MONTHLY NEWSLETTER



THE SHADOW BANKING SYSTEM

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In the last decade, the architecture of our financial system has changed hugely due to the emergence of new intermediaries. If it is true that nowadays we still rely on traditional intermediaries such as banks and financial markets, new players have been rapidly emerging. Some of these players are the so-called Shadow Banks, institutions positioned between the traditional intermediaries mentioned above that are generally not well understood by the general public. In this article we will try to shed some light on this topic to better understand what these institutions are and why they are important nowadays.

Although for most of the people the Shadow Banking institutions fall within the category of banks, they are completely different financial institutions. In a general way, Shadow Banks can be defined as financial institutions performing core banking functions without having the same funding, backstops and regulations than commercial banks. In this regard, Shadow Banks differ from commercial banks in four important aspects: their activities are not funded by deposits, they do not have direct access to the liquidity of a central bank, they are subject to lighter regulations and they are not backstopped by any deposit guarantee. According to the Financial Stability Board, the institutions that can be included under the category of Shadow Banks are: insurance companies, pension funds, "pure" investment banks, collective investment vehicles susceptible to runs (such as fixed income funds or money market funds), lending companies dependent on short term funding (finance companies), companies in charge of market intermediation dependent on short-term funding (broker-dealers), financial guarantors facilitating credit intermediation and companies facilitating the securitisation-based credit intermediation (such as securitisation vehicles or structured finance vehicles).

Shadow Banks are key important players in our financial system mainly because of their size, interconnexion with other banking and non-banking institutions and the possible negative spillovers that they can have on the financial system nowadays. Probably, one of the best examples of the problems associated with Shadow Banks was the beginning of the Great Recession as a consequence of Lehman Brothers collapse in 2008 and the subsequent liquidity drain in several markets. These events showed that they were under the radar of the regulatory bodies around the world.

After 2008, the new financial regulation introduced some important changes in regard to the non-banking financial institutions, creating several supranational organisms in order to monitor these intermediaries and their possible effects on the system. Despite this, the degree of complexity of their operations, their interconnections, the lack of available data concerning their activities, the new financial innovations and the inclusion of bank-like activities in the business models of some fintech and big tech, makes difficult to have a clear picture of the real extension of the Shadow Banking sector.

From the positive side and, as it happens with other financial institutions, the existence of Shadow Banks provides some dynamisms to the financial markets, increasing the level of competition and allowing market participants to diversify their funding sources and portfolios. Despite this, in periods of economic stress or financial turmoil, Shadow Banks can be a source of concern as they can be the origin of systemic and financial stability risk. This is mainly due to their level of interconnection and, sometimes, the performance of key functions for the financial markets.

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From the positive side and, as it happens with other financial institutions, the existence of Shadow Banks provides some dynamisms to the financial markets, increasing the level of competition and allowing market participants to diversify their funding sources and portfolios. Despite this, in periods of economic stress or financial turmoil, Shadow Banks can be a source of concern as they can be the origin of systemic¹ and financial stability risk. This is mainly due to their level of interconnection and, sometimes, the performance of key functions for the financial markets.

To better understand Shadow Banking, it is useful to know how commercial banks work. Commercial banks, as any other financial intermediary, are institutions that channel funding between economic agents in need of financing and economic agents with spare financial resources. To do this, they get financing from their clients through deposits an extend loans to their clients. With this channelling of funding, commercial banks are involved in credit intermediation, a process that includes maturity and liquidity transformation². These two activities can be risky since banks, institutions with long terms illiquid investments, are obliged to meet the withdrawals of money from their depositors. Even though banks can intermediate the risk arising from these activities, the banking business has shown through history that it is prone to sudden confidence crises and banks runs than can be only solved through the provision of liquidity, coming from a central bank³or a private institution, and the existence of public deposit backstop. In addition to this, other regulations such as reserve coefficients and minimum liquidity and capital requirements have been enforced in order to minimize the effects of the maturity and liquidity mismatch.

Concerning Shadow Banking institutions, apart from other activities, they are also engaged in maturity and liquidity transformation. The difference with commercial banks is that they do not have any of the external safety nets of a commercial banks. The volatile short-term funding of Shadow Banks, mainly coming from wholesale money markets³, their lack of access to the liquidity coming from the central bank and their lower (if any) liquidity cushion, make them to be more prone to suffer liquidity crisis and, at the same time, to be ill-prepared to withstand them.

