SHADOW BANKING
AND CAPITAL MARKETS
RISKS AND OPPORTUNITIES
Disclaimer

This report is the product of the Group of Thirty’s Steering Committee and Working Group on Shadow Banking and reflects broad agreement among its participants. This does not imply agreement with every observation or nuance. Members participated in their personal capacity, and their participation does not imply the support or agreement of their respective public or private institutions. The report does not represent the views of the membership of the Group of Thirty as a whole.

ISBN 1-56708-170-3
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FOREWORD

The global response to the 2007–08 global financial crisis comprised a series of internationally coordinated government and regulatory steps aimed at the world’s largest banks and financial institutions, designed to reduce financial stability risks, both macroprudential and microprudential.

Eight years on from the peak of the financial crisis, the Group of Thirty decided there was a need to address two related questions: (1) whether growing nonbank credit intermediation is leading to the reemergence of worrisome shadow banking risks; and (2) whether it is possible to develop more stable and sustainable forms of securitization, truly delivering the benefits that the originate-to-distribute model of securitized credit was supposed to make possible.

This study, Shadow Banking and Capital Markets: Risks and Opportunities, commenced in 2014, tackles both questions. The analysis reveals both positive and negative developments for the global supervisory and financial communities.

We find that the specific forms of nonbank credit intermediation most implicated in the 2007–08 financial crisis have declined significantly and have not reemerged or changed shape in response to the global regulatory steps we have lived through. As a result, the global financial system itself is significantly more resilient than it was in the run-up to 2008.

But we also find that high real economy leverage can create macroeconomic risks, even if the financial system is itself more resilient. And some new forms of credit extension are creating new risks. In certain markets, notably China, shadow banking activities merit extremely close attention.

Given the above analysis, we conclude that the risks arising from the combination of high leverage and the ways in which credit is intermediated remain concerning and must be monitored very closely lest they pose new risks to global financial and economic stability.

* * *

The project was guided by the knowledge and insight of Adair Turner, Chair, and Jacques de Larosière and Masaaki Shirakawa, Vice-Chairs. They were supported by the eleven G30 members who comprised the Working Group on Shadow Banking, which can be found on page ix.

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We commend this study to the global financial community. We hope that its findings and recommendations are instructive, and that they provide the basis for further fruitful debate and discussion on the possible financial stability risks ahead.

Jacob A. Frenkel
Chairman of the Board of Trustees
Group of Thirty

Jean-Claude Trichet
Chairman and CEO
Group of Thirty
# Abbreviations

<table>
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<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>FSB</td>
<td>Financial Stability Board</td>
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<td>G30</td>
<td>Group of Thirty</td>
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<td>GDP</td>
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ACKNOWLEDGMENTS

On behalf of the Group of Thirty (G30), we would like to express our appreciation to those whose time, talent, and energy have driven this project to a successful completion. We would like to thank the members of the Steering Committee and Working Group on Shadow Banking, who guided our work at every stage and added their unique insight. The intellect and experience brought to the table by the eleven members of the Working Group on the important subject of shadow banking was essential to our collective success.

No project of this magnitude can be accomplished without the committed effort of a strong team. The G30 extends its deep appreciation to Project Director, Susan Lund, and to Ritesh Jain, both of the McKinsey Global Institute, and to the many members of the team at the McKinsey Global Institute who worked so hard to put this report together. We thank them all for their contributions to the analysis and formulation of the report.

Finally, the coordination of this project and many aspects of project management, Working Group logistics, and report production were centered at the G30 offices in Washington, D.C. This project could not have been completed without the efforts of our editor, Diane Stamm, and the work of Executive Director Stuart Mackintosh and his team, including Corinne Tomasi and Stephanie Tarnovetchi of the G30. We are grateful to them all.

Adair Turner
Chair, Working Group on Shadow Banking

Jacques de Larosière
Vice-Chair

Masaaki Shirakawa
Vice-Chair
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Old risks reduced—and some
Old risks reduced—and some

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EXECUTIVE SUMMARY

Prior to the 2007–08 financial crisis, the growth of securitized credit, which turned bank loans into marketable securities and distributed them to nonbank investors, was widely believed to offer significant advantages over a purely bank-based credit intermediation system. But the emergence of the complex combination of activities labelled “shadow banking” turned the securitized credit system into an engine of financial instability. Partly as a result of tighter regulation of the formal banking system, new forms of nonbank credit are now growing. This growth therefore prompts the two questions addressed in this report:

- Whether growing nonbank credit intermediation is leading to the reemergence of worrisome “shadow-banking” type risks
- Whether it is possible to develop more stable and sustainable forms of securitization, truly delivering the benefits that the originate-to-distribute model of securitized credit was supposed to make possible.

Shadow banking diminished, but overall risks to stability as great as ever

In the advanced economies, the specific forms of nonbank credit intermediation most implicated in the 2007–08 financial crisis have declined significantly and have not reemerged in response to tighter bank regulation. But high real economy leverage can create macroeconomic risks even if the financial system is itself more resilient; some new forms of credit extension are creating new risks, and shadow banking developments in China mirror precrisis developments in the advanced economies. Overall, the risks arising from the combination of high leverage and the ways in which credit is intermediated may be as great now as they were before the 2007–08 crisis.

Old risks reduced—and some benign developments

We define shadow banking as activities relating to credit provision extended outside or partially outside the banking system, but involving the distinctive features of banking, that is, leverage and liquidity/maturity transformation.1 In the precrisis years, complex structured credit securities, distributed via multistep and opaque distribution chains, allowed leverage and maturity transformation to flourish, but in forms difficult for regulators and market participants to understand and manage. These specific precrisis forms of shadow banking have declined significantly in scale, and, at least in the advanced economies, growing nonbank credit intermediation has primarily been in forms that do not appear (for now) to raise the same financial stability concerns. Specifically, we find that:

- While total bank shares of private credit supply have declined slightly in both the United States and Europe, much of the growth of nonbank

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1 The report uses the Financial Stability Board definition of shadow banking. (See the box on page 4 for key definitions used in this report.)
credit has been in the form of straightforward single-name nonfinancial corporate bonds, which have increased by US$5.1 trillion from 2007 through the second quarter of 2015, becoming a major source of funding for larger companies in advanced economies. This development could in principle represent a more stable and less risky form of credit extension than bank lending.

- There has been a dramatic decline in the volume of complex structured credit securities such as collateralized debt obligations (down 67 percent), asset-backed commercial paper (down 70 percent), and structured investment vehicles (down 100 percent), from 2007 through the second quarter of 2014.
- The degree of interconnectedness between banks and other financial institutions appears to have diminished since 2008, a potentially positive development.
- Private debt funds of alternative asset managers, such as hedge funds and private equity funds, are growing rapidly, but are still small in relation to the total system.
- Direct lending to corporations by insurance companies and pension funds is growing, but does not in general pose risks since credit is provided in a simple and transparent fashion, and does not involve maturity transformation.
- Hedge fund risks have not increased, with leverage 2.3 times assets on average, and the average gross leverage of fixed-income arbitrage funds (the most highly leveraged class) 4.7 times assets, far below the level seen in banks and broker-dealers before the crisis.
- While credit provided through online peer-to-peer services raises some concerns and regulators must be particularly alert to possible interconnections with commercial banks, the sector is, at present, still very small, with total outstanding credit less than US$30 billion globally.

In several ways, therefore, the risks created by shadow banking entities and activities prior to the crisis have been reduced and have not reemerged on a large scale as a result of tighter bank regulation. Given the capacity of the financial system endlessly to evolve, creating new forms of activities and risks, regulatory authorities must continually monitor developments, and keep a particularly close eye on currently small but rapidly growing activities (such as peer-to-peer lending). But at least for now, and in the advanced economies, the financial system itself seems likely to be less vulnerable to the sort of self-reinforcing shocks experienced during the 2008 crisis.

**Overall risks to stability as great as ever**

But despite these broadly favorable trends within the financial system itself, and within the advanced economies, overall risks to stability are likely now to be as great as ever. This reflects the combination of rising leverage across the global economy together with some concerning developments in the specific ways in which credit is being extended in particular markets and countries, and new amplifying mechanisms particularly in illiquid markets.

**Excessive real economy leverage.** At the level of the overall world economy, there has been no deleveraging since 2008, but rather a gradual increase in global debt to GDP. Some deleveraging by, for instance, US households, has been offset by large increases in advanced economy public debt and in private sector debt in many emerging economies.

This rising real economy leverage in itself creates macroeconomic risks, but also makes it more important to identify whether the particular form of debt or the particular ways in which credit flows are intermediated or managed are contributing further to the inherent risks. Three developments are of clear or potential concern.

The first is the rapid increase in emerging market corporate debt, often denominated in foreign currency, which grew from US$6 trillion in 2007 to US$20 trillion by the second quarter of 2015. This growth occurred during a period of low global interest rates, leaving many borrowers vulnerable to interest rate rises. In addition, many borrowers face significant currency mismatch risks. But policy makers do not have an adequately clear picture of the holders of this debt, of their links to the rest of the financial system, and of the risks to financial stability that such debts therefore pose. Further analysis of these debts should be a key regulatory priority.
The second is the role of asset managers in illiquid credit markets. In principle, the fact that credit investments are managed by asset managers (rather than held directly by end investors) need not introduce new risks into the financial system. And the total share of all global investments that is “managed” is similar to what it was in 2007. But some asset management practices can amplify the risks of herd behavior inherent in all liquid traded markets, and if asset managers promise immediate liquidity to investors whose money is invested in potentially illiquid assets, this can introduce a worrying new form of risky maturity transformation. The evolving role of asset managers therefore merits close regulatory attention.

The third is shadow banking risks in China. China’s total nonfinancial debt to GDP—of households, government, and corporates combined—has risen from 116 percent in 2007 to 240 percent in 2015, and is now similar to that of the United States and other advanced economies and far above typical emerging market levels. Total nonfinancial debt is over US$26 trillion, and has more than quadrupled since 2007. Corporate debt at over 130 percent of GDP in 2015 is particularly high, and has continued to grow over the last year. This massive growth of leverage, funding a huge property and infrastructure construction boom, creates macroeconomic risks and poses major management challenges for the Chinese authorities.

In addition, some 30 percent of credit is provided via a multiplicity of unregulated or imperfectly regulated shadow banking entities and activities, including trust funds, wealth management products, and “entrusted loans.” Some of these structures and activities are eerily reminiscent of those that proliferated in the advanced economies before the 2007–08 crisis, with opaque links between some regulated banks and shadow banking entities, and with implicit but unspecified commitments to provide credit or liquidity support.

