences across assets) would have resulted in an increased in SME lending of £14-£17 bn, following QE.

The period preceding the GFC saw a large increase in bank lending, stimulated by cheap wholesale funding. One consequence was a substantial lending to SMEs, which peaked in 2007 ([RBS Independent Lending Review, 2013](#)). An important caveat to be mentioned is that 40 per cent of this lending was directed at real estate businesses. Nonetheless, non-real estate SMEs also benefited from it by using their real estate properties as collateral for acquiring funds to implement their business plans ([RBS Independent Lending Review, 2013](#)).

## Challenger Banks



We follow [Ahern and Rose \(2021\)](#) and define “challenger banks” as those offering alternative ways of banking for personal and business customers. A classic example of a challenger bank is the Metro Bank, which received a UK banking license in 2010, the first in more than 150 years ([Singh et al., 2020](#)). Over forty new licenses have been granted since 2012 following the new regulatory framework codified in the 2012 Financial Services Act ([Singh et al., 2020](#)).

Another bank worth highlighting is Handelsbanken (HB), a Swedish bank which entered the UK market in the 1980s in order to support the expansion of some of its Swedish clients into the UK. Since then, it has made the UK one of its ‘home markets’ – offering local businesses and individuals relationship banking and wealth management services. It has opened new branches all over the UK, currently totalling over 140. HB is shareholder-owned but operates a relationship approach, in which individual branches have autonomy to choose clients and make lending decisions. Relationship managers build a deep knowledge about their local area and their customers, who they often visit at home or their place of work, in order to better understand and support them.

In general, challenger banks have introduced more innovative banking services/products than legacy banks (such as personalisation of financial products/services, fast account opening, expenditure analytics, integration with accounting softwares, business toolkits for invoicing and expenses, etc) and possibly lower/higher charges/returns to customers. Along with specialist banks, they currently provide 60 per cent of UK gross lending, the highest on record, surpassing the big five banks for the fourth year in a row ([BBB, 2025](#)).

Innovative products are not only a necessary strategy to enhance competitiveness but also a source of income diversification. In addition to traditional sources of revenue (interest and fees from lending), challengers also rely on premium service charges and commissions from recommending third-party products, also used by legacy banks ([The Financial Times, 2019](#); [Bain & Company, 2022](#)).

A barrier challengers face is that their funding costs are usually higher than that of legacy banks. They not only tend to offer higher interest rates on their deposits but also pay higher premia on their wholesale funding ([CMA/FCA, 2014](#); [FCA, 2018](#)). Furthermore, challenger banks also typically rely on the standard risk weighting model which can impact the amount of capital they have to hold.

Challengers’ funding originates from similar sources as those of Legacy Banks, but might be more reliant on capital from investors and government programmes such as the BoE’s Term Funding Scheme (TFS), which ended in 2018 ([British Business Bank, 2019](#)). Recently, [The Financial Times \(2024\)](#) points out that the venture capital that promoted the growth of neobanks, banks operating exclusively online, has been declining since 2022.

Regulation is also an important issue that hinders new banks’ ability to start operating and to compete in the market. While the period post-2008 saw the implementation of measures directed at facilitating competition in the banking sector, those were also accompanied by additional regulation intended to insure the sector against losses which would have to be bailed-out by the government. Some of these regulations have been or are under revision such as ring-fencing, which requires UK banks with more than £25 bn “core deposits” to legally separate their retail

banking services from investment activities ([Ring-fencing and Proprietary Trading, 2022](#)). In the assessment by [Ring-fencing and Proprietary Trading \(2022\)](#), while challenger banks did not cite ring-fencing as a main constraint on their businesses, they cited the following:

- minimum requirement for own funds and eligible liabilities (MREL);
- smaller banks hold higher lending capital than larger banks (ring-fenced bodies);
- government lending schemes, such as the Coronavirus Business Interruption Loan Scheme (CBIL) and bounce back loans (BBL), initially relying on the largest banks;
- larger banks have lower cost base, arising from scale.

In conversation for this report, Handelsbanken UK indicated that capital requirements can be higher here than in Sweden, which could affect profitability, investment and the services they can provide to SMEs in comparison to their home country.

We note that the Mansion House 2025 speech (and accompanying releases) has announced various policies directed at reducing unnecessary regulation of financial markets, many of which can benefit lending to businesses. These include the proposal of increasing the indicative asset threshold for MREL from a range of £15-£25 bn, to £25-£40 bn; a revision of the recovery and resolution frameworks to reduce the administrative burden on Small Domestic Deposit Takers of the resolution regime; various plans to increase access to data by financial institutions and stimulate fintech growth. In addition, the PRA has tweaked Pillar 2A to prevent the removal of SME/infrastructure “support factors” from raising overall capital for those exposures, limiting upward pressure on loan pricing of SME and infrastructure lending.

Despite the challenges above (which are likely to be lessened by 2025 measures), the market share of challengers’ and specialist lenders’ market share has increased. Nonetheless, the significance of this to competition relies on the level of substitution that these new market players represent over legacy banks. The impact in the market of new lenders also depends on whether they target previously under-served SMEs (and compete with each other in this market).

## Non-banks

Alternative finance, of which non-banks are significant providers, includes asset-based finance, leasing and hire purchase agreements (asset finance). Asset-based lending allows businesses to use e.g. debtors, unpaid invoices, accounts receivable as collateral to fund working capital and asset finance uses the funded fixed asset as its own collateral ([Fraser, 2019](#)). The importance of such finance is illustrated by the fact that 14 per cent of SMEs in the SME Finance Survey 2023 stated having sought leasing or hire purchase in their last external finance search, the same percentage as term loans. A third of total SME asset finance new business was provided by non-bank lenders from 2019 to 2021 ([British Business Bank, 2022b](#)). On one hand, as [Sabato et al. \(2019\)](#) notes, while non-bank lenders may offer an alternative to businesses rejected by major banks, they might also charge higher interest rates. On the other hand, non-banks expand the market by offering very different products and may be able to fund assets (as exemplified above) that banks would not due to specialist knowledge.



non-bank lenders encompass a diverse array of business and funding models, commonly relying on securitization and warehousing facilities for funding, rather than customer deposits (UK Finance).

The regulatory changes introduced in response to the GFC (Basel III) have contributed to a change in bank lending. As reported by Fraser (2019), overdraft and term loan applications had a rate of rejection of 11 per cent and 5 per cent, respectively, in 2001-2004 (BIS, 2013). In 2017, these increased to 15 per cent and 33 per cent, respectively (Fraser, 2019). Given that non-bank lenders are not subject to the same prudential regulatory frameworks, they have represented an alternative for credit constrained SMEs. Many banks returned to their core products and stopped offering, for instance, asset finance and venture debt. Many non-bank lenders then stepped in to fill this space and some non-banks were created by whole teams leaving banks and setting up as non-bank lenders.

A series of policies, aimed at increasing competition in lending markets, might have contributed (a long with tech and cloud advancements) to the observed increasing market share of these institutions and of challengers. In 2014, for instance, the BBB launched the **ENABLE Funding programme**, designed to facilitate access to securitisation capital markets by smaller banks and non-banks in order to ultimately improve SME finance. The programme purchases newly originated SME finance receivables portfolios on commercial terms from these providers and then pools them into an asset-backed security (ABS), which can then be refinanced through capital markets. This allows small finance providers to reach the necessary scale and obtain the structural support that may be required to fund themselves in the capital markets. Therefore, this initiative targets an important constraint of alternative lenders, i.e. high funding costs. While our market engagement, detailed in Appendix A, indicates it could be improved, recent evaluation shared with us suggests the programme has responded to feedback and received amendments which have led to an increase in participants.

The **Bank Referral Scheme** (BRS) initiated in 1st of November 2016, establishes that major banks must offer any SME which has been declined for financing the chance to have their details directed to a specified platform. Also in this case, our market engagement indicates space for improvement (see Appendix A). Indeed, this issue and others have been found in a current review of the scheme by HMT (2024), which should lead to a better formulation of the BRS.

Since 2018, **Open Banking** has also contributed to helping alternative lenders by offering a place where they can access customers data on their financial history and giving businesses the option to safely share this information.

### Community Development Finance Institutions (CDFIs)

CDFIs are financial institutions which are overseen by the industry body Responsible Finance and provide finance to businesses facing challenges in accessing traditional bank lending. In 2022, for instance, they lent £81 million to 2,320 startups and small businesses (Responsible Finance, 2023).

CDFIs have a social purpose and focus on serving disadvantaged areas and small businesses (Ah-

ern and Rose, 2021). They are an example of relationship-based banking in the UK, where their lending decision relies on e.g.:

- annual accounts and business plan;
- getting to know their customer;
- the social impact the loan might have.

Furthermore, being non-profit organisations means their lending decision is not driven by profit distribution or shareholder compensation (Ahern and Rose, 2021). Since CDFIs' customers represent a higher risk of default, in addition to finance, CDFIs also provide support and mentoring to businesses, a way to "de-risk" the investment (Community Development Finance Association, 2014).

The credit they supply is sourced from government grants, private investors (including banks) and philanthropists. Government grants (e.g. CDFA's Regional Growth Fund – only in England) along with policy guarantee schemes (e.g. Enterprise Finance Guarantee scheme and European Investment Fund) and internal loan loss reserves constitute the main sources used by CDFIs to cover first loss from their lending. This, as well as tax reliefs like the Community Investment Tax Relief, reduces the risk attached to SME finance and help attract private capital. CDFIs can also raise funds from issuing shares (Community Benefit Societies) and managing funds in exchange of a fee (Community Development Finance Association, 2014).

Recent additional effort has been made to support and expand the sector. For instance, the BBB, via the Community ENABLE Funding programme, will provide a Government-backed wholesale vehicle of up to £150 million of new lending capital for CDFIs in its first two years, with a public-to-private match once track record is proven. In 2024, Lloyds Bank became the first mainstream lender to support the CDFI sector by investing £43 million in the Community Investment Enterprise Fund (CIEF), established in 2018 to provide capital for three CDFIs based in Wolverhampton, Doncaster, and Bradford.

### Mutuals and co-operatives

The definitions of mutuals and co-operatives have not formally been distinguished but, as described in New Economics Foundation (2014), some key differences can be identified:

- co-operatives can be owned by various of stakeholders (i.e. you can have customer-owned co-operatives or employee-owned co-operatives). Mutuals, on the other hand, are always owned by their customers.
- Customers of a co-operative do not have to become members, while customers of mutuals automatically become members.
- In co-operatives, any member can run for election to integrate the supervisory board. In mutuals, the current supervisory board nominates candidates for future elections.

Despite those, mutuals and co-operatives are still very similar. Mutual/co-operative banks distribute their profits among their members rather than shareholders, as in the case of standard

banks (Ahern and Rose, 2021). They also have a regional focus, reinvesting their deposits back into where they operate. Furthermore, their lending decision is relationship-based and seeks to promote their region's economic and social development.

In the UK, the only remaining examples of these banks are credit unions, which via a legislative change in 2012, became allowed to lend to businesses. Nonetheless, their total penetration in Great Britain is very low and their business lending has been very slow to respond to the 2012 policy change (Talbot et al., 2015; Panjwani and Booth, 2025).

Although, other mutual/co-operative banks have mostly ceased to exist, we have chosen to include them in this section for two reasons. First, they are an important source of business (in particular SMEs) finance in other European countries and in the US. Second, there has been growing interest in the establishment of UK mutual banks prepared to operate in the business finance market.

However, both new and existing co-operative banks face significant challenges, which have been raised since the financial crisis by the stricter regulation that followed. Basel III demands banks to maintain Tier 1 capital levels at least 6 per cent of Risk Weighted Assets (RWA). Within that, Common Equity Tier 1 (CET1) must correspond to 4.5 per cent of RWA. Tier 1 capital is composed of equity capital (stocks and shares) and retained earnings. CET1 includes mostly common shares, excluding preferred shares and non-controlling interest from total Tier 1 capital. The problem with co-operative membership shares is that they are usually withdrawable, that is, a member can end their participation at any point and take their share capital with them (International Co-operative Alliance, Blue Ribbon Commission, 2017). Therefore, co-operative membership shares do not qualify as CET1 (International Co-operative Alliance, Blue Ribbon Commission, 2017).

By definition, co-operatives are owned by their members. Hence, raising capital via issuance of shares to outside investors to meet regulatory requirements is in general against the co-operative principles. An alternative which has been implemented consists on issuing investment instruments which are restricted to an internal market amongst existing co-operative members and offer no additional voting rights (Ethical Consumer Research Association, 2017). Another possibility is the creation of a publicly listed company partly owned by the co-operative members as well as private investors (Ethical Consumer Research Association, 2017). France is an example of that (see Section 4.4).

## 2.2 The Demand Side

Table 1 shows values of new finance to SMEs from 2008 to 2017 by different products. Clearly bank loans have represented over 70 per cent of those, only decreasing to 68 per cent in 2017. Still, we can observe that other sources have grown during the period, notably peer-to-peer (P2P) finance and private equity.

Figure 1, sourced from British Business Bank (2025), shows more recent statistics on asset finance. It shows that SME asset finance achieved almost £25 billion in new lending by 2024.



Table 1: Gross new funding (£bn) from various sources (2008-2017), with percentages of each column total

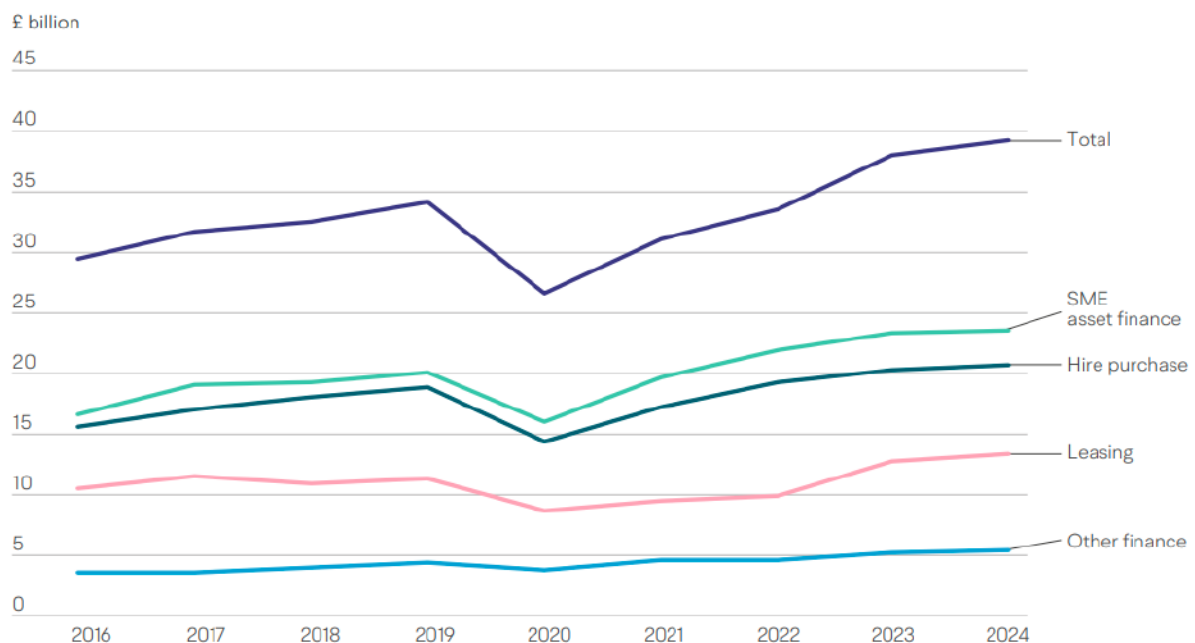
| Source of Funds      | 2008  | 2010  | 2012 | 2014 | 2016 | 2017 |
|----------------------|-------|-------|------|------|------|------|
| Bank Loans           | 44.5  | 40.4  | 38.0 | 53.4 | 59.0 | 57.0 |
| Private Equity       | 1.0   | 0.5   | 1.5  | 2.5  | 3.11 | 5.89 |
| Asset Finance        | 14.3  | 10.2  | 12.2 | 14.4 | 16.7 | 18.6 |
| P2P Business Lending | 0.001 | 0.001 | 0.06 | 0.59 | 1.2  | 1.8  |
| P2P Invoice Funding  | 0.001 | 0.001 | 0.04 | 0.27 | 0.35 | 0.5  |
| CDFIs                | 0.03  | 0.02  | 0.05 | 0.09 | 0.08 | 0.06 |
| Invoice Finance      | 8.66  | 7.4   | 7.9  | 8.81 | 8.9  | 9.57 |
| Total                | 68.5  | 58.5  | 59.8 | 80.1 | 89.3 | 93.4 |

Source: UK Finance (2018)

Figure 1: Size of UK asset finance market for businesses 2016-2024 – new business in £ bns

#### Size of UK asset finance market for businesses 2016-2024 – new business in £ billions<sup>a</sup>

Source: Finance & Leasing Association (FLA)



a. Asset finance new business for deals of up to £20 million.

Source: British Business Bank (2025)

In 2024, gross bank lending to SMEs by the main high-street banks rose 13% to just over £16 bn, and overall bank lending to SMEs was approximately £60 bn (UK Finance (2025b,a); British Business Bank (2025)). Invoice finance and asset-based lending total advances at end-2024 were £21.2 bn (UK Finance, 2025a). Equity finance into smaller businesses totalled £10.8 bn across 2,048 deals in 2024 (British Business Bank (2025b,a)). CDFIs lent £141.6 m to 5,825 enterprises in 2024 (Responsible Finance, 2025). For P2P/marketplace business lending, market-wide 2024 aggregates were not compiled by the British Business Bank, but platform disclosures indicate for example that Funding Circle UK reported £1.9 bn of “credit extended” in 2024 (Funding Circle Holdings plc, 2025; British Business Bank, 2025).

We note that the volumes lent are also dependent on supply response to finance applications,



hence the numbers above are a product of both supply and demand. In terms of applications, which offer a cleaner picture of demand factors, in 2023, for example, in response to the SME Finance Survey, 12 per cent of SMEs stated applying for or seeking bank overdrafts in the previous three years and 10 per cent applied for or sought credit cards, while bank loans were sought by 7 per cent (British Business Bank, 2024b). This indicates a very weak demand for bank finance which could be a result of various factors such as discouragement (see Section 2.2.1), deleveraging after receiving Covid-19 loans, general macroeconomic conditions such as uncertainty, costs and higher interest rates (British Business Bank, 2025).

CMA/FCA (2014) considers that invoice and asset finance, especially, can act, to a certain extent, as substitutes to overdrafts and loans, respectively.<sup>1</sup> Through the former, businesses can have early access to a percentage of an outstanding invoice by offering it as security to a finance provider in exchange of funding. The latter allows businesses to access capital equipment via regular payments. Naturally, for invoice and asset finance to be useful, businesses need to have invoices (e.g. businesses in a supply chain) and demand physical capital, respectively. British Business Bank (2023) shows that around 80 per cent of SMEs are aware of asset finance while this number was approximately 50 per cent in 2019 and 60 per cent in 2022 for invoice finance and asset-based lending (e.g. stock lending facility).

The use of invoice finance and asset-based lending has remained more or less stable, apart from a drop in 2020. Asset finance (e.g. machine and vehicle finance), on the other hand, has seen stable growth, although also interrupted in 2020 (British Business Bank, 2023).

CMA/FCA (2014) cites various competition concerns in the UK debt-lending market and suggests that the following demand patterns and behaviours contribute to it:

- small businesses tend to use personal current accounts (PCAs) rather than business current accounts (BCAs) in order to avoid the costs entailed by the latter;
- when setting up their BCAs, SMEs tend to favour the financial institution where they hold their PCAs;
- SMEs are more likely to obtain an array of products from their BCA provider;
- SMEs still have a preference for finance providers with branches in close proximity;
- despite significant dissatisfaction with banks, SMEs do little shopping around when choosing their BCAs and loans, and in terms of considering switching provider. Evidence suggests that SMEs find little differentiation across banks, which might be one cause of this behaviour. The complexity of pricing structure of banks' products also hinder provider comparison. A suboptimal equilibrium then arises, where this weak customer effort acts as a disincentive for banks to compete and innovate.

Nevertheless, more recent evidence shows that a growing percentage of SMEs are considering more than one finance provider, going from 35 per cent in 2016 to 41 per cent in 2023 (British

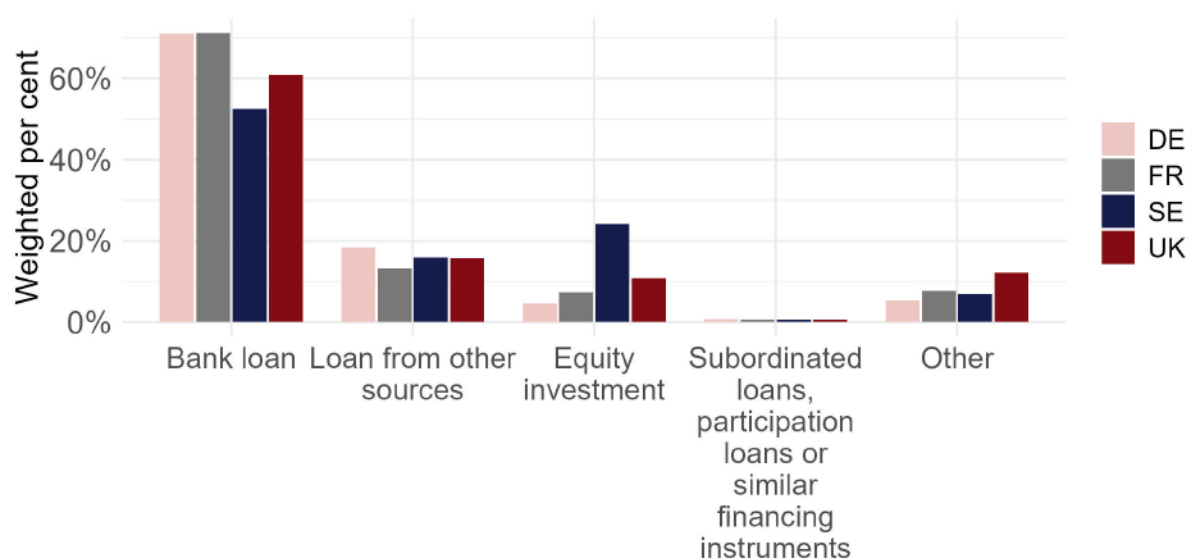
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<sup>1</sup>Other substitutes to overdrafts include, for instance, trade credit and merchant cash advances.

Business Bank, 2024b). The market share in total gross bank lending of the largest five banks in the UK has also declined from about 60 per cent in 2012 to just above 40 per cent in 2024 (British Business Bank, 2025).

Despite the increase of the non-bank sector, the Survey on the Access to Finance of Enterprises (SAFE) suggests that businesses with positive growth expectation over the following two to three years still prefer bank loans to realise that growth. Figure 2 shows the weighted per cent of responses to “If you need external financing to realise your growth ambitions, what type of external financing would you prefer most?”, for the UK and the other European nations discussed later in this report.

Figure 2: Finance type preference for growth (2009-2019)

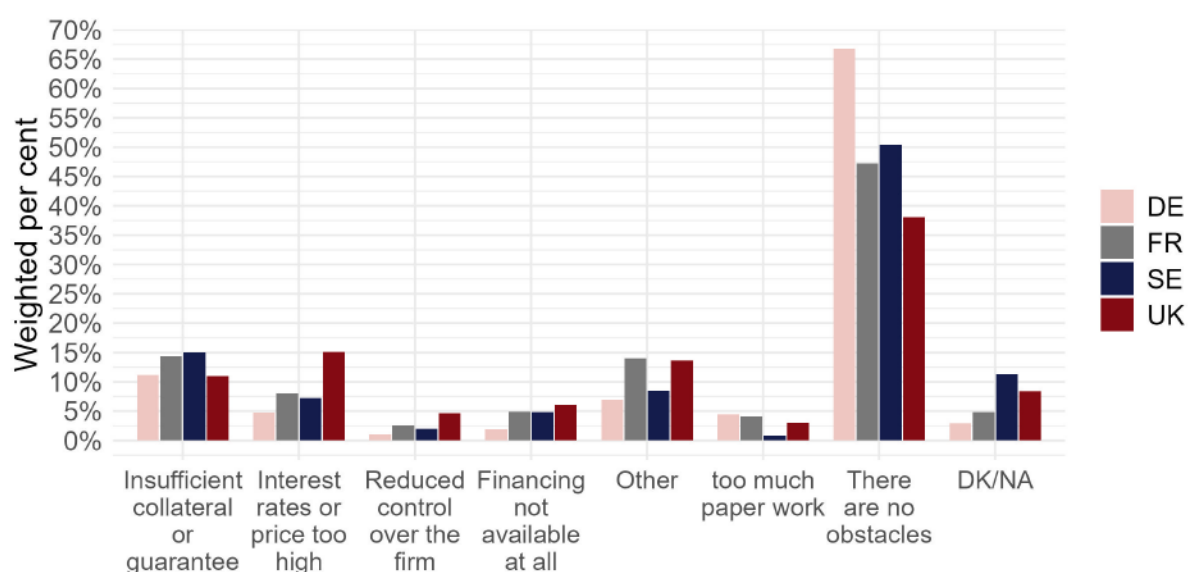


Source: SAFE and authors' calculations

In both France and Germany, 70 per cent of businesses who expected to grow over the following two to three years selected bank loans as their preferred finance to realise that growth. In the UK and Sweden, 60 and just over 50 per cent of businesses selected bank loans, respectively. This reflects the general reliance on bank finance of European businesses and importance of bank intermediation for growth.

The UK however, presents the lowest proportion of businesses who do not see limitations in their access to bank loans. Figure 3 shows the weighted per cent of responses to “What do you see as the most important limiting factor to get this financing?” filtered for those respondents who selected bank loans as their preferred product. Germany outperforms all countries, with over 65 per cent of businesses indicating that there are no obstacles. 47 and 50 per cent of French and Swedish businesses with a preference for bank loans also stated no obstacles to access these. In the UK, this number was 38 per cent.

Figure 3: Obstacles to bank loans access (2009-2019)



Source: SAFE and authors' calculations

Amongst the alternative barriers, cost of finance stands out as the main difference between the UK and other countries. In the UK, 15 per cent of businesses who prefer bank loans for growth indicated costs as their main limitation to access these. Germany presented the lowest proportion at 4.7 per cent. France and Sweden display 8 and 7 per cent, respectively.

While businesses may prefer bank loans if in need of external finance to realise expected growth, British SMEs would more likely favour internal funds for investment. In fact, the 2023 Finance and Investment Decisions Survey reports that around 70 per cent of SMEs favour slower growth to having debt.

Lloyd (2021), who makes a historical comparison of SME lending between the UK, US, Germany and France, discusses British SMEs short-termism and how it reflects, as well as is reinforced by, the lack of tax incentives for retained earnings and the limited access to long-term external investment funds. Therefore, while scarcity of bank long-term finance may contribute to SMEs' cautious attitude to growth, other factors may be at fault, such as tax incentives. Adam and Miller (2019) show that the present UK tax system discourages risk-taking and some forms of investment.

### 2.2.1 Discouragement

As described in the previous section, the period before the GFC saw substantial lending to SMEs and about 40 per cent of the stock of lending to all non-financial corporations was to the Commercial Real Estate sector (RBS Independent Lending Review, 2013). After the GFC, rejection rates increased and lending declined. In addition, some SMEs were treated badly during the crisis, having previously agreed debt lines pulled or being moved between bank teams.

This experience appears to have caused SMEs to retreat and not even try to apply for debt-finance,

leading to the coining of a “scarred” business, who does not apply for finance because of previous rejection. Before the GFC, 14 per cent of SMEs applied to loans in 2001-2004, 11 per cent in 2005-2009. Meanwhile, 10 per cent of SMEs applied to loans in 2010-2011, 7 per cent in 2011-2012 and 3 per cent in the year ending 2017 Q4 (Fraser, 2019). British Business Bank (2022c) shows that, in 2021, the most common reason for not making an application to finance was fear of rejection, corresponding to 41 per cent of SMEs who had a need for finance in the previous 12 months but did not apply.

## 2.3 Market Engagement Summary

Complementing the picture we have so far provided of the UK debt lending markets, here we provide a brief summary of the findings from our market engagement which is detailed in Appendix A. Our engagement with market participants consists of nine interviews with SMEs and four with financial institutions, two large banks, a non-bank and a CDFI.

- We have found that SMEs perceived cost as a central consideration when deciding whether to access finance and that recent, relatively, higher interest rates have caused problems with affordability.
- SMEs viewed larger financial institutions as being more risk averse in recent years; pushing them towards more expensive, smaller, alternative financial institutions.
- SMEs would like stronger relationships with financial institutions because it would help them to gain clarity on how to access finance, and it would help increase their agency when making financial agreements with financial institutions.
- SMEs also see the decline in branches and relationship managers have been a barrier to their access to finance. Banks stated branch closures are demand-led and that “hard” information and automation have in general expanded credit.
- Financial institutions suggested the quality of SME finance applications varies a lot and that the action of other bodies to support SMEs in this process could improve their success.
- Financial institutions pointed out the potential of greater customer data access and better evaluation processes to speed up application responses, but also stated that alternative lenders such as CDFIs could fill a potential existing gap in loan values, possibly in cooperation with large banks.

# 3 Market Failures

## 3.1 Summary

This section describes the market failures, or more specifically, the conditions for an efficient market and to what extent the UK satisfy them, given the literature and our market engagement. Based on this, we can answer the research question:



*“Are there any market failures that are occurring in the business lending market that the commercial banking system and current public interventions are not addressing? What gaps in the market are there? What gaps are not being effectively addressed? Are there any risks that are not being addressed?”*

Our findings suggest that

1. competition is hindered by various barriers to market entry for new financial institutions in the UK, such as increasing returns to scale, regulatory obstacles such as capital requirements, demand preferences and relative unawareness of all existing financial products and lenders, and lower information levels on borrowers by new lenders than established incumbents.
2. there is some information asymmetry between lenders and SMEs in terms of lenders' knowledge about SMEs' businesses and informational advantage of legacy banks over other potential lenders. Standard borrower assessment may also be unfavourable to specific SMEs, such as intangibles-intensive and growing SMEs.
3. there exists imperfect information in terms of SMEs' awareness of existing financial institutions and financial products as well as misunderstanding of finance application processes and requirements.
4. banks' compensation scheme and market incentive structure might be an incentive to prioritise larger borrowers.
5. large banks present an increase in risk aversion.

The overall existing gaps are:

- unmet demand for services which could help improve communications between lenders and borrowers, such as business finance support and coaching; and
- unmet demand for finance especially during macroeconomic downturns as well as SMEs' output idiosyncratic contractions.

Existing private and public measures directed at those include:

- a the BBB Finance Hub, the [Bank Referral Scheme](#), [Open Banking](#), [Commercial Credit Data Sharing \(2015\)](#), [Open Finance](#), [ENABLE Funding programme](#) (see [Section 2.1](#));
- b the work of CDFIs;
- c policies which help these institutions access funding such as government guarantee schemes and the Community Investment Tax Relief (see [Subsection 2.1](#)).

There has been substantial focus on improving competition in the SME finance market since the publication of [CMA/FCA \(2014\)](#). Without detailed data analysis of financial products offered by different lenders, it is difficult to state to what extent competition has improved and, if it has, whether SMEs' access to finance has increased. However, as detailed in [Section 2.1](#), new bank

licenses have been issued in the last decade and the share in total lending of challengers and non-banks has increased substantially.

Items 2-5 above and the resulting gaps, in comparison, seem to deserve more government effort<sup>2</sup>. As described in Section 2.2, awareness of alternative finance products could be improved. In 2022, for instance, only 60 per cent of SMEs were aware of invoice finance and asset-based lending (see Section 2.2). A BBB survey on finance intermediaries conducted in the end of 2023 shows that between 52 per cent and 70 per cent of respondents in each UK Nation and region reported lack of awareness of finance options as one of the biggest barriers to finance access (see Section 2.2). Therefore, despite existing measures, there is still space for the provision of services such as coaching and support to SMEs in evaluating their finance options and satisfying the requirement of their finance applications. Due to the stage of their businesses, SMEs also face frequent periods of downturns, periods when access to finance would be very important but traditional financial institutions would be reluctant to lend.

Furthermore, it is often expected that the limited information of lenders on SMEs could be reduced by initiatives such as [Open Banking](#), [Commercial Credit Data Sharing \(2015\)](#) and [Open Finance](#), and that in turn this would lead to higher credit supply. However, empirical evidence from similar policies suggest that, while these can allow for better assessment of customers, they do not cause an increase in lending. The statement of one financial institution in our market engagement further supports this evidence. Nonetheless, further evaluations, preferably in the UK, should be conducted, since financial information sharing, in particular [Open Finance](#), is a very recent initiative.

In addition, the combination of banks' compensation scheme and market incentives with the availability of customers who have different borrowing demands might lead lenders to favour larger borrowers, creating unmet demand for finance amongst SMEs.

While CDFIs and policies such as government guarantee schemes already contribute to addressing the issues described above, the literature and our market engagement indicate additional measures and evaluations could be beneficial.

## 3.2 Conditions for an Efficient Market

Before we lay out the market failures that we can currently identify in the UK debt-lending market, it is useful to start by outlining the meaning of market failures. This will not only help us support this and the following sections of this report, but also provide the reader with the information necessary for an active assessment of this report.

In economics, we consider markets to be efficient if they are Pareto Optimum, that is, no agent could be made "better-off" with an alternative allocation of resources without making another agent "worse-off". Three conditions for this to be achieved are ([Ledyard, 2017](#)):

1. existence of enough markets;

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<sup>2</sup>Very recent public measures on this direction include [Gov.uk \(2024\)](#).

2. competitive behaviour between consumers and producers; and
3. existence of an equilibrium.

Market failures then occur when any of these conditions are violated. The first condition requires that the existing markets fulfil and price all of that which agents care about (complete markets). Negative externalities, for instance, occur when the activity of some market participants negatively affect agents outside that market. A classic example is pollution of natural environment by manufacturing enterprises. Governments often interfere in cases like this, by pricing the externality via taxation.

Another example, which we can look at through the lenses of credit markets, is the case of information asymmetry between market participants. A lender usually has limited information about the quality of a borrower while the borrower knows more about their probability of repaying. This leads to under- or over-pricing of the financial product and thus misallocation of resources. An additional market which could account for the lender's uncertainty, such as insurance markets, would lead to market completion. If governments perceive that the lending benefits contribute to the wider economy (positive externalities), then they might choose to act as the insurer, such as in the case of the British Business Bank's Growth Guarantee Scheme (GGS).

The second condition requires agents to have no influence over market prices and to behave optimally given prices. This is obviously violated when firms enjoy some level of market power, which is usually expected in concentrated markets. In lending markets, greater competition, however, can lead to higher information asymmetry between lenders and borrowers since more options of finance providers would likely lead to shorter relationships between lenders and borrowers (for a discussion, see e.g. [BIS, 2016](#)).

The third condition, combined with the second, requires the existence of competitive equilibrium. It is violated, for example, in natural monopolies, where the number of firms that can produce at minimum cost is limited to one. Regulatory requirements and other fixed costs in the banking industry make the existence of a perfectly competitive equilibrium unlikely. Furthermore, as outlined above, the presence of information asymmetry makes the consequences of higher competition ambiguous. It is likely that the optimum equilibrium would be an intermediate level of concentration, as suggested by [Biswas and Koufopoulos \(2020\)](#). Given these and because the theoretical verification of this condition is out of the scope of this report, we will focus on the first two conditions moving forward.

Based on this, the next subsections describe the resulting market failures that can be identified in the UK debt-lending markets. These will guide the investigation about other countries' systems in Section 4.

### **3.3 Competition and Barriers to Entry**

As described in Section 2, the UK lending market (and lending markets in general) presents incumbent advantage attributable to size, regulatory obstacles (such as capital requirements), demand preferences and relative unawareness of all existing financial products and lenders. As



cited by [Bank of England \(2020\)](#), young lenders also have lower information on potential borrowers than established incumbents, which also hinders their ability to compete. Nonetheless, initiatives such as the [Bank Referral Scheme](#), [Open Banking](#), [Open Finance](#) and [Commercial Credit Data Sharing \(2015\)](#) should contribute to ameliorating the demand and information access issues of small lenders.<sup>3</sup> Indeed, 46 new banks were authorised between April 2013 and September 2019 (around 7 per year) [Senior et al. \(2019\)](#). By 2024/25, the cumulative total since 2012 had reached 80, of which 40 were brand new UK banks [Prudential Regulation Authority \(2025\)](#). For pre-2013 context, the FSA's barriers-to-entry review reports 39 bank authorisations over 2006–2012 (8 UK stand-alone or part of a UK group, 22 UK subsidiaries of foreign entities, 9 UK branches of non-EEA banks) [Financial Services Authority \(2013\)](#). Also, as pointed out in Subsection 2.1, the market share of challenger banks and non-banks has meaningfully increased.

The existence of such barriers makes the UK (and other) lending markets less than perfectly competitive and potentially lead to the classic outcome of lower output (lending) and higher prices of imperfect competition. Nevertheless, as outlined above, the presence of information asymmetry makes the consequences of higher competition ambiguous. It is likely that the optimum equilibrium is an intermediate level of concentration, as suggested by [Biswas and Koufopoulos \(2020\)](#). We also conjecture that the larger use of customer information sharing in the market combined with improved algorithms for customers screening might be able to increase competition whilst reducing information asymmetry, although, as considered by [Biswas and Koufopoulos \(2020\)](#), in a theoretical model, competition will only increase if lenders are similarly able to use the available data for customer screening, that is, lenders with better algorithms, for example, might have an advantage. In addition, some existing evidence shows that higher information sharing is not observed to increase bank credit ([Behr and Sonnekalb, 2012](#); [Loaba and Zahonogo, 2019](#)), but it might lead to better loan performance by reducing the probability of arrears ([Behr and Sonnekalb, 2012](#)). This has also been suggested by one of our interviewed financial institutions in our market engagement in Appendix A.

Higher competition is also not necessarily better against the risk of bank distress. Under the “competition-fragility” theory, the reduction in market power from competition depresses profit margins, and results in reduced franchise value that encourages bank risk taking ([World Bank](#)). The “competition-stability” theory, on the other hand, predicts that more market power in the loan market may lead to greater bank risk as the higher interest rates charged to loan customers make it more difficult to repay loans and exacerbate moral hazard and adverse selection problems ([World Bank](#)). Nonetheless, if market power generates greater risk in the loan market but also higher franchise value, overall bank risk might be kept low ([World Bank](#)). Empirically, using a sample of over 8,000 banks across 30 developed countries, [World Bank](#) find that banks with a higher degree of market power bear significantly more loan portfolio risk, which is consistent with the “competition-stability”. However they also find that banks with more market power also enjoy less overall risk exposure, which is achieved via significantly more equity capital holding. This lends support to the “competition-fragility” argument. Several other studies have also find mixed results. [Yuan et al. \(2022b\)](#), for instance, find a U-shaped relationship between competi-

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<sup>3</sup>Commercial Credit Data Sharing (CCDS) dates back to 2013. It requires major banks (designated by the Treasury) to share credit information on their SME customers with credit reference agencies designated by the Treasury, in order to improve access to finance. A consultation is being conducted this year to explore if CCDS could be enhanced to better support SME access to finance.



tion and overall bank risk for a sample of US banks. [de Ramon et al. \(2020\)](#) find heterogeneous results across UK banks' solvency levels and that regulatory pressure can ameliorate the adverse links between risk and competition.

## 3.4 Market Completeness

### 3.4.1 Information Asymmetry

[Bank of England \(2020\)](#) perfectly describes the inefficient equilibrium resulting from two types of information asymmetry that happens in lending markets, between borrowers and lenders, and between incumbent lenders and new competitors. The former, which is more acute between lenders and small businesses, leads to a risk premium and lower lending. The latter refers to the informational advantage account providers have over other potential lenders. As described by [Bank of England \(2020\)](#), "In order to compare prices from any other lenders, the SME needs to share this and other information to demonstrate that they are creditworthy. But this is often a very manual and paper-heavy process, which varies considerably between lenders." Such a long process may cause busy owners of small businesses to choose not to borrow at all, leading to lower demand.

It is worth mentioning, though, that [Hutton and Nightingale \(2011\)](#) challenge this commonly accepted notion that information asymmetry is the primary hurdle faced by SMEs when seeking finance. Instead, they suggest that this narrative overlooks the assessment processes employed by banks. Banks utilize behavioural credit models that integrate data from numerous similar businesses, providing them with a comprehensive understanding of the risks associated with each firm. This often surpasses the entrepreneur's perception, which may tend to be overly optimistic about risks.

Nonetheless, [Hutton and Nightingale \(2011\)](#) highlight that while these models excel in evaluating established firms with substantial tangible assets, they falter when it comes to assessing the risks associated with lending to high-growth enterprises. Such companies often experience disproportionate growth fuelled by intangible assets. Given the challenge in accurately quantifying the value of intangibles, these firms may appear riskier than they truly are. This has more recently been identified by others as well, such as [Nesta \(2017\)](#) and the [British Business Bank \(2018\)](#). The issue with high street banks' assessment of growing businesses was also pointed out during our market engagement. As shown by [British Business Bank \(2018\)](#), however, businesses "with registered IPRs (intellectual property rights) are less likely to default and, where default does occur, the resulting losses to the banks are lower". [World Intellectual Property Organization \(2023\)](#) conjectures that these results have been a potential encouraging factor for HSBC and Natwest to introduce credit products targeted at high growth firms.

Hence the spread of better data across lending markets can reduce information asymmetry not only because alternative lenders have access to the same data as large banks but also because they can innovate in the assessment of these data. Therefore, [Open Banking](#), [Open Finance](#) and [Commercial Credit Data Sharing \(2015\)](#) also contribute to ameliorating this market failure. [Open Finance](#), in particular, aims to extend Open Banking, by extending consent-based data sharing beyond payment accounts to a wider set of financial data sourced from HMRC and Companies

House. These include sales, expenses, VAT payments and receipts, savings, investments, pensions, insurance, mortgages and consumer credit (Financial Conduct Authority, 2019, 2021; OECD, 2023).

### 3.4.2 Imperfect Information

As cited in Section 2.2, businesses' present some lack of awareness about different types of financial products and all the lenders available. Market solutions such as the use of brokers can ameliorate the issue. National Association of Commercial Finance Brokers (NACFB) (2024) indicates that brokers facilitated £38 bn of SME lending in 2023. In a 500-SME survey, 28 per cent of the sample had used a broker to access business finance and 20 per cent were unaware they could use a broker for this (Time Finance, 2025). Public initiatives aimed at developing businesses awareness and knowledge of available funding opportunities such as the BBB Finance Hub and the Bank Referral Scheme can also help. Nonetheless, as mentioned in Section 2.1, existing evidence suggests that bank referrals do not happen often.

In addition to the potential restricted information of lenders on borrowers and vice versa, our market engagement has identified a mismatch between large financial institutions' and SMEs' expectations. The former state that often SMEs are not aware of what they should present in a finance application, in contrast to large companies, which can afford to have dedicated finance departments. Indeed, Lloyd (2021) mentions that SMEs' poor financial management is reflected in "many reported difficulties in completing the paperwork required by UK banks when applying for loans." This leads "many businesses to resort to overdrafts or credit cards not only to fund their working capital needs, but to use these sources to finance investment."

SMEs, on the other hand, state that financial institutions do not have enough knowledge about their industry and do not consider enough information about their business. Anecdotal evidence also suggests that SMEs might not have a suitable system to estimate their returns on investments and expenditure of the business, which would be useful as evidence for finance applications.

This highlights something which is cared about by economic agents but is not generally supplied in the market. That is, there seems to be demand for services which support SMEs navigate financial institutions' requirements.

### 3.4.3 Market and Institutional Incentives

In addition to regulation, which, as discussed in Section 2.1, discourages SME lending via RWA, large financial institutions might have the incentive to prioritise larger borrowers due to the operational cost involved in managing borrowing applications and servicing them once they are approved (see Section 2.1). Furthermore, professional incentives within banks also negatively affect SMEs' success in accessing finance, since returns on equity are key elements in determining bonuses (Hutton and Nightingale, 2011).

Therefore, if banks are large enough to be able to choose their borrowers between SMEs and larger companies, they might tend to prioritise the latter as these offer lower risk and higher return due to higher loan value. In addition, larger companies have finance applications potentially

easier and cheaper to process since information is more readily available and servicing their loan also likely demands fewer resources, since for instance they have a more stable income stream and would need less support and refinancing services. Preference toward large firms might also result from the larger revenue stream these firms could contribute to the bank due to additional services they use.

This preference is described in other words by Appleyard (2011) when presenting the space that CDFIs filled after banking liberalisation: “CDFIs recognised that banks were unwilling rather than unable to provide financial services to small firms due to the high level of risk against the relatively low level of reward. Many small businesses became financially excluded because banks found it uneconomic to lend to micro and small enterprises, particularly when the loans were small and the cost of servicing the loans was high.”

While banks can automate lending of small amounts, applications over, for instance, £50,000 still require more costs of analysis as one large financial institution mentioned in our market engagement (see Appendix A).

We must remark however that profit maximisation is not itself a market failure. If combined with healthy competition, it is typically one of the main drivers of innovation and productivity. Nonetheless, other market characteristics and imperfections might make supply uneconomical. SME lending is in general loss making but vital for SME investment and growth, underpinning the role of public policy and regulation.

#### 3.4.4 Risk-Aversion

Some narratives point towards a historical risk aversion of UK banks, even after consolidation of the sector in the beginning of the 20th century, which happened alongside the professionalisation of banking, with the creation of rules and “good practices” describing what was risky and what was a safe investment (Collins, 1991). Lending to industry was not considered safe (Collins, 1991).

Lloyd (2021) also discusses “the historical pattern of apparently risk-averse British banks failing to accept the risks of business lending to SMEs over a 120-year period.” The authors argue that this has reinforced a short-term profit-oriented vision amongst SMEs, to the overall detriment of the sector’s international competitiveness.

Furthermore, our market engagement as well as aggregate data inspection in Section 4.6 indicates that for-profit financial institutions might tend to withdraw credit during the lows of macroeconomic and SMEs’ business cycle, the periods when they would probably need it the most. The 2008 financial crisis is an example of this and was also mentioned in our market engagement (see Appendix A).

This observation can be, at least in part, attributed to the pro-cyclicality of risk-sensitive capital regulation. Various studies in the literature show evidence that risk-weighted capital requirements lead to an excessive increase in bank assets (e.g. loans) during booms. During crises, when assets’ risk increases and their prices fall, banks engage in asset sales which further depresses asset prices (Brunnermeier et al., 2009; Ly and Shimizu, 2021; Fatouh et al., 2021). Existing evidence supports the role of bank strong capitalisation in maintaining credit supply during adverse econ-



omy shocks (Gambacorta and Mistrulli, 2004; Bedayo et al., 2020; Basel Committee on Banking Supervision, 2022). As a result, Basel III introduced a capital conservation buffer and a countercyclical capital buffer in order to ameliorate the pro-cyclicality issue and some recent studies show some positive results (Fatouh, 2023).

### 3.5 (Banking) Market Failures' Impact

Given that banks are still the main source of finance for SMEs, their actions and performance can affect ultimate levels of investment and productivity. Riley et al. (2015), for instance, using descriptive analysis, investigate the link between UK productivity and credit constraint for the period 2007-2013. As described in the literature, a recession accompanied by a financial crisis tend to cause deeper and longer losses in output, possibly because banks act as an important source of resource allocation, which in turn is a channel of productivity growth. For instance, firms which are more bank dependent become credit constrained during a banking crisis, and so do not engage in viable projects. In addition, fewer firms might enter the market if an initial investment is necessary, reducing competitive pressure on incumbents. Furthermore, banks may forbear bad debtors in order to preserve their own balance sheets, thereby delaying the process of company closure. Therefore, a banking crisis could prevent the entrance and growth of productive businesses while prolonging the life of unproductive ones.

Although Riley et al. (2015) do not present direct evidence of the link between productivity and credit constraint, they find some evidence that the relationship between firm growth and relative labour productivity was weaker in the 2008 GFC, in sectors with many small and bank dependent businesses. They also show that the contribution of external restructuring (i.e. the net effect of firm entry and exit and changes in market shares of surviving firms) to aggregate productivity growth was less in 2010/13 than in previous years, although not necessarily associated with sectoral bank dependence. Furthermore, in comparison to the recession of 1990, which was not caused by a financial crisis, the contribution of external restructuring in the manufacturing sector since 2007 was found to be weaker than might have been expected.

Anderson et al. (2019) use a quasi-experimental approach to infer the causal link between credit constraint and UK productivity. Given that the 2008 financial crisis more heavily affected Lloyds Banking Group and Royal Bank of Scotland, which provided around half of bank lending to UK businesses, these banks and their customers are used as a treated group to evaluate the effects of stress among banks on their business customers. Their results show that tighter credit conditions caused some businesses to exit despite being more productive than their surviving competitors. The authors also find evidence of increased forbearance, where distressed banks protected highly leveraged, low productivity businesses from failure.

