In response to the financial crisis of 2007–09, the financial services industry has seen a wave of new regulations. Although banks may have been the primary target because they sit at the center of both the economy and the history of that crisis, the effects of these new regulations are being felt well beyond their walls. Investment management—practiced by banks, serviced by banks, and a competitor against banks—clearly inhabits this landscape, and in this paper we consider some of the ways in which banking regulations are re-shaping it. We find financial market dynamics changing, competitive pressures shifting, new risks appearing and exciting opportunities developing across asset classes and strategies. From global equity managers to specialist lenders, virtually every practitioner has a story to tell.
**AT A GLANCE**

- Banks face curbs on their activity from post-financial crisis regulation.
- This development is changing the nature of banks themselves, as well as the dynamics of the financial markets they support.
- Opportunities are growing for institutional asset managers to engage further in activities that banks are no longer able to, help banks as they shrink their balance sheets, and take advantage of risk premiums that can be more attractive now that banks have withdrawn from certain activities.
- Post-crisis banking regulation exerts its influence in sometimes obvious but often subtle ways:
  - Investors who transfer risks from bank balance sheets can reap rewards
  - Where banks are withdrawing, investors can take over
  - The advantages of managing bonds and loans together are growing
  - Tighter liquidity creates opportunity and risk in a range of markets
  - New trading talent is coming to asset management

Before the financial crisis of 2007–09, savings found their way into the real economy through three types of intermediary: banks; “shadow banks”; and asset managers.

Banks and pre-crisis shadow banks both borrowed short-term funds to capitalize often highly-leveraged long-term lending. Banks’ short-term funds are typically highly-liquid customer deposits. Shadow banks’ short-term funds were generally raised in wholesale money markets. During the financial crisis, money markets went on strike and flows remain depressed. Disquiet at the risk banks were able to run against deposits guaranteed by the public purse led to sweeping reform of the rules governing their operations. In particular, the new rules increase and strengthen the capital banks are required to allocate against assets, and limit their proprietary trading activities. The result is an incentive either to strengthen capital or rein in the size or risks of balance sheet assets.

This is where the third type of intermediary comes in. Authorities have stated that they want asset owners and managers to play a bigger role because, as longer-term and much lower-leveraged entities, they tend not to run the same risks as banks. The argument was made in a 2013 Green Paper from the European Commission on “Long-term Financing of the European Economy”:

The diminished role of banks in long-term lending opens up new needs and opportunities for other financial institutions […] The length of their liabilities allows institutional investors, at least in principle, to make buy-and-hold investments in long-dated productive assets, achieving higher yields to offset longer-term risks and lower liquidity inherent in many of these assets. Their longer time horizons enable institutional investors to behave in a patient, counter-cyclical manner, restraining “short-termism” and reducing the need for maturity transformation.

As the Green Paper suggested, some of these bank-disintermediation opportunities can generate the yields required to meet multi-decade insurance and pension liabilities for which government bonds are no longer adequate. As such, the life and pensions sector in particular has increased its allocations to private-placement corporate bonds, high-yield, securitized lending, and private debt and mezzanine. In addition to partnering with asset management institutions, some asset owners are moving their balance sheets directly into liquidity-provision and lending, across asset-backed, loan, real estate and corporate markets. The shadow banks of the pre-crisis world are giving way to the shadow banks of the post-crisis world: insurance companies, pension plans and direct lending funds.

These opportunities come with challenges. Some are associated with the bank-disintermediation opportunity itself: for example, the staffing and infrastructure requirements can make banks unwilling to cede ground and institutional asset managers unable to take it. Others arise as banks withdraw from certain activities: some fixed income markets are now harder to trade in because banks cannot afford to hold large inventories of bonds on their balance sheets, for example.

"This is a secular change that we think investors with sophisticated governance capabilities and modest liquidity constraints can exploit in three ways. They can engage in activities that banks are no longer able to, help banks as they shrink their balance sheets, and take advantage of risk premiums that can be more attractive now that banks have withdrawn from certain activities.”

— Erik Knutzen, Chief Executive Officer—Multi-Asset Class
In this paper we identify some of the major opportunities and challenges that have arisen across a range of asset classes and strategies, and describe the new landscape that investors now inhabit. We divide our survey into three areas of opportunity: engaging in activities that banks are no longer able to; helping banks shrink their balance sheets; and seeking to exploit more attractive risk premiums in markets where banks have withdrawn from activity.

