

Who owns banks? The household-bank nexus and its implications for bank stock prices



By Matías Lamas and David Martínez-Miera^{1, 2}

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In a recent study we analyze the evolution and price implications of households' (HH) holdings of stocks, using detailed information on the universe of publicly traded stocks in the euro area and aggregate sectorial ownership. The main results of this empirical work are threefold: (i) HH direct holdings represent a higher fraction of total ownership in domestic bank stocks than in non-financial corporations' (NFC) stocks; (ii) HH holdings of stocks increase (decrease) following a decline (increase) in the stock price, especially for domestic bank stocks; and (iii) an increase in domestic HH holdings is followed by future (persistent) increases in the price of NFC stocks, but not for bank stocks. Moreover, during equity issuances, an increase in the share of domestic HH holdings is followed by a future persistent decrease in the stock price of bank stocks, but not for NFC stocks. These results are consistent with HH being liquidity providers in the stock market and, at the same time, being less sophisticated and therefore less able to acquire and process information disseminated in the marketplace (information channel). This latter effect is more prevalent in domestic banks' stocks than in NFC, which we argue can be related to the close relationship between HH and banks.

¹ **Matías Lamas**, Banco de España; **David Martínez-Miera**, Universidad Carlos III de Madrid and Centre for Economic Policy Research.

² This note reflects our views and not necessarily the views of Banco de España or the Eurosystem. We appreciate the comments received from Carmen Broto, Javier Mencía and Carlos Pérez.

1. Introduction

According to the Securities Holdings Statistics by Sector (SHSS), a large repository of holdings of securities collected by the Eurosystem, households (HH) owned one tenth of the market capitalization of common stocks issued by euro area firms as of the end of 2017.³ To understand the role of HH in the stock market (as well as that of other investors), we analyze in a recent study the trading behavior of this sector, together with its implications for future price developments in stocks.⁴

We document three main findings:

(1) HH are major holders of bank stocks, and overweight bank stocks in their portfolios when compared to institutional investors. Interestingly, this is particularly the case when the residence of the HH coincides with that of the headquarter of the bank, which we refer to as domestic HH;

(2) HH are more prone than other sectors to purchase a stock following a price decline in the stock. Interestingly, we document that this behavior is more intense among domestic HH trading bank stocks.

(3) HH trading activity provides different signals about the future price developments of bank and non-financial corporation (NFC) stocks. An increase in the share of domestic HH holdings predicts future permanent increases in NFC stock prices, but this is not the case in bank stocks for which we document no increase in prices. Interestingly, we document that during equity issuances, a situation in which asymmetric information problems have been argued to be high,⁵ an increase in domestic HH holdings results in future stock price declines in bank stocks, but not in NFC stocks.

We argue that this latter set of results are suggestive of domestic households suffering from a (negative) information channel effect when trading bank stocks, as well as being affected by a liquidity channel effect.

Previous literature has documented that HH benefit from providing liquidity to other investors that demand immediacy (Kaniel et al., 2008) – the liquidity channel –. This results in HH investing when prices are declining due to liquidity tensions, and making a profit from such investment when liquidity tensions dissipate and stock prices recover. We argue that our results concerning HH investment in NFC stocks are consistent with the liquidity channel, but that this is not the case for HH investment in bank stock as higher HH investment does not predict future price increases (we study price effects for a period of eight quarters following the trade). In this study we highlight that there can also be another relevant channel at play – informational channel – that affects HH trading behavior and price developments, and that this channel can be especially relevant for bank stocks given the close relationship between HH and banks.

HH have been shown to be less sophisticated and less informed than other participants in the stock market (Barber and Odean, 2000 and Barber et al. 2009) and, hence, can be slower and less efficient in incorporating new information about stock fundamentals – information channel –. This information channel can be more relevant for domestic investors, as less sophisticated investors present a higher home bias (Karlsson and Norden 2007). Hence, the information channel can make HH more prone to buy stocks of their own country that, due to a negative information shock which HH do not fully incorporate, have a decline in their future price.