In addition to a financial crisis, regulatory changes can also alter banks' lending choices leading to effects on the real economy. Juelsrud and Wold (2020), for example, study the introduction of Basel III in 2013 in Norway. They decompose the increase in capital ratios into increases in equity, reductions in total assets and reductions in average risk weights. The authors also use administrative loan level data on the universe of Norwegian firms to estimate the effects from Basel III requirements on the real economy, including the impact on smaller firms. They show that more than 85 per cent of the increase in capital ratios is achieved by adjusting risk-weighted assets. These

85 percent are mainly explained by a portfolio rebalancing effect, in which banks substitute high-risk assets with low-risk assets. To estimate the impact on bank lending, they divide banks into low- and high-capitalised banks. Low-capitalised banks are more affected by the new requirements, such that a differences-in-differences approach can be applied, in which low-capitalised act as the treated group. This is a similar approach to that of [Anderson et al. \(2019\)](#). They estimate that low-capitalized banks had on average 6.3-8.9 percentage points lower growth in corporate lending than high-capitalized banks, a result statistically significant at five per cent level. No impact is found on lending to households. [Juelsrud and Wold](#) informally compute that the decrease in business lending relatively to household lending accounts for 80 per cent of the reduction in average risk weights. Using firm-bank matched data, they estimate the impact on business lending at the firm level and show that firms which borrowed from low-capitalized banks presented lower growth in borrowing in the post-reform period. Regarding the real economy, they estimate that firms which borrowed from low-capitalized banks prior to the reform had lower employment growth following the increase in capital requirements, and estimates of this negative impact are larger for small firms.

To the best of our knowledge, no similar studies on Basel III have been published for the UK, but the relationship between regulation and business lending in the UK has been investigated for earlier periods. For instance, [De Marco et al. \(2021\)](#) study changes in capital requirements and monetary policy shocks in the UK between 1998 and 2006. They estimate the impact on SME borrowing and investment and whether time length of relationship with a bank and number of banks affect the transmission of regulatory or monetary policy changes. They find that tightening of microprudential and monetary policy have negative effects on corporate debt and investment, mostly on firms who have been with the same bank for a shorter period. The pass-through of monetary policy however is higher. The heterogeneity of their results includes the differential impact of capital requirement changes across firms borrowing from banks with different levels of capital buffers. Capital requirement changes are found to have a larger impact on investment decisions of firms borrowing from banks with low capital buffers for which capital requirement changes are more likely to bind than on investment decisions of firms borrowing from banks with large buffers.

The above studies exemplify the impact that constraints in bank lending can have on the real economy. While these constraints stem from regulatory changes and/or the GFC, we can expect that a long run constraint resulting from the established banking system (e.g. centralised or decentralised) would have a continuous negative impact on the evolution of productivity, employment and other real-economy variables (see Section 4).

## 4 International Evidence

### 4.1 Summary

This section describes some existing evidence on international examples of banking systems and how or whether they more closely satisfy the conditions for an efficient market presented above. We focus on Germany, Sweden, France and the US. In addition, Subsection 4.6 shows some national level statistics, mainly sourced for Germany from the Bundesbank, due to data availability.

Based on the findings of this section, we answer the research question:

*Based on international comparisons, are there alternative, commercial and non-commercial approaches that could better address market gaps and market failures in SMEs seeking finance in the UK?*

Overall, our literature review indicates that decentralised banking systems perform as well or better than their centralised counterparts, including in terms of cost efficiency and during macroeconomic downturns. This is found for the Sparkassen in Germany, Handelsbanken in Sweden and co-operative systems in general. In the case of France, where co-operative banks have a market share of 50.3 per cent in the SME lending market, we find very positive results from the SAFE aggregate analysis, in particular, for bank loan application success rates.

Sweden also counts on state-owned financial institutions that provide finance for specific purposes and businesses, when finance from private banks is not available. We focused on the example of Almi, which provides not only finance, but also advisory services. In addition, Almi works with businesses and their private lenders to arrive at the best finance solution.

The German and Sweden experiences also demonstrate that state ownership of banks can be a channel for countercyclical policy. Both countries' governments used their banks to inject funds into the economy during the GFC, causing increases in lending.

We also reviewed the CDFI system in the US. The US count on a very large number and variety of banks, encompassing large commercial banks, small regional banks and CDFIs. The latter benefit from substantial public funding via the CDFI fund while also relying on private sources, such as banks which are incentivised by the Community Reinvestment Act to provide CDFIs assets for loans in exchange of credits that receive consideration when applying for branches, mergers, and acquisitions, for instance.

Regarding competition, the literature suggests that the French banking market presents higher concentration level than the other studied countries, for which we could not find significant evidence of substantial differences in competition. However, due to differences in the banking systems, only a bespoke analysis by country could determine the effect of competition on business lending outcomes.

Regarding market completeness, bank decentralisation, with regional focus and relationship banking, classic characteristics of the co-operatives and savings banks, but also features of the commercial Handelsbanken, can help reduce the information asymmetry between borrowers and lenders, via their close interaction, and reduce the imperfect information of borrowers about the market. The approach by the Swedish bank Almi could also potentially address those issues.

Furthermore, evidence based on the German market suggests that savings banks contribute to meeting the finance demand of financially constrained SMEs, which might indicate that savings banks at least partially cover the market demand gaps identified in Section 3.

Lastly, German savings banks, by law, must not prioritise profit maximization, although they should be maintained economically healthy. They also do not operate bonus schemes, which are common in private banks. This therefore should help prevent SMEs' finance demand from being un-



met due to banks' incentive structure.

## 4.2 The German Case

The German banking market is characterised by three pillars plus specialist banks (McKinsey&Company, 2016):

- Private or commercial banks which control more than 40 per cent of domestic banking assets. They are privately owned and profit oriented.
- Savings banks are quasi-public enterprises which control 30 per cent of domestic banking assets. These include:
  - Sparkassen, which are small to medium-sized retail banks with a decentralised, regional focus on supporting local communities, municipalities, and businesses. They are legally and economically independent institutions under public law (Deutscher Sparkassen- und Giroverband, 2021).
  - Landesbanken are also regionally focused savings banks but larger. They are tasked with servicing customers in their designated regions by, for example, offering universal banking services, acting as a regional central bank and clearing institution for the Sparkassen, and serving as a house bank to the federal state in which they are located, e.g. by financing infrastructure projects (Puri et al., 2011; Mayer et al., 2021). Landesbanken are owned primarily by federal states and by the Sparkassen from their respective federal state (Deutscher Sparkassen- und Giroverband, 2021).
- co-operative banks, despite being the most numerous, collectively hold only about 15 per cent of total domestic banking assets. They are small institutions, also with local focus and aim of benefiting their members, mainly small businesses and individuals.
- Specialist banks including Bausparkassen (building societies), Hypothekenbanken (real estate banks), and mostly state-owned development banks.

The concept of the original Savings Banks comes from the eighteenth century when they were founded with the philanthropic aim of providing the poor with the opportunity to deposit small amounts safely, earn interest and thus have funds available to combat the adversities of illness and old age. Gradually these services developed to include support for local tradesmen and businesses (Simpson, 2013).

Of particular interest to us is the Sparkassen, as these are particularly strong in the provision of finance for SMEs (Deutscher Sparkassen- und Giroverband, 2021). They supply finance to all stages of a business life, from start-up to growth (Deutscher Sparkassen- und Giroverband, 2021).

As described above, the Sparkassen are geographically bounded and focus on serving the public interests of their region. In fact, by law, they must not prioritise profit maximization, although they should be maintained economically healthy (Krahnen and Schmidt, 2004). Sparkassen sup-

port various community activities such as sponsoring art and culture, engaging in social projects, supporting sports and providing educational material to schools for promoting financial literacy (Deutscher Sparkassen- und Giroverband, 2021).

According to Detzer et al. (2017), Sparkassen use part of their surplus to fulfil their obligations in their community. Furthermore, savings banks (as well as co-operative banks) are found to be more cost efficient than private banks (Detzer et al., 2017). Furthermore, Figure 7 in Section 4.6 illustrates that savings banks' and co-operative banks' ROE is higher and more stable than those of commercial banks.

While not seeking to maximise profits, the Sparkassen have to generate adequate profits to fund their business operations. The Sparkassen manage risk in the following ways (Deutscher Sparkassen- und Giroverband, 2021):

- Savings Banks legislation limits the scope of Savings Banks' engagement in certain high-risk business transactions.
- The Sparkassen maintain internal customer ratings, containing information on key financial ratios and qualitative factors (e.g. sound succession arrangement and information on the quality of business controlling).
- Extensive knowledge about regional and national trends in specific sectors.

Furthermore, the savings banks have their own deposit guarantee scheme, the Institution Protection Scheme (IPS). The IPS safeguards not only customer deposits in full, but also the solvency and liquidity of its member institutions. When a member requires support, the neighbouring savings banks provide the initial help. If this is not sufficient, the savings banks' supra-regional funds are used (Deutscher Sparkassen- und Giroverband, 2021).

The Sparkassen network presents a very low rejection rate of finance applications. This reflects their commitment to lend to all their community, while maintaining a financially healthy institution. The Sparkassen cultivate a deep and strong relationship with their clients to the extent that the banks, for example, also provide customers with alternative investment suggestions to those initially proposed by the clients. Furthermore, the Sparkassen offer financially struggling businesses with advice and support. These measures help the savings banks keep their overall loss on SME lending close to 6%. The loss is subsidised by infrastructure and mortgage lending.

Nonetheless, the interest rate charged from borrowers tends to be higher than that charged by private banks. Therefore, one can expect that businesses who do not need the advisory services and relationship proximity offered by the Sparkassen would prefer the cheaper rates of private banks, preventing the Sparkassen to take over the whole market.

Decentralised banking systems, especially the German, have been extensively researched in the literature and consistently demonstrated to outperform centralised banking, especially in SME lending (see Mayer et al., 2021 for a recent survey). Gärtner and Flögel (2014), for instance, study centralised and decentralised banking in Germany from a spatial perspective, focusing on geographical market orientation and location of decision-making. They show that the GFC hardly

affected the lending policy of decentralized banks, with savings and co-operative banks continuously increasing their lending to the economy. Meanwhile, centralized banks substantially reduced lending, both the privately owned big banks and the publicly owned Landesbanken. The authors argue that, with their counter-cyclical credit expansion, the decentralized banks may have prevented a credit crunch and reduced the impact of the global economic crisis in Germany. Figure 9 in Section 4.6 illustrates the higher volatility of lending by commercial banks. Similarly to the centralised banks in Germany, lending to businesses also fell after 2008 in the UK (Simpson, 2013).

Apart from monetary policy shocks, bank lending is also exposed to GDP shocks. One reason for this is quite obvious: demand for loans is pro-cyclical. However, banks' lending supply could behave differently according to the business cycle. One reason is that banks deeply involved in relationship lending are likely to smooth lending "through the cycle" Boot, 2000, Thakor, 2004. In this respect, well-capitalized banks could be in a better position to absorb temporary financial difficulties on the part of their borrowers. This paper analyzes what drives the detected negative effect. In order to do so, the capital buffer is decomposed into capital and risk-weighted assets, and the effect of business cycle fluctuations on both of these components is analyzed.

Behr et al. (2013), using a German dataset containing businesses' financial statement and credit rating information, investigate whether bank lending behavior alleviates the sensitivity of investment to businesses' financial constraints, which they proxy with the ratio of earnings before extraordinary items and depreciation divided by the beginning-of-period capital stock. Their results indicate that an increase in relative borrowings from local state-owned banks significantly reduces firms' financial constraints, while there is no such effect for privately-owned banks.

Furthermore, analogously to Almi in Sweden (see Section 4.3), the Sparkassen were used to inject funds into local markets quickly so as to mitigate the effects of the crisis, ensuring that both firms and employees were equally protected (Simpson, 2013 reported by Mayer et al., 2021).

While the Sparkassen were not directly affected by the 2008 GFC, some of them were indirectly affected via their respective Landesbanken. As mentioned above, the Landesbanken are owned by their federal state as well as the Sparkassen associations in their state. As explained by Hübner (2010), they act as a house bank for their state and serve the Sparkassen as clearing houses, hold Sparkassen's excess liquidity reserves, provide marketing services and access to capital markets, and offer savings banks' clients investment banking services, access to foreign markets and credit on a larger scale. Hübner (2010), however, points out that the Landesbanken had increasingly operated in similar ways to private commercial banks on an international scale. Furthermore, Landesbanken debt used to be traditionally formally guaranteed by their respective public owners (Puri et al., 2011), but in 1989 the introduction of the "Own Funds and Solvency Directives", which incorporated capital adequacy requirements similar to those of Basel I into EU law, triggered the Association of German Private Banks (BdB) to submit a complaint to European Commission as they were under the same obligation to increase their solvency ratios without, however, being able to rely on public support (European Commission, 2004). In 2001, an agreement was reached to abolish any formal public guarantee, which started to be in effect after July 2005 (European Commission, 2004). Nonetheless, the Landesbanken have another two sources of support if necessary: horizontal support from the other Landesbanken and vertical support from their corre-



sponding Sparkassen (European Commission, 2004).

Between 2001 and 2005, in anticipation of the end of their prerogative of cheap liquidity, the Landesbanken accumulated large funding reserves. They then used these to invest abroad with the amount of assets invested in foreign securities more than doubling in size between mid-2005 and mid-2008 (Hüfner, 2010). This led many Landesbanken to be severely exposed to the financial crisis that started in the US subprime real estate market. Hüfner (2010) cite different contributing factors for this and the German banking crisis that followed. Those include poor quality of financial and managerial competence of supervisory board members relative to private banks, low profitability and capitalization, and the lack of a viable business model. On the latter, according to Hüfner (2010), the Landesbanken had attempted to grow into retail banking and small business lending but were blocked by the Sparkassen, who sought to protect their own market. As a result, the Landesbanken turned to wholesale activities, expanding their investment banking and international operations, exercising direct competition with private banks. Furthermore, they had been pressured by their owners to meet high performance goals.

Puri et al. (2011) investigate the effect of the GFC on finance demand and supply between Sparkassen banks associated with exposed Landesbanken and Sparkassen linked to Landesbanken without this exposure. For this, they follow a differences-in-differences approach, using data on the universe of consumer and mortgage loan applications and approvals for German savings banks before and after the financial crisis. Their results indicate that the affected Sparkassen reject more loan applications (11.1 per cent increase in rejections) than the nonaffected banks (0.1 per cent increase in rejections) as a result of the crisis and that Sparkassen curtail their lending in particular when they are small and more liquidity-constrained. The authors also find that applications by pre-existing customers are more likely to be approved than applications by new ones, ameliorating the negative effect on supply.

**Competition.** The German banking system is less concentrated than in other countries. Its five largest banks accounted for 44 per cent of total domestic banking assets in 2016 while this number was 84 per cent for the UK (McKinsey&Company, 2016). In 2024, the big 5 UK banks supplied just over 40 per cent of total gross lending to SMEs (British Business Bank, 2025). We could not find the same measure for Germany. It is however important to note that the operations of German savings banks are legally limited to the local area, and thus effective regional competition is probably lower than the national analysis suggests. Considering large cities and measuring competition by the number of branches in a certain area, savings banks and co-operative banks dominate retail markets Detzer et al. (2017). Therefore, we cannot conclude that the German market is necessarily more competitive than the British.

**Market completeness.** Rather than providing incentives for private lenders to increase the credit provision, the German model completes the market with supply of credit via cooperative banks and quasi-public financial institutions, the saving banks. Furthermore, the relationship banking and regional focus offered by these institutions can help reduce the information asymmetry and the idiosyncratic risk associated with the borrower's characteristics (Flögel, 2017). Furthermore, Section 4.6 illustrates the resilience of Sparkassen's and German co-operative banks's lending during economic crisis and regulation changes.

### 4.3 The Swedish Case

The Swedish debt-lending markets include banks, mortgage institutions and other credit institutions such as finance companies and corporate- and municipality-financing institutions. The four biggest banks on the Swedish credit market in 2022 (Handelsbanken, Swedbank, Nordea, and SEB) accounted for 66 percent of the Swedish credit market (Copenhagen Economics, 2023).<sup>4</sup> Banks include limited liability banks, savings banks and co-operative banks. Finance companies are specialised lenders, offering, for instance, leasing and factoring services to corporate customers and promissory note loans and credit card accounts to households. While some of them are owned by the largest banks, they operate as independent companies within the banking groups.

Other credit institutions also include state-owned companies which supply credit at favourable terms to particular sectors. One of those is Almi, the parent company of 16 regional subsidiaries (OECD, 2020). It was founded in 1994 with the specific aim of promoting the manufacturing sector. Nonetheless, it now stimulates growth and development across all sectors, but it is still known best among manufacturing companies (Anna-Karin Gustafsson and Eurofound, 2022). In response to the financial crisis of 2008-09, the Swedish government undertook a number of measures, such as support of the banking sector by strengthening the capital base and securing bank lending, provision of tax credits, export credit facilitation and business development programmes. The largest measure was an increase in Almi's loanable funds, in order to increase access to finance for SMEs. As a consequence, new lending by Almi almost doubled from 2008 to 2009 (OECD, 2016).

Almi offers advisory services (e.g. mentoring, growth advice, seminars and courses), loans and venture capital across all phases of the establishment of a business from start-up, focusing on companies with a sustainable growth ambition and which cannot access finance from banks for specific reasons (Momot and Momot, 2018; European Investment Fund, 2021; Almi).

The services offered vary across regions based on regional circumstances and the resources of the regional Almi company (Momot and Momot, 2018). Almi's lending is not subsidized since it is able to cover its financial costs. Nonetheless, Almi is not a profitable firm and is dependent on government funding to cover its non-financial costs. It also charges higher interest rates than other banks as a result of greater risk taking, and so firms able to obtain sufficient finance from commercial banks have little incentive to apply for its loans (Kärnä, 2021; Kärnä and Stephan, 2022).

Almi does not follow Swedish banking legislation and is not bound by Basel III rules. Instead, it is governed by regulation on state financing through regional development companies (Kärnä and Stephan, 2022).

Kärnä (2021), using Differences-in-Differences, study the effect of Almi's loans on investments, sales and labour productivity of credit-constrained SMEs in Sweden with and without complementary private bank loans. They estimate a substantial increase in investments for the year in which the business receives its loan and afterwards, followed by increases in sales and productivity only for firms with 10 or fewer employees. Kärnä and Stephan (2022) estimate that the impact

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<sup>4</sup>Share of lending to households and non-financial corporations.

of Almi's loans on firm growth and productivity is larger for SMEs located in cities than for those in rural areas.

**Competition.** In the case of Sweden, the four biggest banks on the Swedish credit market in 2022 accounted for 66 percent of lending to households and non-financial corporations (Copenhagen Economics, 2023). As previously mentioned, in 2023, the big 5 UK banks supplied 41 per cent of total gross lending (British Business Bank, 2024a). Discussions on increasing concentration in the sector have prompted the Swedish Bankers' Association to commission the report Copenhagen Economics (2019), which indicates:

- Their net interest margin is among the lowest in Europe.
- Concentration levels are also below average among comparable countries.
- High levels of efficiency with operating costs among the lowest in the EU.
- Prices follow cost variations: the banks that have experienced the biggest declines in operational costs in the previous six years have also given the biggest price reductions to their customers.
- Low switching costs and high levels of customer switching.<sup>5</sup>
- High digitalisation.

While the percentages above suggest the UK market is less concentrated, the findings from Copenhagen Economics (2019), such as high levels of customer switching, indicate a higher competitive pressure in Sweden than in the UK.

**Market completeness.** Despite having mostly private institutions, we have not found any evidence in the literature that debt-lending markets in Sweden are incomplete, although we have not found it to perform necessarily better than the UK in our aggregate analysis of SAFE (see Section 6.3.1). Nonetheless, Figure 4 in Section 4.6 shows that in Sweden credit from all sectors to NFCs has represented a very high percentage of GDP for decades, and it has remained approximately around 10 per cent higher than 2008 levels (with the exception of Covid-19 period). Sweden also counts on state-owned financial institutions which are likely to at least partially meet the finance demand that commercial banks do not. Nonetheless, in Section 6.3.1's SAFE descriptive analysis, Sweden's aggregate performance overall in comparison to the UK is mixed.

An often cited example of banking success is that of Handelsbanken, founded in 1871 and one of the four largest banks in Sweden. Despite being a large private bank, has a decentralised structure and operation, where branches have high autonomy of decision making on their products. Furthermore, Handelsbanken relies on a relationship-based approach, maintaining close contact with their customers (Mayer et al., 2021). It is known for being the only bank that survived the Swedish banking crisis in 1991-2 without having to approach the government for support or tapping its owners for emergency capital injections Kroner (2010). It also significantly outperformed its peers during the 2008 financial crisis, during which it did not require or request state or share-

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<sup>5</sup> 38 per cent of customers changed provider of one or several financial products in 2017-2022.



holder support. (Handelsbanken, 2016; Mayer et al., 2021). It is the top rated bank in the UK by the Extended Performance Satisfaction Index (EPSI).

#### 4.4 The French Case

A dominant part of the French banking system is its co-operative banks. The concept of co-operative banks originated in the first half of the nineteenth century. Initially, these banks were formed by individuals in relatively similar economic situations. They could either focus on a specific sector or be more general in scope. Owned by their members, these co-operatives provided financial services to economic agents that large national banks were unwilling to invest in, as well as to people who were not served by large commercial banks (Richez-Battesti and Leseul, 2016).

Most co-operative financial institutions first emerged in France towards the end of the nineteenth century. Their goals were to combat usury, provide access to banking services and loans to those excluded from them, and support the development of their economic activities (Richez-Battesti and Leseul, 2016).

Girardone et al. (2009) find that mutual banks in the EU-15 countries are significantly more cost efficient than their commercial counterparts. Mäkinen and Jones (2015) find that co-operative banks are more efficient than both commercial and savings banks. In 2018, co-operative banks had a market share in SME lending of 35.8 per cent, 50.3 per cent and 39.6 per cent in Germany, France and Finland, respectively (McKillop et al., 2020). Flögel et al. (2023) estimate that, in July 2021, German savings banks accounted for 31.9 per cent of total business lending including self-employed, and co-operatives accounted for 22.4 per cent.

In contrast to the UK, in Europe, the market share of co-operative banks in the SME market is usually higher than their share in the total loan market, mainly in countries where co-operative banks are relatively important (Lang et al., 2016). Furthermore, co-operative banks demonstrated more resilience during the GFC than commercial banks, often increasing deposits and loans during that period (McKillop et al., 2020).

The French co-operative network, for instance, is characterised by a mixture between local co-operatives and stock market listed corporations. As described by Bülbül et al. (2013), co-operative banks are divided into three groups: Banques Populaires Caisses d'Épargne (BPCE), Crédit Mutuel (CM) and Crédit Agricole (CA). Each of these consists of a network of local banks, regional bank groups and a central institution, which are among the largest banks in France. The local banks are traditional private co-operatives; the central institutions are corporations with shares held by the local co-operatives and outside institutional and retail investors.

While not obliged by law, the local co-operatives restrict themselves to their region, which facilitates cooperation (since they do not have to compete with each other). The French co-operative banks are also linked by a 'solidarity mechanism' protected by law, implemented by agreements and/or regulations, and recognised by the central institution (Ladasic and Zosi, 2021). Usually, it is implemented through liquidity and capital transfer mechanisms and through mutualisation of loss (sometimes, via contributions to guarantee funds paid by affiliates) (Ladasic and Zosi, 2021). The co-operative networks covered by a solidarity mechanism generally includes the central body

and the different layers of regional or local banks which own it (Ladasic and Zosi, 2021).

Under the French Monetary and Financial Code (article L. 511-31) central bodies have statutory extraordinary rights and obligations provided by law with respect to the institutions affiliated to them, despite not holding (or only partially holding) the share capital of some of these affiliates. That is, even if the central body owns little or none of a local bank's share capital, the law still allows or requires it to intervene (Ladasic and Zosi, 2021). This contrasts with parent companies of capitalistic groups, whose powers over their subsidiaries are almost entirely derived from their equity ownership in these subsidiaries (Ladasic and Zosi, 2021). The central institutions of co-operative banks have the legal obligation to ensure the proper functioning of all their affiliated banks and their compliance with the applicable laws and regulations, in order to preserve the stability of the financial system and protect customers (Ladasic and Zosi, 2021).

Co-operative banks design regionally motivated strategies and often manage an investment fund dedicated to lending to regional firms. For this, as shown by Bezzon et al. (2024), the geographical, cognitive and social proximities between banks and businesses are essential. The authors conducted eight interviews with SMEs that received finance from co-operative banks and two interviews with regional banks in order to unveil the development of relationship between businesses and co-operative banks. While the finance provided consists of equity capital – as opposed to loans – provided by these banks' investment funds, the insights of Bezzon et al. (2024) are still informative about the French banking system. The relationship between these funds and businesses start from numerous meetings and events, which they organise or are invited too. These gatherings disseminate information about investment opportunities and place bank managers in direct contact with SMEs. This social proximity contributes to the building of trust. In addition to that, cognitive proximity, which denotes the technical understanding by investment funds about the business and its projects, is necessary for the correct evaluation of funding applications as well as the continuous management of the finance provided. Geographic proximity facilitates the formation of social and knowledge capital, and is the basis of regional banks' strategies.

The relationships between businesses and investment funds are close, but still required to follow a set of rules and uniform procedures. Interactions between businesses and investment funds are subject to an ethical code (on gifts, lunches, etc), internal compliance controls and prudential regulation. Investment managers make decisions collectively and all decisions are evaluated by the fund and supervised and audited by the French supervisor of banking and insurance undertakings (Autorité de Contrôle Prudentiel et de Résolution).

The contribution of investment funds goes beyond provision of finance to SMEs. Investment fund managers also connect businesses with other potential investors and intermediaries such as lawyers, accountants, etc, who can help produce and process information for the development of equity investment. Furthermore, banks and their investment funds collaborate in referring businesses to one another, offering different financing deals.

In addition to co-operative banks, French SMEs also count on Public Credit Guarantee Schemes (CGS), which began to be granted in 1980 by the "SOFARIS" program and was initially restricted to companies in the manufacturing and business services industries, but has expanded ever since. In 2013, the CGS became responsibility of the newly created Bpifrance, a public bank for invest-

ment (Gazaniol and Lê, 2021). Bpifrance, however, provides more than loan guarantees, it also offers direct loans and capital guarantees for investments, including venture capital and small-cap growth equity investments (Bpifrance). In 2022, for instance, it provided €565 million in unsecured innovation loans. Existing evidence shows positive impacts of Bpifrance' guarantees on business survival, sales investment and employment, as well as on bank lending volumes (Gazaniol et al., 2022; Gazaniol and Lê, 2021).

**Competition.** In 2021, the top 6 banking groups (which include the above cited co-operative groups) represented 82 per cent of the total assets of the sector (ACPR, 2021).

**Market completeness.** As previously mentioned in this and Section 4.2, co-operative banks perform as well as or better than their commercial counterparts, in terms of efficiency and during macroeconomic downturns. The public bank Bpifrance should also contribute for market completeness, since its focus is on SMEs. Descriptive analysis of the SAFE dataset in Section 6.3.1 for France shows that it outperforms Germany in rates of bank loan applications and presents similar rates of success.

## 4.5 United States: CDFIs

CDFIs were created to provide financing to households, businesses, and real estate developers in low- and moderate-income communities throughout the country. Following banking liberalisation, local banks from many areas left and CDFIs were the alternative found to replace them (Appleyard, 2011). They are structured in a variety of ways – as deposit-taking financial institutions (banks and credit unions) or as nondepository institutions (loan funds and venture capital funds). With the exception of venture capital funds, CDFIs primarily supply debt capital to different sectors, including affordable housing, small businesses, community facilities, and various consumer credit needs (Sanchez-Moyano and Simms, 2023).

Deposit-taking CDFIs are regulated by state and federal banking regulators, but CDFI loan funds and venture capital funds are not. Meanwhile, all CDFIs are typically certified by the CDFI Fund at the U.S. Treasury Department. Certified CDFIs are eligible to apply and compete for grants and low-cost debt capital from the CDFI Fund, which was established by the Riegle Community Development and Regulatory Improvement Act of 1994. In 2022, the U.S. Congress appropriated the CDFI Fund \$295 million through the annual appropriations process (Community Development Financial Institutions Fund, 2022).

Furthermore, certification provides eligibility for resources from other government agencies and some private funders such as banks, who are incentivised by the Community Reinvestment Act to provide CDFIs with assets for loans in exchange for credits that receive consideration when applying for branches, mergers, and acquisitions, for instance (Darryl E. Getter, 2023). In addition to public and private institutions, nondepository CDFIs also receive funding from philanthropic sources (Sanchez-Moyano and Simms, 2023).

In 2016, the total number certified CDFIs were 1049 and, in 2023, 1487. Most of this growth happened from 2019 onwards, when the sector grew almost 40 per cent. Furthermore, credit unions accounted for 66 per cent of the CDFIs' assets in Q1 2023, which totalled \$452 bn (The



Federal Reserve System, 2022).

As seen in Section 2.1, CDFIs already operate in the UK. However, none of them take deposits as they don't have banking licences. Therefore, they have generally relied on government grants, private investors and philanthropists. As also already mentioned, new effort by the Government and private institutions, such as Lloyds Bank, has been made to support and expand the sector. The work of CDFIs further demonstrates the market failures in the banking market, where viable businesses have finance applications denied. As *Responsible Finance* (2024) mentions, 99% of the businesses which borrowed from CDFIs in 2023 had previously been declined by another lender; yet, 89% of loans issued to small business were fully repaid. Therefore, the recent investments in the sector are encouraging steps towards better finance provision.

**Competition.** The U.S. banking system is considerably less concentrated than European systems. *Covas and Calem* (2021) calculate that the top 5 banks held 46 per cent of bank assets in 2021, while that number was 68 per cent in the UK and 85 per cent in France.

**Market completeness.** Despite declining, the market share of community banks in the U.S. is representative, mainly in rural areas. In terms of number of banks, they accounted for 98.8 per cent in 2000 and 97.1 per cent in 2020. Meanwhile, their assets, deposits and loans accounted for 28.3 per cent, 32.9 per cent and 29.1 per cent in 2000; and 13.5 per cent, 13.9 per cent and 17.8 per cent in 2020, respectively. In rural locations, their deposits represented 65.9 per cent in 2020 and, in urban locations, 11.6 per cent (*Matt Hanauer and Ziadeh, 2021*). We expect that the relationship approach operated by them as well as CDFIs along with government funding support would significantly contribute to completing the market.

## 4.6 Aggregate Analysis

Here we show some national level statistics, mainly sourced for Germany from the Bundesbank, due to data availability. Nonetheless, since each of the three bank types we have discussed plays a substantial part in the German banking system and given that different cross-county studies have attested the relationships we observe in this sector's plots, we consider that these statistics are still informative of the general performance that these banks might outside Germany or would have following a banking system reform.

Figures 4 and 5, respectively, display credit from all sectors to non-financial corporations (NFCs) from the Bank for International Settlements (BIS) as a percentage of GDP and its growth in percentage points since 2008 for the G7 plus Sweden. The most striking feature is the negative trend for the UK seen in Figure 5, in contrast to the other countries, with the only exception of Italy.

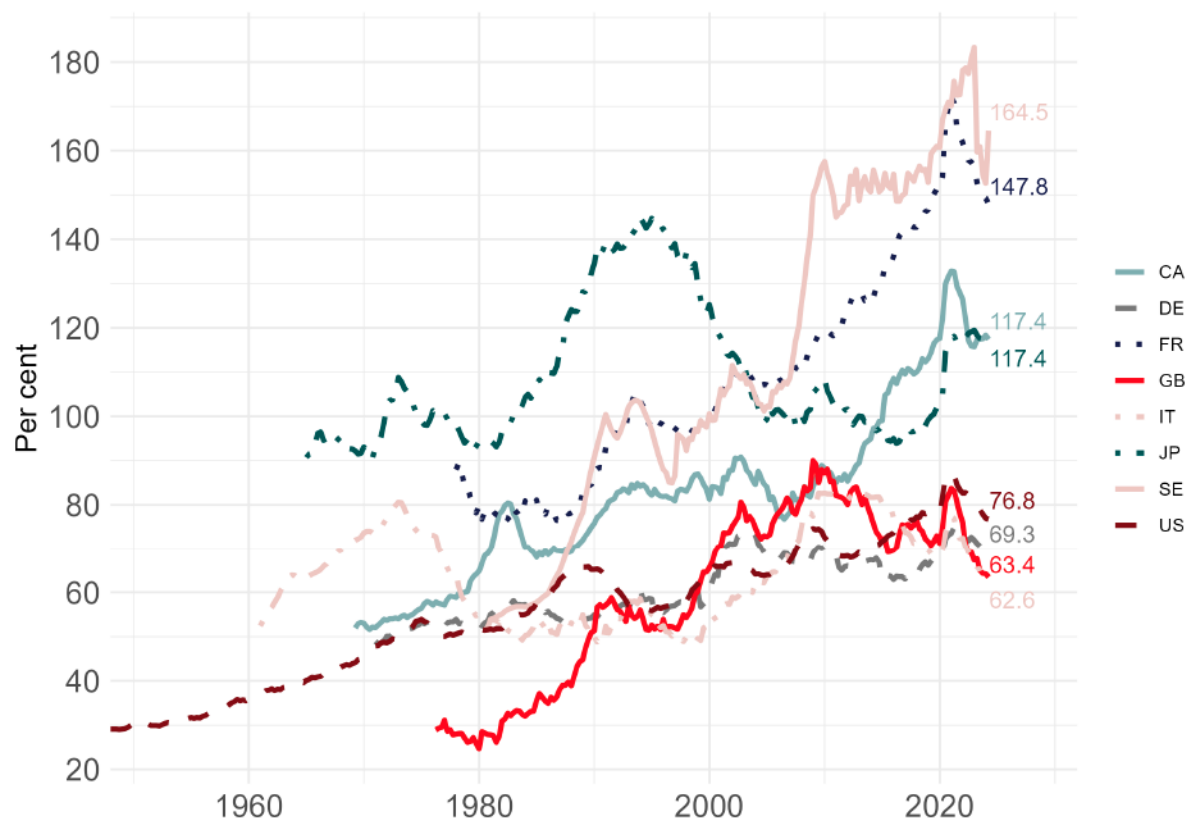
Furthermore, Figure 4 shows that credit to NFCs in Sweden and France has massively increased in proportion to GDP since the beginning of 1980's. In the case of Sweden, this growth lasted up until 2008. It was fueled by rising domestic demand and investment, which was made viable by an average annual growth in exports of 7.2 per cent between 1994 and 2008, facilitated by favorable exchange rates (*Barredo and Buendía, 2024*). In this period Sweden also implemented various structural reforms, which contributed to, amongst other things, a more friendly environment to SMEs and startups. These included temporary financial aids, administrative support for SMEs

and measures to promote management skills (Barredo and Buendía, 2024). In addition corporate tax rates were reduced from 55 to 30 per cent and the investment funds system was scrapped. The fund allowed companies to transfer 50 per cent of their pre-tax profits every year into an investment fund, which could then be used for investment projects subject to certain rules and government approval. However, it meant that highly profitable and established incumbents paid in practice less tax than entrants and small businesses, which could not yet profit from the investment funds system (Schnyder, 2012).

France, on the other hand, kept its credit to NFCs growing even after 2008 until Covid-19. This was mostly due to debt raised by French multinationals and state-controlled companies, which borrowed to finance mergers and acquisitions, to fund capital expenditure needs or future acquisitions, or as liquidity reserves against takeover attempts, while the costs of holding cash were relatively low (Amiot and Broyer, 2019). The very low cost of borrowing also benefitted SMEs, which used it to take out bank loans (Amiot and Broyer, 2019).

Figure 6, for instance, compares the cost of loans for SMEs and large businesses across the UK, France and Sweden. France shows the lowest rates, with a negative trend from 2012 to 2020. Sweden rates sharply dropped after 2008 but soon after rose 1.5 percentage points with a peak in 2012 and then decreasing again up to 2019, with its lowest levels reaching 1 and 1.5 per cent for large business and SMEs, respectively. The UK rates also dropped after 2008 but soon stabilised at higher levels. Between 2011 and 2019, interest rates charged from large firms varied between 2 and just over 2.5 per cent, while SMEs faced rates between 3.5 and 3 per cent. Unfortunately, OECD (2024), from which we source these data, does not provide the same information for Germany.

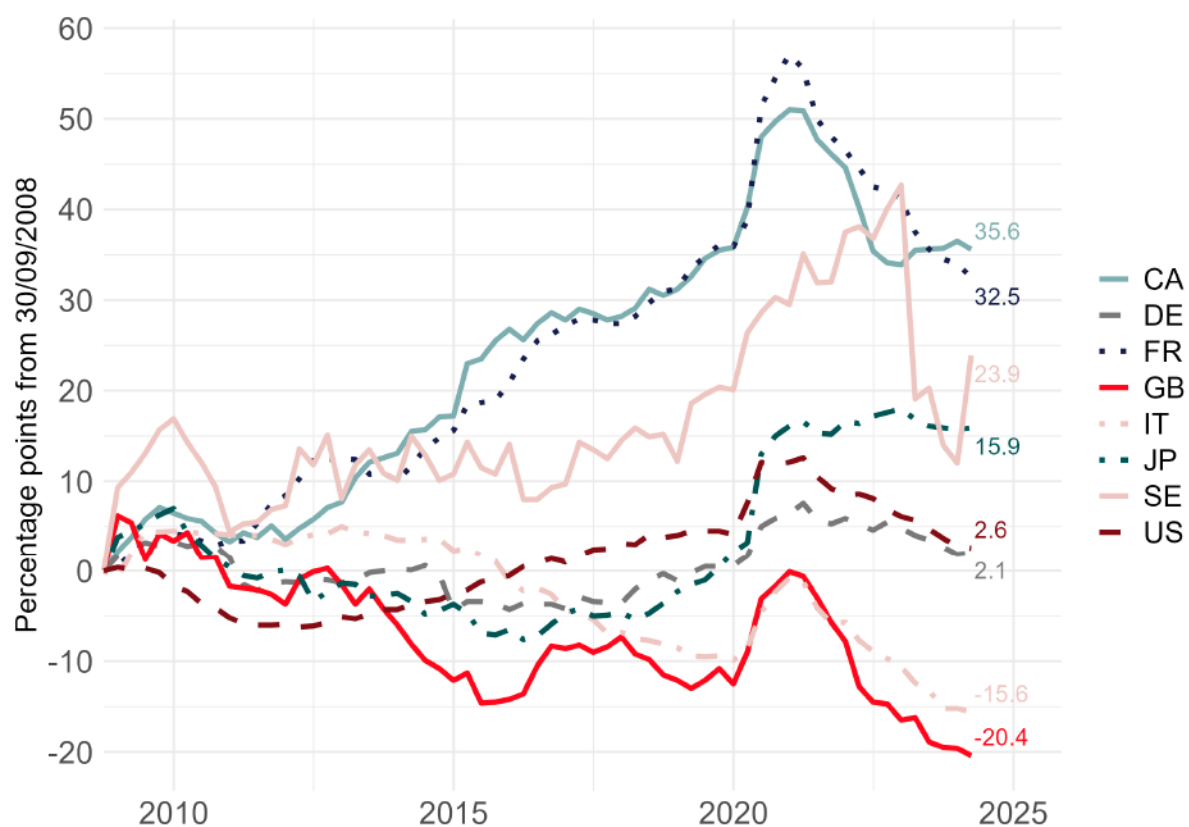
Figure 4: Credit from all sectors to NFCs (% GDP, adjusted for breaks)



Source: BIS

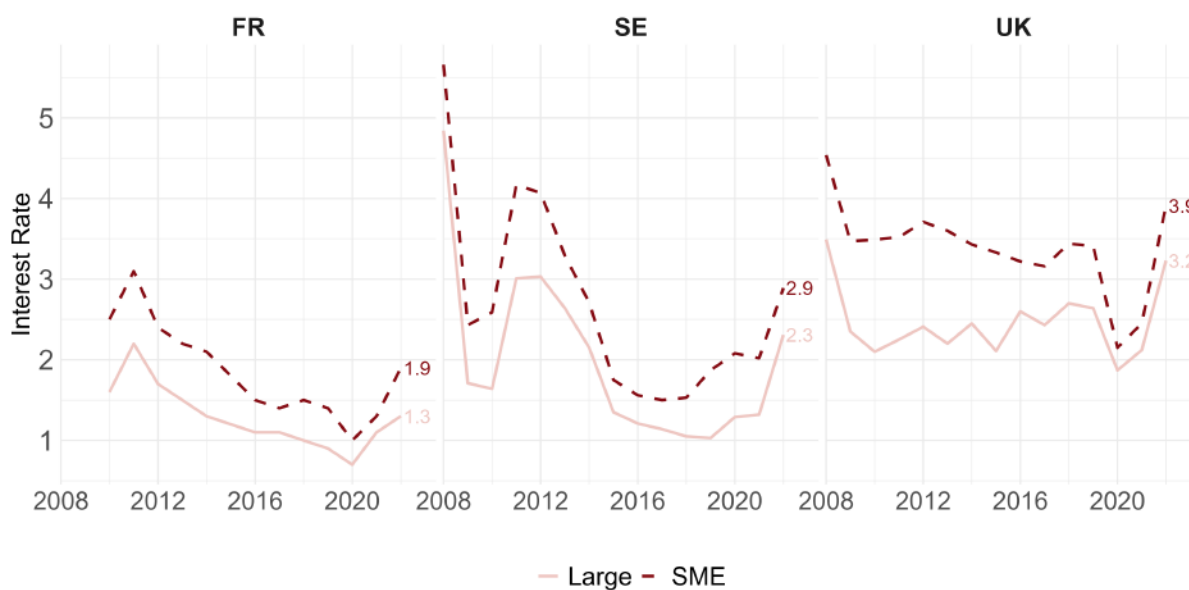


Figure 5: Change in credit from all sectors to NFCs (index, adjusted for breaks)



Source: BIS

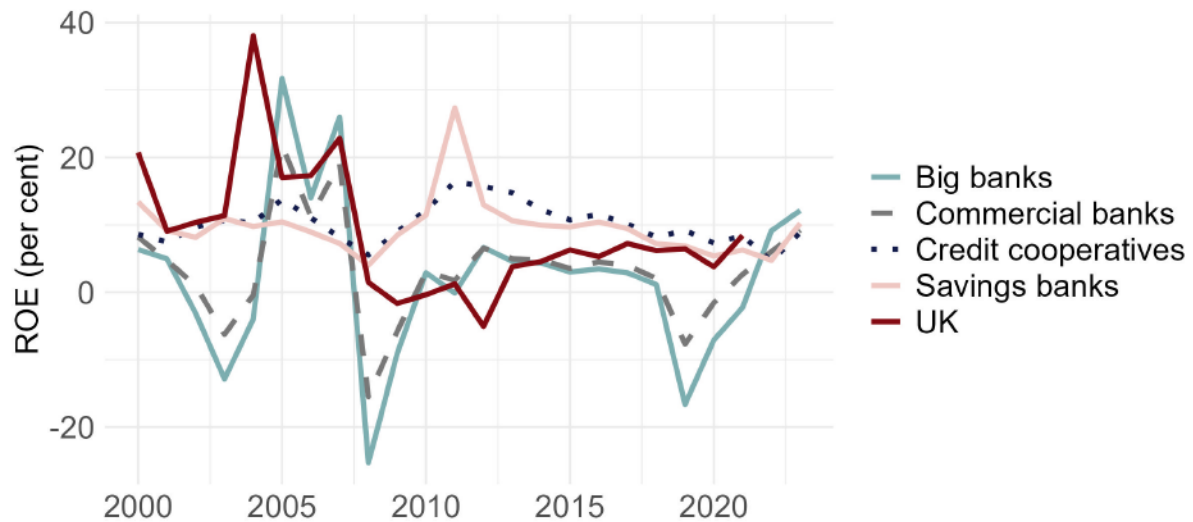
Figure 6: Average bank loan interest rates



Source: OECD (2024)

Figure 7 shows return on equity (ROE) of German banks by type. It demonstrates the lower volatility of savings and co-operative banks, with lower peaks, but also much less dramatic drops.

Figure 7: German banks' ROE before tax

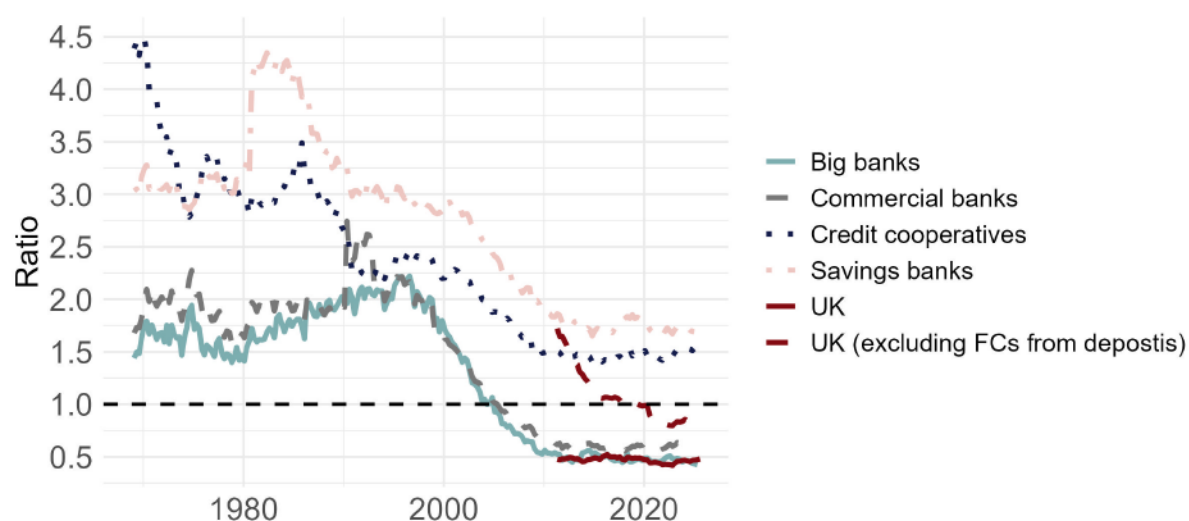


Source: Deutsche Bundesbank, BoE

Note: "Commercial banks" include "Big banks".

Figure 8 shows the ratio of bank outstanding lending to non-financial corporations (NFCs) over deposits of all domestic enterprises in Germany, that is, we cannot exclude financial corporations' deposits. We see that this ratio has in general decreased over time for all bank models, stabilising around 0.4 for commercial banks (including big banks) while remaining above 1.38 for credit cooperatives and 1.65 for savings banks. The figure also contains the UK ratio for which data is unfortunately available only from 2011. In the UK case, we can separate deposits of financial corporations, so we present ratios based on both deposit aggregates. Considering deposits from all corporations (the most comparable to the German banks), the lending-to-deposit ratio has been stable at around 0.5, considerably lower than the figures of German relationship banks. However, when we restrict deposits to NFCs, the ratio starts at 1.7 in 2011, but drops to 0.88 by July 2025. This pattern is the result of a continuous increase in deposits since 2011 by NFCs while these companies had declining amounts of lending until 2015, when the trend reversed.

Figure 8: German banks' ratio of lending to domestic enterprises (NFCs) over deposits of domestic enterprises compared to UK ratio



Source: Deutsche Bundesbank and BoE

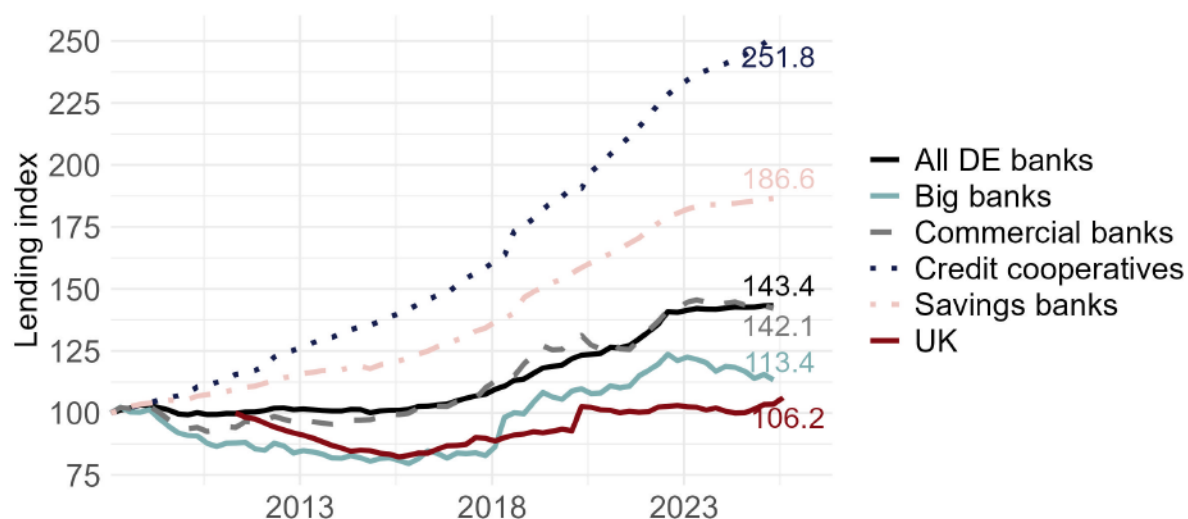
Notes:

- "Commercial banks" include "Big banks"
- Deposits in German banks include financial corporations' deposits

Figure 9 displays nominal growth of bank outstanding lending to domestic enterprises and self-employed in Germany and in the UK. It shows that, despite savings banks and co-operatives having maintained overall positive ROE, they have sustained and increased their lending to businesses over time, with little fluctuation. Meanwhile, commercial banks' lending is observed to fall following 2008 by over 7 per cent. Big banks' lending drops just over 20 per cent. Commercial banks recover their 2008 levels in 2015 and big banks only by 2019. UK lending only fully recovers with the start of the Covid-19 pandemic. Total bank lending to NFCs in Germany has grown over 40 per cent since 2008. In the UK, this number is just over 6 per cent.