How far this growth of leverage and of shadow bank forms of credit provision poses a threat to global financial stability can be debated. Most of the debt currently in place links Chinese domestic state-owned banks to state-owned companies, and to local government financing vehicles, with only limited involvement (so far) of overseas investors or financial institutions. And with Chinese central government debt still (in 2015) only 25 percent of GDP, the government has the capacity to fund significant bank capitalization. But as China continues with capital account liberalization, the potential risks of global contagion will increase, and even if a major financial system crisis can be avoided, bringing an end to the unsustainable credit boom will inevitably have significant consequences for Chinese, and therefore global, growth.

Sustainable securitization and nonbank finance

The precrisis growth of securitized credit was widely lauded as a positive development, not only because it would (supposedly) enable more effective risk management, but because it increased diversity of credit supply. The larger role for capital markets that securitization enabled could, it seemed, provide economies with a “spare tire” of additional credit supply that would not dry up in the face of a banking crisis. And the fact that the US capital markets provided 68 percent of private credit, compared to only 32 percent in Europe, was seen as an important advantage.

The second question we address in this report is therefore whether there are opportunities to grow nonbank credit intermediation in sustainable ways that do not create “shadow banking” risks. In particular, we assess the common assertion that securitization could play a greater role (particularly in Europe) in providing credit to small and medium enterprises (SMEs), which are often believed to be underserved by the banking system.

Our analysis suggests that some commonly held beliefs are wrong, and that a more realistic assessment of the opportunities for securitization is required, particularly in relation to the SME sector. Specifically:

- In all economies, including the United States, securitization plays a trivial role in corporate credit provision. The greater role of capital markets in corporate credit provision in the United States reflects almost entirely a greater role for single-name corporate bonds.
- Securitization is almost entirely a household sector phenomenon, playing a major role in residential mortgage credit in the United States but a much more limited role elsewhere. In the United States, moreover, extensive residential mortgage securitization reflects the pervasive role of the
government-sponsored enterprises; it has not flourished as a result of a free-market approach.

- Securitization of SME credit plays a minimal role in all financial systems, but if anything plays a proportionately slightly larger role in Europe than in the United States.
- Single-name corporate bonds also play a minimal role in SME finance, and there is no evidence that corporate bond markets reach further down the size spectrum of companies in the United States than in Europe or other economies.
- It seems inherent, indeed, that debt capital markets will play only a small role in providing credit to SMEs, whether through corporate bonds or through securitized loans. Opportunities to improve external finance for SMEs lie instead in equity markets and private debt placements, and policies to improve access to finance should be focused on these areas, rather than on creating markets in securitized business assets.

Capital market developments are therefore unlikely to play a significant role in directly improving the supply of credit to SMEs, which in all economies rely primarily on banks for credit supply. But there may be opportunities to foster the development of securitized mortgage markets in countries other than the United States, and this may indirectly benefit SMEs by freeing up banks to concentrate to a greater extent on the SME sector. Fostering sustainable securitization regulators should favor the development of simple and transparent security structures and distribution chains, discouraging the overly complex structured products and multistep, opaque distribution chains that contributed to the 2007–08 crisis.

**Recommendations**

This report provides an overview of financial system risks and development opportunities of relevance to investors, financial market participants, and macroeconomic policy makers. In addition, we set out several specific recommendations for regulators focused on financial stability risks and for policy makers seeking to foster more sustainable forms of capital market credit provision.

These recommendations fall into four categories:

- The need to monitor risk, creative incentives for better risk management, improve data availability, and increase transparency in a continually evolving financial system
- Policy reforms that can help foster the development of debt capital markets
- Policies to support more sustainable forms of securitization than proliferated before the 2007–08 crisis
- Appropriate approaches to improving SME access to finance, which should focus on equity finance and private placement, rather than on the development of SME securitization markets.

Details of these recommendations are presented on pages 45–48.
INTRODUCTION

The complex combination of activities labelled “shadow banking” played a significant role in the origins of the 2007–08 global financial crisis. Central to those activities was the originate-to-distribute model of credit intermediation, in which bank loans were turned into marketable credit securities and potentially distributed to nonbank end investors, rather than held to maturity on bank balance sheets. This model, first developed in the 1980s, was believed to deliver important advantages, enabling the more efficient “slicing and dicing” of credit risk, and the distribution of that risk into the hands of the most appropriate investors. It was asserted that highly developed securitization markets could equip economies with “spare tires” of additional credit supply that would not dry up in the face of banking crises.

But the system of nonbank credit intermediation that actually emerged failed to achieve those objectives, and instead contributed significantly to systemic risk of the financial system itself. It involved the following components: (a) complex, multistep, and opaque chains of credit distribution, which facilitated the origination and distribution of poor-quality loans; (b) the creation of complex structured credit securities whose true risk and return characteristics were difficult to assess; (c) the extensive use of derivatives such as credit default swaps that were meant to hedge credit risk but instead created counterparty risks; and (d) the introduction at multiple points in the system of leverage and maturity transformation (the defining characteristics of banks), but in forms that were difficult for regulators and market analysts to understand.

Rather than distributing credit risk away from the banking system to more appropriate investors, the shadow banking system that emerged prior to the crisis had complex and opaque interconnections with the regulated banking system. Troubles that began with shadow banking entities that had short-term and potentially unstable funding ultimately spread to

Many of the specific forms of shadow banking most implicated in the 2007–08 financial crisis have declined.

the trading books of the major banks and investment banks. Moreover, the scale and risks of these interconnections were difficult for the market or regulators to understand and monitor. Shadow banking thus took the originate-to-distribute model of securitized credit and turned it into an engine of financial instability.

Two questions arise, both of which this report explores. They are: (1) Whether the risks involved in the shadow bank entities and activities prior to the crisis have been reduced, or whether they have reemerged in similar or new ways, in part perhaps as a result of the more strict regulation of the formal banking system; and (2) Whether there are opportunities to develop more stable and sustainable forms of nonbank credit intermediation, truly delivering the benefits that the originate-to-distribute model of securitized credit was supposed to make possible.
Old risks reduced but new ones emerging

Regarding the first question, the report finds that many of the specific forms of shadow banking most implicated in the 2007–08 financial crisis have declined significantly in scale, and that, at least in the advanced economies, the significant growth of nonbank credit intermediation has primarily been in forms that do not appear for now to raise the same financial stability concerns as precrisis shadow banking.

Nonetheless, the report underscores that national policy makers and regulators must continue to monitor the shifting, evolving nature of markets, and actors’ responses to those markets. Authorities must remain alert to identify new financial stability risks, including those interconnections between the regulated commercial banking sector and the unregulated shadow banking sector. For example, recent work by the European Banking Authority suggests that such interconnections continue to be seen in some major markets, notably the UK and Germany.²

We also caution that as the overall level of leverage in the global economy continues to grow, financial and macroeconomic risks could increase even if the financial intermediation system itself has become more resilient. We note that even where financial flows are managed rather than intermediated, increased financial stability risks can be introduced; we highlight the importance of currency mismatch risk in lending to emerging market companies; and we note with concern that in China, where overall leverage has increased most dramatically, a complex shadow banking system has also emerged.

Overall, the risks arising from the combination of high leverage and the particular ways in which credit is intermediated may be as great as before the 2007–08 crisis, even if in advanced economies the financial system itself is less susceptible to the sort of self-reinforcing shocks experienced in that crisis.

Opportunities, but not in all sectors

Regarding the second question, the report identifies opportunities to develop more stable and sustainable forms of nonbank credit intermediation, but stresses that the scale of this opportunity varies greatly by sector. In particular, the report finds little support for one commonly asserted proposition—that the development of credit securitization could play a major and useful role in providing alternative sources of credit for small and medium enterprises. But the report spells out the requirements for a good, stable system of securitization in those areas of credit intermediation—in particular residential mortgages—where securitization can play a useful and major role in an overall credit system.

* * *

This report is structured as follows. Section 1 presents the objectives, definitions used, and focus of the report; section 2 covers shadow banking and other risks to financial stability; section 3 explores opportunities to develop securitization and other forms of nonbank finance; section 4 offers policy recommendations; and section 5 presents the conclusion.

OBJECTIVES, DEFINITIONS, AND FOCUS

Objectives

This report has two principal objectives: to assess risks and to assess opportunity.

Assessing risks. We first assess to what degree risks to financial stability are reemerging outside the formal banking sector through shadow banking activities. The report addresses the concern that shadow-banking-type risks may be growing as some financing activities shift to nonbank sectors in response to tighter regulation of the formal banking sector.

In assessing these risks, we draw a distinction between risks that can be generated by the financial system itself, as a result, for instance, of excessive maturity transformation or leverage within financial balance sheets, opaque and overly complex intermediation chains, or procyclical risk management practices; and wider macroeconomic risks that could be created by high levels of real economy leverage (among companies, households, or governments), or by currency or liquidity mismatches, even if the financial system itself were as resilient as possible, and was not itself generating additional risks.

Our primary focus is on the first of these, that is, on financial system risks, narrowly defined. Our assessment of overall risk, however, has to take account of the fact that overall global leverage has continued to increase since 2008, with dramatic increases in some specific markets.

Assessing opportunity. The second objective is to assess the opportunity for creating stable sources of nonbank credit supply, and in particular safe forms of securitization, to play a positive and (in some economies) larger role in providing finance. This reflects the belief that while some forms of securitization played a role in the origins of the 2007–08 crisis, in principle nonbank credit supply (including via securitization) can be a useful alternative to bank lending. In particular, we assess the hypothesis that enhanced development of debt capital markets and securitization outside the United States (in Europe, for example) might help ensure better credit supply to SMEs or other types of borrowers.

We conclude by identifying actionable recommendations for the international policy-making and financial industry communities, in line with the Group of Thirty’s long-standing mission.

* * *

This report uses definitions consistent with those used by the Financial Stability Board. The box on the following page presents definitions of key terms used in the report.
and the empirical record suggests that the most severe
necessarily have anything to do with shadow banking,
movements in equity markets by themselves do not
ations can provoke macroeconomic instability. But
markets. Equity markets can, of course, be volatile
are warranted.
of the analysis
Scope and focus—limits
of the analysis
Two further points of clarification of this study’s scope
are warranted.
First, the report focuses on credit supply, not equity
markets. Equity markets can, of course, be volatile
for rational or irrational reasons, and their fluctuations
can provoke macroeconomic instability. But
movements in equity markets by themselves do not
necessarily have anything to do with shadow banking,
and the empirical record suggests that the most severe
financial instability problems derive from developments in credit markets, not in equity markets.
Second, the report addresses private equity and
hedge funds only if they are involved in the intermediation of credit and if their activities introduce significant
leverage and maturity transformation into the system.
The report proceeds from the observation that many
hedge funds and private equity funds were not central
to the developments leading to the 2007–08 crisis. In
principle, there is a reasonable case that lightly lever-
aged equity hedge funds that can impose “gates” on
investor withdrawals do not create significant risks
within the financial system itself.