In case one of this liquidity crises take place, Shadow Banks, in order to get cash to meet redemptions, dump a lot of assets all together in the market. This process, known as fire sales, if followed by several sizeable institutions, depresses hugely the valuation of the assets. Through this decrease in valuation, the actions of Shadow Banks can impair the balance sheets of other financial institutions holding the same assets thus, forcing them to reduce their assets (contributing to more price decreases) or to absorb the losses coming from those assets.

1-According to the Bank of International Settlements systemic risk can be defined as "a risk of disruption to financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy".

2-Maturity transformation because they invest in long term assets (loans) obtaining funding with short term liabilities (deposits). Liquidity transformation because cash-like liabilities are used to fund illiquid assets.

3-Money markets include all those markets in which it is possible to obtain sort term financing (normally with a maturity lower than 180 days). In the case of financial institutions, the instruments that are normally used include repurchase agreements (REPOs) and asset backed commercial paper.

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Furthermore, the decrease in prices is accelerated by the use of leverage strategies and the necessity to get cash to repay the debts contracted. A recent example of this took place in March 2021 and involved the fire sale of Archegos Capital Management shares. The event did not have systemic consequences but implied billions of dollars in losses for Nomura and Credit Suisse and showed that there are hidden cracks under the surface of our financial system. in losses for Nomura and Credit Suisse and showed that there are hidden cracks under the surface of our financial system.

In the case of banks, the depreciation of assets and the absorption of losses, forces them to reduce their funding capacity and, as a consequence of the credit reduction, the first negative effects on the real economy start appearing. Furthermore, the existence of commercial banks participating through Special Purpose Vehicles in some of the activities of Shadow Banks, makes them to be directly exposed to the risk of this activities. One of the main examples of this the activities involving credit were risk transformation, whose major exponent was the securitization chain, a process that transforms illiquid assets in cash-like securities. During the Great Recession, some big commercial banks had to offer support to the Special Purpose Vehicles they created to participate in the subprime mortgage market.

The fast balance sheet contagion among several financial institutions makes it easy for reductions of liquidity in some parts of the market to be amplified thus, having big effects on the overall liquidity of the market and the level of losses arising from asset depreciations. It is because of this that the Shadow Banking entities can pose a risk to financial stability affecting the financial system as a whole.

Concerning the growth of Shadow Banks, they have been outperforming the growth of other financial intermediaries in the last decades and more specifically, since the Great Recession. The reasons of this, taking into account the differences among jurisdictions, have to do with the search-for-yield, the general level of liquidity in the system, the growth of insurance and pension funds, the complementarities with the banking sector, the increased demand of the products offered by Shadow Banking institutions and the increase in the level of regulation of banks.

When it comes to the increased demand of products, the necessities of international investors to park their savings in safe assets encouraged Shadow Banks to offer securitised products, deemed safe by market participants. Regarding the banking regulations, these have created an uneven playing field for banks and, as a consequence, the non-banking financial institutions are in better position to offer more attractive terms for the financing they provide and, at the same time, higher yields to investors. Because of this, it is possible to say that, to some extent, banking regulation has been somehow counterproductive as it has encouraged the migration of risks from the banking sector to the non-banking financial sector.

In brief, the existence of non-banking financial intermediaries is highly positive since they can complement other sources of funding while, at the same time, introducing new opportunities for investors. Although, because of the possible negative effects they can have on the financial system, they should be properly monitorised and have mechanisms to weather periods of market stress.

4-Some examples of commercial banks directly involved in the process of securitization were Bank of America and Citibank.

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Some possible ways to achieve this is through the access to central bank liquidity or through well designed regulations related with liquidity cushion or redemptions.

History of the Shadow Banking System

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Origins

The history of Shadow Banking is not precise, since we do not have exact dates of where and when this system has begun, nonetheless its evolution has been closely intertwined with the history of banking in general, so its growth has also been similar. It was not until 2007 that it was given the name "shadow banking" by Paul McCulley, fixed-income trader at Pimco, who referred to it as "the whole alphabet soup of levered up nonbank investment conduits, vehicles, and structures". Yet before him, the Financial Stability Board had defined it as "credit intermediation involving entities and activities wholly or partially excluded from the conventional banking system".