Figure 9: UK and German banks' lending to domestic enterprises (NFCs) and self-employed

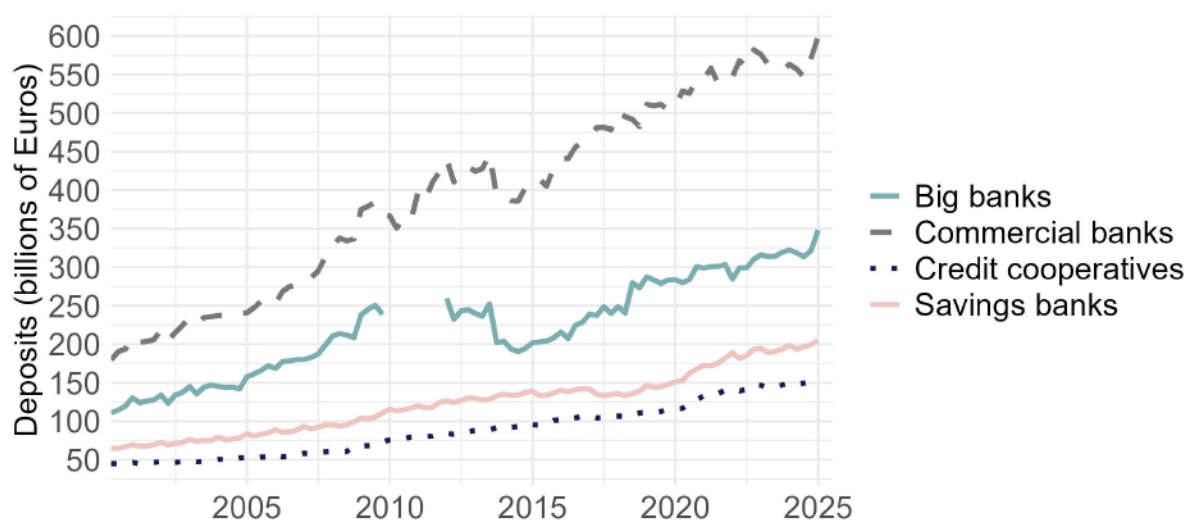


Source: Deutsche Bundesbank, BoE

Note: "Commercial banks" include "Big banks".

Figure 10 presents the sum of sight, time, savings and bonds deposits from German enterprises. It is clear that commercial banks receive by far the largest share of enterprises' deposits in Germany, with a volume almost 3 times that of savings banks in 2024.

Figure 10: German banks' deposits from domestic enterprises (in nominal values)



Source: Deutsche Bundesbank

Note: "Commercial banks" include "Big banks".

The higher stability of decentralised banks (not only in Germany) illustrated in this Section and also cited in the literature review in Section 4 (also see Bolton et al. (2016) for a model of rela-

tionship and transactional banks in Italy) can be explained by various factors, such as

- Banks focused on relationship lending are likely to smooth lending through economic cycles, that is, they smooth contract terms, accepting potential losses for the bank in the short term which are recouped later in the relationship (Boot, 2000);
- Savings banks and cooperative banks focus on the retail market (deposits and lending) and are often risk-averse, which prevents them from taking part in capital markets and purchasing complicated securities (Cassell, 2020; Richez-Battesti and Leseul, 2016);
- The reliance on deposits also provides more stable funding. Existing evidence shows that bank lending was less affected by the GFC when the bank was more reliant on core deposits and equity relative to wholesale sources (Cornett et al., 2011);
- Although cooperative banks might be less capitalised than commercial (centralised) banks, they present lower volatility of return on assets (Hesse and Cihák, 2007).

Handelsbanken UK, for instance, has stated in conversation for this report, that they expanded during GFC due to new clients operating in sectors which transactional banks had made a decision to exit due to their sector-level focus, whereas Handelsbanken could look at each customer individually to assess their underlying credit quality. This shows that relationship banking can not only reduce information asymmetry and hence the risk banks faces when lending, but also has the potential to contribute to lower SME debt aversion by reassuring credit support during difficult times and thus lowering the risk SMEs perceive from borrowing, in particular when demanding personal guarantees are required.

The last 15 years have seen the growth in non-bank lending not only in the UK, which we might conjecture as a substitute for bank lending and an alternative to relationship banking. The performance of these lenders during downturns, however, is currently mixed but not extensive. For instance, Gopal and Schnabl (2022) find that bank lending to small businesses declined permanently in the US after the 2008 financial crisis but that non-bank lenders were able to offset the decline by expanding their lending. Nonetheless, Gopal and Schnabl (2022) also notes that non-bank lending also dropped during the GFC, but once recovered, it continued to grow whereas bank lending stagnated.

Aldasoro et al. (2025) using global data on syndicated loans by banks and non-banks to investigate non-bank lending and the role of lending relationships during financial crises. They find that non-banks reduce their credit to non-financial firms by 19 per cent more than banks during a financial crisis in the borrower country. They also study the role of relationship, which they proxy in terms of duration and frequency of previous interactions. Their results show that banks on average have stronger relationships with their borrowers than non-banks, both in terms of duration and frequency. In addition, for the same relationship strength, benefits in terms of higher loan amounts are greater during crises if the relationship is with a bank rather than a non-bank. Overall, relationships with non-banks seem less valuable in general, leading to less support during crises.

## 5 Appraisal of Alternative Lending Systems

### 5.1 Summary

Based on the previous sections, here we answer the research questions:

*What are the characteristics of those approaches that make them distinct from the current UK model (e.g. transactional versus relationship-based approaches to lending decisions)?*

*What changes would be needed in the UK SME lending landscape for such alternative approaches to be effective?*

Based on Section 4, both Germany and France operate banking systems for which relationship and regional focus are characterising features, in contrast to the UK, where a centralised approach, based on hard information is the norm. France also has a public bank which offers various types of finance to SMEs, not only guarantees for stimulating private banks' lending but also direct capital provision. On the other hand, Sweden, via its state bank Almi, represents a more targeted approach to the identified failures in Section 3, since Almi only seeks to support businesses when they cannot borrow from private financial institutions.

These countries' examples naturally suggest two potential policies:

- a network of relationship-based banks across the UK implemented via a new Sparkassen-type network or via mutuals or CDFIs;
- state banks focused on lending to specific businesses who cannot access finance from private markets.

The implementation of mutuals faces the problem previously mentioned in Section 2.1.

Alternatives combining features of the above policies as well as making use of the UK's own existing infrastructure could possibly be implemented, but in this report, the proposals being examined are options that have worked well elsewhere.

The implementation of such a network of relationship lending in the UK could take the form either of a non-regulated or a regulated financial institution. The former could be a non-depository lender or a deposit-taking lender with sovereignty immunity. The latter, in particular, would encounter a few challenges to implementation and operation. Firstly, to start operating, the new fully regulated banks would need to meet initial capital requirements as well as have a banking platform. Secondly, maintaining their day-to-day and emergency liquidity would require some central institution. Lastly, these regional banks would have to generate enough income above costs and defaults in order to build up their equity and meet capital requirements.



## 5.2 Discouraged Borrowers

As Section 2.2.1 described, the discouragement of SMEs from applying to finance is very large, and also includes firms that would have received finance if they had applied. During phase 2 of this project, we investigate, among other related questions, the determinants of being a discouraged borrower, in particular the quality of relation with a business' main bank. Other factors include the existence of a mentor, business size and credit risk.

We also study the inefficiency of discouragement, that is, the proportion of discouraged borrowers who would likely have been accepted had they applied for bank finance. The results from offer an estimate of the increase in lending that would be generated only from tackling discouragement.

## 5.3 International Evidence and the UK

Section 4 outlined the approaches to banking of other countries and their results. In both Germany and France, relationship banking and regional focus are important features of the lending process, in contrast to the UK, where a centralised approach, based on hard information is the norm (see Section 2.1). Furthermore, the French public bank Bpifrance offers different sources of investment capital, most of which can be accessed via businesses' own banks, similarly to the BBB in the UK.

Section 4 also reviewed Sweden's experience, in particular that of the state-owned lender Almi, which provides loans, venture capital as well as support and guidance in business development for small and medium-sized enterprises (Almi). Almi does not intend to compete with commercial banks, instead it works to meet the finance demand of start-ups and SMEs with growth potential but which cannot access funding from commercial banks. Almi also has consultants across Sweden, many of whom have run their own businesses and are thus more familiar with what SMEs face. Therefore, differently from the UK, Almi has a more direct approach in helping businesses access finance than the BBB, who tends to act via incentives to financial institutions rather than directly interacting with businesses. However, in contrast to the systems in France and Germany, it represents a more targeted measure to completing the market.

## 5.4 A Network of Decentralised Relationship-Based Banking

Relationship banking is characterised by the use of "soft" information which leads to lower information asymmetry between borrowers and lenders. This information is gathered through repeated interactions between the parties, during which the lender learns about the borrower's business. The time and resources dedicated to this type of banking as well as the "soft" information it entails mean that it is mostly efficiently implemented in a decentralised system. If regionally focused, a bank (or other financial institution) will have greater knowledge and understanding of the context where a business operates and its quality as a borrower. If we consider the acquisition of this knowledge as a fixed cost, the more regional customers the bank has, the lower the average cost per customer. In economic terms, the bank faces increasing returns to scale in this knowledge cost.

It is also clear that relationship banking of co-operative banks and Sparkassen banks has demon-

strated better stability through economic crisis and better support for SMEs than commercial banks (McKillop et al., 2020, Mayer et al., 2021).

Furthermore, CDFI's operation in the UK indicate that a closer relationship accompanied by support services, which help SMEs prepare proposals or business plans, are valued by SMEs. In 2014, business mentoring was offered by 50 per cent of all CDFIs, making it the most common service provided (Stensrud, 2017).

Evidence from our market engagement also supports the importance of this kind of service, indicating that SMEs would benefit from advice, coaching, and liaising with financial institutions' staff with knowledge in their specific industry (see Section A.4).

The importance of relationship banking and advisory services which connect SMEs and their business' contexts with their lenders was also mentioned in our engagement with financial institutions. In our conversation, Handelsbanken UK also noted how businesses enjoy being able to speak to someone and how their customer base expanded during the GFC when some main banks divested of customers as part of their capital management, irrespective of the underlying credit quality of those customers. While Handelsbanken offers relationship banking to every one of its customers, the bank mostly works with established enterprises, is weighted more towards property companies and larger SMEs, and also focuses on personal banking services, e.g. for directors of such companies, professionals and entrepreneurs. Therefore, there is still ample room for other alternative lenders offering relationship banking to other under-served segments of the SME population.

In that, CDFIs can have an important impact. British Business Bank (2022a) emphasises their role with nearly half of their lending going to the UK's 35 per cent most deprived areas.

Stensrud (2017) also notes that, in 2015, CDFIs reported annual provisions and write-offs of 12.6 per cent and that 15.9 per cent of loans were in arrears for 90 days or more, which, despite higher than some commercial lenders, are lower than for other organisations and schemes that provide finance to high-risk SMEs and microenterprises. In 2019, write-offs and provisions represented 10.82 per cent of CDFIs' Micro and SME lending (Responsible Finance, 2019).

Given the performance that relationship-based lending shows in the SME market and during economic downturns, we will estimate the expected effect of relationship banking on lending outcomes and on macroeconomic aggregates such as investment and output. Lending outcomes will especially the probability of lending as well as the change in lending under the counterfactual scenario.

## 5.5 A Targeted Approach

Based on Section 4.3 and as described in Section 5.3, the Swedish case illustrates a more targeted approach to closing the finance gap to SMEs. Through the state-owned bank Almi, in addition to lending, the Swedish government can provide direct advice to businesses, similarly to savings banks in Germany. Furthermore, the provision of funds to Almi during the GFC in order to support local economies and the resulting increase in lending shows the advantage that pub-

lic ownership has over private banking systems in guaranteeing the support of businesses during macroeconomic downturns.

Although we do not include the Swedish case in our evaluation due to data limitations, it does provide a potential, the Almi case suggests a few potential steps:

- Regional advisors: this could take the form of providing tailored regional SME support for exporting, but the financial advice would not be necessarily provided by the DBT.
- Direct lending (similarly to the Development Bank of Wales) which could be targeted at those who have been rejected by standard lenders.
- Top-up lending: directly provide a share of a business loan, complementing the loan from private financial institutions.

## 5.6 Relationship Lenders Implementation

The implementation of a network of relationship lenders in the UK faces different challenges. For instance, time of implementation could be considerably long, with benefits seen only after substantial upfront investment of resources into, for example, regulatory examinations and bank infrastructure. It is also important to have in mind to what extent the culture, history or political context of those countries with alternative banking systems contribute to the success of those systems. Germany, for example, is a robust federal state where regional subdivisions possess extensive regulatory authority. This authority is further delegated to local municipalities, particularly in large municipal districts. The regulatory decisions made by regional authorities impact the retail banking systems of Landesbanken and Sparkassen (Corbet and Larkin, 2022).

In terms of practical challenges, the creation of such a network faces two general paths: a regulated and a non-regulated routes.

### Non-regulated Route

There are two broad non-regulatory routes. The first avoids the regulated activity of retail deposit taking. Since it would not take retail deposits, it would not need a banking license and not be subject to capital requirements.

This entity would provide finance directly to SMEs rather than through private financial institutions. This model is analogous to that operated in Sweden (e.g. Almi).

The second would use the provision in the Financial Services and Markets Act which provides sovereign immunity for government agencies. This would extend to local government. The entity could then take deposits and provide lending to businesses.

### Regulated Route

The regulated route would attempt to create a network of regional banks either via a Sparkassen-



type model or via mutuals or by granting banking licenses to CDFIs and promoting their expansion.

While SME lending is usually loss-making, that would not be the challenge in facing regulators. Instead, they would be mostly concerned with the capital requirements and crucially access to further capital (to replenish the losses eroding the existing capital base). Capital requirements would be high given that each bank would operate in a high-risk market and be concentrated within an area. Nonetheless, the construction of a risk-pooling structure which banks jointly contribute to, analogously to the Sparkassen's Institutional Protection Scheme, could count towards regulatory approval. Furthermore, the replication of the Sparkassen's commitment to lend to almost all of its community would be restricted by the required capital-lending ratio of 33 to 1. Regulators would try hard to approve authorisation quickly and have a mobilisation route which allows banks to establish quickly but with a speed limit. The best case would be three years from application to fully up and running.

The higher capital requirements would also make the bank's products more expensive to customers, posing the question of whether businesses are willing to pay higher interest rates for a bank which seeks to provide finance in both up- and downturns.

Regarding Basel III regulation, the EU requires it to be applied to all of its banks. However, since leaving the Union, the UK has chosen to allow Small Domestic Deposit Takers (SDDT) to be subject to a simpler regime, which is temporarily given by the Interim Capital Regime until the final risk-based capital framework for SDDTs is determined. One of the criteria for a bank or building society to be defined as a SDDT is to have an average up to £20 bn in assets over past 36 months.

For liquidity maintenance during downturns, an emergency liquidity pool or something similar to the Counter Cyclical Capital Buffer which builds up in good times and is released in downturns could be created. For day-to-day liquidity an entity like the Norinchukin Bank from Japan could be an alternative. This is a national level financial institution of co-operative organisations, whose members include agriculture, fishery and forestry co-operatives. In terms of governance, Germany follows a two-tier board system while the UK operates unitary boards. The governance structure of the new regional banks could then combine a unitary board with an advisory committee appointed by mayors. The committee in turn would select some or all of the board. Under the regulatory option, regulators would probably insist on some wholly independent directors and some banking experience amongst executives and non-executives.

Another two challenges the creation of these new banks would face include the necessary initial capital and the cost of generating their banking platform. For the former, levelling up funds could potentially be used or recently formed depository institutions like Ecology Building Society could offer possible alternatives. One solution for the latter could be to resurrect an earlier pro-competition idea of "the Bank in a Box"<sup>6</sup>, where new entrants could take advantages of a ready built technology platform.

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<sup>6</sup>One version of the Bank in a Box was to take advantage of (then) public ownership of Lloyds and NatWest and forcing them to create the Bank in a Box from their technology platform.

## 6 Evaluation Methodology

### 6.1 Summary

In this section, we answer the question

*What analytical framework can be established to assess additionality of the alternative approaches in the UK compared to the counterfactual of the current commercial banking system continuing?*

In order to assess the determinants of discouragement and its efficiency, we use a probability model of being discouraged and of being successful upon application. In order to estimate the effect of the proposed reforms in Section 5, we use a probability model for the estimation of the finance gap between the UK and Germany and between the UK and France using the SAFE. This provides an indication of the potential effect on lending of the reforms. To estimate the final effect on macroeconomic variables (e.g. output, consumption, investment) and counterfactuals, we construct a macro structural model.

While the models we use for the predictions of lending outcomes for the UK under the alternative systems of Germany and France are able to take into account various variables relevant for the finance application choice of businesses and the application acceptance choice of banks, they rely on the assumption that businesses' expectations and preferences in the UK would mirror those of French and German businesses, conditionally of course on UK businesses' characteristics. That is, if offered relationship banking, a British enterprise would be as likely to apply for finance as German/French enterprise with the same characteristics. Analogously, it is assumed that the new UK relationship banks would assess and make their lending decision in the same way as German and French banks, such that the probability of accepting an application from businesses with the same characteristics would be the same between German/French banks and the new UK relationship banks.

While these might be seen as strong assumptions, our market engagement and our conversation with Handelsbanken UK indicate British businesses are well receptive to relationship banking. In addition, like in Germany and France, they seem to have a preference for bank lending (see Figure 2).

Furthermore, while cost concern and debt aversion might be characteristics of UK businesses, these are based on the current banking system. Even though, relationship banks might charge slightly more than other banks, they are more stable and defined by their continuous support to businesses through difficult times, which we expect to reduce businesses' perceived borrowing risk and, consequently, reduce their debt aversion.

Another factor which can also dampen the actual effect of new UK relationship banks is regulation. If regulation in the UK is substantially different than in Germany, such that it would limit the new banks' ability to lend, overall lending would not be as high as we predict. In addition to the fact that regulation can always be enhanced, we note that all three countries have agreed to the same minimum capital requirements, established by the Basel Accord.

## 6.2 Discouragement

### 6.2.1 Literature

Discouragement has been widely acknowledged as a significant phenomenon in debt markets (Berger et al., 2021). The issue of borrower discouragement is critical given that undercapitalisation during initial phases of a SME's development can lead to subsequent underperformance (Marlow and Patton, 2005). Prior research indicates that discouraged borrowers are twice as common as those who have been formally rejected, with substantial cross-country variations in borrower discouragement (Qi and Nguyen, 2021). Given the potential for suboptimal economic outcomes resulting from borrower discouragement (Cowling et al., 2016; Hutton and Nightingale, 2011), empirical evidence on this phenomenon is particularly important for designing policies that improve firms' access to finance.

Surprisingly, while credit rejection has received significantly more attention in the literature, there are relatively few empirical studies that attempt to explain the widespread prevalence of discouraged borrowers (Ferrando and Mulier, 2022). Existing research has primarily focused on factors such as financial literacy (e.g., Aristei et al., 2024), gender and racial minority status (e.g., Ghosh, 2023; Mercado, 2025), past credit experiences, firm-level risk indicators (e.g., Cowling and Sclip, 2023), and the innovativeness of SMEs (e.g., Brown et al., 2022) in influencing the likelihood of borrower discouragement. Additionally, some studies have examined the role of country-level institutional quality, including corruption, law enforcement, and judicial efficiency, in shaping variations in borrower discouragement (e.g., Ullah Khan et al., 2021). These studies generally treat insufficient demand and credit self-rationing as demand-side phenomena, implying that the decision not to seek credit stems from borrower choice rather than supply-side constraints.

Building on the analytical framework of Kon and Storey (2003), we argue that borrower discouragement reflects a trade-off between the marginal return on financial capital and the effective cost of borrowing. In other words, supply-side market failures influence a firm's decision to participate in the bank credit market, even when there is a clear need for external finance. While previous empirical studies, such as those by Mol-Gómez-Vázquez et al. (2019) and Wernli and Dietrich (2022), have examined how bank market power and bank-borrower relationships—measured through the number of banking relationships—affect borrower discouragement, our study takes a more direct approach. We utilize responses from survey questions to construct a more precise measurement of bank-borrower relationships. To further strengthen the theoretical foundation of our research, we develop a theoretical model that predicts the impact of bank-borrower relationships on SME participation in the credit market. We then empirically test these theoretical predictions to provide a more comprehensive understanding of borrower discouragement.

### 6.2.2 Hypothesis

We extend the analytical framework of Kon and Storey (2003) to investigate the role of the bank-borrower relationship in the need for external finance and non-participation. In this framework, firms in need of external finance weigh the costs and benefits of applying for a bank loan, considering their firm type and the screening quality of banks. There are two types of firms among potential borrowers: good (safe) firms and bad (risky) firms. Likewise, there are two types of banks: soft banks, which use relationship-based lending technology, and hard banks, which rely



on transaction-based lending technology. Hard banks screen borrowers solely based on hard information, whereas soft banks incorporate both soft and hard information. Regardless of bank type, lending is only profitable when provided to good firms, as only these firms have positive net present value (NPV) of projects.

Credit markets are characterized by asymmetric information—firms are aware of their own risk levels and the quality of their investment projects, but banks are not. To mitigate this information gap, banks conduct screening to determine a firm's type. However, screening is imperfect, leading to two types of errors: rejecting a good borrower (wrongly classifying them as bad) or approving a bad borrower (wrongly classifying them as good). Since soft banks use both soft and hard information, they have lower screening errors, which is particularly beneficial for good firms that lack strong hard information.

Therefore, firm type and bank screening quality influence a firm's decision to participate in the bank credit market when external finance is needed. This decision involves a trade-off between the firm's expected return on investment and the effective cost of borrowing, which includes application costs, interest payments, and opportunity costs. Bank type—and thus its screening quality—affects this decision through two key channels. First, higher screening errors result in higher interest rates in pooled loan contracts, assuming that both types of banks face the same cost of loanable funds and must break even. Second, screening errors increase application costs, as firms may incur sunk costs during the application process if their loan is rejected due to misclassification. Given that a strong relationship between SME and their bank should result in lower information asymmetry, we make the follow hypotheses:

**Hypothesis 1:** SMEs that have a strong relationship with their main bank are less likely to choose not to participate in the bank credit market when they need financing.

**Hypothesis 2:** SMEs that have a stronger relationship with their main bank are less likely to experience credit constraints upon application.

**Hypothesis 3:** The prediction error of non-participation for SMEs with a strong relationship with their main bank, based on a sub-sample of those without a strong relationship, will be more pronounced for those for whom soft information is more valuable.

**Hypothesis 4:** The prediction error of credit constraints for SMEs with a strong relationship with their main bank, based on a sub-sample of those without a strong relationship, will be more pronounced for those for whom soft information is more valuable.

### 6.2.3 Methodology

To understand the impact of the quality of relationship with their bank on SMEs' non-participation in the bank credit market, we estimate the following probit model:

we estimate the following probit model:

$$\Pr(\text{NON-PARTICIPATION} = 1 \mid \text{STRONG}, Z) = \Pr(y^* \geq 0) = \Phi(\delta \text{STRONG}, Z' \beta), \quad (1)$$

where "NON-PARTICIPATION" is a binary dummy variable for not participating in the bank credit market given the existence of the need for external finance. "STRONG" is our main variable of interest, denominating a strong relationship with main bank.  $Z$  is a vector of control variables.

The probit model analytically expresses the binomial probabilities  $\Pr(y = 1)$  and  $\Pr(y = 0)$  using the cumulative standard normal distribution function  $\Phi(\cdot)$  as follows:

$$\Pr(y = 1 | W) = \Pr(y^* \geq 0) = \Phi(W'\varphi), \quad (2)$$

where  $W$  is the vector of explanatory variables defined as  $W = (STRONG, Z)$  that generates  $y^*$  and  $\varphi$  is the vector of response parameters of  $W$ . The coefficients  $\varphi$  are estimated by maximum likelihood and their corresponding standard errors are asymptotically efficient. However, these coefficients give the impact of the explanatory variables on the latent variable  $y^*$ . The marginal effect of the explanatory variables on the probabilities of the occurrence of  $y = 1$  can be derived via the transformation from the coefficient to a probability.<sup>7</sup>

We construct a binary dummy variable for strong relationships (STRONG) based on responses to the following question: "Which of these best describes your relationship with your main bank?" A value of one is assigned to respondents who indicate that they "have a strong working relationship with the bank and feel they can approach the bank whenever needed." A value of zero is assigned to those who respond that "the relationship with the bank is fine, but the bank is primarily used for transactions, so there is rarely a need to approach the bank," or "do not have an active working relationship with the bank but wish they did." A zero value for STRONG therefore indicates a transaction-based lending relationship and an unmet demand for closer relationship among SMEs, whereas a value of one reflects satisfaction with relationship. Next, we construct a binary dummy variable for non-participation despite the need for external finance (NON-PARTICIPATION). This variable takes a value of one if the respondent did not apply for bank credit for reasons other than a lack of need for external finance. It takes a value of zero for those who have applied for bank credit given their need for external finance.

The main data for this paper comes from the SMEFM. This quarterly survey questions SMEs about their borrowing events in the past 12 months as well as their future borrowing intentions. The data has been used by banks, government, the Bank of England, and industry bodies to inform the debate on key issues regarding SMEs' access to finance. The interview respondent is the person in charge of managing the business finances.

Although the UK does not have relationship banking and the responses to the survey question above cannot be interpreted as an evaluation of relationship banking as that operated by co-operative and savings banks, the use of this question can provide an indication of the importance of a good relationship between bank and business. For instance, the alternative "have a strong

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<sup>7</sup>The marginal effects of the regressors tell us how much the (conditional) probability of the outcome variable  $y$  changes when there is a change in the value of a regressor  $z$ , holding all other regressors constant. The marginal effect of a particular regressor on the change in the probability can be derived either by using the probabilities tabulated in the cumulative normal tables (Stock and Watson, 2003) or computed using the Margins command in Stata (Williams, 2012).

working relationship with the bank and feel they can approach the bank whenever needed” can be seen to reflect at least one aspect of relationship banking, where SMEs feel comfortable in communicating with their bank, even if, in the UK case, this communication is not considered in the lending decision. Furthermore, the use of solely UK data, differently from our Section 6.3, avoids country-specific confounding factors which can explain differences in lending outcomes but which are not relationship banking.

Although we utilize 20 waves of survey data from Q3 2015 to Q2 2020, the question used to construct our main variable of interest – STRONG, which proxies for the quality of relationship between SMEs and their main bank – is only available from Q1 2016 onwards. As a result, the sample period for analysis is restricted to Q1 2016 to Q2 2020. Since the survey questions refer to the past 12 months, our empirical findings correspond to the period from Q1 2015 to Q2 2019. The sampling weight for each respondent assigns the probability of selection and has been applied in the quantitative analysis to ensure the data analysis reflects the population accurately.

To capture the need for external finance, we construct a binary dummy variable (NEED), which takes a value of one if the respondent explicitly indicates a need for external finance or has applied for bank credit – including bank loans, commercial mortgages, and bank overdrafts – even if they did not explicitly state they need. Additionally, it takes a value of one if the respondent did not apply for bank credit, but their reason for not applying was unrelated to a lack of need for external finance. For all other respondents, the variable takes a value of zero.

To measure credit constraints upon application, we construct a binary dummy variable (CONSTRAINT), which takes a value of one if the respondent reports any of the following outcomes when applying for bank loans, bank overdrafts, or commercial mortgages: (i) “being offered a smaller facility than you wanted,” (ii) “being offered a facility but with terms and conditions that SMEs didn’t want to accept,” or (iii) “being turned down for the facility.” A value of zero is assigned if the outcome is “being offered the facility wanted and SMEs took it.”

#### 6.2.4 SMEFM

This section presents a few descriptive statistics of the SMEFM subsample used in estimations. The weighted means in Table 2 show:

- 11 per cent of businesses have had a need for external finance in the previous 12 months.
  - Of those, 19 per cent chose not to participate in the market despite the need for external finance.
- Over all businesses with non-missing values, 22 per cent expressed to have a strong relationship with their main bank.
- Over all businesses with non-missing values, 28 per cent faced credit constraints upon application (as defined in our CONSTRAINT variable above).

Figure 11 shows that micro and small SMEs (fewer than 50 employees) are more likely to have a weak relationship compared to a strong relationship with their main bank. This is less so for



Table 2: Summary Statistics for Financial Constraints

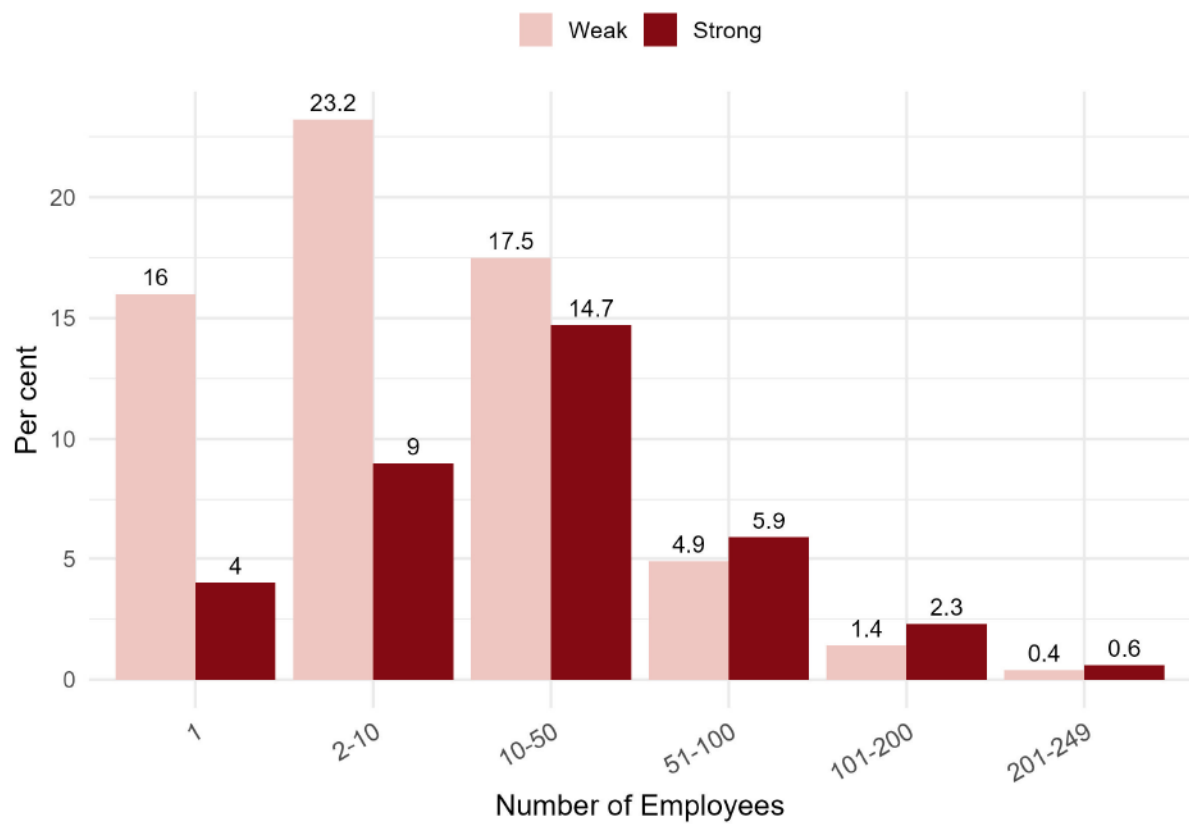
| Category                                                       | Value        | Frequency | Percent | Weighted Percent |
|----------------------------------------------------------------|--------------|-----------|---------|------------------|
| Businesses with need for external finance (value = 1)          | 0            | 78,139    | 85.83   | 0.887            |
|                                                                | 1            | 12,898    | 14.17   | 0.113            |
|                                                                | <b>Total</b> | 91,037    | 100     | 100              |
| Non-participating businesses despite need (value = 1)          | 0            | 11,463    | 88.87   | 0.812            |
|                                                                | 1            | 1,435     | 11.13   | 0.188            |
|                                                                | <b>Total</b> | 12,898    | 100     | 100              |
| Businesses with strong relation with the main bank (value = 1) | 0            | 51,432    | 63.47   | 0.778            |
|                                                                | 1            | 29,598    | 36.53   | 0.222            |
|                                                                | <b>Total</b> | 81,030    | 100     | 100              |
| Facing credit constraint upon application (value = 1)          | 0            | 3,989     | 80.46   | 0.716            |
|                                                                | 1            | 969       | 19.54   | 0.284            |
|                                                                | <b>Total</b> | 4,958     | 100     | 100              |

Source: SMEFM (Q1 2015 to Q2 2019)

medium sized SMEs (51-249 employees) which are slightly more likely to have a strong relationship compared to weak. Overall, a far larger proportion of SMEs have a weak relationship with their main bank than a strong relationship. When looking at turnover, we see the same is true, with businesses who report a turnover up to £1m being more likely to have a weak relationship but firms above £1m in turnover more likely to report a strong relationship.

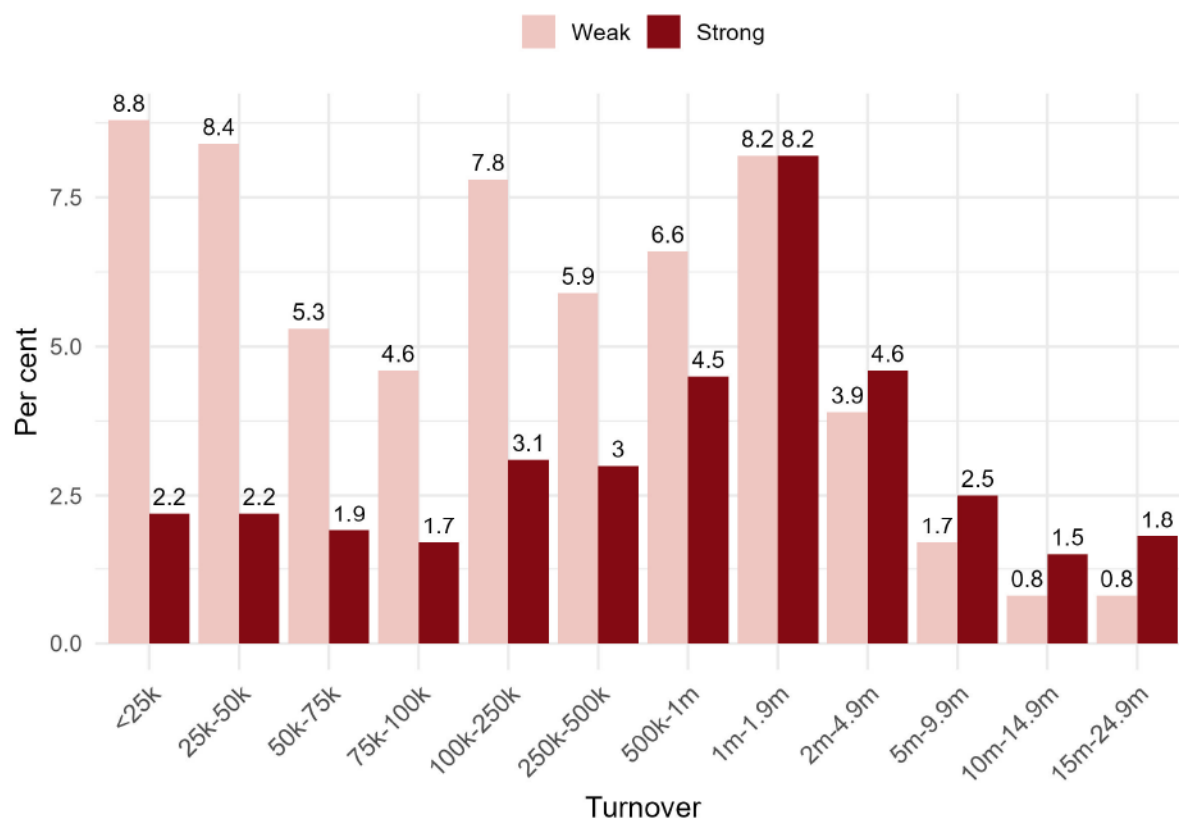
having a weak relationship with their main banks is more common across most sizes of SMEs. However, for the largest SMEs, the percentage of businesses stating a strong relationship is actually larger than the percentage of businesses stating the opposite.

Figure 11: Relationship with main bank across employment sizes



Source: SMEFM (Q1 2015 to Q2 2019)

Figure 12: Relationship with main bank across turnover levels

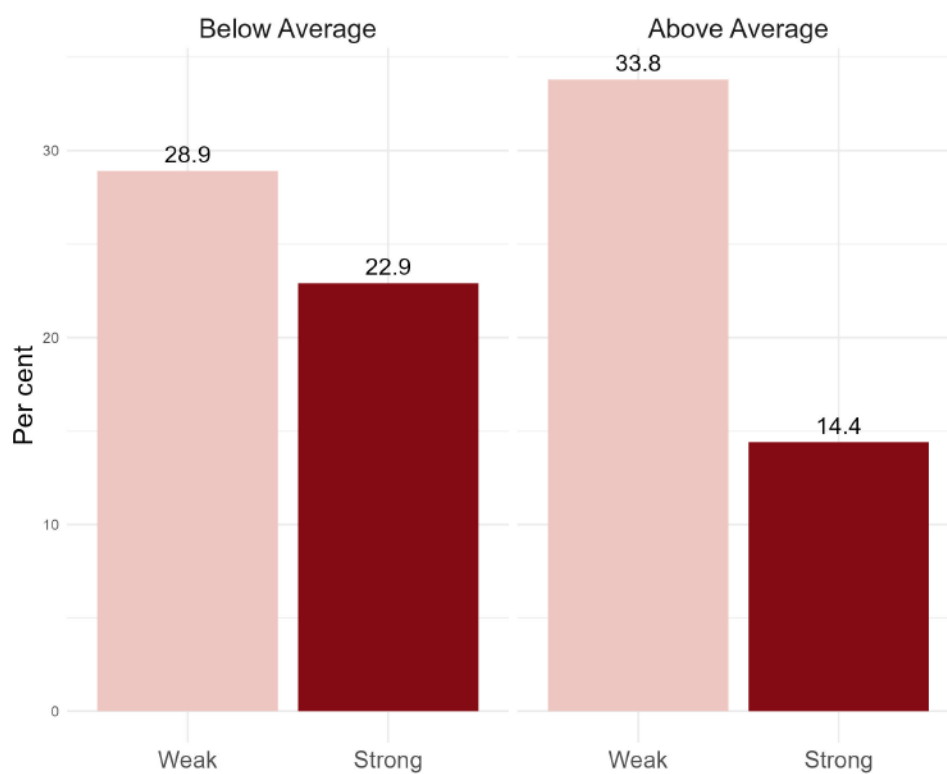


Source: SMEFM (Q1 2015 to Q2 2019)

The SMEFM classifies businesses' risk rating into minimal, low, average and above average. We combine minimal and low into a "below average" category and average and above average into a "above average" category. Figure 13 indicates that a weak relationship is mainly associated with higher credit risk. Figure 14 suggests that having no mentor is linked to a higher probability of having a weak relationship with the main bank.



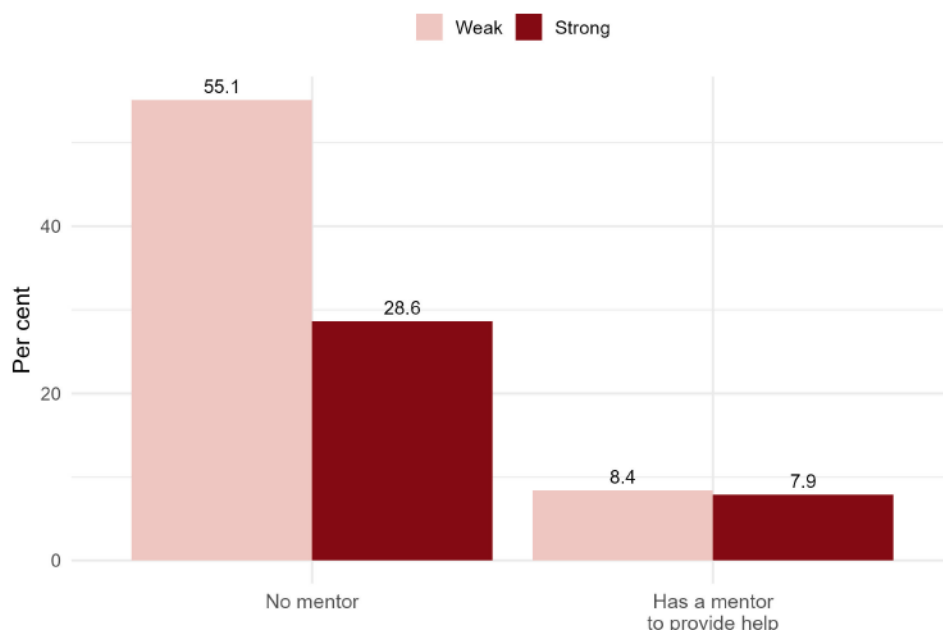
Figure 13: Relationship with main bank across credit risk levels



Source: SMEFM (Q1 2015 to Q2 2019)

Note: Credit risk levels correspond to Dun & Bradstreet risk ratings indicating likelihood of business failure (e.g., bankruptcy, closure) within 12 months.

Figure 14: Relationship with main bank given existence of mentor



Source: SMEFM (Q1 2015 to Q2 2019)

These figures of course do not mean causality. Larger businesses, with lower credit risk and access to a finance mentor could have the perception of a better relationship with their bank because they more easily produce good quality hard information, facilitating their interaction with UK banks and increasing their access to finance. Only via the econometric results presented in the next section, can we ascertain the causal impact of the quality of relationship with the bank on business lending outcomes.

## 6.2.5 Results

Table 3 shows the results for the estimated impact of relationship on discouragement (that is, non-participation despite need for external finance) in different specifications, that is, including different sets of covariates. The first column does not include year and industry fixed effects. We therefore consider the results of the other columns more reliable. Everything else constant, a strong relationship with the main bank reduces the probability of non-participation by approximately ten percentage points, relatively to having a weak relationship. In absolute value, this is even larger than the effect of higher credit risk, which increases the probability of discouragement by 3 to 7 percentages points.

Table 3: The Impact of the Relationship with the Main Bank on Non-Participation: Estimated Results from a Probit Model

|                 | (1)       | (2)       | (3)       | (4)       | (5)       |
|-----------------|-----------|-----------|-----------|-----------|-----------|
| Strong Relation | -0.133*** | -0.097*** | -0.106*** | -0.106*** | -0.101*** |

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Table continued from previous page

|                                                  | (1)     | (2)       | (3)       | (4)       | (5)       |
|--------------------------------------------------|---------|-----------|-----------|-----------|-----------|
|                                                  | [-9.54] | [-6.35]   | [-6.81]   | [-6.77]   | [-6.51]   |
| Risk-rating Average and Above                    |         | 0.062***  | 0.060***  | 0.053***  | 0.034*    |
|                                                  |         | [3.92]    | [3.78]    | [3.34]    | [1.95]    |
| <b>Reference: Sole Proprietorship</b>            |         |           |           |           |           |
| Partnership                                      |         |           |           |           | -0.033    |
|                                                  |         |           |           |           | [-1.28]   |
| Limited Liability Partnership                    |         |           |           |           | 0.025     |
|                                                  |         |           |           |           | [0.52]    |
| Limited Liability Company                        |         |           |           |           | 0.019     |
|                                                  |         |           |           |           | [0.84]    |
| <b>Reference: 1 Employee</b>                     |         |           |           |           |           |
| 2 to 10                                          |         | -0.035*** |           |           |           |
|                                                  |         | [-2.69]   |           |           |           |
| 10 to 50                                         |         | -0.095*** |           |           |           |
|                                                  |         | [-6.61]   |           |           |           |
| 51 to 100                                        |         | -0.107*** |           |           |           |
|                                                  |         | [-6.11]   |           |           |           |
| 101 to 200                                       |         | -0.044    |           |           |           |
|                                                  |         | [-1.23]   |           |           |           |
| 201 to 250                                       |         | -0.053    |           |           |           |
|                                                  |         | [-0.83]   |           |           |           |
| <b>Reference: Last Year Turnover &lt;£25,000</b> |         |           |           |           |           |
| £25,000 - £49,999                                |         |           | -0.100*** |           |           |
|                                                  |         |           | [-2.81]   |           |           |
| £50,000 - £74,999                                |         |           | -0.158*** |           |           |
|                                                  |         |           | [-3.90]   |           |           |
| £75,000 - £99,999                                |         |           | -0.175*** |           |           |
|                                                  |         |           | [-5.77]   |           |           |
| £100,000 - £249,999                              |         |           | -0.155*** |           |           |
|                                                  |         |           | [-4.40]   |           |           |
| £250,000 - £499,999                              |         |           | -0.146*** |           |           |
|                                                  |         |           | [-3.93]   |           |           |
| £500,000 - £999,999                              |         |           | -0.132*** |           |           |
|                                                  |         |           | [-3.08]   |           |           |
| £1m - £1.9m                                      |         |           | -0.201*** |           |           |
|                                                  |         |           | [-5.89]   |           |           |
| £2m - £4.9m                                      |         |           | -0.161**  |           |           |
|                                                  |         |           | [-2.47]   |           |           |
| £5m - £9.9m                                      |         |           | -0.228*** |           |           |
|                                                  |         |           | [-6.15]   |           |           |
| £10m - £14.9m                                    |         |           | -0.230*** |           |           |
|                                                  |         |           | [-5.24]   |           |           |
| £15m - £24.9m                                    |         |           | -0.123**  |           |           |
|                                                  |         |           | [-2.08]   |           |           |
| <b>Other Variables</b>                           |         |           |           |           |           |
| Last Year Turnover                               |         |           |           | -0.023*** | -0.021*** |
|                                                  |         |           |           | [-4.49]   | [-3.53]   |
| Age                                              |         |           |           |           | -0.026*** |
|                                                  |         |           |           |           | [-5.52]   |

Continued on next page



Table continued from previous page

|                                  | (1)   | (2)   | (3)  | (4)   | (5)            |
|----------------------------------|-------|-------|------|-------|----------------|
| Previously Being Turned Down     |       |       |      |       | 0.04<br>[1.59] |
| <b>Controls and Observations</b> |       |       |      |       |                |
| Year Fixed Effects               | N     | Y     | Y    | Y     | Y              |
| Standard Economic Controls       | N     | Y     | Y    | Y     | Y              |
| Industry                         | N     | Y     | Y    | Y     | Y              |
| Observations                     | 10454 | 9612  | 8461 | 8461  | 8461           |
| p-value of Goodness-of-Fit       | 1     | 0.202 | 0.86 | 0.323 | 0.264          |

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Standard errors in brackets.

An issue with the approach above is that it does not control for the potential selection bias arising from the fact that the subsample of firms needing new financing might be non-random. We address this sample selection problem by incorporating information on firms who have indicated there is no need for external finance in our estimation. We estimate the probit model of non-participation with the sample selection for the need for external finance.

For identification purposes, we use three variables as exclusion restrictions derived from the response to survey questions, namely binary variable for whether the business has significantly improved an aspect of the business in the past 3 years (growth), binary variable for whether the owner of the business currently run/manage multiple businesses (busy owner), and ordinal variable for the reliance of business on external finance for development (reliance), which are included in the selection model (i.e. need for external finance) but excluded from the equation of non-participation given the need for external finance. The "reliance" variable refers to question "How much would you agree or disagree with the following statements about SMEs and their use of external finance?" of the SMEFM survey. Statements indicate businesses' attitude to borrowing, including e.g. "Our current plans for the business are based entirely on what we can afford to fund ourselves" and "We never think about whether we could or should use more external finance in the business".

Exclusion restrictions have to be added because otherwise we might not be able to separate the model of non-participation from the model of the need for external finance. The variables used as exclusion restrictions must only be correlated with the need for external finance but not with the non-participation decision. The rationale for using the above variables as exclusion restrictions for the need for external finance is the following. With regard to "reliance", it reflects firms' general culture with respect to borrowing, which would influence their application decision, but not affect the bank's acceptance. Regarding "growth", firms having higher improvement in business could have higher demand for external finance as suggested by Pecking Order theory of financial choice. This is also consistent with the assumption in Ferrando et al. (2019) and Freel et al. (2012) that a rise in expected future revenues increases the demand for funding but does not affect discouragement. As far as "busy owner" is concerned, it relates to the principal-agent problem which happens between managers and shareholders. Shareholders (the principals) delegate day-to-day control to managers (the agents), but these may pursue private interests which do not

maximise firm value, such as paying large bonuses or over-expanding the business rather than investing. External finance can act as a disciplinary tool, since it exposes the business to a third party agent who monitors the financial health of the business. External finance also reduces the available cash, which managers might otherwise squander. Having multiple businesses to operate by the same owner could significantly compromise the effectiveness of shareholders' monitoring to align the interest of management and employees with the owner, thus the demand for external finance could be driven by the benefit of external finance for reducing the principal-agency problem of these firms.

Table 4 verifies the result from Table 3, accounting for the potential occurrence of selection – discouragement can only happen if businesses have a need for finance.

Our results show the estimated marginal effect of having a strong relationship with the main bank on the likelihood of not participating in the external finance market. The second column shows a similar estimate to Table 3 once exclusion restriction variables are included. Also, none of these three variables we use as exclusion restriction appears to be statistically significant on the likelihood of non-participation (Column 2) but all are significant on the need for external finance (Column 3). The findings lend support to the use of these variables as the exclusion restriction in dealing with the sample selection bias. As a robustness check, we apply a matching approach using Propensity Score Matching to mitigate the endogeneity concerns over having a strong relationship. The results are provided in Appendix B.1. This further validates our results and supports Hypothesis 1.