“INVESTORS CAN… ENGAGE IN ACTIVITIES THAT BANKS ARE NO LONGER ABLE TO”

- Providing mortgages to trickier customers
- Extending loans to moderately-leveraged companies…
- …or providing equity or mezzanine finance to lower the leverage
- Lending in specialist niches
- Buying banks’ private equity and hedge fund interests
- Investing with ex-bank traders

We begin our survey at the epicenter of the 2007–09 financial crisis: residential mortgage markets. If bank lending in general has been curtailed by the new capital-adequacy rules in the Third Basel Accord, U.S. mortgage lending in particular is being reined in by additional consumer-protection laws embedded in the Dodd-Frank Act.

Constraints were clearly required following the crisis, but not-for-profit housing research organizations such as The Urban Institute suggest that as many as a million people that can afford to get mortgages are unable to in the U.S. today. That represents a huge potential market for non-bank lenders.

— Terry Glomski, Senior Portfolio Manager, Investment Grade Fixed Income

THE THIRD BASEL ACCORD (“BASEL III”)

WHAT IS IT? A global, voluntary regulatory framework covering capital adequacy, market liquidity risk and stress testing for banks.

WHO PASSED IT AND WHEN? The Basel Committee on Banking Supervision, 2010 – 11.


WHAT DOES IT DO? Basel III aims to limit the risk posed by bank runs by defining different levels of reserves depending on the form that bank capital takes. It requires Tier-1 capital to be at least 6% of risk-weighted assets, and at least 4.5 percentage points of that to be common equity (up from 4% and 2 percentage points under Basel II). It introduces a new conservation buffer, which will be 2.5% of risk-weighted assets by 2019 (effectively raising the required common equity ratio to 7%). It empowers national regulators to require an additional counter-cyclical capital buffer, up to 2.5%, also in the form of common equity. It introduces a minimum leverage ratio of Tier-1 capital over total consolidated assets of 3%. (In the U.S. this will be raised to 6% for eight systemically important financial institutions). It introduces a minimum liquidity coverage ratio of high-quality liquid assets over 30 days’ total net liquidity outflows of at least 100%. It introduces a net stable funding ratio of available stable funding over the amount of stable funding required during 12 months of stressed markets of at least 100%. It introduces a requirement that banks conduct well-defined stress tests.

HOW MIGHT IT AFFECT BANK ACTIVITY? By increasing required bank capital and liquidity ratios, banks are incentivized either to increase their common equity and additional Tier-1 capital and/or decrease the amount and/or risk of their balance sheet assets. This is likely to result in fewer mortgage and small-business loans being held on balance sheets; a reduction in securities being held on balance sheets for market making and liquidity provision; and a reduction in proprietary trading assets being held on balance sheets. It is also likely to result in banks raising more equity, and especially additional Tier-1 capital.

“New regulation is intended to stop mortgages being provided to consumers who may not be able to afford them. But there have been unintended consequences: as many as one million people that would get mortgages under sensible underwriting standards are unable to in the U.S. today. That represents a huge potential market for non-bank lenders.”

— Terry Glomski, Senior Portfolio Manager, Investment Grade Fixed Income
be confined to private equity managers pursuing more aggressively-leveraged deals in less capital-intensive sectors, such as software production. Nonetheless, following tougher enforcement during 2015, leverage in private equity deals has reduced and some debt syndications have failed.

As a result, we have seen private equity managers turn to private debt funds and pay higher yields precisely because, in addition to greater privacy, flexibility and timeliness, these debt funds now offer more certainty than banks. Providers of mezzanine and preferred stock financing are also in demand to build the lower layer of the capital structure that’s often needed to get a deal under the leverage guidelines, freeing banks to lend. For the same reason, we think the rule is likely to create more opportunity for private equity co-investment.

Basel III and Dodd-Frank have made it more costly for banks to hold corporate loans on their balance sheets, and this has led to more direct lending by private debt funds. This is most prevalent in U.S. mid-market private equity buyouts, but it is increasingly becoming the default option in niches where banks always struggled to lend, which can lead to greater opportunity for specialist lenders.

One example is secured lending to smaller businesses that are relatively capital-intensive but collect regular royalties. We see numerous such companies in complex areas of intellectual property such as music rights and pharmaceutical royalties. The latter is a very entrepreneurial sector with high demand for capital, but when these companies have reached the stage where their first drug is approved and they need more substantial growth financing, they tend to be concerned about the execution risk and associated dilution of equity and/or venture capital, and too small and unproven in their cash flows to attract LBO firms, issue a bond, or access bank lending.

Banks can offer Venture Debt or asset-backed loans, but these tend to be too small or too short-term. A lender that really understands the company’s products, cash flows and intellectual property can potentially lend senior secured at high single- or low double-digit yields—cheaper than a bank, particularly in the new regulatory environment.

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**DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT (“DODD-FRANK ACT”)**

**WHAT IS IT?** A wide-ranging reform program for the U.S. financial services industry that will consolidate regulatory agencies, introduce new systemic risk oversight council, tighten regulation of most financial markets and credit rating agencies, introduce new consumer protection agencies and rules, create a new bank resolution regime and limit banks’ ability to conduct proprietary trading.

