Economic Analysis

The rise of collateralized loan obligations: role, structure and risks

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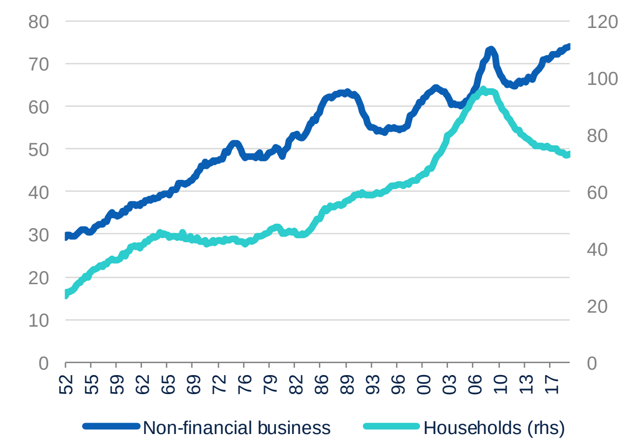
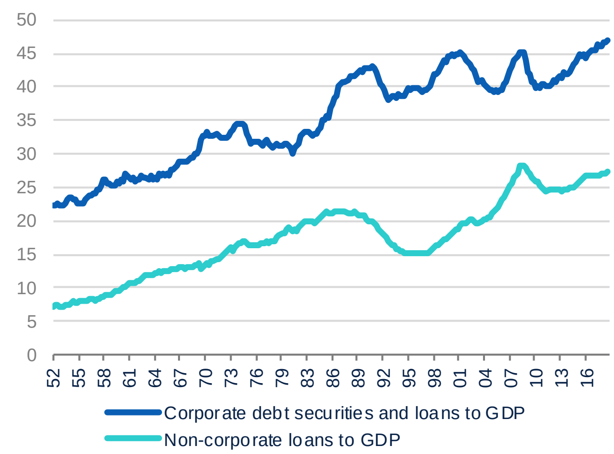
Nonfinancial business debt has increasingly come to the attention of economists working in the spheres of policy and finance. The main reason is the relatively high ratio of business leverage, which comes on the heels of over a decade of accommodative monetary policy worldwide, and is now recognized as a potential source of financial instability. Unlike household debt, which has declined in relative terms since the Great Recession, business leverage has continued to trend upwards (Figure 1), and our recent research on recession triggers (link) suggests that unlike the last recession, which was a result of household overleverage, the next one could very likely be caused or exacerbated by unsustainable business indebtedness. The main driver behind the steep increase in nonfinancial business debt has been corporate debt (Figure 2).

Figure 1. **Non-financial business and household debt (securities and loans) to GDP, %**



Source: Federal Reserve and BBVA Research

Figure 2. **Non-financial business debt (securities and loans) to GDP, %**



Source: Federal Reserve and BBVA Research

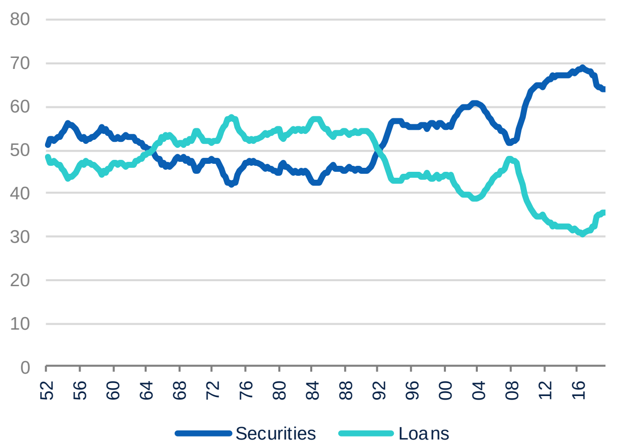
Corporate debt can take several forms: trade finance, commercial paper, bonds, municipal securities[1] and loans. Loans (both bank and non-bank) tend to be long-term instruments and account for 40% of total long-term debt. Loans' share in long-term corporate financing remains critical, despite some decrease in their share over the last several decades (Figure 3).[2] As such, the volume of outstanding loans to nonfinancial corporations has continued to grow and has

1: Industrial revenue bonds. Issued by state and local governments to finance private investment and secured in interest and principal by the industrial user of the funds.
2: Companies have started to rely more on direct access to securities markets and financing through issuance of bonds - a result of a long-term trend of banking disintermediation in the U.S

increased by close to $1tn in just the last three years, a large chunk of it through funding by foreign entities and non-banks. The increase in funding of corporate loans by non-banks has gone hand in hand with the evolution of collateralized loan obligations (CLOs), which are the instruments through which corporate loans are securitized.