Table 4: The Impact of the Relationship with the Main Bank on Non-Participation: Estimated Results from a Heckman Selection Model

| Dependent Variable                          | Discouragement      | Discouragement       | Need for External Finance |
|---------------------------------------------|---------------------|----------------------|---------------------------|
| Strong Relation                             | -0.053*<br>[-1.91]  | -0.101***<br>[-6.44] | 0.022***<br>[3.35]        |
| Risk-rating Average and Above Average       | 0.026*<br>[1.90]    | 0.040**<br>[2.38]    | 0.010*<br>[2.05]          |
| Previously Being Turned Down                | 0.085***<br>[4.08]  | 0.044*<br>[1.66]     | 0.264***<br>[16.66]       |
| Last Year Turnover                          | -0.009<br>[-1.39]   | -0.018***<br>[-3.01] | 0.009***<br>[7.93]        |
| Age                                         | -0.016**<br>[-2.08] | -0.027***<br>[-5.65] | 0.004*<br>[2.01]          |
| Significant Improvement in the Past 3 years |                     | -0.003<br>[-0.16]    | 0.016***<br>[2.80]        |
| Low Reliance on External Finance            |                     | 0.027<br>[1.22]      | -0.112***<br>[-14.10]     |
| Owner has more than one business            |                     | 0.033<br>[1.32]      | -0.021***<br>[-3.22]      |
| Year when the Survey is Conducted           | Y                   | Y                    | Y                         |
| Region of Registration                      | Y                   | Y                    | Y                         |
| Industry                                    | Y                   | Y                    | Y                         |
| Legal Form of SME                           | Y                   | Y                    | Y                         |
| Observations                                | 52646               | 8142                 | 52646                     |
| p-value of goodness-of-fit test             |                     | 0.266                |                           |
| $\rho$                                      | 0.411               |                      |                           |
| p-value of $\rho$                           | 0.053               |                      |                           |

Note: The exclusion restrictions used include whether SMEs have experienced significant business improvement in the past three years, the degree of reliance of SMEs on external finance for growth, and whether the owner of the business owns other businesses. Columns 2 and 3 present tests for the validity of the exclusion restrictions. The estimates are derived from a probit model. Figures in brackets are t-statistics. \* indicates  $p < 0.10$ , \*\* indicates  $p < 0.05$ , \*\*\* indicates  $p < 0.01$ .

Table 5 shows the results for the estimated impact of relationship on being credit constrained upon application, that is, businesses who (i) "were offered a smaller facility than wanted," (ii) "were offered a facility but with terms and conditions that the SME didn't want to accept," or (iii) "were turned down for the facility." Here, the importance of relationship quality is also apparent. The estimated marginal effect of a 13 percentage points decrease is high compared to other relevant variables, such as turnover, age and profits. As a robustness check, we apply a matching approach using Propensity Score Matching to mitigate the endogeneity concerns over having a strong relationship. The results are provided in Appendix B.1. This further validates our results and supports Hypothesis 2.

Table 5: The Impact of the Relationship with the Main Bank on Credit Constraint: Estimated Results from a Probit Model

| Dependent Variable                                  | Credit Constraint after Application |
|-----------------------------------------------------|-------------------------------------|
| Strong Relation                                     | -0.130***<br>[-2.79]                |
| Risk-rating Average and Above Average               | -0.019<br>[-0.36]                   |
| Last Year Turnover                                  | -0.032***<br>[-3.28]                |
| Age                                                 | -0.050***<br>[-3.85]                |
| Profit Loss Last Year                               | -0.016<br>[-1.51]                   |
| Owner Belongs to Business Groups or Industry Bodies | 0.077*<br>[1.72]                    |
| Leverage Last Year                                  | -0.007<br>[-0.19]                   |
| Year when the Survey is Conducted                   | Y                                   |
| Region of Registered                                | Y                                   |
| Industry                                            | Y                                   |
| Legal Form of SME                                   | Y                                   |
| Observations                                        | 1771                                |
| p-value of goodness-of-fit test                     | 0.516                               |

Note: Table 5 presents the estimated marginal effect of having a strong relationship with the main bank on the likelihood of facing a credit constraint upon application. The estimates are derived from a probit model. Figures in brackets are t-statistics. \* indicates  $p < .10$ , \*\* indicates  $p < .05$ , \*\*\* indicates  $p < .01$ .

Table 6 shows the marginal effect of explanatory variables for the presence of errors in predicting the status of non-participation and credit constraint for SMEs with a strong relationship with the main bank, based on the estimated results from the sample of SMEs without a strong relationship with the main bank. The predicted error of being discouraged takes the value of zero if the predicted likelihood is larger than 0.5 and the SME is observed to be discouraged, and one otherwise. The predicted error of facing credit constraint takes the value of zero if the predicted likelihood is larger than 0.5 and the SME is observed to encounter credit constraint, and one otherwise.

A weaker relationship between bank and business is expected to entail larger screening errors, which affects both the probability of being a non-participant and that of being credit constrained upon application. Therefore, when estimating these models using solely the businesses with weak relationship and then using these to predict the discouragement and credit constraint of businesses with strong relationship, we expect to find substantial errors which increase the higher the SME's risk rating, and the lower its age and turnover. That is, SMEs with higher risk, lower turnover, and younger age are more likely to have higher predicted errors, as soft information



tends to be more valuable for them. Table 6 confirms those, supporting Hypotheses 3 and 4.

Table 6: Prediction errors of discouragement and prediction errors of credit constraint

|                    | Predicted errors of being discouraged |      |      | Predicted errors of facing credit constraint |     |     |
|--------------------|---------------------------------------|------|------|----------------------------------------------|-----|-----|
| Risk Rating        | 0.062***<br>[2.81]                    |      |      | 0.134*<br>[1.83]                             |     |     |
| Age                | -0.016***<br>[-2.89]                  |      |      | -0.063***<br>[-2.96]                         |     |     |
| Last Year Turnover | -0.021***<br>[-2.93]                  |      |      | -0.041***<br>[-3.01]                         |     |     |
| Observations       | 3954                                  | 3954 | 3954 | 910                                          | 910 | 910 |

Note: Table 6 shows the marginal effect of explanatory variables for the presence of errors in predicting the status of discouragement and credit constraint for SMEs with a strong relationship with the main bank, based on the estimated results from the sample of SMEs without a strong relationship with the main bank. The predicted error of being discouraged takes the value of zero if the predicted likelihood is larger than 0.5 and the SME is observed to be discouraged, and one otherwise. The predicted error of facing credit constraint takes the value of zero if the predicted likelihood is larger than 0.5 and the SME is observed to encounter credit constraint, and one otherwise. Figures in brackets are t-statistics. \* indicates  $p < .10$ , \*\* indicates  $p < .05$ , \*\*\* indicates  $p < .01$ .

Building on the estimated model of the probability of facing credit constraint after application (see Table 5), now we turn to the study of discouragement inefficiency, that is, whether businesses who do not apply for external finance despite need would have been successful had they applied. To begin the study of discouragement inefficiency, Figure 15 displays the distributions of estimated probabilities of not facing credit constraint, that is, businesses whose loan application is successful in terms of being offered the facility the businesses want and businesses taking it without issues. That is, by using approved applicants' data in the estimated model, we compute the expected probabilities of finance approval for these businesses, based on the values of their explanatory variables. Figure 15 shows that more than 60 per cent of approved businesses have an expected probability of success higher than 80 per cent. This means that, if these businesses applied again, 60 out of every 100 businesses would have at least a 80 per cent probability of success, conditionally on their characteristics not changing.

Figure 15: Distribution of approval probability for approved borrowers

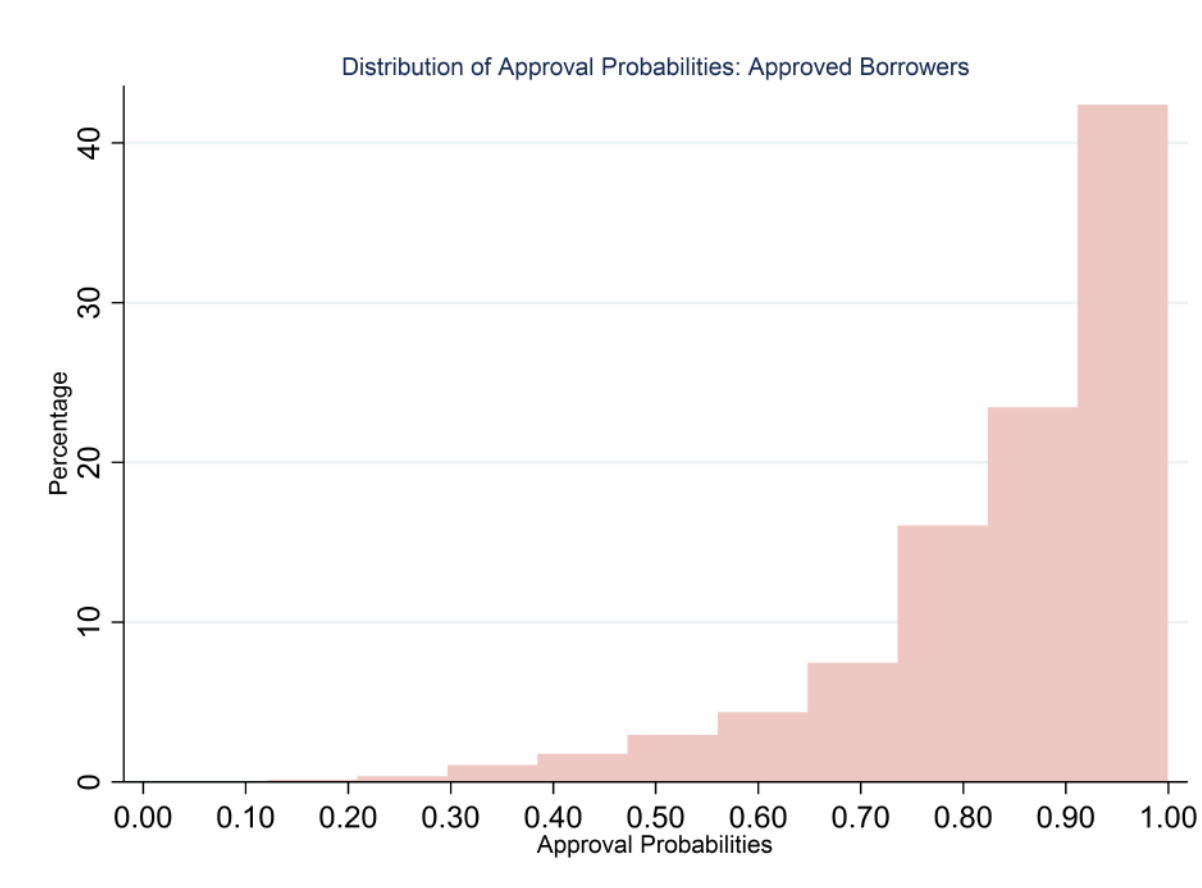


Figure 16 shows that most discouraged businesses (over 70 per cent of those discouraged) have expected probabilities of application success higher than 50 per cent. It also shows that over 30 per cent of discouraged businesses have predicted approval probabilities higher than 80 per cent. That is, if discouraged businesses were to apply, 30 out of every 100 businesses would have a very high probability of success, higher than 80 per cent. Figure 16 uses data on SMEs which did not participate in the bank credit market despite of the need for external finance in the estimated model of the probability of facing credit constraint after application. This is the same exercise of Figure 15 but now using SMEs who did not participate instead of approved applicants.

Figure 16: Distribution of approval probabilities for non-participating SMEs

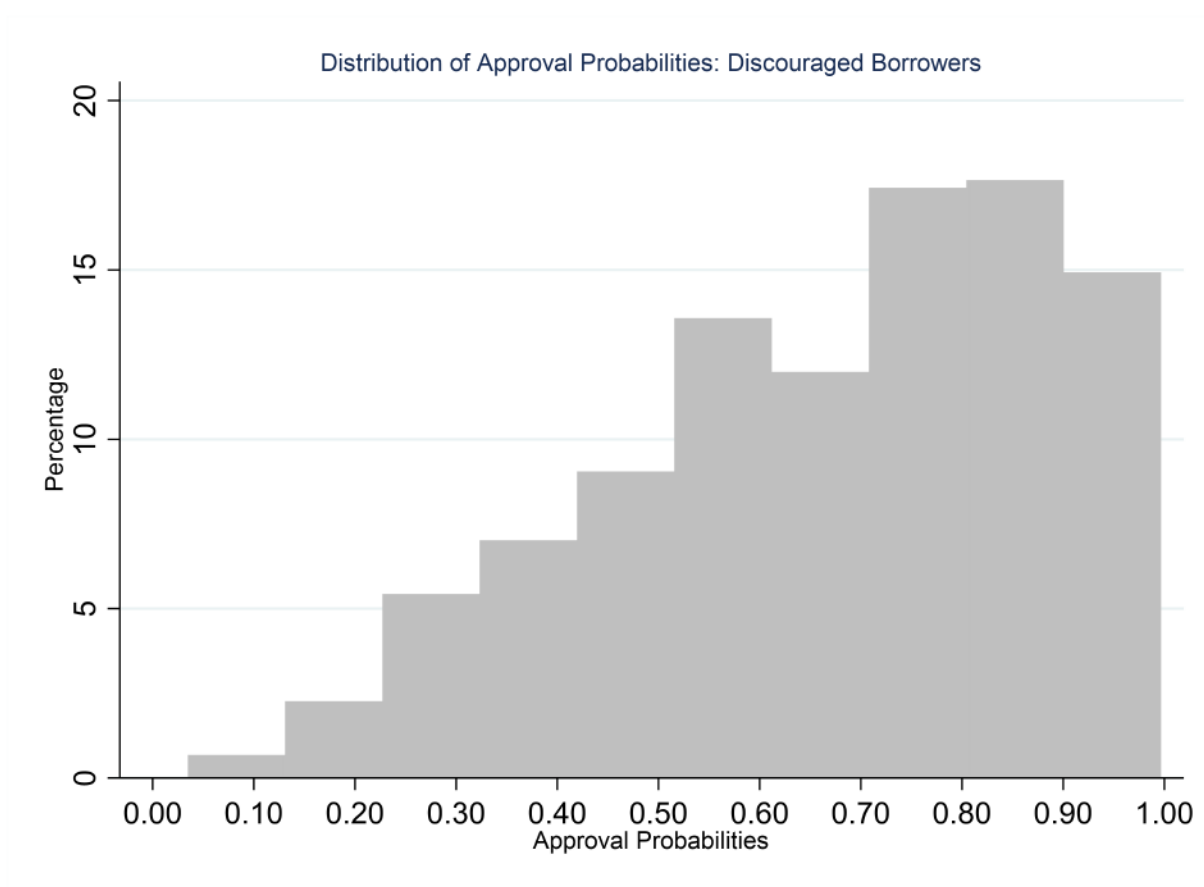
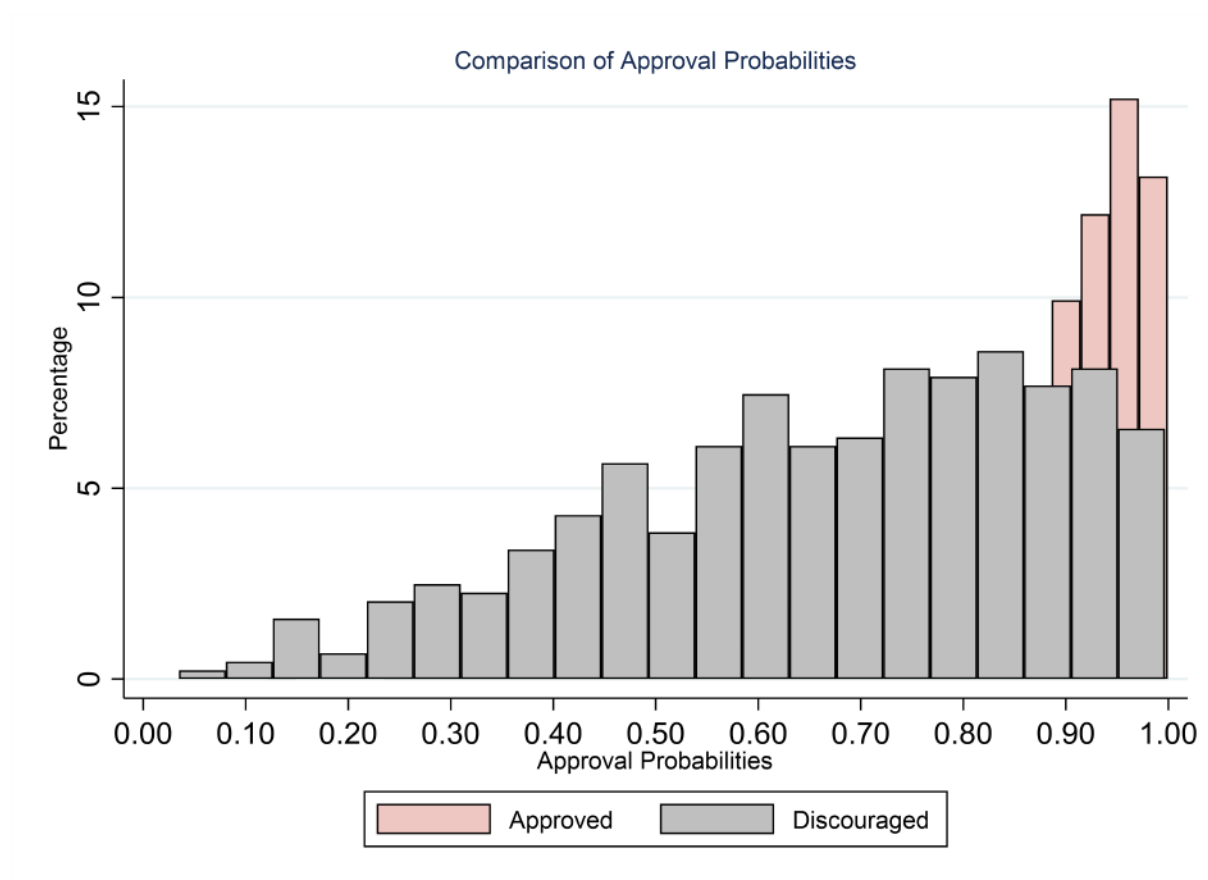


Figure 17 presents an overlay histogram showing the distribution of the approval probability of approved borrowers and non-participant businesses. As observed with approved applicants, the frequency of discouraged borrowers is also concentrated on higher values of approval probabilities, although this concentration is more conspicuous for approved applicants.

Figure 17: Combined histogram of the distribution of the approval probability of approved borrower and that of discouraged borrower



In summary, we have estimated a high impact of around 10 percentage points on the probability of application from businesses having a strong relationship with their main bank. A strong relationship also is estimated to raise the probability of application success by 13 percentage points. Furthermore, we verified the importance of soft information for businesses which have higher risk rating, younger age and lower turnover. Lastly, Figures 15-17 suggest similar distributions of approval probabilities between discouraged businesses and approved applicants, thus a high level of discouragement inefficiency, in which a high proportion of discouraged businesses would have been approved had they applied. We now turn to quantifying the credit gap stemming from discouragement.

### 6.2.6 Credit Gap for Non-Participants

To estimate credit gap of non-participation despite the need for external finance (that is, as we have so far defined discouragement) we will use the credit approval probabilities estimated in the previous subsection. We aggregate the experiences of individual firms that do not participate in the market for bank credit, despite their need for external finance, to quantify the country-level credit gap due to the non-participation. To this end, we propose the following definition in line



with Akbas et al. (2023):

$$\text{Credit Gap} = \sum_{t=2016}^{t=2020} \sum_{i \in \text{non-participants}} w_{it} P_{it}(A|A) \text{Volume}_{it} \quad (3)$$

where  $w_{it}$  is the survey weight of firm  $i$  at time  $t$  when the survey is carried out.  $P_{it}(A|A)$  denotes the approval probability if applied. It is estimated as the out of sample prediction of the probit model based on the SMEs who applied for bank credit. The term  $\text{Volume}_{it}$  indicates the desired loan volume of non-participating firms.

The SME Finance Monitor used in this analysis covers the period from Q3 2015 to Q2 2022. The survey question regarding the need for external finance differs between the periods Q3 2015 – Q4 2017 and Q1 2018 – Q2 2022. In the former period, the question was directed towards SMEs that had applied for overdrafts, bank loans, or commercial mortgages and asked, "How large was the facility that you initially applied for?" However, there was no corresponding question regarding the amount that non-participating firms would have desired if they had sought financing. In the latter period, the question was posed to SMEs that indicated a need for external finance and asked, "How much funding did you think you would need in total?" While responses to this question include firms that both participated and did not participate in the bank credit market, a significant portion of the responses contain missing values.

To quantify the desired loan amount for non-participating firms over the period Q3 2015 – Q2 2022, we undertake the following steps.

1. First, we assume that the amount of financing applied for by SMEs is equivalent to their total need for external finance for the period Q3 2015 – Q4 2017. We then incorporate this information with data on the need for external finance for the period Q1 2018 – Q2 2020 to estimate the overall financing requirement.
2. Second, we address the issue of missing values related to the amount needed by non-participants using out-of-sample predictions from a regression model, that is, applying the estimated model to a sample not used in estimation. This model estimates the required amount based on several firm characteristics, including the Dun & Bradstreet risk ratings, industry SIC code (i.e., the principal activity of the business), economic region (i.e., the Standard Region where the SME is registered), survey timing (measured via year), legal form, turnover, and firm age.

Our approach assumes that the demand for external finance among non-participating firms is equivalent to the volume of credit they would have applied for, irrespective of the outcome of their application. This assumption is justified within the framework of the trade-off theory of capital structure and the pecking order theory of financing choice, both of which suggest that credit demand is influenced by factors such as sales growth rate, firm life cycle, industry-average financial leverage, information opacity, and default risk. For firms that applied for bank credit but did not respond to the question regarding the amount applied for or needed, we employ the same out-of-sample predictions to approximate the missing values.

3. Lastly, we calculate the annual gross credit flows to SMEs using Bank of England data on monthly changes in monetary financial institutions' sterling and all foreign currency gross lending to small and medium-sized enterprises. This measure serves as an estimate of the credit flow for firms that applied for bank credit and successfully obtained the financing they required.

Based on this, we derive the following expression for the credit gap among non-participating SMEs, given their need for external finance:

$$\text{Credit Gap} = \sum_{t=2020}^{t=2016} \text{Credit flow}_t \frac{\sum_{i \in \text{non-participants}} w_{it} P_{it}(A|A) \text{Amount needed}_{it}}{\sum_{i \in \text{participants}} w_{it} P_{it}(A|A) \text{Amount needed}_{it}}, \quad (4)$$

where  $w_{it}$  is the survey weight of firm  $i$  at time  $t$  when the survey is carried out. For non-participants,  $P(A|A)$  corresponds to the probability of being approved if applied and is computed as the out-of-sample prediction of the approval likelihood for non-participating firms. For participants,  $P(A|A)$  refers to the estimated approval likelihood for firms that have applied for credit.

The approval model is a probit model that estimates the probability of approval (measured as the non-existence of credit constraint, i.e. the SMEs were “offered the facility wanted and took it”) based on a set of explanatory variables. These variables include whether the firm has a strong relationship with its primary bank, the Dun & Bradstreet risk ratings, the industry SIC code (which identifies the principal activity of the business), the economic region (defined as the Standard Region where the SME is registered), survey timing, legal form, financial leverage as reported in the most recent financial statement, the amount of profit or loss in the past 12 months, whether the majority shareholder belongs to any business groups or industry bodies, turnover, and firm age.

In this context, the numerator in Equation (4) represents the expected approved amount if non-participating firms were to apply for bank credit, while the denominator refers to the expected approved amount for firms that actively participated in the bank credit market. Firms with credit needs can be categorized into two groups: participating firms (i.e., applicants) and non-participating firms. The methodology employed links the desired credit volume of non-participating firms to that of participating firms. It also establishes a connection between the flow of credit to successful applicants and the potential credit flow to non-participants.

Table 7 displays the results deflated by January 2025 CPI. The “Credit flow” column contains the actual gross lending to SMEs as given by the BoE data. The “Credit gap” column contains the final estimate of the finance gap computed for each year, which is the expected additional amount of lending to SMEs which would have been made if all SMEs with a need for finance had applied for bank loans in each year of 2016-2020. The final row displays the total amount of actual credit flow and the total gap in the period of analysis. These imply that non-application to finance despite the need for external finance has resulted in a finance gap of one third the actual lending. Furthermore, the estimates across years show that the annual gap massively increased from 2015 to 2019, starting at £6.6 bns and ending the period at £24.5 bns, an almost four fold increase.

Table 7: Current credit and credit gap (in bns of pounds deflated by CPI 2025)

|              | Credit flow   | Credit gap    |
|--------------|---------------|---------------|
| 2015         | 78.53         | 9.48          |
| 2016         | 79.33         | 17.48         |
| 2017         | 74.64         | 27.50         |
| 2018         | 74.16         | 23.01         |
| 2019         | 77.87         | 31.40         |
| <b>Total</b> | <b>384.53</b> | <b>108.87</b> |

As a comparison exercise, we use the Longitudinal Small Business Survey (LSBS) to compute the non-participation credit gap in 2019 and 2023. For this we use the following expression:

$$\text{Credit Gap}_t^{LSBS} = \text{Credit flow}_t \frac{\sum_{i \in \text{non-participants}} w_{it} P_t(A|A) L_{it}}{\sum_{i \in \text{participants}} w_{it} \mathbb{I}\{\text{Approved}\} L_{it}}, \quad (5)$$

where  $\mathbb{I}\{\cdot\}$  denotes an indicator function which is equal to 1 when applicant businesses have been approved and zero otherwise. Because we do not estimate a probability model, we assume the probability of application approval for non-participants who had a need for finance to be equal to the overall success rate in the sample, in the corresponding year. We assume that amount needed would be positively correlated with employment size ( $L_{it}$ ) and use this to approximate Equation (5) to Equation 4. For 2019, we estimate the credit gap to be £27 bns and, for 2023, we estimate it to be £26 bns. Using nine waves of the SMEFM from Q1/2 2011 to Q2 2013, [Fraser \(2014\)](#) estimated that, by addressing bank issues associated with discouragement, approximately 77,000 businesses or 63 per cent of new applicants might receive a loan or overdraft if they applied. According to [Roberts \(2018\)](#), this would correspond to around £2 bn of debt, although it is not clear in which year prices. Considering it to be in 2013 prices, the inflated figure in 2025 prices would be £2.5 bn. If £2 bn is being given in 2018 prices, then its inflation to 2025 prices would result around £2.8 bn. Although this is lower than our initial estimate of £9.5 bn for 2015, it relates the period Q1/2 2011 to Q2 2013, before the beginning of our analysis. Also, given the increase we observe in Table 7, it is plausible that the gap increased between 2011 and 2015.

This section has estimated that the credit gap stemming from SMEs not applying for external finance despite need has surpassed £25 bns. It has also been show that fomenting a stronger relationship between SMEs and banks could substantially contribute for reducing this gap by encouraging SMEs to apply for finance. We estimated that a strong relationship raises the probability of application by 10 percentage points. A strong relationship also is estimated to raise the probability of application success by 13 percentage points. Furthermore, we verified the importance of soft information for businesses which have higher risk rating, younger age and lower turnover. Furthermore, Figures 15-17 showed similar distributions of approval probabilities between discouraged businesses and approved applicants, thus suggesting a high level of discouragement inefficiency, in which a high proportion of discouraged businesses would have been approved had



they applied.

The next section uses the Survey on the Access to Finance of Enterprises (SAFE) to evaluate lending outcomes if the German or French systems were implemented in the UK. Given the positive result we find here from a strong relationship between banks and business on finance application as well as success, we expect the counterfactuals in the next section to also be positive, since relationship banks represent a large share of both the German and French markets. Relationship banking extends beyond “a strong relationship between bank and business”. It characterises banks which operate in close proximity to customers and via a business model that relies on cultivating and utilizing the strong relationship it establishes with clients to gather and build soft information which is then used in lending decisions (Mayer et al., 2021).

## 6.3 Finance Gap of UK Businesses

### 6.3.1 Survey on the Access to Finance of Enterprises (SAFE)

SAFE’s data are collected through a survey of companies in the European Union, conducted on behalf of the European Commission (DG Internal Market, Industry, Entrepreneurship and SMEs) and the European Central Bank (ECB). The SAFE was launched in 2009, partially motivated by the financial crisis, and initially was run every six months using a given set of questions and in a limited number of euro area countries (the “ECB round”). A more comprehensive survey, run in co-operation with the European Commission and covering all European Union Member States plus some neighbouring countries (the “Common round”) was initially conducted every two years, in 2009H1 and 2011H1. Since 2013H1, both the ECB round and the Common round are conducted once a year, around April and October respectively (ECB, 2023).

Tables 8 and 9 present the sample sizes for Germany (DE), France (FR), Sweden (SE) and the UK across sub-year sampling and across years, respectively. UK and Swedish businesses are sampled only in the Common round and as a consequence they are absent from the data in 2010 and 2012. The UK also stopped participating in the survey after 2021. Furthermore, it is clear that the samples for the UK and for Sweden are quite smaller than for Germany and France, indicating that estimates for the former two countries would be more uncertain.

Table 8: Sample per year fieldwork

|       | DE    | FR    | SE   | UK    | Total |
|-------|-------|-------|------|-------|-------|
| H1    | 19258 | 19924 | 6206 | 10929 | 56317 |
| H2    | 17805 | 18121 | 0    | 0     | 35926 |
| Total | 37063 | 38045 | 6206 | 10929 | 92243 |



Table 9: Sample per year

|       | DE    | FR    | SE   | UK    | Total |
|-------|-------|-------|------|-------|-------|
| 2009  | 2004  | 2001  | 220  | 502   | 4727  |
| 2010  | 2000  | 2007  | 0    | 0     | 4007  |
| 2011  | 2006  | 2007  | 500  | 1001  | 5514  |
| 2012  | 2008  | 2003  | 0    | 0     | 4011  |
| 2013  | 2000  | 2007  | 507  | 1000  | 5514  |
| 2014  | 2837  | 3003  | 500  | 1218  | 7558  |
| 2015  | 3003  | 3007  | 502  | 1420  | 7932  |
| 2016  | 3001  | 3003  | 499  | 1502  | 8005  |
| 2017  | 3006  | 3008  | 500  | 1070  | 7584  |
| 2018  | 3005  | 3003  | 471  | 1177  | 7656  |
| 2019  | 2964  | 2861  | 501  | 1437  | 7763  |
| 2020  | 2654  | 3002  | 501  | 301   | 6458  |
| 2021  | 2491  | 2675  | 500  | 301   | 5967  |
| 2022  | 2581  | 2956  | 502  | 0     | 6039  |
| 2023  | 1503  | 1502  | 503  | 0     | 3508  |
| Total | 37063 | 38045 | 6206 | 10929 | 92243 |

The interviews are predominantly conducted by telephone (using computer-assisted telephone interviewing or CATI). However, in a few waves respondents had the option to fill in the online questionnaire. The interviewee in each company was a top-level executive (ECB, 2023).

The companies in the sample are randomly selected from the Dun & Bradstreet business register. In some countries, where the Dun & Bradstreet register was not sufficient or not available, other (mainly local) sources have also been used in the past. The sample is stratified by country, enterprise size class (micro, 1-9 employees; small, 10-49 employees; medium, 50-249 employees; and large, 250 or more employees) and economic activity (one-digit level of the European NACE classification). Some industries were excluded from the sample: agriculture, forestry and fishing (A), financial and insurance activities (K), public administration and defence, compulsory social security (O), education (P), human health and social work activities (Q), activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T), activities of extra-territorial organisations and bodies (U), holding companies (NACE 64.20) and private non-profit institutions (ECB, 2023).

The number of firms in each of these strata was adjusted to increase the accuracy of the survey across activities and size classes. For instance, small firms are over-represented in terms of their economic weight (employment) and hence reweighted. Some countries are excluded from the ECB round due to their small size and increases in the sample of various countries have occurred between 2010 and 2014 for both rounds (ECB, 2023).

The weights in the SAFE data reflect the economic weight of enterprises in their countries and their employment size is used as a proxy for this (ECB, 2023). Tables 10 and 11 display the number

of sampled businesses in each country by employment size and the weight of these businesses in the economy of each country, respectively. Table 11 essentially summarises how much each business size accounts for each country's workers population. While the numbers are similar, some differences are worthy of noting. The UK has the highest employment proportion for businesses with 250 or more employees (46.3 per cent) and France has the highest proportion for businesses with 1 to 9 employees.

Table 10: Employment size

|                                    | DE    | FR    | SE   | UK    | Total |
|------------------------------------|-------|-------|------|-------|-------|
| From 1 employee to 9 employees     | 9347  | 12763 | 1782 | 3092  | 26984 |
| From 10 employees to 49 employees  | 11824 | 10959 | 1883 | 3391  | 28057 |
| From 50 employees to 249 employees | 11537 | 9935  | 1774 | 2982  | 26228 |
| 250 employees or more              | 4355  | 4388  | 767  | 1464  | 10974 |
| Total                              | 37063 | 38045 | 6206 | 10929 | 92243 |

Table 11: Economy weight (Per cent)

|                                    | DE   | FR   | SE   | UK   |
|------------------------------------|------|------|------|------|
| From 1 employee to 9 employees     | 19.5 | 27.3 | 24   | 18.9 |
| From 10 employees to 49 employees  | 22.8 | 18   | 20.8 | 18.9 |
| From 50 employees to 249 employees | 19.5 | 14.6 | 18.1 | 15.9 |
| 250 employees or more              | 38.2 | 40.1 | 37.2 | 46.3 |

Tables 12 and 13 contain the number of businesses interviewed in each country by turnover level and their weight in the economy. From 2014 onwards, the alternative "Up to 2 million euros" to the corresponding survey question was divided into three: "More than 1 million and up to 2 million euros", "More than 500 thousand and up to 1 million euros" and "Up to 500 thousand euros". Table 13 only presents the proportions corresponding to the years after 2013, with the new alternatives. Table 13 shows that, as defined in turnover values, SMEs represent almost 70 per cent of the economy when weighted by employment size.

Table 12: Turnover level

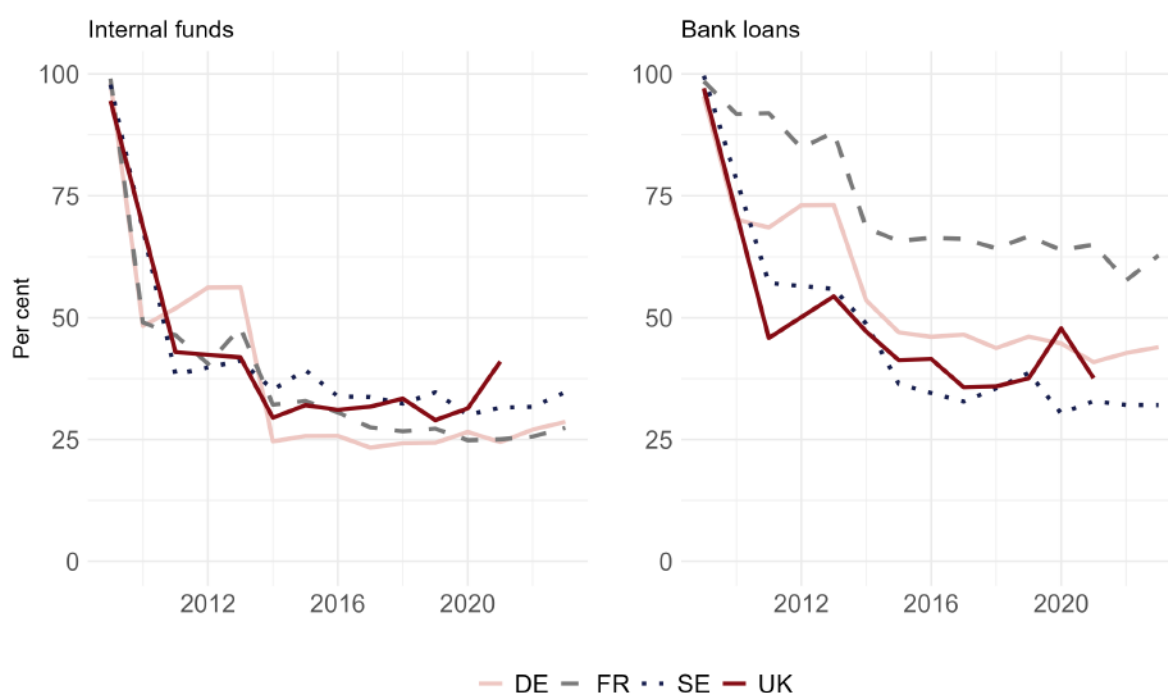
|                                                  | DE    | FR    | SE   | UK    | Total |
|--------------------------------------------------|-------|-------|------|-------|-------|
| More than 50 million euros                       | 4263  | 4289  | 1053 | 1325  | 10930 |
| More than 10 million and up to 50 million euros  | 7499  | 7702  | 1337 | 1973  | 18511 |
| More than 2 million and up to 10 million euros   | 9422  | 8819  | 1541 | 2612  | 22394 |
| Up to 2 million euros                            | 4658  | 4178  | 493  | 1286  | 10615 |
| More than 1 million and up to 2 million euros    | 3214  | 3582  | 628  | 986   | 8410  |
| More than 500 thousand and up to 1 million euros | 2939  | 3579  | 469  | 778   | 7765  |
| Up to 500 thousand euros                         | 3953  | 4988  | 547  | 1557  | 11045 |
| DK/NA                                            | 1115  | 908   | 138  | 412   | 2573  |
| Total                                            | 37063 | 38045 | 6206 | 10929 | 92243 |

Table 13: Turnover level (Weighted per cent)

|                                                  | DE   | FR   | SE   | UK   |
|--------------------------------------------------|------|------|------|------|
| More than 50 million euros                       | 29.1 | 30.6 | 34.4 | 32.3 |
| More than 10 million and up to 50 million euros  | 19.3 | 17.7 | 17.5 | 20.8 |
| More than 2 million and up to 10 million euros   | 18.4 | 15.2 | 18   | 15.3 |
| More than 1 million and up to 2 million euros    | 7    | 6.6  | 8.3  | 6.2  |
| More than 500 thousand and up to 1 million euros | 6.7  | 7.4  | 6.5  | 5    |
| Up to 500 thousand euros                         | 9.7  | 11.5 | 8.1  | 10.1 |
| DK/NA                                            | 2.7  | 2.2  | 2    | 3    |

SAFE asks participants about the relevance of financial instruments for them. Figure 18 focuses on bank loans and internal funds. On the left hand side, it shows that internal funds are relevant for between 30 and 40 per cent of SMEs in the UK and in Sweden. Meanwhile, for France and Germany, these numbers are found between 30 and 24 per cent of SMEs. On the right hand side, it shows that bank loans are relevant for a remarkable 65 per cent of french SMEs. This rate is around 45 per cent for Germany and between 45 and 30 per cent for the UK and Sweden. Lastly, we can observe a slight downward trend on bank loans' relevance across all countries.

Figure 18: (Weighted) Percentage of SMEs who cite internal funds or bank loans as relevant



Following the question about the relevance of financial products, SAFE asks businesses about the reason for their response. Figure 19, focuses on bank loans, and plots the proportion of SMEs who responded that they do not need these. On the left, we show the percentages considering the number of SMEs who do not find bank loans relevant as the denominator. Given that, for all

countries, these percentages are over 70 per cent in general, this plot indicates that not needing bank loans is the main reason for classifying it as irrelevant. On the right, we use the entire SME sample as the denominator to determine the percentage of SMEs that do not require bank loans in the overall population. France presents the lowest percentages of SMEs which do not need bank loans (between 20 to 30 per cent), again demonstrating the importance of this type of lending for French enterprises. The UK percentages are below those of Sweden, starting at 40 per cent in 2014 and increasing to 55 per cent in 2021. Germany starts with 35 per cent of SMEs not needing bank loans in 2014 and arrives at just over 40 per cent in 2023. This upward trend is observed across all countries.

Figure 19: (Weighted) Percentage of SMEs who do not need bank loans

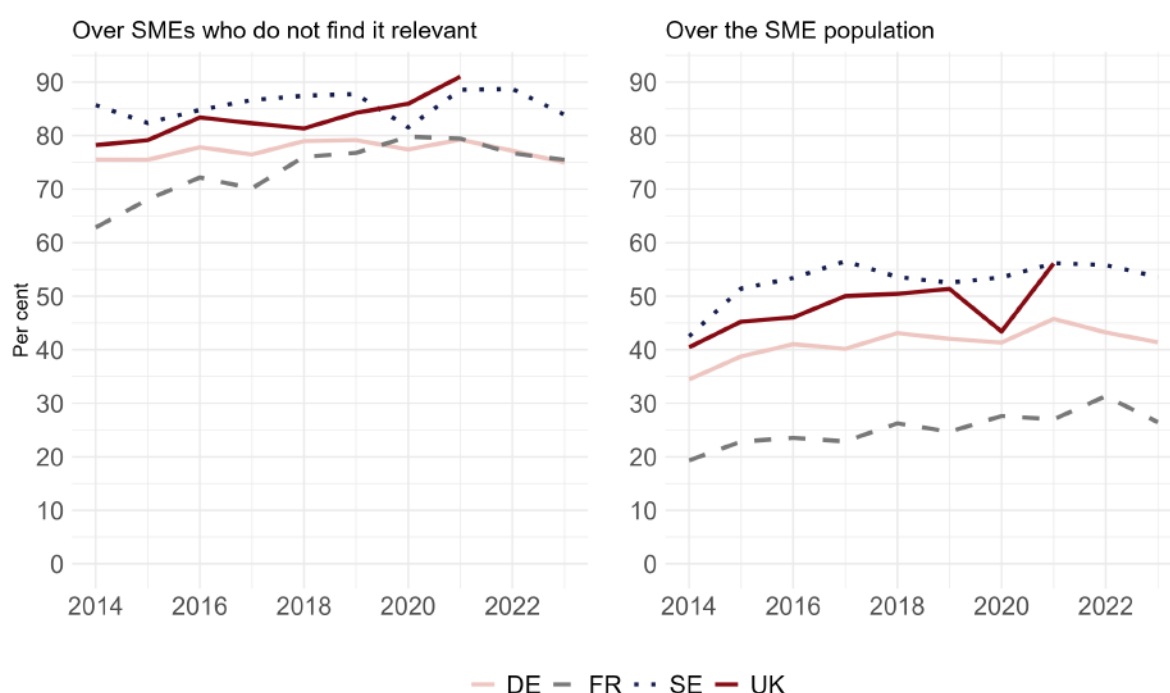


Figure 20 contains the percentage of business (large or SMEs) who applied for bank loans in the 6 months preceding the survey. The left hand side plot shows that on average 30 per cent of French large businesses applied for bank loans. In Germany, after a peak of over 35 per cent, applications of large businesses decrease to on average 20 per cent from 2015 onwards. Sweden also displays a large drop from over 25 per cent to 10 per cent just before the Covid-19 crisis. The UK series starts the period with just over 15 per cent and drops to just over 10 per cent in 2019. On the SME side, we can observe a clear downward trend across all countries and that the UK presents the lowest rates throughout the period, with the exception of 2020, when government guarantee schemes heavily increased lending.



Figure 20: Percentage of businesses who applied for bank loans in the previous 6 months

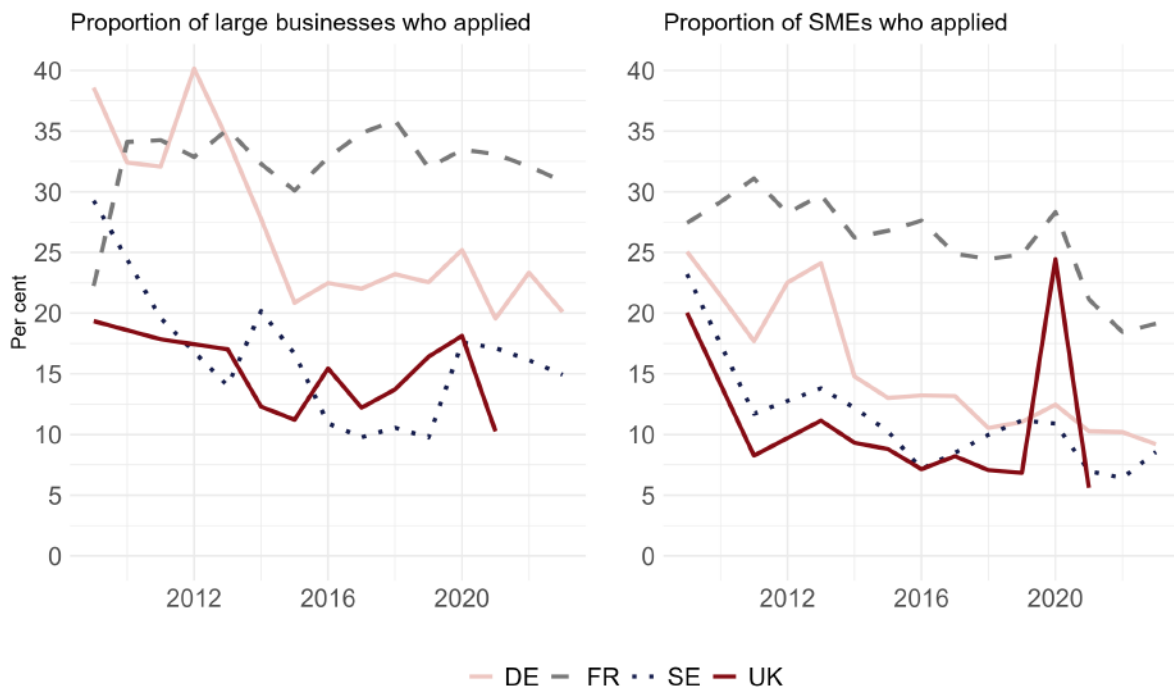


Figure 21 shows the percentage of large businesses and of SMEs who were successful in their bank loan applications. We define success as receiving all or most of what was applied for. For better visualisation, we smooth the series due to their high volatility and drop the years after 2019 to avoid the distortions of Covid-19. For large businesses, after the financial crisis, UK success rate increases to over 90 per cent and then drops below the rates of all the other three countries. For SMEs, the UK rate also increases post-2008, but on average, tends to remain slightly below France and Germany (at around 75 per cent), although it surpasses the rates of Sweden in a few years.

