

Corporate Debt: It's Private

The Threat Isn't the Debt of the Public Companies...

- Investors are worried that public companies have taken on too much debt. Their discomfort centers on those in the U.S., where debt-to-assets ratios have risen by +10 percentage points since the end-of-2013. On the other hand, their EBIT interest coverage ratios are around 8.5x, the second-highest in the world after Japan. Upon examining the U.S. companies that drove that market's rise in leverage we found they actually have stronger interest coverage ratios and superior free cash flow production, with tech a big part of the mix. Higher leverage and weak interest coverage aren't one and the same.

...But Rather the Nexus Between Leveraged Loans and Private Equity

- Our concern lies instead in a different corner of the credit market, leveraged lending, where global issuance reached \$800 billion last year, the highest in nearly two decades. The low-rate environment helped foster demand for these high-yielding instruments, and for the better part of two decades leveraged loans have produced better Sharpe ratios than the equity market. The boom in private equity created the supply, and last year 60% of global leveraged loan issuance financed M&A and LBO transactions. The multiples being paid for LBOs represent the highs of the cycle and covenants are weak. The best returns from private equity have generally come from investing early in an economic cycle, when the pickings are ripe.

Institutional Investors Have the Biggest Exposure, A Comparison with the U.S. Subprime Market of 2006

- Estimates for the size of the global leveraged loan market are hard to come by, in part because some transactions are private, and also because there's no consistent definition of what a leveraged loan is among commercial data providers. Recent work by the Bank of England puts that estimate at around \$2.6 trillion, with institutional holdings making up \$1.8 trillion, and those of banks, that include term loans and drawn credit facilities, comprising another \$800 billion. CLOs account for about \$800 billion as well, of which banks, primarily U.S. and Japanese ones, are thought to hold about \$250 billion. That makes the stock held by banks about \$1 trillion. That's comparable to the \$1.1 trillion stock of U.S. subprime mortgages outstanding in 2006, and the concern is that the leveraged loan market is on the same road to perdition. We think that's an unlikely outcome.
- One of the reasons subprime mortgages ended up infecting the entire U.S. mortgage market was that up to that point mortgages had generally been a pristine asset class. That's a different starting point compared to the leveraged loan market, where highly indebted companies compete for funding. The real issue has to do with loss potential. Since 2007 default rates on U.S. leveraged loans have averaged about 2%, while the recovery rate has been about 75%. On the other hand, over that same span default rates of U.S. subprime mortgages have averaged about 7%, while the recovery rate has only been about 30%. What's also different is that banks are now much better positioned to cope with any potential hiccups, with the Tier 1 capital base of U.S. and Pan-European ones totaling about \$4 trillion, up from about \$1.2 trillion in 2007.

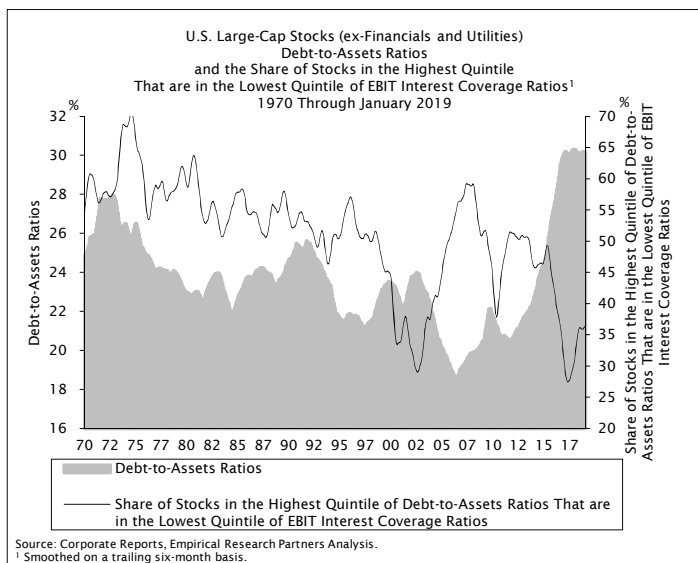
Tail Risk, Cyclical

- We don't think the level of debt of public companies worldwide represents the sum of all fears. The real vulnerability is in the leveraged loan market. That said, we don't think the threat it poses to public equity investors is systemic, as banks' exposures are of moderate proportions. A wave of defaults, though, would likely exacerbate a downturn. That's because three-quarters of the aggregate stock of leveraged loans in the U.S. and Pan-Europe was issued to cyclical businesses. That share is greater than what we see in the public company sphere.

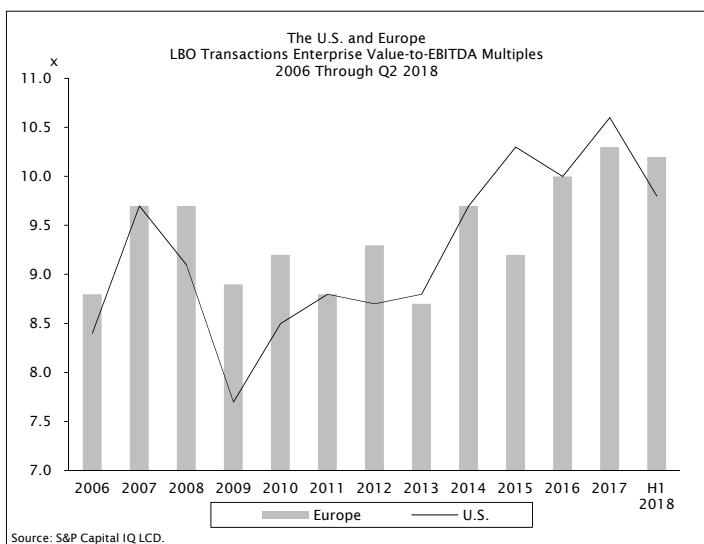
Sungsoo Yang (212) 803-7925 Nicole Price (212) 803-7935 Yu Bai (212) 803-7919 Iwona Scanzillo (212) 803-7915

