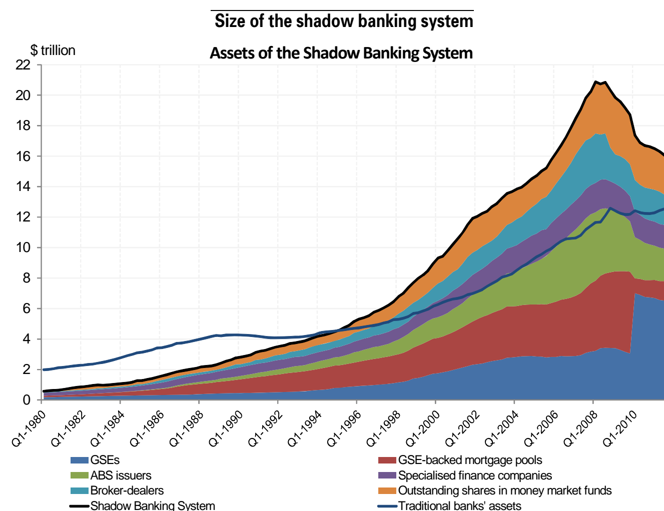
No. 113
May 2013

TRÉSOR-ECONOMICS

The Shadow Banking System in the United States: Recent Developments and Economic Role

This study was prepared under the authority of the Directorate General of the Treasury (DG Trésor) and does not necessarily reflect the position of the Ministry of Economy and Finance and Ministry of Foreign Trade

- The shadow banking system (SBS) is made up of a multitude of banking and financial operators linked to each other by financial intermediation chains of varying lengths and degrees of complexity.
- At one end of the financial intermediation chain, deposits are taken from non-financial investors, in the form of shares in money market mutual funds, for example. At the other end of the chain, loans are distributed to these investors.
- Therefore, the shadow banking system performs the financial intermediation function in the same way as the traditional banking system. The main distinguishing characteristics of the shadow banking system are looser supervision and greater fragmentation between operators at each link in the intermediation chain.
- The shadow banking system underwent substantial growth in the United States after 2000, with total assets peaking at $21 trillion in the third quarter of 2008, which is equivalent to 145% of the country's GDP. After the financial crisis, the SBS, as measured by the sum of the balance sheet assets of the players in the system, contracted by nearly one quarter.
- This contraction was the result of a decline in some of the shadow banking system's main lines of business, such as mortgage securitisation, as well as increasing difficulty in accessing financing, as markets revalued risks.
- This decrease in the size of the shadow banking system coincided with a sharp contraction of its share in the financing of the United States' real economy. This share is difficult to gauge, but it is estimated to have shrunk from 41% to 31%, depending on the method used, or from $16 trillion to $12 trillion from its peak in the third quarter of 2008.
- This decline of the shadow banking system's share of financing for the economy went hand-in-hand with an increase in the demand for short-term investments, stemming from American companies' growing cash reserves. However, this demand was met by alternatives to the short-term securities that are traditionally issued by the shadow banking system and, more specifically, by commercial paper issued by the federal government.
- Supervision of the SBS was supposed to be tightened up under the Dodd Frank Act passed in July 2010, which has been progressively implemented by American regulatory agencies.



Sources: Federal Reserve, DG Treasury.

MINISTÈRE DE L'ÉCONOMIE ET DES FINANCES

MINISTÈRE DU COMMERCE EXTÉRIEUR

1. The *shadow banking system* is a concept designating credit intermediation and distribution outside of the traditional banking system

1.1 Measuring the size of the SBS

There is no generally approved definition of the SBS, but this term can be used to designate all of the banking and financial institutions acting as financial intermediaries, conducting credit, maturity and liquidity transformation, but without the benefit of public safety nets that are available to traditional banks, such as access to the central bank's discount window or deposit insurance. These intermediaries are generally not covered by traditional banking regulations. The SBS can involve such varied institutions and entities as specialised finance companies, securitisation vehicles, money market mutual funds, securities brokers or leveraged investment funds.

The generally accepted definition of the SBS covers both entities and activities, which makes it very hard to assess the size of the system. Nonetheless, one way to do so is to sum the balance sheet assets of all of the institutions in the system. This method provides a rough assessment of the size of the system, but has several weaknesses.

