

Shadow banking in Spain

Orestes Collazo Brañanova

Credit intermediation

The normal functioning of an economy leads to a situation with some institutional units in possession of more funds than they want to spend and others with less. As long as there is a price such that these groups willingly exchange the funds across time, the economy will be better off. This exchange can be performed without intermediation. Savers transfer the funds directly to borrowers, which acquired the obligation to return them at an agreed price at a later date. However, direct lending between savers and borrowers has three mayor problems which reduce the execution of profitable exchanges. First, the risk that the borrower defaults on its obligation may be too high for a single saver, the so called credit risk problem. Secondly, the period of time for which the saver wishes to lend the funds must match that in which the borrower wishes to have them, the maturity problem. Finally, the saver may want to transform the obligations against the borrower into money before maturity and not be able to do so without a loss, the liquidity problem. Traditional credit intermediation, in which savers entrust their savings to banks¹ in the form of deposits which banks channel to borrowers, involves credit, liquidity and maturity transformation that solves these problems. Pooling a large number of credits creates risk economies of scale. The credit risk exposure for every single saver is reduced as all savers share the performance of all loans. Moreover, credit risk is further enhanced as banks have equity to partially cover losses from the loans, and can screen and monitor more efficiently borrowers. On the other hand, maturity match is not necessary as no funds of a single saver are linked to any loan; rather all deposits are pooled and partially used to finance the borrowers. But as the amount credited to borrowers is lower than the deposits taken from the savers, each single saver can withdraw the full amount of its funds without loss, solving the liquidity problem.

We have presented how traditional credit intermediation solves the problems associated with direct lending between savers and borrowers. In general, we call credit intermediation to the activity where credit risk, maturity or liquidity transformation occurs between the initial saver and the final borrower. In this broad sense, credit intermediation also includes the funds channeled as debt securities and not merely the intermediation instrumentalized as loans.

Originate-to-distribute credit intermediation

The traditional banking system just described – borrow short, lend long, and hold on to loans as an investment – in which the funds are channeled through a single institution now covers only a part of the credit intermediation process. A new process of credit intermediation has materialized as market forces, regulation and technology have evolved. The exponential increase of assets under management resulted in a larger demand for financial assets that brought specialized firms into the credit intermediation system which ended up increasing competition; changes in regulation governing capital requirements reduced the profitability of traditional banks; financial innovations such as securitization and credit risk transfer allowed the use of different tools along the credit intermediation process. As a consequence, the

¹ We use the term “bank” in a general sense, referring to any deposit taking institution.

economy moved from a deposit-funded single-intermediary originate-to-hold system, into a market-funded multiple-intermediaries originate-to-distribute system, which is structured in multiple sequential steps.² First credit is originated. When credit is instrumentalized as loans, these may be bought by loan warehouses which specialize on their trading and accumulate the credit risk. Ultimately financial vehicle corporations (FVCs) pool and, possibly, structure the financial assets into asset-backed securities (ABSs³). These securities may be bought by ABS warehouses which specialize on trading ABSs. FVCs may also buy ABSs from ABS warehouses or other FVCs, and then restructure those issuing ABS CDOs. Finally, ABSs are held by a number of different institutions from investment funds to special purpose entities as structured investment vehicles. Funding the above activities is heterogeneous and depends greatly in the type of entity involved, but can be divided in two broad categories, micro-funding where funds come from end-savers and wholesale-funding, where funds come from collective investment institutions.