Conclusions in Brief

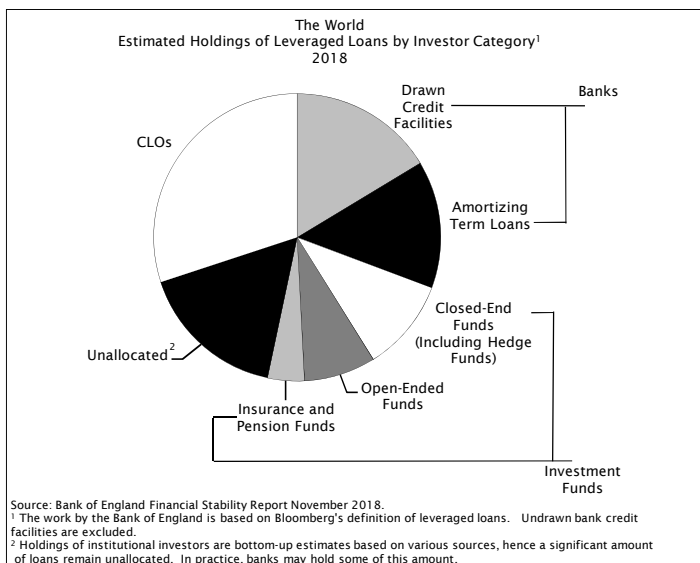
- The level of public company debt and the ability to service it aren't the same thing:



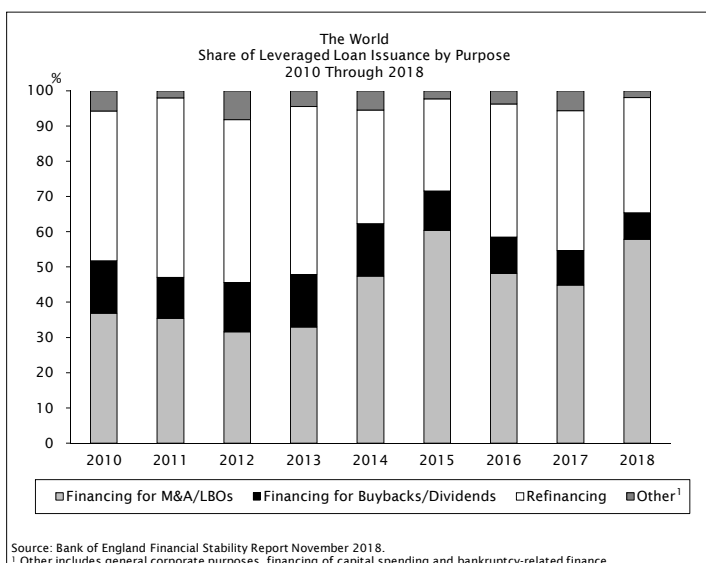
- The multiples for LBOs are looking frothy...



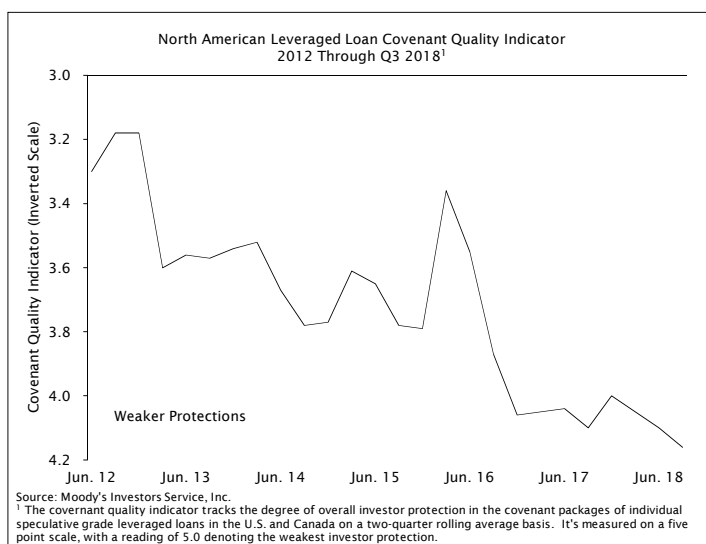
- Institutional investors, not banks, have the biggest exposure...



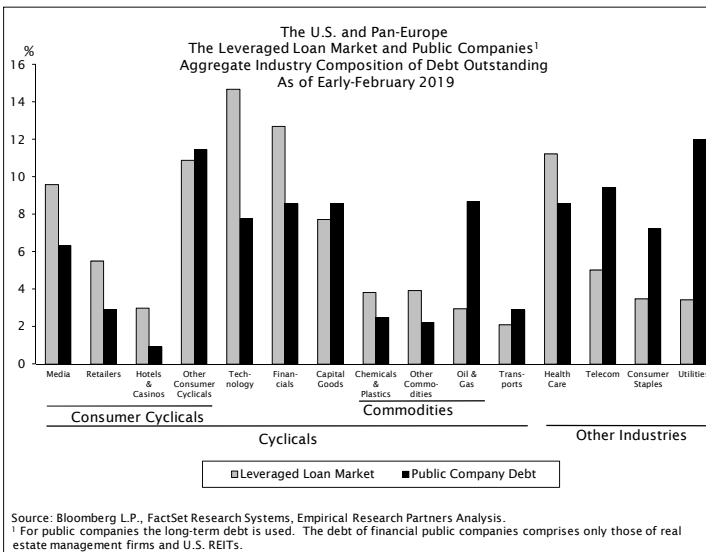
- We're more worried about the nexus between leveraged loans and private equity:



- ...And in the leveraged loan market investor protection is now the weakest in years:



- ...And leveraged loans are more tied to the fate of cyclical businesses than the public company debt is:



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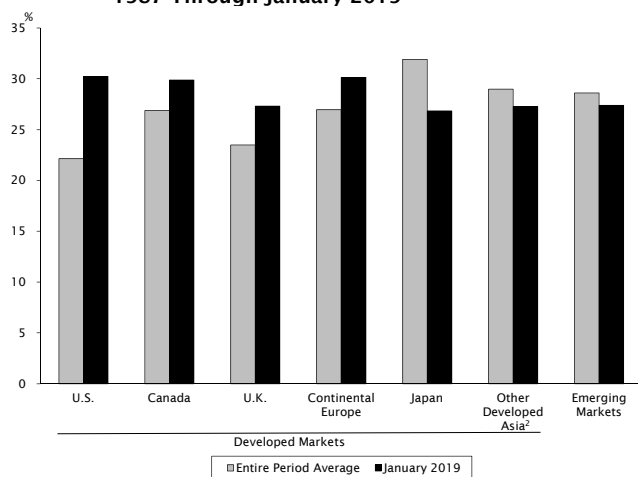
The Threat Isn't the Debt of the Public Companies

A widely-followed survey of global fund managers recently reported that those participants are worried about the level of debt of public companies, with the majority of them preferring managements to use cash to pay down debt rather than boost capital spending or buy back shares.¹ In this research we begin by examining the financial leverage and interest coverage ratios of publicly-traded companies across the world, looking for signs of excess. We then examine the state of the fast-growing leveraged loan market, where private equity has been an active participant, and assess how big a threat it poses to public equity investors.

