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Non-bank lenders in the syndicated loan market[1]

Non-bank lenders are an important source of syndicated credit to non-financial corporates in most regions and industries. Their loan origination, however, is more concentrated by location and sector than that of banks and it is also more volatile. Syndicated loans arranged by non-banks carry a significantly higher spread relative to those by banks, consistent with the pattern that firms borrowing from non-banks are more leveraged and less profitable, ie riskier. Non-banks generally grant a smaller share of their new loans to foreign borrowers than banks do. During domestic financial crises, they reduce this share further, exacerbating the global transmission of shocks.

JEL classification: E51, F34, G21, G23.

The increasing footprint of non-bank financial intermediaries has put them front and centre of policymakers' agendas. While they can contribute to a more diversified and efficient financial system, non-banks can also be a source of instability due to, for instance, liquidity mismatches (Aramonte et al (2021)). With the March 2020 market turmoil serving as a case study, substantial efforts have been made to understand how such instability can unfold and what policy measures can mitigate it (Carstens (2021)).

The reach of non-banks extends beyond financial market conditions. Non-bank lenders represent an important source of funding for non-financial corporates (NFCs) in general (Aramonte and Avalos (2021)) and through syndicated loans in particular (Elliott et al (2019)). As non-banks extend syndicated loans in a highly procyclical fashion (Fleckenstein et al (2021)) and access to syndicated credit affects firm performance (Chodorow-Reich (2014)), their ubiquitous presence could drive real economy developments.

This special feature provides the first systematic overview of global syndicated lending by non-banks and contrasts it with that by banks.[2] It further investigates the role of non-banks in cross-border spillovers during financial crises.

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[2] Syndicated lending by banks has been studied extensively (see Güler et al (2021) for a summary).

Key takeaways

- Non-banks' origination of syndicated loans to non-financial firms grew twentyfold from 1990, to $410 billion in 2019, and represents a sizeable share of the total in most regions and sectors.

- Non-banks' syndicated lending is more concentrated across countries and industries than that of banks and it is more volatile. It also carries higher spreads, partly reflecting riskier borrowers.

- In the wake of a crisis at home, non-banks curtail lending to foreign borrowers by more than they do to domestic ones, thereby transmitting shocks across countries.

The main findings are as follows.

First, non-banks play an important role in the syndicated loan market, but their lending patterns differ from those of banks. Non-banks have increased their yearly syndicated lending twentyfold over the past three decades, serving borrowers in all major regions and sectors. Their share in total new syndicated lending fluctuated between 7% and 18% over the same period. Non-bank lending is more concentrated by geographical location and sector than bank syndicated lending. While non-banks' credit provision tends to ebb and flow with that of banks, it is more volatile and contracted more during the Great Financial Crisis (GFC).

Second, loans arranged by non-bank lenders carry materially higher spreads than those arranged by banks. The difference in spreads largely reflects a riskier pool of borrowers and associated risk premia, rather than differences in loan terms.

Finally, when facing domestic financial crises, non-bank arrangers retrench particularly forcefully from abroad. In general, non-banks exhibit a stronger home bias than banks, as foreign borrowers account for a smaller share in their syndicated lending. During a financial crisis in their home country, non-banks further reduce their credit provision abroad, and do so more than banks. Such retrenchment, so far established for banks only (Giannetti and Laeven (2012)), suggests that non-banks transmit financial shocks across countries.

The rest of this article is organised as follows. The first section discusses the main features of syndicated lending and the classification of lenders into banks and non-banks (Box A). The second section documents patterns in non-bank syndicated lending across countries, industrial sectors and over time. The third discusses differences in loan terms and borrower characteristics between banks and non-bank lenders, assessing to what extent they explain loan spreads. The fourth section investigates how non-banks adjust their lending in foreign and domestic markets during domestic financial crises, with details summarised in Box B. The final section concludes with policy considerations.

The syndicated loan market and non-bank lenders

Syndicated loans are an important financing source for non-financial firms. They represent around three quarters of total cross-border lending to NFCs in high- and middle-income countries (Doerr and Schaz (2021)) and are particularly important for

larger firms (Cerutti et al (2015)). Consequently, changes in the supply of syndicated credit influence firm investment and employment (Acharya et al (2018)).[3]

A syndicated loan is granted by a group of financial institutions (the "syndicate") to a single borrower. The lending syndicate includes at least one lead institution (the "lead arranger(s)", sometimes called "underwriter(s)") as well as one or more participants. Lead arrangers negotiate preliminary loan terms and conditions and, upon agreement with the borrower, put together the group of participants to fund parts of the total loan amount. In return, lead arrangers receive an arrangement fee (Gadanecz (2004)).

In the loan's life cycle, lead arrangers typically act as the agent bank and perform due diligence. They ensure screening and monitoring, govern the terms of the loans and enforce covenants. In line with their responsibility as monitors, lead arrangers retain a larger portion of the loan on their balance sheets, while participants often sell their tranches on the secondary market (Sufi (2007)).