First of all, the measurement is based on the assumption that it is possible to identify SBS participants accurately. Some of the players may benefit from indirect public support, as is the case of the various entities connected to the traditional banks, such as off-balance sheet vehicles with access to lines of credit from the banks backing them, or hedge funds and money market mutual funds in which banks hold a stake. These entities enable banks to offer a wider range of products and services. This measurement method is based on a bright line separating the traditional banking system from the SBS and completely overlooks the interactions and links between the two systems. Several provisions of the Dodd Frank Act signed into law on 21 July 2010 are aimed at introducing a separation between traditional activities and riskier activities, which are seen as the business of the SBS. More specifically, the Volker Rule limits the stakes that banks seeking access to public safety nets, such as the Fed's discount window and coverage from the Federal Deposit Insurance Corporation (FDIC), can hold in investment funds[1].

Box 1: *Stylised description of the shadow banking system financial intermediation chain*

In the traditional banking system, banks are financed by taking deposits from and extending loans to the non-financial sector. The capital of the banking sector is owned by the non-financial sector. The banking sector's simplified balance sheet can be represented by the following equation, where claims on the real economy P_0 are equal to the deposits of the real economy D_0 and the bank's capital c_1:

$$P_0 = c_1 + D_0$$

In a financial intermediation chain, the assets of each intermediary become the liabilities of the "next" link in the chain. This results in a greater number of participants and a decoupling of the size of the aggregate balance sheet assets of these participants from the loans distributed to the non-financial sector. By definition, the aggregation involves double counting.

$$A_1 = c_1 + D_0$$

$$A_2 = c_2 + A_1$$

$$A_n = c_n + A_{n-1} = K + P_0$$

Where A_k denotes the loans granted by the kth financial intermediary to the "next" link and K denotes the claims held by the "last" link, the nth financial intermediary, on all of the others. This leads to an increase in the size of the financial intermediaries' balance sheet assets, stemming from the interests that the financial sector holds in itself. Ultimately, the total capital of the banking sector as a whole is split between the capital held by the non-financial sector and that held by the banking sector itself:

$$\sum_{k=1}^{n} c_k = P_0 - D_0 + K$$

In addition to being too linear, this stylised representation of the SBS does not account for the links between financial intermediaries that go beyond equity interests and claims to include a whole range of more or less binding relations, such as links to off-balance sheet vehicles that take the form of contingent liquidity lines under which the sponsor entities have a more or less binding obligation to step in if the off-balance sheet vehicles run into problems. Furthermore, rather than forming a sequential chain of intermediaries, the various participants can belong to the same banking group, where the parent company holds stakes in a myriad of interdependent subsidiaries. These relations may not be so linear, but the intertwining of debts within the banking and financial sector does lead to a discrepancy between the aggregate size of the sector and the size of the loans granted to the real economy.

Secondly, this evaluation method does not provide a clear measurement of the financing that the SBS provides to the economy. The SBS decomposes the financial intermediation process. In the traditional banking sector, a bank acts as an intermediary between lenders (depositors) and borrowers, whereas SBS participants are linked by an intermediation chain, where the assets of some are often used to finance the others. Consequently, there could be a discrepancy between the amount of loans granted to the real economy "at the end of the chain" and the total assets of the sector, which involve a good deal of double counting (see Box 3 for a stylised description of the financial intermediation chain created by the SBS).

(1) The Volcker Rule also prohibits banks from engaging in proprietary trading, with a few rare exceptions.

Box 2: **The Dodd Frank Act and international work under way on the shadow banking system**

The Dodd Frank Act enacted in July 2010 does not focus on the shadow banking system, but several of its provisions affect the SBS.

The Act tightens up regulation of securitisation, with the requirement that the originating entity retain at least 5% of the risk, and introduces new investor transparency requirements. The Dodd Frank Act also stipulates that contributions to the Deposit Insurance Fund (DIF) of the Federal Deposit Insurance Corporation (FDIC) will no longer be calculated on the basis of deposits alone, but on all assets minus capital. Consequently, securitisation transactions where the bank retains some of the risk exposure on its balance sheet will generate a cost for the bank in terms of its DIF contribution.

Off-balance sheet activity will have to be included when calculating capital requirements. This provision of the Dodd Frank Act is in line with the change in accounting standards introduced on 12 June 2009 with the Financial Accounting Standards (FAS) 166 and 167, which tighten up the requirements for recognising certain entities as off-balance sheet items.