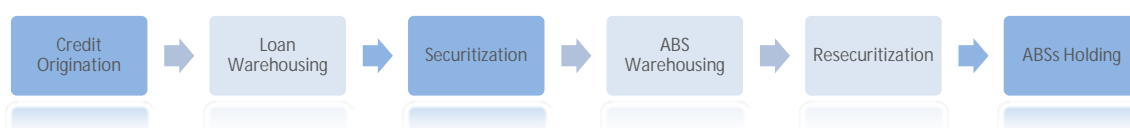


Figure 1. The originate-to-distribute credit intermediation process (Spanish main stages in darker blue)

Even when the originate-to-distribute model evolved from the traditional banking intermediation, banks do participate in this process at different stages. In addition, we have described this model as a series of stages, but not all these stages take place and some may be repeated several times. For example, a conduit could buy some loans originated by a bank and hold on to them. In this case the credit intermediation process would finish after two stages. However the conduit could sell them to a financial vehicle corporation (FVC) which issues ABSs which can then be multiple times restructured.

Shadow banking

The current financial crisis has driven much attention towards the credit intermediation developed off-banks' balance sheets. The term "shadow banking", coined by McCulley (2007), has been used to describe the miscellaneous activities involved in this process; however, no common definition has been drawn in the literature. Depending on the area of focus, several attempts have been proposed. Pozsar et al (2010) use a somehow narrow perspective of the concept. They consider shadow banking the credit intermediation activity that is not officially and explicitly enhanced. This is a sensible approach when one wants to focus on financial stability issues as they do. However it doesn't facilitate the international comparison of data as the enhancements greatly vary across nations. A more general approach is taken by Poschmann (2012) who identifies shadow banks with non-banks financial intermediaries in order to construct a typological framework to study the optimal size of the different types of financial intermediaries.

² Pozsar et al. (2010) describes in more detail these steps.

³ Here ABSs represent any securities issued in a securitization of first degree, where the assets securitized have not been previously securitized. Thus ABSs include residential and commercial mortgage-backed securities, consumer credit-backed securities, collateralized loan obligations, collateralized debt obligations (CDO) and synthetic CDO among others.

The traditional originate-to-hold and the more modern originate-to-distribute classify credit intermediation by how credit intermediation is performed. Along these lines, we define shadow banking as credit intermediation channeled through non-deposit taking institutions to explicitly separate credit intermediation by the entities involved. Also, notice that the originate-to-distribute model is not synonym of shadow banking; for instance, banks do participate in the former.

We have reached this definition by extending the main conceptual activity of banks to all other institutions, rather than focusing arbitrarily on a specific subsector of the economy. As a consequence, it includes a large area of the financial intermediation specter since most financial intermediaries perform some credit risk, maturity or liquidity transformation. Since there is no consensus on the definition of shadow banking, we will also provide a measure of a reduced shadow banking excluding the credit intermediation activity of investment funds, pension funds and insurance corporations, which is closer to the entities used to measure shadow banking in other studies.

Shadow banking in Spain

Spanish banks concentrate most credit intermediation in the form of traditional bank intermediation. Moreover, investment banking is integrated within commercial banks, thus capital requirements are applied to both activities jointly, reducing the size of shadow banking. Regarding shadow banking, the main activity in Spain is securitization, which is promoted and initiated by banks. The originate-to-distribute model is relatively small, both in terms of the funds channeled and the diversity of institutions and methods involved. Other sizable financial intermediaries are the issuers of preference shares; however we argue that they should not be accounted within the shadow banking system. Institutions of relative importance in other markets such as specialized credit institutions and money market funds (MMF) move a low volume of resources in Spain. Below, we discuss in more detail these elements of the shadow banking system.

Spanish securitization

Securitization is the major shadow banking activity in Spain with financial vehicle corporations (FVCs) carrying a balance sheet of 457 billion Euros by the end of 2011, but also a simple one in many aspects. More than 99% of securitized assets are originated by banks. Not only banks do originate those assets, but also initiate the securitization process. Two reasons justify this claim. First is that there are no conduits in Spain, or more generally, loan warehouses, which acquire assets from banks that in a posterior step securitize through a FVC. The second reason is that the assignor of assets to the FVC keeps the benefits (not the losses unless it is designed that way) from the securitization. In Spain FVCs are funds without legal personality. Thus, once the FVC's debt is serviced, the remaining value is transferred to the assignor. This also explains why the assets transferred to the FVCs are not necessarily priced at market value, but are often sold at their nominal value. Moreover, the assignor will receive the positive value between the collections from the securitized assets and the ABSs during the life of the ABSs and not just when they mature.

