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Non-bank Lenders to SMEs: Sensitivity to Financial Conditions

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Abstract

We use credit registry data on lending to businesses in Ireland, a developed, small open economy, which has a significant share of new credit to firms provided by non-bank lenders. We assess whether lending from non-banks reacts more sensitively in comparison to banks to a tightening in financial conditions. We use a fixed effects approach to isolate credit supply effects and show that non-banks contract lending to a greater degree than banks in response to tightening financial conditions. We also highlight the critical importance of looking beyond the binary classification of banks versus non-banks when conducting analysis on how the increased role of non-banks in direct lending may affect financial stability. We show that asset finance providers and general lenders do not contract lending in response to a tightening in financial conditions, and instead increase credit supply in comparison to the banking sector. In contrast, specialist property lenders react negatively and strongly, contracting lending significantly in comparison to banks.

JEL classification: G23, E44, E51, G21, E58, G01, E44, L20.

Keywords: Non-Bank lending, financial conditions, credit supply, financial stability, non-bank financial Institutions, private credit, alternative lenders.

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Non-Technical Summary

This paper focuses on the role of non-banks in directly providing financing to small and medium enterprises (SMEs) in Ireland. In line with international trends and the growth of private credit, non-bank lenders account for a significant share of new lending to SMEs and are thus relatively important actors in the Irish SME credit market. Our key interest in this analysis is on the increased role for non-banks in providing credit directly to SMEs in Ireland and the potentially higher sensitivity of these non-banks in amplifying shocks. We assess how non-banks respond, in comparison to banks, to an environment of tighter financial conditions and how this can influence credit supply.

The analysis draws on loan-level data from the Central Credit Register (CCR), covering the period from 2019 to 2022. This dataset allows for a comparison of credit provision by banks and non-banks to the same firms over time. We use borrower-time fixed effects to control for changes in credit demand, isolating the supply-side behaviour of different lender types. We also incorporate balance sheet information for non-banks, including funding structures and liability characteristics.

The results of the analysis indicate that non-banks contract lending to a greater degree than banks in response to tightening financial conditions. Specifically, a one standard deviation tightening in financial conditions is associated with an estimated 8.4-9.3 percent greater contraction in lending by non-banks relative to banks. However, we also highlight the critical importance of looking beyond the binary classification of banks versus non-banks when conducting analysis on how the increased role of non-banks in direct lending may affect financial stability.

We show that asset finance providers and general lenders do not contract lending in response to a tightening in financial conditions, and instead increase credit supply in comparison to the banking sector. In contrast specialist property lenders react negatively and very strongly contracting lending significantly in comparison to banks. Our results suggest that in response to financial conditions one standard deviation tighter than the long run average in the euro area, specialist property lenders decrease lending in the range of 80-90 per cent in comparison to banks.

Overall, the results highlight the importance of examining the differences between non-bank lenders when assessing the potential implications for credit supply and financial stability. While the analysis focuses on Ireland, the approach and findings may be of relevance to other jurisdictions where non-bank lending is increasing in importance.

1 Introduction

Non-bank financial intermediation (NBFI) can broadly be defined as 'credit intermediation involving entities and activities outside the regular banking system' (FSB, 2011). NBFI has grown in importance for the financial system in recent years, with total assets held by non-bank entities increasing from $95 trillion in 2008 to $218 trillion in 2022. This accounts for almost half (47%) of total global financial assets (FSB, 2023). NBFI refers to a broad variety of financial entities which are not banks, central banks or public financial institutions (FSB, 2023). NBFI entities include, among others, insurance corporations, pension funds, open-ended funds, special purpose vehicles (FSB, 2023).

The NBFI sector in Ireland has grown strongly in recent years also, in line with global trends. As a financial services centre, Ireland is 'now one of the world's largest hubs for investment funds at a global level' (CBI, 2023a). Most NBFI activity in Ireland is global facing, intermediating 'financing to the global financial system' and generally does not influence economic conditions in Ireland (CBI, 2023a). However, there are some exceptions to this as non-banks are active in the commercial real estate market and in providing direct lending to Irish households and businesses (CBI, 2023b). While the scale of this activity is not large relative to the size of the overall Irish NBFI sector, some specific activity has relevance from a domestic financial stability perspective.

This paper focuses on the role of non-banks in directly providing financing to small and medium enterprises (SMEs) in Ireland. The Central Bank of Ireland has documented how, in comparison to bank lending, non-bank lending has recently accounted for a high share of new lending to SMEs (CBI, 2023b). Growth in non-bank lending is particularly interesting as SMEs would not necessarily have the same level of access to financial markets and alternatives to the banking sector as would larger non-financial corporations (NFCs). SMEs are also important for the Irish economy, accounting for a significant majority of employment.[1]

Ireland is not the only jurisdiction which has seen the importance of non-banks grow with respect to directly providing finance to firms (as opposed to firms accessing finance through corporate bond markets for example). For example, the International Monetary Fund has discussed the topic in detail in recent reports and defined private credit as 'Non-bank corporate credit provided through bilateral agreements or small club deals outside the realm of public securities or commercial banks. This definition excludes bank loans, broadly syndicated loans, and funding provided through publicly traded assets such as corporate bonds' (IMF, 2023). The IMF have recommended that 'given the potential risk private credit poses to financial stability, authorities could consider a more proactive supervisory and regulatory

[1] See the Central Statistics Office Business in Ireland 2021 Report for greater detail.

approach to this fast-growing, interconnected asset class,' which underscores the importance of gaining a greater understanding of these entities.

Our key interest in this analysis is on the increased role for non-banks in providing credit directly to SMEs in Ireland and the potentially higher sensitivity of these non-banks in amplifying shocks. For example, does their participation increase fragility and pro-cyclicality in lending, or do they take advantage of opportunities where the banking system is not necessarily meeting credit demand. There are additional differing views on whether non-banks offer competition to the banking sector or simply lend to riskier borrowers, thus increasing access to financing at the margin.

Ireland provides a useful context for our analysis, as non-bank lenders account for a significant share of new lending to SMEs and are thus relatively important actors in the Irish SME credit market. Another key benefit to focusing on the Irish market is the quality of data available. The depth and compatibility of data on lending can vary significantly between financial entities. For example, banks tend to be highly regulated with detailed reporting requirements which can shed light on their lending behaviour. In contrast, while some non-bank entities are subject to relatively comprehensive regulations and reporting requirements (for example investment funds in the European Union), others are relatively lightly regulated and may not be required to provide granular data to regulators or supervisors.[2] Even in the case where entities have detailed reporting requirements, these may differ by entity type making comparison difficult. In contrast, the data used for this analysis uses a full credit register on lending in the Irish economy and all lenders are required to submit data regardless of their specific entity type. Credit registers of this nature are available in some other jurisdictions but are not universally available. This data allows us to contribute to the literature using these comprehensive data sources to assess the dynamics of lending in an economy, focusing specifically on non-banks in our case. Our dataset covers a period of significant changes in financial conditions, including both the COVID-19 period and the more recent tightening in financial conditions as interest rates increased through 2022-2023.

In this paper, we assess how non-banks respond, in comparison to banks, to an environment of tighter financial conditions. There are questions as to whether non-banks would decrease their lending or in fact step in if the banking sector reduces their supply of new lending. The funding structure of non-banks may be relevant here, not having a deposit base for example like banks, may make them more susceptible to difficulties in raising funding themselves to support their lending activities. There is also the question of which SMEs banks and non-banks are lending to, some firms may reduce their demand for credit in the face of

[2]Investment funds are regulated in the EU under several areas of legislation, for example the directive on Undertakings for Collective Investment in Transferable Securities (UCITS) and the Alternative Investment Fund Managers Directive (AIFMD) among others. For further detail see information from the European Commission.

tightening financial conditions, separate to any decision the lenders themselves may make. Disentangling this is key to understanding whether non-banks react differently to banks. We also use a novel dataset with balance sheet indicators for non-banks manually collected from financial statements, which allows us to analyse whether the particular funding structures of non-banks is relevant for their lending behaviour. These indicators include the equity share of liabilities as well as the share of floating rate liabilities for each entity, which provides an indicator of sensitivity to tightening financial conditions.

Our results show that non-banks react more negatively thank banks in response to tighter financial conditions. Specifically, we estimate that in response to financial conditions being one standard deviation tighter than the long run average in the euro area, non-banks contract lending in the range of 8.4-9.3 percent in comparison to banks. However, once we adjust our specification to account for the significant differences among non-banks lending in Ireland, we show that both asset finance providers and general lenders do not contract lending in response to a tightening in financial conditions, and instead increase credit supply in comparison to the banking sector. In contrast, specialist property lenders react negatively and strongly, contracting lending significantly in comparison to banks. Our results suggest that in response to financial conditions one standard deviation tighter than the long run average in the euro area, specialist property lenders decrease lending in the range of 80-90 per cent in comparison to banks. Overall, the results highlight the importance of examining the differences between non-bank lenders when assessing the potential implications for credit supply and financial stability.