Ratings agencies played a crucial role in the valuation of the mortgage-backed securities and are now subject to closer supervision by the Securities Exchange Commission (SEC) under the provisions of the Dodd Frank Act.

In addition to these specific provisions, the Dodd Frank Act emphasises management of systemic risk by creating a Financial Stability Oversight Council chaired by the Secretary of the Treasury, with the aim of alerting regulators to the development of close interdependent links in the financial system that could lead to a systemic crisis.

The preliminary rough estimates by the Financial Stability Board[a] (FSB) show that the aggregate assets of the SBS in the leading countries[b] were worth some $51 trillion in 2010, compared to $23 trillion in 2002. Work is underway to refine these rough estimates, but according to the preliminary data of the FSB, the SBS shrank in the United States following the crisis, whereas its share of financing in Europe increased.

The SBS is particularly vulnerable to runs, meaning events where the mass of depositors lose confidence in the system and rush to withdraw their funds. The estimated size and vulnerability of this sector, along with the role it played in the imbalances that led up to the crisis, mean that it is a key concern for decision-makers and regulators.

At the Seoul Summit, the G20 asked the FSB to propose a roadmap for strengthening oversight and regulation of the SBS. In April 2011, the FSB published a background note aimed at defining the scope of the work to be done and proposing a preliminary definition of the shadow banking system as "the system of credit intermediation that involves entities and activities outside the regular banking system".

In this document, the FSB proposes a two-step approach. The first step would be to look at all non-bank credit intermediation to ensure that surveillance covers shadow banking system activities likely to create risks and that the relevant data are gathered. The second step would be to focus on the SBS activities that could (i) give rise to systemic risk, such as liquidity and maturity transformation, imperfect credit risk transfer and leverage, or (ii) lead to regulatory arbitrage.

In October 2011, the FSB published a report proposing five areas for reform and announced that it had launched five workstreams to assess the case for further regulatory actions concerning (i) regulation of banks' interactions with shadow banking entities (Basel Committee); (ii) regulatory reform of money market funds (MMFs) by the International Organization of Securities Commissions (IOSCO); (iii) regulation of other shadow banking entities by the FSB; (iv) regulation of securitisation by IOSCO in coordination with the Basel Committee and (v) regulation of securities lending and repos. The five workstreams should publish their final reports by the end of the year.

The workstream on regulation of banks' interactions with shadow banking entities should address (i) consolidation rules for prudential purposes, (ii) limits on the size and nature of banks' exposure to SBS entities (this area falls within the scope of the Basel Committee's work on large exposure rules), (iii) special capital requirements for banks' exposure to SBS entities (the Basel Committee is paying particular attention to the treatment of investment in funds and a possible extension to all SBS entities of the treatment of short-term liquidity facilities granted to securitisation vehicles) and (iv) treatment of reputational risk and implicit support. The FSB published an interim report in April 2012 on securities lending and repos setting out in detail the financial instability problems that these activities are likely to cause. The FSB highlighted (i) the lack of transparency, (ii) the procyclicality of debt and interconnectedness through such channels as asset valuation practices, haircuts and re-use of collateral, (iii) other potential financial stability issues associated withcollateral re-use, (iv) potential risks arising from the fire-sale of collateral assets, (v) potential risks arising from securities lending practices, (vi) shadow banking through cash collateral reinvestment and (vii) insufficient rigor in collateral valuation and management practices.

The latest IOSCO consultation on MMFs set out the following regulatory options: (i) requiring C-NAVs to become V-NAVs[c], (ii) improving valuation and trading models, (iii) improving liquidity risk management and (iv) a substantial reduction of the importance of the role that rating agencies play in the MMF industry. IOSCO, in coordination with the Basel Committee concerning securitisation aspects, will examine risk retention requirements and possible measures to promote greater transparency and standardisation of securitisation products.

Meanwhile, the European Commission published a Green Paper on the SBS and Commissioner Michel Barnier, speaking at the Conference on the SBS held in Brussels on 27 April 2012, declared that regulation of the SBS was one of his priorities for 2012.

a. http://www.financialstabilityboard.org/publications/r_111027a.pdf.
b. The first estimates cover Australia, Canada, France, Germany, Italy, Japan, the Netherlands, South Korea, Spain, the United Kingdom and the United States.
c. Constant Net Asset Value (C-NAV) funds are distinguished from Variable Net Asset Value (V-NAV) funds.