FVCs finance the purchase of the assets by issuing securities. Figures 2 and 3 below depict the structure of the FVCs assets and liabilities where we can see that the securities issued cover the securitized assets, both the securitized loans and covered bonds, as well as other minor assets securitized. Both the Spanish flow of funds and other monetary statistics record the financial instrument by original maturity. Therefore, no analysis on the maturity mismatch between the assets and the securities issued can be performed using these statistics. However, a study of the FVCs original prospectus, on the other hand, shows that this is the case. Typically, along with the assets transferred to the FVC, the bank will concede a subordinated loan of 5% to 10% of the assets transferred that the FVC deposits to cover the

first losses from the assets, securing the ABSs. Finally, FVC smoothes payments to investor by removing the fluctuations in its collections using interest rate swaps, normally contracted with the banks transferring the assets.

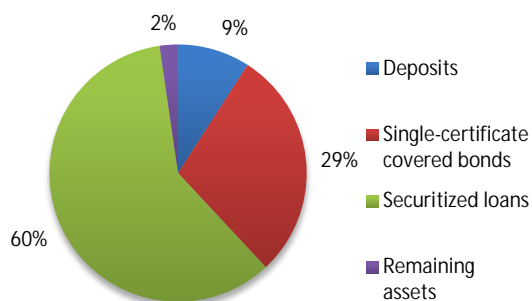


Figure 2: Assets of Spanish FVCs, 2011.
Source: Banco de España

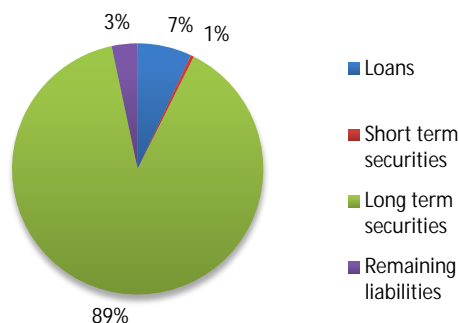


Figure 3: Liabilities of Spanish FVCs, 2011.
Source: Banco de España

FVCs securitize two main assets: loans originated by banks and single-certificate covered bonds issued by banks, both transferred directly from the banks. The Spanish flow of funds registers these transactions in a particular way. Due to regulatory requirements meant to identify banks' risks more accurately, Spanish banks cannot derecognize loans unless they do not keep any residual risk (e.g. as when they hold a subordinated loan in a securitization). By the end of 2011, 91% of loans securitized were not derecognized, amounting for 224 billion Euros. In this case, the transaction is recorded in the banks' balance sheets as an increase in the banks' deposits reflecting the payment received for the loans, but not as a decrease in the loans held by banks, rather as an increase in the banks' liabilities in the form of deposits, which are held by the FVCs. These single-certificate covered bonds issued by banks have typical nominal value of several million Euros and even when they are assigned an ISIN, they are recorded as deposits because their negotiability is very restricted in practice and because they are registered, no bearer instruments.

Securitization in Spain grew very rapidly from the mid-nineties until 2009. At an average growth rate of 58%, it reached its peak with 472 billion Euros in June 2009 as depicted in figure 4. During this development, Spanish securitization remained simple. Both synthetic securitization and resecuritization were negligible, as the securitization of other complex assets. On the other hand, Spanish straightforward CDOs, mostly backed by single-certificate covered bonds issued with the sole purpose of being securitized, took a large share of the ABSs market. After attaining a maximum, the level of redemptions surpassed the issues which at these rates will stabilize the outstanding amount of ABSs around 310 billion by 2014. However, this estimate depends on current trends which are closely related to banks' liquidity necessities, and may change during current events.