Exhibit 1 compares the debt-to-assets ratios of public companies in the developed and emerging worlds. The grey bars represent the averages since 1987 while the black bars depict today's levels, that stand somewhere between 25% and 30%. Compared to the historical averages they're highest in the U.S. and lowest in Japan.

Of course financial leverage and the ability to service debt aren't quite the same thing. Exhibit 2 compares EBIT interest coverage ratios (i.e., EBIT divided by the interest expense) of publicly-traded companies across the world. Today they're higher than average across the board, save for the emerging market companies. Those in the U.S. stand at around 8.5x, a level they've held throughout most of the decade and the highest around the world save Japan, where interest rates have trailed those of other developed economies for two decades. The problem of course with interest coverage ratios is that they could plummet if the economy dives. Were that to occur at least it'd be from a less vulnerable starting point.

Exhibit 1: Public Companies Worldwide (ex-Financials and Utilities)
Debt-to-Assets Ratios by Region
1987 Through January 2019¹

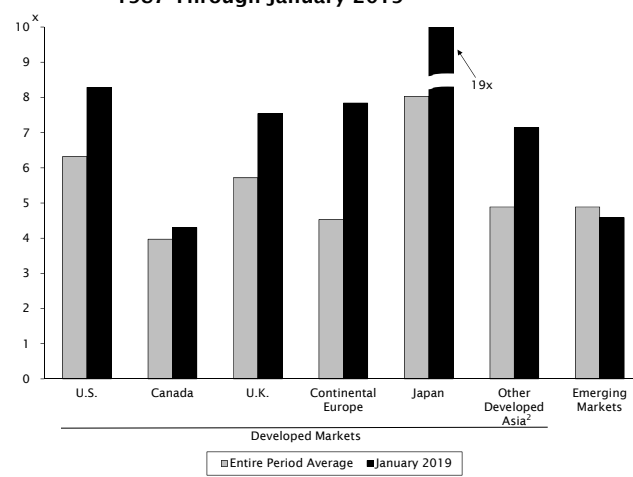


Source: Corporate Reports, Empirical Research Partners Analysis.

¹ Data for the U.S. since 1952, and for the emerging markets since 1997.

² Other Developed Asia comprises Australia, Hong Kong, Singapore and New Zealand.

Exhibit 2: Public Companies Worldwide (ex-Financials and Utilities)
EBIT Interest Coverage Ratios by Region
1987 Through January 2019¹



Source: Corporate Reports, Empirical Research Partners Analysis.

¹ Data for the U.S. since 1952, and for the emerging markets since 1997.

² Other Developed Asia comprises Australia, Hong Kong, Singapore and New Zealand.

The concern around the debt of public companies has centered on the U.S., where debt-to-assets ratios have risen from a level of 22% at the end-of-2013 to 30% lately (see Exhibit 3). Countering that, though, companies with the weakest interest coverage ratios have comprised a *decreasing* share of the most financially-leveraged cohort, as shown by the line in the chart, the opposite of what went on in the last cycle. That's consistent with the relative returns of stocks with the weakest coverage during the tumultuous fourth quarter, that not only swooned but also lagged those of the highest-levered firms by about six percentage points (see Exhibit 4).

In fact, an examination of the companies that drove the rise in the market's financial leverage since the end of 2013 reveals their interest coverage ratios are, in fact, superior to those in the rest of the market, despite having debt-to-asset ratios that are +10 percentage points higher (see Exhibit 5). Moreover, they have also better free cash flow

¹ Bank of America Merrill Lynch Global Fund Manager Survey, February 2019.

production, with tech companies an important part of the mix. A corporate debt vulnerability index built by economists at the Federal Reserve, that tracks the share of total public company debt comprised by that of businesses with weak interest coverage ratios, doesn't look worrisome (see Exhibit 6).

Exhibit 3: U.S. Large-Cap Stocks (ex-Financials and Utilities) Debt-to-Assets Ratios and the Share of Stocks in the Highest Quintile That are in the Lowest Quintile of EBIT Interest Coverage Ratios¹ 1970 Through January 2019

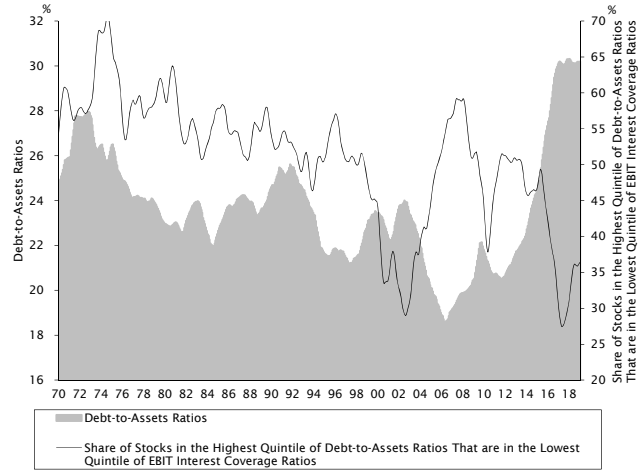
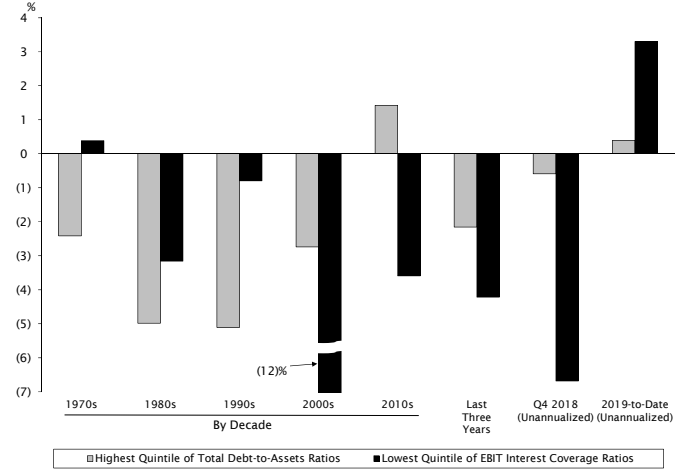


Exhibit 4: U.S. Large-Cap Stocks (ex-Financials and Utilities) Relative Returns to the Highest Quintile of Total Debt-to-Assets Ratios and the Lowest Quintile of EBIT Interest Coverage Ratios¹ Monthly Data Compounded to Annual Periods 1970 Through January 2019



Source: Corporate Reports, Empirical Research Partners Analysis.