Source: DG Trésor.

Thirdly, this method cannot account for the small changes that may shift an SBS institution into the traditional banking sector or vice versa. For example, the New York Federal Reserve considers that Fannie Mae and Freddie Mac, which play a crucial role in the American real estate market by securitising mortgages and guaranteeing mortgage-backed securities, are SBS entities since their government guarantee before the crisis was implicit and not explicit. However, since they were taken over by the Treasury in September 2008, they have benefited from a full government guarantee, as a result of the Treasury's pledge to keep them solvent. Consequently, the takeover by the Treasury and the resulting strengthening of their prudential management mean that Fannie Mae and Freddie Mac should no longer be deemed to be part of the shadow banking system, which results in a sudden decrease in the size of the system[2]. Similarly, the Treasury's guarantee to maintain the value of shares in money market funds until 18 September 2009 did not solve the sector's intrinsic problems[3].

Fourthly, this method of assessing the size of the SBS overlooks the participants' off-balance sheet exposures. According to the IMF, failure to account for certain financial transactions, such as "collateral rehypothecation" in repo transactions, led to underestimation of the American SBS sector by nearly $2 trillion at the end of 2009. Such transactions, where collateral received is reused, enabled the top seven broker dealers to increase their financing sources and the size of their off-balance sheet positions. The introduction of the new Financial Accounting Standards 166 and 167 on 1 January 2010 to increase the transparency of off-balance sheet activities tightened up the exit requirements for certain investment vehicles and facilitated their shift back to the balance sheet. This probably helped to reduce the lack of transparency surrounding such transactions, but the extent of this contribution is largely unknown.

Box 3: **Banking and financial institutions that make up the shadow banking system**

In our definition of the SBS, we include the following entities: security brokers and dealers (Flow of Funds Table L. 129), which are specialised companies that buy and sell securities on their own account (dealers) or on behalf of others (brokers).

Government Sponsored Enterprises (Flow of Funds Table L. 124 - GSEs), which are Fannie Mae, Freddie Mac, Federal Home Loan Banks and other smaller institutions sponsored by the government. GSEs are financial corporations that the American Congress has created to promote access to credit for certain sections of the American population. Fannie Mae and Freddie Mac were created to support the liquidity of the mortgage market. They play a central role in the market by buying up mortgages on the secondary market. They retain a share of the mortgages on their own books and sell off the rest to investors with a guarantee from Fannie Mae or Freddie Mac.

The GSE-backed mortgages are placed in pools (Flow of Funds Table L. 125 - Agency and GSE-Backed Mortgage Pools). These pools were returned to the Fannie Mae and Freddie Mac balance sheets following the changes to FAS 166 and 167. Issuers of asset-backed securities (Flow of Funds Table L. 126 - Issuers of Asset-Backed Securities) are special purpose vehicles that are usually set up by commercial banks, savings institutions, real estate investment companies or finance companies to invest some of their assets in off-balance sheet entities. The assets backing the securities issued are generally made up of mortgages, consumer loans (car loans and student loans) and other loans. These entities are key players in the United States securitisation market.

Finance companies and mortgage companies (Flow of Funds Table L. 127 - Finance Companies) are undertakings that specialise in specific types of loans, such as car loans. They are not recognised as banks and, consequently, cannot finance their lending by taking deposits. They developed their business by making specialisation gains.

The size of the traditional banking sector's share of this market has been evaluated by summing the assets of commercial banks (Flow of Funds Table L. 110 - Chartered Commercial Banks), credit unions (Flow of Funds Table L. 115 - Credit Unions) and savings institutions (Flow of Funds Table L. 114 - Savings Institutions).

Sources: Federal Reserve, DG Trésor

2. An examination of the assets of the SBS shows that its role in financing the American economy has shrunk since the end of 2008

2.1 The SBS has shrunk since the onset of the crisis.

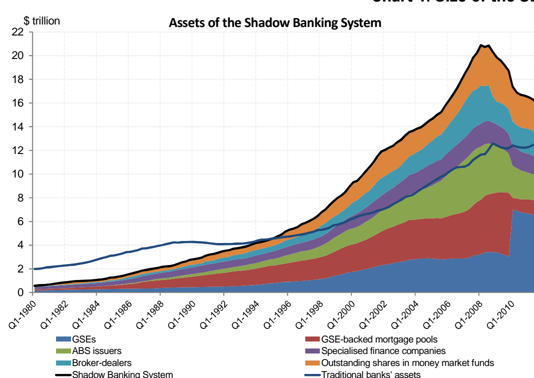
Despite its limitations, the evaluation of the size of the SBS based on the balance sheet assets of the institutions in the sector is the one most commonly used. In particular, it has been used by the FSB and New York Fed.