2 Literature Review

A number of research papers have examined the role of non-bank lenders in the financial system and the effects that tightening financial conditions have on the financial system more broadly.

For research connected to Ireland specifically, Gaffney and McGeever (2022) outline information on the relationship network between non-bank lenders and SMEs in Ireland, showing differences between firms that rely on bank funding, non-bank funding, or a mix of both. They find that SMEs that borrow from non-banks are younger, less liquid, and have higher leverage than SMEs that borrow from banks. This shows the potential for financial conditions to affect the SMEs borrowing from banks and non-banks differently, potentially affecting their demand for credit. McCarthy and Navarro Ramírez (2025) examine whether non-banks compete with banks in the Irish credit market or provide access to credit for borrowers which may have otherwise been unavailable. They find that overall, the premium charged by non-banks is not economically meaningful but highlight that the interest rate

differentials on lending for real estate and construction are more material and suggests non-banks provide access to credit for these sectors. McCarthy and Navarro Ramírez (2025) note that non-bank real estate lending may be highly sensitive to market conditions.

From the broader literature, research shows that a tightening in financial conditions linked to monetary policy, something observed recently with heightened inflation, can influence the flow of funds and shift the supply of credit in the financial system. Morell et al. (2022) examine the effects on bank performance through four main channels: borrower resilience; maturity transformation; loan demand; and, the valuation of banks' securities portfolios. Drechsler et al. (2017) show that increases in interest rates can lead to outflows of deposits from the banking system, which has implications for lending to the real economy. Xiao (2020) outlines that non-banks are more likely to pass through interest rate increases to depositors, potentially attracting flows from the banking sector during periods of monetary policy tightening, reducing the deposit base of the banking sector. Elliott et al. (2023) examine loan-level data from the global syndicated lending market and show that non-bank lenders act as shock absorbers for monetary policy tightenings, increasing credit supply relative to banks. Di Maggio and Kermani (2017) studies the impact on borrower credit demand while Boyd et al. (2001) and Agarwal and Baron (2023) investigate the effects of periods of sustained inflation on the banking sector over the longer term.

Stein (2013) shows that monetary policy changes the funding cost of all financial intermediaries who borrow short-term, and therefore, non-banks should react similarly to banks to changes in policy. Gürkaynak et al. (2022) studies US stock reactions of non-financial corporations (NFCs) to monetary policy announcements while Andreolli (2021) investigates the effects of monetary policy through the maturity structure of public debt. Kaminska and Mumtaz (2022) studies the impact of term premia on macroeconomic variables. Cucic and Gorea (2022) analyse the role of non-bank lenders providing credit in Denmark using credit registry data in Denmark over a 15 year period. They find that non-banks increase their supply of credit relative to banks after a monetary policy tightening.

Overall, uncertainty remains regarding the dynamics of non-bank lending during a period of tightening financial conditions and also during a higher interest rate environment, as least outside of the low interest rate environment observed in advanced economies over the past decade or so. This uncertainty is problematic from a financial stability perspective when attempting to assess how bank and non-bank lending will behave in response to a shock. Policymakers, in the Central Bank of Ireland and elsewhere, generally aim to strengthen the resilience of the financial system to absorb rather than amplify shocks to the real economy. Macroprudential policy measures are one important set of tools to strengthen resilience, and

understanding whether non-banks react more adversely to financial shocks is important for any potential considerations around the introduction of measures for non-bank entities [3].

3 Data

We rely on a number of data sources for this paper, which are outlined below.

3.1 Loan Data and Firm information

Our key data source for lending in Ireland is the Central Credit Register (CCR).[4] This data is collected by the Central Bank of Ireland on loans from lenders to borrowers in Ireland. Loans are included on the CCR if:

- the loan is for €500 or more;
- the borrower lives in the State at the time of applying for a loan; or,
- the loan agreement or loan application is governed by Irish law.

The data we have analysed from the CCR spans the 2019-2022 period and covers lending (as per the conditions above) in Ireland from banks and non-banks to households, individuals and companies. Within the CCR, information is available on the loan amount, the loan start and planned end-date, the contract type (business loan, hire purchase, revolving facility etc.), the interest rate amount and whether the interest rate is fixed rate or variable. For this analysis we focus on loans to SMEs. As mentioned previously, non-bank lenders in Ireland account for a high share of new lending to SMEs with potential implications for domestic financial stability.

Non-bank lenders are defined as loan-originating entities that are not banks, credit unions (as they are already contained within existing credit institution statistics), or government-sponsored entities. CCR data provides information on whether the borrower is a firm or an individual and Dun & Bradstreet data is used to provide information on borrowers which are companies. Information from Dun & Bradstreet includes the borrower sector and the size of the enterprise, meaning we can distinguish between SMEs or larger NFCs.

An important aspect of the CCR data to note is that an observation is only included when loans are granted. This is an important consideration for this research paper as in the event

[3] The Central Bank of Ireland Governor, Gabriel Makhlouf, has previously outlined considerations for a macroprudential policy for non-banks while the Central Bank of Ireland has recently introduced macroprudential policy measures for one cohort of the Irish non-bank sector.

[4] The analysis for this paper was conducted on a sample up to end-2022. This sample was updated as of January 2024 to ensure any revisions to the data throughout 2023 were reflected in the final results. See here for further details on the Central Credit Register.

that a lender stops providing credit to a borrower, this is not included in the data-set. To handle this issue, we include observations for zero loan amounts for existing borrower-lender relationships where no credit is provided in the quarter. Therefore, if a borrower provides credit to a lender in 2021, but there are no observations of loans provided in 2022, we include an observation to reflect that the borrower has provided €0 in these periods. To guard against including unrealistic observations, we only include additional zero observations following the first quarter where we observe a borrower-lender relationship. We also filter out observations for borrower-lender relationships which saw no new credit granted after the last quarter of 2019, to avoid for example zero values in later years when the relationship has been dormant.[5]

3.2 Non-Bank Lenders - Categorisation and Balance Sheet Data

For information on the non-bank lenders themselves we use information from a data-gathering and research project by Moloney et al. (2023). Firstly, we use the taxonomy developed in this research, which categorises the non-banks based on their lending behaviour (which can be observed through the CCR). A taxonomy/categorisation is particularly useful as NBLs providing credit to SMEs are not a homogeneous cohort. There are significant differences in business models and funding sources, which we show are relevant when trying to understand what may be driving the lending decisions of NBLs. Non-banks are classified based on whether they have high concentrations of lending to any one sector in the economy, and based on whether they have high concentrations of lending in any one product type (for example business leasing products). The non-bank lenders are categorised under three main headings, *Specialist Property Lenders*, *Asset Finance Providers* and *General Lenders*.

Specialist Property Lenders are categorised as such if greater than 80 per cent of their lending is to the Real Estate Sector while *Asset Finance Providers* are categorised as such if greater than 80 per cent of the loans they provide are business leasing products. *General Lenders* have more varied business models and as a result do not fit in either category, but overlap with both *Specialist Property Lenders* and *Asset Finance Providers* in their lending behaviour to some extent. A residual of smaller firms remains which are categorised as *Other*.[6]

As well as using the categorisation of NBLs, we are also able to include balance sheet information from Moloney et al. (2023). Balance Sheet information is gathered from the non-banks' annual financial statements, which are available from the Company Registration Office,

[5]We do not wish to assign any effect of changing financial conditions on decreases in lending in this case when borrower-lender relationships appear to have already ceased.

[6]The entities classified as Other also include lenders with specific business models that differ from the lender types outlined above. These are high cost credit providers and some other entities that provide finance to support social goals (and who may be non-profit organisations).