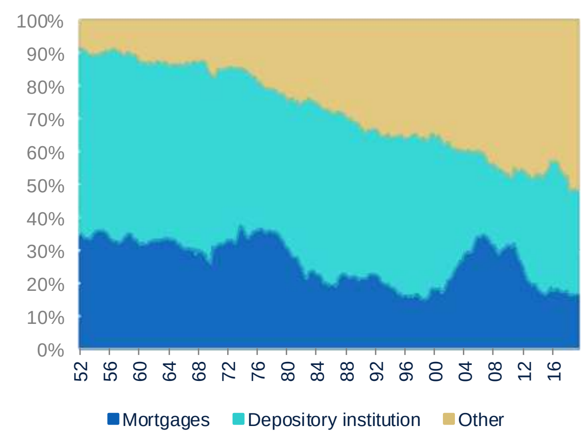
The increase in corporate leverage, the expansion and compositional and contractual evolution of CLOs, and the fact that they share similarities with private-label mortgage-backed securities (MBS) and collateralized debt obligations (CDOs) more broadly, which were the instruments that exacerbated the downturn during 2007-2009, has led to parallels being drawn between the CLOs of today and the private-label MBS of yore. This brief discusses CLO composition, the CLO market size and its importance to corporate finance, and the potential risks of CLOs precipitating market dislocations going forward.

Figure 3. **Nonfinancial corporations, long-term debt composition, %**



Source: Federal Reserve and BBVA Research

Figure 4. **Nonfinancial corporations, loans (liabilities), by type, %**

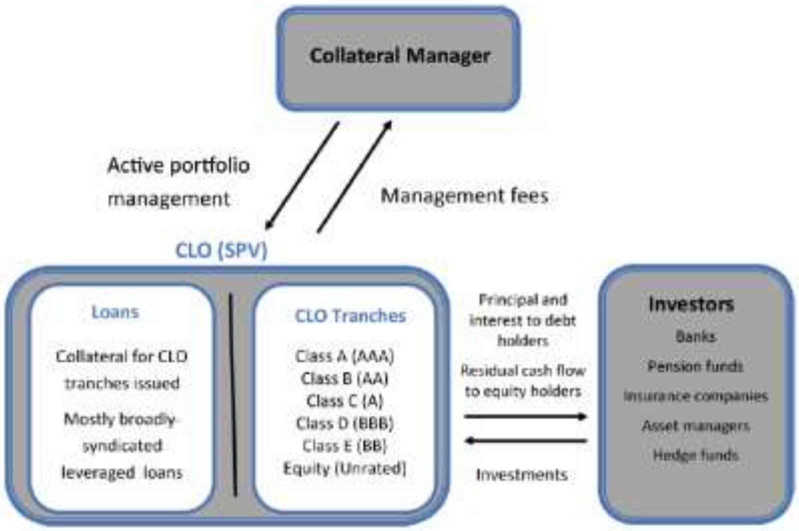


Source: Federal Reserve and BBVA Research

CLO structuring

The process of CLO structuring starts by assembling a pool of corporate loans by a CLO arranger, usually a bank, and raising funds from investors. The loans are placed in a special purpose entity or trust, which is controlled by a CLO manager. The CLO managers tend to be specialized asset management teams. The loans represent assets of the CLO as well as collateral against which securities are issued to the CLO investors (Figure 5). Investors can invest in one or more CLO tranches, each having different characteristics and thus credit rating.

Figure 5. **Collateralized Loan Obligation Structure**



Source: Guse, M. et al. (2019)[3]

The process of corporate loan securitization allows banks to earn fees on origination of the loans as well as fees for securitization, but avoid being subject to high regulatory capital requirements, which would be the case if they kept the originated debt on their balance sheets, particularly if it is in the form of high-risk loans. According to Bloomberg[4], lenders can charge about 2 percent of the issuance as fees. With originations in 2019 reaching over $130bn, the implied profit pool from CLO loan originations stood at around $2.5bn, which is an equivalent to 1% of the total net income earned by U.S. commercial banks during the year.