Key definitions used in this report

**Nonbank credit** is credit provision that does not result in a loan permanently and continuously held on a bank balance sheet. This could entail simple credit securities such as single-name corporate bonds, securitized credit assets, and loans extended on the balance sheets of nonbank institutions (for example, insurance companies, pension funds, or other financial institutions).

**Securitization** refers to the creation of tradable credit securities composed of multiple underlying loans. It might include structuring of the securities into multiple tranches of credit risk, and will always include pooling of multiple smaller credits into a composite credit security.

**Shadow banking** is the “activities related to credit provision extended outside or partially outside the banking system, but involving the distinctive features of banking, that is, leverage and maturity transformation.” There are several key aspects of this definition. First, these activities are focused on credit extension, not equity finance. Second, the credit extension could be either entirely outside or partially outside the banking system. This captures the important reality that what went wrong before the crisis often involved loans and credit securities that were first originated and held off bank balance sheets, but were then repurchased by the trading divisions of banks, or ended up in vehicles (for example, structured investment vehicles) owned by banks and/or to which banks had extended liquidity guarantees. Third, as the name implies, shadow banking describes activities that are bank-like in character, and involve leverage and maturity transformation (the distinctive defining characteristics of banks). Thus, nonbank credit provided in a simple, nonleveraged, and nonmaturity-transforming form—for example, a major corporate issuing a bond that is bought by a long-term investor—does not fall within “shadow banking.” Fourth, analyses by the Financial Stability Board and other regulators illustrates that shadow banking, as defined here, played a major role in bringing about the 2007–08 global financial crisis.

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3 Prior Group of Thirty work has, however, rightly recognized that hedge funds owned by commercial banks were a conduit of transmission during the formative stages of the 2007–08 global financial crisis. That work, *Financial Reform: A Framework for Financial Stability* (2009), led to changes in US law limiting commercial bank ownership of hedge funds.
SHADOW BANKING AND OTHER RISKS TO FINANCIAL STABILITY

Debate within the policy-making and financial communities has shifted since 2007–08. At first, policy makers and regulators correctly focused on reregulating the banking sector; reinforcing capital and related standards; and coordinating an international, multitiered, multiyear effort to restore stability. Those efforts have strengthened the capital base of major financial institutions and reduced systemic risks. But the resulting slower growth in bank lending, offset by growth in various forms of nonbank credit intermediation, has raised concerns that risks to financial stability have shifted from the banking system to the shadow banking sector.

This section assesses the risks, and there are three main findings.

First, while slower bank credit growth since 2008 has undoubtedly been matched by growing nonbank credit intermediation, some of the specific forms this has taken, particularly in the advanced economies, do not for now appear to raise the same financial stability risks that contributed to the 2007–08 crisis.

Second, our understanding of financial intermediation risks remains incomplete, and with overall leverage continuing to rise, there is a danger that some new forms of nonbank credit intermediation (for instance, through asset managers managing illiquid assets such as emerging market bond funds) could be amplifying the risks inherently created by high leverage. In China, in particular, it is notable that rapidly rising leverage has been accompanied by the proliferation of shadow banking intermediation systems.

Third, overall risks arising from a combination of high leverage and the particular ways credit is intermediated may, therefore, be as great as before the crisis, even if the specific forms of shadow banking seen in the run-up to 2007–08 have declined in importance, and even if the financial system itself is less vulnerable to self-reinforcing shocks.

A shift to nonbank credit—sometimes in less risky forms

Over the last eight years, the slower growth of bank credit in advanced economies has been matched by the rapid growth of some forms of nonbank credit intermediation. But so far this seems to have been primarily in forms that do not raise immediate financial stability concerns.

A somewhat reduced banking system role

Since 2008, banks have been subject to much larger capital requirements against both loan and trading books, and much tighter liquidity requirements. Partly as a result, there are some signs of a slightly reduced role for banks within total credit intermediation. For example, total bank shares of private credit supply indicate a somewhat reduced banking system.
role in both the United States and Europe (exhibit 1). Cross-border bank lending in particular countries (but not all) has declined significantly (exhibit 2). This may reflect the greater focus within some bank regulatory policies on ensuring that the local operations of banks in different countries operate as subsidiaries rather than branches, and that they have adequate bank capital. Capital flows by type declined US$6.7 trillion from 2007 to 2014. Finally, bank trading assets have significantly declined, with banks playing a reduced role as holders of securitized credit.

EXHIBIT 1

Bank lending accounts for 68% of private sector credit in Western Europe compared to only 32% in the United States

Outstanding private sector debt—nonfinancial corporate and households
Percent, US$ trillions, constant exchange rates

<table>
<thead>
<tr>
<th></th>
<th>United States</th>
<th>Western Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000</td>
<td>2007</td>
</tr>
<tr>
<td>Nonbank loans</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>Securitization</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>Corporate bonds</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Bank loans</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>


NOTE: * Western Europe includes the United Kingdom, Germany, France, Spain, and the Netherlands.

---

4 There has been considerable debate over the pros and cons of the regulatory fragmentation of banking activities caused by such policies, whether there has been a resultant loss in economic efficiency, and the degree to which the current balance between stability and efficiency is appropriate.
EXHIBIT 2

Cross-border lending has declined by 84% since 2007, reflecting new banking regulation

Global cross-border lending—
inflows
US$ billion

Global cross-border lending—
inflows by region
US$ billion

Global capital inflows by type
US$ trillion


NOTE: FDI = foreign direct investment; pp = percentage points.

* Includes trade credits, loans, currency, and deposits.
**More corporate bonds but less securitization and shadow banking**

Increasing nonbank credit intermediation has come primarily in forms that in principle could reduce financial system risk.

Much of the growth of nonbank credit has been in the form of straightforward single-name corporate bonds (exhibits 3 and 4). Provided these bonds are held by natural long-term investors—such as pension funds, insurance companies, or ultimate investors—this could in principle represent a more stable and less risky form of credit extension than bank lending.

Conversely, however, there has been a dramatic decline in the volume of complex structured credit securities such as collateralized debt obligations and collateralized debt obligations squared, a big fall in the role of credit derivatives, and some reduction in the role of inherently procyclical short-term funding markets (for example, repo on nonstandard securities) (exhibit 5). And as figures from the

---

**EXHIBIT 3**

**Corporate bonds outstanding have increased by US$5.1 trillion since 2007, compared to US$1 trillion between 2000 and 2007**

**Nonfinancial corporate bonds outstanding per region**

US$ trillions, constant exchange rates

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>5.3</td>
<td>6.3</td>
<td>11.4</td>
<td>28.3</td>
</tr>
<tr>
<td>Other developing</td>
<td>1.6</td>
<td>1.3</td>
<td>2.1</td>
<td>4.8</td>
</tr>
<tr>
<td>Other developed</td>
<td>0.9</td>
<td>1.2</td>
<td>2.1</td>
<td>3.3</td>
</tr>
<tr>
<td>Western Europe</td>
<td>0.1</td>
<td>0.3</td>
<td>+79%</td>
<td>+20%</td>
</tr>
<tr>
<td>United States</td>
<td>2.7</td>
<td>3.3</td>
<td>5.2</td>
<td>6.2</td>
</tr>
</tbody>
</table>

**Growth rate**

2007–Q2,2015, %

**Absolute increase**

2007–Q2,2015, US$ tn

<table>
<thead>
<tr>
<th>Growth rate</th>
<th>Absolute increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.9</td>
<td>28.3</td>
</tr>
<tr>
<td>1.1</td>
<td>17.4</td>
</tr>
<tr>
<td>2.1</td>
<td>6.2</td>
</tr>
<tr>
<td>+79%</td>
<td>7.3</td>
</tr>
<tr>
<td>+20%</td>
<td>6.2</td>
</tr>
<tr>
<td>+20%</td>
<td>1.90</td>
</tr>
</tbody>
</table>

**Source:** McKinsey Global Institute.

**Note:** *Nonfinancial corporate debt securities by residence of issuer.

---

Collateralized debt obligations are financial products that pool assets and repackage them into tranches that can be sold to investors. Collateralized debt obligations squared are similar, but they are backed by these tranches instead of assets.
Financial Stability Board’s (FSB’s) Global Shadow Banking Monitoring Report 2015 illustrate, securitization-based credit intermediation is a subset of shadow banking that continued to decline between 2011 and 2014 (exhibit 6).

In addition, the degree of interconnectedness between banks and other financial institutions (some of which may be involved in shadow-banking-type activities) appears to have diminished since 2008 (exhibit 7).

EXHIBIT 4

Since the financial crisis, corporate bonds have been the main source of funding for companies in advanced economies

Change in nonfinancial corporate debt in advanced economies

US$ trillions, constant exchange rates

Cumulative change
US$ trillion

<table>
<thead>
<tr>
<th></th>
<th>2004–08</th>
<th>2009–14†</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>2002</td>
<td>0.3</td>
<td>0.7</td>
</tr>
<tr>
<td>2003</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>2004</td>
<td>0.1</td>
<td>0.4</td>
</tr>
<tr>
<td>2005</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>2006</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>2007</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>2008</td>
<td>0.3</td>
<td>0.5</td>
</tr>
<tr>
<td>2009</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>2010</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>2011</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>2012</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>2013</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>2014†</td>
<td>0.4</td>
<td>0.2</td>
</tr>
</tbody>
</table>


NOTE: * Australia, Canada, France, Germany, Japan, the Republic of Korea, the Netherlands, Spain, the United Kingdom, and the United States.

† As of June 30, 2014.
EXHIBIT 5

The riskiest “shadow banking” instruments have declined substantially since the crisis—especially SIVs, ABCP, and CDS

US$ trillions, 2007–Q2,14

<table>
<thead>
<tr>
<th>Instrument</th>
<th>2007</th>
<th>2014*</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS</td>
<td>19.5</td>
<td>8.7</td>
</tr>
<tr>
<td>Repos (Europe)</td>
<td>7.9</td>
<td>6.4</td>
</tr>
<tr>
<td>Repos (US)</td>
<td>4.3</td>
<td>7.6</td>
</tr>
<tr>
<td>CMO/CD/CLO</td>
<td>4.8</td>
<td>5.1</td>
</tr>
<tr>
<td>Money Market Funds</td>
<td>1.0</td>
<td>0.3</td>
</tr>
<tr>
<td>ABCP</td>
<td>58.2</td>
<td>0.4</td>
</tr>
<tr>
<td>SIV</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

There has been an upturn of leveraged loans in the US, and the creation of CLOs out of them. However, a new regulation (the Volcker Rule) is expected to curb future growth.