Figure 21: Percentage of bank loan applicants who were successful in the previous 6 months

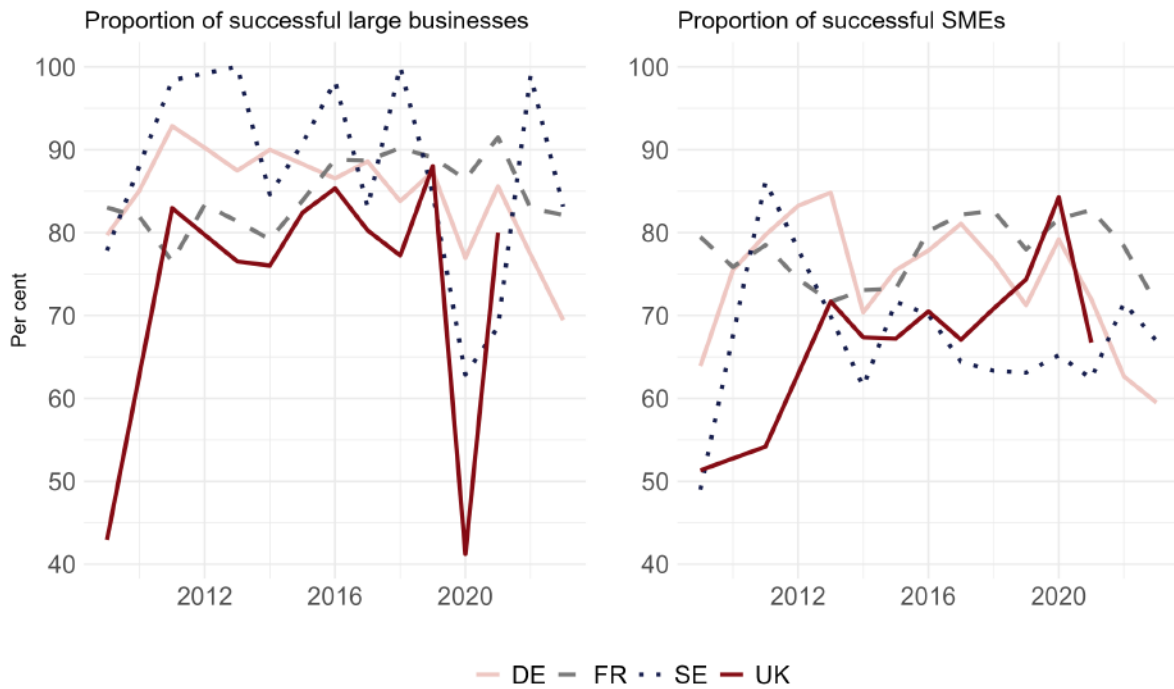


Table 14: Bank loan application success in the past 6 months (all firms)

|                                           | DE   | FR    | SE  | UK   |
|-------------------------------------------|------|-------|-----|------|
| Applied and got everything                | 4797 | 8414  | 514 | 763  |
| Applied but only got part of it           | 63   | 32    | 5   | 13   |
| Applied but refused because cost too high | 100  | 98    | 12  | 20   |
| Applied but was rejected                  | 241  | 630   | 36  | 70   |
| Applied and got most of it                | 284  | 343   | 48  | 73   |
| Applied and got a limited part of it      | 204  | 336   | 22  | 31   |
| Application is still pending              | 293  | 451   | 27  | 61   |
| Do not know                               | 185  | 217   | 36  | 47   |
| Total                                     | 6167 | 10521 | 700 | 1078 |
| Percentage in total business population   | 17%  | 28%   | 11% | 10%  |

### 6.3.2 Literature

Akbas et al. (2023) define the credit gap as the monetary financing needs of firms that are bankable but discouraged from applying for a loan. They use as a benchmark the credit intensity of successful applicants to derive the potential demand of bankable discouraged firms within the same country. Their data come from the Enterprise Surveys, which span multiple countries and are implemented by the European Investment Bank, the European Bank for Reconstruction and Development and the World Bank Group. To identify the bankable but discouraged firms, Akbas et al. (2023) start by estimating a scoring model, that is, the probability of applicant firm  $j$  to have

their application rejected:

$$P(rejected_j = 1 | applied_j = 1). \quad (6)$$

Before estimating this probability, they choose the explanatory variables by applying the Lasso, a statistical technique for variable selection. They then estimate a logit model with the selected variables. Once estimation is complete, they apply the model to the sample of discouraged firms to predict their approval probability. The authors compute the additional proportion of the aggregate credit flow which would have been lent to discouraged firms had they applied via two alternative approaches:

- By setting a threshold in the distribution of rejection probabilities that replicate the observed rejection rate in the sample of applicants. The authors assume that discouraged firms with a rejection probability below this threshold would have obtained credit had they applied.

$$\text{credit gap} = \text{credit flow} \frac{\sum_{j \in \text{discouraged}} w_j \mathbb{I}\{\widehat{Approved}\} L_j}{\sum_{k \in \text{applied}} w_k \mathbb{I}\{Approved\} L_k} \quad (7)$$

- By assuming an allocation of credit in proportion to the firms' approval probabilities.

$$\text{credit gap} = \text{credit flow} \frac{\sum_{j \in \text{discouraged}} w_j P(\widehat{Approval}) L_j}{\sum_{k \in \text{applied}} w_k \mathbb{I}\{Approved\} L_k} \quad (8)$$

Khanna et al. (2017) estimate the size of the SME finance gap in emerging economies using a potential demand approach, which models the potential demand for credit by SMEs, and attempts to match it with the current supply of credit. As benchmark of the potential demand, the authors use the average debt-to-sales ratio of firms in 10 developed countries by firm size, industry and age. The data for this are sourced from the Bureau van Dijk's ORBIS database. They apply these ratios to the emerging countries, weighted by the firm classes proportions in these countries. This step is taken using the World Bank Enterprise Surveys. As a measure of supply, they use the total volume of SME lending from the IMF's Financial Access Survey (FAS) and from the OECD's SME Scorecard. The final gap is computed as the difference between the existing supply in emerging countries and the derived potential demand.

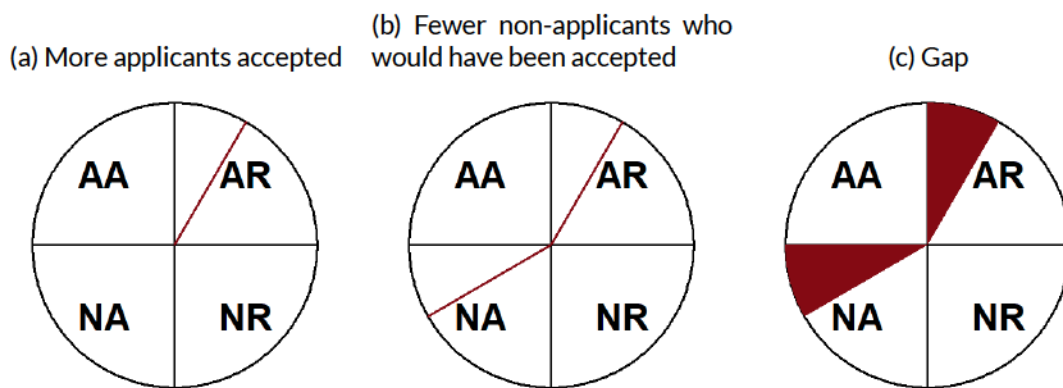
Mc Cahery et al. (2015) estimate country-specific financing gaps of SMEs as the difference between the demand for and supply of finance in 2013, taking into account the desired finance amount rather than just the loan value. Their analysis includes the US, France, Germany, The Netherlands, Poland and Romania. Using the SAFE for the European countries, they are able to separate demand and supply by having access to the amounts SMEs reported to have requested when applying for finance. Unfortunately, the corresponding question is not available anymore in the SAFE. Using other studies' results they can perform the same estimation for the US. Their results show that, for France, the loan gap ranged from 3.37 per cent to 5.16 per cent of GDP in 2013; for Germany, the loan gap ranged from 2.70 per cent to 6.04 per cent of GDP; and for the US, the gap was estimated to be within the range of 1.12 per cent to 2.25 per cent of GDP.

### 6.3.3 Financing Gap Definition

The finance gap we seek to estimate aims to capture both the supply side and the demand side. That is, we aim to estimate the difference in lending (bank loans) between the current UK banking system and its relationship banking counterfactual accounting for a potential increase in applications of SMEs as well as an increase in the success rate of applications. This is exemplified in Figure 22, where the population of SMEs is considered to be composed of four groups:

- AA denotes applicants who are accepted;
- AR denotes applicants who are rejected;
- NA denotes non-applicants who would have been accepted had they applied; and
- NR denotes non-applicants who would have been rejected had they applied.

Figure 22: Finance gap definition



Therefore, we consider the finance gap to be composed by the two red areas in Figure 22c. These are produced by:

- an increase in the success rate of applicants in the counterfactual scenario;
- an increase in application rate combined with the higher success rate.

The SAFE asks businesses whether they have applied for the following types of financing in the past six months, including renewal of existing contracts:

- Bank loan (excluding overdraft and credit lines).
- Trade credit.
- Credit line, bank overdraft or credit card overdraft.
- Other external financing (for example, loans from a related company, shareholders or family and friends, leasing, factoring, grants, subordinated debt instruments, participating loans, peer-to-peer lending, crowdfunding, and issuance of equity and debt securities).

Our analysis only considers bank loans for various reasons:

- (b) and (c) denote short-term credit, hence are not perfect substitutes for bank loans.



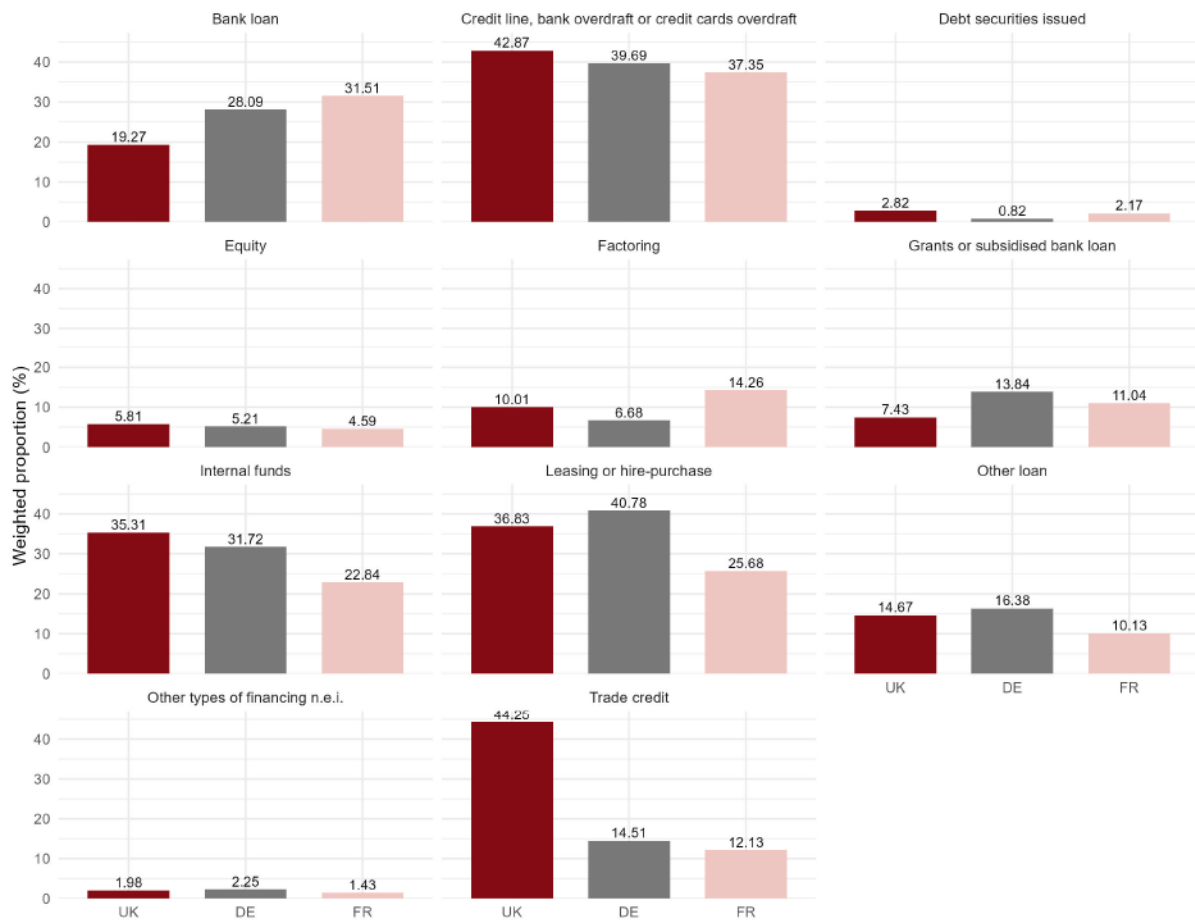
- (d) includes loans from "family and friends", which we do not consider external finance.

Item (d) also includes external finance alternatives which could, in some cases, act as substitutes for banks loans, such as leasing. As described in the next section, we control for leasing and hire-purchase finance availability in our model of the probability of businesses applying for bank loans. Another question in SAFE asks "Are the following sources of financing relevant to your enterprise, that is, have you used them in the past or considered using them in the future?". It provides a finer breakdown of financial products used by businesses:

- Grants or subsidised bank loans
- Bank loan (excluding subsidised bank loans, overdrafts and credit lines)
- Other loan, for example from family and friends, a related enterprise or shareholders, excluding trade credit
- Credit line, bank overdraft or credit cards overdraft.
- Trade credit
- Leasing or hire-purchase
- Debt securities issued
- Equity capital
- Factoring
- Retained earnings or sale of assets
- Other sources of financing, for example subordinated debt instruments, participating loans, peer-to-peer lending, crowdfunding

Figure 23 shows the weighted percentage of businesses, over 2009-2019, which stated using these products in the previous 6 months or considering using them in the future. We can see that, for most finance options, the UK presents similar figures to those of France and, especially, Germany. The largest discrepancies arise in the case of bank loans (19, 28 and 32 per cent for the UK, Germany and France, respectively) and trade credit (44, 15 and 12 per cent for the UK, Germany and France, respectively). The economic literature suggests that trade credit tends to be more utilised when bank credit availability is lower. [García-Teruel and Martínez-Solano \(2010\)](#), for instance, in studying the determinants of trade credit use by European SMEs, find that firms reduce their levels of debt from suppliers when they can access other short- or long-term debt which have lower cost. [Moro et al. \(2021\)](#), with a large sample of small firms in Western Europe, investigate how countries' culture impacts SMEs' use of trade credit. Their results indicate that countries where culture discourages information sharing between banks and SMEs, the latter tend to rely more on trade credit. Trade creditors might have better information about SMEs due to their commercial relationship, and thus be more willing to lend than financial institutions.

Figure 23: Financial products usage by country



Regarding measures of discouragement, the SAFE asks businesses whether they did not apply to external finance due to fear of rejection, which is the narrowest definition of discouragement. No substantial differences are found between the three analysed countries over 2009-2019, and rates are found to be in general lower than 4 per cent. Nonetheless, the comparability of rates across countries relies on businesses having the same conception of banks across countries, that is, cultural differences might mean that businesses across the UK, Germany and France can have different expectations about the products/services offered by banks. The embedded culture in the UK might lead businesses to believe that bank finance does not apply to some of their needs, even if across borders it does. This is similar to some of the arguments already raised in the 20th century and recorded by [Collins \(1991\)](#). In that case, businesses might just believe they do not need bank finance and thus not be considered “discouraged”. Nonetheless, as also registered by [Collins \(1991\)](#), banks might not lend more because businesses do not demand bank finance, implying a demand-led issue. While this might contribute to the UK lower application rate, our market engagement in [Appendix A](#) and our analysis of discouragement in [Section 6.2](#), suggest a closer relationship between UK businesses and banks would generate a higher application rate.

### 6.3.4 Methodology

To estimate the finance gap in the UK, we take Germany and France as benchmarks. Define  $s_{it}$  as a dummy variable, which is equal to 1 when the application for a bank loan of firm  $i$  is successful and is equal to zero otherwise. In addition, define  $a_{it}$  as a dummy variable, which is equal to 1 when a firm  $i$  applies for a bank loan and is equal to zero otherwise. Let

$$P(a_{it} = 1|z_{it}) = \Phi(\alpha z_{it}), \quad (9)$$

be the probability of firm  $i$  to apply for finance given the vector  $z_{it}$  which contains variables relevant for this decision. All variables are described on the next page.  $\Phi(\cdot)$  denotes the Normal distribution function. Let

$$P(s_{it} = 1|x_{it}) = \Phi(\beta x_{it}), \quad (10)$$

be the probability of an application of firm  $i$  to be successful, where  $x_{it}$  is a vector of variables which affect the decision of lending.

Naturally, we can only observe acceptance or rejection for the firms that applied, that is, the sample model is given by  $P(s_{it} = 1|a_{it} = 1, x_{it})$ . If firms which apply for finance are on average no more or less likely to have their application accepted, then  $P(s_{it} = 1|a_{it} = 1, x_{it}) = P(s_{it} = 1|x_{it})$ . In this case, equations (9) and (10) could be separately estimated. However, if firms which apply for finance are, for instance, more productive or have better credit history and thus are more likely to be accepted, then we would have a sample selection problem (Heckman, 1979) and this estimation will lead to biased results since the probabilities of application and success are not independent, that is,  $P(s_{it} = 1|a_{it} = 1, x_{it}) \neq P(s_{it} = 1|x_{it})$ . To account for this, estimation follows the procedure developed by Heckman (1979) and considers the following model:

$$P(a_{it} = 1|z_{it}) = \Phi(\alpha z_{it}) \text{ and} \quad (11)$$

$$P(s_{it} = 1|a_{it} = 1, x_{it}) = \frac{\Phi(\alpha z_{it}, \beta x_{it}, \rho)}{\Phi(\alpha z_{it})}, \quad (12)$$

where  $\Phi(\alpha z_{it}, \beta x_{it}, \rho)$  is the joint normal distribution of applying and succeeding, i.e,  $P(s_{it} = 1, a_{it} = 1|x_{it})$ , and  $\rho$  is the correlation between the two probabilities. If the two probabilities are independent,  $\rho = 0$ . Traditionally, (11) is called the "selection equation" and (12) is called the "outcome equation". While originally Heckman (1979) designed his methodology considering a continuous dependent variable in the outcome equation, similar scenarios to ours, where both the dependent variable is binary in both the selection as well as in the outcome equation, can be found for instance in Mohanty (2002) and Greene (1992).

Our explanatory variables in  $z_{it}$  and  $x_{it}$  include some common variables between the equations:

- Business size: indicated as a dummy variable 'Micro/small' which is equal 1 if the business is micro or small and equal 0 otherwise.
- Turnover: indicated as a dummy variable 'Turnover up to 2m' which is equal 1 if the business turnover is lower than or equal to 2 million pounds and equal 0 otherwise.

- Age: indicated as a dummy variable 'Five or more years of age' which is equal 1 if the business age is higher than or equal to 5 years and equal 0 otherwise.
- Credit history: indicated as a dummy variable 'Credit history improved' which is equal 1 if the business' credit history improved in the last six months and equal 0 otherwise.
- Ownership: indicated as a dummy variable 'Family/individuals ownership' which is equal 1 if the business is owned by a family or a group of individuals and equal 0 otherwise.
- Business internal capital: indicated as a dummy variable 'Own capital improved' which is equal 1 if the business' capital improved in the last six months and equal 0 otherwise.
- Industry: indicated as a dummy variable 'Manufacturing/construction' which is equal 1 if the business belongs either to the manufacturing or to the construction industries, and equal 0 otherwise. The industry variable in SAFE contains some missing values which we turn into a separate dummy 'Unknown industry'. We choose to do this rather than dropping those observations because the latter would substantially reduce the UK sample.
- Year 2013: indicated as a dummy variable '2013 year dummy' which is equal 1 if year corresponds to 2013, and equal 0 otherwise. We also experimented with a 'post 2013' dummy and the fitted probability results are very similar. This variable is meant to control for the introduction of Basel III.
- Economy health: proxied by 'GDP growth per capita'.

In addition, for identification of the outcome equation, we have included additional variables in  $z_{it}$  which affect the probability of finance application but not the success of application (exclusion restrictions). These are businesses' expectations on the future improvement of their own capital, their growth and on the availability of leasing or hire-purchase finance. In the outcome equation we include variables to proxy for the cost that banks face in their own funding. Following, for instance, [Holton et al. \(2014\)](#), we use the logarithm of the median CDS price on bank bonds in each country to assess the impact of stress in the financial sector on lending decisions. Sovereign bonds are expected to impact the supply and terms and conditions of credit offered by banks due to its role as collateral in the interbank market ([Holton et al., 2014](#)).

We estimate equations (11) and (12) for the UK, Germany and France, but not for Sweden in SAFE, because of its small sample, which could generate imprecise and biased results. After estimation, for computing the gap and the macroeconomic effects, we consider the joint probability  $P(s_{it} = 1, a_{it} = 1 | x_{it})$  given by  $\Phi(\alpha z_{it}, \beta x_{it}, \rho)$ . We compute the fitted values from the estimated UK model applied to the UK data and produce out-of-sample predictions by applying the estimated models of Germany and France to the UK data, constructing our counterfactuals. This results in the fitted and predicted joint probabilities  $\Phi(\hat{\alpha}^{UK} z_{it}^{UK}, \hat{\beta}^{UK} x_{it}^{UK}, \hat{\rho}^{UK})$ ,  $\Phi(\hat{\alpha}^{DE} z_{it}^{UK}, \hat{\beta}^{DE} x_{it}^{DE}, \hat{\rho}^{DE})$  and  $\Phi(\hat{\alpha}^{FR} z_{it}^{UK}, \hat{\beta}^{FR} x_{it}^{UK}, \hat{\rho}^{FR})$ .

This approach assumes that businesses in the UK would behave under the German and French systems in the same way that German and French businesses do. In other words, it assumes that businesses in the UK have the same preferences as German and French businesses. If one con-



siders that these preferences are shaped through history and culture, this assumption might be strong. However, if one considers that businesses have in general the same preferences across borders, making choices based on the same optimisation problem governed by the same parameters, then our assumption is valid. This is necessary because we do not observe businesses operating in the UK as well as in Germany or France.

Furthermore, SAFE is the only cross-country uniform source of information on business finance applications and success. Therefore, it provides a basis for the evaluation of the UK system beyond UK surveys. However, it does not include a few important pieces of information:

- Interest rates on bank loans: no information is given on the interest rates of loan offers, hence differences in prices and price sensitivities cannot be controlled for. A robustness check which controls for the average interest rates on business loans is included in Appendix B.2.2.
- Loan values: the loan values businesses apply to and receive are also unknown. Therefore, the estimated increase in loan values in Section 6.3.6 consider only the extensive margin.
- Type of bank applied to (savings/co-operative/commercial banks): because this is not available, it is not possible to estimate differences in probabilities between applying for commercial banks' loans and applying for savings or co-operative banks' loans, nor to estimate the differences in outcomes amongst these banks.

If types of banks were observed, it would be possible to estimate the effect of relationship banking implementation net of other country factors. For instance, the implementation of such a policy in the UK would likely not replicate the German banking regulation. However, regulation plays an important role mainly in banks' willingness to lend. Therefore, regulation affects our results, as well as other factors do, such as country culture. In essence, our methodology transposes the entire banking systems of Germany and France, along with all unobserved elements associated with their outcomes.

Nonetheless, UK businesses, like their German and French counterparts, still appear to have a preference for bank lending (see Figure 2). As our market engagement as well as Figure 3 demonstrate, UK businesses worry about the cost of external finance, which could lower the effect from a potential reform since relationship banks are expected to have a slightly higher interest rate than commercial banks due to the labour intensive work of maintaining lender-borrower relationship. Nonetheless, as shown in Figure 3, German and French businesses, who have access to relationship banking were less likely to indicate cost as their main barrier to bank loans. Of course, this might be the result of higher price elasticity of demand in the UK or lower interest rates and fees in Germany and France. Figure 6 does indicate lower average interest rates in France. Moreover, as mentioned in Section 2.1, a conversation with Handelsbanken UK, which operates relationship banking and is the best rated amongst SMEs in the BVA BDRC survey for 3 out of 5 measures, indicates that their charges are competitive in the market. Fewer layers of bureaucracy are potentially a contributing factor to this.

Cultural factors or higher risk aversion to borrowing in the UK could also dampen the effects of

a reform. Yet, our market engagement suggests an existing appetite by SMEs for more closeness with their banks. In addition, our conversation with Handelsbanken UK also shows that British businesses welcome a relationship approach, in particular when loan values are higher.

Furthermore, all three countries follow the Basel Accord, which has aimed to set minimum requirements of capital adequacy across countries.<sup>8</sup> Hence, while overall regulations may still differ across countries, they all follow a baseline.

Overall, our model is not structural, hence it is subject to the Lucas' critique, that is, its parameters are not structural and so can change as a result of policy changes. This is a result of the fact that we do not model businesses' and banks' optimisation problems when making their decision to apply for finance or lend, taking into account their expectations about the future. One could then imagine that the creation of new banks in the UK would make agents re-optimize, leading to different parameters and thus to different results from those we estimate. Nonetheless, given the considerations above regarding regulation, culture and preferences as well as the fact that the new banks would be an option and not replace existing banks, we believe our results still hold. In addition, the historical evidence from Germany shows the export success of the manufacturing "Mittelstand" (medium-sized companies), supported by long-term banking relationships and bank lending since 1945, via the local Sparkassen and cooperative banks (Lloyd, 2021). In Germany, 21 per cent of SMEs exported in 2021; in the UK, 11.8 per cent of SMEs exported in 2022. Therefore, as long as the new relationship banks are as efficient and similarly motivated as their German counterparts, one could expect relationship banks to contribute to the expansion of higher (real) added-value businesses in the UK, although other factors, beyond the scope of this report, would still impinge such as high energy costs, taxes and red-tape.

Lastly, as discussed in Section 6.4.6, new banks may be at risk of higher adverse selection initially, due to attracting higher risk borrowers. However, experience and knowledge about borrowers and regions gathered over time is expected to gradually lessen this issue.

### 6.3.5 Results

Table 15 includes summary statistics of the final data used in estimation. Table 16 displays the estimated coefficients from estimating equations (11)-(12) and Table 17 contains the respective average marginal effects, that is, the average percentage change in the probability of applying for finance (selection columns) and the conditional probability of being successful (outcome columns). Appendix B.2.2 shows additional results from variations in the model specifications. Our model specification has been chosen based on the variables we considered relevant for the decisions of applying and providing the loan, on the plausibility of the coefficients' signs and on avoiding collinearity issues to which the model was prone due to SAFE being mostly composed of categorical variables. Overall, the estimates follow what we expected.

For estimation, we create a dummy variable equal to 1 if a business is micro or small (MS) and equal to zero otherwise. The categories micro, small, medium and large are defined as follows:

- Micro: 1-9 employees and less than €2 million in turnover;

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<sup>8</sup>Link to source: <https://www.bis.org/bcbs/history.htm>

- Small: 10-49 employees and less than €10 million in turnover;
- Medium: 50-250 employees and less than €50 million in turnover; and
- Large: 250 or more employees or more €50 million in turnover.

With the exception of France, being a micro or small business (MS) does not present a significant effect on the probability of finance application acceptance. Nonetheless, a smaller size has a negative impact on the probability of application. It makes UK businesses 7.7 percentage points less likely to apply. For Germany and France the expected negative impact is 4.7 and 5.8 percentage points, respectively. We also add a variable indicating whether the business has up to €2 million in turnover, which shows a negative effect in both probabilities for all countries, although, for the UK, the marginal effect is only significant at 10 per cent level.

Years of age only presents an expected significant impact for France, where businesses with five or more years of age are 10 percentage points more likely to be successful when applying for finance. In the UK, older businesses are less likely to apply by 6.4 percentage points, in contrast to France, where older businesses are 3.4 percentage points more likely to apply.

Improvement in credit history presents positive statically significant effects on finance application in France and in the UK, and on application success in Germany.

The effect of ownership of businesses by families or individuals is estimated negative for all countries in both the selection and outcome equations. In the latter case, only Germany presents significance at 5 per cent level. The effect for the UK is at 10 per cent level.

Improvement of a business' own capital shows significant positive impact on application for Germany and France. The results are statistically insignificant for application success.

As explained previously, we use businesses' expectations on the improvement of their own capital, their growth and on the availability of leasing or hire-purchase finance as exclusion restrictions, that is variables which only affect the decision to apply for bank loans. All countries present significant estimates of these variables' effects, implying that they represent good exclusion restrictions.

The sector variable presents many missing values in SAFE. Therefore, in order to be able to include this variable as well as avoid dropping numerous observations, we have replaced the missing values of this variable with the number 2. Whether the business belongs to the manufacturing or construction sectors rather than trade or services does not show any statistically significant estimates.

We add a dummy variable equal to 1 if the year corresponds to 2013, and equal to zero otherwise.

GDP per capita growth presents negative and significant impact on finance applications in Germany and the UK, but a positive and significant impact on applications in France. No significant impact is found on the probability of application success.

Our proxies for the cost of bank funding present estimates as expected, i.e. negative, although not significant.

Our estimates of  $\rho$ , the correlation term, are significant for both the UK and Germany further justifying the use of the Heckman approach.

The lower significance of the results for the outcome stage relative to the selection stage, in particular for the UK, might be a result of the smaller sample size.



Table 15: Summary statistics

| Variable                           | Statistic | UK   | DE   | FR   |
|------------------------------------|-----------|------|------|------|
| loan application                   | Mean      | 0.16 | 0.24 | 0.34 |
|                                    | Median    | 0.00 | 0.00 | 0.00 |
| Micro/small (MS)                   | Mean      | 0.55 | 0.52 | 0.60 |
|                                    | Median    | 1.00 | 1.00 | 1.00 |
| Turnover up to 2m                  | Mean      | 0.43 | 0.38 | 0.45 |
|                                    | Median    | 0.00 | 0.00 | 0.00 |
| Five or more years age             | Mean      | 0.92 | 0.94 | 0.92 |
|                                    | Median    | 1.00 | 1.00 | 1.00 |
| Credit history improved            | Mean      | 0.30 | 0.36 | 0.24 |
|                                    | Median    | 0.00 | 0.00 | 0.00 |
| Family/individuals ownership       | Mean      | 0.33 | 0.43 | 0.38 |
|                                    | Median    | 0.00 | 0.00 | 0.00 |
| Own capital improved               | Mean      | 0.31 | 0.40 | 0.26 |
|                                    | Median    | 0.00 | 0.00 | 0.00 |
| Own funds expectation              | Mean      | 0.18 | 0.11 | 0.09 |
|                                    | Median    | 0.00 | 0.00 | 0.00 |
| Growth expectation                 | Mean      | 0.13 | 0.06 | 0.05 |
|                                    | Median    | 0.00 | 0.00 | 0.00 |
| Leasing/hire-purchase availability | Mean      | 0.07 | 0.06 | 0.06 |
|                                    | Median    | 0.00 | 0.00 | 0.00 |
| Manufacturing/construction         | Mean      | 0.53 | 0.58 | 0.54 |
|                                    | Median    | 0.00 | 0.00 | 0.00 |
| 2013 year dummy                    | Mean      | 0.10 | 0.09 | 0.10 |
|                                    | Median    | 0.00 | 0.00 | 0.00 |
| GDP growth per capita              | Mean      | 0.88 | 0.84 | 0.71 |
|                                    | Median    | 1.15 | 0.85 | 0.83 |
| loan successful                    | Mean      | 0.79 | 0.85 | 0.84 |
|                                    | Median    | 1.00 | 1.00 | 1.00 |
| median CDS price                   | Mean      | 4.71 | 4.90 | 4.68 |
|                                    | Median    | 4.64 | 4.93 | 4.68 |
| Government bond yield              | Mean      | 1.93 | 0.96 | 1.40 |
|                                    | Median    | 1.99 | 0.57 | 0.94 |

Table 16: Loan application and success probabilities (Heckman selection model) - Coefficient estimates

|                              | Selection          |                    |                    | Outcome            |                    |                    |
|------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                              | UK                 | Germany            | France             | UK                 | Germany            | France             |
| (Intercept)                  | −0.57***<br>(0.05) | −0.66***<br>(0.04) | −0.38***<br>(0.05) | −0.17<br>(0.28)    | 0.37<br>(0.34)     | 1.81***<br>(0.37)  |
| Micro/small (MS)             | −0.32***<br>(0.05) | −0.16***<br>(0.03) | −0.16***<br>(0.04) | −0.28***<br>(0.07) | −0.22***<br>(0.05) | 0.22**<br>(0.10)   |
| Turnover up to 2 m           | −0.12***<br>(0.05) | −0.23***<br>(0.02) | −0.30***<br>(0.04) | −0.28***<br>(0.07) | −0.43***<br>(0.05) | −0.50***<br>(0.11) |
| Five or more years of age    | −0.25***<br>(0.04) | 0.05*<br>(0.03)    | 0.09**<br>(0.04)   | 0.03<br>(0.07)     | 0.29***<br>(0.07)  | 0.32***<br>(0.08)  |
| Credit history improved      | 0.09***<br>(0.02)  | 0.01<br>(0.01)     | 0.14***<br>(0.02)  | 0.20***<br>(0.04)  | 0.21***<br>(0.03)  | 0.06<br>(0.05)     |
| Family/individuals ownership | −0.09***<br>(0.02) | −0.08***<br>(0.02) | −0.12***<br>(0.02) | −0.22***<br>(0.04) | −0.18***<br>(0.04) | −0.09*<br>(0.05)   |
| Own capital improved         | −0.03<br>(0.02)    | 0.07***<br>(0.01)  | 0.15***<br>(0.02)  | −0.02<br>(0.04)    | −0.01<br>(0.03)    | 0.15***<br>(0.05)  |
| Own funds expectation        | 0.11***<br>(0.02)  | 0.11***<br>(0.02)  | −0.22***<br>(0.03) |                    |                    |                    |
| Growth expectation           | 0.13***<br>(0.03)  | 0.09***<br>(0.03)  | 0.23***<br>(0.04)  |                    |                    |                    |
| Leasing/HP availability      | −0.20***<br>(0.04) | −0.21***<br>(0.03) | −0.11***<br>(0.04) |                    |                    |                    |

|                            | Selection          |                    |                   | Outcome           |                    |                   |
|----------------------------|--------------------|--------------------|-------------------|-------------------|--------------------|-------------------|
|                            | UK                 | Germany            | France            | UK                | Germany            | France            |
| Manufacturing/construction | −0.05<br>(0.05)    | 0.04<br>(0.03)     | 0.07*<br>(0.04)   | −0.05<br>(0.08)   | 0.01<br>(0.05)     | −0.13*<br>(0.07)  |
| Unknown industry           | 0.06<br>(0.03)     | 0.19***<br>(0.02)  | 0.05*<br>(0.03)   | 0.27***<br>(0.06) | 0.40***<br>(0.05)  | −0.08<br>(0.07)   |
| 2013 year dummy            | 0.05<br>(0.02)     | 0.24***<br>(0.02)  | 0.06**<br>(0.03)  | 0.02<br>(0.04)    | 0.61***<br>(0.07)  | −0.10*<br>(0.06)  |
| GDP growth per capita      | −0.02***<br>(0.00) | −0.02***<br>(0.00) | 0.06***<br>(0.01) | 0.01<br>(0.01)    | 0.01<br>(0.01)     | 0.02<br>(0.02)    |
| $\rho$                     | 0.93***<br>(0.04)  | 0.76***<br>(0.10)  | −0.37<br>(0.25)   | 0.93***<br>(0.04) | 0.76***<br>(0.10)  | −0.37<br>(0.25)   |
| Median CDS price           |                    |                    |                   | −0.09<br>(0.06)   | −0.14***<br>(0.04) | −0.12*<br>(0.07)  |
| Government bond yield      |                    |                    |                   | −0.08**<br>(0.03) | −0.02<br>(0.01)    | −0.05**<br>(0.02) |
| Log Likelihood             | −4646.09           | −9940.19           | −8041.46          | −4646.09          | −9940.19           | −8041.46          |
| Num. obs.                  | 4978               | 7081               | 8581              | 4978              | 7081               | 8581              |
| Censored                   | 4198               | 5394               | 5671              | 4198              | 5394               | 5671              |
| Observed                   | 780                | 1687               | 2910              | 780               | 1687               | 2910              |

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.10$

Table 17: Loan application and success probabilities (Heckman selection model) – Marginal effects

|                               | Selection            |                      |                      | Outcome          |                   |                    |
|-------------------------------|----------------------|----------------------|----------------------|------------------|-------------------|--------------------|
|                               | UK                   | Germany              | France               | UK               | Germany           | France             |
| Micro/small (MS)              | −0.077***<br>(0.012) | −0.047***<br>(0.008) | −0.058***<br>(0.016) | −0.01<br>(0.05)  | −0.04<br>(0.03)   | 0.05*<br>(0.03)    |
| Turnover up to 2 m            | −0.028***<br>(0.010) | −0.067***<br>(0.007) | −0.107***<br>(0.013) | −0.11*<br>(0.06) | −0.10**<br>(0.04) | −0.15***<br>(0.03) |
| Five or more years of age     | −0.064***<br>(0.011) | 0.016*<br>(0.009)    | 0.031**<br>(0.014)   | 0.14<br>(0.09)   | 0.09*<br>(0.05)   | 0.10**<br>(0.04)   |
| Credit history improved       | 0.022***<br>(0.005)  | 0.002<br>(0.004)     | 0.050***<br>(0.008)  | 0.07*<br>(0.04)  | 0.07**<br>(0.03)  | 0.02<br>(0.02)     |
| Family / individual ownership | −0.021***<br>(0.004) | −0.025***<br>(0.005) | −0.040***<br>(0.008) | −0.09*<br>(0.05) | −0.04**<br>(0.02) | −0.03<br>(0.02)    |
| Own-capital improved          | −0.006<br>(0.005)    | 0.021***<br>(0.004)  | 0.053***<br>(0.008)  | 0.00<br>(0.05)   | −0.02<br>(0.03)   | 0.05**<br>(0.02)   |
| Own-funds expectation         | 0.026***<br>(0.005)  | 0.032***<br>(0.005)  | −0.073***<br>(0.009) |                  |                   |                    |
| Growth expectation            | 0.032***<br>(0.007)  | 0.028***<br>(0.009)  | 0.082***<br>(0.016)  |                  |                   |                    |
| Leasing / HP availability     | −0.043***<br>(0.008) | −0.057***<br>(0.007) | −0.037***<br>(0.014) |                  |                   |                    |



|                              | Selection            |                      |                     | Outcome          |                   |                 |
|------------------------------|----------------------|----------------------|---------------------|------------------|-------------------|-----------------|
|                              | UK                   | Germany              | France              | UK               | Germany           | France          |
| Manufacturing / construction | −0.01<br>(0.01)      | 0.01<br>(0.01)       | 0.02**<br>(0.01)    | −0.01<br>(0.04)  | −0.01<br>(0.02)   | −0.03<br>(0.02) |
| Unknown industry             | 0.01<br>(0.01)       | 0.06***<br>(0.01)    | 0.02**<br>(0.01)    | 0.11**<br>(0.05) | 0.08***<br>(0.03) | −0.02<br>(0.03) |
| Year 2013 dummy              | 0.011*<br>(0.006)    | 0.077***<br>(0.005)  | 0.021**<br>(0.009)  | −0.01<br>(0.08)  | 0.12***<br>(0.02) | −0.02<br>(0.04) |
| GDP growth per capita        | −0.004***<br>(0.001) | −0.005***<br>(0.001) | 0.023***<br>(0.003) | 0.02<br>(0.02)   | 0.01<br>(0.00)    | 0.01<br>(0.01)  |
| Median CDS price             |                      |                      |                     | −0.05<br>(0.08)  | −0.05<br>(0.05)   | −0.03<br>(0.04) |
| Government bond yield        |                      |                      |                     | −0.05*<br>(0.03) | −0.01<br>(0.01)   | −0.01<br>(0.01) |

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.10$

The coefficient estimates in Table 16 are then used to compute the fitted and predicted probabilities of transaction in the UK under the current system and under the German and French systems, i.e.  $\Phi(\hat{\alpha}^{UK} z_{it}^{UK}, \hat{\beta}^{UK} x_{it}^{UK}, \hat{\rho}^{UK})$ ,  $\Phi(\hat{\alpha}^{DE} z_{it}^{UK}, \hat{\beta}^{DE} x_{it}^{DE}, \hat{\rho}^{DE})$  and  $\Phi(\hat{\alpha}^{FR} z_{it}^{UK}, \hat{\beta}^{FR} x_{it}^{UK}, \hat{\rho}^{FR})$ . Figure 24 displays the distribution of these probabilities grouped into large enterprises and SME categories along with the average of each distribution. Figure 25 displays the average probability of each distribution and its 95 per cent confidence interval, computed via bootstrap.<sup>9</sup> We can see that the averages under the current system are lower than both of our counterfactuals.

Under the current UK system 11 per cent of SMEs both apply for finance and are successful in receiving it. Under the German counterfactual, 18 per cent of UK SMEs are expected to apply and be accepted for finance and, under the French counterfactual, the figure would be 27 per cent. In the case of large enterprises, 21 per cent both apply for finance and are successful under the UK current system. That figure is expected to increase to 33 and 38 per cent under the German and the French counterfactuals, respectively. We highlight however that this result is more uncertain, showing larger confidence intervals. Appendix B.2.1 provides the Brier scores of the predictive power of each country model: 0.105 for the UK model, 0.156 for the German model and 0.193 for the French model. Based on these, the German counterfactual is expected to be more reliable than the French counterfactual.

Contrary to our results, we did expect the difference for large companies to be smaller, since they might have better relationships with banks and, in the UK as well as in other countries, they are likely to have more external finance options available such as debt issuing. However, Figure 9 does show that large businesses in DE and FR are considerably more likely to apply for bank loans than UK large businesses. Yet, as stated above, uncertainty for these results is higher, a reflection of the smaller sample for these companies.

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<sup>9</sup>Bootstrap is a resampling technique where, in one of its forms, rows of the data are resampled repeatedly creating numerous new samples which are used to re-estimate the model. These estimations result in a distribution of estimates from which inference can be performed.

Figure 24: Joint probabilities of applying for finance and being successful  $P(1, 1|x, z)$

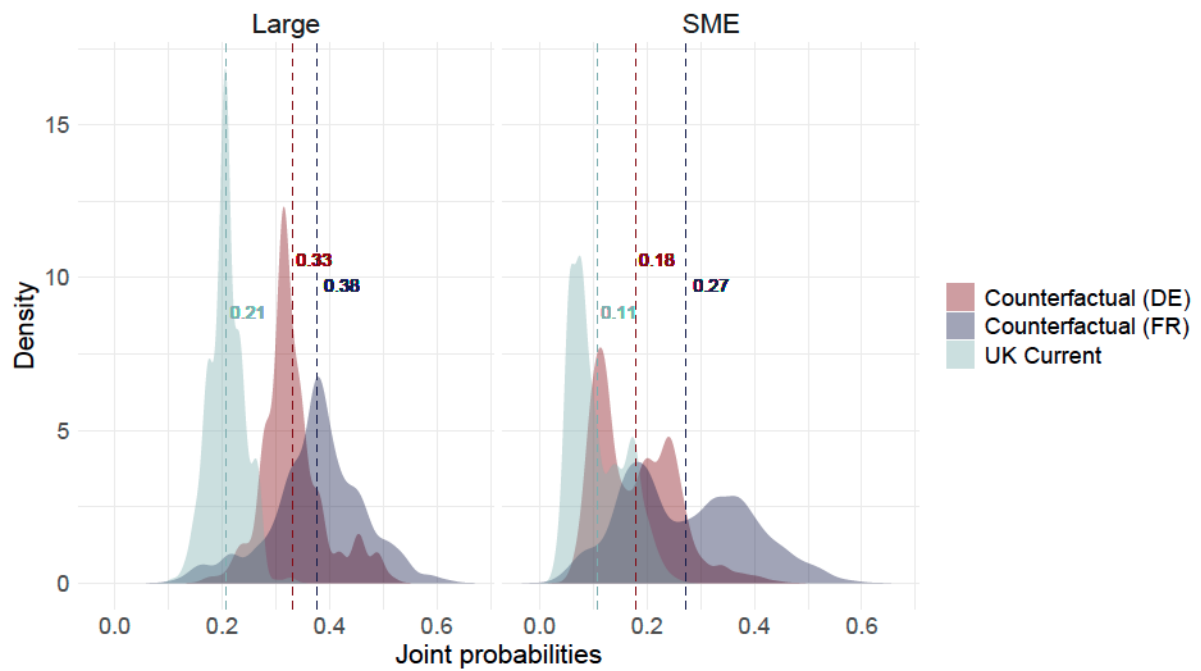
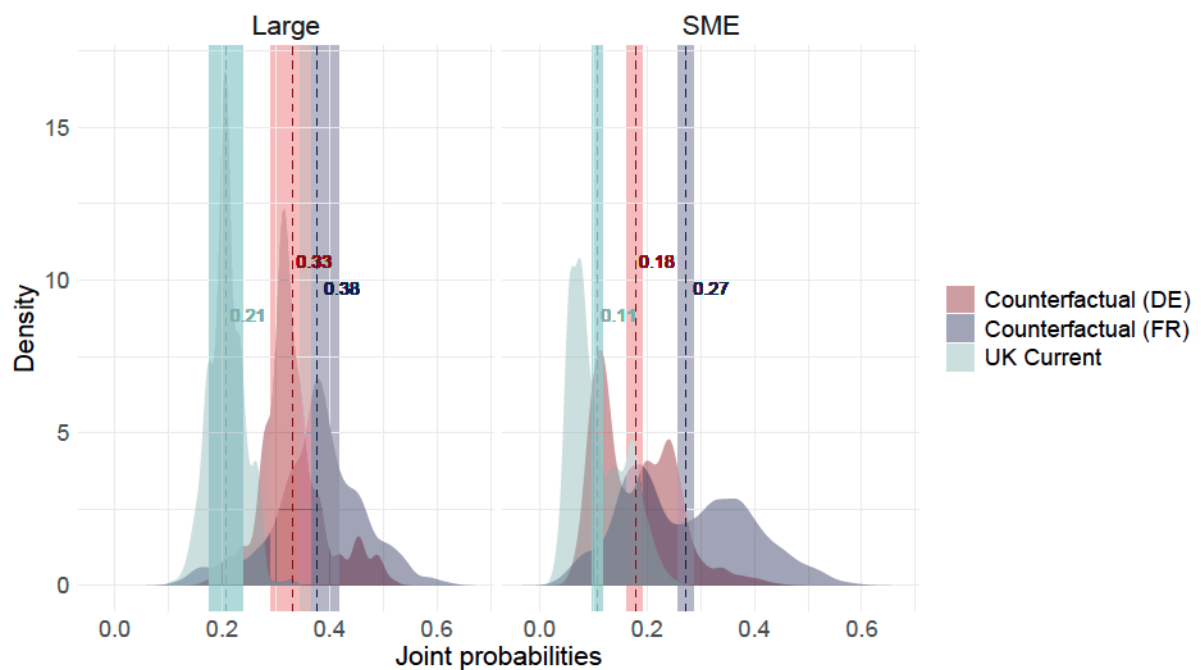


Figure 25: Joint probabilities of applying for finance and being successful  $P(1, 1|x, z)$  and 95 per cent confidence intervals



### 6.3.6 Lending Gap

Similarly to Akbas et al. (2023), we use the following definition for the gap between the UK and each country  $C \in \{DE, FR\}$ :

$$\begin{aligned} \text{credit gap} &= \text{gross loans} \frac{\sum_{it} w_{it} [P^C(1, 1|x_{it}, z_{it}) - P^{UK}(1, 1|x_{it}, z_{it})]}{\sum_i w_i P^{UK}(1, 1|x_{it}, z_{it})} \\ &= \text{gross loans} \frac{\sum_{it} w_{it} [\Phi(\hat{\alpha}^C z_{it}^{UK}, \hat{\beta}^C x_{it}^{UK}, \hat{\rho}^C) - \Phi(\hat{\alpha}^{UK} z_{it}^{UK}, \hat{\beta}^{UK} x_{it}^{UK}, \hat{\rho}^{UK})]}{\sum_{it} w_{it} \Phi(\hat{\alpha}^{UK} z_{it}^{UK}, \hat{\beta}^{UK} x_{it}^{UK}, \hat{\rho}^{UK})}. \end{aligned} \quad (13)$$

Akbas et al. (2023) also use employment size in their numerator and denominator. SAFE, however, only contains banded employment. We have experimented using the lower bound of each employment category (1 for businesses with 1 to 9 employees, 10 for businesses with 10 to 49 employees, 50 for businesses with 50 to 249 employees, and 250 for businesses with 250 or more employees) in the computation as:

$$\begin{aligned} \text{credit gap} &= \text{gross loans} \frac{\sum_{it} w_{it} [P^C(1, 1|x_{it}, z_{it}) - P^{UK}(1, 1|x_{it}, z_{it})] L_{it}}{\sum_i w_i P^{UK}(1, 1|x_{it}, z_{it}) L_{it}} \\ &= \text{gross loans} \frac{\sum_{it} w_{it} [\Phi(\hat{\alpha}^C z_{it}^{UK}, \hat{\beta}^C x_{it}^{UK}, \hat{\rho}^C) - \Phi(\hat{\alpha}^{UK} z_{it}^{UK}, \hat{\beta}^{UK} x_{it}^{UK}, \hat{\rho}^{UK})] L_{it}}{\sum_{it} w_{it} \Phi(\hat{\alpha}^{UK} z_{it}^{UK}, \hat{\beta}^{UK} x_{it}^{UK}, \hat{\rho}^{UK}) L_{it}}. \end{aligned} \quad (14)$$

The estimated gaps of Equation (14) for SMEs are moderately lower to those of Equation (13). This formula can be understood as the following. Consider that the denominator contains the number of businesses in the UK which apply for and receive bank loans. The amount borrowed by these businesses corresponds to the value of gross loans in the UK economy. Analogously, the term  $\sum_{it} w_{it} \Phi(\hat{\alpha}^C z_{it}^{UK}, \hat{\beta}^C x_{it}^{UK}, \hat{\rho}^C)$  in numerator represents the number of UK businesses which would apply for bank loans and be successful under the banking system of country  $C$  (Germany or France). Therefore, the numerator contains how many more businesses would take bank loans in the counterfactual scenario than in the current system.

An important assumption of this is that loans would change in number but their average value would remain constant. Hence, this counterfactual analysis only refers to the extensive margin of lending. We cannot assess the intensive margin since the data available provide no information on the value of loans.

For the value of gross loans, we source from the BoE the series

- Monthly changes of monetary financial institutions' sterling and all foreign currency gross lending to SMEs (in sterling millions) not seasonally adjusted;
- Monthly changes of monetary financial institutions' sterling and all foreign currency gross lending to large enterprises (in sterling millions) not seasonally adjusted;
- Monthly changes of monetary financial institutions' sterling and all foreign currency gross lending to all enterprises (in sterling millions) not seasonally adjusted.



The series starts in 2011. Therefore, we will use the period from 2011 to 2019 for the computation of the monetary gaps. The BoE defines SMEs "as those with an annual debit account turnover on the main business account of up to £25 million. Those with an annual debit account turnover on the main business account above £25 million are termed large businesses." Note that our size categories do not exactly match this definition since we also consider number of employees. We deflate the series by the Consumer Price Index (CPI) with base in January 2025.

Table 18 shows the computed gaps with Germany and France for each enterprise group (SMEs, large and all) using Equations (13) and (14). The current lending column shows the total gross lending to businesses from 2011 to 2019. The gaps are the expected amounts which would have been added to 2011-2019 lending under the counterfactuals. The estimated gaps with the German system are between £336 and £407 bns for SMEs depending on whether we weigh by employment. The estimated gap with the German system is £1,121 bns for large enterprises. It does not vary between the two computation approaches because it only contains one category and thus only one lower bound, 250 employees. With the French counterfactual, the estimated gaps are between £788 and £956 bns for SMEs. In the case of large firms, the gap is expected to be £1,531 bns.