³ This fact, as well as the picture of holdings provided in section 2 has remained barely unchanged in recent years, including during the pandemic.

⁴ See Lamas and Martinez-Miera (2021) for a more in-depth analysis and the full set of results.

⁵ Chemmanur and Hu (2009) provide evidence consistent with institutional investors possessing private information during SEOs.

This information channel is likely to be more important when HH trade bank stocks, since HH acquiring these securities can be also customers of the bank. For these HH, bank stocks can be an attractive choice due to their closeness and familiarity with the credit institution issuing the stocks. Also, less sophisticated HH investors might be less prone to consider other stock investments, as that would entail additional search and learning costs. Finally, banks can play an important part in this relation, as not only do they offer investment advice in general, but also special conditions to HH if they invest in their own stocks (Hoechle et al. 2018).

The negative informational effects that HH face, that we argue are more pronounced than for other market participants, can explain both why domestic HH buy more bank stocks during price declines, and also why bank stocks underperform other segments of the stock market after HH gain share in the ownership of banks. Interestingly, this close relationship can also explain why domestic HH overweight bank stocks in their portfolios, in relation to other investors, a result that we also document in our study.

Overall, our findings point to the existence of both a liquidity channel and an information channel driving HH trading behavior. This has important implications. By providing liquidity to other market participants, HH can ease the impact on stock prices of liquidity-driven sell-offs. However, this can come at a financial cost for HH if such prices do not revert, a pattern that we document in the paper for bank stocks. Since domestic HH holdings increase during distress situations (when stock prices decline), and since equity issuances expose investors to informational asymmetries, which are especially difficult to process for HH, this sector might end up suffering from significant negative information effects, especially in the segment of bank stocks.

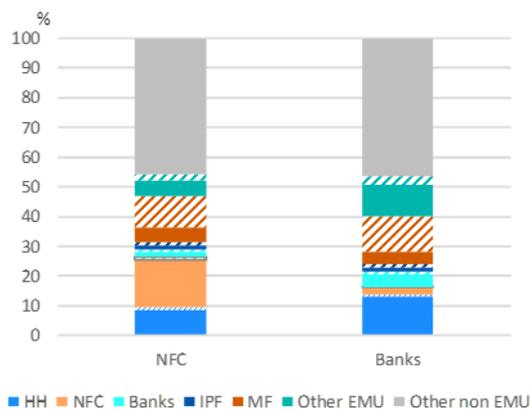
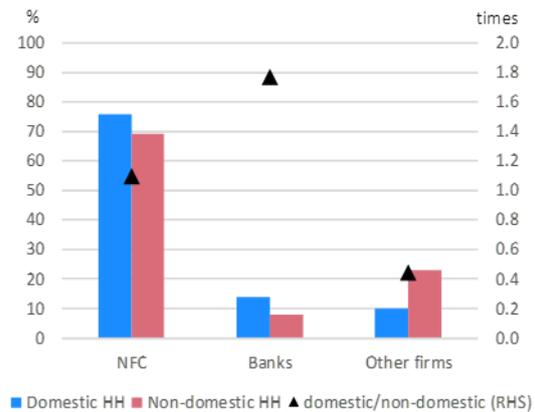
2. Who owns the stock market? Ownership in banks and in non-financial corporations

We first summarize the holdings of euro area common stocks as of the end of 2017 in Figure 1. We consider two types of issuers of stocks: NFC and banks, and six types of euro area-based holders: HH, NFC, Banks, insurance and pension funds (IPF), mutual funds (MF), and other holders (Other EMU). For each holder category, we differentiate between domestic investors (solid color), which are those who invest in stocks issued by a corporation of their own country (same residence), and non-domestic investors (gradient color). Given data limitations, investors based outside the euro area or unallocated are dubbed “Other non EMU” investors. The data source is the SHSS.⁶

Two issues merit attention. First, whereas non-retail investors hold the majority of common stocks issued by euro area corporations, HH are also important investors, especially in bank stocks. HH direct holdings of NFC shares represented close to 10% of the market capitalization of NFC at the end of 2017, and this share nears 14% in the case of bank stocks. The latter percentage is higher than that of institutional investors such as Banks or IPF, and comparable to that of MF based in the euro area.