**WHO PASSED IT AND WHEN?** The U.S. Congress, 2010.

**WHEN DOES IT COME INTO FORCE?** The law was passed in 2010. It requires regulators to create more than 200 new rules.

**WHAT DOES IT DO?** The full scope of the Act is beyond this article. We focus on the provisions most relevant to banks. Title VI of the Act introduces the “Volcker Rule”. This prohibits banks from proprietary trading (with some exemptions). It also limits banks’ ownership of hedge funds and private equity funds. Title VII of the Act requires over-the-counter swaps to be cleared through exchanges or central clearing counterparties. Title IX of the Act proposes improvements to the asset-backed securitization process, including requiring securitizers to retain at least 5% of the credit risk. Title X of the Act establishes a Bureau of Consumer Financial Protection that regulates all consumer financial products, including consumer loans. Title XIV of the Act imposes obligations on mortgage originators to lend only to those likely to repay, and stipulates additional requirements from creditors extending higher-risk mortgages.

**HOW MIGHT IT AFFECT BANK ACTIVITY?** There is some evidence that the regulations of the Act disproportionately affect small local banks, forcing some to end mortgage and auto lending and adding to the long-term consolidation trend in the U.S. banking industry. The Volcker Rule has led to smaller risk budgets for trading desks and hence reduced staffing, compounding the decline in market-making activities resulting from new capital-adequacy regulations. It is also forcing divestment from private equity and hedge fund interests by banks.

“Banks used to be willing to put equity into deals to help facilitate a financing mandate: not having those banks out there has materially opened opportunities for managers like us to plug that equity gap in the form of a co-investment.”

— Michael Kramer, Member of the Co-Investment Investment Committee
## INVESTORS AND THE CHANGING BANKING LANDSCAPE: A SNAPSHOT

**"Investors can..."** | **Key Regulations** | **Asset Class / Strategy** | **New Opportunities** | **New Challenges** |
--- | --- | --- | --- | --- |
...engage in activities that banks are no longer able to." | Volcker Rule | Hedge Fund & Private Equity Secondaries | Restrictions on banks owning interests in hedge funds and private equity funds are forcing sales into the secondary markets | Ex-bank traders may not have good buy-side relationships or a non-bank desk track record |
...help banks as they shrink their balance sheets." | Basel III | Private Debt Direct Lending | Capital adequacy rules are causing banks to shrink their assets, leaving a "lending gap" that investors can fill through direct lending, either self-originated or via partnerships with originating banks | Loans still need to be originated. Loan administration is very staff and infrastructure intensive compared with trading in MBS |
...take advantage of risk premia that may be more attractive now that banks have withdrawn from certain activities." | Basel III | CLOs | Regulatory-capital strategies can be designed to transfer some of the risk of banks' assets to hedge funds, in return for a premium, without the risk-retention constraints of a traditional CLO. Hedge funds may replace banks as providers of various capital-markets or risk-transfer services: writing put options is just one example | Risk-retention rules have made securitization balance sheet-intensive for CLO structuring entities, too |
| | | Hedge Funds | We think that the high-yield markets will continue to grow and change profile, especially in Europe, as corporates increasingly turn to capital markets rather than banks. Bond and loan terms are converging as more corporates use both routes to raise capital, giving combined bond-and-loan investment platforms an edge | Covenants are loosening in loans as they become more bond-like. Bond investors attempting to address the loan market, and vice versa, may lack the scale and expertise to do so without a genuinely integrated platform |
| | | Private Debt | Now that banks are less inclined to hold loans on balance sheets, even in volatile markets, higher premiums may be on offer for private liquidity providers | |
| | | High Yield Bonds & Loans | High Yield Bonds | Tighter capital-adequacy rules and constraints on proprietary trading mean banks hold lower inventories of securities as liquidity buffers for markets, and can provide fewer risk-transfer services, resulting in pricing anomalies that can be exploited by arbitrage strategies | In credit markets, the same tightness in liquidity can result in higher trading costs that make such short-term opportunities expensive to execute |

**Dodd-Frank X & XIV** | U.S. Residential Mortgages | Many creditworthy individuals struggle to get mortgages because they are no longer eligible for agency MBS inclusion | Mortgages still need to be originated. Mortgage administration is very staff and infrastructure intensive compared with trading in MBS |

**Interagency Guidance on Leverage Lending (Federal Reserve System, Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency)** | Private Debt | Hedge Funds | We think that the high-yield markets will continue to grow and change profile, especially in Europe, as corporates increasingly turn to capital markets rather than banks. Bond and loan terms are converging as more corporates use both routes to raise capital, giving combined bond-and-loan investment platforms an edge | Covenants are loosening in loans as they become more bond-like. Bond investors attempting to address the loan market, and vice versa, may lack the scale and expertise to do so without a genuinely integrated platform |