An important benefit of the process of securitization is that it allows asset managers and entities such as insurance firms to purchase tranches with risk profiles that match their liabilities. Moreover, without CLOs, many investors would be unable to invest in the corporate loan market due to the requirement to invest solely in rated securities, which the CLOs provide, in addition to the advantages of participating in a more liquid secondary market. As such, CLOs improve credit availability for non-financial corporations, but also likely facilitate greater leverage.

The CLO cash-flows are determined by the CLO structure and tranches. The life of the CLO can generally be divided in three stages. The first stage consists of the warehouse and ramp-up periods, during which the CLO buildup occurs through the purchase of assets using investment proceeds. The second stage is the reinvestment period, during which the interest earnings from the CLO assets are reinvested in additional securities. The last stage consists of the amortization period during which the cash flows, both in terms of principal repayment and interest, are returned to the investors using a waterfall method. The length of each period is determined by the governing documents of each CLO and vary from structure to structure. The waterfall method ensures that each tranche is repaid consecutively, starting

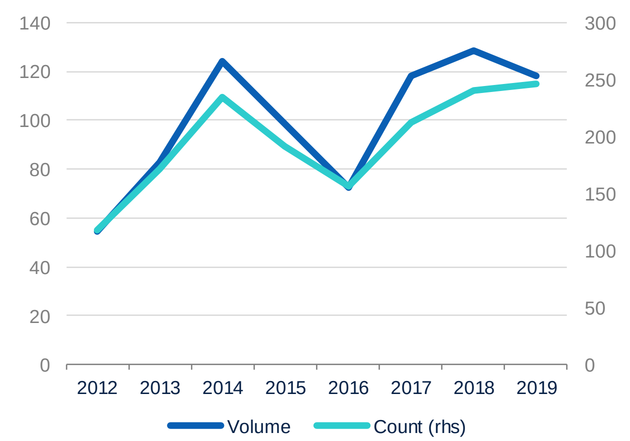
3: Guse, M. et al. (2019). Collateralized Loan Obligations in the Financial Accounts of the United States. Federal Reserve Board. http://bit.ly/36BaSuD
4: Metcalf, T. et al. (2018). Wall Street's Billionaire Machine, Where Almost Everyone Gets Rich. Bloomberg. https://bloom.bg/2O1tRbh

with the most senior one, and only after certain metrics are met. This in effect provides that any changes in the value of the collateral are translated to gains or losses to the equity and most junior tranches in a pre-defined manner.

CLO market, size and trends

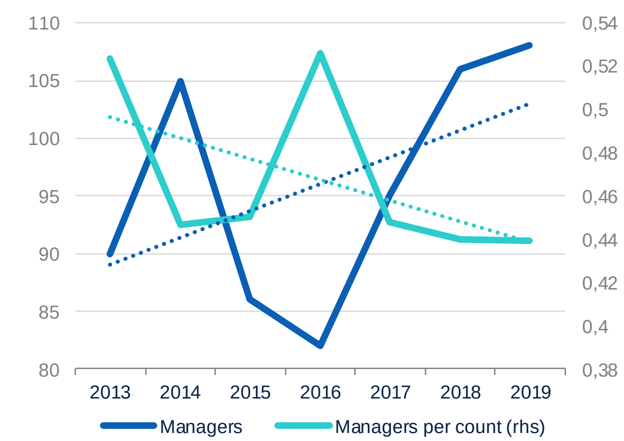
The volume of newly issued CLOs (as opposed to refinanced CLOs) has grown by about 120% to 120bn over the last eight years. Likewise, the number of CLOs has also more than doubled in the same period (Figure 6). Unlike the CLO arrangers, which tend to be commercial banks, the CLO managers are asset management firms such as Credit Suisse Asset Management, GSO (Blackstone), Carlyle, CIFC, PGIM, Ares Management, Guggenheim Investments, and Voya Financial. While the market has seen an influx of new CLO managers, the ratio of managers per deal has nevertheless been trending downwards due to the fast increase in the number of deals (Figure 7).