This feature analyses loan originations using detailed deal-level data on global syndicated lending from Thomson Reuters' DealScan. The sample period is from 1990 to 2019. Information on loans at origination includes the loan amount, maturity, currency of denomination and interest rate, as well as the identity, type, location and industry code of borrowers and lenders (banks as well as non-banks). All loan amounts are converted to US dollars. To attribute loan portions among members, we use the allocation provided by DealScan or, if this is not available, allocate pro rata. Henceforth, we will refer to the syndicated loan amounts attributed at origination to banks or non-banks as "bank loans" or "non-bank loans", respectively. There is no public information to track loan sales on the secondary market.[4]

We identify non-bank lenders based on information provided by DealScan, in combination with Standard Industrial Classification codes, string search and manual checks. In our sample, non-bank lenders include investment banks (or broker-dealers), finance companies and mutual funds – in line with the categorisation used by the Financial Stability Board (2021).[5] Investment banks and finance companies account for over four fifths of aggregate non-bank syndicated lending.

Non-bank lenders have gained a large footprint in the syndicated loan market and their participation is now comparable with that of banks along important dimensions. The share of all loan facilities with non-bank involvement exceeds one third. Around two fifths of all non-bank lenders active in the syndicated loan market act as lead arrangers, a share similar to that of banks. Likewise, individual members of both types contribute comparable shares to the total syndicated amount on average and extend loans for similar purposes (eg working capital, debt repayment

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[3]   For the real effects of bank syndicated lending, see also Doerr et al (2018), Hale et al (2020) and Chodorow-Reich and Falato (2022). These papers build on work showing that lender-borrower relationships are sticky and that the costs of switching between lenders are high, especially during downturns (Sette and Gobbi (2015), Bolton et al (2016)).

[4]   While such information is important to accurately assess lenders' risk exposures, it is less relevant for understanding patterns in the origination of *new* credit, which is key from the borrower's perspective and is the focus of this special feature. That said, non-banks purchase a significant amount of loans in the secondary market (Aramonte et al (2019)). Accordingly, loan volumes at origination probably represent a lower bound of the ultimate financing provided by non-banks to NFCs.

[5]   Broadly speaking, non-bank lenders differ from banks in their funding structure and their lack of access to public backstops. For example, their funding tends to be largely wholesale (Jiang et al (2020), Xiao (2020)) and they are not eligible for deposit insurance. There is, however, no harmonised or universally accepted definition of non-bank lenders.

or capital expenditure). That said, credit lines are more common among banks at origination and term loans are more common among non-banks.

Box A presents further details on the data construction, classification of banks and non-bank lenders, and their role in syndicates.

Identifying non-bank lenders in the syndicated loan market

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For the analysis of the syndicated loan market, we categorise lenders into banks and non-banks. This box outlines the two underlying steps.[1]

First, we build on lender type information provided by DealScan. Consistent with the notion of banks representing deposit-taking institutions, we define bank lenders as commercial banks, classified by DealScan as "African bank", "Asia-Pacific bank", "Eastern European/Russian bank", "foreign bank", "Middle Eastern bank", "mortgage bank", "thrift/S&L", "US bank" or "Western European bank". Non-banks comprise the remaining lenders. Around 20% of lenders, however, are initially unclassified.

In a second step, we improve on this classification by using lenders' Standard Industrial Classification (SIC) sector codes as well as a string search procedure.[2] In particular, we look for matches with names of major commercial banks, descriptions of activities (such as "bank", "life insurance", "trust" and "securities"), or variants of spelling in different languages (eg "banca", "banco", "banque"). These procedures allow us to categorise around three quarters of the originally unclassified lenders, splitting them roughly equally between the bank and non-bank groups. We allocate the still unclassified lenders, mostly middle-market debt management companies, to the non-bank category. Ultimately, we classify almost 7,500 lenders as non-banks, out of a total of 19,000 lenders.
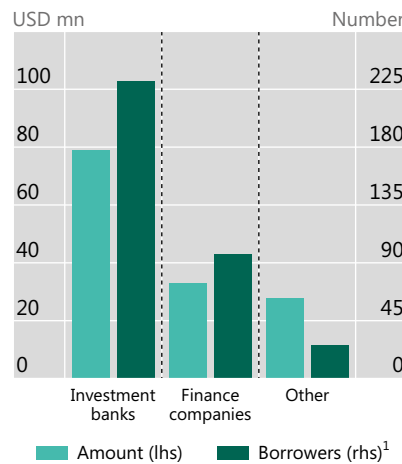
Different types of non-bank lender in the syndicated loan market   Graph A
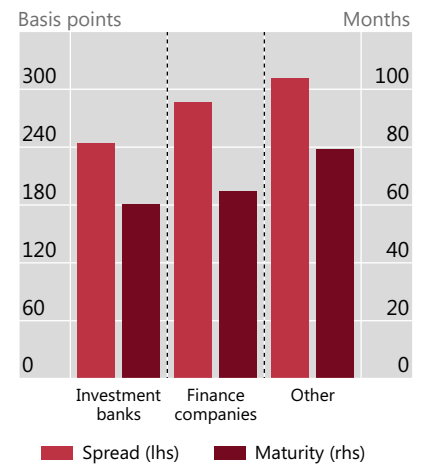

Investment banks dominate non-bank lending volumes…
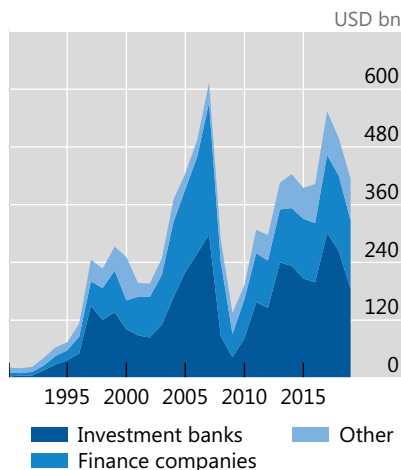
…serving more borrowers than other non-banks, and with larger amounts

Other key loan terms do not differ much across non-bank lenders[2]

The centre and right-hand panels show average results for the full sample (1990–2019).