Ironically, one of the pillars of shadow banking was the implementation of banking regulations, such as capital and solvency requirements to avoid banking panics; one of these examples was the "regulatory stream" in the United States in 1913. Among the risks faced by banks are: credit risk, which is the probability of non-payment of interest by the borrower; as well as the risk of maturity transformation, which is caused by the mismatch between illiquid assets and the raising of funds through highly liquid instruments, making it very difficult to manage the maturity of assets and liabilities (Grandío et al, 2008). On an international basis, the creation of the Basel Committee on Banking Supervision in 1974, was one of the most important developments; the organisation's mission was for central banks to cooperate with each other to improve their supervision of banking activities around the globe.

In 1988, the Basel Accord would set the minimum capital requirement at 8% of risk-adjusted assets; during this time, banks' assets were funded almost entirely by debt, which led to restructuring and a threat to banks' profitability. As a result of these new policies, in conjunction with other regulations, the attractiveness of commercial banks to investors decreased, which consequently led to the expansion of shadow banking, where the lack of regulation resulted in more profitable returns.

21st century

The shadow banking system has become a very important way of funding worldwide in the last two decades. In Europe the total assets of the shadow banking more than double between 2000 and 2008, and between 2009 and 2018 a similar progress was testified. In 2019, was estimated that the industry of the shadow banking had assets valued in more than \$100 trillion and more than 80% of loans to corporation were from this industry. Two main motives that explain this boom and the growth of this system are the funding costs and the search for yield.

The motive of the funding costs was important before the 2008 global crisis. With the tightening of the monetary policy (increases in the ECB's interest rate) the shadow banking grew substantially. The opposite of the traditional banking. Apparently, there is a positive relationship between monetary policy actions and the growth of the shadow banking that relies on the efforts of avoiding high funding costs. After the crisis it was the search for yield that had an important role. With central banks pushing interest

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rates and yields to very low values, in fact the lowest values ever testified. The post-crisis measures caused huge inflows to investment funds as a result of search for yields induced by low rates. In this case, the search for yield settles a negative relation between monetary policies and shadow banking growth.

Subprime Crisis

It is important to notice that data shows that shadow banking in European Union is procyclical, which means that in good times it booms and in bad times it has a tendency to fall. The funny thing, which isn't funny at all, is that in the 2007-2008 crisis the shadow banking didn't fall because of the crisis but, actually, was a big contribution for it. And in that aspect, securitization had an important role, with the securities being sold with a credit risk level much lower than what it really had. Another implication in the crisis was the unidentified risks created by the CDS trading.

Shadow banking, because it isn't regulated, doesn't have a deposit insurance, and some investors can get panicked. So, in the 2007-2008 crisis, although this system isn't regulated, both the US and the European governments had to give trillions of dollars to "save" the shadow banking system. This financial crisis showed the world that although the actions of investment banks are regulated by the government, much of their activity is in the "shadows".

COVID Crisis

With the recent recession caused by COVID-19 it is expected that the shadow banking will become even more important. Corporates need funds to recover from the pandemic and the flexibility and speed that shadow banks have in opposition to traditional banking will make them a source of financing used with more frequency.

The shadow banks have profited with this crisis investing in sectors that have developed a lot, during the pandemic times like de delivery services, and in sectors that have struggled, like energy, hospitality sectors, etc. One of the methods they used was short selling which occurs when an investor borrows a security and then sells it on the open market. If the price goes down, he can buy back the security at the lower price and make a profit on the difference. One example of this was that during the crisis a hedge fund manager made a return of \$1.3 billion by shorting mall stocks, knowing that they would be hit hard by the confinement plans.

According to Tobias (2021, p. 3) "while the most economically vulnerable have suffered the brunt of the hardships of the pandemic, those with financial capital have benefited from the distressed and booming sectors alike. The work of shadow banks has contributed to increasing economic and social inequality during the crisis". The financial market is vital to developed economies, and it is important to understand that the work of these firms can affect everything from pension funds to government bonds themselves; hence the importance of finding solutions to shadow banking. In this way, the banking authorities do not lose credibility and the stability of the banking system is ensured, otherwise there would be a large and uncertain risk impact.

Evolution of Shadow Banking around the Globe

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When COVID-19 started, it became more important to monitor the developments of the non-bank financial intermediation sector in order to have financial stability.