Figure 6. **CLOs, newly issued volume and count, $bn and number**



Source: S&P

Figure 7. **CLO managers**

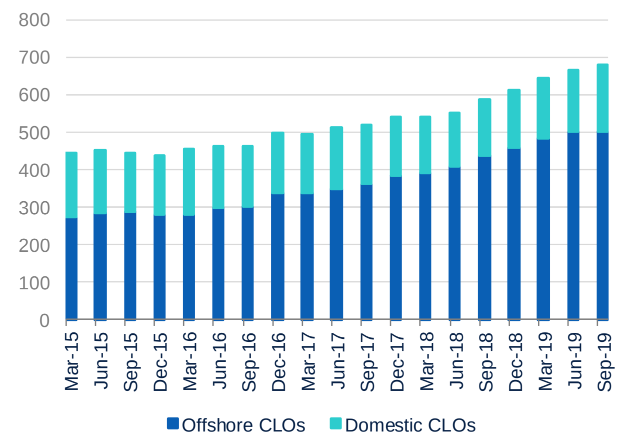


Source: S&P

According to Federal Reserve data, the volume of outstanding CLOs in 3Q19 stood at roughly $680bn. An overwhelming share of these instruments is created through offshore domiciled entities, primarily in the Cayman Islands, due to tax considerations and creditor friendly jurisdiction. About one-quarter of outstanding CLOs are created through domestic entities, mostly in Delaware (Figure 8), due to its reputation as a preeminent jurisdiction and flexibility and freedom of contract. CLO collateral generally takes the form of long-term debt that is classified in the Federal Reserve's Flow-of-Funds tables as "non-mortgage, non-depositary institution loans", which allows us to estimate the relative importance of CLO financing for non-financial corporations. In this respect, CLOs account for close to 7% of long-term financing for nonfinancial corporations and 37% of total non-mortgage non-depository institution loans[5] (Figure 9). The latter represents the share of corporate loans that are not directly funded by banks, as some loans could be held by non-bank institutions outright.

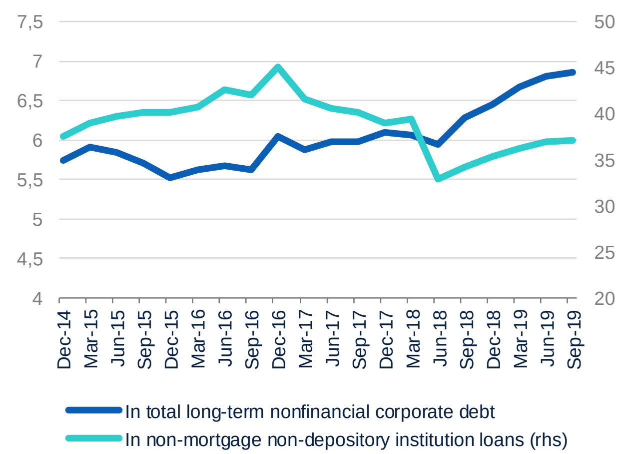
5: While traditionally CLOs have been backed by non-mortgage loans, there has been an increase in the volume of commercial real estate (CRE) backed CLOs. CRE CLOs currently account for about 5% of the total CLO market.

Figure 8. **CLOs outstanding,** $bn



Source: Federal Reserve data and BBVA Research estimations

Figure 9. **Relative importance of CLOs for nonfinancial corporate business financing,** %