[1] Number of distinct borrowers in a given year.   [2] Spread and maturity are winsorised at the 1st and 99th percentiles. The spread refers to the all-in drawn spread, weighted by loan volume.

Sources: Thomson Reuters DealScan; authors' calculations.

Finance companies and investment banks account for the bulk of non-bank syndicated lending. While only 3% of non-bank lenders are investment banks, these account for around half of the total amount of non-bank lending to NFCs from 1990 to 2019 (Graph A, left-hand panel). This group of non-bank lenders can include, among others, brokerage and securities underwriting firms or an international bank's broker-dealer subsidiary. Finance companies, in turn, comprise 44% of the non-bank lenders and account for 34% of total non-bank lending. This group can include financial institutions that specialise in industrial loans or the financial arms of large companies. Other lenders, such as insurance companies, pension funds and mutual funds, have a small presence in the primary market for syndicated loans in the data. Over the sample period (1990–2019), investment banks served more clients and extended larger loans than did finance companies and other non-bank lenders (centre panel). Loan spreads and maturities were of comparable magnitude across non-bank lender types (right-hand panel).

Non-banks participate in a significant number of syndicated loans, contributing – at the level of individual lenders – similar amounts to syndications as banks, and often acting as lead arrangers. Overall, the share of loan facilities with non-bank involvement is 37%, vs 88% with bank involvement. Individual non-bank syndicate members account, on average, for 19% of the total syndication amount in a given syndicate, vs 17% for banks. On average, 36% of all non-banks active in the syndicated loan market have acted as lead arrangers at least once, compared with 42% for banks. While 72% of all syndicates have only bank lead arrangers, just 7% of all loans are arranged by non-banks exclusively. These patterns are similar across deals involving borrowers in advanced vs emerging market economies (EMEs).

When it comes to the type of loan and loan purpose, patterns are broadly comparable between non-banks and banks. Credit lines comprise 41% and term loans 48% of all non-bank loans, compared with 50% and 40% for banks.[3] For both lender types, term loans are more common among EME borrowers. As regards loan purposes, there are no significant differences, with "corporate purposes" and "debt repayment" dominating for both banks and non-banks.

[1] Prior to the classification, we drop incomplete deals and those involving government-linked lenders. In particular, we drop deals with the status "cancelled", "suspended" or "rumour", and deals with missing information on amounts and loan packages that amend previous deals. We further drop deals involving supranational organisations, governments and development banks based on string matches and SIC codes. In cases where only the aggregate size of the loan is known or for loan facilities with lending shares totalling more than 110%, we impute the lending share of each participant using pro rata splits.   [2] For instance, we assign lenders with SIC code 6211 ("Security brokers, dealers, and flotation companies"), classified as commercial banks by DealScan, to the non-bank group. This is in line with policy practice (Financial Stability Board (2021)) and academic literature (Elliott et al (2021)).   [3] Other types include bridge loans or leases.

# Patterns in non-bank syndicated lending

Non-bank syndicated lending has grown with the overall market, both domestically and internationally. Total new syndicated lending to NFCs increased substantially, from under $300 billion originated in 1990 to around $4,750 billion in 2019. Non-bank lending increased from $20 billion to $410 billion per year over the same period (Graph 1, left-hand panel). Its share of total loan originations steadily increased to around 14% in 2007 but contracted sharply during the GFC. This share trended up again from 2010 to 2019. Foreign loans, ie loans to borrowers located in a jurisdiction other than the lender's home country, follow a similar pattern, albeit at a lower level.

Growth in non-bank syndicated lending is more volatile than that of banks. On average across borrower countries, the standard deviation of the growth in loan origination is almost 60% higher for non-bank than bank loans (Graph 1, centre panel). While the volatility is in general higher for emerging market economy (EME) borrowers than for those from advanced economies (AEs), non-bank lending is more volatile than bank lending in both regions. Higher volatility meant greater procyclicality during the GFC, when non-banks cut their syndicated loan origination by twice as much as banks, in a pattern typical for crisis times (Fleckenstein et al (2021), Aldasoro et al (2022b)).
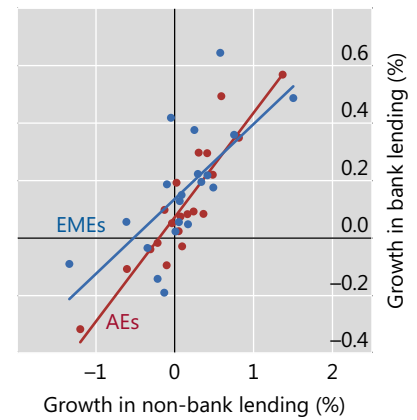
Non-bank syndicated lending to non-financial corporates