Table 18: Real lending gaps by enterprise group (in bns of pounds deflated by CPI 2025)

|       | (a) Without employment |              | (b) With employment |              | (c)             |
|-------|------------------------|--------------|---------------------|--------------|-----------------|
| Group | Gaps with DE           | Gaps with FR | Gaps with DE        | Gaps with FR | Current lending |
| All   | £1,549                 | £2,733       | £1,479              | £2,111       | £2,520          |
| SMEs  | £407                   | £956         | £336                | £788         | £622            |
| Large | £1,121                 | £1,531       | £1,121              | £1,531       | £1,898          |

Source: BoE, SAFE (2011-2019) and authors' calculations

Table 19 reports the corresponding gaps (without employment for brevity) as shares of GDP as well as the UK actual lending between 2011 and 2019 as a share of the period total GDP. For the economy as a whole, the estimated lending gap ranges from 6.4% of GDP when benchmarked against Germany to 12.7% of GDP when benchmarked against France, compared with actual UK lending of 11.2% of GDP. Among SMEs, the implied gap is 1.7% of GDP under the German benchmark and 3.4% of GDP under the French benchmark—while actual SME lending amounts to 2.8% of GDP. In contrast, large firms present a gap of 4.7% of GDP (Germany) and 9.4% of GDP (France), against observed lending of 8.5% of GDP. Table 20 reports the corresponding annual averages.

Table 19: Lending gaps and actual lending as a share of GDP for 2011-2019

| Group | Gaps with DE | Gaps with FR | UK actual lending |
|-------|--------------|--------------|-------------------|
| All   | 6.4%         | 12.7%        | 11.2%             |
| SMEs  | 1.7%         | 3.4%         | 2.8%              |
| Large | 4.7%         | 9.4%         | 8.5%              |

Source: BoE, SAFE (2011-2019) and authors' calculations

Table 20: Average annual lending gaps and actual lending for 2011-2019 (in bns of pounds deflated by CPI 2025)

| Group | Gaps with DE | Gaps with FR | UK actual lending |
|-------|--------------|--------------|-------------------|
| All   | £172         | £304         | £280              |
| SMEs  | £45          | £106         | £69               |
| Large | £125         | £170         | £211              |

Source: BoE, SAFE (2011-2019) and authors' calculations

Keeping in mind that not all lending is used for investment and since SAFE does not contain information about the purpose of applying for finance, we use question H7b from the LSBS to estimate the share of lending which is invested. This question asks: "Did you try and obtain finance in the last 12 months for any of these reasons?"

- a. Acquisition of capital equipment or vehicles
- b. Buying, renting, leasing or improving buildings or land
- c. Investment in a new or significantly improved process
- d. Investment in a new or significantly improved goods or services
- e. Marketing
- f. Staff training or development
- g. Any other type of investment
- h. Other reasons
- i. Unsure
- j. Prefer not to answer"

The ONS defines business investment as a component of gross fixed asset formation (GFCF), excluding investment by central or local government, investment in dwellings, or the costs associated with the transfer of non-produced assets (such as land). Therefore, we consider as investment alternatives a-g with the exception of b. We then construct an estimate of the share of lending used for investment as the percentage which the amount received by those who meant to invest in those items represents in total amount lent, which corresponds to 22% over 2015-2019. If the sample is restricted to those who applied for loans, this percentage drops to 7%.

We multiply gross loans in Equations (13) and (14) by 22% to compute the lending gap for investment. This approach assumes that the percentage of lending directed at business investment would remain the same under the banking reform. Currently most investment is finance by businesses' own accumulated resources. Therefore, while investment can be expected to increase due to higher lending, it is also possible that a lot of the investment which would be funded with businesses' internal capital is instead carried out using external finance following the reform. Hence, the increase in investment is more uncertain than the increase in lending.

Table 21 shows the results. The estimated gaps with the German system are between £73 and £88 bns for SMEs depending on whether we weigh by employment. The estimated gap with the German system is £244 bns for large enterprises. With the French counterfactual, the

estimated gaps are between £171 and £208 bns for SMEs. In the case of large firms, the gap is expected to be £333 bns.

Table 21: Estimated real lending gaps for investment based on LSBS amount received (in bns of pounds deflated by CPI 2025)

| (a) Without employment |              |              | (b) With employment |              | (c)                            |
|------------------------|--------------|--------------|---------------------|--------------|--------------------------------|
| Group                  | Gaps with DE | Gaps with FR | Gaps with DE        | Gaps with FR | Current lending for investment |
| All                    | £337         | £594         | £322                | £459         | £548                           |
| SMEs                   | £88          | £208         | £73                 | £171         | £135                           |
| Large                  | £244         | £333         | £244                | £333         | £413                           |

Source: BoE, SAFE (2011-2019) and authors' calculations

Figure 26 plots the total annual lending from 2011 to 2019 under the current UK system and the estimated amounts under the counterfactual systems using solely Equation (13) for brevity. The German system in the UK would have generated about one and a half the actual UK lending per year and the French system would have resulted in about 2.1 times the actual levels.

Figure 26: Total current and counterfactual real annual lending (deflated by CPI 2025)

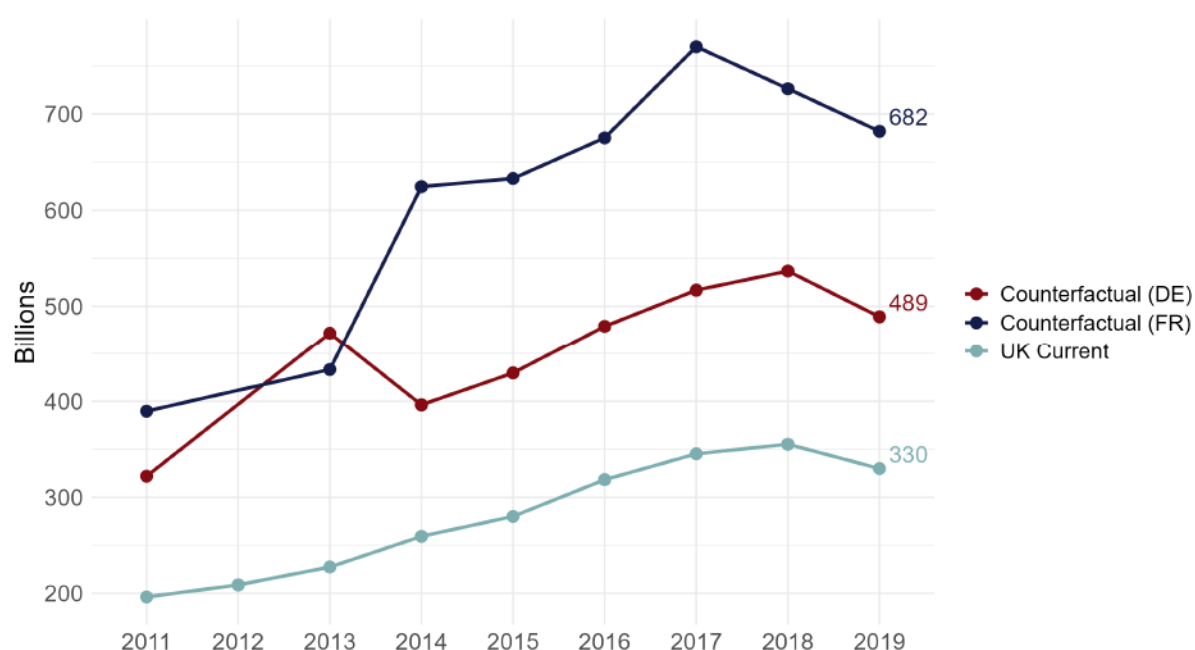


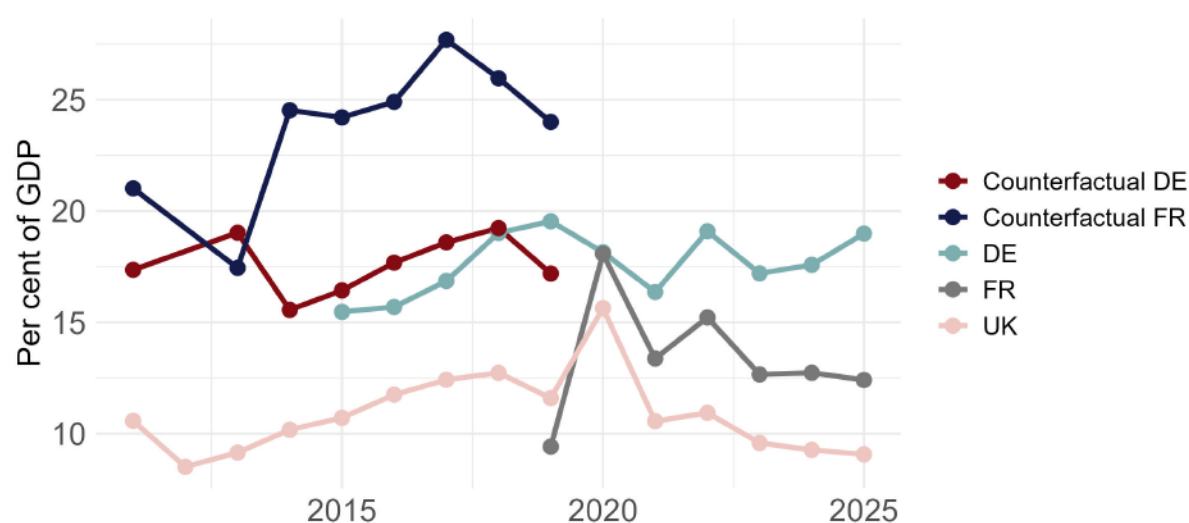
Figure 27 shows the actual per cents of GDP that new bank lending represents in the UK, Germany and France, as well as the shares that the counterfactuals would represent in the UK's GDP. The data for Germany and France consists of new loans to NFCs other than revolving loans and overdrafts, convenience and extended credit card debt, which we consider to be the closest definition to UK gross loans to NFCs excluding overdrafts.

We caution that the increase in lending is expected to lead to higher GDP (as exploited in Section 6.4), such that the ultimate per cents would be different from those displayed in Figure 27. Nonetheless, this exercise counts as a verification that the counterfactual results are sensible.

Regarding the current per cents, the UK presents the lowest lending to NFCs as a share of GDP in all years apart from 2019. The French series, unfortunately, is not available before 2019. The German series is also short, starting in 2015. The UK per cent continuously increase from 2012 until 2018, from just over 7 per cent to just over 12 per cent. In 2019, it slightly dropped and then, it spiked to 15 per cent in 2020 with the onset of the Covid-19 pandemic. It has then decreased to just under 10 per cent by 2025. French lending also spiked in 2020 and then followed an approximately parallel trajectory to UK lending, although at a higher level. It was just over 12 per cent in 2025. German lending has remained between 15 and 20 per cent of GDP since 2015.<sup>10</sup>

The counterfactual for the UK using the German model (Counterfactual DE) suggests a per cent of GDP very similar to the actual share for Germany from 2015 to 2019. Meanwhile, the counterfactual with the French model (Counterfactual FR) results in a higher percentage, varying between 17 and 27 per cent. This might be a result of UK businesses having more favourable characteristics for access to bank loans than French businesses. Overall, we consider these percentages to be reasonable.

Figure 27: Bank lending as a percentage of GDP



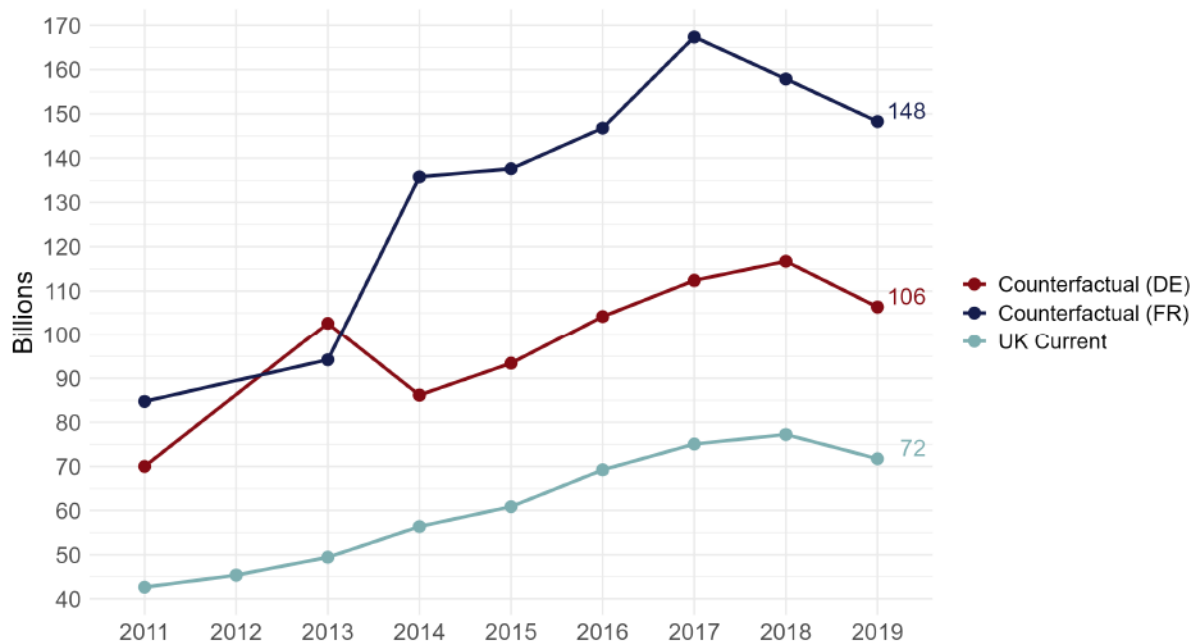
Source: Deutsche Bundesbank, ECB, BoE

Figure 28 plots the total annual lending for investment from 2011 to 2019 under the current UK system and the estimated amounts under the counterfactual systems using solely Equation (13) and based on our third estimate of lending for investment, which corresponds to 22% of total lending.

<sup>10</sup>Note that Figure 27 refers to bank lending, whereas Figure 4 displays lending from all sectors to businesses.



Figure 28: Total estimated and counterfactual real annual lending for investment



The difference between our estimates of total lending gap and lending-for-investment gap might have two potential causes, which are likely to be linked. First, risk aversion might result in banks' reluctance to lend for more uncertain purposes such as investment. Second, UK businesses present a historical habit of investing out of accumulated internal resources or family grants, which is also verified by current surveys. [Collins \(1991\)](#) documents that between the late 19th century and World War I, businesses operated in much the same way as in the previous 100 years: producing at a small scale and resourcing their investment funds from internal profits or personal ties. As reported by [Collins \(1991\)](#), some argued that the demand for bank lending existed but businesses expected to be turned down since, by the late 19th century, it was well established that banks were averse to making long-term loans and that the formal capital market was too expensive.

Furthermore, it is important to highlight that our analysis only accounts for the period post-GFC. After 2009, many central banks, including the Bank of England and the Federal Reserve moved to a system of plentiful reserves. This is where the central bank pays interest on deposits held at the policy rate. This reform in conjunction with the Basel III regulatory framework fundamentally changes the incentives and risk profile associated with commercial lending. Due to the magnitude of the financial and economic distress created by the GFC and the Great Recession, these regulatory changes aimed to reduce the fragility of the financial system and increase buffers through stress tests. These regulatory changes have largely achieved these objectives and have created a supply of safe assets to ensure sufficient liquidity and to prevent the amplification of financial shocks. However, one of the consequences is that commercial banks may have reduced incentives to innovate, compete and lend as they have access to a safe return on deposits in the form of payment of reserves at the policy rate at any point in time.

(Hogan, 2021). These regulatory changes, as well as wider economic conditions and an absence of relationship banking, contribute to the outcomes observed in commercial lending since 2008.

## 6.4 Macroeconomic Analysis

To further inform our analysis, we develop a macroeconomic DSGE model in order to understand the aggregate implications of an alternative commercial lending regime in the UK. Specifically, we develop a two firm version of [Bernanke and Gertler \(1989\)](#) with transaction costs and application choice and incorporate the production structure of [Herrendorf et al. \(2014\)](#). We apply a permanent shock to the parameters which govern the transaction cost and application choice to simulate a reform to the economy and examine the outcomes on macroeconomic aggregates.

### 6.4.1 Entrepreneur Setup

At the start of each period both types entrepreneurs face a choice to apply for a business loan. SMEs face a probability  $\theta_S$  of application while Large enterprises face an application probability  $\theta_L$ . As corroborated by survey data, large entrepreneurs consistently exhibit higher probability of applying for business loans relative to SMEs, therefore  $\theta_L > \theta_S$ . Therefore,  $1 - \theta_S$  SMEs do not apply for commercial loans and produce at a baseline level of productivity  $A^{ks}$  and  $1 - \theta_L$  Large enterprises do not apply for loans and face a baseline level of productivity  $A^{ki}$ . The remaining entrepreneurs then go on to apply for a loan and face the borrowing problem. Therefore, as is the  $\theta$  probability of acceptance; it scales up the portion of business in the model which are impacted by the change in the verification costs (i.e. move to relationship banking reducing costs of screening using soft information and a lower deadweight loss).

**The Borrowing Problem:** We assume a risk-neutral capital market mutual fund (i.e. a collection of diversified commercial banks) who lends to  $\theta_S$  portion of SMEs and  $\theta_L$  portion of large entrepreneurs. Banks provided intra-period business loans, meaning entrepreneurs borrow at the start of the period and pay back at the end of the period (hence we can drop time subscripts for this section). We use the subscript  $k = s, l$  to differentiate that each type of entrepreneur faces a different constraints and distributions. Each entrepreneurs of both types takes  $i$  units worth of investment funds and transforms them into  $\omega_k i$  units worth of capital. Entrepreneurs wish to borrow an amount  $b$ , which is the difference between their required investment funds  $i$  and their net worth  $n$ :

$$b = i - n$$

Every period, all entrepreneurs of both types draw a productivity level  $\omega_k$  from a respective distribution with a probability density  $\varphi(\omega_k)$  and cumulative distribution  $\Phi(\omega_k)$ . Where  $\omega_k(j)$  is an idiosyncratic productivity term specific to the  $j_k^{th}$  entrepreneur. This  $\omega_k$  term can be interpreted of as the 'quality' of a entrepreneur's proposed business plan in their loan application. The borrowing constraint of the  $j_k^{th}$  entrepreneur is as follows:

$$\omega_k(j)i \geq b(1 + r^k) + \mu_k$$

Where the pay-off to the  $j_k^{th}$  entrepreneur is represented by the left hand side of equation above, and the right hand side represents the cost of repaying the business loan. Banks can observe entrepreneurs  $\omega_k$  value by paying the verification cost  $\mu_k$ . This costs is passed onto entrepreneurs and represents a transaction cost to the enterprise. As corroborate by survey data, large entrepreneurs consistently exhibit higher probability of loan approval relative to SMEs, and we interpret this as SMEs facing a higher verification cost  $\mu_S > \mu_L$ . Therefore, commercial banks know whose business loans are financially viable, and whose are not. Commercial banks then provide intra-period business loans to all entrepreneurs of each type who they know can repay.

This means there is a cut-off value  $\bar{\omega}_k$  where it is not financially viable for a bank to lend to a type of entrepreneur. If we rearrange the above, we obtain this cut-off value:

$$\omega_k(j) < \frac{b(1+r^k)}{i} + \frac{\mu_k}{i} = \bar{\omega}_k \quad (15)$$

Therefore, if an entrepreneur  $j_k$  draws  $\omega_k(j) < \bar{\omega}_k$ , the bank will not lend to them and they will not invest or produce during this period. Due to the difference in the verification cost  $\mu_k$  SMEs and Large enterprises will face different cut-off thresholds for receiving loans. The distribution of business loans can therefore be visualised as follows.

The  $\Phi(\bar{\omega}_k)$  term represents the portion of the distribution of each type of entrepreneur that does not receive loans when they apply. In fact, as we normalise  $\int_{-\infty}^{+\infty} \varphi(\omega_k) d\omega = 1$  we can interpret the term  $\Phi(\bar{\omega})$  as being the percentage of entrepreneurs who make unsuccessful loan applications.

Therefore, the net pay-off to entrepreneurs generated from intra-period business loans is:

$$if(\bar{\omega}_k) = i \left[ \int_{\bar{\omega}}^{\infty} \omega \varphi(\omega_k) d\omega - (1 - \Phi(\bar{\omega}_k)) b(1+r^k) \right] \quad (16)$$

The first term  $\int_{\bar{\omega}_k}^{\infty} \omega_k \varphi(\omega_k) d\omega$  represents the total pay-off of each type of entrepreneur who receives loans. The second term  $(1 - \Phi(\bar{\omega}_k)) b(1+r^k)$  represents the total cost of business loans to each type of entrepreneur who receives a loan.

The net capital income received by banks through issuing business loans to each type of entrepreneur:

$$ig(\bar{\omega}_k) = i \left[ (1 - \Phi(\bar{\omega}_k)) b(1+r^k) \right] \quad (17)$$

If we add (16) and (17) the above we arrive at:

$$f(\bar{\omega}_k) + g(\bar{\omega}_k) = \int_{\bar{\omega}_k}^{\infty} \omega_k \varphi(\omega_k) d\omega = 1 - \Phi(\bar{\omega}_k)$$

Optimal issuing of intra-period business loans will maximise the pay-off to entrepreneurs. Banks will issue loans up until the the  $j_k^{th}$  entrepreneur who breaks even at  $\omega_k(j) = \bar{\omega}_k$ . As lending consist of a risk-neutral capital market mutual fund, commercial banks are not credit

constrained and hence  $ig(\bar{\omega}) = b$  binds with equality. The intra-period lending problem is therefore:

$$\max = if(\bar{\omega}_k) \quad s.t. \quad ig(\bar{\omega}_k) = b \quad (18)$$

To solve, we can consolidate (17) into the constraint of (18) and substitute it into the objective function:

$$ig(\bar{\omega}_k) = i - n$$

$$i = \frac{1}{1 - g(\bar{\omega}_k)} n$$

Then substituting in yields:

$$i = \frac{1}{\Phi(\bar{\omega}_k) + f(\bar{\omega}_k)} n$$

Now, we substitute the above into the objective function of (18):

$$\max = \frac{f(\bar{\omega}_k)}{\Phi(\bar{\omega}_k) + f(\bar{\omega}_k)} n$$

Now the objective and constraint have been consolidated we can take the first order condition or by using the quotient rule (n is multiplicative and drops out):

$$\frac{d}{d\bar{\omega}_k} \left[ \frac{f(\bar{\omega}_k)}{\Phi(\bar{\omega}_k) + f(\bar{\omega}_k)} \right] = \frac{f(\bar{\omega}_k) [\Phi'(\bar{\omega}_k) + f'(\bar{\omega}_k)] - (\Phi(\bar{\omega}_k) + f(\bar{\omega}_k)) (f'(\bar{\omega}_k))}{[\Phi(\bar{\omega}_k) + f(\bar{\omega}_k)]^2} = 0$$

Rearranging the first order condition and given that  $\Phi'(\bar{\omega}_k) = \varphi(\bar{\omega}_k)$  and, assuming net worth is sufficiently small to motivate borrowing, we arrive at the following condition:

$$f(\bar{\omega}_k) = f'(\bar{\omega}_k) \frac{\Phi(\bar{\omega}_k)}{\varphi(\bar{\omega}_k)} = 1 - \Phi(\bar{\omega}_k) \quad (19)$$

In equation (19)  $\bar{\omega}_k$  is determined exogenously by the moments of the distribution and the size of the verification cost  $\mu_k$ . The solution to this intra-period banking problem will be embedded into the aggregate macroeconomic model next as follows.

## 6.4.2 Aggregate Firms Setup

There are two types of enterprises who each produce output for consumption and investment goods. All production functions exhibit Cobb-Douglas production with symmetric capital shares.

$$Y_t^s = (K_t^s)^\alpha (A_t^s L_t^s)^{1-\alpha}$$

$$Y_t^l = (K_t^l)^\alpha (A_t^l L_t^l)^{1-\alpha}$$

Small and medium size enterprises (denoted with s superscript) produce output allocated to consumption (c) and investment (i) goods according to the following, where weights  $\psi$  and  $\vartheta$  refer to the respective shares of consumption and investment goods produced in the economy by SMEs.

$$C_t^s = \psi \left( \frac{P_t^c}{P_t^s} \right) C_t$$



$$I_t^s = \vartheta \left( \frac{P_t^i}{P_t^s} \right) I_t$$

Large firms (denoted with an  $l$  superscript) and produce consumption ( $c$ ) and investment ( $i$ ) goods according to the following, weighted according to their respective shares:

$$C_t^l = (1 - \psi) \left( \frac{P_t^c}{P_t^l} \right) C_t$$

$$I_t^l = (1 - \vartheta) \left( \frac{P_t^i}{P_t^l} \right) I_t$$

Where  $P^c$  refers to the price of consumption,  $P^i$  refers to the price of investment,  $P^s$  refers to the price of SME output and  $P^l$  refers to the price of Large Enterprise output. Moreover, factors can freely move between the both sectors and both types of firms such that marginal products equalise in every period. The aggregate constraints on inputs are as follows:

$$K_t = K_t^s + K_t^l$$

$$L_t = L_t^s + L_t^l$$

Due to free movement and equal capital shares, first order conditions can be combined to achieve the following expression for prices. The first order conditions with respect to labour are:

$$W_t = W_t^s = P_t^s (A_t^s)^{1-\alpha} (1 - \alpha) \left( \frac{K_t^s}{L_t^s} \right)^\alpha = W_t^l = P_t^l (A_t^l)^{1-\alpha} (1 - \alpha) \left( \frac{K_t^l}{L_t^l} \right)^\alpha \quad (20)$$

The first order conditions of the firm with respect to capital are:

$$R_t = R_t^s = P_t^s \alpha \left( \frac{K_t^s}{L_t^s} \right)^{\alpha-1} (A_t^s)^{1-\alpha} = R_t^l = P_t^l (1 - \psi) \alpha \left( \frac{K_t^l}{L_t^l} \right)^{\alpha-1} (A_t^l)^{1-\alpha} \quad (21)$$

Taking the ratio of the respective first order conditions from (20) and (21) with respect to capital and labour gives:

$$\frac{W_t}{R_t} = \frac{W_t^s}{R_t^s} = \frac{W_t^l}{R_t^l} = \frac{P_t^l (1 - \psi) (A_t^l)^{1-\alpha} (1 - \alpha) \left( \frac{K_t^l}{L_t^l} \right)^\alpha}{P_t^l (1 - \psi) \alpha \left( \frac{K_t^l}{L_t^l} \right)^{\alpha-1} (A_t^l)^{1-\alpha}} = \frac{(1 - \alpha)}{\alpha \left( \frac{K_t^l}{L_t^l} \right)^{-1}} = \frac{1 - \alpha}{\alpha} \left( \frac{K_t^l}{L_t^l} \right) = \frac{1 - \alpha}{\alpha} \left( \frac{K_t^s}{L_t^s} \right)$$

Due to symmetric capital shares, the above expression also applies to large firms too. Therefore, due to perfect factor mobility, repeating the above for both types of goods shows that the capital labour ratio equalises across sectors and firms.

$$\frac{K_t^l}{L_t^l} = \frac{K_t^s}{L_t^s} = \frac{K_t}{L_t}$$

Using the capital-labour ratios expressions above we can substitute them into the marginal product conditions to obtain the relative price of different goods.

$$P_t^s (A_t^s)^{1-\alpha} (1 - \alpha) \left( \frac{K_t^s}{L_t^s} \right)^\alpha = P_t^l (A_t^l)^{1-\alpha} (1 - \alpha) \left( \frac{K_t^l}{L_t^l} \right)^\alpha$$

The relative price of goods between SMEs and large enterprises is:

$$\frac{P_t^s}{P_t^l} = \left( \frac{A_t^l}{A_t^s} \right)^{1-\alpha}$$

The relative price of investment goods for SMEs is:

$$\frac{P_t^i}{P_t^s} = \left( \frac{A_t^l}{A_t^s} \right)^{(1-\alpha)(\vartheta-1)}$$

The relative price of consumption goods for SMEs is:

$$\frac{P_t^c}{P_t^s} = \left( \frac{A_t^l}{A_t^s} \right)^{(1-\alpha)(\psi-1)}$$

The relative price of investment to consumption goods for SMEs is therefore:

$$\frac{P_t^i}{P_t^c} = \frac{\left( \frac{A_t^l}{A_t^s} \right)^{(1-\alpha)(\vartheta-1)}}{\left( \frac{A_t^l}{A_t^s} \right)^{(1-\alpha)(\psi-1)}} = \left( \frac{A_t^l}{A_t^s} \right)^{(1-\alpha)(\vartheta-\psi)}$$

Therefore, the prices expressed above are a function of relative productivity and relative intensity of each type of good produced by SMEs and Large Enterprises. From the entrepreneur's borrowing problem, the relative approval rate depends on productivity and the efficiency of screening loan applications. Moreover,  $P_t^i/P_t^c$  is a function of the relative price of investment to consumption goods for SMEs. Therefore, we can assume the relative changes in investment productivity will be reflected in relative loan approval rates between firms:

$$\left( \frac{A_t^l}{A_t^s} \right)^{(1-\alpha)(\vartheta-\psi)} = \frac{1 - \Phi(\bar{\omega}_l)}{1 - \Phi(\bar{\omega}_s)}$$

The above can be normalised to unity in the initial steady state, then the counterfactual approval rates estimated in the previous section can be imposed to simulate the permanent shock of a banking reform to the UK macroeconomy.

### 6.4.3 Dynamic Consumer Optimisation

The optimisation problem for the consumer is standard as and is as follows, where  $\beta$  is the discount factor,  $\eta$  is the Frisch elasticity of labour,  $\delta$  is depreciation and  $\kappa$  is investment adjustment costs:

$$\begin{aligned} \max_{C_t, L_t, K_{t+1}} \quad & \mathcal{L} = \beta^t \left\{ \ln C_t - \chi \frac{L_t^{\eta+1}}{\eta+1} \right\} \\ \text{s.t.} \quad & \begin{cases} R_t K_t + W_t L_t = P_t^c C_t + I_t \\ K_{t+1} = (1 - \delta) K_t + \left( 1 - \frac{\kappa}{2} \left( \frac{I_t}{I_{t-1}} - 1 \right)^2 \right) I_t \end{cases} \end{aligned}$$

The household maximises discounted lifetime utility and the first order conditions are as follows:

$$\frac{1}{C_t} - P_t \lambda_t = 0$$

$$-\chi L^\eta + W_t \lambda_t = 0$$

$$\beta \lambda_{t+1} R_{t+1} + \Omega_t - \beta \Omega_{t+1} (1 - \delta) = 0$$

$$-\lambda_t + \Omega_t \left( 1 - \frac{\kappa}{2} \left( \frac{I_t}{I_{t-1}} - 1 \right)^2 - \kappa \left( \frac{I_t}{I_{t-1}} - 1 \right) \frac{I_t}{I_{t-1}} \right) + \beta \Omega_{t+1} \kappa \left( \frac{I_{t+1}}{I_t} - 1 \right) \left( \frac{I_{t+1}}{I_t} \right)^2 = 0$$

Where  $\lambda$  is the multiplier on the first constraint and  $\Omega$  is the multiplier on the second constraint. The ratio of these two multipliers is the Tobin's Q  $Q = \lambda/\Omega$ . Consolidating the above equations and rearranging gives:

$$W_t = \chi P_t C_t L_t^\eta$$

$$\frac{P_{t+1} C_{t+1}}{P_t C_t} Q_t = \beta (R_{t+1} + (1 - \delta) Q_{t+1})$$

$$P_t = Q_t \left( 1 - \frac{\kappa}{2} \left( \frac{I_t}{I_{t-1}} - 1 \right)^2 - \kappa \left( \frac{I_t}{I_{t-1}} - 1 \right) \frac{I_t}{I_{t-1}} \right) + \beta Q_{t+1} \frac{P_t C_t}{P_{t+1} C_{t+1}} \kappa \left( \frac{I_{t+1}}{I_t} - 1 \right) \left( \frac{I_{t+1}}{I_t} \right)^2$$

#### 6.4.4 Equilibrium Equations

Table 22: Equilibrium Equations and Constraints

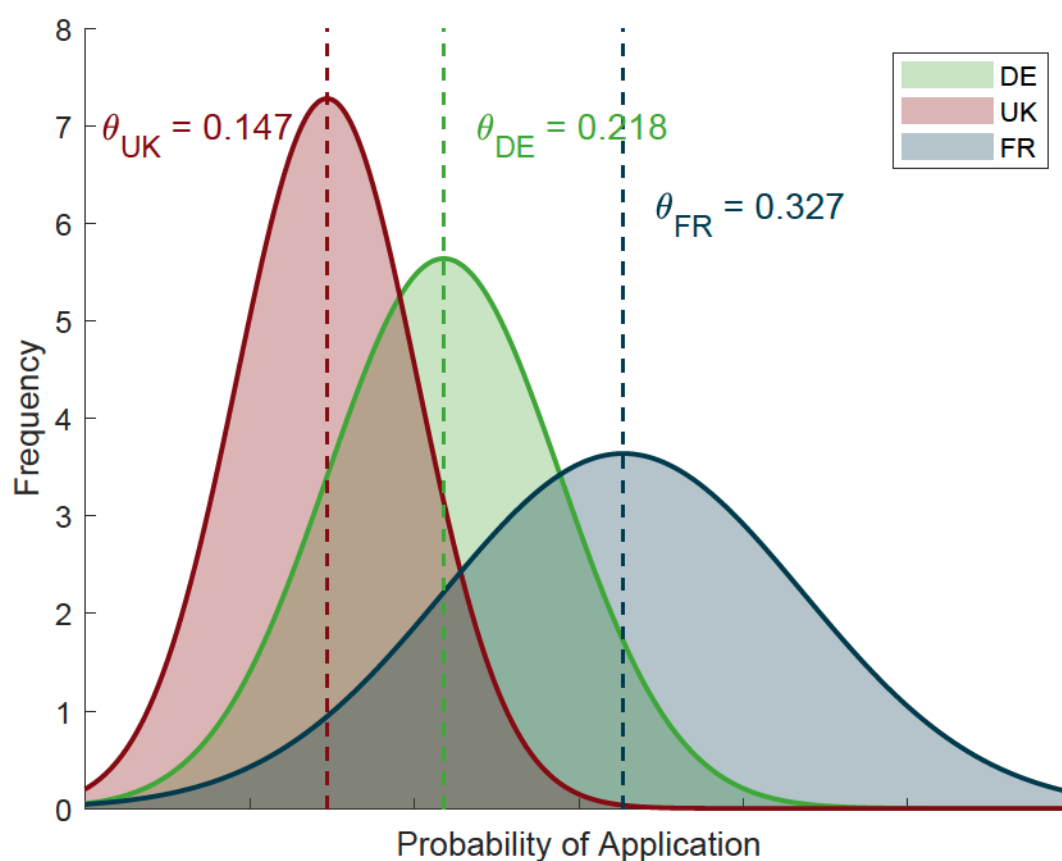
| Equilibrium Equations                |                                                                                                                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Euler Equation                       | $\frac{P_{t+1}C_{t+1}}{P_t C_t} Q_t = \beta (R_{t+1} + (1 - \delta) Q_{t+1})$                                                                                                                                                                                                               |
| Labour Leisure Optimality            | $W_t = \chi P_t C_t L_t^\eta$                                                                                                                                                                                                                                                               |
| Capital Law of Motion                | $K_{t+1} = (1 - \delta) K_t + \left(1 - \frac{\kappa}{2} \left(\frac{I_t}{I_{t-1}} - 1\right)^2\right) I_t$                                                                                                                                                                                 |
| Investment Adjustment Cost           | $P_t^c = Q_t \left(1 - \frac{\kappa}{2} \left(\frac{I_t}{I_{t-1}} - 1\right)^2 - \kappa \left(\frac{I_t}{I_{t-1}} - 1\right) \frac{I_t}{I_{t-1}}\right) + \beta Q_{t+1} \frac{P_t^c C_t}{P_{t+1}^c C_{t+1}} \kappa \left(\frac{I_{t+1}}{I_t} - 1\right) \left(\frac{I_{t+1}}{I_t}\right)^2$ |
| Aggregate Constraints                |                                                                                                                                                                                                                                                                                             |
| Aggregate Resource Constraint        | $Y_t = P_t^c C_t + P_t^i I_t$                                                                                                                                                                                                                                                               |
| Aggregate Consumption                | $C_t = P_t^c C_t^s + C_t^l$                                                                                                                                                                                                                                                                 |
| Aggregate Investment                 | $I_t = P_t^i I_t^s + I_t^l$                                                                                                                                                                                                                                                                 |
| Enterprise Type Resource Constraints |                                                                                                                                                                                                                                                                                             |
| SME Output                           | $Y_t^s = (K_t^s)^\alpha (A_t^s L_t^s)^{1-\alpha}$                                                                                                                                                                                                                                           |
| Large Enterprise Output              | $Y_t^l = (K_t^l)^\alpha (A_t^l L_t^l)^{1-\alpha}$                                                                                                                                                                                                                                           |
| SME Good Production                  |                                                                                                                                                                                                                                                                                             |
| SME Consumption                      | $C_t^s = \omega \left(\frac{P_t^c}{P_t^s}\right) C_t$                                                                                                                                                                                                                                       |
| SME Investment                       | $I_t^s = \vartheta \left(\frac{P_t^i}{P_t^s}\right) I_t$                                                                                                                                                                                                                                    |
| Large Enterprise Good Production     |                                                                                                                                                                                                                                                                                             |
| Large Enterprise Consumption         | $C_t^l = (1 - \psi) \left(\frac{P_t^c}{P_t^l}\right) C_t$                                                                                                                                                                                                                                   |
| Large Enterprise Investment          | $I_t^l = (1 - \vartheta) \left(\frac{P_t^i}{P_t^l}\right) I_t$                                                                                                                                                                                                                              |
| Relative Prices                      |                                                                                                                                                                                                                                                                                             |
| Relative Consumption Price for SMEs  | $\frac{P_t^c}{P_t^s} = \left(\frac{A_t^l}{A_t^s}\right)^{(1-\alpha)(\psi-1)}$                                                                                                                                                                                                               |

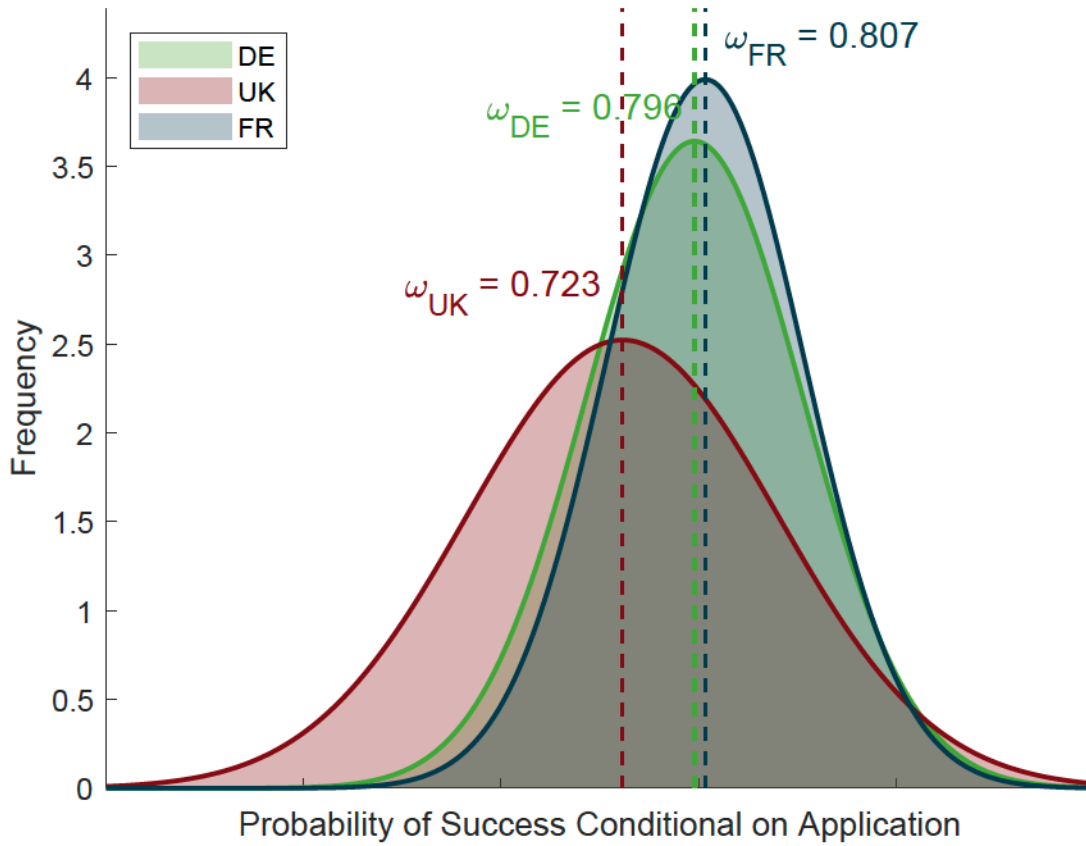


|                                           |                                                                                      |
|-------------------------------------------|--------------------------------------------------------------------------------------|
| Relative Investment Price for SMEs        | $\frac{P_t^i}{P_t^s} = \left( \frac{A_t^l}{A_t^s} \right)^{(1-\alpha)(\vartheta-1)}$ |
| Relative Output Price Between Enterprises | $\frac{P_t^s}{P_t^l} = \left( \frac{A_t^l}{A_t^s} \right)^{1-\alpha}$                |
| <b>Marginal Products</b>                  |                                                                                      |
| Wage Rate                                 | $W_t = (1 - \alpha) \frac{Y_t}{L_t}$                                                 |
| Interest Rate                             | $R_t = \alpha \frac{Y_t}{K_t}$                                                       |
| <b>Factor Ratios and Constraints</b>      |                                                                                      |
| SME Capital-Labour Ratio                  | $\frac{K_t^s}{L_t^s} = \frac{K_t}{L_t}$                                              |
| Large Enterprise Capital-Labour Ratio     | $\frac{K_t^l}{L_t^l} = \frac{K_t}{L_t}$                                              |
| Aggregate Capital Constraint              | $K_t = K_t^s + K_t^l$                                                                |
| Aggregate Labour Constraint               | $L_t = L_t^s + L_t^l$                                                                |

### 6.4.5 Simulations

We impose a permanent shock to the model to simulate the impact of a bank lending reform to the macroeconomy. This shock involves imposing the counterfactual findings for what the UK economy would experience in terms of application rates and approval rates if it were under the bank lending outcomes of the German economy and the French economy. Below are the stylised distribution which we compute from the findings in the previous section, these inform our parameter values in Table 25.





This involves a permanent shock to the application rate  $\theta_k$ ,  $k = DE, FR$  (there is a symmetric set of equations in Table 25 which are weighted by the share  $1 - \theta_k$  which do not apply for business loans. The  $1 - \theta_k$  portion of the economy is not impacted by the change in the verification cost  $\mu_k$  because they do not apply for loans and produce at a baseline level of productivity.

Therefore, the shock of a banking reform is the simultaneous decrease in verification costs  $\mu$  for SMEs and Large Enterprises. And a simultaneous increase in the application rates  $\theta_k$  for SME and large enterprises. From here we plot the impulse response functions to this permanent shock.

Moreover, we use the parameter values detailed in Table 23 which are calibrated from the period 2009-2019, or taken as benchmark from the literature, as in 24. The shocked parameters are detailed in Table 25 and are computed from the econometric findings in Section 6.3.5 for the German counterfactual. Specifically, the  $\mu_k$  values are backed out from the conditional acceptance rates using the entrepreneurs lending constraint (15).

Therefore, 25 details the parameter values for the economy before and after the reform. The simulation starts with the UK values for applications and verification costs (obtained through conditional approvals). Verification costs for the UK are higher, the idea being that verification

Table 23: Calibrated Parameters

| Calibrated Parameter             | Value |
|----------------------------------|-------|
| Capital share $\alpha$           | 0.407 |
| Depreciation rate $\delta$       | 0.078 |
| SME consumption share $\psi$     | 0.536 |
| SME investment share $\vartheta$ | 0.401 |

Table 24: Smets and Wouters (2007)

| Benchmark Parameter      | Value |
|--------------------------|-------|
| Discount factor $\beta$  | 0.96  |
| Frisch elasticity $\eta$ | 2     |
| Adjustment cost $\kappa$ | 4     |

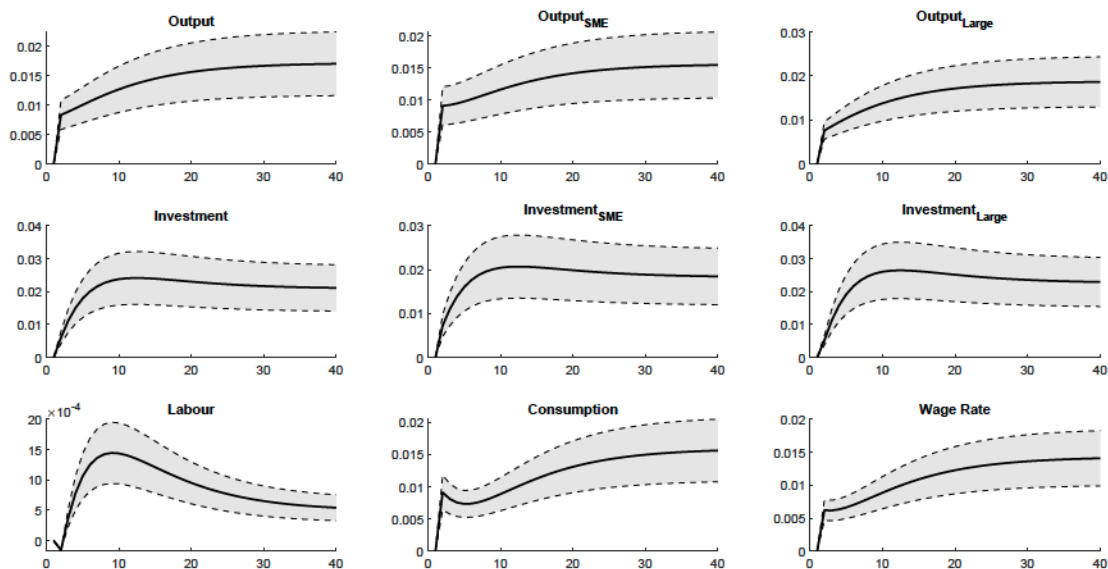
Table 25: Permanent Shock Parameters

| Shocked Parameters               | $[UK, DE, FR]$        |
|----------------------------------|-----------------------|
| SME application share $\theta_s$ | [0.147, 0.217, 0.327] |
| L application share $\theta_l$   | [0.231, 0.351, 0.433] |
| SME verification cost $\mu_s$    | [0.318, 0.245, 0.128] |
| L verification cost $\mu_l$      | [0.135, 0.099, 0.029] |

costs are lower with relationship banking because of local decision making and the knowledge already acquired about the local area. Since the UK does not have relationship banking, the cost that a standard UK bank would have to incur in order to considerably reduce information asymmetry would be higher than the cost incurred by a relationship bank.

The economy is then subject to the counterfactual values obtained using the German banking system outcomes. The impulse responses for key variables in response to this shock are displayed in Figure 29 below.

Figure 29: Impulse response functions - German reform shock



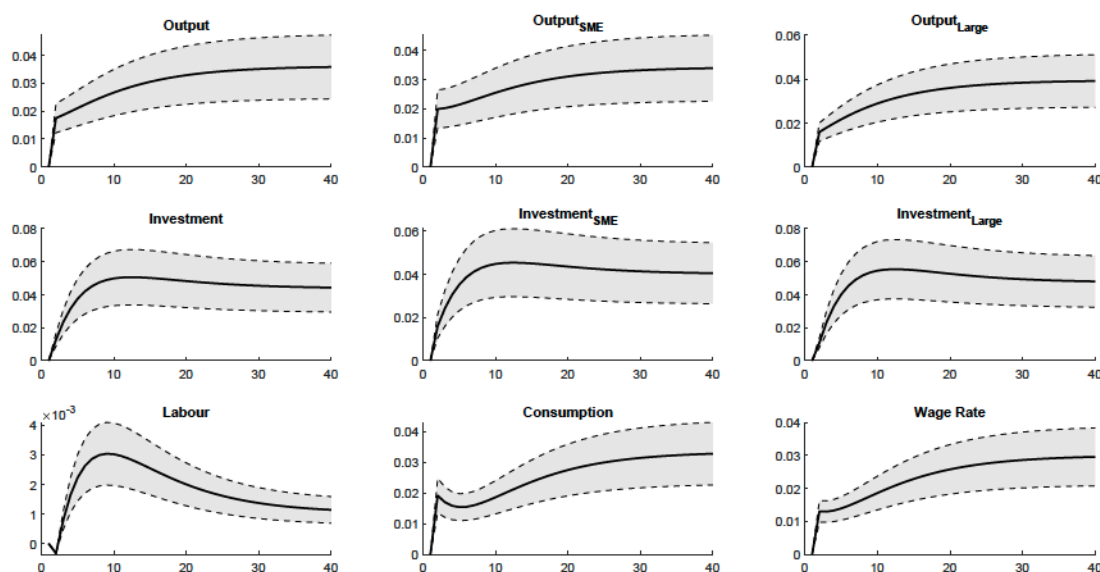
As can be seen there is an increase in GDP by 1 per cent above baseline within first 5 years and rising further to 1.7 per cent in long run. There is also an increase in aggregate investment by 1.7 per cent above baseline within first 5 years and rising further to 2.1 per cent in long run. The



impact on hours worked and employment is very small and essentially neutral with no significant changes in the long run. Both types of entrepreneurs benefit, but large firms grow more relative to SMEs in response to the reform - this is driven in part by the relatively large increase in the share of large enterprise applications in the banking reform.