Source: Empirical Research Partners Analysis.

¹ Smoothed on a trailing six-month basis.

¹ Equally-weighted data.

Exhibit 5: U.S. Large-Cap Stocks (ex-Financials and Utilities) Stocks in the Highest Quintile of Change in Debt-to-Assets Ratios Since 2013 Debt-to-Assets Ratios, EBIT Interest Coverage Ratios and Free Cash Flow Margins 2013 Through Q3 2018

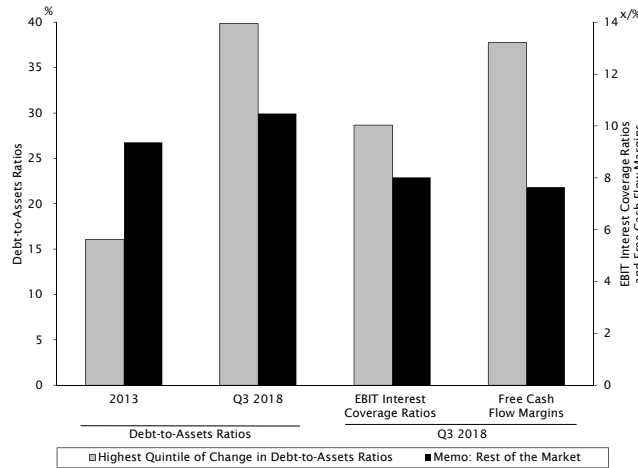
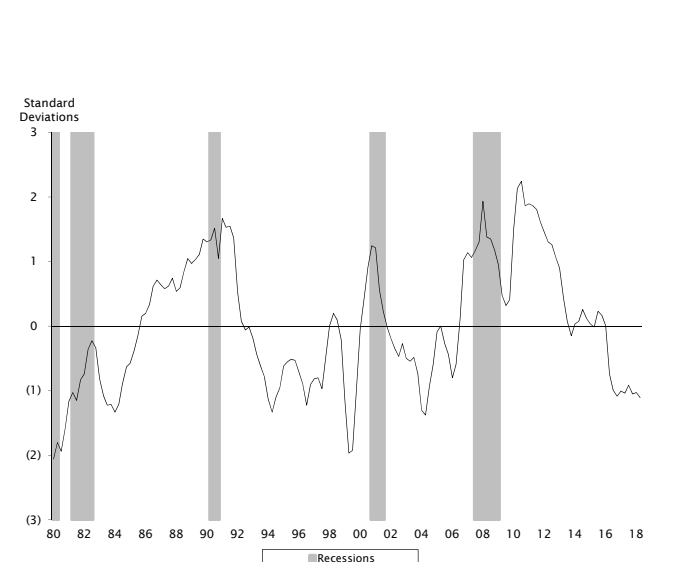


Exhibit 6: Corporate Debt Vulnerability Index Q2 1980 Through Q3 2018



Source: Corporate Reports, Empirical Research Partners Analysis.

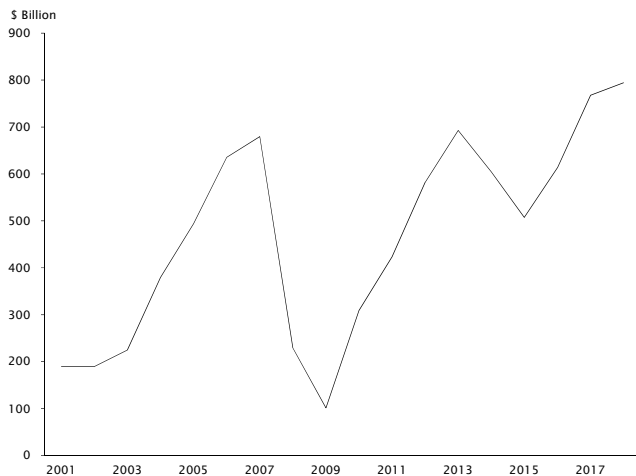
Source: Palomino, F., Paolillo, S., Perez-Orive, A. and Gerardo Sanz-Maldonado, 2019. "The Information in Interest Coverage Ratios of the U.S. Nonfinancial Corporate Sector," FEDS Notes. Washington: Board of Governors of the Federal Reserve System, January 10, National Bureau of Economic Research.

Private Equity and Leveraged Loans: A Dangerous Combination?

The market for lending to companies carrying large amounts of debt has grown rapidly in the post-Crisis years, and last year issuance of leveraged loans reached a whopping \$800 billion globally, the highest in 18 years (see Exhibit 7).

The low-rate environment helped foster demand for this high-yielding product, as most of its return comes from the interest rate margin (i.e., what's paid on top of, usually, LIBOR). Investors have been drawn to its equity-like returns and Sharpe ratios that have been superior to those in the equity market (see Exhibit 8).

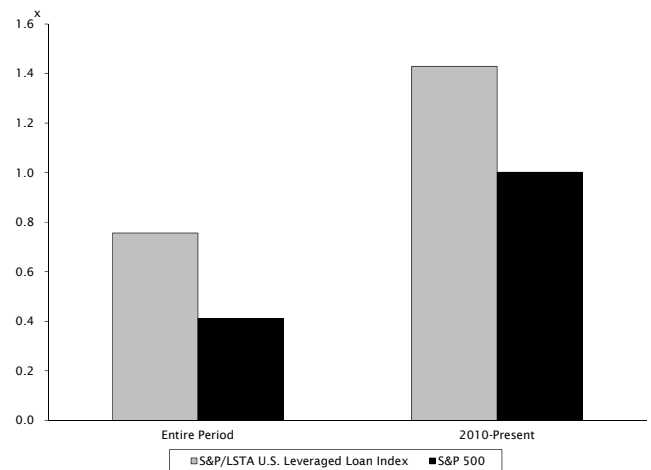
Exhibit 7: The World
Annual Leveraged Loan Gross Issuance¹
2001 Through 2018



Source: Bank of England Financial Stability Report November 2018.

¹ Gross issuance comprises total issuance without subtracting repayments of outstanding loans. Based on leverage loan transactions tracked by LCD (Leveraged Commentary and Data), covering both institutional and pro-rata facilities (including amortizing term loans and credit facilities). Excludes private bilateral deals and non-syndicated facilities.