All 29 structured investment vehicles that operated in 2007 have been shut down.

ABCP has dramatically declined, and risky hybrid and SIV issuances have nearly vanished. The ABCP market has also shifted to less risky “multiname” issuances.


NOTE: ABCP = asset-backed commercial paper; AUM = assets under management; CDO = collateralized debt obligations; CDS = credit default swaps; CLO = collateralized loan obligations; CMO = collateralized mortgage obligations; Repos = repurchase agreement; SIV = structured investment vehicle.

* As of June 30, 2014.
EXHIBIT 6

Shadow banking by economic function

Annual growth of economic functions from 2011 to 2013 and in 2014 for 26 jurisdictions

FSB’s “economic functions” view

Definition: “Nonbank credit intermediation that may pose shadow banking risks (e.g. maturity / liquidity transformation and leverage)”

Under this view, nonbank financial entity types are classified into five economic functions (EF):

- **EF1**: Management of collective investment vehicles with features that make them susceptible to runs
- **EF2**: Loan provision that is dependent on short-term funding
- **EF3**: Intermediation of market activities that is dependent on short-term funding or on secured funding of client assets
- **EF4**: Facilitation of credit creation
- **EF5**: Securitization-based credit intermediation and funding of financial entities

SOURCES: National financial accounts data; other national sources; FSB calculations; Financial Stability Board Global Shadow Banking Monitoring Report 2015.

NOTE: Shadow banking not classified into EFs = Residual other financial intermediaries with some shadow banking risks but not classified into any of the five economic functions.

* Controlling for exchange rate effects. Average annual growth rates not shown for “not classified” category.
New forms of nonbank lender—potentially creating less financial system risk

Three categories of nonbank lenders have rapidly grown in recent years.

*Private debt funds of alternative asset managers,* such as hedge funds and private equity funds, are growing rapidly, but are still small relative to the total system. As long as these managers do not employ high degrees of leverage or maturity transformation within the funds, these funds could be seen as a positive rather than a risky development. The assets in credit funds of some of the largest alternative asset managers have doubled since 2009, to over US$400 billion (exhibit 8).

*Direct lending to corporations by insurance companies and pension funds* is also growing, but in general this is a positive development. It results in more credit provided in a simple and transparent fashion by institutions whose balance sheets do not involve maturity transformation. European insurers Allianz, AXA, and Aviva are reportedly considering participating in the direct lending arena, possibly in partnerships with banks and other financial institutions.

*Credit provided through online peer-to-peer services* is growing rapidly and evolving, although it is still small, with outstanding credit of less than US$30 billion globally. Examples include Funding Circle, Lending Club, Prosper, and Zopa. While most of the funding for loans on these platforms was originally from retail investors, banks and other financial institutions have become major sources of funding for some of them, and this could clearly pose risks in the future if a large share of the loans made through these platforms were to default. At present, loans through these online platforms do not involve maturity transformation or leverage, so while they do risk losses to
investors, they do not appear to present systemic risk at this point. However, due to the rapid growth of these platforms, and the potential for possible future systemic risk (if, for example, the credit analyses behind such loans proves substandard, or commercial banks begin to become interconnected with these platforms), regulators must continue to remain vigilant.

**Hedge fund risks have not increased**

Hedge fund leverage shrank after 2008 as banks contracted prime broker activities, but leverage has since returned to precrisis levels (see exhibit 9). The role of hedge funds in the 2007–08 crisis was not a central one, however, and the risks posed by the hedge fund industry to financial stability have not clearly increased.

Hedge fund leverage remains only 2.3 times assets, on average, and the average gross leverage of fixed-income arbitrage funds (the most highly leveraged class) is 4.7 times assets, far below the level seen in banks’ broker-dealers before the crisis. In addition, hedge funds are typically able to impose “gates” on investor withdrawals, significantly reducing the danger that self-reinforcing runs will produce panic asset liquidations. Overall, therefore, while the role of hedge funds within the financial system needs to be kept under tight surveillance, it does not appear that
a more robust banking system has been offset by a major shift of risks to the hedge fund industry.

In summary, recent developments in the balance of different forms of credit intermediation in the advanced economies do not suggest that risks equivalent to those that flourished in the precrisis shadow banking system are reemerging as a result of tighter bank regulation.

**Areas of rising risk concern**

Available data suggest that several of the most risky forms of precrisis shadow banking have diminished since the 2007–08 crisis, after growing dramatically in the years before the crisis. But FSB and International Monetary Fund figures still reveal the enormous size of nonbank credit intermediation activities, and we must

---

**EXHIBIT 9**

Hedge funds’ leverage ratio has reverted to precrisis level, with total leveraged assets reaching US$6.9 trillion in 2014

**Hedge funds’ AUM and leveraged assets**

<table>
<thead>
<tr>
<th>Year</th>
<th>AUM</th>
<th>Leveraged assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1.9</td>
<td>4.3</td>
</tr>
<tr>
<td>2010</td>
<td>1.9</td>
<td>3.4</td>
</tr>
<tr>
<td>2014</td>
<td>3.0</td>
<td>6.9</td>
</tr>
</tbody>
</table>

**Gross leverage ratio by fund strategy**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Gross Leverage Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed-income arbitrage</td>
<td>2.3x</td>
</tr>
<tr>
<td>Global macro</td>
<td></td>
</tr>
<tr>
<td>Equity market neutral</td>
<td>1.9x</td>
</tr>
<tr>
<td>Multistrategy</td>
<td>3.5x</td>
</tr>
<tr>
<td>Event driven</td>
<td>2.9x</td>
</tr>
<tr>
<td>Convertible arbitrage</td>
<td>2.7x</td>
</tr>
<tr>
<td>Dedicated short bias</td>
<td>2.6x</td>
</tr>
<tr>
<td>Equity long/short</td>
<td>1.9x</td>
</tr>
<tr>
<td>Emerging markets</td>
<td>1.4x</td>
</tr>
<tr>
<td>Distressed</td>
<td>1.0x</td>
</tr>
</tbody>
</table>

- Low interest rate environment has encouraged hedge funds to lever up over the past few years. As a result, gross leverage of global hedge funds has increased from 1.8x in 2010 to 2.3x in 2014.
- Hedge funds can obtain credit from multiple sources, including prime brokerage, repos, secured credit line, structured financing vehicles, and derivatives.

**SOURCE:** McKinsey Global Institute.

**NOTE:** AUM = assets under management.

* Gross leverage ratio (mean) calculated as sum of long market value and absolute short market value, divided by net equity; estimate used for 2007.
be cognizant that available figures can provide only an imperfect understanding of the multiple different activities involved in nonbank credit intermediation.

FSB figures suggest that narrowly defined shadow banking activities have expanded as a percentage of global GDP since 2011. When viewed as a shadow-banking-to-GDP ratio, the growth rate is still more marked, particularly in several emerging markets and most notably in China (see exhibit 10). FSB figures show a slight increase in shadow banking as a percentage of GDP since 2010. Further, within the FSB’s five “economic functions” of shadow-bank-type activities, the most rapidly growing segment is collective investment vehicles, with features that make them susceptible to runs (see exhibit 11).

International Monetary Fund estimates, in contrast, based on a somewhat different definition, suggest a slight decline in various measures of shadow banking, but still indicate its huge potential size (see exhibit 12).

Meanwhile, figures for total real economy leverage—whether provided through banks or nonbank intermediation channels—illustrate that there has
FSB figures show a slight increase in shadow banking as a percent of GDP since 2010—from 56.7% to 59.1% in 2014.

FSB’s measure of shadow banking based on economic functions (or activities)*

EXHIBIT 11

NOTE: FSB = Financial Stability Board; GDP = gross domestic product.
* Based on 26 jurisdictions.
EXHIBIT 12

IMF’s shadow banking data based on noncore liabilities also show a decline in shadow banking in the United States and Euro area

IMF’s “activity” view

Definition: “Financing of banks and nonbank financial institutions through noncore liabilities, regardless of the entity that carries it out”

- **Broad measure** includes noncore liabilities from both banks and “other financial corporations”
  Size estimate = US$50–US$55 trillion

- **Narrow measure** excludes noncore liabilities of the financial sector; it is thus a proxy for the intermediation between the ultimate lender (financial sector) and the ultimate borrower (real economy)
  2013 size estimate = US$35–US$40 trillion

IMF also provides a **flow-of-funds measure** (entity view), that captures the financial assets of other financial intermediaries (OFIs) engaged mainly in financial intermediation and entities providing primarily long-term financing. It includes money market funds, leasing corporations, securitization vehicles, broker-dealers, venture capital corporations, and others

2013 size estimate = US$40–US$45 trillion


**NOTE:** IMF = International Monetary Fund.

* Includes the United States, the United Kingdom, Japan, and the Euro area.
been no deleveraging since 2008, but rather a gradual increase in global debt to GDP. Deleveraging by households in, for instance, the United States, has been offset by large increases in advanced economy public debt and by large increases in private sector debt in many developing economies6 (see exhibits 13 and 14). The latter, in particular, may in part reflect sustained loose monetary policy that, in addition to making existing debt stocks (particularly in developed economies) more affordable, also creates incentives for new debt growth.

This rising real economy leverage in itself creates macroeconomic risks, but also makes it more important to identify whether the precise way in which credit flows are intermediated or managed is adding further to that inherent risk.

Three areas of particular concern have been identified: the increase in emerging market corporate debt, particularly when denominated in foreign currency (usually the US dollar) rather than in local currency; the role asset managers might play in amplifying the

---

inherent potential volatility and procyclicality of capital market credit, particularly in somewhat illiquid markets such as emerging market corporate debt; and the dramatic growth of leverage in China, which has been accompanied by the growth of nonbank credit intermediation channels, some of which have features reminiscent of precrisis shadow banking in the advanced economies.

**Emerging market debt**

Against the backdrop of a continued increase in global debt, the growth of corporate debt in emerging markets—and in particular the portion of that debt that is denominated in US dollars—has raised the concern of a number of observers. The Bank for International Settlements and the International Monetary Fund have both suggested that this increase poses risks to future financial stability and macroeconomic risks, particularly in the context of likely increases in dollar interest rates at some time, which may cause currency swings and prompt some foreign investors to withdraw from the market. Key facts on this risk include the following.