We then repeat the same exercise of a permanent shock using the parameter values implied by the counterfactual exercise of the result from the French economy detailed in Table 25.

Figure 30: Impulse response functions - French reform shock



As can be seen, due to more favourable commercial lending outcomes in the French economy, the permanent shock generates a 2.1 per cent increase in cumulative GDP by year five and a 3.5 per cent increase in long run GDP. There is an increase in aggregate investment by 3.5 per cent by year five and 4.4 per cent in the long run. Moreover, real wages are 2.9 per cent higher in the long run under this counterfactual.

#### 6.4.6 Discussion of macroeconomic impacts and macroprudential regulation

Here we seek to outline some of the wider consequences of the introduction of new relationship banks ("new banks") in the UK economy and financial system. We largely focus on the steady state effects but also note some of the transitional ones. We focus first on macroeconomic effects before noting some monetary consequences, financial stability risks and bank behaviour/macprudential policy considerations.

As can be seen, for the German counterfactual, there is an increase in GDP by 1 per cent above baseline within first 5 years and rising further to 1.7 per cent in long run. There is also an increase in aggregate investment by 1.7 per cent above baseline within first 5 years and rising further to 2.1 per cent in long run. The impact on hours worked and employment is quite small. The French counterfactual presents analogous but approximately twice as large results. Both types of entrepreneurs benefit but large firms grow more relative to SMEs in response to the

reform - this is driven in part by the relatively large increase in the share of large enterprise applications and success in the banking reform.

In addition to the modelled effects, other impacts are possible which we discuss in this section.

### **Macroeconomic effects**

Following the reform, the current account would tend to deteriorate, at least initially, as aggregate demand increases arising from greater investment, stock building and employment suck in imports. In the longer run the supply effects, especially from large companies, will soften any rise in imports and therefore improve the current account balance.

In the UK National Accounts, the household sector includes unincorporated businesses, such as partnerships, that are owned by households. These businesses are considered to be part of the household sector because their production and consumption are inseparable. Hence a part of the increase in investment will count for the household and not the corporate sector. In the case that the deposits with the new banks will come largely from households, there could be higher net interest income to households if the interest paid by the new banks to depositors would be higher than the existing banks pay.

Some of the rise in investment, stock building and employment will be attributed to the corporate sector. As for unincorporated businesses, their balance sheets will have more debt and fixed assets, while their income and expenditure account will feature interest costs but also hopefully more profit from which the interest can be paid.

Assuming the new banks will be permitted to diversify by lending to households, such as via mortgage lending, this will permit profits from mortgage lending to contribute to covering any losses in SME lending, analogously to the Sparkassen in Germany. We also assume that the new banks would not be permitted to undercut commercial lenders and building societies on any financial product, so as to avoid market distortions. That is, the new banks would focus on providing an alternative way of lending – based on relationship banking, with the purpose to support local/regional economies – but with pricing (interest rates and fees) fully dependent on their costs, like any other lender.

### **Monetary and financial effects**

As the new banks would be deposit-taking institutions, they could compete directly with existing banks for deposit funding. In order to attract deposits, as is the case with any other newly formed bank, their interest rates on deposits may need to be somewhat higher than those available from existing banks. However, in their stated purpose, the new banks would not be permitted to take advantage of their status by undermining the ability of purely commercial lenders to take deposits.

It is important that the new banks would rely mostly on funding from household and corporate deposits, since wholesale funding tends to be more expensive for small banks, jeopardising their capacity to compete with large banks. However, the proportion of wholesale funding might be significant in the earliest stages while the new banks accumulate deposits.

It would be unlikely that the overall household saving ratio would increase owing to more competitive deposit rates, as its sensitivity to interest rates is low, and household consumption/saving decisions are driven by long term life cycle/permanent income considerations except in the short run. Rather, there would be a reallocation of household sector wealth towards deposits in the new banks in light of higher interest rates.

This in turn would lead the existing banks in the short term to reduce holdings at the Bank of England to levels more consistent with liquidity risk. Since the Global Financial Crisis, the value of reserves held by banks at the Bank of England has increased substantially. This rise is largely due to the introduction of interest payments on reserves and the implementation of quantitative easing (QE). [Joyce and Spaltro \(2014\)](#) and [Fatouh \(2021\)](#), for instance, find a small or no significant impact on bank lending from the BoE QE rounds, although [Fatouh \(2021\)](#) does find a larger and significant effect on lending from by highly capitalised banks. This illustrates that capital levels influence the transmission of QE to lending to the real economy. Also, we note that quantitative tightening is leading to lower reserves.

In the long term, existing banks might become more dependent on wholesale funding if they wish to maintain their lending, unless they were willing to compete more aggressively for deposits. Alternatively, they might reduce lending in response to lower deposits to keep their loan/deposit ratios constant. Another possibility is that existing banks may provide wholesale lending to newly formed banks, similarly to what has started to happen in the UK with Lloyds' investment in CDFIs via the CIEF (Community Investment Enterprise Fund).

Concerning the effect of monetary policy on the new banks and their SME clients, the effect of a rise in interest rates on existing borrowers will depend on whether the loan is fixed or variable rate. If the new banks can provide more fixed rate loans to SMEs than existing banks, that would provide valuable "insurance" that could stimulate investment. On the other hand, to the extent monetary tightening also affects longer term rates, there would remain a disincentive to new borrowing.

Interest rates are not the only part of the story, however. The aim is that new banks would provide reliable lending, which is not withdrawn when the borrower runs into difficulty. Relationship banking is based on a long term relationship with soft information exchange between borrower and lender, incentivising the bank to not withdraw their funding or worsen its conditions because it expects that, by supporting the borrower, the borrower will recover and the bank will be able to recoup its lending. The soft information provides the bank with deeper knowledge about the borrower, allowing it to better assess the borrower's condition as temporary or permanent.

In the monetary policy context, it implies that even if loans are floating rate or short term and tightening causes cashflow difficulties, the flow of lending would be maintained assuming that the bank assesses that the business is viable in the long term. Therefore this behaviour also works as "insurance".

The ageing of the population may play a role in the success of new banks, since high interest rates with a good level of liquidity and of course deposit insurance would be attractive to the



elderly who prefer stable returns rather than the volatility of equities (and bonds). There is extensive evidence of the preference of the elderly for lower risk assets, such as Fagereng et al. (2017), Yogo (2016) and Yuan et al. (2022a).<sup>11</sup>

An important additional consideration is whether ISA availability continues to cover deposits, contrary to current arguments that it should be confined to equities. Availability of ISAs would boost scope for new banks to attract deposits, while their withdrawal would make it more difficult. It is worth adding that the Sparkassen and their equivalents are highly established and well known institutions in European countries, whereas the new banks would not have an established brand or reputation. This would mean that growth may be quite slow, and there would be a risk to the reputation of the sector if a failure occurred.

### **Financial stability considerations**

Bringing in considerations of financial stability is relevant not just to the direct financing of the SME sector but also to the wider economy. As is well known, a banking crisis typically leads to a marked decline in GDP. There would be several aspects of a change in banking market structure (such as the introduction of new banks that is being considered) that would at least give grounds for caution and enhanced oversight by prudential regulators, as well as relatively high capital requirements on the new banks, until the situation settles down. One is the above-mentioned shift of retail deposits likely to occur between existing banks and the new banks. Leaving the former more dependent on wholesale funds in the long run could make them more fragile and vulnerable to runs than would otherwise be the case, as was shown by experience in 2007-8.

Meanwhile a change in market structure may lead not only to higher application success rate but also a switch of some borrowers from existing banks to the new banks. New banks may also attract higher risk borrowers in the first instance – a form of adverse selection – as was the case with financial liberalisation in countries like Japan, Finland and Sweden (Davis, 1995). This would be more likely, the higher the interest rate charged, as good quality borrowers would tend to borrow elsewhere. So, it is vital that the new regional/local banks have banking licenses, so as to ensure they can compete on a level playing field for good quality borrowers. In addition, as incumbent banks do, the new banks would also have access to potential borrowers' data, such as credit scores, allowing them to evaluate applicants' quality.

With more time new banks would also acquire a more diverse selection of businesses creating a diversified loan portfolio of reasonable levels of risk, having developed banking relationships and a reputation in the market. It is likely that larger risky businesses would continue to go to the big commercial banks for lower interest rates whilst smaller businesses would go to the local relationship banks for the advice, better terms and conditions and higher loan success rates (despite paying higher interest rates). This research paper assumes that the new lenders

---

<sup>11</sup> In line with Merton (1971), one explanation for the desire for lower risk with old age is the importance of human capital (the discounted stream of future wage income) relative to accumulated wealth. If shocks to wage income are uncorrelated with stock market returns, the deterministic component of wage income (i.e. abstracting from periods of unemployment etc.) mimics the payoff of a risk-free asset. For a given level of human wealth, younger households with low levels of financial wealth have a relatively large amount of future income from risk-free assets (relative to their financial wealth) and are thus incentivised to invest more aggressively in equities than wealthier households. When agents grow older, the capitalised value of labour income drops with age, and households compensate for this drop in bond-like wealth by reducing their relative holdings of risky financial assets.



take their mandate to finance businesses in their local/ regional area responsibly by lending to businesses that seek finance whilst pricing credit according to risk.

### **Bank behaviour and macroprudential policies**

There is a question as part of the reform as to what extent the new banks' lending to SMEs would be subject to macroprudential policies. Assuming they are depository institutions, they would certainly be subject to the countercyclical buffer, which the authorities would raise when overall lending is growing rapidly, and ease at times of recession/credit crunch. Leverage ratio changes would also impinge. Higher capital requirements would tend to lead to less lending to SMEs as well as other borrowers. To manage risk, banks may also implement stricter lending criteria when macroprudential policies are tight, further impacting SMEs.

Čehajić and Košak (2022) show with a firm-level survey covering EU countries between 2009 and 2017, that macroprudential policies have a major effect on SME lending. They note that although macroprudential policy can make banks more resilient, they often lead to restricted lending to firms, especially smaller firms with fewer financing options and considerable reliance on bank credit. This effect is largely due to capital-based measures such as the countercyclical buffer and leverage ratio used in the UK. It would, however, apply mainly if the new banks hold capital close to regulatory limits – a policy of ensuring much higher capital ratios would leave them much less vulnerable to such macroprudential policy effects and could also imply a low cost of capital.

The effectiveness of any banking reform would also depend on the role of macroprudential regulation and whether it differentiates in its impact on smaller or larger banks. It is notable that research on bank profitability using a global sample shows that small banks are more affected by macroprudential policy than larger ones (Davis et al., 2022) where the latter may be more able to boost noninterest income in response to policies affecting lending. Studies of bank risk such as Altunbas et al. (2018) also show that risk taking is more sensitive to macroprudential policy (tightening reduces risk) in small than large banks. Both these effects could impinge on SME lending by new banks, that would certainly start small. It remains to be seen whether such effects would impact on the effectiveness of the banking reform.

In this context, we note that the Sparkassen banks in Germany risk pool, where each bank contributes to the Institutional Protection Scheme (IPS), which safeguards not only customer deposits in full, but also the solvency and liquidity of its member institutions. However, such an arrangement would only work once enough banks are created, and the UK authorities would likely still integrate the new banks into the financial services compensation scheme (FSCS) which compensates deposits up to £85,000 per eligible person/business, per bank, building society or credit union. To the extent that they lend to residential property, new banks would also be subject to direct effects of loan-to-value and debt-service to income limits.

## **7 Conclusion**

The research conducted in this report answered the following questions:

- *Are there any market failures that are occurring in the business lending market that the commercial banking system and current public interventions are not addressing? What gaps in the market are there? What gaps are not being effectively addressed? Are there any risks that are not being addressed?*

Examined evidence suggests that the UK market was concentrated at least until 2015, but with declining levels and no more than other countries, as well as incomplete.

Concentration is caused by market entry barriers including increasing returns to scale, regulatory obstacles such as capital requirements, demand preferences and relative unawareness of all existing financial products and lenders, and lower information levels on borrowers by new lenders than established incumbents. Various measures have been implemented by the CMA and the BBB in order to incentivise competition, which seem to be having gradual positive effects by increasing the market share of challenger banks and non-banks.

Competition in lending markets however is a double-edged sword, since it also tends to lead to higher information asymmetry between lenders and borrowers, raising perceived risk, and thus increasing charges and reducing supply of credit. Detailed information sharing of borrowers would contribute to reducing this asymmetry. Initiatives such as [Open Banking](#), [Commercial Credit Data Sharing \(2015\)](#) and, especially, [Open Finance](#) work in this direction. Nonetheless, more data can provide more positive or more negative information about a finance applicant, such that it does not necessarily improve SMEs' access to finance, in particular for younger SMEs which have not produced extensive data due to their age.

Given that competition concerns have already started to be addressed, we consider the demand gap for finance caused by other factors to be more pressing. Those factors are high risk-aversion of financial institutions, information asymmetry between lenders and SMEs, imperfect information by SMEs of existing lenders and financial products, SMEs risk-aversion (due to interest cost, personal guarantees and deterioration of terms and conditions during crisis), and banks' compensation schemes and incentives.

Regarding market completeness, we find evidence of information asymmetry and imperfect information. Information asymmetry is the most cited issue in the context of lending markets and it is more severe between financial institutions and SMEs than between financial institutions and larger businesses. This causes financial institutions to be more reluctant to lend to SMEs, due to the perceived higher risk, and to charge higher prices for their products. Furthermore, this report also found evidence suggesting imperfect information amongst SMEs about available financial products and lenders, and about finance application requirements. Businesses' imperfect knowledge of available finance suppliers not only contributes to lower competition between lenders but also prevents SMEs to possibly find better finance conditions. Moreover, because SMEs might be more unprepared to support their finance applications than larger businesses, and so they face higher rejection rates.

Lending markets are also characterised by homogeneous costs associated with processing

different finance applications and maintaining resulting lending, independently of the amount demanded. This means that higher borrowing amounts are more profitable. Since those are usually associated with larger businesses, who are also capable of providing more information about their financial health, profit-maximising lenders naturally have a preference for them. Low competition allows the largest financial institutions to then realise those preferences.

- Based on international comparisons, are there alternative, commercial and non-commercial approaches that could better address market gaps and market failures in SMEs seeking finance in the UK?

The UK banking system is characterised by private centralised financial institutions. However, our literature review indicates that decentralised banking systems perform as well or better than their centralised counterparts, including in terms of efficiency and during macroeconomic downturns. This is found for the Sparkassen in Germany, Handelsbanken in Sweden (and in the UK) and co-operative systems in general. In the case of France, where co-operative banks have a market share of 50.3 per cent in the SME lending market, we find very positive results from the SAFE aggregate analysis, in particular, for bank loan application success rates.

The continuous financial support during downturns generally offered by decentralised banks is particularly important and expected to reduce SMEs' debt aversion by lowering their perceived borrowing risk, mainly in the context of required personal guarantees. The increased competition, with the entrance of non-bank lenders, might not solve this issue as existing (but limited) evidence suggests that non-bank lenders are even more likely to reduce lending in times of economic distress.

Sweden also counts on state-owned financial institutions that provide finance for specific purposes and businesses, when finance from private banks is not available. We focused on the example of Almi, which provides not only finance, but also advisory services. In addition, Almi works with businesses and their private lenders to arrive at the best finance solution.

In terms of competition, the evidence seems to suggest that the current levels of concentration in the UK are not significantly different from those in Germany or Sweden. France however presents a higher concentration level with its top 6 banking groups representing 82 per cent of the total assets of the sector.

German savings banks, by law, must not prioritise profit maximization, although they should be maintained economically healthy. This therefore should prevent SMEs' unmet finance demand due to banks' profit incentives.

Regarding market completeness, the regional focus and relationship banking, classic characteristics of co-operatives and savings banks, but also features of the commercial Handelsbanken, can help reduce the information asymmetry between borrowers and lenders, via close interaction between borrowers and lenders, and reduce borrowers'



imperfect information about the market. The approach by the Swedish bank Almi could also potentially address those issues.

The fact that the Sparkassen does not seek to maximise profits should prevent SMEs' unmet finance demand due to banks' profit incentives and lack of competitive pressure. Sweden fills this gap with its state-owned banks.

These countries' examples suggest two potential policies:

- a network of relationship-based banks across the UK implemented via a new Sparkassen-type network or via mutuals or CDFIs;
- state-owned financial institutions focused on lending to specific businesses who cannot access finance from private markets.

Of course, these represent the largest measures which could be implemented. However, as we mention in the report, alternatives could include tackling SME knowledge about available financial products and lenders. Furthermore, continuing the incentive provided by the BBB, via the Community ENABLE Funding programme, to cooperation between banks and other lenders is an option that uses UK already existing institutions. Banks hold the necessary lending capital, but CDFIs hold the relationship knowledge to make informed lending decisions.

- *What are the characteristics of those approaches that make them distinct from the current UK model (e.g. transactional versus relationship-based approaches to lending decisions)?*

Both Germany and France operate banking systems for which relationship and regional focus are characterising features, in contrast to the UK, where a centralised approach, based on hard information is the norm. On the other hand, Sweden, via its state bank Almi, represents a more targeted solution to the identified failures, since Almi only seeks to support businesses when they cannot borrow from private financial institutions. Differently from the UK, Almi has a more direct approach in helping businesses access finance than the BBB, which tends to act via incentives to financial institutions rather than directly interacting with businesses.

- *What changes would be needed in the UK SME lending landscape for such alternative approaches to be effective?*

The implementation of such a network of relationship lending in the UK could take the form either of a non-regulated or a regulated financial institution. The former could be a non-depository lender or a deposit-taking lender with sovereignty immunity. The latter, in particular, would encounter a few challenges to implementation and operation. Firstly, to start operating, the new fully regulated banks would need to meet initial capital requirements as well as have a banking platform. Secondly, maintaining their day-to-day and emergency liquidity would require some central institution. Lastly, these regional banks would have to generate enough income above costs and defaults in order to build up their equity and meet capital requirements.



- *What analytical framework can be established to assess additionality of the alternative approaches in the UK compared to the counterfactual of the current commercial banking system continuing?*

We have estimated the impact of a strong relationship with the main bank in the probability of SME participation in applying for finance and being successful as well as evaluated the expected effect of relationship banking in the UK on the probability of bank lending to businesses, on the resulting overall amount lent to businesses, and on macroeconomic aggregates such as investment and output.

Regarding discouragement, we use the SMEFM to estimate a probability model of participating in the market of bank finance and of being successful. Our estimates demonstrate the importance of a good relation with businesses' main bank. A strong relation with the main bank has an estimated impact on reducing non-participation higher than the impact of having lower risk rating, reducing the probability of non-participation by 10 percentage points. Analogously, a strong relation with the main bank increases the probability of application success.

Moreover, we show the high inefficiency of non-participation, where most non-participant businesses have a probability of application success higher than 50 per cent. This exemplifies the existing potential for increased lending just from tackling non-participation.

In order to estimate the effect of implementing relationship banking in the UK, we use a probability model for the estimation of the finance gap in the current UK system relatively to the UK under the German or the French systems. For this, we use the Survey on the Access to Finance of Enterprises (SAFE). This approach provides an indication of the potential effect on lending of the reform. To estimate the final effect on macroeconomic variables (e.g. output, consumption, investment), we construct a bespoke macro structural model.

Our results show that, between 2011 and 2019, lending would have been substantially higher in the UK under the German or French systems due to increases in demand and supply of loans. Our estimates indicate that, on average, the former would have resulted in 1.5 the annual lending in this period. The latter would have caused about 2 times the actual levels. These are driven by statistically significant increases in the joint probabilities of businesses applying for finance and being accepted, for both SMEs and large businesses. For SMEs, the average joint probability of application and success moves from 11 per cent to 18/27 per cent under the German/French counterfactuals. For large enterprises, it rises from 21 per cent to 33/38 per cent under the German/French counterfactuals.

The predicted probabilities are used to calibrate our macroeconomic model. We estimate that, under the implementation of the German (French) system in the UK,

- Increase in GDP by 1 (2.1) per cent above baseline within first 5 years and rising further to 1.7 (3.5) per cent in long run.

- Increase in aggregate investment by 1.7 (3.5) per cent above baseline within first 5 years and rising further to 2.1 (4.4) per cent in long run.
- Impact on hours worked and employment neutral with no significant changes in the long run under the German counterfactual, but wages rise by 2.9 per cent under the French counterfactual.
- Both types of firms benefit, but large firms grow more relative to SMEs in response to the reform.

## **A Appendix - Market Engagement**

### **A.1 Methodology**

### **A.2 Interviews**

Our qualitative research consists of 13 in-depth, semi-structured interviews with market participants. Our sample of market participants is split into two groups, SMEs and financial institutions, with 9 interviews being conducted with SMEs and 4 with financial institutions. Prior to the interviews being conducted, participants were provided with a description of the research project which also detailed their contribution to the research. A privacy notice was attached to this description, which guaranteed that participants would be anonymised within any research publications. This was also confirmed at the beginning of the interviews. The interviews lasted approximately 45 minutes and were conducted online, with consent to record the interviews attained prior to them commencing. Participants were not offered any financial reward for participating in the research. A topic guide, outlining the questions and interviewer guidance, was used during the interviews to try to ensure important themes and questions were covered; whilst providing the flexibility to divert the conversation into alternative areas when relevant. Interviewees from SMEs were asked about what they borrowed for, their experience with finance applications, their preferences about finance providers, issues they might have encountered when looking for external finance and potential solutions they have considered. Interviewees from financial institutions were asked about their role in the business, the general scope of their business in terms of customers and products, how they evaluate borrowing applications, challenges their business faces and any solutions they think would help.

### **A.3 Stakeholder Workshop**

We held a workshop with 8 relevant stakeholders, who had an understanding of and had conducted research into the problems in the SME financial market. Stakeholders included academics, participants from the public sector, and businesses' and banks' representative bodies. This workshop was held prior to our interviews, which enabled us to 'sense-check' whether our research themes and questions reflected those of other researchers in this area.

### A.3.1 Sampling

A purposive sampling approach was used to identify and select our market participants for interviews. This approach was not used to achieve a representative sample, but to try to include participants most relevant for the research project, whilst also trying to ensure they are as diverse as possible.

Our sample of SMEs was focused on ensuring a split between the different sizes and relevant sectors. We define the split of SMEs by size via the number of employees, micro: 0-9 employees (3 interviewees); small: 10-49 employees (4 interviewees); and medium: 50-249 employees (2 interviewees) (see Figure 32). We also split our SMEs by relevant sectors which were compiled into groupings (A, B, and C) based on their similar characteristics (see Figure 31). We focused our sample of SMEs towards small and medium-sized businesses as CMA/FCA (2014) and the SAFE data suggest that these two groups have larger shares of applications for finance. In addition, we tried to include as much regional variation as feasible, resulting in a final sample which includes businesses from north to south of England as well as Wales. Our interviewees were all males, middle aged (45-65 years old), and included SMEs' head of finances, owners, directors. Our sample of FIs was equally split among institutions' sizes, in order to gauge the perspectives of a diverse group of institutions. Our final sample contains two high street banks (large financial institutions), a CDFI and a non-bank lender (small financial institutions) (see Figure 33).

Figure 31: Sectors of sampled SMEs

|                  |                                                                                                                         |
|------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Sectors A</b> | Manufacturing & Construction                                                                                            |
| <b>Sectors B</b> | Wholesale and Retail; Repair of Motor Vehicles & Transportation and Storage & Accommodation and Food Service Activities |
| <b>Sectors C</b> | Information and Communication & Professional, Scientific and Technical Activities & Administrative and Support Services |

Figure 32: Split Between SME Size and Sector

| Employees in SME                 | Sectors A | Sectors B | Sectors C |
|----------------------------------|-----------|-----------|-----------|
| <b>0-9 employees (Micro)</b>     | 1         | 1         | 1         |
| <b>10-49 employees (Small)</b>   | 1         | 2         | 1         |
| <b>50-249 employees (Medium)</b> | 1         | 1         | 0         |

Furthermore, our sample of financial institutions was equally split institutions' sizes, in order to gauge the perspectives of a diverse group of institutions (see Figure 33).



Figure 33: Split of Financial Institution Interviews

| Financial Institution                 | Number of Interviews |
|---------------------------------------|----------------------|
| <b>Larger financial institutions</b>  | <b>2</b>             |
| High street banks                     | 2                    |
| <b>Smaller financial institutions</b> | <b>2</b>             |
| Nonbank                               | 1                    |
| CDFI                                  | 1                    |

### A.3.2 Recruitment

SMEs were identified as preferred participants following our review of their responses to the Department for Business and Trade and Bank of England, 'Finance and Investment Decisions Survey 2023'. Firstly, we filtered the survey respondents based on the sampling criteria above, and then refined this sample by examining their responses to relevant survey questions. Our preferred sample was then sent to DJS, the recruitment company which had access to the contact details of all the respondents. DJS conducted telephone calls with the chosen SMEs to ask for permission for the research team to contact them and if they would be willing to participate.

We had five SMEs accept our request to participate and conducted these interviews. The recruitment for the final four SME interviews was facilitated by the Federation of Small Businesses. We also used our connections as a research institute to contact relevant FIs. In addition, we received help from the funders to finalise this recruitment.

### A.3.3 Data Analysis

After receiving the recordings of the interviews, they were shared with an external company to conduct transcription. Interview transcripts were then analysed using a qualitative framework approach, a systematic method for categorising qualitative data, which is helpful for conducting thematic analysis (Gale et al., 2013). Framework analysis has five key analytical steps. Firstly, familiarisation with the dataset through reading of the transcripts; secondly, identifying a suitable thematic framework after considering findings within the transcripts; thirdly, indexing, identifying the data which comes under relevant themes; fourthly, charting the data into their relevant theme; and finally, analysing and interpreting the data (Gale et al., 2013).

### A.3.4 Limitations of Research

This report analyses the findings of 9 interviews with SMEs and 4 with FIs. Despite these interviews being in-depth, and our sample not intending to be representative, we had hoped to achieve our desired sample size of 20 interviewees. Recruitment for this project was particularly challenging, in part due to a lack of engagement from contacted survey respondents. To overcome this, we undertook recruitment tasks, telephoning numerous survey respondents, allowing us to reach a sample of 9 interviews with SMEs. The recruitment of FIs was similarly challenging, particularly that of smaller institutions. Only FIs with whom we or the funders already had a relationship with accepted to be interviewed.



Lastly, it must be noted that, like much qualitative research, our project may include some self-selection bias as a result of SMEs having to opt-in to participate in our research project. Accordingly, it may be that SMEs which accepted the invitation to participate in our research did so because they had strong views on this subject matter, skewing our sample. To account for this, we included survey respondents in our sample who did not engage much with the survey questions, and therefore may not have the strong views which others in the sample may have. Hence, we have tried to account for limitations in our methods as much as possible.

The recruitment of FIs would also suffer from a selection bias since those who have accepted the interview were recruited via having an existing relationship with either NIESR or the DBT. Therefore, one could expect that these FIs are in close contact with research and policy on a continuous basis. This might mean, for instance, that they have more resources than other FIs which allow them to dedicate time to the interview. Therefore, they might also have a different experience in the market than other FIs.

## **A.4 Findings**

### **A.4.1 Considerations on and problems with the current SME financial market**

#### **The cost of financial products**

Our SME interviewees reported accessing or having tried to access various financial products, the most common being overdraft facilities and loans from high street banks. A minority of interviewees also applied for finances from alternative institutions, including venture capitalists. Some also applied for government funding such as Coronavirus Business Interruption Loan Scheme (CBILS) or the Recovery Loan Scheme (RLS). Most SMEs considered applying or applied for financial products in order to expand liquidity or invest in their business (e.g., buying vehicles and other assets needed to expand their business). When asked about the key factors influencing SMEs' choice to apply for finance, the main consideration was the cost of financial products. All our interviewees noted how the costs of financial products have increased across FIs. Interviewees cited recent increases in interest rates, which can be explained as the result of the UK's ongoing inflationary pressures.

*"When interest rates were 1 or 2 per cent, and we're paying 1 or 2 per cent over base, you're thinking that's fine. When interest rates went up to 6-5.5 per cent, or whatever, you think it's expensive."*

*Medium-sized business, Wholesale and Retail, South East*

*"Right now, I wouldn't apply for anything because generally speaking, they are 7 to 10 per cent above bank base rates. So at the moment, we would be looking at 12 to 14 per cent. Yes, I wouldn't even entertain that. So that's why we've got capital-, it's one of the reasons we've got capital expenditure on hold at the moment."*

*Micro-sized business, Manufacturing, South West*

For nearly all SMEs interviewed, the cost of financial products had become a barrier to entry into the financial market, even to the point of unaffordability. One interviewee from a micro-sized SME described the current cost of financial products as "prohibitive". This situation impacted the SMEs in our sample differently. A company director of a small-sized business in

the wholesale sector explained how the firm can rely on a longstanding overdraft facility for liquidity and daily operations, which remains considerably less expensive than any other financial products they have come across.

*"We have looked elsewhere [...] We found it was going to be expensive in comparison to what we were, compared to the overdraft we have [...] It [the overdraft] worked for the way we operated, basically. We could, if we wanted to, change now because we have a lot of capital, capital goods, we have machines, trucks and all the rest of it which we could put up as security against all of that. We don't own the site, we do have an office which we do own and we could get some borrowings against that if we wanted to, we could mortgage it, we own it outright, there's no mortgage on the place. So, at the moment, yes, there's probably a hundred or more alternatives we could go down but they all seem to be more expensive than our overdraft"*

*Small-sized business, Wholesale and Retail, North East*

However, for other SMEs, particularly the younger ones and the micro-sized businesses, the unaffordability of financial products was holding them back from growing their business. For example, the managing director of a wholesale trade of potatoes and onion firm explained how the cost of borrowing meant that the firm is unable to upgrade its vehicles and do other investments necessary for growth, since the risks involved in borrowing far outweigh the rewards.

*"We haven't upgraded our vehicles. So yes, it has affected the business in not being able to, one, expand, but, take chances. Take opportunities, if they've arisen. We've done a scenario analysis to say, if we were to expand, what would our costs be? What would our rewards be? And, do the rewards justify the risks? And, with the interest rates being what they are, no, they don't justify the risks"*

*Micro-sized business, Wholesale and Retail, East Midlands*

We caveat that these interviews were conducted in early 2024, when interest rates were still substantially higher relatively to the pre-Covid period. Therefore, SMEs views were probably temporary.

Importantly, for some interviewees it was not just the high interest rates impacting their decisions to apply for financial products, but also the lack of company or personal assets to provide as collaterals and at times the unwillingness to do so when borrowing from banks. One of our interviewees from a micro-sized business explained how he could provide personal properties as collaterals when borrowing from banks, allowing him to borrow money and expand his business.

*"I mean, if I hadn't had the assets to put a security for our borrowings, we would never be in the position where we are now, where we own our buildings, own our vehicles [...] So, when it comes to bank borrowing, or borrowing, I'm always hesitant because of what, in the past, I've had to put as collateral to get to where we are [...] When we were looking at buying the warehouse for this business, they wanted a personal guarantee, they wanted my property, my residential property, my buy-to-let, everything as collateral"*

*Micro-sized business, Wholesale and Retail, East Midlands*

However, not all SMEs may be in a similar position. One interview from a small sized business in the construction sector explained how he was not willing to provide his personal properties as collaterals, as he deemed it too risk for his own family.

Therefore, although we know that problems in the SME finance market were in place before the recent interest rate rises in the UK, it is clear that these have exacerbated the demand-side deficiencies that were present prior to their introduction.

One small financial institution noted that the ENABLE Funding programme, aimed at reducing funding costs of alternative lenders which could then lower the cost of finance for SMEs, has space for improvement:

*"But, still, they're wrapping that guarantee around the senior bank funding line (...). So, rather than doing that scheme in that way, BBB should have access to wholesale finance market or Bank of England, that would be a more efficient way to get this money working."*

*Small financial institution*

### **Debt aversion among SMEs**

We also found evidence of debt aversion within the group of SMEs we interviewed. The most notable example of this was from one SME which mentioned their resistance to apply for a loan because they had not yet released their product to the market and so were uncertain about their ability to repay. Accordingly, these sentiments guided this participant to access government grants instead of loans from private FIs.

*"You have to return all the money that you borrow so you have to go out and sell something which I'm not able to sell it at the moment because the product is not at that stage [...] I'm a first time businessperson who perhaps is scared to take the dip in to the cold water or hot water whatever the case may be."*

*Micro-sized business, Professional, Scientific and Technical Activities, London*

This hesitancy may be particularly prevalent not only among micro-sized businesses, as exemplified by the case presented above, but also among medium SMEs. This was the case for a medium-sized firm in the manufacturing sector specialised in textiles, which the firm's head of finance described as a "dying business".

*"I mean, I wouldn't say they were apprehensive, I just think they [the business owners] are conservative in their appetite for risk, and, you know, the business has never had debt and they don't see why introducing it would particularly help them. It's not a fast-paced industry that we're in. It's not a fast-paced business compared to some, and therefore the idea of suddenly leveraging the business and massively expanding isn't really credible in our industry, if that makes sense. [...] Also, I think, because most of the shareholders are reasonably removed from the business, so they might have had shares handed down from their parents and they get a little dividend once a year, and they're quite happy with that, that actually don't really want anything to change, if that makes sense."*

*Medium-sized business, Manufacturing, Yorkshire and The Humber*

Debt aversion seems to be a common feature of UK SMEs as suggested by the 'Finance and



Investment Decisions Survey 2023'. This is reflected here although to a limited extent. This is likely to be due to the focus on recruiting businesses who have at least attempted to apply for finance.

### **Risk aversion among financial institutions**

Nearly all interviewees from SMEs noted an increase in risk aversion by FIs in recent years, particularly among high-street banks, as a reason they could not access finance.

*"They're very risk averse, the traditional banks are much more risk averse than they used to be. And it's not that we don't have the facilities and the stock or the assets, it's just, actually, opening up the door."*

*Medium-sized business, Wholesale and Retail, North East*

Participants who mentioned this problem referred to the difficulties they had in accessing finance, despite demonstrating a proven track record of servicing their previous financial agreements.

*"We had a loan with [high street bank] probably 2015, so many years ago now, but have found it a lot harder to get loan or funding from the high street banks in recent years. [Alternative Lender], we found to be a lot more flexible, and as I said, they funded the launch of our new education products, and that loan, as I say, is now fully repaid, and the products are doing well. But when we've gone back to them more recently, they've not been able to fund us. So, then that means it's quite difficult for us because then we're on to lenders who have significantly higher rates."*

*Small-sized business, Administrative and Support Services, Wales*

One participant felt that the level of risk aversion among high street banks changes depending on sectors and types of industry, as he felt that some sectors are perceived more profitable and "glamorous" compared to others. These perceptions in turn shape FIs' decisions to lend money.

*"We're in the wholesale fruit and veg industry. We have found it very difficult for this business sector, purely because it's not seen as glamorous or [as generating] huge amount of returns [...] Well, they [the banks] don't probably see you as a risky investment, but they do see you as a non-glamorous industry to lend money into, and therefore attach a risk to it, therefore making it difficult to borrow [...] If you're a glamorous business, people are clamouring to lend you money. If you are an old-fashioned, bricks and mortar, uneducated kind of business, people are less likely to listen to you or even lend you money, even though you might be profitable."*

*Micro-sized business, Wholesale and Retail, East Midlands*

One small financial institution mentioned that large banks withdrew funding from small businesses during the GFC:

*"It was the banks' decision to withdraw funding from the small businesses, largely because of their under-capitalisation at the time."*

*Small financial institution*

The risk aversion of FIs not only makes it hard to access finance but also may mean that FIs impose terms and conditions placing severe burden on SMEs as a means to mitigate risks. This was the experience of one SME in the construction sector who opted for development finance,



as presented below:

*"It's called development finance, many many providers... we get emails all the time purporting to, you know, they do it at 1 per cent a month, there's an entry and exit fee. The last one we did was with [Large Bank], they basically said, 'Yes we will do it,' but they wouldn't release the money upfront. We had to spend £0.25 million of our own funds, which we haven't got, before they would release the first tranche of money, even though we were giving them first charge on £800,000 worth of assets. Well, that's just crazy, you know, if we're giving you £800,000 worth of assets, they should at least release 20 per cent of that £800,000 so that we can actually start the rolling cycle of the development of the buildings."*

*Small-size business, Construction, North West*

Since larger FIs have been less willing to finance SMEs in recent years, SMEs have been pushed to seek out and access finance from smaller, alternative FIs, including challenger banks like Metro Bank as well as non-banks like Funding Circle . While the costs of alternative FIs may remain high, our interviewees found that smaller FIs were typically more flexible, and do not always make the same requests for security, making the financial product more accessible.

*"We had a loan with [high street bank] probably 2015, so many years ago now, but have found it a lot harder to get loan or funding from the high street banks in recent years. [Alternative Lender] , we found to be a lot more flexible, and as I said, they funded the launch of our new (...) products, and that loan, as I say, is now fully repaid, and the products are doing well."*

*Small-sized business, Manufacturing, Wales*

*"With the high street bank, they tend to want far more security than the non-high street banks."*

*Micro-sized business, Manufacturing, South West*

Overall, our research demonstrates that the recent lack of willingness on the part of the larger FIs to provide finance for SMEs has pushed SMEs to access finance from alternative FIs, who tend to offer financial products with higher interest rates which might be unaffordable for some SMEs.

### **The importance of relationships**

SMEs who successfully applied for finances would typically highlight the importance of having meaningful, supportive, and collaborative relationships with FIs in helping them access financial products. This was the case for a small-sized business in the construction sector who borrow money from high street banks multiple times:

*"We had a person I could ring rather than a computer and speak to them. We've had meetings here in our offices with the relationship manager, so they know our business, what we do, and to be fair to them they've supported us."*

*Small size business, Construction, North West*

Yet, most SMEs noted how personal relationships with FIs had reduced over recent years.

*"I used to have somebody in Cardiff who was managing our business. I'm now one of 300 businesses one person manages from a call centre in Birmingham, so you don't have that personal relationship, and it just feels like we're not big enough to really be on their radar."*

*Small-sized business, Administrative and Support Services, Wales*

*"Over the 40 years I've been involved with this business, we've gone from having a bank manager, a proper bank manager, where you would meet face to face and have proper discussions and your bank manager would make virtually an immediate decision if you had a decision to be made. Now, you've gone from that kind of scenario to a bank manager or a relationship manager [...] to somebody who really you don't have any real connection with and if you want a decision, it takes forever."*

*Small-sized business, Wholesale, North East*

*"So, it is as difficult now to get money from a bank as it ever was and possibly even harder because they don't have branches any more and they don't have relationship managers. So, it's all done through the computer or through a call centre. So, they would argue that's easier but, in truth, it's an easier way for them to be declined."*

*Small financial institution*

Importantly, one interviewee from a micro-sized business perceived a differential treatment and level of attention and care from FIs, particularly high-street banks, based on the firms' size, revenue, and turnaround.

*"Historically, you could go to your bank manager and borrow. Now, you have to go through a business banker. Like I said, we're in that little bit of time gap. We're not a £5 million business, so we don't get into their corporate regime, we're still a small business, so we don't get any corporate banking activities. You know, we don't get wined and dined by their corporate director."*

*Micro-sized business, Wholesale, East Midlands*

Our interviews with representatives from FIs confirmed this trend of reducing personal relationships and contact between FIs and SMEs. They explained this trend results in lower costs for FIs and more convenience and a larger lender base for customers. Furthermore, one of our interviewees highlighted that while relationship banking might bring more SMEs to branches, SMEs would be reluctant to pay for it.

*"Back twenty, twenty-25 years ago an SME would have a relationship director at their bank, who they knew. And that person knew their business inside out, but they didn't go out to the market, they'd go and ask their bank manager who would basically, probably, be able to give them what they wanted, or certainly be able to push the bank to support. Whereas now, you know, there's less of that, but they will have access to a much wider lender base, and convenience and time to money has become a key feature."*

*High street bank*

Most SMEs observed how the reduction in personal relationships with FIs and the lack of relationship management was driven and exacerbated by the closure of physical branches. Several SMEs reported having their bank's local branch closed, making it hard to access bank managers and other bank employees that could provide support with financial products.

*"Well, we've just recently had our local branch closed and it's just the hassle factor. If, you know, we've had times when you just need to go up and talk to somebody about fairly basic stuff, there's nobody there. Then you've got to go through a phone line and, you know, hit 1, hit 4, hit 7, hit 3 and then you*

*wait in a queue for 45 minutes. That's just not helpful, I haven't got time to be sitting on the phone for 45 minutes.*

*Small business, wholesale, North East*

The perception among SMEs that closure of physical branches is further jeopardising their ability to build relationships with lenders was confirmed by our interview with representatives from FIs. However, one interviewee from a high street bank observed how the expectation of providing high quality relationship management is often placed on high street banks but less so on neo-banks or FIs.

*"And, I think that's been a bit of a change because, again, a little bit like the discussions more widely about the branch networks, which is technology and the use by customers has pushed banks and building societies to reduce advanced network, and likewise to reduce their relationship management network. But at the same time, external parties still, sort of, see branches and relationship managers as what banks do and what banks ought to provide. Although, I would say they don't place the same expectations on new providers. No one, as far as I can tell, is demanding that [neo-bank] open a branch. It'd be a bit odd if they did."*

*High street bank*

Another interviewee highlighted the contradiction between SMEs wishing to be able to access physical branches and the fact that when these are present, they are often "empty" due to SMEs' tendency to use technology to access lenders in diverse locations.

*"So I think there's a trend away from local SME orientated resources, and that is a cost income imperative decision by the banks in total. People aren't going into the branches anymore, so the decisions are made there. I think it's, at the same time, a rise of a low cost to search, through using technology that enables people to go to different lenders in the market, and they're clearly doing that from a convenience perspective."*

*High street bank*

*"Yes, I think that's what you see in the newspapers. That whenever a branch closes, the bank, whoever it is, [cites bank examples], will say, 'The footfall was not there. So, we've got people standing in a branch, and no one goes in,' and they don't."*

*High street bank*

However, SMEs commented that this lack of contact was problematic for a number of reasons. Some interviewees observed how the lack of relationship caused difficulty in being able to negotiate with FIs regarding the cost of financial products and the terms and conditions of financial agreements.

*"Well, there isn't any negotiation. They will quote you what they're prepared to lend. You know, the circumstances and what they're prepared to lend under. You either take it or leave it. So, there's just black and white, there's no negotiations, there's no discussion."*

*Micro-sized business, Manufacturing, South West*

One of our interviewees from a high street bank admitted that there is a value region where automation is not possible. This means that it becomes more costly for banks to process applications in those values, resulting in a finance gap, without quality relationships with SMEs.



*"But there is a bit of a gap which is there, and I think it will be filled. Which is the loan amount lending, access to finance, so up to 25,000. Banks seem to be very comfortable working with data and tech, to say, 'Yes, that's a good bet, we can go with that.' If you go from say 50,000, to 500,000, I think that's the gap where the cost-to-serve is most difficult. So, the computer, the data is not there yet to give the banks the confidence to lend, without seeing the business, and testing the business in that zone, and if you start losing money in those amounts it hurts the bank, it's a value destroyer."*

*High street bank*

Another implication of the decline in physical branches, concerned the fact that some SMEs did not know who to contact in order to access finance. One participant noted this being the case with a larger financial institution, even though they had an existing relationship through business current account provision. This was in spite of this participant commenting on past positive experiences with this financial institution, describing the experience of receiving a government COVID loan from this institution as "superb". Others noted that they had struggled to know who to contact to be able to receive government grants, suggesting that this problem may not be exclusive to private, larger FIs. It is worth noting that the lack of awareness of who to contact within FIs was a particularly recurrent issue among micro-sized businesses with lower revenues.

The reduction of personal relationships and interactions negatively affected the trust SMEs had in financial providers, as they felt FIs had no interest in helping them access finances to grow and expand their business. As a result, some interviewees felt "alone" and compelled to seek advice from a broker to help them navigate and understand the financial market.

*"I will get it done but definitely if I had the funding which I knew was meant for that purpose, it's not for my personal use it's for business purposes, and somebody is supporting me to develop my idea further, that would give me a lot of confidence. At the moment, I feel very alone."*

*Micro-sized business, Professional, Scientific and Technical Activities, London*

Clearly, for SMEs the reduction in personal relationships with FIs negatively affected their chance to access finances. Yet, this feeling was not necessarily always shared by our interviewees from FIs. For example, the Senior External Engagement Manager from a high street bank felt that a more automated process to lending allowed the bank to expand access to finances among SMEs.

*"And, I think, the risk scores as a test, risk assessment and risk scoring are in general have allowed greater lending than would otherwise have been the case in traditional systems."*

*High street bank*

Clearly, our findings suggest that the closure of branches and the decline in the relationship and support provided by FIs has been an important barrier to SMEs' access to finance, including for those who used to have a good relationship with their finance providers. Nonetheless, the interviewed high street banks pointed out that branch closures have been triggered by insufficient customer visits. In addition, they highlight that the replacement of relationship banking with the use of "hard" information and automation have resulted in the expansion of credit.

**Frictions resulting from application processes**



Most interviewees, irrespective of the size of their firms, had challenges with the application process. Common issues reported included excessive paperwork and lengthy processes as key factors discouraging SMEs from applying for finance or making it hard to do so.

*"The reason is because I feel that there would be a lot of paperwork involved."*

*Micro-sized business, Professional, Scientific and Technical Activities, London*

A similar point was also made by an SME in reference to the process of applying for government department funding:

*"There's just quite a bit of paperwork. There's quite a lot of administration to be completed but apart from that it's not been too bad."*

*Small-sized business, Transportation and Storage, West Midlands*

The same interviewee also described the process of applying and dealing with the paperwork as "painful", even if worthwhile.

*"To be fair, you know, when I look back, yes, it was a bit painful getting there but it was worth it for the funding that we got."*

*Small-sized business, Transportation and Storage, West Midlands*

In addition to being highly bureaucratic, the application process can be "too rigid". SME participants often mentioned the rigid and less individualized application processes followed by larger FIs such as high-street banks. This means that unless SMEs are able to "tick all the boxes" and were a perfect fit with the criteria for borrowing, the application process was unsuccessful.

*"I think it's too rigid. I think you have to fill in a form, you have to tick all the right boxes and that's where, you know, when I was saying people aren't willing to negotiate."*

*Small-sized business, Wholesale, North East*

*"Not personable process. Just a matter of ticking list. It's a hidden bot mechanism. There's no subjectivity left in it anymore, it feels like a tick list. "*

*Small-sized business, Wholesale, North East*

High street banks' assessment of growing businesses was also pointed out by one small financial institution:

*"Yes, so they're big bureaucratic organisations and the branch manager in the 1980s could make a decision to lend £5 million. It doesn't exist any more, it goes to a central telephone thing or a relationship manager who's got very limited power, he's got to live within a very simple box. Because it's a very large organisation and they have to control risk in certain ways, right? And what happens is that all of those people in the banks, they get dumbed down, right? [...] then it becomes self-fulfilling because you've not done that sort of lending, so you don't know how to do it, and so you become this vicious circle. So, you end up with these people who only know how to do a certain way of lending, which means growth, in particular, gets lost, because growth does require some thinking, does require some analysis, right? And that's the challenge for a lot of the clearers, because they want to keep all the other income but they won't lend the money to enable that growth."*

*Small financial institution*

Finally, one interviewee who had several applications turned down from both high-street banks

as well as government funding explained how he was never provided with feedback or an explanation as to why the applications were unsuccessful. This was partially attributed to the lack of meaningful advice and relationships with financial providers. The lack of feedback was perceived as particularly problematic, as it prevents SMEs from being able to improve their approaches to applying for finances.

*"There's a disconnect of information flow. If the funders have got a problem with us as a company, I'd like to know what it is so that I can fix it. But, they're telling the broker [hired by the small business to help them navigate the market of financial products] 'no, we're not going to fund that project, and no we can't tell you why we're not.' That's what they're saying."*

*Small-sized business, Construction, North West*

These findings clearly indicate that bureaucracy, rigidity and lack of communication from FIs are all factors hindering SMEs' access to finance. The interviewed high street banks noted that part of the bureaucracy and time to process finance applications is due to necessary measures for financial crime prevention.

*"I mean, the account opening and the financial crime responsibilities that we have to carry now, are a higher bar than we've every seen, they don't seem to mirror other European jurisdictions. So, it's not a barrier to lending, but what it does mean is it's hard work for banks and SMEs to change bank, get a new bank account, and then provide all the KYC that they need to do a deal."*

*High street bank*

Small financial institutions also identified issues with the Bank Referral Scheme, through which banks are expected to refer businesses' whose finance application is denied to alternative finance providers.

*"There was this thing around the bank referral scheme, which I'm sure you're familiar with, which has gone nowhere, right? Because if theoretically the banks reject something, it's going to say, 'Oh, put it into referral scheme so it can refer to other people,' but they end up in a position where they don't record it as a reject, so they don't have to put it into that portal. So, this bank referral scheme just doesn't work, right?"*

*Small financial institution*

*"The other thing is referrals from the banks. The banks turn down millions of businesses (...) They've turned off millions of businesses in the UK but the banks don't refer (...) so why don't they? It's a dead easy thing to do. Just get them to do it."*

*Small financial institution*

#### **A.4.2 Solutions identified by SMEs and FIs**

As solutions to their cited problems in debt-lending markets, SMEs provide several suggestions, including: reduction of the cost of financial products, simplification of financial products and application processes, reconstruction of a relationship-based approach to financing, provision of bespoke business advice and support, and increase of public financial provision and support.