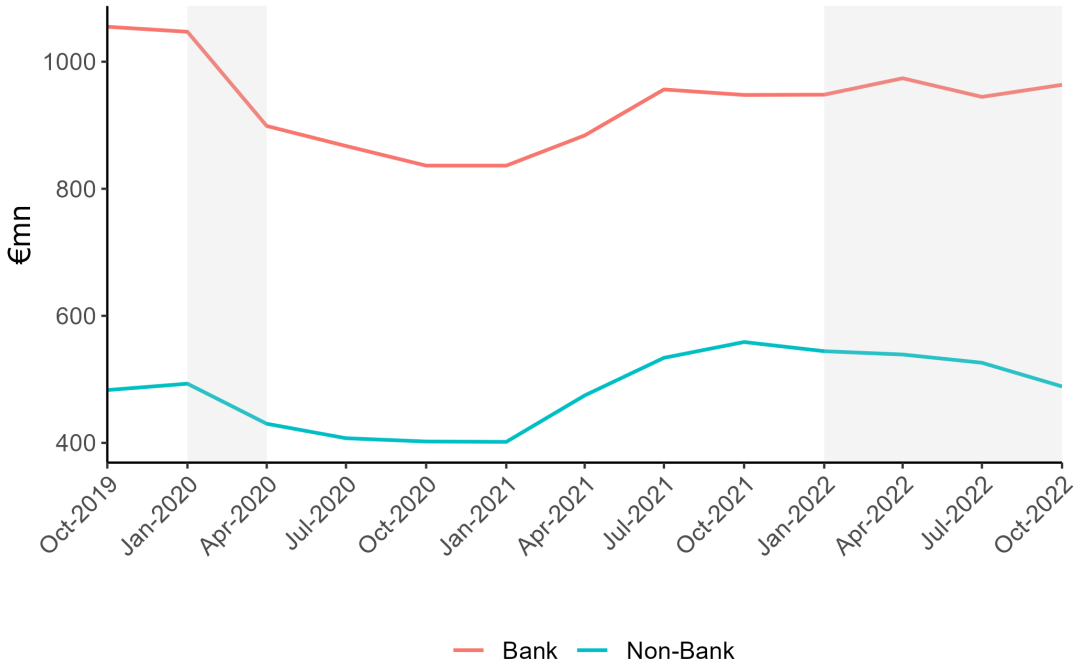
and from Dun & Bradstreet data. This novel dataset, with granular information provided through financial statements, allows the identification of funding sources for the NBLs, the type of funding provided (e.g. whether NBLs fund themselves through loans, notes or equity) and the regions and sectors of the entities providing funding (including whether these counterparties are parent companies or part of the same overall group). This dataset also includes information on whether NBLs rely on interest-rate sensitive liabilities, i.e. floating rate loans/notes. This information is relevant as entities that rely more on these type of funding sources are more likely to be vulnerable to a tightening in financial conditions.

3.3 Financial Conditions

To assess the position of financial conditions throughout the 2019-2022 period, we use the Financial Conditions Index (FCI) developed by the International Monetary Fund (IMF). This index is a composite measures that gives a sense of financial conditions in a number of jurisdictions, including the US and the euro area (EA). The FCI aggregates the information content of several financial indicators to provide a single indicator for financial conditions. The IMF outline that an increase in the FCI corresponds to tighter financial conditions, that is, higher spreads and volatility, lower asset prices, worsening risk sentiment, exchange rate depreciation, and unfavorable commodity price movements (IMF, 2017). Specifically, the FCI is based on a combination of variables including: the real short term interest rate; the interbank spread; the term spread; the sovereign local debt spread; sovereign dollar debt spread; the corporate local currency spread; the corporate dollar debt spread; equity prices; equity volatility; exchange rates; and, real house prices.[7] The FCI is expressed through z-scores which outline how much the indicator is deviating from its long term trend. Therefore measures above zero denote conditions that are tighter than average over recent decades. The indicator is useful to show whether conditions are tight compared to a long-run average, and also to outline whether conditions are tighter or looser over time, depending on how far the index deviates from the mean in either direction. We consider the euro area FCI to be a suitbale proxy for financial consideration in the Irish economy, particularly given Irelands membership of the economic and monetary union of the European Union (EMU). As a small open economy with no independent monetary policy, Irish financial institutions and borrowers are directly affected by changes in euro area-wide interest rates, sovereign and corporate spreads, and broader market sentiment, which which are captured in the euro area FCI.

[7] Further details on the FCI can be found in the IMF Global Financial Stability Report October 2018 Online Annex 1.1.

Figure 1: Lending to SMEs by Banks and Non-Banks in Ireland 2019-2022

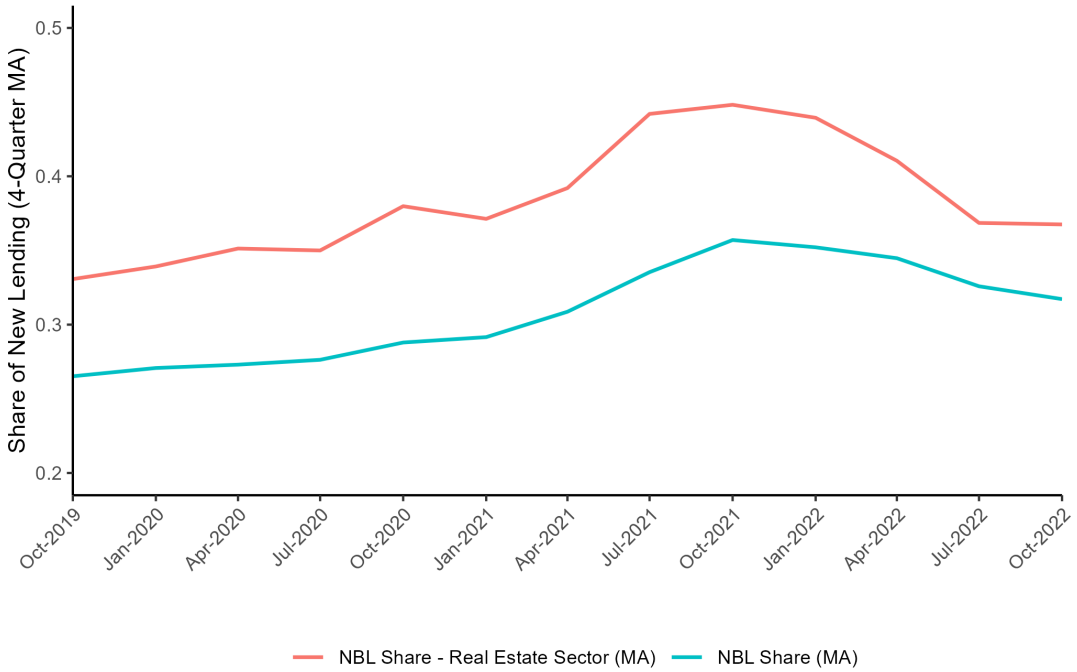


Source: Central Credit Register, IMF.
Notes: This chart shows lending by both banks and non-banks to SMEs in Ireland for the 2019-2022 period. This is aggregated data from the Central Credit Register. Time periods are shaded if financial conditions are deemed to be 'tight' in the euro area as per the IMF Financial Conditions Index.

3.4 Final Data Set

The final data set for this paper consists of a quarterly panel with new lending agreements to SMEs in Ireland from both banks and non-banks. Each borrower and lender is uniquely identified meaning the data is available at the quarter-borrower-lender level. The dataset is augmented with additional information on the characteristics of the SMEs such as the sector they operate in and additional information on the characteristics of the lenders. Information on the lenders includes their category (based on Moloney et al. (2023)) and annual balance sheet information, which gives an insight into how the lenders themselves are funded. This information is relevant when considering how tighter financial conditions affect the lenders and thus their lending behaviour. Empirical results below will rely on borrowers who have relationships with both banks and non-banks due to the two-way fixed effects specification used.

Figure 2: Share of Non-Bank Lending to SMEs in Ireland 2019-2022



Source: Central Credit Register, IMF.
Notes: NBL Share (MA) is a four quarter moving average of the share of new lending from non-bank lenders relative to the sum of NBL and bank new lending. NBL Share Real Estate Sector (MA) is a four quarter moving average of the share of new lending to real estate SMEs from non-bank lenders relative to the sum of NBL and bank new lending to real estate SMEs. Real estate-SMEs include SMEs in Real Estate Activities and Construction. Last observation 2022 Q4.

4 Descriptive Statistics

An initial view of headline data on non-bank and bank lending shows that both bank and non-bank lending decreased during the tightening in financial conditions observed during early 2020 in response to the shock from COVID-19, Figure 1. However, in contrast, during the more recent period of tightening throughout 2022 linked to increasing inflation, bank lending remained relatively constant while non-bank lending showed a persistent downwards trend. Figure 2 outlines the relative importance of non-banks in providing credit for SMEs. In line with the overall increase in credit provided in 2021, the share of lending increased to about a third (in comparison to banks) before falling back in 2022. Figure 2 also shows the share of lending for the real estate sector, as non-banks have become particularly important in this space. The share of new lending provided by non-banks approached 50 per cent in 2021 before declining sharply in 2022. Whether the evolution of credit from non-banks is due to the lending decisions of non-banks themselves or due to other factors such as the specific credit demand of the firms they lend to is a key question which we aim to address.

Table 1: Summary Statistics - Lenders

Lender Type	Number of Lenders	Number of Borrowers	Average Loan (€, mean)	Average Loan (€, median)
Bank	4	55,399	127,661	30,000
Non-Bank	71	50,994	58,902	19,289

Note: This table outlines summary statistics for lenders categorised as banks or non-banks using the Central Credit Register for the 2019-2022 period. This table displays statistics from the lender perspective, outlining the number of banks and non-banks and the number of borrowers each type has in the sample. We also show the average loan size by bank or non-bank.