Graph 1

Volumes and shares of total syndicated lending
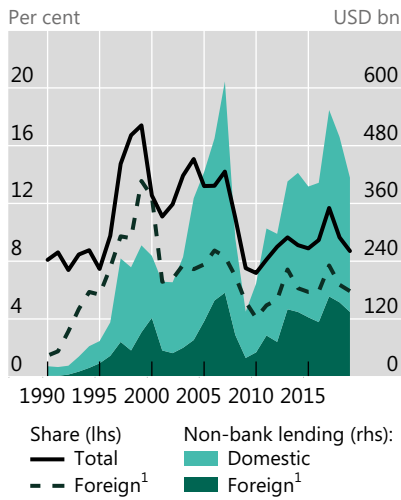
Lending by non-banks is more volatile than that of banks...[2,3]
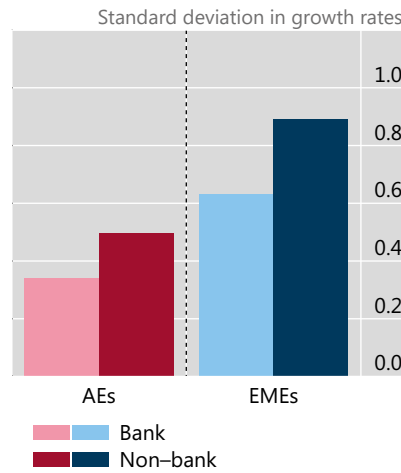
...but growth in non-bank and bank lending is strongly correlated[2,4]

AEs= advanced economies; EMEs= emerging market economies.

[1] A loan is classified as foreign if the location of the lender's headquarters differs from that of the borrower.   [2] Data are aggregated to the borrower-country-year level and split by the region of the borrower. The underlying sample covers 1,863 borrower-country-year observations from 119 countries from 1990 to 2019. Loan growth is computed as the difference in the logs of loan origination volumes and is winsorised at the 1st and 99th percentiles.   [3] Standard deviation of loan growth from 1990 to 2019, averages across borrower countries within a group, for a given lender type.   [4] Binned scatter plot, which enhances readability by grouping observations into equally spaced bins and reporting the average value within each bin; region-specific fitted lines.

Sources: Thomson Reuters DealScan; authors' calculations.

Differences in volatilities notwithstanding, bank and non-bank lending move in tandem, especially for loans granted to borrowers from AEs. The overall correlation between bank and non-bank loan growth stands at 0.50 on average across borrower countries. For loans granted to NFCs in EMEs, the correlation is 0.36, whereas it is 0.54 in AEs (Graph 1, right-hand panel). Together with the greater volatility in loan originations, this positive correlation casts doubt on the notion that non-banks provide a "spare tyre" for borrowers when banks retrench.

Non-banks serve firms in all regions and sectors. In terms of geographical reach over the full sample period, the share of non-bank loans in total loans is largest in South Asia and that in foreign loans is largest in East Asia and the Pacific (Graph 2, left-hand panel). Among the major economies, the share of syndicated borrowing from non-banks averages 14% for the United States and 3% for China. In terms of sectoral presence, the average share of non-bank loans in total new syndicated lending ranges from 6.4% in the construction sector to 14.2% in services (centre panel).

Despite their global presence, non-banks' origination of loans is more concentrated than that of banks. The average non-bank serves fewer distinct borrowers than the average bank (around 330 vs 740 per year) and does so in a narrower set of regions and sectors. Accordingly, loan origination by non-banks is more concentrated across borrower countries and industries (Graph 2, right-hand panel).

Non-bank lending is pervasive but less diversified than bank lending

Graph 2

On aggregate, non-banks serve non-financial corporates in all regions...

...and all major sectors...

...but individual lenders' loan origination is more concentrated

Per cent | Per cent | HHI
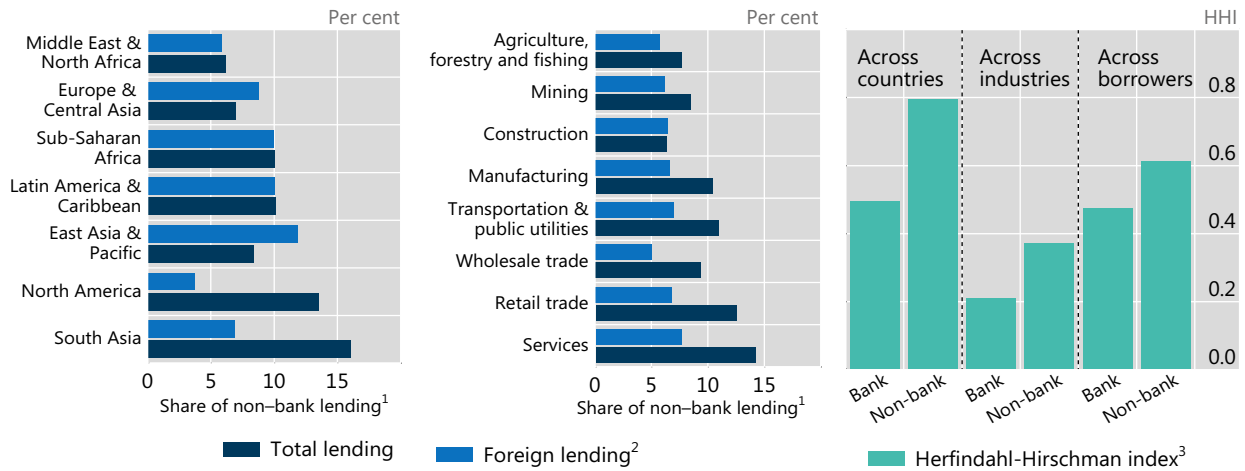
Average results for the full sample (1990–2019).

[1] Total amount of syndicated loans originated by non-bank lenders over the total origination amount of syndicated loans in the borrower region/industry. [2] A loan is classified as foreign if the locations of the lender parent and the borrower differ. [3] Averaged Herfindahl-Hirschman index (HHI) calculated for each lender across all borrower countries, two-digit borrower industries, and individual borrowers, respectively.