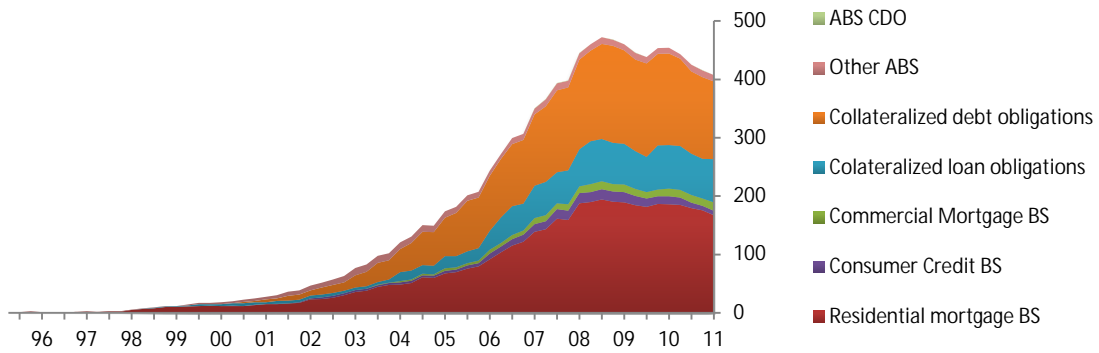


Figure 4: ABSs at nominal values (billion of Euros)
Source: Banco de España

The Spanish flow of funds does not provide detail on the institutions holding FVCs' issues. Although we couldn't obtain a time series for these data, we estimated the structure of the ABS holders by the end of 2011 as shown in figure 5. With more than 90% of the market in the banks' and rest of the world's portfolios, no relevant maturity mismatch is added to the Spanish financial system, as banks already run on a maturity mismatch balance sheet. As a corollary, both hedge funds and money market funds have little relevance in the Spanish securitization process, contrary to more complex and market oriented financial systems. Although no precise data is available for the holders of ABSs using the flow of funds, this does provide historical data for the holdings of debt issued by other financial institutions, which in conjunction with data from the other financial institutions, other than the FVCs, we can conclude that from the beginning of the financial crisis in mid-2007 and until the peak in the securitization market in mid-2009, banks bought about 200 billion Euros of ABSs to obtain liquidity from the Eurosystem. Of these 200 billion Euros, about 30 came from the rest of the world, as they divested the ABSs, while the rest came from new securitizations promoted by banks as international markets dried up.

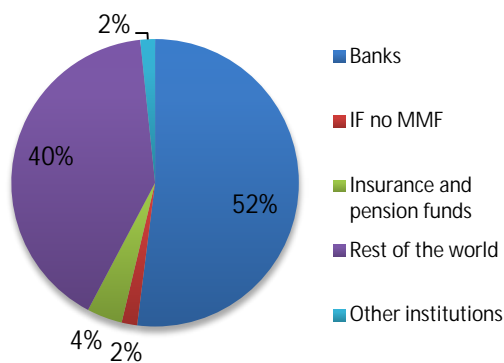


Figure 5: Holders of ABS, 2011.
Source: Banco de España

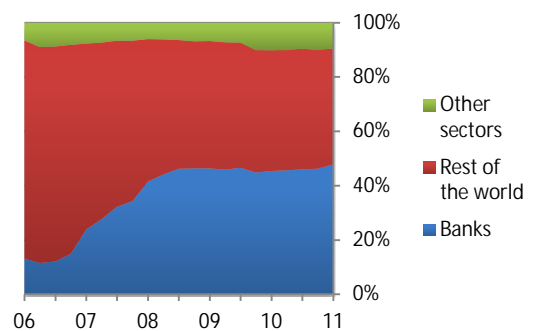


Figure 6: Holders of ABS.
Source: Banco de España

Other shadow banking institutions

Regulatory arbitrage has become a relevant issue for the structure of financial intermediaries. As of 2003, the service of preference shares⁴ issued by a resident subsidiary is deductible from corporate taxes. Moreover, in Basel I and II preference shares can be computed as Tier I Capital. As a result, both banks and non-financial corporations have created a set of subsidiaries which by the end of 2011 had issued 152 billion Euros of preference shares, of which 101 came from bank subsidiaries. Issuers of preference shares' business is fairly simple. They issue preference shares and deposit the proceeds in or lend the proceeds to the parent company, which pays the service of the securities. As they do not provide any financial service other than tax deductibility, we argue that these institutions should be consolidated within the parent companies for the purpose of this paper, reducing the size of the shadow banking system.