Source: Federal Reserve data and BBVA Research estimations

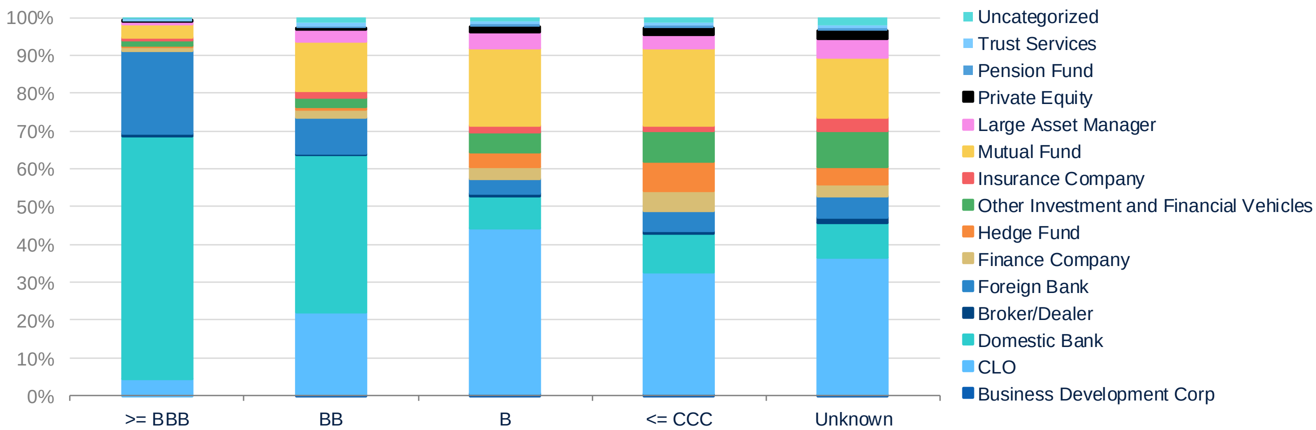
CLO collateral

Most loans used as CLO collateral are non-real estate related corporate loans, although the volume of commercial real estate (CRE) CLOs has been on a rise. CLO collateral generally comes through syndications conducted by CLO arrangers and carries lower credit rating. For example, while domestic and foreign banks account for the majority of investment-grade loans holdings, CLOs account for the largest share of loans rated BB and below, as well as unknown grade loans in the Shared National Credit (SNC) report (Figure 10).

While CLO collateral might carry below-investment-grade rating, it mainly consists of senior secured debt, which occupies the safest segment of a company's debt spectrum. This means that in case of a company's bankruptcy, the CLOs are the first in line for repayment. Historically, senior secured loans have had high recovery rates in case of default, which has contributed to relatively low default rates of CLOs even in times of severe financial stress. For example, according to S&P data, while corporate defaults in 2002 exceeded 3.5%, CLO defaults remained below 0.2%, and while corporate defaults exceeded 4% in 2009, CLO defaults peaked in 2011 at less than 0.3%.[6]

6: Vazza et al. (2019). 2018 Annual Global Leveraged Loan CLO Default and Rating Transition Study. S&P. http://bit.ly/2uG5ide

Figure 10. **SNC reported loans: utilized values by holder category in 2018 Q4**



Source: Lee S. et al. (2019)[7]

That said, recent data shows that CLO collateral is generally issued by highly leveraged companies. These so-called leveraged loans are recognizable not only by their BB+ or lower rating (some might not be rated) but also by a high spread over LIBOR rates. The risks of the collateral are managed by the CLO manager by maintaining a high degree of diversification with respect to company and industry exposure, a limited amount of CCC-rated collateral, as well as over-collateralization. Over-collateralization is the "ratio of the aggregate principal value of pooled assets to the outstanding debt (tranches) that comprises the capital structure."[8] Last but not least, the CLO structure is also subject to an interest coverage requirement, which means that "the income generated by the pool of assets is compared to (and must be greater than) the interest due on the outstanding debt".[9]

To safeguard that CLOs are performing as intended, tests are performed at the tranche level regularly. These tests ensure limited over-collateralization and satisfactory interest coverage. In case of failure of any of the tests, cash-flows intended for payments to the lower level tranches are redirected to ensure compliance at the upper-level tranches. These protections provide that the senior tranches are appropriately protected and that the waterfall method of cash-flow distribution ensures that the losses incurred at the top of the seniority scale are minimal and unlikely.

In this sense, the role of the CLO manager is critical, not just from an operational standpoint, but also from a strategic one, as the task of the CLO manager is to manage risks and ensure that the CLO structure remains within the contractual framework, especially in challenging circumstances. This means that in case of prepayments, the CLO managers need to reinvest the proceeds in a manner that maintains the appropriate diversification and risk profile. The CLO manager is also in charge of preventing the value of the collateral falling below the contractual limits, which in some cases requires replacement of loans in the collateral pool with different loans that have more appropriate risk profiles. These requirements lead to more or less active management of the collateral portfolios. The CLO managers

7: Lee, Seung Yung et al. (2019). The U.S. Syndicated Term Loan Market: Who holds what and when? Federal Reserve Board. http://bit.ly/37rJiRw
8: Johnson, J. (2018). Collateralized Loan Obligations (CLOs) Primer. National Association of Insurance Commissioners. http://bit.ly/36zjP7A
9: Ibid

are incentivized to provide high-quality service to the CLO investors by tiered compensation, depending on the CLO tranche performance and hurdle rates at different tranche levels. That said, each CLO can have different provisions, as the structures are not uniform.