Emerging market corporate debt has increased dramatically in dollar terms and as a percentage of national GDPs over the past seven years, reaching US$20 trillion at the end of the second quarter of 2015, compared to US$6 trillion in 2007 (see exhibit 15). Growth has occurred in both dollar-denominated debt securities and securities denominated in local currency, with the percentage split between dollar-denominated and non-dollar-denominated corporate debt varying significantly by country. The largest concentrations of dollar-denominated corporate bonds (as a share of total corporate debt securities issued) are found in Israel, Chile, South Africa, Brazil, and Mexico (see exhibit 16).
Emerging economy corporate debt has more than tripled since 2007; China accounts for two-thirds of it

**EXHIBIT 15**

Stock of nonfinancial corporate debt

<table>
<thead>
<tr>
<th>Year</th>
<th>Emerging excluding China</th>
<th>China</th>
<th>Corporate debt-to-GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2007</td>
<td>2</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Q2,2015</td>
<td>3+ times</td>
<td></td>
<td>20</td>
</tr>
</tbody>
</table>

Nonfinancial corporate debt-to-GDP ratio

<table>
<thead>
<tr>
<th>Country</th>
<th>Q2,2015, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>131</td>
</tr>
<tr>
<td>Chile</td>
<td>93</td>
</tr>
<tr>
<td>Vietnam</td>
<td>90</td>
</tr>
<tr>
<td>Hungary</td>
<td>89</td>
</tr>
<tr>
<td>Malaysia</td>
<td>83</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>58</td>
</tr>
<tr>
<td>Thailand</td>
<td>57</td>
</tr>
<tr>
<td>Russia</td>
<td>56</td>
</tr>
<tr>
<td>Turkey</td>
<td>55</td>
</tr>
<tr>
<td>India</td>
<td>49</td>
</tr>
<tr>
<td>South Africa</td>
<td>49</td>
</tr>
<tr>
<td>Brazil</td>
<td>36</td>
</tr>
</tbody>
</table>


NOTE: GDP = gross domestic product.
EXHIBIT 16

Over 65% of corporate debt securities are issued in foreign currencies in emerging economies outside Asia

Nonfinancial corporate bonds issuance in select emerging economies, by currency
Percent, US$ billions; 2007 to 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>US$</th>
<th>Other foreign currencies</th>
<th>Local currency</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Israel</td>
<td>83</td>
<td>17</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td>66</td>
<td>3</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>63</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>62</td>
<td>8</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>54</td>
<td>13</td>
<td>187</td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td>35</td>
<td>9</td>
<td>219</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>25</td>
<td>5</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>10</td>
<td>89</td>
<td>1,712</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>10</td>
<td>90</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>9</td>
<td>87</td>
<td>80</td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: McKinsey Global Institute
The Bank for International Settlements reports that total dollar-denominated debt to nonbank corporations (including some nonbank financial firms) has reached US$3.2 trillion, up from US$1.7 trillion in 2008 (including bonds and loans).

Much of the debt is issued by very large corporates that are often para-state-owned organizations (see exhibit 17). While some of these companies have dollar-based revenue streams (for instance, mining and oil companies), many might not.

This growth in debt clearly creates economic vulnerability for the borrowers, for four reasons.

First, the growth of debt has occurred during a period of low global interest rates, leaving some borrowers potentially vulnerable to interest rate rises if and when their liabilities reprice or need to be refinanced.

Second, some of the borrowers, and in particular those who have borrowed in dollars, may be exposed to significant currency mismatch risks, making them vulnerable to any further dollar appreciation that results from dollar interest rate rises. This risk will be most important where companies have borrowed in dollars but do not have revenue streams denominated in, or naturally linked to, the value of the dollar.

Third, some of the borrowers are in natural resource sectors exposed to falling commodity prices (see exhibit 18).

Fourth, foreign investors have been the source of much of the new credit in their “search for yield” as rates on fixed-income products in advanced economies have fallen to historic lows. But already their appetite for continued funding of emerging market debt has

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**EXHIBIT 17**

*Corporate bonds market in emerging economies is heavily concentrated, with state-owned enterprises being dominant issuers*

*Share of top 10 corporate bond issuers in select emerging economies*

Percent, share of total issuances from 2007 to 2014

- **Share of state-owned enterprises among top 10 issuers**
  - Israel: 100
  - South Africa: 86
  - Mexico: 78
  - Malaysia: 66
  - Chile: 62
  - Russia: 60
  - Brazil: 58
  - Thailand: 57
  - India: 57
  - China: 20

- **Top 3 issuers**
  - Teva, Israel Electric Corp, Gazit Globe
  - AngloGold Ashanti, Eskom, Sappi
  - Pemex, América Móvil, Cemex
  - Khazanah Nasional, MMC, Usaga tegas sdn bhd
  - Codelco, Grupo matte, Angelini group Chile
  - Gazprom, Russian Railways, Rosneft
  - Petrobras, Odebrecht, Vale
  - Ptt, SCG, CP all pci
  - Tata, Power Grid Corporation of India, Reliance Industries
  - CNPC, State Grid Corporation of China, CRCC

*Source: McKinsey Global Institute.*
waned in the expectation of rising interest rates in the United States.

The crystallization of these vulnerabilities may in turn have global macroeconomic consequences, with the risk that reductions in future investment by over-leveraged emerging market companies—or (at the extreme) bankruptcies or default—might reduce GDP growth and intensify deflationary pressures.

What is less clear, however, is how far the growth of emerging market corporate debt creates major global financial stability risks (that is, a threat to the solvency or liquidity of major financial institutions, or a danger that risk crystallization will induce self-reinforcing market reactions, such as runs and fire sales, which would threaten the solvency of financial institutions). Such risks would exist if a large proportion of the bonds or loans involved are held by highly leveraged and maturity-transforming financial institutions, but not if they are held primarily by end investors (whether directly or via asset managers) who will face losses if the risks crystallize, but who do not themselves have financial liabilities to other financial institutions or to real economy firms and households. Available evidence does not, however, present an adequately clear picture of the holders of emerging market debt. Further analysis of significant potential risk is therefore a priority.

EXHIBIT 18

Four sectors account for 65% of the bond issuances in emerging economies—construction and real estate, oil and gas, utilities, and metals and mining

Nonfinancial corporate bonds issuance, by industry
Percent, US$ billions; 2007 to 2014

**Asset managers and risk amplification**

The second key area of significant concern relates to the role of asset managers. The International Monetary Fund and the Bank for International Settlements, in particular, have expressed concern that managed (rather than intermediated) financial flows may be a new source of systemic risk, and the FSB is considering whether very large asset managers should be defined as “systemically important institutions.”

“Assets under management” are that subset of all global financial assets that are managed by professional asset management firms, rather than held directly by investors or by financial intermediaries such as banks, insurance companies, or pension funds. Such asset managers include mutual funds, exchange-traded funds, private equity funds, and hedge funds. Exhibits 19 and 20 display the evolution of asset management in recent years. Total global financial assets (equities and bonds) stood at 209 percent of GDP in 2014, of which 51 percent (or US$108 trillion) was managed by

**EXHIBIT 19**

As a share of GDP, global financial assets and AUM of asset managers are significantly below their precrisis peaks

*Ratio of global financial assets and assets under management to GDP*

Percent of GDP

<table>
<thead>
<tr>
<th></th>
<th>2000–07</th>
<th>2007–14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change Percentage points</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total financial assets excl. loans</td>
<td>36</td>
<td>-30</td>
</tr>
<tr>
<td>Assets under management</td>
<td>15</td>
<td>-12</td>
</tr>
<tr>
<td>Nonfinancial corporate debt securities</td>
<td>15</td>
<td>-25</td>
</tr>
<tr>
<td>Financial institutions debt securities</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Government debt securities</td>
<td>22</td>
<td>-18</td>
</tr>
<tr>
<td>Stock market capitalization</td>
<td>-4</td>
<td>2</td>
</tr>
</tbody>
</table>


NOTE: AUM = assets under management; GDP = gross domestic product.

asset managers. This share of total assets held by asset managers is the same now as it was in 2007.

An asset manager holds assets on behalf of each investor. In some cases, the asset manager makes discretionary investment decisions on the investors’ behalf (either in general or within specific asset classes) or the asset manager invests in passive indexes. The asset management company itself, however, does not normally have a risk-taking balance sheet; investors bear the full upside and downside risk of price movements and returns in the investment portfolio.

Potentially irrational volatility and self-reinforcing herd effects could cause financial and economic instability even if all investment flows passed directly from end investors to end borrowers/equity issuers, and involved neither balance-sheet intermediation nor asset management. Credit assets held by individual investors might grow to levels that create excessive leverage and might produce harmful debt overhang effects. Equity markets might overshoot (on both the upside and downside). “Herd effects” could exacerbate

**Potentially irrational volatility and self-reinforcing herd effects could cause financial and economic instability.**

---

**EXHIBIT 20**

Postcrisis, the asset management industry has grown at a much slower rate, and the ratio of its AUM to global financial assets has declined

*Assets under management of world’s top 500 asset managers*

US$ trillions

![Chart showing assets under management by investment vehicles](chart.png)


**NOTE:** AUM = assets under management.

* Providers of separate account services privately manage the money of institutional investors or high-net-worth individuals.
initial price movements, with investors rushing to liquidate positions in falling markets. Some Asian equity markets, such as the Shanghai Stock Exchange, are dominated by retail investors and “day traders”—and these markets have had wild swings in valuations. Unmanaged investment flows can thus create risks.

But analysis by the International Monetary Fund,7 the Bank for International Settlements,8 the Financial Stability Board,9 and others has identified several ways in which asset management practices can exacerbate these inherent risks.

**Herd behavior.** There is some evidence that asset managers tend to lean toward or replicate the moves of their peers and follow benchmark indexes, and this can create price volatility (both upward and downward movements) and liquidity issues in times of volatility. Volatility from herd behavior would be particularly acute in less liquid markets and asset classes, such as emerging market bonds and equities (which have grown since the 2007–08 crisis as investors search for yield), infrastructure funds, or private equity funds. Bank for International Settlements analysis finds that asset managers amplify price movements and volatility by selling more financial securities than needed to meet current investor redemptions, with the expectation that further redemptions will follow.

**Leverage.** Asset management could introduce additional risk if it facilitated the introduction of additional leverage, as is the case with most hedge funds and the growing new class of “leveraged beta” funds.

**Maturity transformation.** Asset managers may in effect perform maturity transformation if investors can withdraw their assets at will from a portfolio that is funded with long-term, illiquid assets. Asset management funds hold cash to meet daily investor redemptions and avoid liquidity crunches, and also have lines of credit with banks. Again, transformation risk is highest in markets with less liquidity, such as emerging market equities and bonds. However, worrisome connections between asset managers and the banking system could arise if many asset managers were to simultaneously draw on their credit lines, as would likely be the case in the event of a major market shock. Regulators must be sure to adequately stress test these lines of credit and assess their balance sheet risk.

