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A DECADE AFTER THE GLOBAL FINANCIAL CRISIS: WHAT HAS (AND HASN'T) CHANGED?

BRIEFING NOTE
SEPTEMBER 2018

It all started with debt.

In the early 2000s, US real estate seemed irresistible, and a heady run-up in prices led consumers, banks, and investors alike to load up on debt. Exotic financial instruments designed to diffuse the risks instead magnified and obscured them as they attracted investors from around the globe. Cracks appeared in 2007 when US home prices began to decline, eventually causing the collapse of two large hedge funds loaded up with subprime mortgage securities. Yet as the summer of 2008 waned, few imagined that Lehman Brothers was about to go under—let alone that it would set off a global liquidity crisis. The damage ultimately set off the first global recession since World War II and planted the seeds of a sovereign debt crisis in the eurozone.[1] Millions lost their jobs, their homes, and their savings.

The road to recovery has been a long one since those white-knuckle days of September 2008. Historically, it has taken an average of eight years to recover from debt crises, a pattern that held true in this case.[2] The world economy has recently regained momentum, although the past decade of anemic and uneven growth speaks to the magnitude of the fallout.

Central banks, regulators, and policy makers were forced to take extraordinary measures after the 2008 crisis. As a result, banks are more highly capitalized today, and less money is sloshing around the global financial system. But some familiar risks are creeping back, and new ones have emerged. In this article, we build on a decade of research on financial markets to look at how the landscape has changed.[3]

GLOBAL DEBT CONTINUES TO GROW, FUELED BY NEW BORROWERS

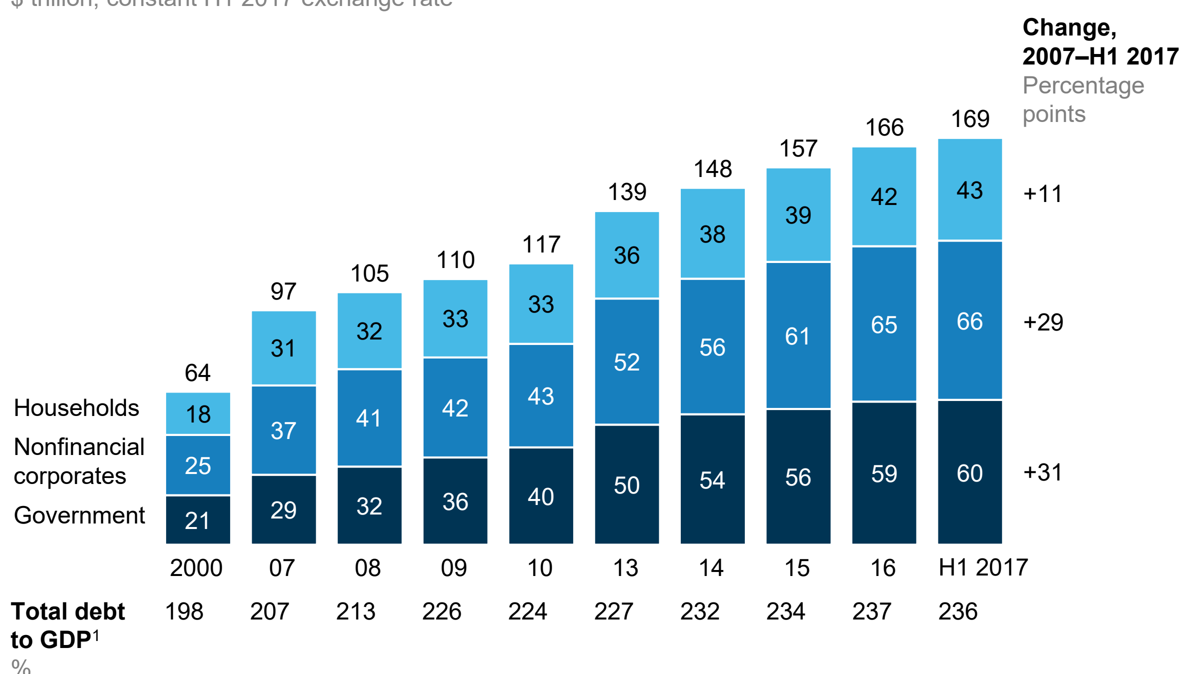
As the Great Recession receded, many expected to see a wave of deleveraging. But it never came. Confounding expectations, the combined global debt of governments, nonfinancial corporations, and households has grown by $72 trillion since the end of 2007 (Exhibit 1). The increase is smaller but still pronounced when measured relative to GDP.