Given the definition of the entities in the SBS, the **United States' shadow banking system seems to have contracted by nearly one-fourth since the crisis hit in the last quarter of 2008**. After reaching nearly $20.8 trillion in the third quarter of 2008, or 145% of GDP at the time, the aggregated balance sheet assets of SBS participants stood at only $16 trillion in the third quarter of 2011, or 106% of GDP (see Chart 1). This valuation is substantially smaller than the one by the FSB, which estimated the size of the SBS at $24 trillion in 2010, but much of the difference stems from a difference in the population considered and, more specifically, the inclusion of the GSEs Fannie Mae and Freddie Mac. The size of the traditional banking sector increased from $12 trillion to $12.5 trillion over the same period.

(2) For the sake of convenience, Fannie Mae and Freddie Mac are counted as part of the SBS here.

(3) This programme was set up on 18 September 2008 to counter any risk of a run on money market funds following the failure of the Reserve Primary Fund on 17 September 2008, in the wake of the collapse of Lehman Brothers.

Chart 1: Size of the SBS



Source: Federal Reserve, DG Tresuary.

The contraction seen since the end of 2008 is particularly pronounced in the case of issuers of asset-backed securities, whose assets were reduced by nearly half in the three years following the third quarter of 2008. Their aggregate assets declined from $4.2 trillion to $2.2 trillion. This decline stemmed from the halt of securitisation in difficult economic times and investors' new appreciation of risk. Investors were much more prudent in their investments in commercial paper, which is a major source of financing for issuers of asset-backed securities. Furthermore, the changes in FAS 166 and 167 restrict the use of off-balance sheet vehicles and make such entities less profitable. The regulatory framework for these entities will be tightened up with enforcement of the 5% credit risk retention requirement introduced under the Dodd Frank Act[4].

The aggregate assets of broker-dealers shrank by nearly one-third from $3 trillion to $2 trillion in the three years following the third quarter of 2008. This decline stems in part from the changes in the legal status of the five top companies[5] in 2008 and 2009, and also from the specific difficulties that the sector encountered during a period of great uncertainty and the disappearance of certain sources of financing. More particularly, the contraction in the value of the tripartite repo market[6] was largely due to fears about the value of the collateral provided and a major increase in the liquidity providers' appreciation of risks. The collapse of MF Global at the end of 2011 highlighted the vulnerability of such entities, which do not have access to the Fed's discount window.

The aggregate size of the money market fund sector shrank by 20%, from $3.3 trillion to $2.6 trillion in the three years following the third quarter of 2008. This big decline stems in part from the low interest rates maintained by the Fed, which squeezed money market funds' margins. Their holdings of Treasuries decreased sharply as yields fell. MMFs' transactions were subject to stricter regulation following changes in SEC rules in February 2010 aimed at restricting MMFs' capacity to purchase lower quality securities and, more generally, at limiting risk-taking and tightening up liquidity requirements. This environment led to massive withdrawals of funds, especially since the Treasury guarantee expired on 18 September 2009.

The housing market crisis led to a complete halt of securitisation in the private sector and a sharp contraction of activity by Fannie Mae and Freddie Mac, which were taken over by the government in September 2008. The changes made to FAS 166 and 167 in 2009 meant that, as of 1 January 2010, all of the GSE-backed mortgage pools have been returned to these corporations' balance sheets. Their consolidated assets increased from $3 trillion at the end of 2009 to $7 trillion in the first quarter of 2010, while the total assets in the mortgage pools declined from $5.4 trillion to $1 trillion. Nevertheless, when these changes in the scope of consolidation are factored in, the cumulative assets of the GSEs and the mortgage pools declined from $8.3 trillion to $7.8 trillion between the third quarter of 2008 and the third quarter of 2011.

2.2 A smaller role for the SBS in financing the American real economy

The discrepancy between the size of the SBS and lending to real players in the American economy (households, non-financial corporations, public sector) is even greater due to the strong financial interdependence between the SBS players themselves.