As it is crucial to assess the activity of the most relevant entities in the Spanish shadow banking, it is also important to discuss the role of those entities which have a minor role in the system. In other economic areas, structured investment vehicles (SIVs), MMF, hedge funds and private equity firms have had a significant role, but their relevance in the Spanish economy has been small. SIVs profit from the spread between the interest rate of long term ABSs, and the rate for the short term funding they obtain issuing commercial paper or selling repos. However, SIVs were never profitable for Spanish banks. The Bank of Spain required the SIVs to be consolidated in the group, what in practice posted an 8 per cent capital charge against SIV assets. As SIVs never sprung up, the role that MMF had in other markets as a principal funding source for the SIVs did not materialize in Spain. Also, as FVCs matched the maturity of their ABSs with their securitized assets, the direct involvement of MMF funding securitizations was negligible. In general, the weight of these institutions in the financial system is small. After moving 58 billion Euros in 2004, nowadays they manage 8.

Specialized credit institutions cannot take deposits from the public, which is why their liabilities are not secured, and therefore, we have not included them within the SBS. However they are part of the monetary financial institutions as they do provide credit. Their operations are subject to an administrative regulatory regime overseen by the Bank of Spain similar to banks, especially in regard to minimum capital. They are mostly funded with deposits from other banks, and their weight in the securitization market is small with only 1.1 billion Euros securitized.

Finally, private equity firms and hedge funds, with 10 and 1 billion Euros respectively, are not relevant in the SBS. Moreover, private equity firms' strategy is to provide venture capital and since they are funded using capital, their impact on credit intermediation is almost null. Hedge funds on the other hand have no relevant weight either in the securitization market or the repo market.

⁴ Preference shares are a hybrid financial instrument, with features both from debt securities and equity: the holders of preference shares receive a fixed interest; however this is conditional on the parent company having profits. The System of European Accounts establishes that preference shares should be recorded as debt securities because they do not provide for participation in the distribution of the residual value of a corporation on dissolution.

Measuring credit intermediation

The size of credit intermediation is the amount of funds channeled from final savers to final borrowers through financial institutions. Most works⁵ use the size of the balance sheet of the financial institutions involved in the process as a proxy. However, this offers several issues. First, both banks and entities engaged in shadow banking, the shadow banking system (SBS), develop more activities than just credit intermediation. For instance, banks and other shadow banking institutions hold large equity portfolios. These assets should be taken into account and removed from the balance as we are specifically focusing on credit intermediation and not on capital investments.

Another problem is to count multiple times the same funds when we aggregate the balance sheets from different institutions. As funds are channeled from final savers to final borrowers, some financial institutions may hold positions on other financial institutions. As this happens, the liabilities of these institutions grow, whereas credit does not. Were we to estimate credit intermediation in such a situation, we would need to account for and correct this multiplicity. In our framework, this shows up when banks and shadow banks hold other banks and shadow banks liabilities respectively, and when banks and shadow banks position into each other. For instance, ABSs acquired by a FVC should not count as credit, since we are already counting as credit the funds that the FVC which issued the ABSs used to buy the assets backing the ABS. Similarly, all intra bank positions should be removed when accounting for bank credit intermediation. Finally, we correct by equal amounts both banks and shadow banks' balance sheet when they hold each other liabilities as they are participating by the same amount in the credit intermediation process, just at opposite ends.