Underneath that headline number are important differences in who has borrowed and the sources and types of debt outstanding. Governments in advanced economies have borrowed heavily, as have nonfinancial companies around the world. China alone accounts for more than one-third of global debt growth since the crisis. Its total debt has increased by more than five times over the past decade to reach $29.6 trillion by mid-2017. Its debt has gone from 145 percent of GDP in 2007, in line with other developing countries, to 256 percent in 2017. This puts China's debt on a par with that of advanced economies.

Exhibit 1

Global debt has continued to swell since the crisis but has remained stable relative to world GDP since 2014.

Total debt outstanding[1]
$ trillion, constant H1 2017 exchange rate



	2000	07	08	09	10	13	14	15	16	H1 2017
Households	18	31	32	33	33	36	38	39	42	43
Nonfinancial corporates	25	37	41	42	43	52	56	61	65	66
Government	21	29	32	36	40	50	54	56	59	60
Total	64	97	105	110	117	139	148	157	166	169
Total debt to GDP[1] %	198	207	213	226	224	227	232	234	237	236

1 Includes household, nonfinancial corporate, and government debt; excludes debt of the financial sector. Estimated bottom up using data for 43 countries from Bank for International Settlements (BIS) and data for eight countries from McKinsey's Country Debt Database.
NOTE: Figures may not sum to 100% because of rounding.

SOURCE: Bank for International Settlements (BIS); McKinsey Country Debt Database; McKinsey Global Institute analysis

Growing government debt

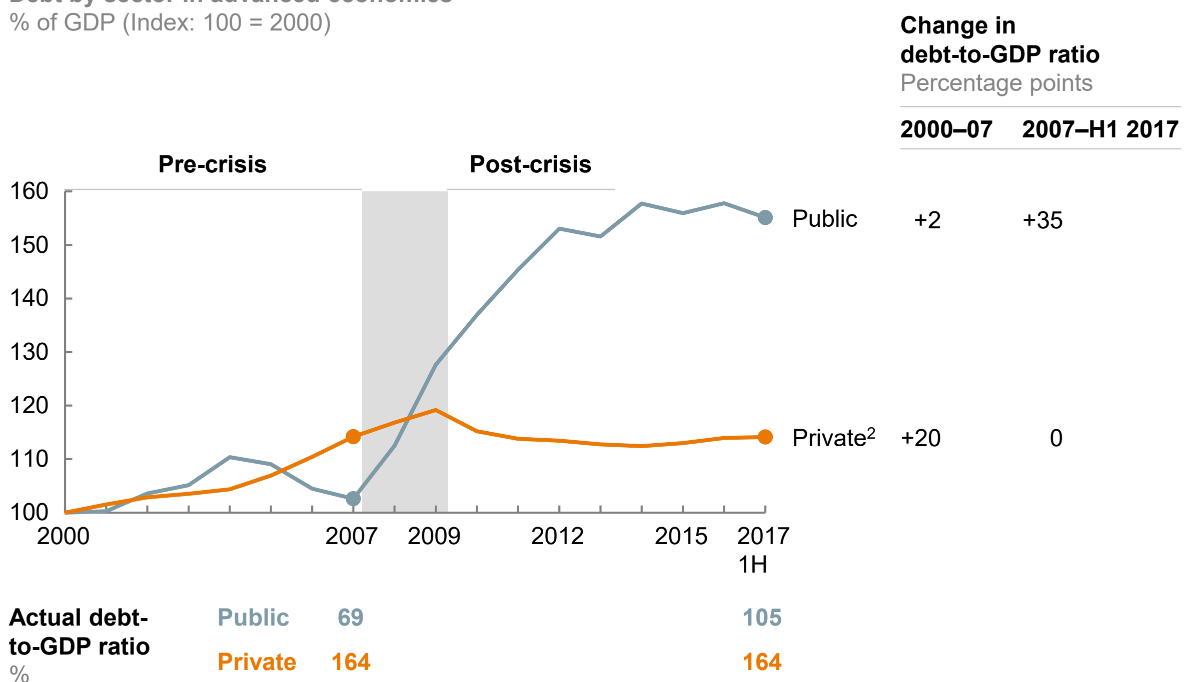
Public debt was mounting in many advanced economies even before 2008, and it swelled even further as the Great Recession caused a drop in tax revenues and a rise in social-welfare payments. Some countries, including China and the United States, enacted fiscal-stimulus packages, and some recapitalized their banks and critical industries. Consistent with history, a debt crisis that began in the private sector shifted to governments in the aftermath (Exhibit 2). From 2008 to mid-2017, global government debt more than doubled, reaching $60 trillion.