**Contagion risks.** Finally, in the event that investor withdrawals exceed cash on hand, asset managers could introduce contagion effects to other parts of the financial system, causing sell-offs of assets in unrelated markets or of investments in different asset classes. Moreover, if many asset managers with very large credit lines from commercial banks were to respond to stress and investor withdrawals by calling on their lines simultaneously, stress could be passed onto the banking system.

These potential risks in asset management activity are not wholly new, but their prevalence may have grown as the asset management industry has sought to provide end investors with more attractive combinations of liquidity and return in an environment of low interest rates. And while managed assets as a percent of GDP have not grown since 2008, the growth of funds investing in less liquid, thinly traded markets, such as emerging market debt, is a cause for particular concern.

Overall, therefore, while asset management companies themselves do not create systemic risk, particular practices and particular markets give specific cause for concern and merit close regulatory attention. To that end, we make particular recommendations for policymakers (see page 45).

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Shadow banking in China

This report has focused on shadow banking in the advanced economies, since it was advanced economy shadow banking that played a major role in the origins of the 2007–08 global financial crisis, whereas most of the relevant types of firm and shadow bank activity were virtually absent from emerging markets. But while some forms of shadow banking have subsequently declined in the advanced economies, shadow banking has grown rapidly in China, with many features similar to those seen in advanced economies before 2008.

Even apart from shadow banking, the growth of debt in China has recently received particular attention. China’s total nonfinancial debt—of households, government, and corporates—more than quadrupled since 2007, reaching over US$26 trillion by the second quarter of 2015. This partly reflects a government stimulus program in 2009 that entailed greatly increased bank lending to fund local infrastructure projects. As a result, China’s nonfinancial debt to GDP has reached about 240 percent (and 290 percent if financial sector debt is included), similar to levels in the United States, Canada, and Germany, and far above typical emerging market levels (see exhibit 21). This high leverage poses major risks.10

First, corporate debt is very high, at 132 percent of GDP. Just under half of total debt to the private sector is related to real estate, including loans to real estate developers, local government financing vehicles, household mortgages, and real-estate-related sectors such as cement and steel (see exhibit 22). A decline in property

**EXHIBIT 21**

China’s debt reached 290 percent of GDP in 2015, higher than debt levels in some advanced economies

**Debt-to-GDP ratio**

Percent

<table>
<thead>
<tr>
<th></th>
<th>Government</th>
<th>Nonfinancial corporate</th>
<th>Households</th>
<th>Financial institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>51</td>
<td>132</td>
<td>39</td>
<td>68</td>
</tr>
<tr>
<td>Australia</td>
<td>35</td>
<td>76</td>
<td>120</td>
<td>59</td>
</tr>
<tr>
<td>United States</td>
<td>97</td>
<td>70</td>
<td>78</td>
<td>41</td>
</tr>
<tr>
<td>Canada</td>
<td>75</td>
<td>70</td>
<td>95</td>
<td>45</td>
</tr>
<tr>
<td>Germany</td>
<td>78</td>
<td>54</td>
<td>53</td>
<td>69</td>
</tr>
</tbody>
</table>

By country, 2015


---

10 For more detail, see Chapter 4 of “Debt and (not much) deleveraging,” McKinsey Global Institute, February 2015.
prices could reduce the ability of many borrowers to repay, creating risk of defaults and bankruptcies.

Second, lending to local governments, including local government financing vehicles, are a particular area of worry, and total credit to them has gone from a small amount in 2007 to US$2.6 trillion in 2014 (see exhibit 23). These loans have been used to fund property development and other infrastructure, but many investments do not have clear revenue streams to repay the loans. A government audit of these funds in 2014 found that up to 20 percent were using new loans to repay old ones.

Finally, around 30 percent of credit in China comes from unregulated shadow banking entities. These include trust funds and “wealth management products” that take individual deposits and then make loans (often to real estate) and other investments, and “entrusted loans” from corporations to other business and other types of informal loans. The interconnection of credit risks in these shadow banking activities is unknown, but can grow to be very complex (see exhibits 24 and 25). As a result, they could pose similar risks, as we saw in advanced economies prior to 2008.

**Around 30 percent of credit in China comes from unregulated shadow banking entities.**
Despite the risk of future loan losses in China, its rising debt and leverage currently do not appear to be a major threat to global financial stability, because most of the credit is issued by Chinese banks and other local investors. Moreover, China's central government currently has outstanding debt of only 25 percent of GDP and thus has ample capacity to bail out the financial system, if needed. The larger risk to the global economy from the rise in Chinese debt and leverage would be through macroeconomic forces; a wave of loan defaults and bankruptcies would further reduce GDP growth in the world's second-largest economy, directly affecting countries that export to China. Even barring loan losses, however, growth of debt in China at some point will collapse under its own weight, and that will be a significant drag on GDP growth.

As the world saw from 2000 to 2008, a credit boom unsustainably raises GDP growth during the boom, and the end of credit growth therefore dampens what people assumed was “normal” growth. Moreover, if China pursues capital account liberalization as planned, in the future the exposure of foreign creditors to China’s domestic credit market would likely increase, creating a direct channel of contagion to other countries.
EXHIBIT 24
Shadow bank loans now account for 30 percent of outstanding Chinese debt

<table>
<thead>
<tr>
<th>Composition of China’s debt, Q2,2014*</th>
<th>Shadow banking entities</th>
<th>Credit growth 2007–Q2,2014, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>US$ trillion</td>
<td>US$ trillion</td>
<td></td>
</tr>
<tr>
<td><strong>Total = US$21.6 trillion</strong></td>
<td>Shadow bank loans †</td>
<td>86</td>
</tr>
<tr>
<td>Banks</td>
<td>30%</td>
<td>38</td>
</tr>
<tr>
<td>Corporate bonds</td>
<td>13%</td>
<td>59</td>
</tr>
<tr>
<td>Government bonds</td>
<td>4%</td>
<td>23</td>
</tr>
<tr>
<td><strong>Shadow banking entities</strong></td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>Wealth management products</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>Entrusted loans</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Trust loans</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Financing companies and other loans</td>
<td>2.4</td>
<td></td>
</tr>
</tbody>
</table>


NOTE: * Excludes financial sector debt.
† Includes loans from world cooperatives, microcredit institutions, internet peer-to-peer lending, and informal loans.
EXHIBIT 25

China's complex shadow banking system


NOTE: CNY = Chinese Yuan Renminbi.
Conclusions regarding risks

While there are reasons to believe that the financial system itself may be more resilient than before 2008, the combination of rising global leverage and new forms of financial system risk means that overall vulnerability to financial and macroeconomic instability is as great now as it was then. The key points supporting this conclusion are the following.

First, the banking system itself has been made considerably more resilient by the introduction of new capital and liquidity requirements.

Second, more onerous regulation of the banks has probably encouraged the shift toward the nonbank forms of credit intermediation that has occurred since 2008.

Third, the significant growth in nonbank credit intermediation has primarily been in forms that do not for now raise the same financial stability concerns as precrisis shadow banking, and the importance of specific forms of shadow banking most implicated in the 2007–08 financial crisis has declined significantly. There are, moreover, some indications that interconnectedness between the banking system and other financial institutions has declined.

Fourth, to a degree, therefore, the financial system itself—and in particular the element of it that relates to intermediation of credit flows via balance sheets—is probably more resilient than in 2008, making it less likely that we will see self-reinforcing cycles of financial instability arising within the credit intermediation system.

Fifth, as the overall level of leverage in the global economy continues to grow, however, risks to macroeconomic stability could grow even if the financial system itself had become more resilient. And even where credit flows are managed rather than intermediated, new forms of financial stability risk can be introduced.

Finally, in China, a dramatic increase in leverage has been accompanied by the emergence of a complex shadow banking system, some of whose features are reminiscent of precrisis shadow banking in the advanced economies.

Therefore, while the specific forms that risk takes have changed, overall risks are as great now as they were before the crisis. Required policy actions (which are considered in section 4) need to reflect both the severity of the overall risks and the specific forms that risk now takes.
OPPORTUNITIES TO DEVELOP SECURITIZATION AND OTHER FORMS OF NONBANK FINANCE

While complex and opaque forms of securitization clearly played a significant role in the origins of the 2007–08 crisis, capital-markets-based credit provision can in principle play a positive role within a financial system. Corporate bonds, as noted above, are one example. In principle, simple “plain vanilla” securitization might usefully free up bank capital for additional lending and extend the range of loan types that can be intermediated by capital markets rather than by banks.

This report, therefore, assesses whether there are positive opportunities for capital markets to play an increased role in credit provision in some countries and what is required to seize those opportunities.

A common starting point for analysis of these opportunities is to note that the United States has a far more capital-markets-based system of credit provision than the rest of the world, with about 68 percent of US private sector credit provided by capital markets and 32 percent by banks; in Western Europe, the percents are reversed (see exhibit 26). This simple observation raises the question of whether Europe and other economies might benefit by expanding capital market credit provision. Some commentators argue that securitization, in particular, could play a greater role in providing credit to small and medium enterprises (SMEs) which, it is argued, are often underserved by the banking system.
To evaluate the idea of increasing the use of capital market loan origination and securitization, it is vital to look separately at the very different roles that capital markets, and in particular, securitization, play in different economies in both the corporate and household sectors.

In the corporate sector, securitization plays a trivial role in credit provision in all economies, including the United States, and the differences between the United States and other countries lie almost entirely in the greater role of single-name corporate bonds in the United States (see exhibit 27). In several countries, meanwhile, a significant portion of corporate credit comes from nonbank sources—that is, from government programs, insurance companies, and other nonbank financial institutions.

Securitization, meanwhile, is almost entirely a household sector phenomenon, and is predominantly used in residential mortgage credit. It plays a major role in US mortgage provision but a more limited role elsewhere (see exhibit 28).
### EXHIBIT 27

**Nonbank credit accounts for a majority of corporate debt outside of continental Europe and Japan**

**Nonfinancial corporate debt by source of financing**

US$ trillion, percent, Q2, 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>Bank loans</th>
<th>Corporate bonds</th>
<th>Securitization</th>
<th>Nonbank loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>70</td>
<td>17</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Germany</td>
<td>62</td>
<td>10</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>58</td>
<td>3</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>54</td>
<td>17</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>53</td>
<td>31</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>50</td>
<td>21</td>
<td>2</td>
<td>27</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>48</td>
<td>33</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>46</td>
<td>35</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>35</td>
<td>43</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Canada</td>
<td>31</td>
<td>46</td>
<td>2</td>
<td>21</td>
</tr>
</tbody>
</table>

Analysis of securitization in these two very different sectors leads us to the following conclusions.