Second, HH holdings are much more concentrated in domestic rather in non-domestic stocks, in line with HH exhibiting home bias. But this concentration is higher in banks than in NFC. The preference of HH for owning bank stocks of their own country is evident when looking at the distribution of holders in each equity segment: for domestic HH bank stocks represented 14.0% of their direct holdings in end-2017 versus 7.9% for non-domestic HH (Figure 2). Domestic HH also invest more in NFC stocks of their country, but differences are less pronounced than in the case of banks: for domestic HH NFC stocks represented 75.9% of their portfolio versus 69.3% for non-domestic HH.

⁶ We cover holdings of over 3,000 common stocks issued by euro area firms. The SHSS allows us to identify not only the holder sector (HH, NFC, Banks...) in each of these stocks, but also its country of residence.

Figure 1. Share of each investor in the market capitalization of NFCs and banks**Figure 2.** Distribution of households holdings in domestic and non-domestic equity

Source: SHSS. In figure 1, solid colors refer to domestic holders of the euro area, while colors with gradient effects refer to non-domestic holders of the euro area. There is no breakdown between domestic and non-domestic holders for the group “Other non EMU”. In figure 2, “domestic/non-domestic” stands for the ratio between the share of total holdings of domestic HH in each equity sector (NFC, banks, and other firms) and that of non-domestic HH. Other firms are financial firms excluding banks.

To sum up, HH are relevant players in the equity market, and especially in bank stocks. Provided that the exposure of HH to bank stocks is driven by the especial relationships between HH-banks, as many HH are clients of banks, HH may deal with bank stocks differently than with NFC shares, which may have incidence in the price performance of the former stocks.

3. What HH and other investors do with banks' stocks, and its implications for stock prices

3.A. Trading behavior of HH with bank stocks and with NFC stocks

In our study, we first explore how investors react to changes in the prices of stocks, with a focus on HH, who are major holders of bank stocks, as documented before. To perform this analysis, we pursue an identification strategy similar to that of Abassi et al (2016). Our objective is to test whether HH (and other market participants) buy or sell a given stock following a price increase/decrease, and if the pattern is the same for domestic and foreign investors when trading bank and NFC stocks.

The main findings of this exercise are:

- (1) After stock price declines, HH augment their holdings of such stock, consistent with the liquidity channel documented by Kaniel et al. (2008).
- (2) This effect is stronger when HH trade bank stocks than NFC stocks.
- (3) The previous effect becomes even more pronounced when HH share residence with the bank's headquarter, domestic HH. In particular, after a one standard deviation decline in the price of stocks (near -15%), domestic HH augment their holdings of NFC stocks by 0.5% in the following quarter. For the same price decline in banks, the increase in holdings is 2.5%.

This latter result is of particular interest. (Domestic) HH do not only purchase bank stocks after declines in prices, but augment their holdings of these shares more pronouncedly than with NFC stocks. This is difficult to attribute

to any informational advantage of these investors related to the situation of banks given that, on one hand, HH are (on average) not sophisticated and, on the other hand, that banks are normally large entities with a high degree of scrutiny in the marketplace. On the contrary, HH appear to be exposed to an information channel that, given the bank-HH relationship, is more present in bank than in NFC stocks.

Importantly for our narrative, we show in the paper that the trading behavior of institutional investors is very different from that of HH, as they trade in a similar way in NFC and bank stocks when there are declines in stock prices. This is consistent with these investors not suffering from the informational disadvantages of HH, and, as a consequence, being less likely to be influenced by the information channel.