Sources: Thomson Reuters DealScan; World Bank; authors' calculations.

Loan terms and borrower characteristics

We first provide a comparison of banks' and non-banks' borrower characteristics and syndicated loan terms. Then, motivated by the patterns thus revealed, we zoom in on potential drivers of the notable difference in loan spreads.

Loans with non-bank participation carry materially higher spreads than those with bank participation only. The average all-in spread, defined as the annual spread over Libor, including fees and interests and weighted by loan size, equals 253 basis points on syndicated loans with non-bank involvement, vastly exceeding that on bank-only loans (170 basis points). While average spreads trended upwards until 2010 and receded somewhat since then for both lender types, the difference in loan spreads has remained relatively constant (Graph 3, left-hand panel). These patterns are robust to zooming in on lead arrangers only.

Banks and non-banks originate loans of similar amounts and maturity. The average loan amount granted by banks stands at $44 million, roughly the same as the $42 million granted by non-bank lenders (Graph 3, right-hand panel). The corresponding maturities are also similar, at 60 and 55 months respectively. Again, the patterns persist when considering lead arrangers only.

Non-bank loans carry higher spreads, but are of similar amount and maturity

Graph 3

Non-bank loans carry higher spreads...[1]

...but banks and non-banks extend loans of similar amount and maturity
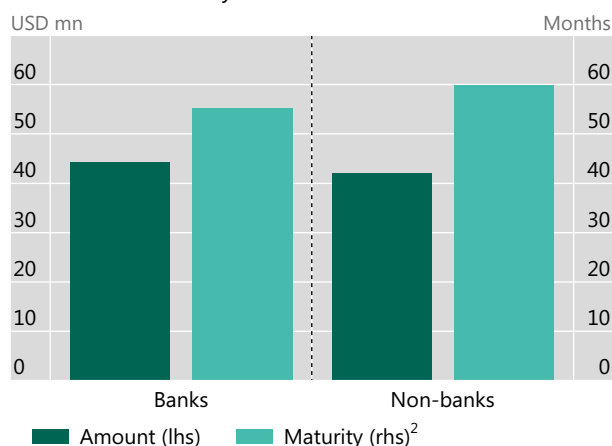
Average results for the full sample (1990–2019) are shown in the right-hand panel.

[1] "All-in drawn spread", defined as the spread over Libor, including fees and interests.   [2] Averages weighted by loan size.

Sources: Thomson Reuters DealScan; authors' calculations.

By contrast, firms borrowing from syndicates with non-bank lenders appear to be riskier.[6] The average firm receiving syndicated credit from non-banks has a lower return on assets, higher leverage and a lower interest coverage ratio than firms obtaining syndicated loans from banks only (Table 1). Unreported tests show that these differences remain material even among firms of similar size and operating in the same location and industry. They are also present when we classify firms by their connection to bank or non-bank lead arrangers.

Firms borrowing from non-banks have lower returns and higher leverage

Table 1

	Assets (USD mn)	Employees ('000)	Interest coverage ratio	Leverage (ratio)	Return on assets (%)
Borrows from banks only	5,180	13.65	22.81	1.92	6.42
Borrows from non-banks	10,703	24.99	12.48	2.61	6.01

The table compares non-financial corporates (NFCs) that borrow only from banks with NFCs that borrow from at least one non-bank lender on the syndicated loan market. Assets are in USD millions. Employees are in thousands. The interest rate coverage ratio is computed as earnings over interest expenses. Leverage is defined as the sum of long-term debt and current liabilities over total equity. Return on assets is defined as operating income net of depreciation over total assets, in per cent. The sample covers 14,443 unique NFCs with 56,295 borrower-year observations in total. The sample period is from 1990 to 2019.

Sources: Chava and Roberts (2008); S&P Compustat; Thomson Reuters DealScan; authors' calculations.

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[6]   We link the DealScan data set to balance sheet data on listed firms from Compustat Global and North America following the updated matching table of Chava and Roberts (2008). Around 40% of all observations are matched, as not all borrowing firms are covered in Compustat. Firms borrowing from at least one non-bank in a given year account for 19,500 firm-year observations. The small sample of firms borrowing exclusively from non-banks (ca 2,500 observations) exhibits similar patterns in the measures of risk. Among firms with credit ratings, the share rated high-yield is significantly higher for NFCs borrowing from non-banks.

We now examine to what extent loan and borrower characteristics drive the spread differential in a regression analysis. The analysis focuses on lead arrangers as they negotiate loan terms and usually contribute material shares to the syndication amount.

Loan characteristics explain only a small part of the spread differential. We start by recording that the average loan spread on loans with non-bank arrangers is 84 basis points higher than on those without (Table 2, column 1). Accounting for loan amounts, maturity and loan currency narrows the gap only marginally, to 77 basis points (column 2). This is consistent with the earlier finding that loan terms are broadly comparable across lender types.