Table 2: Summary Statistics - Borrowers

Lending Relationship	Number of Borrowers	Average Loan (€, mean)	Average Loan (€, median)
Bank	40,719	146,575	28,600
Both	14,680	68,791	24,982
Non-Bank	36,314	72,043	20,000

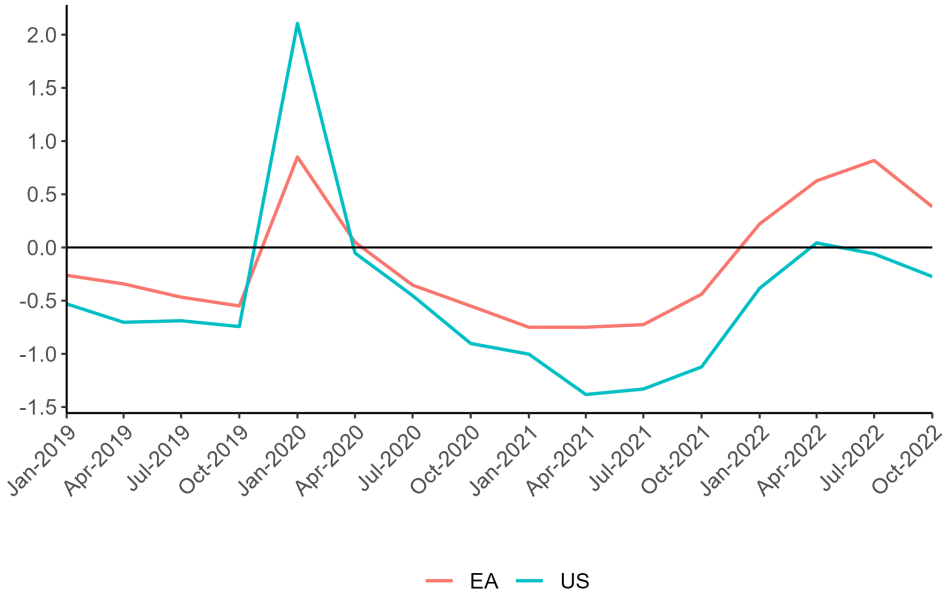
Note: This table outlines summary statistics categorised by whether borrowers have a relationship only with a bank, only with a non-bank, or with both types of lender. The statistics are based on Central Credit Register data for the 2019-2022 period.

Table 1 outlines that there are 4 banks actively lending to SMEs during the 2019-2022 period, while there are 71 non-banks.[8] The number of borrowers for each is similar at about 50,000, meaning that each lender type provides credit to 50,000 different firms. There are differences between the average and median loan sizes. Table 2 outlines summary statistics from the borrower perspective. Here we see that about 40,000 borrowers have a relationship *only* with a bank, while about 15,000 borrowers have received a loan from both a bank and a non-bank. Lastly, approx. 36,000 borrowers only borrow from non-banks. Again, we see differences in average loan sizes depending on whether borrowers have relationships with banks or non-banks. Our analysis relies on the approx. 15,000 firms who have received a loan from both a bank and a non-bank. As shown in Table 2, the median loan size is between that observed for firms borrowing only from banks or non-banks. Additionally, Gaffney and McGeever (2022) show that SMEs relying on financing from both banks and non-banks are not outliers in comparison to SMEs relying solely on bank or non-bank financing. In comparison to SMEs relying solely on financing from banks, Gaffney and McGeever (2022) show that SMEs with financing from both banks and non-banks are larger in terms of assets, of a similar age, have slightly lower liquidity and have higher leverage. In comparison to SMEs relying solely on financing from non-banks, Gaffney and McGeever (2022) show that SMEs with financing from both banks and non-banks are larger, older, more liquid and have slightly lower leverage. These comparisons suggest that SMEs borrowing from both banks and non-banks represent a substantively meaningful and reasonably balanced subset of the SME population.

[8] Some non-banks are associated with each other and can be considered part of a group which we account for in our empirical specification.

As outlined above, the FCI provides a single indicator for financial conditions in a region, based on a variety of underlying measures. Figure 3 shows the measure for the 2019-2022 period. If the index is above zero, financial conditions are considered tight in comparison to their long term average while if the index is below zero, conditions are considered loose. As Figure 3 shows, financial conditions tightened sharply in early 2020 as the COVID-19 pandemic began before easing throughout early 2021. Financial conditions tightened through late 2021, to the extent conditions were deemed tight in the euro area, whereas in the US, conditions tightened to levels comparable to the long-run average. The dynamics visible in 2021 and 2022 show the value of observing the magnitude of deviation from the long-run average, as while conditions were not deemed tight for much of the period in the US, Figure 3 clearly shows that financial conditions in the US in 2022 were significantly tighter than in 2021. The implications of tighter financial conditions, all else equal, would be expected to feed through to borrowers on both the intensive and extensive margin, through higher interest rates and a lower available volume of credit.

Figure 3: IMF Financial Conditions Index 2019-2022

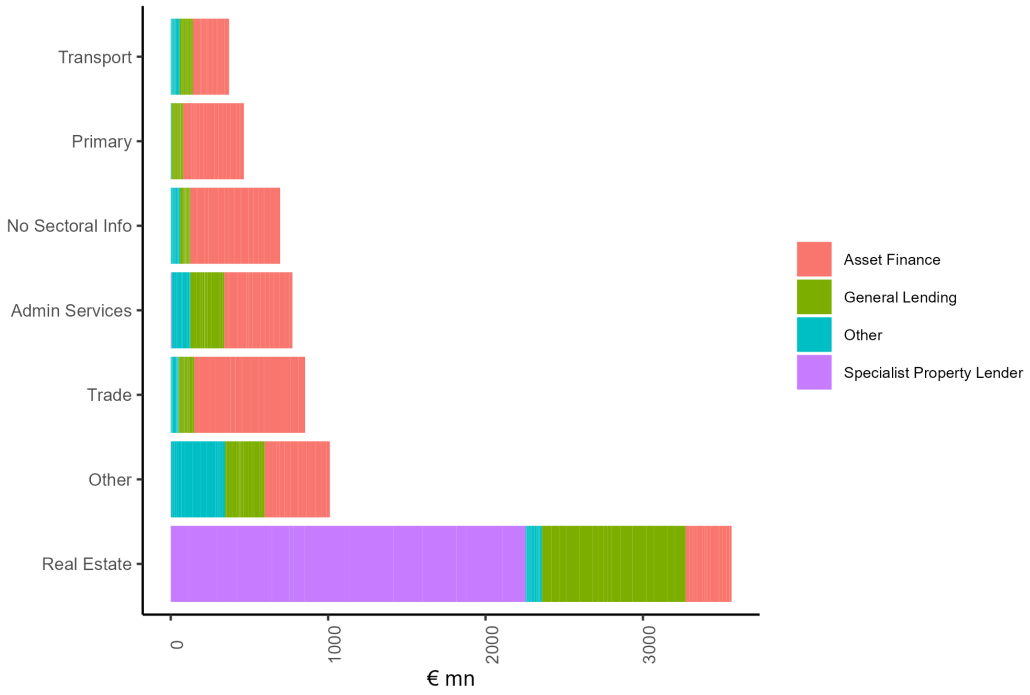


Source: IMF.
Notes: This chart shows the IMF Financial Conditions Index (FCI) over the 2019-2022 period. The FCI is expressed through z-scores which outline how much the indicator is deviating from its long term trend. Therefore measures above zero denote conditions that are tighter than average over recent decades.

Figures 4 and 5 outline the lending behaviour of each of the four NBL types over the 2019-2022 period. The sectoral specialisation is particularly clear for *Specialist Property Lenders* with respect to the real estate sector, while the focus of *Asset Finance Providers* on business leasing products is also apparent. These differences in business model outline that while using the broad category of non-banks is useful to draw a distinction with banks, analysing

the differences between non-banks further can be useful to assess how particular non-bank types react in response to tightening financial conditions.