Lastly, we commented before how the Spanish accounting rules for loans transferred but non-derecognized compel banks to keep the loans on the balance sheet and record a deposit for the institution receiving the assets. This procedure artificially elevates banks liabilities and has to be removed when measuring credit intermediation.

The size of Spanish credit intermediation and shadow banking

Spanish credit intermediation is mostly banking. With an overall credit intermediation of 2.87 trillion Euros by the end of 2011 (see figure 7), the shadow banking system channels only 23% of the funds, only 11% when we look at a reduced credit intermediation system without investment funds, pension funds and insurance corporations. The shadow banking system is concentrated around pension funds and insurance corporations (42%) and other financial intermediaries (36%), which nowadays can be confidently identified as FVCs. The remaining portion is mostly taken up by investment funds with a 16%, leaving 5% for the specialized credit institutions and MMF. As investment funds, pension funds and insurance corporations have a small relation with the reduced shadow banking system, the originate-to-distribute model excluding the banking activity can be safely associated with the reduced banking system which in turn can be linked with the FVCs, illustrating the simplicity of the Spanish originate-to-distribute system, both by the number of different entities involved as for its size.

Credit intermediation increased rapidly in the years previous to the financial crisis. From 2004 to 2007 banks and the reduced shadow banking system grew annually at an

⁵ E.g. Pozsar et al (2010) and Bakk-Simon et al (2012).

impressive 21%. It is important to notice that the reduced credit intermediation system was not small. It had been growing at 10% annually in the previous ten years, why credit managed for these institutions by 2004 was already 1.4 trillion Euros, reaching in just three years 2.4 trillion. Of this increase, 86% can be accounted for the banks, even when the reduced shadow banking grew at larger rates. During those years, the investment funds, pension funds and insurance corporations grew steadily at 10% from 326 billion.

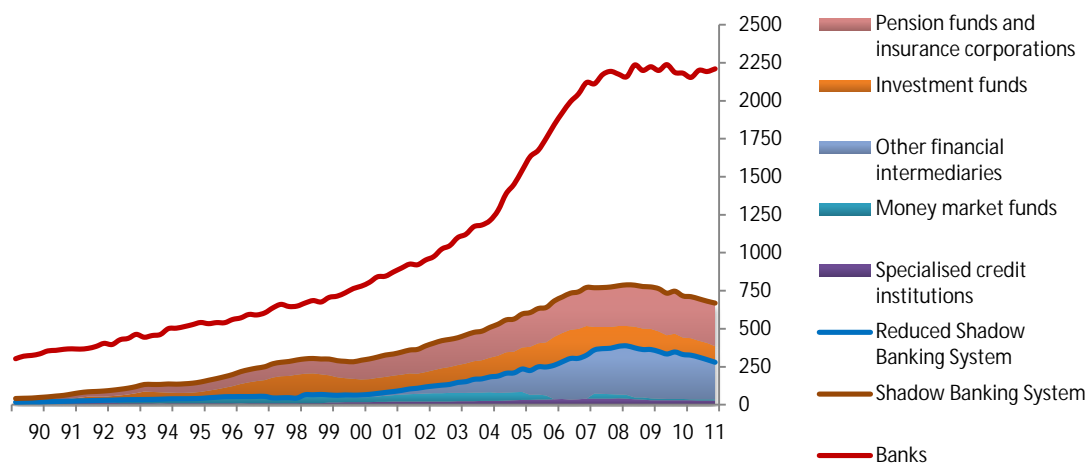


Figure 7: Credit intermediation by sector in Spain. (billion of Euros)
Source: Banco de España