Borrower characteristics, on the other hand, explain a significant fraction of the higher spread on loans arranged by non-banks. Accounting for borrowers' country and industry as well as the year of origination reduces the difference by one third, to 50 basis points (Table 2, column 3). Further considering differences in borrower characteristics such as size, profitability and leverage halves the remaining difference

Borrower characteristics largely account for higher spreads on non-bank loans				Table 2
	(1)	(2)	(3)	(4)
Dependent variable:	Spread	Spread	Spread	Spread
Non-bank	83.981***	76.832***	49.536**	26.883**
	(20.911)	(19.240)	(19.966)	(11.749)
Loan maturity		37.339***	35.748***	16.066***
		(3.915)	(3.101)	(1.599)
Loan amount		−14.311***	−20.571***	−7.674***
		(2.190)	(1.833)	(1.456)
Size				−23.015***
				(1.068)
Return on assets				−345.909***
				(19.293)
Leverage				5.282***
				(0.200)
Interest coverage ratio				−0.108***
				(0.028)
Currency fixed effects (FEs)	No	Yes	Yes	Yes
Country-industry-year FEs	No	No	Yes	Yes
Number of observations	379,516	379,516	379,516	130,559
R-squared	0.039	0.100	0.483	0.608

Observations are at the lender-borrower-year level and the sample is restricted to lead arrangers. The dependent variable is the all-in spread, defined as the spread over Libor, including fees and interests. It is winsorised at the 1st and 99th percentiles. Column (1) includes the dummy *non-bank*, which takes on a value of one if the lender is a non-bank. Column (2) adds the logarithm of loan maturity in months (*loan maturity*) and the logarithm of loan amount in million US dollars (*loan amount*), as well as currency fixed effects. Column (3) adds borrower country-industry-year fixed effects. Finally, column (4) adds borrower-specific balance sheet controls obtained from Compustat (see the notes of Table 1 for variable definitions). The reduction in sample size in this last column is due to the unavailability of balance sheet data for some of the firms borrowing in the syndicated loan market. Standard errors are clustered at the lender level. ***/**/* indicates statistical significance at the 1/5/10% level. The sample period is from 1990 to 2019.

Sources: S&P Compustat; Thomson Reuters DealScan; authors' calculations.

to 27 basis points (column 4). Thus, borrower riskiness is a key driver of the spread differential.[7]

The remaining difference in loan spreads between bank and non-bank arrangers could be explained by lender-specific factors. For example, a closer lender-borrower relationship has been shown to lead to higher spreads to compensate for better access to credit during shocks (Bolton et al (2016)). Lower geographical diversification has also been associated with higher spreads (Keil and Müller (2020)). Further, a higher market share in a sector could allow lenders to charge relatively higher interest rates (De Jonghe et al (2020)). Exploring these dimensions in the context of non-banks would be an interesting avenue for future work.

Non-banks and the global transmission of shocks

Non-banks' large global footprint could have implications for shock transmission across borders. As the volume of non-banks' syndicated lending expanded, so did the attendant share of credit to foreign borrowers, from 3% for the average lender in the early 1990s to 11% in 2019 (Graph 4, left-hand panel). This share is even higher for larger lenders. A retrenchment of such international presence could have material implications in the borrower countries.

To investigate how non-banks' global lending responds to negative shocks, we analyse whether non-bank lenders exhibit a "flight home" effect. So far established for banks only, this effect refers to banks cutting their lending in foreign markets by more than they do in their domestic market following a financial crisis in their home country (Giannetti and Laeven (2012)). The relative retrenchment has been shown to be stronger for banks with higher exposure to risky clients and less stable funding sources.

Non-banks are likely to exhibit a more pronounced flight home effect relative to banks. Not only do non-banks serve riskier borrowers, but they also rely more on wholesale funding (Jiang et al (2020), Fleckenstein et al (2021)). Such funding is more sensitive to price changes than retail deposits are, and makes lenders – non-banks and banks alike (Aldasoro et al (2022a)) – more vulnerable to negative liquidity shocks (Demirgüç-Kunt and Huizinga (2010), Ivashina and Scharfstein (2010)).

We find that, during a financial crisis in their home country, non-bank lead arrangers reduce the share of loans to foreign borrowers by more than bank lead arrangers.[8] Both banks and non-banks curtail credit to foreign borrowers by more

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[7]   Results are qualitatively similar when all syndicate participants are included (the coefficient estimates on the dummy variable *non-bank* are 83 basis points, 72 basis points, 50 basis points and 30 basis points in columns 1, 2, 3 and 4, respectively). They are similarly robust in regressions weighted by each lender's contribution to the total syndicated amount (105 basis points, 95 basis points, 66 basis points and 50 basis points in columns 1, 2, 3 and 4, respectively). Re-classifying investment banks as banks results in coefficient estimates of 80 basis points, 69 basis points, 50 basis points and 29 basis points. Finally, comparing loans exclusively arranged by non-banks (7% of all loans) with those arranged by banks only (72%) yields coefficient estimates of 163 basis points, 151 basis points, 115 basis points and 76 basis points. The robust effect of borrower characteristics on spread differentials is in line with evidence for mid-sized US companies (Chernenko et al (2021)).

[8]   In terms of total lending, banks and non-bank lenders reduce their loan origination by a respective 3.3% and 5.4% during domestic crises. For the identification of financial crises, we rely on Laeven and Valencia (2020). The two conditions defining a banking crisis are significant signs of financial distress

than to domestic ones, even after controlling for crises in foreign countries. However, while the share of new loans to foreign borrowers declines by 7.3 percentage points for banks, it falls by 18.2 percentage points for non-banks (Graph 4, right-hand panel). Box B provides details of the estimation.