Figure 4: Sectoral Lending

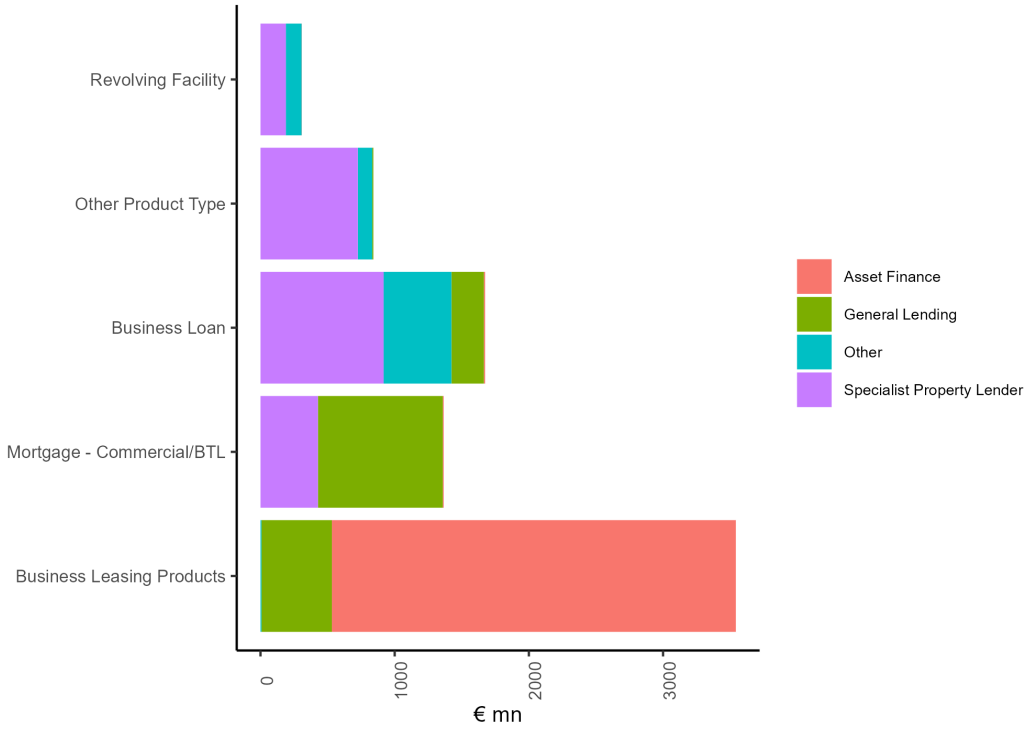


Source: Central Credit Register.
Notes: Chart outlines new lending from 2019-2022 by lender type as categorised in Moloney et al. (2023) and by the sector of the SME which is receiving financing.

The differences in non-bank type extends beyond their lending behaviour and is also apparent in their funding structures. The funding counterparties, by region and sector, for each NBL type are outlined in Figure 6. The significant variation in funding regions and counterparty sectors is clear. In addition, for *Asset Finance Providers*, most funding comes from parent companies (with a significant number of these parent companies being NFCs) whereas for *General Lenders* and *Specialist Property Lenders*, a significant share of funding is from third parties in the financial sector.[9] The majority of funding comes from European sources, however some funding received through European other financial intermediaries (OFIs) may ultimately come from non-European countries such as the US (Moloney et al., 2023).

[9]See Moloney et al. (2023) for further detail.

Figure 5: Contract Type



Source: Central Credit Register.
Notes: Chart outlines new lending from 2019-2022 by lender type as categorised in Moloney et al. (2023) and by contract types offered to SME borrowers. Business Leasing Products include business hire purchase, business leasing, stocking finance, hire purchase (excluding personal contract plan), leasing, and personal contract plans.

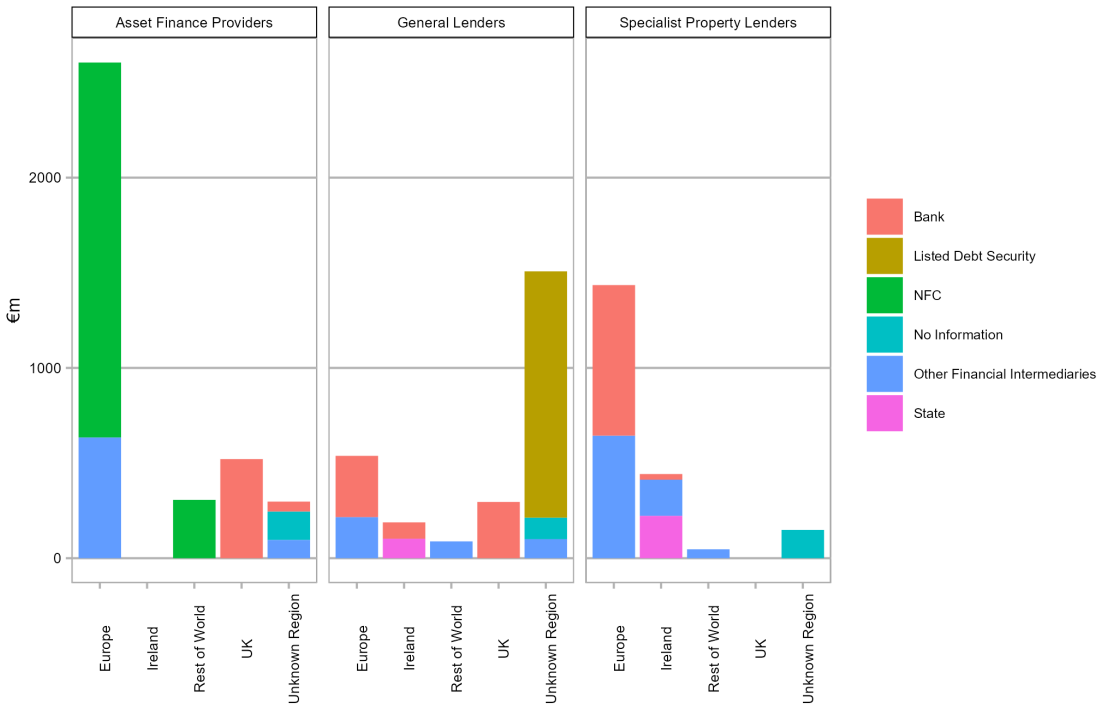
5 Empirical Approach

The aim of our empirical analysis is to estimate how financial conditions differentially affect the lending decisions of non-banks relative to banks. We begin by discussing the challenges to the identification of changing financial conditions on credit supply. Subsequently, we present the empirical specification that we use to estimate the effects of changes in financial conditions on non-banks and banks lending decisions.

5.1 Empirical Strategy - Cyclicality of lending

Analysing how changes in financial conditions affects the lending decisions of financial institutions faces an important challenge. Identifying the effect of financial conditions on credit supply calls for distinguishing credit supply from demand effects. To tackle this identification challenge we include granular borrower controls to capture borrowers credit demand in our regressions. In particular, we include borrower-time fixed effects to control for unobservable borrower characteristics, in the spirt of Khwaja and Mian (2008). Our fixed effect specification thus compares new lending to borrowers who receive credit from banks and non-banks. The

Figure 6: Non-Bank Counterparty Region/Sector - 2021

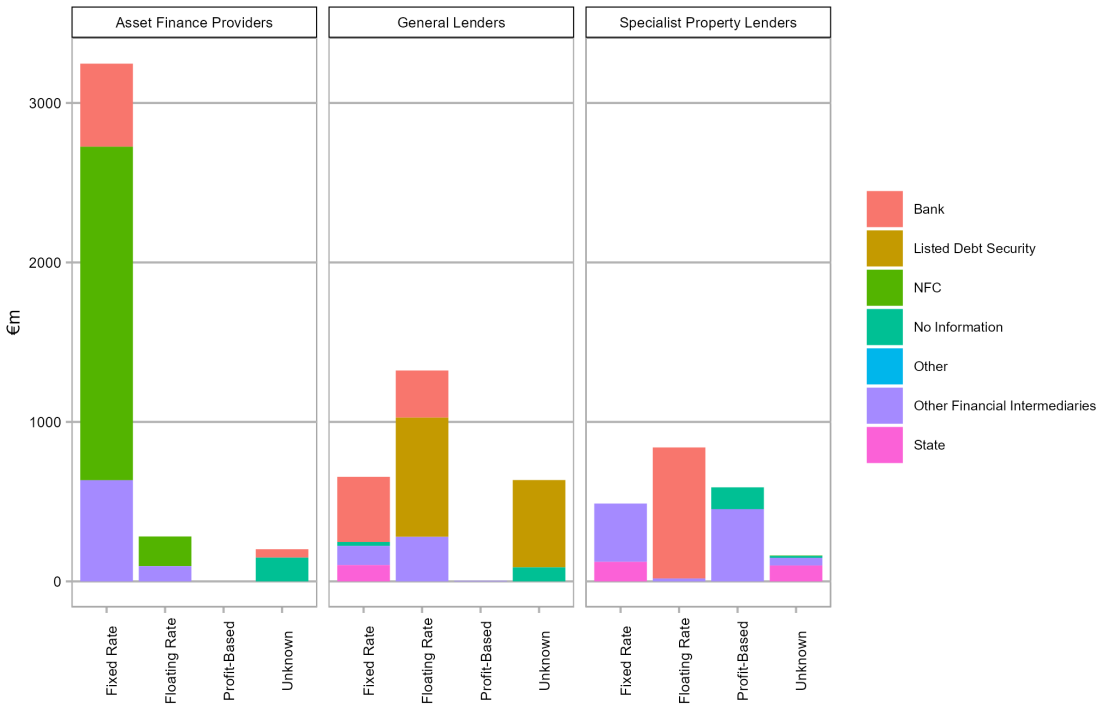


Source: Moloney et al. (2023)
Notes: Chart outlines funding sources for NBLs for 2021 by region. European funding sources include Austria, France, Germany, Luxembourg, Malta, the Netherlands and Sweden. Rest of World includes Japan, Australia, the United States of America, the Cayman Islands, the Isle of Man and some smaller jurisdictions. Counterparty is unknown mainly for funding received through issued debt securities, which may be listed meaning ascertaining ownership can be difficult. State refers to funding from the Ireland Strategic Investment Fund (ISIF). The ISIF, managed and controlled by the National Treasury Management Agency (NTMA), is a sovereign development fund with a mandate to invest on a commercial basis to support economic activity and employment in Ireland. Other Financial Intermediaries are comprised of all financial institutions that are not classified as banks, insurance corporations, pension funds, public financial institutions, central banks, or financial auxiliaries, for example, investment funds, SPEs, treasury and holding companies.