However, **we can estimate the extent to which the SBS plays a role in financing America's real economy by isolating in SBS balance sheets the types of debt issued by the real economy alone**. This means that only Treasuries, mortgage-backed securities guaranteed by Fannie Mae and Freddie Mac, municipal bonds, consumer loans and mortgages and other loans and advances to the non-financial sectors are counted. Commercial paper, which is mainly issued by the financial sector, is not counted, nor are bonds issued by both the financial and non-financial sectors when it is impossible to distinguish between the two.

Using this method, we find that the contraction of the SBS in recent years coincided with a **sharp reduction in the shadow banking system's share of financing for players in the the American real economy. This share decreased from 41% to 31%, or from $15.7 trillion to $12.3 trillion** (–22% in three years). This contraction of SBS financing for the real economy over the last three years was proportionate to the contraction of aggregate SBS assets, which shrank by 24%.

2.3 The shares of long-term investors, the Fed and the rest of the world in financing America's real economy have grown in the last three years

The traditional banking sector had outstanding loans of $8.8 trillion to the real sector at the end of 2011, **representing 22% of the sector's total debt. This share has been stable for three years**. Mortgages account for nearly a third of this debt. In the last three years, the traditional banking sector's exposure to mortgages decreased. This decrease was offset by a slight increase in exposure to consumer loans and to mortgage-backed securities guaranteed by Fannie Mae and Freddie Mac.

Banks' exposure to Treasuries also increased slightly.

(4) This requirement will come into force one year after the final rule is published in the case of mortgage securitisation (two years for securitisation of other claims). To date, the agencies have merely published a proposal for a rule (on 29 April 2011).

(5) Goldman Sachs and Morgan Stanley became bank holding companies, JP Morgan bought Bear Stearns and Bank of America bought Merrill Lynch and Lehman Brothers failed and went out of business.

(6) Transactions on this market are intermediated by Bank of New York Mellon and JP Morgan.

The data considered show that **long-term investors**, such as public and private sector pension funds, insurers and mutual funds, along with closed-end funds et exchange-traded funds[7], **have played a growing role in financing the real economy over the last three years**. These investors held $4.5 trillion of the real sector's outstanding debt at the end of 2008, as opposed to $5.7 trillion at the end of 2011[8]. Their share of the American real sector's total debt, as measured here, rose from 12% to 14% over three years. This stems from an increase in households' and businesses' savings flowing into these funds, as well as from greater risk aversion, which means that fund managers prefer to invest in MBS that are guaranteed by Fannie Mae and Freddie Mac.

Other financial operators maintained their share of financing for the American real sector. More specifically, **foreign banks located in the United States reduced their financing of the real sector slightly, from $1 trillion to $800 billion over three years**. These banks substituted deposits with the Fed that have paid 0.25% interest since the end of 2008. This seems like a high yield given the current low interest rates. The decrease in foreign banks' exposure to the American real sector has been offset by an **increase in Real Estate Investment Trusts' exposure**. These entities are mainly exposed to MBS that are guaranteed by GSEs and securities issued by the latter. The guaranteed yield offered by these securities has been a major attraction in recent years.

Even the Fed has greatly increased its exposure to the real sector, primarily by purchasing guaranteed MBS and Treasuries. Its portfolio has more than tripled in size since the end of 2008, from $800 billion to $2.7 trillion over the period. Its direct holdings of securities issued by entities in the real sector of the American economy have increased from 2% to 7%.

The rest of the world seems to have increased its gross exposure to the real sector in the United States from $7.3 trillion to $8.3 trillion over three years, increasing its share from 14% to 19% of total outstanding debt issued by the real sector. This is the result of a sharp increase in gross cross-border positions, even though the current account deficit has been hovering at around only 2.5% to 3% of GDP in recent years. It also shows an increase in American residents' gross exposure to the rest of the world.

3. The SBS's role as an alternative investment for institutional investors has been reduced to the benefit of the traditional banking sector (examination of SBS liabilities)

3.1 The SBS provides alternative investments for institutional investors seeking safe short-term investments compared to short-term Treasuries and guaranteed bank deposits

Several reasons are cited to explain the growth of the SBS in the United States in recent years. Securitisation and the use of off-balance sheet vehicles may be motivated by the desire to reduce capital requirements while still maintaining risk exposure and high profits (particularly on the real estate market), but there are other reasons, such as regulatory arbitrage, which may have promoted the growth of the shadow banking system. More specifically, the emergence of specialised lenders can be attributed largely to keener competition and the need to make productivity gains.