First, the proposition that capital markets play a significant role in providing credit to SMEs, either through corporate bonds or through securitized loans, is not supported. This is true in the United States and elsewhere. Potentially important differences in the provision of external finance for SMEs lie instead in equity markets and private debt placements, and policies to improve access to finance should be focused on these areas, rather than on creating markets in securitized business assets.

Second, the greater role of securitization in US household credit provision reflects almost entirely the role of the government-sponsored enterprises (Fannie Mae and Freddie Mac). There are both advantages and disadvantages to a securitized approach to household credit, and optimal financial systems would likely entail a balanced mix of bank and securitized household finance. Policy should focus on ensuring that household credit securitization is based on simple, transparent structures, avoiding the complexity, opaqueness, and perverse incentives that led to pre-crisis problems.

Based on the above, we find that capital market developments are unlikely to play a significant role in directly improving the supply of credit to SMEs, which

**Capital market developments are unlikely to play a significant role in directly improving the supply of credit to SMEs.**
in all economies rely primarily on banks for credit supply. But a greater role for capital market credit provision to major corporates (via corporate bond markets) and households (in a securitized form) could indirectly benefit SMEs by freeing up bank capital to focus on the SME segment, which only they can effectively serve.

**Capital market credit intermediation is not the solution to problems of SME credit supply**

Nonbank credit is important for many companies, but securitization of corporate credit plays a minimal role in all advanced economies.

The relative importance of nonbank credit has grown since 2007 (see exhibit 29) and now plays a significant role in credit supply for companies in all major economies and in all advanced economies (except Japan). Securitization, however, plays a trivial role in nonbank credit supply to companies, which instead is provided in the form of single-name corporate bonds or loans from nonbank institutions (see exhibits 27 and 30). As a result, it is the size of the corporate bond market that explains almost all the difference in the relative importance of banks in the corporate sectors of different economies. It is the growth of corporate bonds that explains the shift away from bank lending in many advanced economies over the last eight years.

**EXHIBIT 29**

**Since 2007, nonbank credit has grown as a source of corporate debt in most advanced economies, except Japan**

**Outstanding nonfinancial corporate debt**
Percent, US$ trillions, constant exchange rates

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>4</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Western Europe</td>
<td>1</td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td>Japan</td>
<td>1</td>
<td>30</td>
<td>28</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>1</td>
<td>31</td>
<td>35</td>
</tr>
</tbody>
</table>

**SOURCE:** McKinsey Global Institute.

**NOTE:** * Western Europe includes France, Germany, the Netherlands, Spain, and the United Kingdom.
Turning specifically to SME lending, contrary to the dominant consensus narrative, there is no evidence that capital markets play a more extensive role in credit supply to SMEs in the United States than in other advanced economies. Securitization of SME credit plays a minimal role in all financial systems, but if anything plays a proportionately larger role in Europe than in the United States. The vast majority of European SME securitization, however, is used to create collateral to support funding from central banks, rather than funding from private capital markets (see exhibit 31). Single-name corporate bonds also, for obvious reasons, play a minimal role in SME finance, and there is no evidence that corporate bond markets reach further down the size spectrum of companies in the United States than in Europe or other economies.

**EXHIBIT 30**

**Securitization accounts for 5% or less of nonfinancial corporate sector credit in all advanced economies except the UK, which includes WBS**

**Securitization as a share total nonfinancial corporate sector financing**
Percent, Q2,2014

<table>
<thead>
<tr>
<th>Country</th>
<th>NFC Securitization outstanding US$ billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom*</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td>Republic of Korea</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td></td>
</tr>
</tbody>
</table>

* Includes WBS used to turn the future cash flows of a single business into a security; commonly used by pubs.


NOTE: NFC = nonfinancial corporate; WBS = whole business securitization.
The significant difference between the US and European sources of SME finance is, instead, the more extensive role of external equity finance observed in the United States. In addition, private placement markets may play a greater role in the provision of finance to some midsize corporates in the United States. Policy initiatives to improve the supply of external finance to SMEs, therefore, seem more likely to be effective if focused on equity finance and private placement debt, rather than attempting to stimulate securitization markets.

Securitization of household debt: pros, cons, and the optimal way forward

Major differences among advanced economies in the sources of household debt are almost entirely explained by the role in the United States of the government-sponsored housing agencies. Bank loans account for 30 percent of household debt in the United States compared to 80 percent in Europe, 69 percent in Japan, and 64 percent in the Republic of Korea.

EXHIBIT 31

Nearly all European SME securitization is retained by MFIs as collateral for central banks

*NFC securitization outstanding in Europe, retained compared to market placed*

Percent, US$ billions, Q2, 2014

<table>
<thead>
<tr>
<th></th>
<th>Market placed</th>
<th>MFI retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMBS</td>
<td>100% = 92%</td>
<td>8%</td>
</tr>
<tr>
<td>SME</td>
<td>140</td>
<td>86%</td>
</tr>
<tr>
<td>WBS</td>
<td>101</td>
<td>99%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>352</td>
<td>63%</td>
</tr>
</tbody>
</table>

**EXHIBIT 31**

The private market for SME securitization in Europe is illiquid and lacks a robust secondary market.

The ECB has encouraged use of SME securitization as collateral for repurchase agreements, providing short-term financing for MFIs.

According to Fitch, in 2012, 96% of issued SME securitizations were retained for repo with the ECB.


NOTE: CMBS = commercial mortgage-backed securities; ECB = European Central Bank; MFI = monetary financial institutions; NFC = nonfinancial corporate; SME = small- and medium-sized enterprises; WBS = wholesale business securitization.
In all major countries except Korea, banks have increased their share of household lending since 2008, but the big difference between the United States and other countries in sources of household debt remains (see exhibit 32).

This reflects major differences in the role of household debt securitization in different countries, ranging from 3 percent in France to 55 percent in the United States, and particularly mortgage securitization (see exhibit 33). Mortgage securitization in the United States is dominated by government-sponsored enterprises, a dominance that has dramatically increased since 2008, with the almost complete disappearance of new issuance of private-label mortgage-backed securities (see exhibits 34 and 35).

**EXHIBIT 32**

**Since 2007, bank loans have increased as a share of household debt—except in the Republic of Korea**

*Outstanding household debt*

Percent, US$ trillions, constant exchange rates

<table>
<thead>
<tr>
<th></th>
<th>United States</th>
<th>Western Europe*</th>
<th>Japan</th>
<th>Republic of Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>7.0</td>
<td>4.8</td>
<td>3.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Nonbank loans</td>
<td>17</td>
<td>8</td>
<td>40</td>
<td>29</td>
</tr>
<tr>
<td>Bank loans</td>
<td>55</td>
<td>15</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Securitization</td>
<td>55</td>
<td>55</td>
<td>61</td>
<td>62</td>
</tr>
<tr>
<td>2007</td>
<td>13.8</td>
<td>7.8</td>
<td>3.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Nonbank loans</td>
<td>15</td>
<td>13</td>
<td>32</td>
<td>23</td>
</tr>
<tr>
<td>Bank loans</td>
<td>60</td>
<td>77</td>
<td>61</td>
<td>71</td>
</tr>
<tr>
<td>Securitization</td>
<td>55</td>
<td>89</td>
<td>69</td>
<td>64</td>
</tr>
<tr>
<td>Q2, 2014</td>
<td>13.3</td>
<td>8.4</td>
<td>3.0</td>
<td>1.1</td>
</tr>
<tr>
<td>Nonbank loans</td>
<td>28</td>
<td>80</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>Bank loans</td>
<td>26</td>
<td>77</td>
<td>7</td>
<td>64</td>
</tr>
<tr>
<td>Securitization</td>
<td>30</td>
<td>89</td>
<td>69</td>
<td>64</td>
</tr>
</tbody>
</table>

**SOURCE:** McKinsey Global Institute.

**NOTE:** * Western Europe includes France, Germany, the Netherlands, Spain, and the United Kingdom.
EXHIBIT 33
The United States has the highest levels of securitization of household debt, followed by the Netherlands and Canada

*Household sector debt by source of financing*
Percent, US$ trillions, Q2, 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>Bank loans</th>
<th>Securitization</th>
<th>Nonbank loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>96</td>
<td>31</td>
<td>16</td>
</tr>
<tr>
<td>Germany</td>
<td>91</td>
<td>36</td>
<td>2</td>
</tr>
<tr>
<td>Spain</td>
<td>81</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>Australia</td>
<td>78</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>73</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Japan</td>
<td>69</td>
<td>7</td>
<td>24</td>
</tr>
<tr>
<td>Canada</td>
<td>65</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>64</td>
<td>8</td>
<td>28</td>
</tr>
<tr>
<td>Netherlands</td>
<td>50</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>United States</td>
<td>30</td>
<td>55</td>
<td>15</td>
</tr>
</tbody>
</table>

*100% =

**EXHIBIT 34**

**Since 2007, RMBS has grown as a share of household securitization in advanced economies, while remaining flat in Europe**

*Household securitization outstanding*
Percent, US$ billions

<table>
<thead>
<tr>
<th>United States</th>
<th>Europe*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS</td>
<td>Nonagency RMBS</td>
</tr>
<tr>
<td>100% =</td>
<td>3,800</td>
</tr>
<tr>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>206</td>
<td>25</td>
</tr>
<tr>
<td>Japan</td>
<td>Republic of Korea</td>
</tr>
<tr>
<td>ABS</td>
<td>Nonagency RMBS</td>
</tr>
<tr>
<td>100% =</td>
<td>27</td>
</tr>
<tr>
<td>2000</td>
<td>2007</td>
</tr>
<tr>
<td>N/A</td>
<td>29</td>
</tr>
</tbody>
</table>

**SOURCE:** McKinsey Global Institute.

**NOTE:** ABS = asset-backed security; FDIC = Federal Deposit Insurance Corporation; FHLMC = Freddie Mac; FNMA = Fannie Mae; GNMA = Ginnie Mae; NCUA = National Credit Union Association; RMBS = residential mortgage-backed security.

*Includes the UK and all European area countries with available data.
It is therefore important to understand that mortgage debt securitization plays a dominant and sustained role only in financial systems where, as in the United States, it has been sponsored by government agencies. Large and sustainable private mortgage security systems should, in principle, be possible, but history provides no clearly successful model.

There could be both advantages and disadvantages to a system of securitized rather than bank-loan-based mortgage provision. In principle, it could help create a more stable system, enabling the distribution of assets to diversified and long-term investors, and freeing up bank capital to concentrate on sectors (such as SMEs) where capital markets will inevitably play a small role. And mortgage securities of the sort originally developed by the US government-sponsored enterprises—simple, single-tranche securities in which all investors bore the same credit risks—could enable good credit analysis.