key identification assumption is that when different lenders grant a loan to the same borrower, any differences in lending decisions are due to supply (i.e., lender characteristics) rather than demand.[10] Using two-way fixed effects in this manner means our regression sample is based on borrowers that have relationships with both banks and non-banks. We exploit the variation for these borrowers between the funding they receive from banks and non-banks during different periods of financial conditions. Our preferred specification takes the following form:

[10]We also assume that changes in financial conditions are orthogonal to other changes that could differentially affect the supply of new credit from banks or non-banks. In this context we include macroeconomic controls in our regressions to ensure economic conditions do not differentially affect non-banks in comparison to banks.

Figure 7: Non-Bank Loan Terms - 2021



Source: Moloney et al. (2023)
Notes: Chart outlines funding sources for NBLs for 2021 by sector and by whether interest paid is floating or fixed rate in nature etc.. Profit-based refers to loans/notes where the party providing funding participates directly in the profit and losses of the entity. Thus, payments are made to the funding party if profits remain after accounting for other costs (including other interest payments). These instruments are generally profit participation loans/notes, see Golden & Hughes, (2018) for further detail. State refers to funding from the Ireland Strategic Investment Fund (ISIF). The ISIF, managed and controlled by the National Treasury Management Agency (NTMA), is a sovereign development fund with a mandate to invest on a commercial basis to support economic activity and employment in Ireland. Other Financial Intermediaries are comprised of all financial institutions that are not classified as banks, insurance corporations, pension funds, public financial institutions, central banks, or financial auxiliaries, for example, investment funds, SPEs, treasury and holding companies.

$$\begin{aligned} log(NewLending_{blt}) = \beta_0 + \beta_1(NonBank * FinCond) + \beta_2 NonBank \\ + \beta_3(NonBank * MacroControls) \\ + \delta_{bt} + \epsilon_{blt} \end{aligned} \tag{1}$$

The dependent variable, $NewLending_{blt}$ is quarterly new credit extended to borrower b by lender l in quarter t. We take the log of this value as per the standard approach in the literature which allows a percentage interpretation of results.[11] $NonBank$ is a dummy variable indicating non-bank lenders and $FinCond$ refers to the IMF financial conditions index, which

[11] To take the log of zero values we denote these with a low positive nominal value of 1. We also include a specification taking the inverse hyperbolic sine transformation which has a similar interpretation and is compatible with zero values and results are unchanged, see appendix, Table 8.

we interact with the $NonBank$ term to estimate how non-banks respond to financial conditions in comparison to banks. Usefully, the IMF financial conditions index is expressed through z-scores, so a reading of 1 in the measure means financial conditions are one standard deviation tighter than the long run average. Therefore, for Equation 1, the main coefficient of interest is β_1, the coefficient on the interaction of the non-bank dummy with the financial conditions. A negative β_1 means that, in response to tightening financial conditions, non-banks reduce their lending relative to traditional banks. δ_{bt} are borrower-quarter fixed effects that control for unobservable credit demand in the spirit of (Khwaja and Mian, 2008). We also include $NonBank$ as a dummy variable in the regression to capture differences between banks and non-banks at an aggregate level that could explain differences in new lending. We adjust this approach in our regressions and also use specific lender fixed effects and results are essentially unchanged. $MacroControls$ are included as an interaction term to ensure economic conditions do not differentially affect non-banks in comparison to banks.[12] Standard errors are clustered at the borrower level.

We also adjust the specification of our categorisation of lenders between banks and non-banks. We include additional information on lender types as outlined previously to assess whether certain non-banks react more strongly to tightening financial conditions than others (comparing all to banks). This means adjusting Equation 1 to include multiple dummy variables denoted by $Lendertype$, which encompasses banks, asset finance providers, general lenders and specialist property lenders, instead of $NonBank$.[13] We outline this formally in Equation 2. The remaining terms are the same and have the same interpretation as for 1.

$$\begin{aligned} log(NewLending_{blt}) = \beta_0 &+ \beta_1(LenderType * FinCond) + \beta_2 LenderType \\ &+ \beta_3(LenderType * MacroControls) \\ &+ \delta_{bt} + \epsilon_{blt} \end{aligned} \tag{2}$$

6 Results

As mentioned previously, banks can rely on low-cost deposit funding which is not available to non-banks. The non-banks in our analysis rely on a mix of funding from banks and other financial entities as per Figure 7, which would be expected to have a higher cost than deposit funding for banks. Given this key difference in funding sources, we would expect a tightening in financial conditions to increase costs for the non-banks in our sample, particularly those

[12] We use quarterly modified domestic demand to capture economic conditions in Ireland.

[13] Dummy variables are included for asset finance providers, general lenders, specialist property lenders and other lenders while banks account for the omitted category

relying on floating rate funding, which would in turn influence their lending behaviour. In contrast, the banks acting as their competitors in the SME credit market in Ireland are relatively less vulnerable to tightening financial conditions and thus may be able to maintain their lending volume.

Our results are outlined in Table 3, where the coefficient on $NonBank * FinCond$ is shown under four different specifications. For column 1, we run 1 but exclude macro controls while in column 2, we explicitly include lender fixed effects as opposed to the dummy for banks versus non-banks in the specification. For Column 3, we include macroeconomic controls with the $NonBank$ dummy while for column 4, we include macroeconomic controls and explicit lender fixed effects. Borrower-Quarter fixed effects are included for all specifications to control for credit demand. Results are broadly unchanged and show that non-banks react more negatively than banks in response to tighter financial conditions. Specifically, we estimate that in response to financial conditions being one standard deviation tighter than the long run average in the euro area, non-banks contract lending in the range of 8.4-9.3 percent in comparison to banks[14]. Results are statistically significant as we show in Table 3 and visually in Figure 8.

For robustness, we explore slightly different specifications using variations of the financial conditions index data to assess whether we still find significant results. For example, we include a specification with US financial conditions and lagged euro area conditions and our results are broadly unchanged. We include US financial conditions as we would expect these to affect financial entities in Ireland (albeit less than from euro area conditions), given the potential spillovers from the US financial system to other jurisdictions and particularly given that some non-banks may ultimately rely on US sources of funding (Moloney et al., 2023). Our results in the appendix still show significant results based on US financial conditions, albeit at a lower magnitude than the effects of euro area financial conditions. We include lagged financial conditions also as we would expect a certain lag between financial conditions and the actions of lenders and we find similar results using lagged financial conditions. However, given our data is quarterly, we prefer our main specification given within a quarter we would expect financial conditions to affect lenders.

Next, we adjust our regression to account for the different types of non-banks present in our data, estimating Equation 2. As opposed to previously, when we denoted a dummy variable for banks or non-banks, now we denote dummy variables for lenders, which includes banks, asset finance providers, general lenders, specialist property lenders and a residual of other lenders. As outlined previously, there is significant variation in business models and funding sources for each different lender type so we now aim to assess whether different

[14]These values correspond to percentage changes for ease of interpretation, calculated from the log values reported in our results tables.

Table 3: Regression Results - Bank versus Non-Bank Lending

	(1)	(2)	(3)	(4)
Non-Bank * Financial Conditions	-0.098***	-0.099***	-0.086***	-0.087***
	(0.024)	(0.024)	(0.024)	(0.024)
Num.Obs.	350258	350258	350258	350258
R^2	0.138	0.141	0.138	0.141
Euro Area Financial Conditions	Y	Y	Y	Y
Borrower-Quarter Fixed Effects	Y	Y	Y	Y
Lender Fixed Effects	N	Y	N	Y
Macro Controls	N	N	Y	Y

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: This table shows results for our main specification of Equation 1, comparing non-banks to banks. All specifications are based on Euro Area financial conditions and include borrower-quarter fixed effects while standard errors are clustered at the borrower level. For specification (1), we exclude macro controls while in specification (2), we explicitly include lender fixed effects as opposed to the dummy for banks versus non-banks in the specification. For specification (3), we include macroeconomic controls with the $NonBank$ dummy while for specification (4), we include macroeconomic controls and explicit lender fixed effects.