Exhibit 8: S&P/LSTA U.S. Leveraged Loan Index and the S&P 500
Annualized Sharpe Ratios
2001 Through January 2019

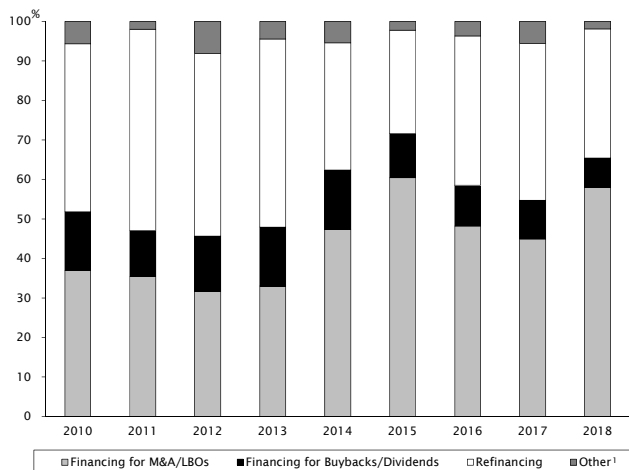


Source: Standard & Poor's, LSTA, Empirical Research Partners Analysis.

Last year about 60% of the issuance of leveraged loans globally was driven by M&A and LBOs, as the private equity business has boomed (see Exhibits 9 and 10). Private equity dealmaking and leveraged loan issuance have been tied at the hip, as private equity sponsors have preferred loans over junk bonds for financing, in part due to less onerous lender restrictions. Commitments to private equity have grown in recent years, as institutional investors have been desperate for returns and believe the asset class can deliver (see Exhibit 11). One problem, though, is that the best returns to private equity have come from investments made *early* in the business cycle (see Exhibit 12). Enterprise value-to-EBITDA multiples paid for LBOs are now around the highs of the cycle (see Exhibit 13).

As multiples have gone up so too has the leverage required to finance the deals (see Exhibit 14). What's also worrisome is that the covenant quality of leveraged loans issued in North America has been deteriorating, and it's the weakest in years (see Exhibit 15). Those concerns became evident in the fourth quarter when prices of U.S. leveraged loans fell precipitously (see Exhibit 16).

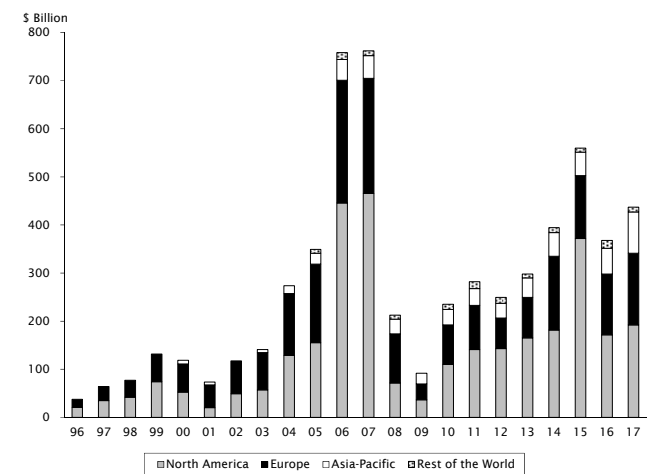
Exhibit 9: The World
Share of Leveraged Loan Issuance by Purpose
2010 Through 2018



Source: Bank of England Financial Stability Report November 2018.

¹ Other includes general corporate purposes, financing of capital spending and bankruptcy-related finance.

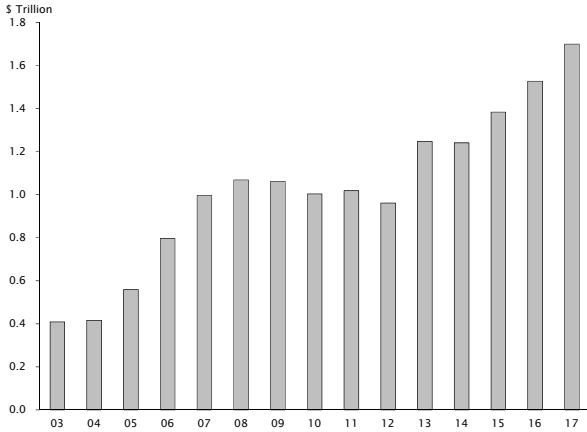
Exhibit 10: Global Buyout Value by Region¹
1996 Through 2017



Source: Bain & Company Global Private Equity Report 2018.

¹ Geography based on target's location. Deal value based on announcement date and includes those completed or pending.

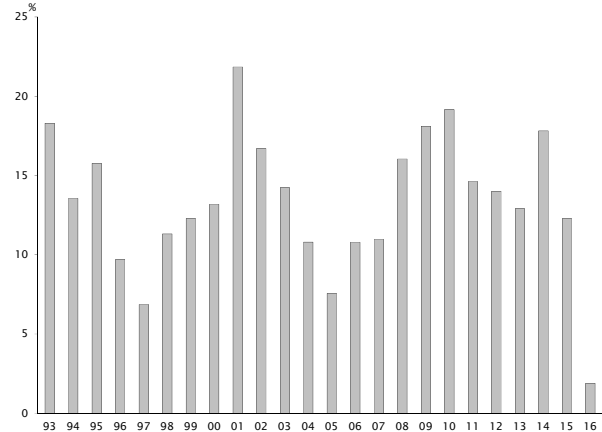
**Exhibit 11: Global Private Equity Dry Powder¹
2003 Through 2017**



Source: Bain & Company Global Private Equity Report 2018.

¹ Year-end amounts.

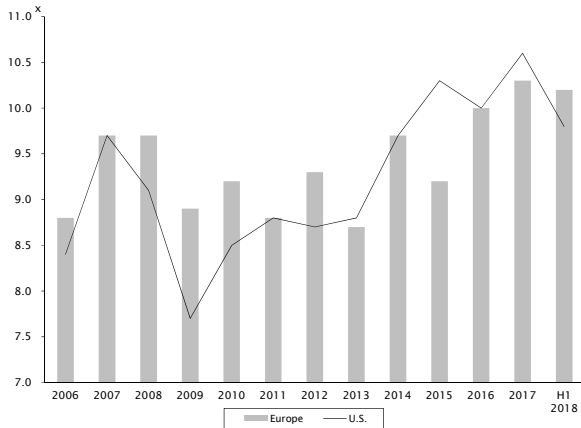
**Exhibit 12: U.S. Private Equity
Mean IRRs by Vintage Year¹
1993 Through 2016**



Source: Cambridge Associates.