**Basel III** | CLOs | Regulatory-capital strategies can be designed to transfer some of the risk of banks' assets to hedge funds, in return for a premium, without the risk-retention constraints of a traditional CLO. Hedge funds may replace banks as providers of various capital-markets or risk-transfer services: writing put options is just one example | Risk-retention rules have made securitization balance sheet-intensive for CLO structuring entities, too |

**Basel III** | Hedge Funds | | | |

**Basel III** | Private Debt | High Yield Bonds & Loans | | | |
Alongside new rules governing bank balance sheet leverage and the riskiness of loans, Dodd-Frank also introduces the “Volcker Rule”, which substantially curtails banks’ ability to hold interests in or manage private-equity and hedge funds.

The rule makes it likely that billions of dollars’ worth of funds will be sold into private equity secondary markets. That supply is not new: banks often conduct buyout transactions to establish relationships that generate other deal flow, and have tended to offload the assets themselves. Nonetheless, the secondary market experienced a massive influx of supply from banks under the new regulatory framework. This sell-off peaked in 2014, but we estimate that U.S. banks alone continue to hold approximately $20 billion of private equity assets, with a comparable amount held by European financial institutions, and we expect these assets to be sold over coming years.

This sell-off, bolstered by increased selling by other large institutional investors, has changed the secondary market landscape. The advent of fairly routine billion-dollar secondary trades created bifurcation, with large institutional investors selling into a fairly efficient auction market intermediated by sell-side agents, and smaller investors selling through privately-negotiated transactions. We estimate that over 70% of the capital raised in the secondary market over the last several years has been concentrated in this mega-cap auction market, and

“Banks had been consistent sellers into the private equity secondary markets for some time, but that baseline definitely surged in response to new regulation.”

— Tristram Perkins, Co-Head of Secondary Private Equity

FIGURE 1: REGULATORY PRESSURES ARE LEADING TO MORE SECONDARY-MARKET TRANSACTIONS

Secondary-Market Transaction Volumes ($BN)

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<tr>
<td>Value</td>
<td>$2.1</td>
<td>$7.1</td>
<td>$8.4</td>
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<td>$27.0</td>
<td>$27.5</td>
<td>$42.0</td>
<td>$40.0</td>
<td>$35.0-$45.0</td>
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Catalyst For Sellers

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<td>Portfolio Management</td>
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<tr>
<td>Liquidity / Distress</td>
<td>60-70%</td>
<td>-75-90%</td>
<td>-90-100%+</td>
<td>-60-70%</td>
<td>-80-90%</td>
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<tr>
<td>Pricing</td>
<td>60-70%</td>
<td>-75-90%</td>
<td>-90-100%+</td>
<td>-60-70%</td>
<td>-80-90%</td>
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Source: Secondary market advisor research.
as a result many of these large deals trade at par or even at a premium to NAV. By contrast, pricing in smaller transactions remains more competitive.

The Volcker Rule also severely restricts U.S. banks’ ability to engage in trading of their proprietary capital. As traders have seen their desks’ risk budgets shrink or even disappear, many have taken their talent to the hedge fund industry. They face considerable challenges: setting up a hedge fund gets more expensive with every passing year and bank-based traders will not enjoy the same buy-side relationships as their competitors striking out from one of the big hedge fund names. Nonetheless, it is increasingly important that fund-of-funds managers be prepared to seek out these first-generation launches, and find ways to get more comfortable with prop-desk track records.

There is a downside to this trend. Bank trading desks have been important players in event-related and special-situations equities, and as they withdraw these are becoming dominated by event-driven hedge funds. Hedge funds face potential client redemptions that bank prop desks do not, which can lead to the kind of volatility evident in this part of the market in 2015. On the other hand, smaller research teams in banks open up potential mispricing for hedge funds with a particular research edge to trade.

“INVESTORS CAN... HELP BANKS AS THEY SHRINK THEIR BALANCE SHEETS”

- Structuring regulatory-capital transactions
- Direct lending—pairing the investor’s balance sheet with the bank’s origination capacity
- Bond markets moving into the loan-market gap

As long as banks are reducing assets to decrease balance sheet leverage, there should be opportunities for investors to assume or even originate those assets and risks.

“Regulatory-capital lending—bi-lateral deals with banks to free-up their regulatory capital—has been a big strategy. It’s a specialist, relationship-driven strategy and each deal has to be approved by regulators, but it has been a successful strategy for some private funds and multi-strategy firms with big private books.”