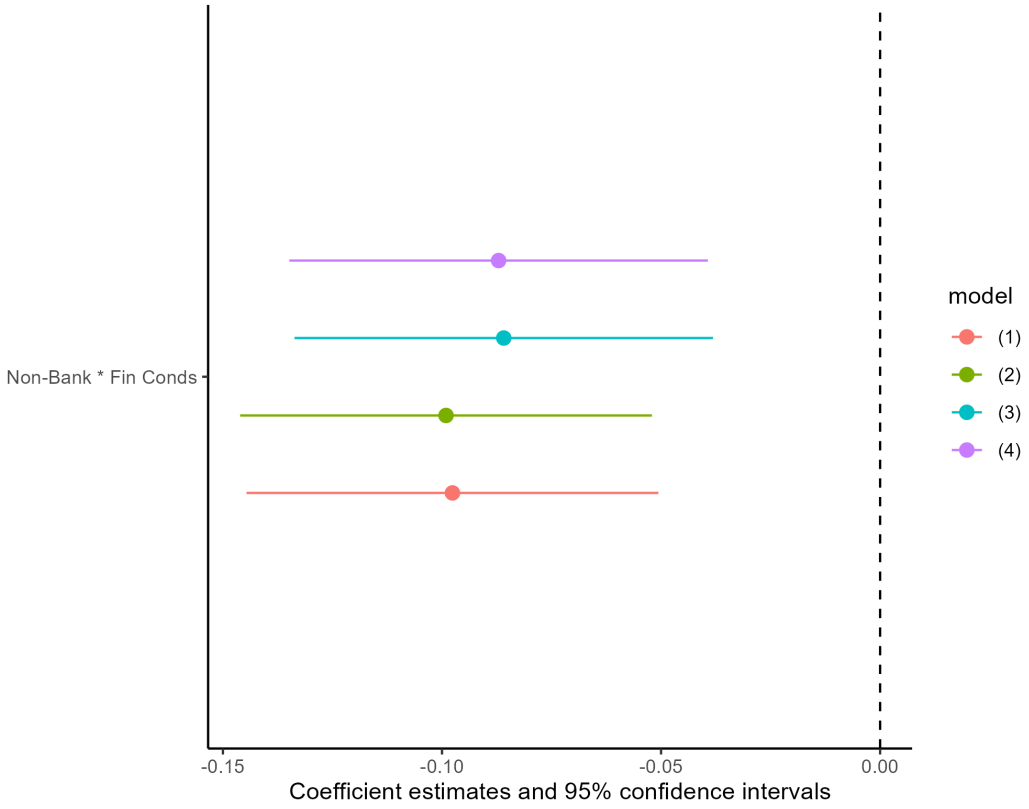
non-banks react more strongly or weakly to tightening financial conditions in comparison to banks.

Our results are outlined in Table 4.[15] We find strongly different results depending on non-bank lender type. We show that both asset finance providers and general lenders do not contract lending in response to a tightening in financial conditions, and instead increase credit supply in comparison to the banking sector. As mentioned above, asset finance providers rely on funding from parent companies and lend to a diverse range of sectors in the Irish economy. General lenders do rely on third party borrowing, but appear to react positively also, potentially due to their diverse business models and established lending relationships. In contrast, specialist property lenders react negatively and very strongly contracting lending significantly in comparison to banks. Our results suggest that in response to financial conditions one standard deviation tighter than the long run average in the euro area, specialist property lenders decrease lending in the range of 80-90 per cent in comparison to banks.[16] This result is driven by specialist property lenders strongly contracting lending during periods of tight financial conditions in the euro area, and we show that this is driven by the decisions of the lenders. However, some caution is warranted for this result, as while our dataset is rich in terms of the number of loans observed, the time period covered is from 2019-2022, which could be considered a particularly negative period for property markets, particularly

[15] Categorisations are based on (Moloney et al., 2023) as outlined above.

[16] These values correspond to percentage changes for ease of interpretation, calculated from the log values reported in our results tables.

Figure 8: Coefficient Plot - Regression Results - Bank versus Non-Bank Lending



Notes: This plot shows results graphically from Table 3. Model numbers correspond to column numbers as indicated. All specifications are based on Euro Area financial conditions and include borrower-quarter fixed effects while standard errors are clustered at the borrower level. For specification (1), we exclude macro controls while in specification (2), we explicitly include lender fixed effects as opposed to the dummy for banks versus non-banks in the specification. For specification (3), we include macroeconomic controls with the $NonBank$ dummy while for specification (4), we include macroeconomic controls and explicit lender fixed effects.

the commercial property market. The effects of the COVID-19 shock, and the associated implications for office spaces, are clearly a factor during our sample, and the commercial real estate market has continued to be a financial stability concern for policymakers throughout the 2021-2022 period of heightened inflation and increasing interest rates (ECB, 2023). Our data does not allow us to run regressions for a longer time period, but other cycles of tightening financial conditions, which are not specifically so negative for CRE outlooks, may result in different outcomes for lenders focused on providing financing to the real estate sector.

Overall, our results show the critical importance of looking beyond the binary classification of banks versus non-banks when conducting analysis on how the increased role of non-banks in direct lending may affect financial stability. While our headline results differ for example from results found by Cucic and Gorea (2022) for the Danish economy, our further analysis shows that different non-banks respond differently to tightening financial conditions and thus the balance of lender types is important when considering how overall credit supply may evolve. There is significant heterogeneity within the non-bank lender space (in Ireland at

Table 4: Regression Results - Lending by Non-Bank Category

	(1)	(2)	(3)	(4)
Asset Finance * Fin Conds	0.094***	0.090***	0.127***	0.122***
	(0.030)	(0.030)	(0.031)	(0.031)
Specialist Property * Fin Conds	-1.709***	-2.233***	-1.656***	-2.178***
	(0.470)	(0.470)	(0.475)	(0.474)
General * Fin Conds	0.094**	0.091**	0.141***	0.139***
	(0.044)	(0.044)	(0.045)	(0.045)
Num.Obs.	350258	350258	350258	350258
R^2	0.139	0.142	0.140	0.142
Euro Area Financial Conditions	Y	Y	Y	Y
Borrower-Quarter Fixed Effects	Y	Y	Y	Y
Lender Fixed Effects	N	Y	N	Y
Macro Controls	N	N	Y	Y

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

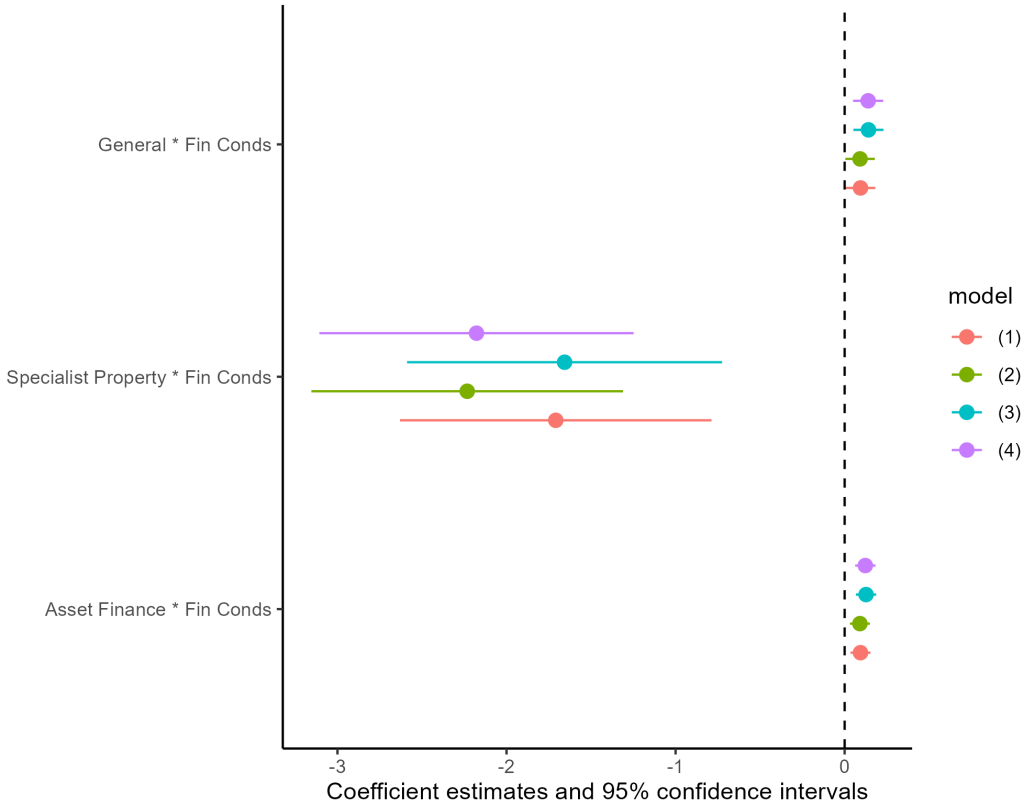
Note: This table shows results for Equation 2 comparing each category of non-bank (as per (Moloney et al., 2023)) to banks. All specifications are based on Euro Area financial conditions and include borrower-quarter fixed effects while standard errors are clustered at the borrower level. For specification (1), we exclude macro controls while in specification (2), we explicitly include lender fixed effects as opposed to the dummy for banks versus non-banks in the specification. For specification (3), we include macroeconomic controls with the non-bank type dummies while for specification (4), we include macroeconomic controls and explicit lender fixed effects.