3.B. Stock price implications of changes in HH ownership

Our previous results suggest that, on top of the liquidity channel by which HH increase holdings of stocks following liquidity tensions, an information channel arising from HH-bank relationships may also be driving the trading behavior of these investors. This can have implications for the evolution of prices in bank stocks. If HH are less efficient incorporating new information, then HH could be purchasing stocks that, due to a negative information shock (which HH do not fully incorporate), have a decline in their future price. In other words, provided that any given information shock is not instantaneously absorbed in the price of the stock, the price of stocks overweighed by HH could continue to decline in the future up to the moment in which the information is completely incorporated. The information channel is more likely to be prevalent for HH when they trade with banks, due to the HH-bank nexus.

To test the prevalence of the liquidity channel and the information channel we evaluate how stock prices perform when HH increase their ownership in banks and NFC, as both channels have different implication for the price of stocks.

We find that:

- (1) In line with the predictions of the liquidity channel, the price of NFC stocks increases in the future when the ownership of these firms shift towards HH.
- (2) In line with the existence of an information channel especially relevant for bank stocks, banks underperform NFC in the stock market when HH increase their ownership in banks. Specifically, an increase in the share of domestic HH holdings predicts future permanent increases in NFC stock prices, but this is not the case in bank stocks for which we document no such increase. Interestingly, if HH increase their ownership during a seasoned equity offering the price of bank stocks exhibits a permanent decline in the future, while this does not happen for NFC stocks.

Result (2) suggests the important role of the information channel in the formation of prices in the stock market. If less informed investors (HH) increase their exposure to bank stocks, meaning that more informed investors (institutional investors) diminish their share in total ownership, this suggests that the stock undergoes a negative information shock. This ultimately translates into price declines of that stock into the future. Importantly for our narrative about the relevance of the information channel, we show that these effects are stronger after seasoned equity offerings, which are periods of high informational asymmetries between the firm and its investors (Myers and Majluf, 1984 and Miller and Rock, 1985). Moreover, while this result holds for HH that share residence with the headquarters of the bank, i.e. those with a close tie to the bank, they do not hold for non-domestic HH or for institutional investors.

4. Conclusions

Our study suggests that, on top of the liquidity role that HH play in the stock market already documented in previous papers, HH are subject to (negative) informational effects in the stock market, which are important in the case of domestic bank stocks. We argue that this can happen because HH are not sophisticated investors and are thus less able to quickly process the information available in the market, and because of the close relationship between banks and HH (their clients). Unsophisticated HH investors are less likely to consider stock investments different from bank stocks, as they would involve additional search and learning costs. We document how these forces have implications for the trading behavior of HH (when comparing it to other sectors) and for the price developments of the stocks that these investors purchase. We document that the negative effects in future price developments related to an increase in domestic HH holdings are more pronounced during bank equity issuances, which are periods in which informational asymmetries are stronger.

As a consequence, we argue that stock and bank regulators should study the convenience of enhancing the price informativeness of bank stocks. Given the presence of the HH-bank nexus, banks could also contribute to this process, for instance, by providing more financial advice to their clients, which could ameliorate potential informational limitations faced by HH, in particular information asymmetries. ■

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About the authors

Matías Lamas is an economist in the Banco de España. Since 2016 he has been working at the Macroprudential Policy Division, in the DG Financial Stability, Regulation and Resolution. Before joining the central bank, he worked at a consulting firm based in Madrid that provides advisory, consultancy and training services in finance. His main areas of interest are Financial Economics and Real Estate Markets.

David Martinez-Miera is currently a Ramon y Cajal Associate Professor of Finance at UC3M Business Department. His main research interest is the analysis of the banking industry and its relation to the economy. His research has been published in leading academic journals such as *Econometrica*, *the Review of Financial Studies* or *the Review of Finance*.

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SUERF Secretariat
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Otto-Wagner-Platz 3
A-1090 Vienna, Austria
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