There were a lot of vulnerabilities during the March market turmoil, when the World Health Organization announced that COVID-19 was a global pandemic.

This pandemic mainly impacted on the non-bank financial intermediation and on money maker funds.

In 2019 the financial assets of the non-bank financial intermediation sector amounted to \$200.2 trillion, these assets were from pension funds, insurance corporations and other financial intermediaries.

The expansion of the collective investment vehicles as money maker funds, hedge funds and other investment funds were the main drivers of growth of the non-bank financial intermediation. The assets of the previous mentioned collective investment vehicles had an annual average growth rate of 11% from 2013 to 2019, this represents 31% of the non-bank financial intermediation sector and reflects sizeable inflows and valuation gains.

Direct interconnectedness in the financial sectors

In order to diversify risk across the financial sectors, it is necessary the financial interconnectedness which features an open and integrated global financial system, this can also propagate certain risks during periods of stress.

Interconnectedness has consecuences for financial stability through funding and credit risk channels. Linkages between banks, other financial intermediaries and other non-bank financial entities can serve as indicators of potential contagion, within and across borders. Since the financial crisis of 2008, linkages between banks and other financial intermediaries have changed, the use of repo transactions as a source of funding increased.

Narrow measure

The narrow measure of the non-bank financial intermediation is a way to measure some parts of it, similar as banks which may pose financial stability risks or involve regulatory arbitrage.

The narrow measure of the non-bank financial intermediation provides an overview of global and regional trends of all economic functions. In 2019, the narrow measure grew 11.1% to 57.1 trillion, it grew faster than 2013 to 2018, which was 7.1% of growth.

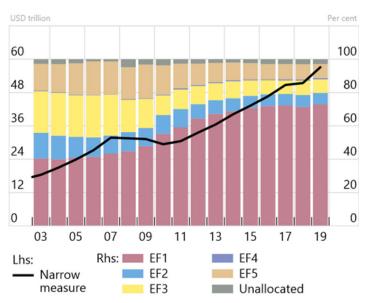
Elements of the narrow measure

Collective investment vehicles. They are classified as the economic function 1 (EF1). These are mainly fixed-income funds, mixed funds and money makers funds, which transform liquidity and maturity. In 2019, their growth rate was of 13.5%, they increased their share to 72.9% of the narrow measure.

Loan provision. This is the economic function 2 (EF2) and it depends on short-term funding, in 2019 it grew 6.1% which represents 6.8% of the narrow measure.

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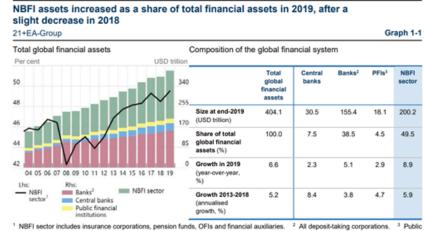
Graph 1 - Behaviour of the elements that make up the narrow measure since 2003 to 2019.

Direct interconnectedness in the financial sectors

According to the **graph 2**, the non-bank financial sector represented aproximately 50% of all global financial assets. Its growth in 2019 surpassed the growth that was registered between 2013-2018, which is a clear sign that this sector needs to be taken into account as a growing presence in the global financial cenario. Also, because the graph presents a general analysis, is important to analyse world economies on separate, on this term. In advanced economies, the NBFI sector comprises nearly 56% of total financial assets, which is fairly higher than the value of the emerging economies (27%). **Intermediation of market activities.** This depends on short term funding, it grew 5.4% in 2019 and it represents 8.2% of the narrow measure. The intermediation of market activities is the economic function 3 (EF3).

Insurance or guarantees of financial products. This element is the economic function 4 (EF4) which in 2019 it grew 16.6% and represents 1% of the narrow measure.

Securitisation-based credit intermediation. It increased 2.5% in 2019 and it is the 8.4% of the narrow measure. It is the economic function 5 (EF5).



financial institutions. Source: Jurisdictions' 2020 submissions (national sector balance sheet and other data); FSB calculations

Graph 2 - Composition of the global financial system (Global Monitoring Report on Non-Bank Financial Intermediation 2020)

How Regulation in the Banking Sector has impacted the Shadow Banking System

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Having defined the shadow banking system and its evolution, we can next analyze its wider implications on the global economy in greater depth. While still an emerging topic, the presence of the shadow banking system within the greater economic ecosystem cannot be ignored. Unlike its regulated counterpart, the size of shadow banking activities is harder to calculate precisely, due to a lack of disclosure and information about the value of assets held by these institutions.