least) and understanding where pockets of risk exist is crucial as this varies significantly. From a policy perspective, our empirical analysis supports the conclusions of Moloney et al. (2023) who highlighted specialist property lenders as the highest priority from a financial stability perspective, based on the concentration of their lending and their funding structure. While our results necessarily focus on Ireland due to our data source, understanding in greater detail the differences among non-banks for financial stability analysis applies across jurisdictions.

7 Conclusion

NBFI has grown in importance for the financial system in recent years, both in Ireland and globally. This analysis focuses on the role of non-banks in directly providing financing to small and medium enterprises in Ireland. This lending is in the sphere of private credit, defined by the IMF as 'non-bank corporate credit provided through bilateral agreements or small club deals outside the realm of public securities or commercial banks' (IMF, 2023). This type of financing from non-banks for SMEs has grown in importance in Ireland, as non-banks now provide a significant share of new lending in comparison to banks. Our key interest in this analysis is on the increased role for non-banks in providing credit directly to SMEs in Ireland and the potentially higher sensitivity of these non-banks in amplifying shocks.

Figure 9: Coefficient Plot - Regression Results - Lending by Non-Bank Category



Notes: This plot shows results graphically from Table 4. Model numbers correspond to column numbers as indicated. All specifications are based on Euro Area financial conditions and include borrower-quarter fixed effects while standard errors are clustered at the borrower level. For specification (1), we exclude macro controls while in specification (2), we explicitly include lender fixed effects as opposed to the dummy for banks versus non-banks in the specification. For specification (3), we include macroeconomic controls with the non-bank type dummies while for specification (4), we include macroeconomic controls and explicit lender fixed effects.

In this analysis, we assess how non-banks respond, in comparison to banks, to an environment of tighter financial conditions. We use credit registry data on lending to businesses in Ireland and our empirical strategy consists of utilising borrower-time fixed effects to control for unobservable borrower characteristics, to isolate the effects of financial conditions on credit supply.

Our results show that non-banks react more negatively than banks in response to tighter financial conditions. Specifically, we estimate that in response to financial conditions being one standard deviation tighter than the long run average in the euro area, non-banks contract lending in the range of 8.4-9.3 percent in comparison to banks. However, once we adjust our specification to account for the significant differences among non-banks lending in Ireland, we show that both asset finance providers and general lenders do not contract lending in response to a tightening in financial conditions, and instead increase credit supply in comparison to the banking sector. In contrast, specialist property lenders react negatively and strongly, contracting lending significantly in comparison to banks.

Overall, our results show the critical importance of looking beyond the binary classification of banks versus non-banks when conducting analysis on how the increased role of non-banks in direct lending may affect financial stability. There is significant heterogeneity within the non-bank lender space (in Ireland at least) and understanding where pockets of risk exist is crucial as this varies significantly. While our results necessarily focus on Ireland due to our data source, understanding in greater detail the differences among non-banks for financial stability analysis applies across jurisdictions.

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Table 5: Regression Results - Bank versus Non-Bank Lending (US Financial Conditions)

	(1)	(2)	(3)	(4)
Non-Bank * Financial Conditions	-0.056***	-0.057***	-0.044**	-0.044**
	(0.020)	(0.020)	(0.021)	(0.021)
Num.Obs.	350258	350258	350258	350258
R^2	0.138	0.141	0.138	0.141
US Financial Conditions	Y	Y	Y	Y
Borrower-Quarter Fixed Effects	Y	Y	Y	Y
Lender Fixed Effects	N	Y	N	Y
Macro Controls	N	N	Y	Y

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: This table shows results for our main specification of Equation 1, comparing non-banks to banks. All specifications are based on US financial conditions and include borrower-quarter fixed effects while standard errors are clustered at the borrower level. For specification (1), we exclude macro controls while in specification (2), we explicitly include lender fixed effects as opposed to the dummy for banks versus non-banks in the specification. For specification (3), we include macroeconomic controls with the $NonBank$ dummy while for specification (4), we include macroeconomic controls and explicit lender fixed effects.

Table 6: Regression Results - Lending by Non-Bank Category (US Financial Conditions)

	(1)	(2)	(3)	(4)
Asset Finance Providers * Tight	0.068***	0.074***	0.105***	0.111***
	(0.025)	(0.025)	(0.026)	(0.026)
Specialist Property Lenders * Tight	-1.109***	-1.272***	-1.069***	-1.224***
	(0.374)	(0.403)	(0.384)	(0.414)
General Lenders * Tight	-0.086**	-0.092***	-0.044	-0.050
	(0.035)	(0.035)	(0.036)	(0.036)
Num.Obs.	350258	350258	350258	350258
R^2	0.139	0.142	0.139	0.142
US Financial Conditions	Y	Y	Y	Y
Borrower-Quarter Fixed Effects	Y	Y	Y	Y
Lender Fixed Effects	N	Y	N	Y
Macro Controls	N	N	Y	Y

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: This table shows results for Equation 2 comparing each category of non-bank (as per (Moloney et al., 2023)) to banks. All specifications are based on US financial conditions and include borrower-quarter fixed effects while standard errors are clustered at the borrower level. For specification (1), we exclude macro controls while in specification (2), we explicitly include lender fixed effects as opposed to the dummy for banks versus non-banks in the specification. For specification (3), we include macroeconomic controls with the non-bank type dummies while for specification (4), we include macroeconomic controls and explicit lender fixed effects.

Table 7: Regression Results - Bank versus Non-Bank Lending (Lagged EA Financial Conditions)

	(1)	(2)	(3)	(4)
Non-Bank * Financial Conditions	-0.081***	-0.083***	-0.064***	-0.066***
	(0.022)	(0.022)	(0.023)	(0.023)
Num.Obs.	350258	350258	350258	350258
R^2	0.138	0.141	0.138	0.141
Euro Area Financial Conditions	Y	Y	Y	Y
Borrower-Quarter Fixed Effects	Y	Y	Y	Y
Lender Fixed Effects	N	Y	N	Y
Macro Controls	N	N	Y	Y

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: This table shows results for our main specification of Equation 1, comparing non-banks to banks. All specifications are based on euro area financial conditions lagged by one quarter and include borrower-quarter fixed effects while standard errors are clustered at the borrower level. For specification (1), we exclude macro controls while in specification (2), we explicitly include lender fixed effects as opposed to the dummy for banks versus non-banks in the specification. For specification (3), we include macroeconomic controls with the $NonBank$ dummy while for specification (4), we include macroeconomic controls and explicit lender fixed effects.

Table 8: Regression Results - Bank versus Non-Bank Lending (Inverse Hyperbolic Sine)

	(1)	(2)	(3)	(4)
Non-Bank * Financial Conditions	-0.109***	-0.111***	-0.093***	-0.095***
	(0.026)	(0.026)	(0.027)	(0.027)
Num.Obs.	350258	350258	350258	350258
R^2	0.138	0.141	0.138	0.141
Euro Area Financial Conditions	Y	Y	Y	Y
Borrower-Quarter Fixed Effects	Y	Y	Y	Y
Lender Fixed Effects	N	Y	N	Y
Macro Controls	N	N	Y	Y

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: This table shows results for our main specification of Equation 1, comparing non-banks to banks. All specifications are based on euro area financial conditions and include borrower-quarter fixed effects while standard errors are clustered at the borrower level. The dependent variable is the inverse hyperbolic sine of new lending. For specification (1), we exclude macro controls while in specification (2), we explicitly include lender fixed effects as opposed to the dummy for banks versus non-banks in the specification. For specification (3), we include macroeconomic controls with the $NonBank$ dummy while for specification (4), we include macroeconomic controls and explicit lender fixed effects.

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