Bakk-Simon et al (2012) analyze the size of credit intermediation at the European level. They use the total assets of the MFI sector minus Eurosystem assets and MMF shares issued by MFIs to account for the size of banks, while their measure for the reduced shadow banking adds the assets of other financial intermediaries, money market fund shares issued by MFIs. Two major differences arise comparing their methodology to ours. In terms of entities, we have moved the special credit institutions from banks into the shadow banking system, and excluded the issuers of preference shares from the other financial intermediaries within the shadow banking. More importantly, we have removed several duplicities in the balance sheet of these sectors. In figure 8 we show how the two methodologies compare. Banking credit intermediation and reduced shadow banking are overestimated by 40% and 75% respectively in average during the last ten years, which for the latter has reached 136% by the end of 2011. The dynamics, on the other hand, are similarly captured; however the estimate à la Bakk-Simon et al for the reduced banking system shows an increase in shadow banking from 2004 until 2008 that should be explained by banks obtaining funds through preference shares and FVCs issuing securities for banks to discount in the Eurosystem.

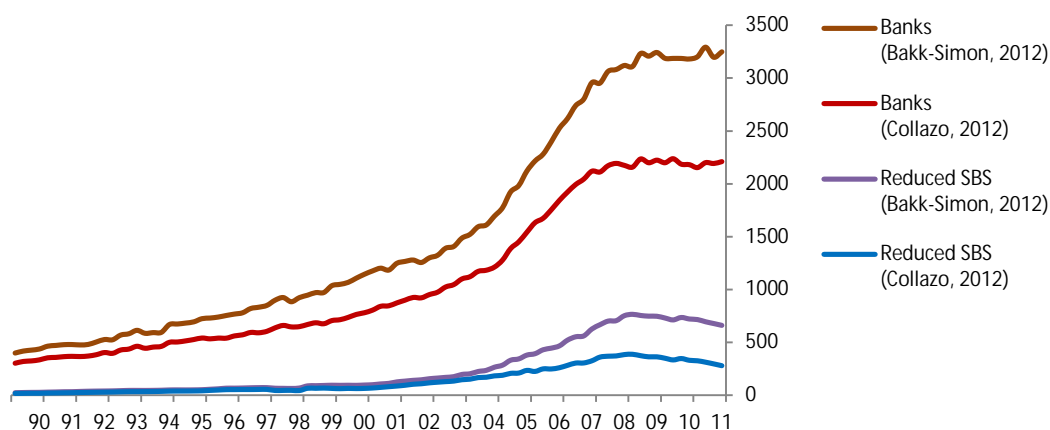


Figure 8: Credit intermediation in Spain. À la Bakk-Simon and à la Collazo (billion of Euros)
Source: Banco de España

Shadow banking is 39% as large as banks in Europe (Bakk-Simon et al, 2012), a much lower figure than the 123% in USA (Pozsar et al, 2010), suggesting a less integrated and possibly more specialized financial system. Compared to that, shadow banking in Spain takes only 20% the size of Spanish banks, a final indication of the minor relevance of shadow banking in Spain.

Conclusions

We found that bank and shadow bank credit intermediation is not well measured by aggregating the balance sheets of the institutions making up the sectors. Rather, several corrections must be taken into consideration primarily to avoid double counting.

Spanish credit intermediation is mostly performed by banks. As a result, shadow banking is small and simple in terms of funds managed and the typology of entities involved, compared to other regions. Moreover, when we exclude investment funds, pension funds and insurance corporations, the Spanish shadow banking system can be associated with the Spanish FVCs with little error. Credit intermediation in Spain grew rapidly in the years previous to the 2008-2009 financial crises. Even when the largest rates of growth came from FVCs, banks were responsible for most credit growth.

The institutions engaged in shadow banking are very heterogeneous and complex. Even if we can obtain a reliable aggregate figure of its size, we may still need to measure other important elements of credit intermediation. From a financial stability perspective, we could be interested on the maturity mismatch, uninsured funds, and financial leverage of the different entities in the SBS, for which different estimates are needed.⁶ The Spanish flow of funds does not provide the necessary information to perform financial stability analysis, which requires further granularity in the classification of financial instruments (ABSs and a breakdown by remaining maturity) and financial intermediaries (FVCs, SIVs, conduits).

⁶ The Financial Stability Board (2011) discusses these issues.

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