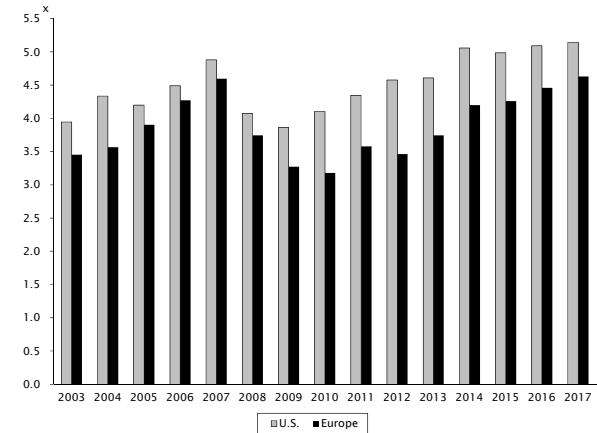
¹ Net-of-fee returns.

**Exhibit 13: The U.S. and Europe
LBO Transactions Enterprise Value-to-EBITDA Multiples
2006 Through Q2 2018**



Source: S&P Capital IQ LCD.

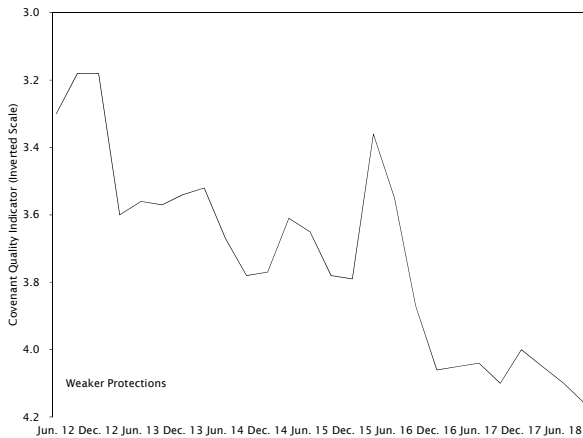
**Exhibit 14: The U.S. and Europe
Leveraged Loan Debt-to-EBITDA Ratios¹
2003 Through 2017**



Source: ECB Financial Stability Review May 2018.

¹ Gross debt and pro-forma EBITDA.

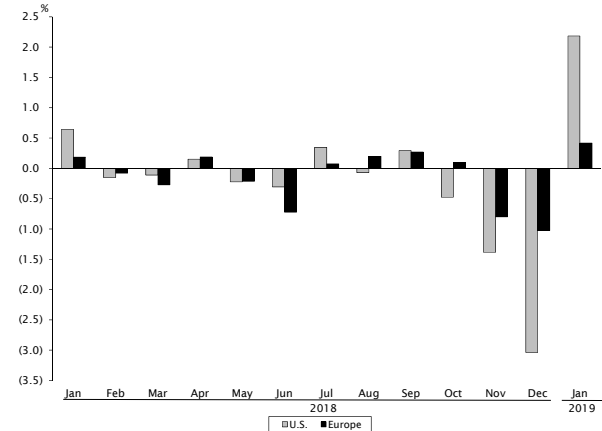
**Exhibit 15: North American Leveraged Loan Covenant Quality
Indicator
2012 Through Q3 2018¹**



Source: Moody's Investors Service, Inc.

¹ The covenant quality indicator tracks the degree of overall investor protection in the covenant packages of individual speculative grade leveraged loans in the U.S. and Canada on a two-quarter rolling average basis. It's measured on a five point scale, with a reading of 5.0 denoting the weakest investor protection.

**Exhibit 16: U.S. and European Leveraged Loan Indices
Monthly Nominal Returns¹
2018 Through January 2019**



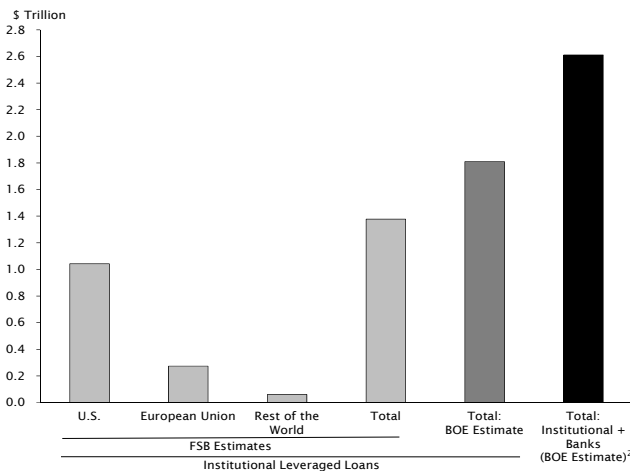
Source: Standard & Poor's, LSTA, Bloomberg L.P., Empirical Research Partners Analysis.

¹ Based on price return indices.

Institutional Investors Have the Biggest Exposure

Transactional data in the leveraged loan market is hard to come by because some of the deals are private. Moreover, there isn't a consistent definition of what a leveraged loan is among commercial data providers. That makes it difficult to size up that market, but the Financial Stability Board estimates the global stock of *institutional* leveraged loans (i.e., those typically distributed by banks to institutional investors) at \$1.3 trillion, with those in the U.S. and Europe accounting for almost all of it (see Exhibit 17). The Bank of England's estimate is closer to \$1.8 trillion, as shown by the dark grey bar, with the difference accounted by the inclusion of smaller middle-market deals and loans that are less widely syndicated. Their estimate rises to \$2.6 trillion once amortizing bank term loans, and drawn credit facilities, are included, as captured by the black bar.

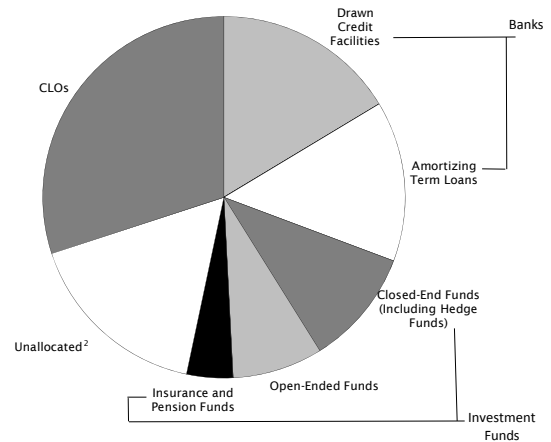
Exhibit 17: The World Holdings of Leveraged Loans by Region¹ 2018



Source: Financial Stability Board Global Monitoring Report on Non-Bank Financial Intermediation 2018, Bank of England Financial Stability Report November 2018.