The relative retrenchment is more pronounced for non-bank lending to risky borrowers and among non-banks with less stable funding. Non-banks contract their share of foreign loans by 22 percentage points when considering only the subset of risky borrowers, defined as those obtaining loans with a spread above the yearly industry median. Excluding investment banks, in turn, leads to a decline of 26.5 percentage points. This may reflect the fact that some investment banks tend to have more stable funding than other types of non-bank lender (eg when they are part of a bank holding company).
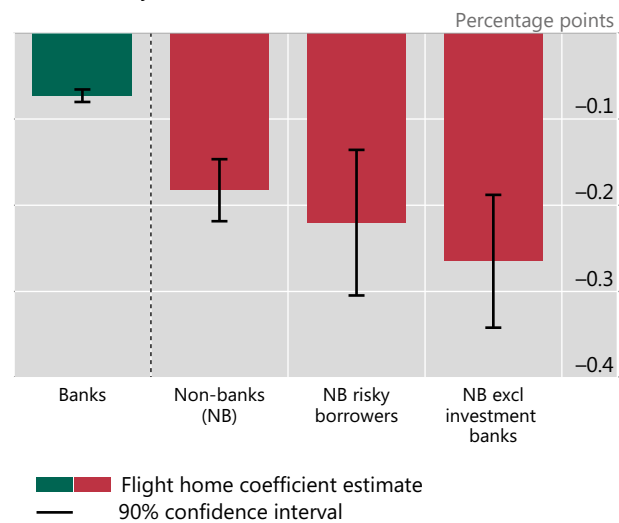
These findings suggest that non-banks transmit financial shocks across countries, and by more than banks do. As a large literature has found that contractions in syndicated lending reduce firm investment and employment,[9] non-banks' retrenchment is likely to have consequences for the real economy.

Non-banks have a stronger home bias that strengthens during a domestic crisis Graph 4

Non-banks increased lending to foreign firms, but less so than banks[1]
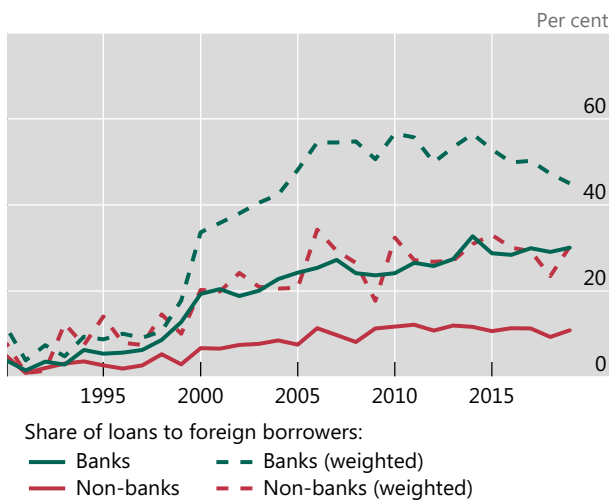
During domestic crises, non-banks cut credit to foreign borrowers by more than banks[2]

Share of loans to foreign borrowers:
— Banks – – Banks (weighted)
— Non-banks – – Non-banks (weighted)

Flight home coefficient estimate
— 90% confidence interval

[1] Average share of new loans extended to foreign borrowers. "Weighted" refers to the weighted average, with weights given by the total syndicated loan amount originated by a lender in a given year. [2] Based on lender parent-borrower country-year level panel regressions for lead arrangers only. The dependent variable captures the share of new loans by lender l in country c in quarter t out of total new syndication by that lender in that quarter. It is regressed against the dummy *foreign loan* that equals one if the location of the arranger's headquarters differs from the location of the borrower, as well as the interaction of *foreign loan* with *crisis lender country* that captures financial crises in the arranger's home country. The displayed coefficients are those on the explanatory variable *foreign loan X crisis lender country*. Regressions control for the effect of borrower country crises on foreign loans as well as the (logarithm of) the lender country-specific loan spread and include time-varying borrower country fixed effects. "Banks" and "non-banks" refer to coefficients obtained from separate regressions for bank and non-bank lead arrangers. "Risky borrowers" focuses on lending by non-bank arrangers to borrowers obtaining loans with a spread above the yearly industry median. "Excl investment banks" excludes investment banks from the sample of non-bank arrangers. The sample period is from 1990 to 2019.

Sources: Laeven and Valencia (2020); Thomson Reuters DealScan; authors' calculations.

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in the banking system and significant banking policy intervention measures in response to losses in the banking system.

[9] See above for the real effects of bank syndicated lending. Elliott et al (2019, 2021) and Aldasoro et al (2022b) establish the real effects of non-bank syndicated lending.

The flight home effect among non-bank lenders

Iñaki Aldasoro, Sebastian Doerr and Haonan Zhou ①

In this box, we investigate the flight home effect (FHE) among non-banks. The FHE refers to the finding in Giannetti and Laeven (2012) that, during financial crises in their home country, lead arranger banks cut lending to foreign borrowers by more than they did to domestic borrowers. Giannetti and Laeven also find that the effect is driven by banks that are more exposed to riskier borrowers and with more volatile funding.