However, **demand factors can also be cited as contributing to the emergence of the SBS**. First of all, large current account surpluses appeared in emerging countries, leading to an abundance of capital seeking safe investments. The SBS, which produced mortgage backed securities, helped to meet this demand. This compartment of the American financial sector is said to have fuelled the American real estate bubble by providing investment opportunities for foreign investors.

Another demand channel may have contributed to the emergence of the SBS, without having any special relation to global imbalances. Pozsar (2011) cites the **demand for liquid short-term investments from "cash managers"**, who may be treasurers of non-financial corporations, pension funds, insurers or other fund managers. Pozsar (2011) stresses the specific investment needs of these tightly regulated managers, who have to maintain a large proportion of their assets in supposedly liquid short-term securities.

By issuing commercial paper and carrying out repos, the SBS helped to meet this demand, that had few alternatives. The contraction of the SBS led to a big fall in the issuance of commercial paper. In order to overcome this shortage and have some control, albeit indirect, over the size of the SBS, Pozsar suggests adding Treasury Bill issuance to the macroprudential toolkit used to manage the size of the SBS.

3.2 Cash managers' demand for short-term investments has increased in recent years

Non-financial corporations' cash reserves have increased substantially in recent years, as earnings bounced back, borrowing capacity improved and the outlook for investments weakened because of major uncertainty about global growth. Non-financial corporations' cash pile is said to have increased from $1.3 trillion to $1.9 trillion between the end of 2008 and the end of 2011 (see Chart 2).

At the same time, tightening up of certain prudential rules, for insurers in particular, has led to stricter liquidity requirements for certain fund managers' investments.

(7) Investment funds registered with the SEC and governed by the Investment Company Act. Shares in these funds are traded on stock exchanges or the over-the-counter market.

(8) The size (but not necessarily the share, given our choice of measurement method) of these long-term investors' exposure to funding for players in the United States' real economy is underestimated here, because our estimate does not include bonds issued by the non-financial sector. Outstanding bonds issued by the private non-financial sector came to $5 trillion at the end of 2012, versus $4.8 trillion for financial sector bonds. The Flow of Funds tables show the outstanding bonds held by each type of player in the American economy, but do not make any distinction between bonds issued by the financial sector and those issued by the non-financial sector. Consequently, such bonds are not counted here.

Box 4: **Steps in the intermediation process**[a]

(i) Loan origination: loans are issued by finance companies which are usually funded through commercial paper, medium-term notes or bonds.

(ii) Loan warehousing: loans are warehoused in single- and multi-seller conduits funded through asset-backed commercial paper.

(iii) Issuance of asset-backed securities (ABS): loans are pooled and structured through special purpose vehicles or special purpose companies sponsored by broker-dealers' ABS syndicate desks.

(iv) ABS warehousing: ABS are warehoused in broker-dealers' trading books, funded, like most broker-dealers' transactions, through repos or total return swaps.

(v) Issuance of collateralised debt obligations (CDOs): ABS are pooled and structured through securitisation vehicles funded by broker-dealers' ABS syndicate desks.

(vi) ABS intermediation: maturity transformation is performed by structured investment vehicles (SIVs), credit hedge funds or limited-purpose finance companies that issue very-short-term securities or use repos to fund ABS.

(vii) Funding of the activities and entities that make up the SBS intermediation chain:

a. Commercial paper, asset-backed commercial paper and short-term repos are funded by money market participants, such as money-market mutual funds or securities lenders.

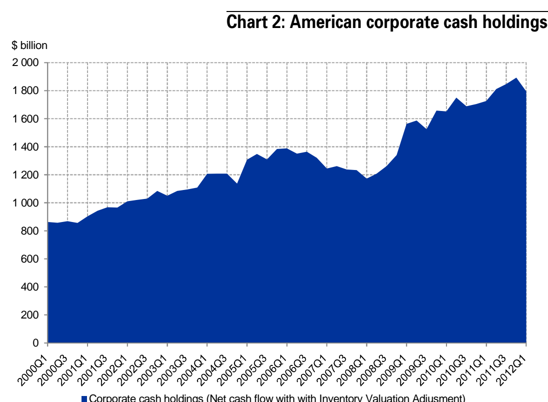
b. Medium-term notes and bonds are funded by institutional investors, such as mutual funds, pension funds and insurance companies.

a. a.See Z. Pozsar et al., (2010), "Shadow Banking", Federal Reserve Bank of New York Staff, *Staff Reports* No. 458, July.