In practice, however, before the 2007–08 crisis, the tranching of credit risk to create complex structured credit securities made it more difficult to understand the underlying risks, for two reasons.

First, the complexity was magnified by the development of the opaque and multistep distribution chains discussed in section 1.

Second, the originate-to-distribute model that emerged undermined incentives for good credit underwriting, since loan issuers did not retain the credit risk. Mortgage losses, as a result, greatly exceeded those

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**EXHIBIT 35**

**Issuance of private-label MBS has dropped to almost nothing since the financial crisis**

**Household securitization issuance**

US$ billions, 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>ABS</th>
<th>Private-label MBS</th>
<th>GSE MBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>806</td>
<td>187</td>
<td>474</td>
</tr>
<tr>
<td>2014</td>
<td>2,131</td>
<td>1,086</td>
<td>269</td>
</tr>
</tbody>
</table>

**SOURCE:** McKinsey Global Institute.

**NOTE:** ABS = asset-backed security; GSE = government-sponsored enterprise; MBS = mortgage-backed security.

*: Includes auto, credit card, equipment, housing related, student loans, and other. Does not include small business ABS.
experienced in bank-dominated mortgage markets (see exhibit 36). These losses also reflected the political pressures on Fannie Mae and Freddie Mac to extend their activities to include lower-income borrowers and expand homeownership. They also reflected the non-recourse nature of home loans in the United States, which created incentives for homeowners to walk away from their obligations when their house prices pushed them into negative equity.

The challenge, therefore, is to facilitate the development of sound, simple, and transparent mortgage securitization structures and distribution chains, while avoiding the specific features that contributed to the 2007–08 crisis.

**EXHIBIT 36**

Mortgage losses in the US spiked during the crisis but have now fallen to a lower level than in Western Europe

**Mortgage losses as a share of total mortgages**

Risk cost margin, percent

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>Canada</th>
<th>Netherlands</th>
<th>Europe†</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2001</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2002</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2003</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2004</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2005</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2006</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2007</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2008</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2009</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2010</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2011</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2012</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2013</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>2014</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>

- **US** is characterized by widespread use of non-recourse mortgages, which may facilitate relatively swift resolution of bad debts via default, but which may also undermine borrower caution.
- **Europe** largely uses recourse loans, which permit the lender to pursue a borrower’s other assets and future income for loan payments. As a result, borrowers have a strong incentive to limit debt and not default.


NOTE: † Risk cost margin is the loss on mortgages estimated by lenders due to bad debts.

† Europe includes France, Germany, Spain, and the United Kingdom.
RECOMMENDATIONS

This report finds that financial stability risks narrowly defined have been somewhat reduced since 2008. However, the scale of broadly defined “shadow banking” activities continues to be large, and the risks that lie outside the formal banking system continue to be imperfectly understood and are continually evolving. And while the financial system itself is somewhat safer, the macroeconomic risks that can result from sudden changes in price and sentiment in asset markets are elevated, and the real economy risks arising from high leverage have continued to increase, stimulated inevitably by sustained low interest rates.

While the systemic risks posed by shadow banking have in some forms declined, this is not the time for complacency. Moreover, further consideration needs to be given to the question of whether leverage beyond some level is bound to depress growth and produce instability, and if so, what that level is.12

The following recommendations are directed at governments, policy makers, and market participants concerned with ensuring that the growth of nonbank finance takes place in a manner that is consistent with the need for financial stability and continued regulatory vigilance.

RECOMMENDATION 1

On monitoring risk and increasing transparency in a continually evolving financial system

Care must be taken to ensure the monitoring and supervisory frameworks for emerging nonbank entities match the scale, scope, and potential systemic risk these entities may potentially pose. This report recommends the following:

• International institutions, including the International Monetary Fund, the Bank for International Settlements, and the Financial Stability Board, should continue monitoring and gathering data on the growth of the shadow banking sector, and of nonbank credit intermediation more generally, to be vigilant about detecting the resurgence or reemergence of financial stability risks.

• International organizations, including the International Monetary Fund and the FSB, should continue efforts to develop data standards on nonbank intermediaries. As part of this endeavor, the FSB should continue and expand its work related to shadow banking activities.

• National policy makers and regulators must continue to monitor the shifting and evolving nature of markets, and of actors’ responses to those markets. Authorities must remain attentive and alert, in order to increase the probability that they can identify new financial stability risks, including those interconnections between the regulated and unregulated sector if and when they develop.

• National policy makers should expand sectoral and flow-of-funds accounts to encompass diverse nonbank credit entities and related maturity risk, liquidity risks, and redemption risks, to better understand bank/nonbank interconnectedness.

• Regulators should monitor leverage ratios in direct lending by investment funds, including hedge funds and credit funds.

• Regulators should continue to gather data on asset managers, hedge funds, and emerging market debt, from a financial stability risk perspective.

Overall, while asset management companies themselves do not create systemic risk, particular practices and particular markets give specific cause for concern and merit close regulatory attention. In their ongoing work on asset managers and financial stability risk, we recommend:

• Financial market supervisors should monitor ongoing developments in the asset management industry, including leverage, maturity transformation of some funds, and use of techniques such as high-speed trading that can exacerbate price volatility.

• Funds in less liquid asset classes—such as emerging market debt, private equity, high-yield corporate bonds, and some hedge funds—warrant particular scrutiny. In these cases, “gates” on investor withdrawals may be useful to limit maturity transformation.

• Connections between asset managers and banks, such as through credit lines, should also be monitored. Regulators should ensure banks could withstand simultaneous drawdowns by asset managers.

• Asset managers (and banks with lines to asset managers) should use stress tests to assess their vulnerability to risks arising from mismatches between highly liquid investor redemption options and less liquid underlying assets by asset managers.

In addition, with reference to other new nonbank platforms:

• Regulators should monitor new platforms and actors such as peer-to-peer and online lending, to ensure that these developing new markets and the systemic risks and interconnections they create are properly understood.

• Regulators are urged to monitor connections between bank and nonbank intermediaries such as

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as asset managers or online peer-to-peer lending platforms to ensure that risks outside the banking sector do not create damaging spillovers to the banking sector.

• Authorities should work to ensure that the development of shadow banking platforms occurs in a transparent manner and that agencies have the ability to enhance oversight, including consumer protection, should it prove necessary in the future.

• If necessary, the mandates and resources of national authorities should be updated and adjusted to facilitate the proper monitoring and oversight of shadow banking markets and activities that may pose financial stability risks.

RECOMMENDATION 2

On mechanisms for developing stable and valuable debt capital markets and securitization

The Group of Thirty has previously underscored the importance of deepening debt and equity capital markets. This report reiterates that challenging long-term goal and makes the following recommendations:

• Corporate bond markets, particularly in Europe and emerging economies, need to be further developed to diversify sources of credit and reduce overreliance on bank lending.

• The legal and regulatory infrastructures necessary to develop debt market structures need to be strengthened. This may include work on post-trade clearing mechanisms, bankruptcy laws, and independent credit rating agencies in economies where they do not exist. The goal is to make it easier for companies to issue corporate bonds, while ensuring sufficient enforcement so as to enable capital markets to work efficiently.

• Regulatory changes should be considered to enable the participation of insurance and pension funds in debt securities markets.15

• A rating system for private placement issues should be established.

• The development of a diverse array of debt securities including social venture bonds, infrastructure bonds, and covered bonds should be encouraged.

RECOMMENDATION 3

On encouraging “safe” forms of securitization

This report underscores that securitization, if risks are understood and the instruments and markets are transparent, can be a useful market finance mechanism. To ensure the growth of safe forms of securitization, this report makes the following recommendations:

• Work should be continued on the standardization of regulatory documentation (for example, prospectuses), and on setting standards for reporting of loan-level data, to improve loan quality.

• National regulations on underwriting and loan quality for securitizations should be required, and the regulations should be coordinated globally and properly enforced nationally.

• The detailed securitization attributes and the credit rating of borrowers should be published to help investors more clearly evaluate risks and payoffs, and programs should be created to remove misconceptions about securitization risks.

• Simple, transparent, and comparable securitization standards should be applied to whole transactions, not only to individual tranches.16

15 There is a continuing controversy over the precise regulatory capital standards for holdings of securitized assets, with some regulators and regulated entities holding opposing views.
RECOMMENDATION 4

On nurturing SME market financing

Contrary to the conventional wisdom, SME debt is primarily provided by banks rather than market mechanisms in all economies, including the United States. Securitization of SME debt always plays a minimal role.

Differences between the US and other markets instead lie primarily in the areas of equity finance and debt private placement. We recommend, therefore, that:

- Policies to expand the range of financing opportunities available to SMEs should focus on identifying and removing any barriers to the effectiveness of these markets, rather than on the probably impossible task of unleashing SME securitization markets.
CONCLUSION

The analysis presented in this report suggests that the financial system itself, at least in the advanced economies, is more resilient than in 2008 and less likely therefore to suffer a sudden and self-reinforcing crisis. But the combination of rising global leverage and new forms of financial system risk means that overall vulnerability to financial and macroeconomic instability is as great now as it was before the crisis.

In response to the 2007–08 crisis, global regulators have greatly strengthened bank capital and liquidity requirements, making the banking system significantly more resilient. And these stronger requirements have probably encouraged the slight shift to nonbank credit intermediation that has occurred since 2008.

In the advanced economies, however, most of this growth in nonbank credit intermediation has been in forms such as single-name corporate bonds, which do not raise the same financial stability concerns as precrisis shadow banking. The specific forms of shadow banking most implicated in the 2008 financial crisis have declined significantly in importance, and it appears that interconnectedness between the banking system and other parts of the financial system may have declined.

As a result, it seems likely that the nonbank credit intermediation system, as well as the formal banking system, now suffer from less excessive leverage, and less dangerous maturity transformation, than they did before the crisis.

But this cautiously favorable assessment of the advanced economy credit intermediation system is no cause for complacency. The financial system continually mutates, and there are many aspects of nonbank credit intermediation that are still imperfectly understood. And even where credit flows are managed rather than intermediated, new forms of financial stability risk can be introduced.

Moreover, growing leverage across the global economy can create important risks to macroeconomic stability even if the financial system itself is more resilient. And two developments are particularly concerning: the growth of emerging market foreign currency debt and the rapid growth of Chinese leverage accompanied by a proliferation of shadow banking activities are ominously reminiscent of pre-crisis developments in the advanced economies.

The specific forms that risk takes have thus changed, but overall risks are as great now as they were before the crisis. Policy makers must remain vigilant to ensure that they spot new risks emerging and respond to them before a new crisis erupts.
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ISBN 1-56708-170-3

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