- Fred Ingham, Head of International Hedge Fund Investments

In the hedge fund world there has been a marked rise in regulatory-capital strategies. These involve bi-lateral deals with banks designed to remove capital-intensive assets from balance sheets—anything from corporate loans or trade finance to books of correlation trades. The typical deal involves a synthetic transfer of tranched risk, based on the underlying assets, from which the hedge fund takes the equity and sometimes the mezzanine while the bank retains the senior tranche.

This is a highly-specialized and relationship-driven strategy, and deals generally need approval from bank regulators, but in various forms it has been part of the private fund industry for years: for example, collateralized loan obligations (CLOs) originated in response to earlier Basel accords on bank capital ratios.

In addition to transferring risks, investors are increasingly taking on the assets themselves via private debt and direct lending vehicles, including hedge funds and CLOs, targeting everything from student debt and social housing loans, through SME lending and trade-receivables finance, to long-term infrastructure debt.

Figures from Preqin show that private debt funds raised a record $18.8bn during 2015, more than twice what was raised two years earlier. Particularly in Europe, direct lenders are underwriting more deals, and those debt packages can be two- or three-times larger than they were a few years ago.

Regional distinctions matter here. Bank disintermediation is far from a new phenomenon in the U.S. Several waves of consolidation have reduced the capacity of the banking system to originate and hold small, local corporate loans. Larger corporations have long turned to banks to underwrite bond issuance, or originate and distribute loans without holding them on their balance sheets.
FROM GROWTH ENGINES TO UTILITIES

Before the financial crisis, banks enjoyed big profits from trading, growing cross-border business, high net interest margins and the ability to leverage relatively freely on cheap capital. Every aspect of that business model has come under threat. Many banks have been forced to withdraw from international markets, yield curves are flat, and while capital ratios are up the cost of capital has not declined to reflect that.

“Net interest margins are under pressure; trading profits are under pressure; there is a dire need for banks to reduce their capital intensiveness.”
– John Nadell, Senior Research Analyst, International Equity Group

In a high-trading, low-capital ratio environment, banks could load their balance sheets with long-duration business generating up-front revenues. Today we see much more focus on the quality of the assets. For investors, this is equivalent to a transition from a return-on-equity growth business to a return-on-assets, utility-like value business. More and more are calling for banks to pay dividends.

In general, we think U.S. banks are much better-adjusted to the new environment, with both higher capital-to-assets ratios and higher returns on assets than those in Europe, on average.

In Europe the response has been a big change in capital structures. When the rules require higher capital ratios and equity is expensive, “additional tier-1 capital” is a cheaper way to build the cushion under senior bondholders.

U.S. banks required less of this “AT1” and it usually came in the form of preference shares. European banks, by contrast, have issued billions in contingent convertible capital as AT1 between 2013 and 2015. These securities pay tax-deductible coupons like a bond but can be written down or even written off by the regulator should the bank’s core tier-1 capital fall below 7% of assets. For investors, they offer substantially higher yields than similarly-rated corporate debt in return for the write-down risks that are central to their role in the post-crisis bank capital structure.

“In Europe in particular an important response to new capital-adequacy regulation has been the issuance of contingent convertible bonds. These offer extra yield relative to senior and dated subordinated debt, but the decision to convert to equity or even write down the securities to restore the bank’s capital ratio is enforced by the regulator.”
– Julian Marks, Portfolio Manager, Investment Grade
In Europe things are slowly moving the same way: in addition to growing institutional direct-lending funds, there is rapid growth in European corporate bond issuance, and banks are syndicating more of the senior as well as the junior tranches of loans. We think that Europe has the greatest potential for growth in direct lending—but as a new and fragmented market it also presents the highest barriers. Moreover, not all European banks are withdrawing from lending. They often compensate for a withdrawal from international markets by increasing their domestic lending. Many Nordic banks are even increasing their cross-border activities.

Even if they did all want to withdraw from markets, we think banks’ local branch networks would still be perfect for providing corporate and consumer lending in this fragmented market, and they are very difficult for institutional asset managers to replicate.

The challenges do not end there. Private debt funds, CLOs, hedge funds or high-yield funds all compete for business based on risk and return. Banks may be just as motivated by where they stand in league tables for lending and syndicating, or by market share, or by building relationships with corporate customers to facilitate cross-selling of other services. A bank loan can almost be a loss leader.

This implies two things for European direct lending in particular. First, we think that the model in which an investor offers its balance sheet to partner with a bank that has origination capacity is likely to become more prevalent. Second, we think private debt funds in a position to originate their own deals will focus on borrowers whose primary concern is not the price of the loan; they might be looking for higher leverage, more flexibility and reliability, or a quicker transaction.