Credit and market risks

Credit risks pertaining to CLOs generally stem from the credit quality of the underlying collateral. Leveraged loans are inherently risky and could have become even riskier with the increase in the issuance of covenant-light loans (Figure 11). Covenant light loans lack many of the protections that lenders have traditionally used. “Historically, financial covenants have been viewed as a form of 'early warning system' for lenders, enabling them to initiate restructuring discussions before the debtor's business irretrievably declines. The absence of meaningful covenants in recent deals greatly restricts lenders' ability to compel a borrower to take action when its business hits the rocks. To make matters worse, lenders' ability to exit the loan has become restricted, due to the increasing use of blacklists, whitelists and tighter consent rights on transfers”.[10]

While sufficient diversification across issuers and industries and the CLO collateral’s active management protect CLO investors most of the time, in an event of increased economic stress CLO managers will face not only an increase in defaults at the loan level but also an increase in correlation in asset prices, as has occurred in past economic crises. This means that collateral value impairments will be more substantial and spread out than what would be expected most of the time. In an event of a financial crisis, a decrease in liquidity in the secondary loan market can also be expected, as well as an increase in risk premiums that can shut off some borrowers from the market and have the effect of a credit crunch. This could trigger fire sales and further exacerbate the decline in collateral values, principal repayment, and interest payment cash flows.

When defaults occur, they “translate into collateral losses, while downgrades not only impair the value of the CLO securities but make matters worse by triggering covenants that limit the amount of junk-rated loans held in the CLO. If another recession arrives, investors may be quicker to blame CLO sponsors, collateral managers, and trustees for insufficient diligence, inadequate disclosures, and failure to abide by collateral quality covenants and investment criteria, among other things. Investors may also invoke event of default provisions that require immediate liquidation of CLOs. Inevitably, these events may—and likely will—end up in court.”[11] Thus, a failure to manage CLO structures properly can lead to significant liability and prolonged legal battles. Because of this, risk management needs underscore the importance of the quality of the CLO management teams. Unfortunately, even during the current period of solid economic expansion, there have been reports of CLO managers trying to circumvent some contractual requirements to the detriment of their investors, which is driven by a “race to the bottom” due to strong competition for CLO management fees.

On a positive note, “nearly all CLOs are not mark-to-market vehicles and have extremely high hurdles to meet before collateral liquidation is triggered, making them better equipped to potentially withstand market volatility.”[12] Moreover, CLO tranches tend to be held by long-term investors such as insurance companies, pension funds and mutual funds, whose investment horizons allow them to wait out a crisis and therefore decrease the volatility of CLO prices. That

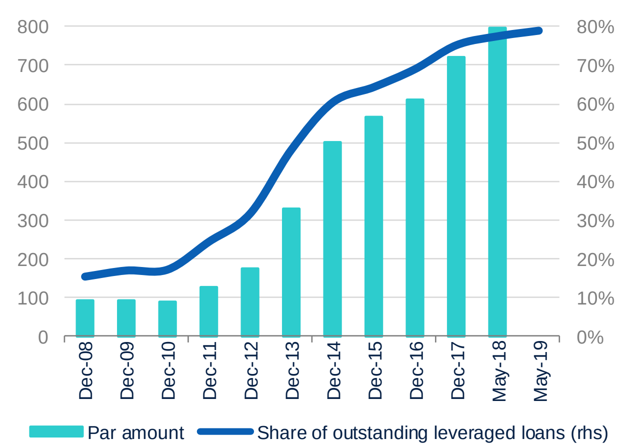
10: Wallace, I. & Pilkington, C. (2019). Restructuring the next wave of cov-lite debt. White & Case. http://bit.ly/3aNSL80
11: Itkin, U. and Breland, A. (2019). Next Economic Downturn Will See Increase in Structured Finance Litigation. Bloomberg Law. http://bit.ly/2GnpIdj
12: Minerd et al. (2019). Understanding Collateralized Loan Obligations. Guggenheim Investments. http://bit.ly/2tLJixt

said, equity and junior tranches will carry a disproportionate share of the burden in case of a downturn, with many investors in these segments likely to suffer losses.