¹ Institutional holdings include only those held by institutional investors and excludes those held by banks.
² Includes term loans and drawn credit facilities.

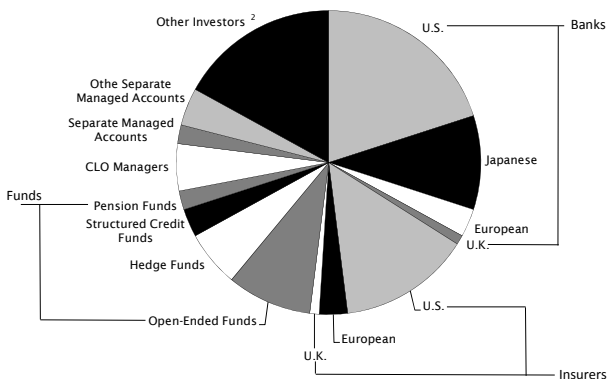
Exhibit 18: The World Estimated Holdings of Leveraged Loans by Investor Category¹ 2018



Source: Bank of England Financial Stability Report November 2018.

¹ The work by the Bank of England is based on Bloomberg's definition of leveraged loans. Undrawn bank credit facilities are excluded.
² Holdings of institutional investors are bottom-up estimates based on various sources, hence a significant amount of loans remain unallocated. In practice, banks may hold some of this amount.

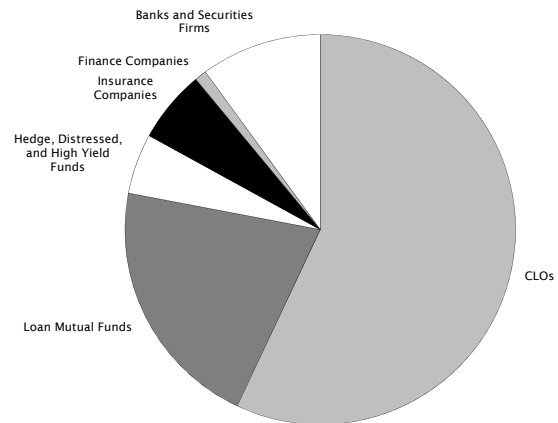
Exhibit 19: The World Estimated Holdings of CLOs by Investor Category¹ As of Q4 2017



Source: Bank of England Financial Stability Report November 2018.

¹ Separate managed accounts are those managed by professional investment firms on behalf of clients, such as pension funds for example, where each portfolio is bespoke for the specific account holder.
² Other investors comprise mainly Asian investors other than Japanese banks.

Exhibit 20: U.S. Leveraged Loans Share of New Issuance by Investor 2017

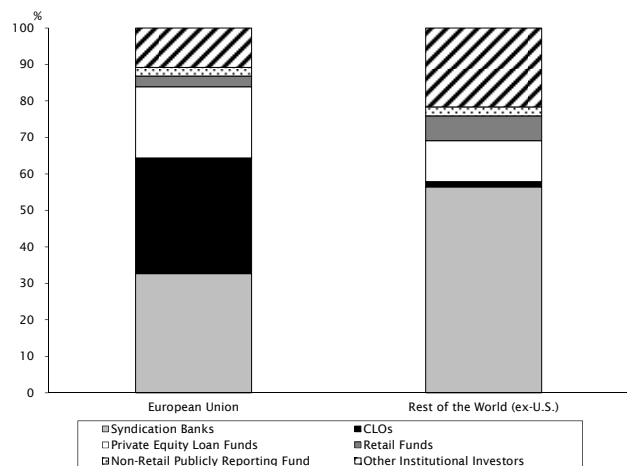


Source: EPFR Global, S&P Leveraged Commentary and Data and IMF staff calculations.

Exhibit 18 (overleaf) decomposes the \$2.6 trillion outstanding by investor category based on bottom-up estimates drawn from a variety of public and commercial sources. Only 14% is made up of term loans held by banks, while another 16% is comprised of bank revolving credit facilities that have been drawn. These two amounts add up to about \$800 billion. Those exposures are inherently less risky compared to that of institutional investors because of stronger covenants, seniority and repayment structure. The remaining 70% is estimated to be held by institutional investors, with CLOs comprising about 30% and investment funds about 23%. About 17% of the estimated holdings could not be allocated to any particular institutional investor. Of the CLOs themselves the Bank of England estimates that nearly a third of the outstanding, or about \$250 billion, is held by banks and the rest by institutional investors (see Exhibit 19 overleaf). That makes the total held by banks about \$1 trillion. Asian investors in particular have driven a lot of the demand.

CLOs have been a driver of the growth in leveraged loans and in the U.S. they've accounted for 60% of the issuance lately, while banks comprise a smaller share (see Exhibit 20). In Europe, CLOs comprise about 30% of the holdings of leveraged loans, about the same as that of syndication banks, while in the rest of the world the share is about 50% (see Exhibit 21). In Europe the banks' exposure has waned over the years, and excluding their revolving credit facilities they've lately accounted for less than a fifth of all leveraged loan facilities (see Exhibit 22).

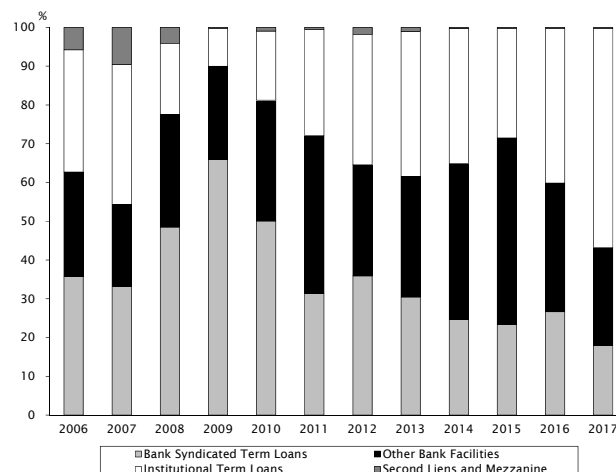
Exhibit 21: The European Union and the Rest of the World Leveraged Loan Holdings by Investor Category¹ 2018



Source: Financial Stability Board Global Monitoring Report on Non-Bank Financial Intermediation 2018.

¹ The share of syndicate banks is based on primary market leveraged loans not structured for institutional investors.

Exhibit 22: The European Union Makeup of Leveraged Loan Facilities by Type¹ 2006 Through 2017



Source: ECB Financial Stability Review May 2018.