We think that a similar dynamic is likely in U.S. residential mortgage lending. Most institutional investors get exposure to mortgages through MBS, which have the advantage of trading and settling as a bond with none of the burdens of administering the underlying loans—but recall that we see the most important investment opportunity for direct lenders in mortgages that do not qualify for agency MBS. Private securitizations that could package these non-qualifying loans have substantially diminished. In short, today’s opportunity may require investors to hold the mortgages themselves.

Like corporate lenders in Europe, institutional mortgage lenders in the U.S. depend upon originating banks, but because the mortgages they are looking for are no longer in scope for banks, it is necessary to form partnerships, outlining the desired loan profile for the banks to originate before taking on all or part of the resulting risk. This also entails building a mortgage bank-style middle-office and working with specialist mortgage servicers that collect payments and deal with delinquent borrowers.

All of this involves substantial up-front expenditures and relationship-building that will prove an insurmountable barrier to many would-be lenders. At Neuberger Berman, we believe we have an unusual headstart, thanks to work our residential mortgage team undertook to purchase many billions of dollars’ worth of non-performing loans from European banks in the post-crisis period. That team now manages 15,000 non-performing mortgages on its proprietary infrastructure.

Securitization still plays an important role in removing corporate loans from bank balance sheets. Again, we see the big transformation happening in Europe, where capital markets remain decades behind those of the U.S. and the corporate world remains highly bank-dependent.

"The rules that require CLO issuers to retain 5% of the deal on their balance sheets are very significant. They will almost certainly limit CLO issuance and that may send yet more borrowers to the bond markets; it may push spreads wider to attract more institutional investors to the loan market."

– Joe Lynch, Senior Portfolio Manager, Non-Investment Grade Credit

1 Many European jurisdictions, most recently France, have introduced their own frameworks for direct lending and loan origination by investment funds. The first step in harmonizing these into a common European framework was taken by the European Securities and Markets Authority (ESMA) on 11 April 2016, when it issued an Opinion to the European Parliament, Council and Commission on the components necessary to establish such an EU-wide framework.
True securitization in the form of CLOs is one priority for EU authorities, but activity remains depressed because of new rules that require structuring entities to retain 5% of all deals on their own balance sheets. But “securitization” in the form of borrowers moving from bank loans to the high-yield bond markets is taking off; as figure 2 shows, the European high-yield bond market is four times larger than it was pre-crisis.

**FIGURE 2: EURO-DENOMINATED HIGH-YIELD BOND ISSUANCE HAS SOARED SINCE THE FINANCIAL CRISIS**

These dynamics are changing bond and loan markets in intriguing ways. As more and more companies complete both bond and loan financing, this can create potential capital-structure relative-value opportunities for investors, based on the different levels of security and seniority of loans versus bonds. Over recent years, some companies have had senior secured floating-rate loans, senior secured floating-rate bonds, senior secured fixed-rate bonds and senior unsecured fixed-rate bonds outstanding all at the same time.

In addition, loans traditionally have more covenants than bonds, but they are also easier for borrowers to “call” at par value before maturity—a key risk for loan investors as calls can limit capital appreciation. However, as loan borrowers turn to the bond markets, these different terms are converging, leading to stronger “call protection” in some new loans in exchange for increasingly “covenant-lite” terms.

As the risks in the two markets become more comparable, relative value opportunities will become clearer and, because practitioners in the two markets have tended to work independently, we think asset managers with integrated bond and loan platforms should enjoy an edge.

An integrated platform can also improve and scale research. Firms that cover bonds alone are unlikely to know the credit agreement that governs an issuer’s loans; similarly, loan holders may have limited knowledge of bond indentures. And while it is expensive to build a loans team in which credit analysts can specialize in a single sector, that specialization becomes possible in an integrated team with two sizeable markets to cover within each sector.

“The increase in the euro high-yield bond market has come roughly equally from three sources: fallen angels; genuine new issuers; and companies switching from loan financing to bond-market financing.”

— Andrew Wilmont, Senior Portfolio Manager, Non-Investment Grade Credit

“INVESTORS CAN... EXPLOIT RISK PREMIA THAT MAY BE MORE ATTRACTIVE NOW THAT BANKS HAVE WITHDRAWN FROM CERTAIN ACTIVITIES”

• Providing liquidity to take new loans from bank balance sheets in volatile markets
• Exploiting increased illiquidity and volatility across a range of markets

It seems likely that there will be a structural increase in a range of market risk premiums as a result of both capital adequacy rules such as those in Basel III and constraints on proprietary trading such as the Volcker Rule. In this final section we consider where these might occur and what the impact could be.

“We have seen a lack of risk-taking appetite among Wall Street banks, which means they cannot underwrite volatility strategies at the scale they used to. The left-tail risk of writing options may not fit into their regulatory-capital value-at-risk models. We can see the effects in the options market: option skew has been going up. That generates extra premium for investors prepared to step in with strategies based upon writing puts.”