3.3 Meanwhile, alternatives to short-term investments have diminished in recent years

The American Treasury decided to increase the maturity of its debt and reduce the proportion of short-term securities in its issuance. The Treasury increased its issuance of Treasury Bills[9] significantly at the end of 2008, when its needs suddenly grew in order to bail out troubled institutions (Merrill Lynch, Bank of America, Citigroup, AIG). These large issues of T-bills reduced the average maturity of Federal Government debt to less than 55 months. Since then, the Treasury has undertaken to extend the average maturity of its debt by cutting back its issuance of T-bills.

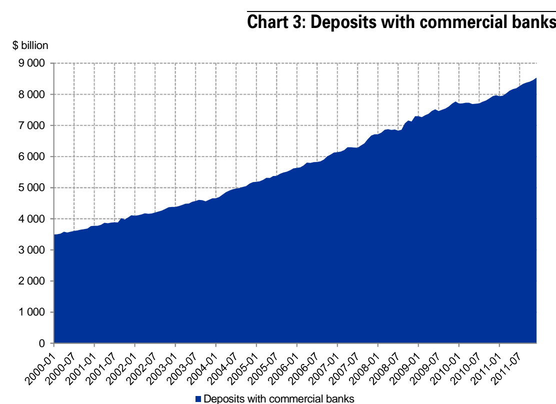
Chart 2: American corporate cash holdings



Source: Federal Reserve.

Furthermore, a large number of bank failures and greater concentration of the banking sector have reduced the number of banks entitled to offer deposit insurance. The crisis led to massive concentration in the traditional banking sector in the United States. The number of banks decreased from 8,853 at the end of 2007 to 7,307 at the end of the first quarter of 2012. Yet, since deposit insurance is computed according to the bank, the account holder and the type of account, this concentration was likely to reduce the supply of guaranteed deposits.

Chart 3: Deposits with commercial banks



Source: Federal Reserve.

(9) With maturities ranging from a few days to 56 weeks.

3.4 The increase in the amounts covered by deposit insurance has made bank deposits much more attractive since the crisis

The Dodd Frank Act eliminated any caps on insurance coverage for deposits when interest payments were temporarily suspended from 31 December 2010 to 31 December 2012. The Act also increased the cap on insurance for all other types of deposits from $100,000 to $250,000. This increased coverage helped to make such investments more attractive in times of great financial instability. Deposits in commercial banks rose from $7.2 trillion at the end of 2008 to $8.7 trillion at the end of May 2012.

Consequently, the shortage of alternatives to liquid short-term investments offered by issues of Treasury Bills or certain SBS debt securities led to an increase in deposits in traditional banks (see Chart 3). The traditional banking sector thus managed to capture a growing share of households' and non-financial corporations' savings, particularly with the increase in deposit insurance coverage from the FDIC and the prevailing low interest rates. The traditional banking sector in the United States has stabilised its sources of funds substantially and strengthened its liquidity ratios.

Timothee JAULIN,

Benjamin NEFUSSI

Publisher:

Ministère de l'Économie, et des Finances et Ministère du Commerce Extérieur

Direction Générale du Trésor
139, rue de Bercy
75575 Paris CEDEX 12

Publication manager:

Claire Waysand

Editor in chief:

Jean-Philippe Vincent
+33 (0)1 44 87 18 51
tresor-eco@dgtresor.gouv.fr

English translation:

Centre de traduction des ministères économique et financier

Layout:

Maryse Dos Santos

ISSN 1962-400X

Recent Issues in English

April 2013

No. 112. The world economy in the spring of 2013: a brighter outlook
Pierre Lissot, Amine Tazi

No. 111. How should one assess short-term economic uncertainty?
Raul Sampognaro

March 2013

No. 110. How have the Hartz reforms affected the German labour market?
Flore Bouvard, Laurence Rampert, Lucile Romanello, Nicolas Studer

February 2013

No. 109. Asia in 2020: growth models and imbalances
Stéphane Colliac

January 2013

No. 108. International trade finance during the 2008 crisis: findings and perspectives
Arthur Sode

http://www.tresor.economie.gouv.fr/tresor-economics