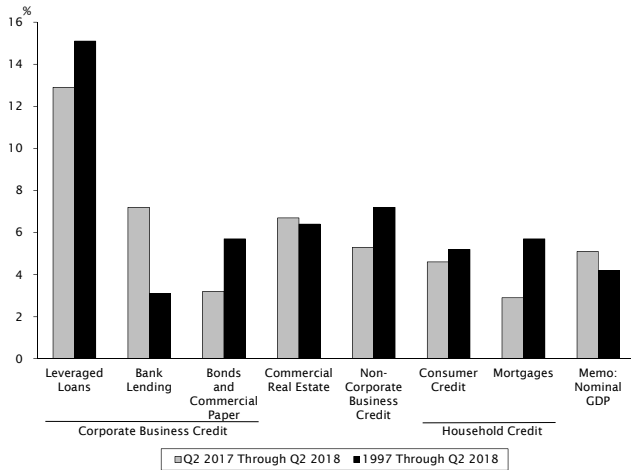
¹ Institutional term loans cover term loans B, C, D and E. Bank syndicated term loans cover term loans A (TLAs). Other bank facilities cover bridge loans revolving credit facilities, capital expenditures and acquisition loans.

Comparisons with the U.S. Subprime Market of 2006

Over the last two decades the leveraged loan market in the U.S. has grown about three times faster than all non-financial private sector credit issued there and almost four times faster than nominal GDP (see Exhibit 23). There are concerns that the breakneck growth in leveraged loans has resembled that of U.S. subprime mortgages in the run-up to the Financial Crisis. At \$1.1 trillion the stock of leveraged loans estimated to be held by banks is comparable to the 2006 stock of U.S. subprime mortgages (see Exhibit 24). The fear is that the leveraged loan market is on the same road to perdition. We don't see it that way.

One of the reasons subprime mortgages ended up infecting the entire market of U.S. mortgages, was that up to that point mortgages had generally been a pristine asset class. That's quite different from the business of lending to companies carrying a lot of debt. The real issue has to do with loss potential. Since 2003 default rates on leveraged loans have averaged about 2%, while the average recovery rate has been around 75% (see Exhibit 25). On the other hand, default rates for U.S. subprime mortgages have averaged about 7% over that span, and the recovery rate has been only 30%. What's also different is that banks are much better positioned to cope with any potential hiccups, with those in the U.S. and Pan-Europe holding Tier 1 capital totaling about \$4 trillion, up from \$1.2 trillion in 2007.

Exhibit 23: The U.S. Growth in Business and Household Credit¹ 1997 Through Q2 2018



Source: Federal Reserve Board Financial Stability Report November 2018

¹ Leveraged loans comprise institutional loans and exclude loan commitments held by banks, such as lines of credit, and its average annual growth for leveraged loans is since 2000.

Exhibit 24: 2018 Global Leveraged Loans Held by Banks and 2006 U.S. Subprime Mortgages¹



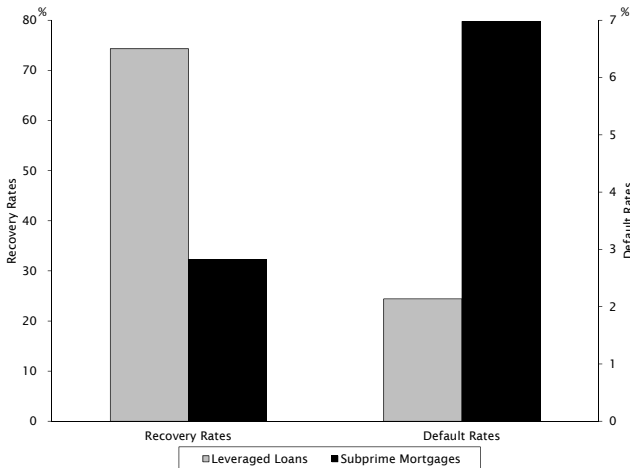
Source: Bank of England Financial Stability Report November 2018, Empirical Research Partners Analysis.

¹ The work by the Bank of England is based on Bloomberg's definition of leveraged loans.

Conclusion: Tail Risk, Cyclical Flavor

We don't think the level of debt of public companies worldwide represents the sum of all fears. The real vulnerability is in the leveraged loan market. That said, we don't think the threat it poses to public equity investors is systemic, as banks' exposures are of moderate proportions. In the event loan prices do head south the misfortunes of institutional investors, that hold most of the assets, aren't likely to be big enough to bring down the real economy, but would likely exacerbate a downturn. That's because three-quarters of the (combined) stock of leveraged loans in the U.S. and Pan-Europe is tied to borrowers in cyclical businesses, as shown by the grey bars in Exhibit 26. On the other hand, the long-term debt of public companies operating in those industries, the black bars, comprises a more modest 63%.

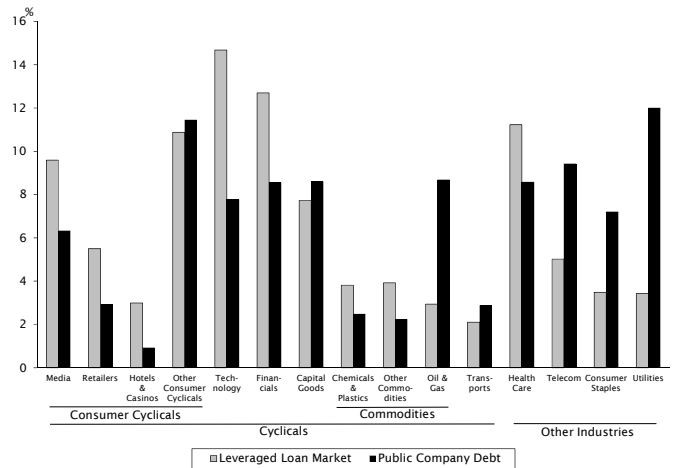
Exhibit 25: U.S. Leveraged Loans and Subprime Mortgages Average Default and Recovery Rates¹ 2007 Through 2018



Source: Standard and Poor's, LCD, Core Logic.

¹ For securitized loans and mortgages.

Exhibit 26: The U.S. and Pan-Europe The Leveraged Loan Market and Public Companies' Aggregate Industry Composition of Debt Outstanding As of Early-February 2019



Source: Bloomberg L.P., FactSet Research Systems, Empirical Research Partners Analysis.

¹ For public companies the long-term debt is used. The debt of financial public companies comprises only of real estate management firms and U.S. REITs.