— Douglas Kramer, Co-Head of Quantitative and Multi-Asset Class Investments
Most attention has been directed at fixed income markets, but bonds and loans are far from the only risks banks hold on their balance sheets. A number of capital markets appear to have been affected. A good example of another is the market in options. Regulatory-capital value-at-risk models have made it prohibitively expensive for banks to provide equity market downside protection for clients by writing put options. Option “skew”—the disparity in the costs of buying downside protection or upside participation—appears to have increased as a result, leaving higher premiums available to the hedge funds and other volatility strategists prepared to write puts.

Within fixed income there have been consequences for both public corporate bonds and private debt.

In private debt, extra premium can be generated during the normal process of originating and distributing a loan within the new regulatory framework. A bank can manage some of the risk that it is unable to sell a new loan into the market by writing into its documentation some flexibility to change the spread over Libor that the loan pays in interest, in response to market demand.

However, banks attract borrowers by offering favourable terms, which incentivises them to keep upward “flex” as low as possible. That often means they cannot raise spreads high enough to sell loans into volatile markets. In the past they simply held onto them until things calmed down. But punitive regulatory capital charges are now more likely to force banks to sell loans with limited upward flex at a price discount, incurring reputational risk for themselves and their client. Private debt funds have always had a role in these situations, transacting privately with banks at a price midway between that implied by the upward flex and that implied by the open market. With higher capital charges and smaller bank lending desks, the balance of power in these transactions may be moving towards the private debt funds.

However, it is in public corporate bond markets, and particularly certain niches of high yield, where the regulatory impact has been most acute. Banks that used to provide an important buffer between buyers and sellers with their willingness to hold securities on their balance sheets now have less capacity to do so. As a result, bond “warehousing” has plummeted (figure 3). The average number of dealers offering quotes on euro-denominated investment grade corporate bonds, for example, has fallen from eight or nine in 2010 to five today.

Is this lack of bank-provided “buffering” affecting market liquidity? The picture is not clear yet. We can consider the amount of trading that occurs and the cost of that trading. Figure 4 shows annual turnover falling in U.S. investment grade bond and U.S. leveraged loan markets, even as the markets themselves get bigger. Turnover has been rising in global high yield recently, but remains lower than it was a decade ago. On the other hand, bid-ask spreads for investment-grade bonds are not structurally higher than before 2008. Spreads in single-B and CCC-rated bonds have increased, but it is difficult to determine how much is due to increased perceived credit risk versus illiquidity.

Whether all this is an opportunity to be grasped or a risk to be managed depends upon the strategy pursued and its vehicle.

Institutional capital locked up for longer periods in private debt vehicles can exploit pricing anomalies resulting from illiquidity, in public as well as private markets. Similarly, special vehicles with less frequent liquidity windows could be launched to invest in parts of the credit markets that have traditionally been more liquid and are still held by vehicles with daily, weekly or monthly liquidity that may be forced to offload in a sell-off. At Neuberger Berman, we believe that particularly keen opportunities can open up in second-lien loans and sub-$400m high-yield issues, where prices can drop substantially further than those for more liquid paper during periods of risk aversion.
ASSET OWNERS ARE REGULATED, TOO

The investment and insurance industries have also been subjected to a regulatory revolution. To what extent will that curtail the capacity of non-banks to step into the banks’ shoes as financial intermediators?

Here we focus on the insurance industry, the biggest potential source of funds that could replace banks’ balance sheets in the economy. Insurers face more stringent risk management and solvency requirements, particularly those governed by the European Union’s Solvency II Directive. This came into force in January 2016 and governs insurers in the European Economic Area, but it has also exerted a strong influence on the capital-adequacy rules developed in the U.S., Australia, South Africa, Japan, China and beyond. These rules introduce risk-based capital principles for investments that are not dissimilar to those proposed for banks in the Basel III accord.

Under Solvency II, the big losers are equity risk (and especially private equity), hedge funds, and low-rated corporate bonds. A Solvency II-regulated insurer must now hold capital worth 49% of the value of a new private equity investment.

Good news comes in the form of Solvency II’s treatment of lending, however. Securitizations were initially set to incur the same capital-adequacy treatment regardless of quality, but were eventually split into higher-quality “Type 1” and lesser-quality “Type 2” securities. Private loans are treated as fixed income, which is generally favored with lower capital requirements, and this treatment comes with two additional supports. First, loan-to-value ratios are taken into account so that a well-secured loan may enjoy more lenient capital-adequacy treatment. Second, the illiquidity risk of a loan is disregarded in the capital-adequacy calculations if that loan matches liabilities of comparable duration. This not only recognizes the advantages insurers have over banks when it comes to lending—they bear no maturity-transformation risks—but also their potential to harvest illiquidity premiums by exploiting the long-term nature of the liabilities in the life and pensions sectors.