Following the methodology in Giannetti and Laeven, we estimate regressions at the lender parent-borrower country-quarter level. We do so *separately* for bank and non-bank lead arrangers:

$$loan\ share_{lct} = \alpha_1 foreign\ loan_{lc} + \alpha_2 foreign\ loan_{lc} \times crisis\ lender\ country_{lt} + \theta_c + \tau_t + controls + \epsilon_{lct}. \quad (1)$$

The dependent variable captures the share of new loans by lender l in country c in quarter t out of total new syndication by that lender in that quarter. Using the share as a dependent variable has the benefit that it is unaffected by shocks changing the lender's overall supply of loans. Instead, it captures the allocation of a lender's new loans to domestic and foreign markets in response to changes in economic conditions. *Foreign loan* is a dummy variable that equals one if the location of the arranger's headquarters differs from the borrower's, and zero otherwise. *Crisis lender country* captures financial crises in the arranger's home country, obtained from Laeven and Valencia (2020).

The interpretation of the key coefficients is as follows. The coefficient α_1 indicates whether lenders systematically issue a higher or lower share of their new loans to the average foreign country, relative to their home country. The coefficient α_2 captures the FHE. A negative estimate suggests that lenders reduce lending to foreign borrowers relative to domestic borrowers when their home country experiences a crisis. A higher absolute value of α_2 indicates a more pronounced FHE.

The flight home effect is stronger for non-bank lenders

Table B

Sample:	(1) Banks	(2) Non-banks (NB)	(3) NB risky borrowers	(4) NB excl investment banks	(5) NB excl GFC
Dependent variable:	Loan share	Loan share	Loan share	Loan share	Loan share
Foreign loan (FL)	–0.422***	–0.328***	–0.224***	–0.343***	–0.326***
	(0.004)	(0.015)	(0.017)	(0.019)	(0.016)
FL X crisis lender country	–0.073***	–0.182***	–0.220***	–0.265***	–0.178***
	(0.006)	(0.028)	(0.043)	(0.039)	(0.033)
Number of observations	53,987	7,479	5,066	5,205	6,916
R-squared	0.513	0.670	0.643	0.684	0.669

The dependent variable in all regressions is *loan share*, defined as the share of new syndicated loans by lender l in country c in quarter t out of total new syndication by that lender in that quarter. *Foreign loan* is a dummy variable that takes on a value of one if the location of the lender's headquarters differs from that of the borrower, and zero otherwise. *Crisis lender country* refers to a financial crisis in the home country of the lender. All columns include borrower country-time fixed effects, an interaction term of *foreign loan* with the dummy *crisis in borrower country* and the log of the lender-borrower country-specific spread. In column (3), *risky borrowers* are defined as those borrowing at prices above the industry median in any given year. Column (4) excludes investment banks from the group of non-bank lenders. Column (5) excludes the Great Financial Crisis (GFC) from the sample. Standard errors are robust. ***/**/* indicates statistical significance at the 1/5/10% level. The sample period is from 1990 to 2019 and focuses on lead arrangers only.

Sources: Laeven and Valencia (2020); Thomson Reuters DealScan; authors' calculations.

The allocation of new loans could also be affected by crises in borrower countries, and more broadly by changes in demand. We control for the differential effect of borrower country crises on foreign loans directly by interacting *foreign loan* with a dummy for crisis years in borrower countries, which implies that the coefficient α_2 reflects relative changes in lending to foreign countries after accounting for the effects of crises there. To account for demand shocks and borrower risk, regressions include time-varying borrower country fixed effects, and control for the (logarithm of) the median lender country-specific loan spread. However, we cannot fully account for (unobservable) changes in borrowers' loan demand, which could also be affected by crises outside the borrower country. Estimated coefficients hence reflect lender characteristics, but also differences in the pool of borrowers within a country. That said, a domestic financial crisis is likely to have a stronger effect on the performance – and hence loan demand – of domestic borrowers compared with foreign borrower countries, implying an attenuation bias in the estimates.

Results in Table B show that the FHE is stronger for non-bank arrangers. Column (1) first shows a FHE among lead arrangers that are banks, with estimates quantitatively similar to those in Giannetti and Laeven. In column (2) we estimate the same specification for non-bank arrangers. As indicated by the point estimate of α_1, the average difference in the shares of new loans between foreign and domestic countries is larger for banks than non-banks (42.2 percentage points vs 32.8 percentage points). More importantly, the FHE is stronger for non-bank arrangers (α_2 of 18.2 percentage points vs 7.3 percentage points for banks). In column (3) we show that the FHE becomes more pronounced when considering only the subset of riskier borrowers, defined as those obtaining loans with a spread above the yearly industry median. Column (4) shows that results strengthen further when excluding investment banks, which could have more stable funding than other non-banks. Finally, the results are also robust to excluding the Great Financial Crisis in column (5).[2]

[1] The views expressed in this box are those of the authors and do not necessarily reflect those of the BIS. [2] In unreported regressions, we find that the existence of a stronger flight home effect for non-banks is also robust to the exclusion of the euro zone crisis, as well as the exclusion of different regions and countries that are home to a significant number of non-bank lenders (eg Japan, the United Kingdom and the United States).

Conclusion

Policymakers have so far mostly focused on the role of non-banks during severe market stress. Yet, non-banks are also important providers of credit to non-financial corporates across the globe. Indeed, this feature finds that, relative to banks, non-banks lend to a riskier pool of borrowers. To the extent that such firms have limited access to financing (Chernenko et al (2021)), non-bank lenders contribute to a more diversified and efficient financial system. That said, the global footprint of non-bank lenders may be a destabilising force. Not only is their credit provision more volatile, possibly reflecting their greater reliance on wholesale funding, but it is also more concentrated than that of banks. The resulting procyclicality of non-bank lending warrants continued analysis, as does the tendency of non-bank lenders to transmit shocks across borders to a larger extent than banks do.

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