The Great Financial Crisis shined light onto the shadows, bringing the system to the attention of economists, researchers, and policymakers as an impactful force that has to be tamed. Following the crisis, regulators and financial institutions have been focused on classifying and valuing the system, in order to better understand it and its overall impact. The Financial Stability Board (FSB) has conducted global monitoring exercises to observe all non-bank credit intermediation, spanning 28 jurisdictions and the euro area (mandated by the major advanced and emerging market economies, the G20). Globally, the shadow banking system peaked in value in 2007, crashing during the crisis, and rebounding to around \$92 trillion (value of assets) by the end of 2015.

Within this, the activity within the EU comprised 33% of the total system, translating to a 37% share of EU financial sector assets in 2016 (marked at \leq 34.5 trillion in 2018). In order to examine the shadow banking system's impact on the economy, we must answer two important questions: why does the system exist, and how it's affected by regulations in the banking sector.

Recent research suggests that the shadow banking system arose to fill a vacuum. This vacuum represents a genuine demand with the market, to which intermediaries respond, as suggested by Zoltan Pozsar, leading expert on the topic. Examining the key players, we harbor two perspectives:

- The demand side, which suggests institutional cash investors (managing institutional cash pools) prefer to invest their funds via wholesale funding markets and instruments. Their required level of safety could be met by government, private, or unguaranteed money market instruments.
- The supply side, which points out that the securitization-based credit-intermediation system used by modern bank, as well as the government and unguaranteed money markets are insufficient to meet the aforementioned demand.

With inelastic supply on one hand (created by a limited supply of government-guaranteed money market instruments), and inelastic demand on the other (an aversion to unguaranteed exposures to the traditional banking system via uninsured deposits), the system is a byproduct of both forces at hand, reliant on and instituted by the modern banking system.

Thus, shadow banking arose in response to a shortage of government-guaranteed money market instruments, filling the vacuum with privately guaranteed instruments.

How Regulation in the Banking Sector has impacted the Shadow Banking System

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Aside from market forces at play, the growth of the shadow market can be further explained by observing its connection to monetary policy. There is a perceived relationship dependent on the relative magnitude of interest rates in the economy (Hondula, 2018). High interest rates generate a positive relationship, since increased cost of function raises traditional banks' incentives to securitize (boosting shadow banking in an effort to avoid high costs). This is referred to as the funding-cost motive. On the other hand, when rates are low, this creates a negative correlation, since lower yields prompt investors to search for more attractive returns in riskier places. This is referred to as the search-foryield motive. We can observe this in evidence, as the funding-cost motive played a significant role leading up to the GFC, whereas the search-for-yield motive played a greater role in the post-crisis period. These relationships can help us understand how certain government regulation affects the growth of the shadow banking system.

A further reason to understand shadow banking are the heavy implications it poses on the overall economy due to its vast integration within the system. While it may seem like a separate issue at first glance, the dense interconnectedness of the system indicates a need for great attention. The way in which shadow banking transforms risk differs from the traditional system in that it needs a backstop. Due to the presence of non-differentiable, systemic risk (also called 'tail risk'), investors remain exposed to risk they don't wish to bear, thus generating the need for a backstop. Since it cannot be generated internally, due to the nature of these organizations, they need access to an external risk absorption capacity. One way is private access - by using the franchise value of existing financial institutions (explaining why traditional banks may operate shadow banking activities within themselves).

The other is public access - by using explicit or implicit government guarantees (within the scope of bigger banks).

This interconnectedness creates what is called 'risk of spillover', whereby the risk of operating within the shadow banking system can thus be transferred to the traditional system, and thus transferred to the 'sovereign' (central bank), potentially leading to a crisis (as observed with the GFC), exponentially growing the impact. This further emphasizes the need for regulation. The overall need for regulation of the shadow banking system, however, is faced with an immediate roadblock stemming from the system's primary characteristic: operating outside of the regular bank system, thus avoiding the rules applied to this system (as well as the overall lack of disclosure). This means that aside from a fundamental understanding of what drives demand for it, we need to understand how banking regulation affects shadow banking (due to the aforementioned interconnectedness).