Source: European Commission; Moody’s Investor Services; JPMorgan.
Among hedge funds, we have seen relative value strategies increasingly trade around liquidity preference—for example, by selling a benchmark Treasury which is going "off-the-run" while buying surrounding issues. "Cash-futures basis" (the price differential between bonds and their derivatives) is substantially more volatile than pre-crisis, and recently interest rate swap curves fell unusually far below their equivalent cash bond yields—illiquidity-driven anomalies that can provide arbitrage opportunities. Wider bid-ask spreads can make these kinds of short-term trade uneconomical in credit markets, however.

Tighter liquidity is not so obviously an opportunity for liquid, open-ended long-only credit funds. Over time a structural illiquidity premium—as opposed to tactical opportunities around sell-offs—may be built into these securities, but even then, for long-only credit strategies with daily liquidity these will certainly remain risks to be managed and mitigated where possible.

Credit risk exposure can be implemented through credit default swaps (CDS), which are sometimes more liquid than bonds because they require less committed capital. The higher cost of trading in lower-quality credits suggests to us that investors should be especially wary of relying on market liquidity as an escape route after poor credit selection. Credit portfolios tend to be more diversified and more focused on new issues than before 2008. In investment-grade portfolios specifically, investors, who focus only on the more liquid USD, EUR and GBP markets and the top 25% of index names, still have around 90% of the tradable indices available to them. In high yield, avoiding bonds where a single institution holds a 25–30% share of an issue or tranche, and maintaining a ladder of maturities—holding one-, two- or three-year maturities that tend to be easier to sell in times of stress—can help mitigate illiquidity risk.

"We can’t predict why, where or when the next credit market dislocation will happen, but we can be confident that one will happen, given a reasonable time horizon. By accepting patient capital, you can be ready to buy paper at fundamentally attractive rates when it does. Investors can look at this as choosing to have their money locked-up so that their managers are never forced to be sellers."

— David Lyon, Head of Special Situations, Neuberger Berman Private Equity
These lessons were learned during the 2007–09 financial crisis, but they stand us, and our peers taking similar measures, in good stead to deal with the tightening liquidity in credit markets today.

**KEY POINTS FOR INVESTORS**

The influence of post-financial crisis banking regulation on investment management is being felt in many forms and many places—some expected, some less so.

While far from exhaustive, not least because this is still an evolving reality, our survey suggests a number of opportunities for investors to engage in activities that banks are no longer able to, help banks as they shrink their balance sheets, and take advantage of risk premia that may be more attractive now that banks have withdrawn from certain activities.

**As banks withdraw from lending and investment activities** this could open up direct-lending opportunities, from corporate loans to private companies or residential mortgage lending that no longer meets the newer, more stringent criteria for inclusion in mortgage-backed securities. There are also opportunities for mezzanine providers and private equity co-investments that provide the extra equity cushion to keep corporate leverage below new regulatory thresholds that bank lenders have to comply with. Investors should also look out for private equity and hedge fund talent coming to market. The Dodd-Frank Act constrains banks’ capacity to conduct proprietary trading and hold interests in private equity and hedge funds. That will continue to supply the institutional asset management world with new trading talent and high-quality private equity secondaries.

**Withdrawal of bank activity in market-making and liquidity provision** creates a different range of opportunities, and can present compelling premiums and relative-value trades for the right strategies packaged in the right vehicles. However, this is a double-edged sword: for many others strategies it introduces new risks to be managed and mitigated, where possible.

Finally, investors will be rewarded for helping banks to reduce their regulatory-capital charges by transferring risks incurred through activities banks wish to continue. In the hedge fund world, expect more regulatory-capital strategies and potentially a revival of collateralized debt obligations (CDOs). In private debt, we think direct lending and loan syndications are likely to grow more common in Europe, and there will be opportunities to help banks offload loans at meaningful discounts in volatile markets.

We are also beginning to see companies move some of their financing from bank loans to corporate bond markets. As they have done so the number of companies financing with both loans and bonds has increased and the two markets increasingly overlap and influence one another. Asset managers specializing in one market alone forego important opportunities to realize relative value and scale their credit research.

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“Liquidity has not materially declined in the BB or single-B part of the U.S. credit market. We do see the cost of liquidity for CCCs fluctuating a lot, but we believe that has more to do with risk aversion than with structural changes in market liquidity. We have seen spread-widening like that in CCCs through many previous sell-offs.”

— Patrick Flynn, Portfolio Manager, Non-Investment Grade Credit