Comparison to private-label MBS and CDOs

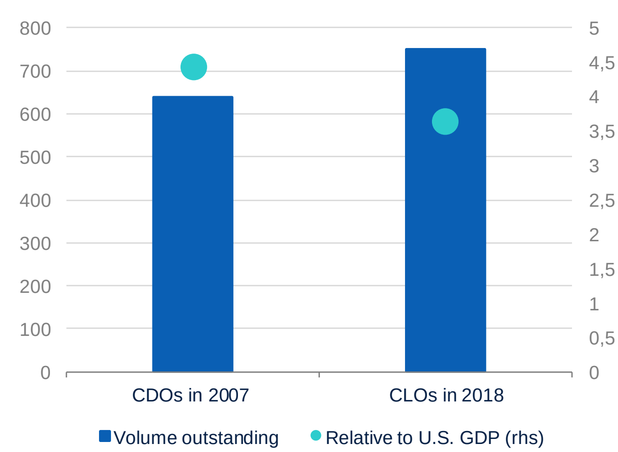
While household leverage was the direct cause of the Great Recession, it was private-label MBS – a vehicle for securitizing subprime mortgages – and CDOs more broadly, that propagated the financial crisis. According to the Bank for International Settlements (BIS), there were over $600bn of outstanding CDOs in 2007, corresponding to about 4.5% of U.S. GDP. In 2018, there were over $700bn of outstanding CLOs (U.S. and foreign), corresponding to slightly less than 4% of U.S. GDP (Figure 12). Knowing that the current expansion of leverage is occurring in the corporate debt sector, it is understandable that according to the BIS, questions remain “about the potential financial stability risks posed by CLOs, which share some similarities with the collateralized debt obligations that were at the center of the Great Financial Crisis”.[13]

Figure 11. **Covenant-lite amount and share of outstanding leveraged loans** ($bn and %)



Source: S&P/LSTA Leveraged Loan Index and BBVA Research

Figure 12. **CDOs in 2007 and CLOs in 2018 in absolute and relative terms**



Source: BIS[14] and BBVA Research

The parallels between the CLOs of today and CDOs of the previous decade, while justified, do not account for the changes in the overall institutional, economic and financial conditions that have occurred in the meantime. The primary reason for the lower level of systemic risks today is lesser leverage of the household and financial sectors, as well as risk mitigation strategies that have been put in place after the 2008 financial meltdown. If the credit/business cycle turns in the foreseeable future, with household leverage at a relatively low level, the recession is likely to be less deep and the level of financial stress less widespread than in 2007-2009. In addition, while corporate debt defaults could increase dramatically as they did at the turn of the century and part of the CLO tranches may suffer significant losses, CLOs are less likely to represent a systemic risk to financial stability because they are backed by more diversified

13: BIS Quarterly Review, September 2019. https://bit.ly/2Ng5eaR
14: Ibid

collateral. Moreover, there has been minimal resecuritization, synthetic securitization and maturity transformation, which were prevalent a decade ago and acted as strong amplifiers of financial stress when the credit cycle turned.[15] Last but not least, banks hold a small share of lower grade CLOs, while their capital buffers are much higher than leading into the Great Recession.

Bottom Line

CLOs have gained significant prominence over the last decade in an environment characterized by low interest rates and yield-hungry investors. CLOs have facilitated the proliferation of corporate funding through leveraged loans, and together with high-yield bonds have fueled the buildup of corporate debt. Although CLOs seem easily manageable currently due to the solid level of corporate profitability and low interest rates, their credit quality is likely to deteriorate in the future when economic conditions turn around. This would affect lower grade CLO tranches and inflict a nontrivial degree of pain to some investors. However, due to healthy household balance sheets and greater banking sector robustness, the consequences of the potential increase in CLO default rates to the overall economy are not likely to resemble those of the MBS and CDO meltdown during the Great Financial Crisis.

15: Ibid