##### **Lower the cost of financial products**

Nearly all interviewees from SMEs commented that lowering the cost of financial products would improve their access to them. Fixing interest rates in proportion to the bank rate and tiering interest rates in relation to the size of the business were both suggested as ways to implement this change. Others indicated the need to also reduce entry and exit fees, brokers' fees, as well as the level of personal guarantees requested by larger FIs, in addition to making the terms and conditions less onerous on SMEs.

*"We need to be reducing the level of director personal guarantees. We need to be more competitive with the costs, some of the interest rates are horrendous, the entry and exit fees, the brokers take their fee from the funders but there's usually a set-up charge."*

*Small-sized business, Construction, North West*

Although lowering costs is not a solution, we reflect it here since it is clearly an important consideration of SMEs when deciding whether to seek external finance.

### **Reduce the complexity of financial products**

Offering financial products that are less complex may encourage applications from SMEs who are debt averse and fearful of getting involved with financial services due to not having a full understanding of these financial products.. The importance of simplicity in financial products was emphasised by the head of finance of a medium-sized business in the manufacturing sector with a track record of successfully applying for finance.

*"Cost was a factor, probably the main one, but simplicity as well. We didn't want to take any products out that were unnecessarily complicated. Because we're not a particularly complicated business from that point of view, and it would have added in risk that was unnecessary. Yes, so cost, and I think appropriateness, as I mentioned before."*

*Medium-sized business, Manufacturing sector, Yorkshire and The Humber*

### **Streamline application process**

Another desirable change our interviewees from SMEs wished to see was the streamlining of application processes for financial products. Our interviewees emphasised the need to make applications shorter, easier to fill out online, with quicker responses and decisions and the opportunity to have one point of contact if questions related to the application emerged.

*"Well, I suppose it was process simplicity, in terms of we wanted to have the online access, and easy to apply for loans, easy to repay them, easy to extend them if we want."*

*Medium-sized business, Manufacturing, Yorkshire and The Humber*

*"As I say, the key to me is pricing and speed of response [...] I would like to have a fairly concentrated point of contact, so 1 or 2 people, that I could go to for everything, rather than having to go to, you know, a call centre for this and that person for that and somebody else for something else. And I would want them to provide a reasonably quick turnaround response in terms of service and competitive pricing, and I wouldn't expect them to price much below the private banks, but certainly to be competitive."*

*Medium-sized business, Manufacturing, Yorkshire and The Humber*

Our interviews with stakeholders from FIs indicate that there have been positive developments



already towards the streamlining of application processes. For example, a high street bank has put in place measures to inform businesses in advance of an application what they could borrow based on their data.

*"What's happened in recent years, and this is true of lots of other banks, in that we will say to some of those customers, a large minority that's now come back on after the COVID period of time, they log on, they'll say, you know, 'We will lend you up to a certain figure,' £15,000, £20,000, £25,000. It might be higher than that for certain customers as well. So, 'Based on your risk score and the size of your business and your behavioural patterns, we can tell you now that if you apply, we will accept. You know, we will auto-accept, if you like, borrowing or up to a particular number."*

*High street bank*

The same high street bank is also trying to expand this pre-assessment to lending of larger amounts alongside exploring how to expand the use of customer data (via open banking and open finance) to speed up their processes.

*"I think that's where you have those choices but the aim has been, over the years, to give customers more information where we can about what's available to them, obviously try and reduce our costs, which is we then don't need to engage lenders and our lending experts to get the lending they would like to have. It obviously allows quicker access to finance for a lot of customers, and the intention has been, where possible, to look to push the upper limit of that, sort of, pre-assessed lending up from £25,000 to £50,000 to maybe £100,000 in some cases. Well, it will vary, not every customer will have access to that but then, depending on our judgement, up to as high as we reasonably can, then thereby allowing our expert lenders to focus on, more effectively, on a smaller pool of applications."*

*High street bank*

*"I'm sure, about improving our processes, speed, how quickly can property valuation be done, how quickly can we judge the value of security. How quickly can we get legal processes done. I think there are opportunities there to be quicker, to get the turnaround time down. It will never come down to 1 day, but I do think there are opportunities there. I think there are opportunities more broadly to integrate open finance, open banking, better into our systems."*

*High street bank*

It is worth again noting, however, that at times application processes may be slower due to FIs' responsibilities to carry out the adequate checks to prevent financial crime.

One high street bank also mentioned the potential of greater access to customer data for enhancing knowledge about the client, but cautioned it will not necessarily increase application acceptance probability:

*"There's no guarantee that knowing more about you will mean I'm more likely to lend to you. I might get a better assessment of you, but that assessment could be good or it could be bad. So, I think the idea that having more knowledge about or more information about a business or a customer or an individual is a good thing. It may well be a good thing in terms of the lending process, overall, but the idea that what we'll get out of it is necessarily more lending or on better terms or with lower prices, I think, is not true, to be honest, from that point of view."*



## Promote a closer relationship with lenders

Fostering quality relationships with FIs emerged as one of the most cited desirable changes among our interviewees from SMEs. SMEs defined quality relationships with FIs as those characterised by regular contact, responsiveness, and interest in understanding the nature of their business.

*“Regular contact, responsiveness and sensible answers really, but I actually think responsiveness was the key for me. They have, I'd say, been far less responsive of late, and if there was going to be a reason why I would look to change services it would be because I can't get the answers as quickly as I need them. But actually, as I say, regular contact, but nothing particularly intrusive, because we didn't need that, kind of, level of intensity. So, it was appropriate to have them in the background and well informed, and have a catchup every now and again, but not have any, kind of, intensive reviews or anything like that, which the bank were fine with because they didn't have a massive exposure to us.”*

*Medium-sized business, Manufacturing, Yorkshire and The Humber*

According to our interviewees, promoting quality relationships between FIs and SMEs would benefit SMEs in several ways. Quality relationships can benefit SMEs during at the application stage since regular contact with an appointed bank manager might allow SMEs to better understand the rates and requirements for different financial products. Furthermore, quality relationships would help reduce risk aversion among FIs as they would gain a deeper understanding of SMEs' business, which may mitigate some of their concerns in lending money. This is exemplified by the head of finance of a medium-sized business in the manufacturing industry, who explained how the reason they often get funding from the bank is because they were able to establish a relationship with the bank and decision-makers there have come to understand the business, providing reassurance for both parties.

*“One of the reasons we were able to access the CBILS financing in the short time frame that we had was because the bank already knew us, they knew what our risk profile was and they understood our requirements, if that makes sense. And without that relationship and that understanding, I think we'd have had to work a lot harder to get that over the line.”*

*Medium-sized business, Manufacturing, Yorkshire and The Humber*

One interviewee highlighted how quality relationships with FIs may also mean that SMEs are supported when they are facing financial challenges, rather than being “abandoned” by the withdrawal of their financial products.

*“Well, I just think the bank managers or bank relationship managers should understand, kind of, what you're doing with their money [...] I don't think they should rely on just the figures only. They should know more about the business, rather than just, you know, you fill a form in and, if the numbers don't add up, then there should be an alternative... a way out of that negative side through explanation or whatever else. Companies have good times and bad times and, you know, there's always the threat, if you have a bad time, the bank could call the overdraft in or withdraw their services.”*

*Small-sized business, Wholesale, North East*

The CDFI we interviewed also mentioned banks' and other lenders' tendency to withdraw their services during periods of downturns either for an SME or the whole economy, and how the

CDFIs attempt to instead provide the necessary support during those periods.

*"The additionality we bring is that when we've given a client a loan we maintain a relationship with them, that during the course of that relationship if the client finds that things are a bit more tricky we will essentially offer a way to change the payments to make it easier for them. The big difference between CDFIs and mainstream lenders or alternative finance providers is that we will bend with the business. So, as anybody will tell you, that the business cycle goes up and down. Yes? It's not a flat line or a steady growth. It varies and we follow the same principle, the support and the help that we give must follow the life of your business. So, if you need more cash, we give you more cash. If you need a period of time where you can't make a repayment, then we will adjust that. That is why we were more successful during COVID."*

*Small financial institution*

Finally, the ability to establish quality relationships would allow SMEs to feel supported, overcome the mistrust towards FIs, and feel reassured that they will be supported both when wanting to expand their business, but also during times of hardship.

*"Even if there wasn't any financial benefit, there was reassurance, which means a lot to someone that actually doesn't see banking as just a transaction. I see it as a relationship. The banks do not, at this level, see it anymore as a relationship. They see it as a transaction. So, if that transaction isn't making them money, [they] don't put any assets towards it."*

*Micro-sized business, Wholesale, East Midlands*

Building quality relationships would also benefit FIs in two main ways, resulting in a "win-win" as described by one interviewee from a small-sized business in the transportation and storage industry. First, fostering quality relationships would attract more SMEs towards FIs, particularly those who are currently not applying for financial products due to mistrust. Secondly, quality relationships would allow FIs to retain SMEs, who would then be less likely to look for financial services from other institutions.

*"I think they'd probably get more business, to be honest with you. Because, I think, we would be probably more willing to engage and have those sorts of conversations."*

*Small-sized business, Transportation and Storage, West Midlands*

*"Well, I already had a good relationship with our relationship manager director person, so, I think that was a key factor, and certainly I didn't have any frustrations which would've pushed me in a slightly different direction I think, at the time."*

*Medium-sized business, Manufacturing, Yorkshire and The Humber*

Accordingly, this suggests that a shift towards an approach to financing which is more relationship-based and has a greater, more detailed and longer-term, understanding of the individual business and sector would be desirable for SMEs. One high street bank cited the partnership between banks, the government and CDFIs, relationship-based institutions which could help reduce the previously mentioned lending gap where application assessment is more costly for banks.

*"Yes. I mean, there's an article in the FT this morning, isn't there, about Lloyds putting 62 million into a not-for-profit fund. Which is run by, is it CBFI, or something like that? Which is a not-for-profit, local SME fund. Which, you know, read quite well. So, maybe that's the space that you're going into, the*



*interest rates that those businesses have to charge, because their loss rates do tend to be higher. Although they do lend up to 100, I think I read this morning [that] is their, sort of, sweet spot. I mean, that might be a community-based, government-wrapped, bank-supported fund might meet the needs of, you know, some SMEs, but it depends which segment you're looking for."*

*High street bank*

Similar concerted effort was also mentioned by one small financial institution:

*"I think there needs to be a concerted government policy about the support of alternative, conscientious finance providers [...]. And, currently, there are tax incentives available to CDFIs to encourage investment from investors, banks, private investors, and corporate investors, which the government has, in fairness to them, encouraged them recently and has made some amendments to, and it's been great but there needs to be also a compulsion on the banks."*

*Small financial institution*

### **Bespoke business advice and support**

Most SMEs, particularly less experienced SMEs and micro- sized businesses, expressed a preference for increased business advice concerning *management, coaching, and support* as well as information about what the banks or FIs look for in businesses they want to support or lend money to.

*"If you had open information, you would then understand what the banks are really looking for in your application to apply for more capital to grow, and it would give you a wider choice. If different banks were looking at it in different ways, you would know who to approach, and you'd waste less time."*

*Micro-sized business, Wholesale, East Midlands*

*"the Welsh Development Bank, I'm connected in with them, they've got an accelerated growth programme which provides, sort of, management, coaching, and support, and that, I've found helpful."*

*Small-sized business, Administrative and Support Services*

However, our interviewees from SMEs emphasised that for this advice to be useful, it should be bespoke to their businesses needs and aims.

*"It would have to be specific to the size of organisation that we are. Yes, I think I've had some which been very helpful, and others which have just been, you know, you're talking to much bigger organisations than a family-run business like ours, and the information hasn't been as relevant."*

*Small-sized business, Administrative and Support Services, Wales*

In this respect, one SME commented on being frustrated with business advice which was too generalised and not individual or in-depth enough, despite remarking that business advice would be desirable.

*"I'm sick to the high teeth of consultants. Certainly, consultants that get grant funding from government sources. That will come into your business, tell you the bleeding obvious and then disappear. So, I've got no time for people like that."*

*Micro-sized business, Manufacturing, South West*

*"I mean, it would have been nice if I had 1, possibly 2, people who actually overlooked my project and said, 'This is what you need to do now, this is what you need to do now.'"*

*Micro-sized business, Professional, Scientific and Technical Activities*

Other SMEs noted that those with specific business expertise in their sector would be helpful, with one suggesting that they should provide one-to-one help when required.

*"If the banks have a manufacturing expert whose every day is looking at what's happening in manufacturing, they could challenge us."*

*Medium-sized business, Wholesale, South East*

*"I mean, it would have been nice if I had 1, possibly 2, people who actually overlooked my project and said, 'This is what you need to do now'."*

*Micro-sized business, Professional, Scientific and Technical Activities, London*

Our FIs' interviewees also felt that business advice was needed among SMEs, particularly the younger ones and the ones managed by their owners, as this would help them put together strong financial proposals.

*"Yes, I'll just add to that, and it's inevitable but the relative sophistication of the borrower, or the prospective borrower. Because some people just come with very little information and expect us to build the case for them. And a lot of the businesses, SMEs won't have an FD, a strategy team, you know, it's often owner-managed. And so that level of understanding that that owner-manager might have about a business and how to construct a lending proposal and present it to a bank, it varies wildly. From people who literally come with it all in their head, to people who may have employed an accountant and come with a pack and a business plan and their story, mapped out. So, if everybody came with a pack and their story mapped out, written by somebody who is financially adept, that would make life a lot easier for banks. But we realise that in the SME market, that's not always going to be the case."*

*High street bank*

While empathising with the need for business advice and guidance, high street banks did not always feel that providing tailored guidance and business advice to SMEs was part of their repertoire of responsibilities.

*"And then, I think, all of those things that you can all do once, what we can try and be is as clear as we can reasonably be about the process and what that will involve and what we need to have. And then work through other bodies to make sure that businesses understand what their requirements or obligations are."*

*High street bank*

Furthermore, one small FI highlighted the importance of finance advisors:

*"So, the point is the advisors are helping them prepare themselves in terms of their application, but also determining which sort of lender is right for them, because, you know, they made need a different sort of finance to us."*

*Small financial institution*

Consequently, our research suggests that SMEs would like to see more bespoke business advice being provided, but FIs, in particular high street banks, do not think this is a need they should be



the ones to fulfil.

### **Increased public financial provision welcomed, if they improve market conditions**

Some SMEs noted that they had positive experiences with publicly owned financial providers. Notably, two SMEs commented on their positive experiences with the [Public bank], with one SME commenting that they would “always be supportive” of the bank as a result of the access to finance they provided.

*“This particular bank wouldn’t support us on a green loan for the aluminium, so this gets a little bit interesting is to get to a greener aluminium, we’re the only people who wanted it at the moment, so we had to buy the minimum quantity which was 10 tonnes, so we now own some aluminium, but thanks for the [Public bank], who I’ll always be supportive of, they gave us a green loan.”*

*Medium-sized business, Wholesale, Yorkshire and The Humber*

Additionally, another SME noted the important role that public banks can play in assisting with regional development. Despite this, they did also note the difficulties they are currently having in accessing finance from the same public bank.

*“So, we’ve had help with things like the [Public bank]... and that has been particularly helpful to us in the past. I say, at the moment, we’re not quite hitting their criteria, which is a bit frustrating, but, yes, I think that would be quite helpful, and particularly in terms of targeting regions.”*

*Small-sized business, Administrative and Support Services, Wales*

This same participant commented that the change to the market they would most like to see would be Government guarantee schemes, favouring an increase in the support provided by publicly owned financial providers, as it would effectuate an increase in the availability of financial products.

*“I think it probably is the government-backed funding because commercially, it doesn’t seem to be working. It’s quite hard to get funding.”*

*Small-sized business, Administrative and Support Services, Wales*

Despite this, another participant noted that this approach, in the context of export finance, had not increased access to finance for their SME.

*“The fact that it’s underwritten by the UK Treasury, or whichever way you want to look at it, UK government, it sounds like the perfect solution. But it all sits with how the organisation who’s the front to us decide to do it. And what we’ve struggled with is, if they’ve got 80 per cent backed by the Treasury, why are they not being more supportive of us? They’ve got 20 per cent at risk.”*

*Medium-sized business, Wholesale, South East*

High street banks themselves noted a few issues with government loan schemes:

*“The small firm loans guarantee, there were so many caveats, and ultimately the first time the bank ever calls upon a guarantee there’s, ‘Oh, you didn’t do this properly,’ and then it just, sort of, doesn’t really land.”*

*High street bank*

*“You know, we’ve had technical challenges. [...] the Bounce Back Loan Scheme was a large challenge to all of the banks that took part, just because of the very compressed timescales that it took. I was not*

*close to this, but my understanding is that [high street bank] gave very serious consideration to not participating in the Bounce Back Loan Scheme at the point it was done, because we felt that it was insufficient time to do everything that needed to be done."*

*High street bank*

Nonetheless, one of the small lenders interviewed mentioned how the Business Bounce Bank Loans indirectly helped them during Covid, since it allowed businesses to repay them and, in turn, they were able to lend to other businesses:

*"As it turned out, yes, we had an astonishingly busy time and we supported lots of businesses but we didn't see the adverse effects at all. I mean, that's got to be down to the government guarantees but the other thing is the Business Bounce Bank loans. Loads of businesses took them out and used those to repay us, so we saw our capitalisation or our liquidity improve significantly during that period of time, which then enabled us to support other businesses. So, it worked quite well."*

*Small financial institution*

Furthermore, one SME implied that transparency may be higher from a publicly owned financial institution, which would be positive.

*"Yes, if there was some transparency that you just know that you're getting a fair deal then yes, that would be nice, but I mean, again, if that facility were going to be charging you 5 to 7 per cent for bank base, that's the point, it needs to be there for a reason. The reason must be to make things affordable for future investing in product improvements or productivity improvements."*

*Micro-sized business, Manufacturing, South West*

However, what this comment also highlights was a sentiment shared by a number of participants that publicly owned financial providers are valuable insofar as they facilitate improved conditions in the SME financing market, most notably for the cost of financial products.

*"It's all about what they were charging.... So if there was a financial institutions that was public funded and would give us similarly good rates, and offer us some of the other financial solutions, I would love it."*

*Medium-sized business, Wholesale, South East*

Therefore, our research suggests that public resources seem helpful when SMEs are able to access them, but its transmission via private financial institutions has been sometimes difficult. Furthermore, SMEs noted that the value of direct public intervention through a public financial institution would be given by the extent to which it improves market conditions, in particular offering cheaper rates.

## **A.5 Market Engagement Key Findings**

**Cost was a key consideration and had become a problem in recent years**

Our research suggests that cost is a central consideration to SMEs when deciding whether to access finance, and the recent increases in interest rates have made accessing finance less affordable. This is in spite of participants wanting to use finance to help grow their businesses. With smaller financial institutions tending to offer higher interest rates, alternatives to larger

financial institutions are limited.

### **Risk aversion from financial institutions has hindered access to financial products for SMEs**

Some SMEs noted that larger financial institutions had become more risk averse in recent years. As a result, this has impacted their capacity to access finance, pushing them towards more expensive, smaller financial institution alternatives. As a result, this has also made finance less affordable. Consequently, solutions which could try to act counter-cyclically and provide finance when SMEs require it and when larger financial institutions are not willing to offer it, would be welcomed.

### **SMEs would like stronger relationships with financial institutions but banks do not find it necessary**

Our research suggests that SMEs would like stronger relationships with financial institutions going forward. This could help provide clarity on how to go about accessing finance for SMEs who are not familiar with this, and help them negotiate the terms of their financial agreements. This could take shape through the increased presence of regional relationship managers and a more relationship-based approach to financing decision making by financial institutions. However, with larger financial institutions seemingly not showing an appetite to increase their relationship management in the ways suggested by SMEs, and smaller financial institutions not offering this to a noticeable degree to participants, public intervention for promoting it may benefit SMEs.

Furthermore, interviewed banks pointed out that branch closures have been motivated by declining footfall, whereas SMEs identify these closures as one barrier to SMEs' access to finance. However, banks highlight that the substitution of relationship banking with the use of "hard" information and automation have resulted in the expansion of credit relative to relationship approaches.

### **SMEs would like more bespoke business advice and support but banks think this is an area for other bodies intervention**

Most SMEs demonstrated a preference for increased business advice concerning management, coaching, and support as well as information about what the banks or FIs look for in businesses they want to support or lend money to. FIs also noted the importance of providing SMEs with the necessary knowledge about the market, but remarked that this is a gap not for them to fill.

### **Financial institutions noted the importance of better customer data and evaluation processes for quicker application outcomes**

Financial institutions pointed out the potential of greater customer data access (Open Banking and Open Finance) and better evaluation processes to speed up application responses, but also stated that alternative lenders such as CDFIs could fill a potential existing gap in loan values, possibly in cooperation with large banks.

## **B Appendix - Robustness**



## B.1 Non-application

Table 26 and 27, respectively, present the estimated marginal effect of having a strong relationship with the main bank on the likelihood of not participating in the external finance market, given the need for external finance, and on the likelihood of being credit constraint upon application.

The estimates are derived from a probit model applied to a matched sample obtained through propensity score matching. In estimating the propensity score for having a strong relationship with the main bank, we follow the recommendations of DuGoff et al. (2014). We use survey weights along with the following covariates: the year the survey was conducted, the Dun and Bradstreet Risk Rating (above average or not), dummy variables for standard economic regions, industry classification, legal forms, whether the SME has experienced previous rejection, the SME's turnover in the last year, the SME's age, whether the SME has significantly improved its business in the past three years, the degree of non-reliance on external finance for growth, and whether the owner has other businesses.

The caliper is set to one-quarter of the standard deviation of the propensity score, as recommended by Stuart and Rubin (2008). Matching is performed using 1-to-1 nearest neighbour matching within the caliper range. The calculated propensity score weight is then multiplied by the existing survey weight for each individual to create a new "combined weight", which is used as the weight variable in the probit model of non-participation on the matched sample, following the methodology of DuGoff et al..

Figure 34 shows the overlap of the propensity scores for having a strong relationship with the main bank (treated) and not having a strong relationship with the main bank (control).

Table 26: The impact of relation with main bank on non-participation: Estimated Effects from a Probit Model Using Propensity Score Matching

| Dependent Variable: non-participation |                      |
|---------------------------------------|----------------------|
| Strong Relation                       | -0.096***<br>[-4.09] |
| Observations                          | 8461                 |
| p-value of goodness-of-fit test       | 0.996                |

Note: Marginal effect reported. Figures in brackets are t-statistics. \* indicates  $p < .10$ , \*\* indicates  $p < .05$ , \*\*\* indicates  $p < .01$ .

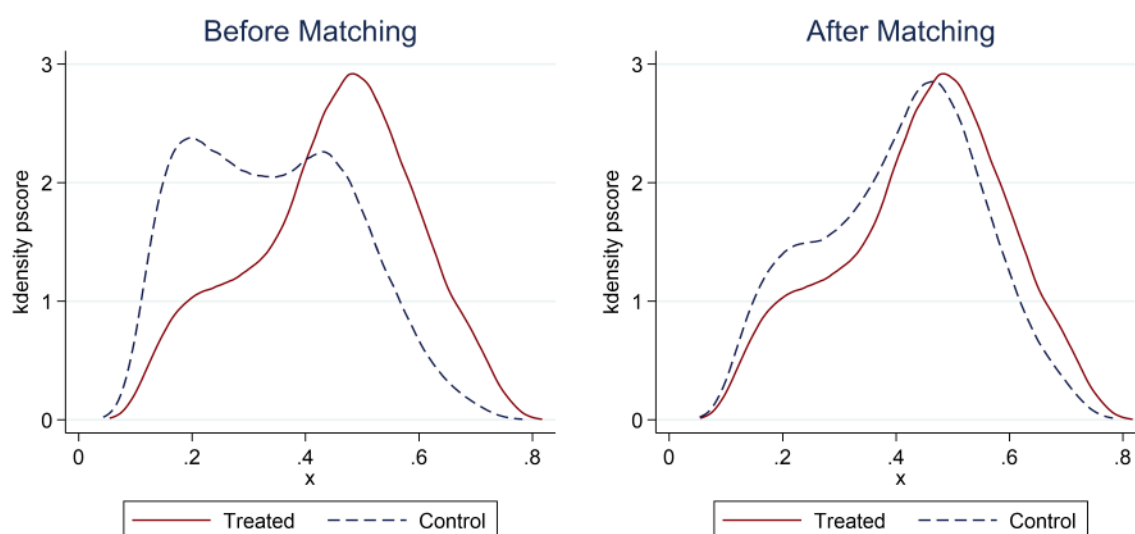


Table 27: The Impact of the Relationship with the Main Bank on Credit Constraint: Estimated Effects from a Probit Model Using Propensity Score Matching

| Dependent Variable: Credit Constraint Upon Application |                      |
|--------------------------------------------------------|----------------------|
| Strong Relation                                        | -0.138***<br>[-3.47] |
| Observations                                           | 3146                 |
| p-value of goodness-of-fit test                        | 0.996                |

Note: Marginal effect reported. Figures in brackets are t-statistics. \* indicates  $p < .10$ , \*\* indicates  $p < .05$ , \*\*\* indicates  $p < .01$ .

Figure 34: Overlap of the propensity score of treatment and control



## B.2 Finance Gap

### B.2.1 Predictive Power

To assess the ability of prediction of our main country models, we use the Brier score, which is the mean squared error of the forecast and computes

$$B = \frac{1}{N} \sum_{n=1}^N (\hat{P}(AA) - \mathbb{I}\{AA\})^2, \quad (22)$$

where  $\hat{P}(\cdot)$  is the forecasted probability of the joint event of application and success, and  $\mathbb{I}\{AA\}$  is the actual observed outcome of the event (0 if it does not happen and 1 if it does).  $N$  is the sample size. We produce the forecasts via cross-validation, leaving 10% of the sample out of estimation each time. Our results produce 0.105 for the UK model, 0.156 for the German model and 0.193 for the French model. The closer the Brier score is to 0 the better and the closer it is to 1 the worse. Therefore, the UK model shows the best prediction and the French model shows the worst. Also, it is important to note that a Brier score close to 0.25 indicates that, on average,

the model assigns a probability of 0.5 to both events (0 and 1).

### **B.2.2 Alternative Models**

When using categorical variables, it is possible that the number of observations for one or some of the categories is very small. If the outcome variable value is different for these categories, the corresponding coefficients' estimates could be very large, determining the outcome. Hence, our main results combined the categories of variables to reduce this risk. Nonetheless, this means we lose the potential heterogeneity of effects of more comprehensive categories. We thus present some alternative estimations containing all available categories of business age (Table 28) and employment (Table 29). As a robustness check for potential price effects which could explain our main results, we use the average of business loans interest rates among our control variables (Table 30). All tables are followed by the distributions of fitted probabilities, for which the means are very similar to those in our main results.

Table 28: Loan application success probability (Heckman selection model) with age categories - Coefficient estimates

|                             | Selection          |                    |                    | Outcome            |                    |                    |
|-----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                             | UK                 | Germany            | France             | UK                 | Germany            | France             |
| (Intercept)                 | −0.83***<br>(0.03) | −0.60***<br>(0.02) | −0.30***<br>(0.04) | −0.23<br>(0.29)    | 0.59*<br>(0.34)    | 2.14***<br>(0.34)  |
| Micro/small (MS)            | −0.33***<br>(0.05) | −0.15***<br>(0.03) | −0.17***<br>(0.04) | −0.30***<br>(0.07) | −0.22***<br>(0.05) | 0.24***<br>(0.09)  |
| Turnover up to 2m           | −0.13***<br>(0.05) | −0.22***<br>(0.02) | −0.31***<br>(0.04) | −0.28***<br>(0.07) | −0.41***<br>(0.05) | −0.46***<br>(0.12) |
| Age: 5-9 years              | 0.13***<br>(0.03)  | −0.11***<br>(0.03) | 0.01<br>(0.03)     | 0.14***<br>(0.05)  | −0.14**<br>(0.06)  | −0.24***<br>(0.06) |
| Age: 2-4 years              | 0.25***<br>(0.05)  | −0.12***<br>(0.04) | −0.19***<br>(0.05) | −0.06<br>(0.07)    | −0.15*<br>(0.08)   | −0.35***<br>(0.10) |
| Age: less than 2 years      | 0.38***<br>(0.08)  | 0.07<br>(0.07)     | 0.18**<br>(0.08)   | 0.27*<br>(0.14)    | −0.51***<br>(0.13) | −0.41***<br>(0.15) |
| Credit history improved     | 0.09***<br>(0.02)  | 0.01<br>(0.01)     | 0.14***<br>(0.02)  | 0.19***<br>(0.04)  | 0.20***<br>(0.03)  | 0.06<br>(0.05)     |
| Family/individual ownership | −0.09***<br>(0.02) | −0.08***<br>(0.02) | −0.11***<br>(0.02) | −0.21***<br>(0.04) | −0.17***<br>(0.04) | −0.08<br>(0.05)    |
| Own capital improved        | −0.03<br>(0.02)    | 0.07***<br>(0.01)  | 0.15***<br>(0.02)  | −0.01<br>(0.04)    | 0.00<br>(0.03)     | 0.16***<br>(0.06)  |
| Own funds expectation       | 0.11***<br>(0.02)  | 0.11***<br>(0.02)  | −0.22***<br>(0.03) |                    |                    |                    |

|                            | Selection          |                    |                    | Outcome            |                    |                   |
|----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|
|                            | UK                 | Germany            | France             | UK                 | Germany            | France            |
| Growth expectation         | 0.13***<br>(0.03)  | 0.10***<br>(0.03)  | 0.23***<br>(0.04)  |                    |                    |                   |
| Leasing/HP availability    | −0.20***<br>(0.04) | −0.20***<br>(0.03) | −0.11***<br>(0.04) |                    |                    |                   |
| Manufacturing/construction | −0.04<br>(0.05)    | 0.04<br>(0.03)     | 0.07*<br>(0.04)    | −0.05<br>(0.07)    | 0.00<br>(0.05)     | −0.15**<br>(0.07) |
| Unknown industry           | 0.06**<br>(0.03)   | 0.19***<br>(0.02)  | 0.05*<br>(0.03)    | 0.26***<br>(0.05)  | 0.38***<br>(0.04)  | −0.09<br>(0.07)   |
| 2013 year dummy            | 0.04**<br>(0.02)   | 0.25***<br>(0.02)  | 0.07**<br>(0.03)   | 0.01<br>(0.04)     | 0.60***<br>(0.07)  | −0.10*<br>(0.06)  |
| GDP growth per capita      | −0.02***<br>(0.00) | −0.02***<br>(0.00) | 0.07***<br>(0.01)  | 0.01<br>(0.01)     | 0.01<br>(0.01)     | 0.01<br>(0.02)    |
| $\rho$                     | 0.94***<br>(0.03)  | 0.80***<br>(0.09)  | −0.41*<br>(0.24)   | 0.94***<br>(0.03)  | 0.80***<br>(0.09)  | −0.41*<br>(0.24)  |
| Median CDS price           |                    |                    |                    | −0.09<br>(0.06)    | −0.14***<br>(0.04) | −0.12*<br>(0.07)  |
| Government bond yield      |                    |                    |                    | −0.08***<br>(0.03) | −0.01<br>(0.01)    | −0.05**<br>(0.02) |
| Log Likelihood             | −4641.37           | −9930.65           | −8031.47           | −4641.37           | −9930.65           | −8031.47          |
| Num. obs.                  | 4978               | 7081               | 8581               | 4978               | 7081               | 8581              |
| Censored                   | 4198               | 5394               | 5671               | 4198               | 5394               | 5671              |



|          | Selection |         |        | Outcome |         |        |
|----------|-----------|---------|--------|---------|---------|--------|
|          | UK        | Germany | France | UK      | Germany | France |
| Observed | 780       | 1687    | 2910   | 780     | 1687    | 2910   |

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.10$

Figure 35: Joint probabilities of applying for finance and being successful  $P(1, 1|x, z)$  adding more age categories to model

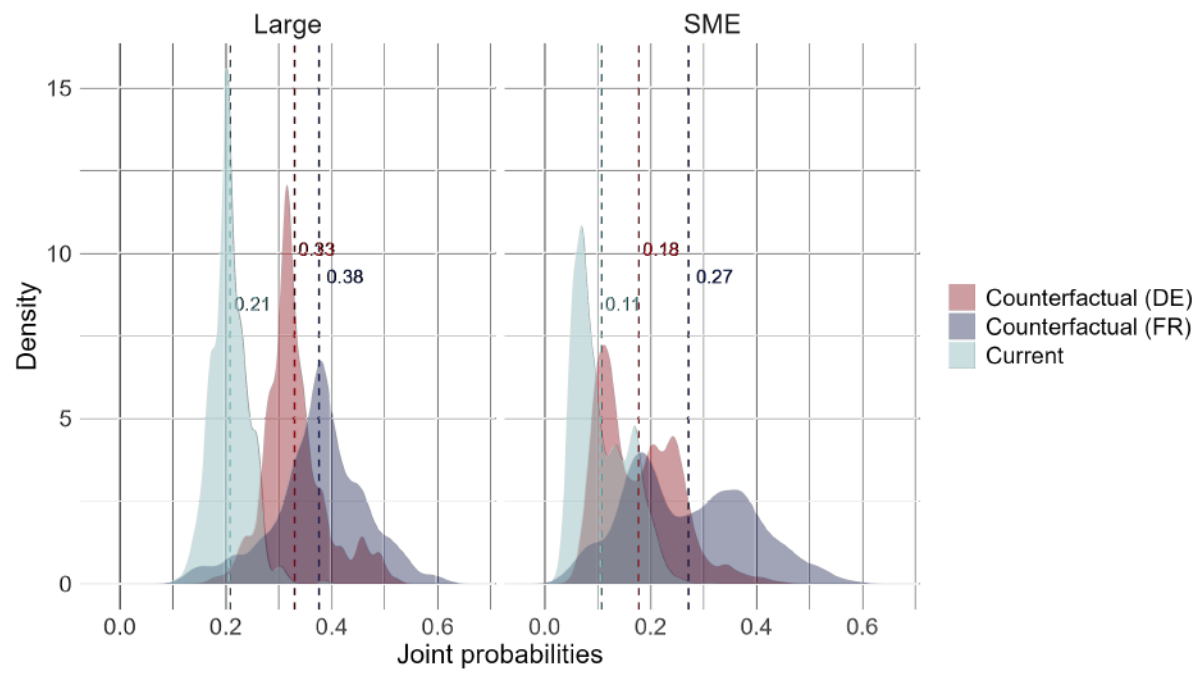


Table 29: Loan application success probability (Heckman selection model) with size categories - Coefficient estimates

|                             | Selection          |                    |                    | Outcome            |                    |                    |
|-----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                             | UK                 | Germany            | France             | UK                 | Germany            | France             |
| (Intercept)                 | −1.01***<br>(0.08) | −0.83***<br>(0.05) | −0.71***<br>(0.06) | −0.52*<br>(0.31)   | −0.07<br>(0.31)    | 1.98***<br>(0.41)  |
| 10–49 employees             | 0.14**<br>(0.06)   | 0.01<br>(0.03)     | 0.19***<br>(0.04)  | 0.09<br>(0.08)     | 0.11*<br>(0.06)    | 0.07<br>(0.09)     |
| 50–249 employees            | 0.44***<br>(0.07)  | 0.16***<br>(0.04)  | 0.35***<br>(0.06)  | 0.35***<br>(0.09)  | 0.29***<br>(0.07)  | −0.16<br>(0.13)    |
| 250+ employees              | 0.38***<br>(0.12)  | 0.29***<br>(0.06)  | 0.28**<br>(0.13)   | 0.41**<br>(0.17)   | 0.64***<br>(0.12)  | −0.18<br>(0.26)    |
| Turnover up to 2 m          | −0.07<br>(0.05)    | −0.22***<br>(0.03) | −0.19***<br>(0.04) | −0.25***<br>(0.08) | −0.37***<br>(0.05) | −0.47***<br>(0.10) |
| Five or more years age      | −0.25***<br>(0.04) | 0.05*<br>(0.03)    | 0.07*<br>(0.04)    | 0.03<br>(0.07)     | 0.26***<br>(0.07)  | 0.31***<br>(0.08)  |
| Credit history improved     | 0.09***<br>(0.02)  | 0.01<br>(0.01)     | 0.14***<br>(0.02)  | 0.21***<br>(0.04)  | 0.21***<br>(0.03)  | 0.06<br>(0.05)     |
| Family/individual ownership | −0.09***<br>(0.02) | −0.08***<br>(0.02) | −0.11***<br>(0.02) | −0.22***<br>(0.04) | −0.16***<br>(0.04) | −0.08<br>(0.05)    |
| Own capital improved        | −0.03<br>(0.02)    | 0.07***<br>(0.01)  | 0.15***<br>(0.02)  | −0.02<br>(0.04)    | −0.01<br>(0.03)    | 0.15***<br>(0.05)  |
| Own funds expectation       | 0.11***<br>(0.02)  | 0.11***<br>(0.02)  | −0.22***<br>(0.03) |                    |                    |                    |

|                            | Selection          |                    |                    | Outcome            |                    |                   |
|----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|
|                            | UK                 | Germany            | France             | UK                 | Germany            | France            |
| Growth expectation         | 0.13***<br>(0.03)  | 0.09***<br>(0.03)  | 0.23***<br>(0.04)  |                    |                    |                   |
| Leasing/HP availability    | −0.21***<br>(0.04) | −0.20***<br>(0.03) | −0.11***<br>(0.04) |                    |                    |                   |
| Manufacturing/construction | −0.05<br>(0.05)    | 0.04<br>(0.03)     | 0.05<br>(0.04)     | −0.05<br>(0.08)    | 0.01<br>(0.05)     | −0.14**<br>(0.07) |
| Unknown industry           | 0.12<br>(0.10)     | 0.07<br>(0.05)     | 0.10<br>(0.12)     | 0.22<br>(0.15)     | 0.09<br>(0.11)     | −0.07<br>(0.24)   |
| 2013 year dummy            | 0.04**<br>(0.02)   | 0.24***<br>(0.02)  | 0.06**<br>(0.03)   | 0.02<br>(0.04)     | 0.60***<br>(0.07)  | −0.10*<br>(0.06)  |
| GDP growth per capita      | −0.02***<br>(0.00) | −0.02***<br>(0.00) | 0.07***<br>(0.01)  | 0.01<br>(0.01)     | 0.01<br>(0.01)     | 0.02<br>(0.03)    |
| $\rho$                     | 0.93***<br>(0.04)  | 0.79***<br>(0.09)  | −0.36<br>(0.25)    | 0.93***<br>(0.04)  | 0.79***<br>(0.09)  | −0.36<br>(0.25)   |
| Median CDS price           |                    |                    |                    | −0.09<br>(0.06)    | −0.13***<br>(0.04) | −0.12*<br>(0.07)  |
| Government bond yield      |                    |                    |                    | −0.08***<br>(0.03) | −0.02**<br>(0.01)  | −0.05**<br>(0.02) |
| Log Likelihood             | −4643.42           | −9935.11           | −8032.16           | −4643.42           | −9935.11           | −8032.16          |
| Num. obs.                  | 4978               | 7081               | 8581               | 4978               | 7081               | 8581              |
| Censored                   | 4198               | 5394               | 5671               | 4198               | 5394               | 5671              |



|          | Selection |         |        | Outcome |         |        |
|----------|-----------|---------|--------|---------|---------|--------|
|          | UK        | Germany | France | UK      | Germany | France |
| Observed | 780       | 1687    | 2910   | 780     | 1687    | 2910   |

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.10$

Figure 36: Joint probabilities of applying for finance and being successful  $P(1, 1|x, z)$  adding more size categories to model

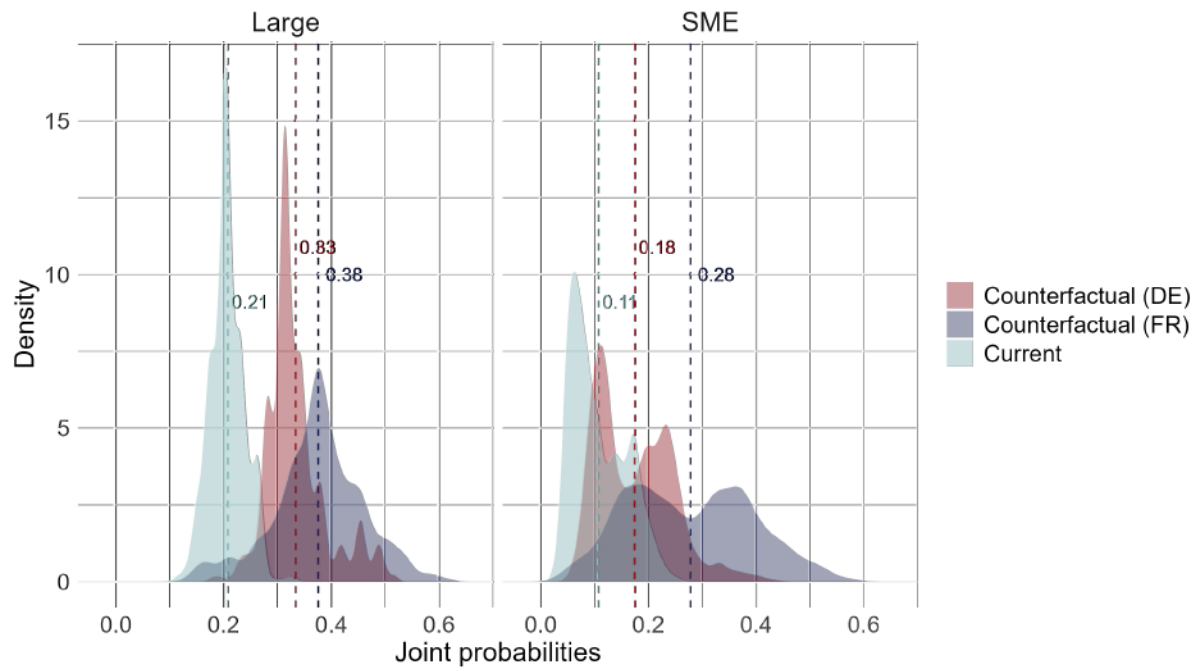


Table 30: Loan application success probability (Heckman selection model) with country interest rates on loans - Coefficient estimates

|                             | Selection          |                    |                    | Outcome            |                    |                    |
|-----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                             | UK                 | Germany            | France             | UK                 | Germany            | France             |
| (Intercept)                 | −0.38***<br>(0.05) | −0.89***<br>(0.02) | −0.18***<br>(0.03) | −1.23***<br>(0.07) | −0.65***<br>(0.06) | 1.78***<br>(0.15)  |
| Micro/small (MS)            | −0.32***<br>(0.02) | −0.16***<br>(0.01) | −0.16***<br>(0.02) | −0.32***<br>(0.02) | −0.20***<br>(0.01) | 0.22***<br>(0.04)  |
| Turnover up to 2 m          | −0.12***<br>(0.02) | −0.23***<br>(0.01) | −0.31***<br>(0.01) | −0.21***<br>(0.02) | −0.34***<br>(0.01) | −0.51***<br>(0.05) |
| Five or more years age      | −0.27***<br>(0.02) | 0.07***<br>(0.01)  | 0.07***<br>(0.02)  | −0.12***<br>(0.02) | 0.17***<br>(0.02)  | 0.34***<br>(0.03)  |
| Credit history improved     | 0.09***<br>(0.01)  | 0.01<br>(0.01)     | 0.14***<br>(0.01)  | 0.15***<br>(0.01)  | 0.11***<br>(0.01)  | 0.06***<br>(0.02)  |
| Family/individual ownership | −0.10***<br>(0.01) | −0.08***<br>(0.01) | −0.12***<br>(0.01) | −0.13***<br>(0.01) | −0.13***<br>(0.01) | −0.09***<br>(0.02) |
| Own capital improved        | −0.02**<br>(0.01)  | 0.08***<br>(0.00)  | 0.15***<br>(0.01)  | −0.01<br>(0.01)    | 0.04***<br>(0.01)  | 0.15***<br>(0.02)  |
| Own funds expectation       | 0.06***<br>(0.01)  | 0.07***<br>(0.01)  | −0.20***<br>(0.01) |                    |                    |                    |
| Growth expectation          | 0.07***<br>(0.01)  | 0.08***<br>(0.01)  | 0.24***<br>(0.02)  |                    |                    |                    |
| Leasing/HP availability     | −0.04***           | −0.07***           | −0.14***           |                    |                    |                    |

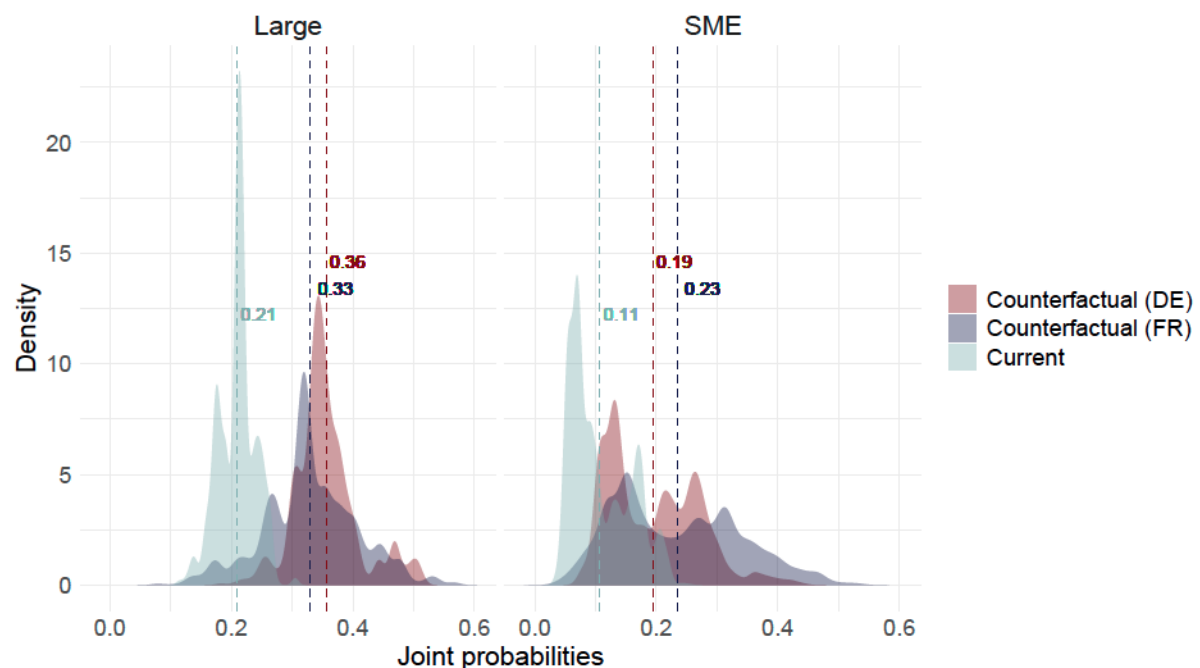
|                            | Selection |           |           | Outcome   |           |           |
|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                            | UK        | Germany   | France    | UK        | Germany   | France    |
|                            | (0.01)    | (0.01)    | (0.02)    |           |           |           |
| Manufacturing/construction | −0.05**   | 0.04***   | 0.07***   | −0.05**   | 0.02**    | −0.13***  |
|                            | (0.02)    | (0.01)    | (0.02)    | (0.02)    | (0.01)    | (0.03)    |
| Unknown industry           | 0.05***   | 0.19***   | 0.05***   | 0.15***   | 0.29***   | −0.08***  |
|                            | (0.01)    | (0.01)    | (0.01)    | (0.01)    | (0.01)    | (0.03)    |
| 2013 year dummy            | 0.07***   | 0.23***   | 0.06***   | 0.04***   | 0.41***   | −0.16***  |
|                            | (0.01)    | (0.01)    | (0.01)    | (0.01)    | (0.02)    | (0.03)    |
| Loans interest rate        | −0.05**   | 0.09***   | −0.09***  | 0.12***   | 0.05***   | −0.15***  |
|                            | (0.02)    | (0.00)    | (0.01)    | (0.02)    | (0.01)    | (0.05)    |
| GDP growth per capita      | −0.02***  | −0.01***  | 0.04***   | 0.02***   | −0.00***  | 0.02**    |
|                            | (0.00)    | (0.00)    | (0.00)    | (0.00)    | (0.00)    | (0.01)    |
| $\rho$                     | 1.00      | 0.98***   | −0.32***  | 1.00      | 0.98***   | −0.32***  |
|                            | (4.10)    | (0.01)    | (0.10)    | (4.10)    | (0.01)    | (0.10)    |
| Median CDS price           |           |           |           | 0.02**    | −0.06***  | −0.09***  |
|                            |           |           |           | (0.01)    | (0.01)    | (0.03)    |
| Government bond yield      |           |           |           | −0.03***  | 0.01      | 0.03      |
|                            |           |           |           | (0.00)    | (0.01)    | (0.03)    |
| Log Likelihood             | −27816.08 | −59541.00 | −48208.05 | −27816.08 | −59541.00 | −48208.05 |
| Num. obs.                  | 29868     | 42486     | 51486     | 29868     | 42486     | 51486     |
| Censored                   | 25188     | 32364     | 34026     | 25188     | 32364     | 34026     |
| Observed                   | 4680      | 10122     | 17460     | 4680      | 10122     | 17460     |



|  | Selection |         |        | Outcome |         |        |
|--|-----------|---------|--------|---------|---------|--------|
|  | UK        | Germany | France | UK      | Germany | France |

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.10$

Figure 37: Joint probabilities of applying for finance and being successful  $P(1, 1|x, z)$  adding country interest rates on loans to model



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