It is difficult to say positively if regulation has affected the shadow banking system. Post GFC securitization regulation has certainly played a hand on how banks view systemic risk and has changed the way banks conduct business and transactions.

How Regulation in the Banking Sector has impacted the Shadow Banking System

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Bank regulation has become stricter on both a local and global level. Given the unprecedented and unforeseen impact of the GFC, many governments opted towards stricter regulation of the sector, in hopes of avoiding future crises and healing the economy. This was further reflected in the work of international bodies such as the Financial Stability Board, indicating the magnitude of the crisis' global impact. Countries around the world dealt differently with the crisis, leading to a diverse range of implemented regulation. While this had different implications for the shadow banking systems locally, our aim is to assess the global standing of the market.

The Basel Committee on Banking Supervision was established by the central bank Governors of the G10 countries in 1974, intended to enhance financial stability by improving the quality of banking supervision worldwide. Presently, the committee has expanded to 45 countries covering 28 jurisdictions. Its most notable work covers the Basel framework, a set of international standards for bank regulation. In response to the GFC, the Committee issued the Basel III accords, later agreed upon by the G20 and the Committee members, outlining higher global minimum capital standards for commercial banks, and further enhancements to the previous Basel II. The committee has since then released a set of revisions reflecting the current state of the banking sector. Members are required to fully implement the Standards, constituting the Basel minimum requirements which are agreed upon (as per the charter). Implementation and progress is further supervised and monitored by the Regulatory Consistency Assessment Program (RCAP), as well as the watchful eye of the FSB.

However, while the Basel III framework is seen to have contributed to the increased stability in the global banking sector (alongside local regulation), higher regulation stringency may also lead to less desired outcomes. Avoiding regulation is seen as a significant incentive for financial institutions to engage in shadow banking, meaning that stricter regulation has led to a shift of intermediation away from regulated banks and towards shadow banks.

This is also tied to the type of capital regulation suggested by the framework. Both the Basel II and III accords use a value-at-risk (VaR) criterion to determine the risk-sensitive requirements. From the demand perspective, VaR requirements are costly for risky borrowers who might be better off borrowing from shadow banks rather than regulated banks. In contrast to this, a flat criterion (or risk-insensitive, as followed by Basel I) is costly to safer borrowers, who may be better off borrowing from shadow banks. (Martinez-Miera and Repullo 2018) argue that each capital requirement produces a varied equilibrium market structure. Taking into consideration the existence of unregulated finance (and the root of its demand), acting bodies can set capital requirements and act accordingly.

Other large financial regulating institutions, such as the ECB, have presented policy initiatives aimed and stabilizing the markets taking into consideration nonbank players (the ECB suggested creating new secondary markets on which riskier loans can be traded while being subject to higher capital requirements).

How Regulation in the Banking Sector has impacted the Shadow Banking System

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Policy formulation is further weighed down by market-related characteristics of the shadow banking system. Evidence suggests that the shadow banking system is highly procyclical (booming in good times and falling steeply in bad times), tied to the positive relationship identified with real GDP growth. This is manifested mainly in the provision of short-term liquidity to financial markets at times of optimism, which may halt in periods of increasing uncertainty. This complementarity to both traditional banking and the rest of the financial system makes it harder to safeguard against deepened vulnerabilities in times of crisis. Moreover, shadow banking poses significant macro-prudential challenges. The use of backstops reduces the market participants' discipline and thus can enable shadow banking to accumulate (systemic) risks on a large scale, increasing the need for regulation in order to avoid accumulated risk.

However, regulators can try to reduce certain forms of undesirable shadow banking activities by taking away their backstop altogether. This can happen by affecting the ability of regulated entities to use their franchise value of supporting shadow banking activities, or by managing the government guarantees.

This brings us back to the beginning of course. Less regulation would bring large systemic risk in case of a liquidity freeze, like it happened in 2008 after Lehman Brothers went bankrupt. So, more regulation or less regulation is disputed. One can argue that securitization regulation and collateralized money lending keep shadow banking activities safer for everyone involved, so maybe regulation should not come in the root of the problem, but rather its branches. The shadow banking tree is complex and difficult to comprehend, leaving us with no right answer.

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