Among Organisation for Economic Co-operation and Development countries, government debt now exceeds annual GDP in Japan, Greece, Italy, Portugal, Belgium, France, Spain, and the United Kingdom. Rumblings of potential sovereign defaults and anti-EU political movements have periodically strained the eurozone. High levels of government debt have set the stage for pitched battles over spending priorities well into the future.

Exhibit 2

Public debt increased rapidly after the crisis in advanced economies.

Debt by sector in advanced economies[1]
% of GDP (Index: 100 = 2000)



1 Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Singapore, South Korea, Spain, Sweden, Switzerland, the United Kingdom, and the United States.
2 Includes household and nonfinancial corporate sector debt.
NOTE: Debt as percent of GDP is indexed to 100 in 2000; numbers here are not actual figures.

SOURCE: BIS; McKinsey Country Debt Database; McKinsey Global Institute analysis

In emerging economies, growing sovereign debt reflects the sheer scale of the investment needed to industrialize and urbanize, although some countries are also funding large public administrations and inefficient state-owned enterprises. Even so, public debt across all emerging economies is more modest, at 46 percent of GDP on average compared with 105 percent in advanced economies. Yet there are pockets of concern. Countries including Argentina, Ghana, Indonesia, Pakistan, Turkey, and Ukraine have recently come under pressure as the combination of large debts in foreign currencies and weakening local currencies becomes harder to sustain. The International Monetary Fund assesses that about 40 percent of low-income countries in sub-Saharan Africa are already in debt distress or at high risk of slipping into it.[4] Sri Lanka recently ceded control of the port of Hambantota to China Harbour Engineering, a large state-owned enterprise, after after falling into arrears on the loan used to build it.

Corporate borrowing in the era of ultra-low interest rates

An extended period of historically low interest rates has enabled companies around the world to take on cheap debt. Global nonfinancial corporate debt, including bonds and loans, has more than doubled over the past decade to hit $66 trillion in mid-2017. This nearly matches the increase in government debt over the same period.

In a departure from the past, two-thirds of the growth in corporate debt has come from developing countries. This poses a potential risk, particularly when that debt is in foreign currencies. Turkey's corporate debt has doubled in the past ten years, with many loans denominated in US dollars. Chile and Vietnam have also seen large increases in corporate borrowing.

China has been the biggest driver of this growth. From 2007 to 2017, Chinese companies added $15 trillion in debt. At 163 percent of GDP, China now has one of the highest corporate-debt ratios in the world. We have estimated that roughly a third of China's corporate debt is related to the booming construction and real-estate sectors.[5]

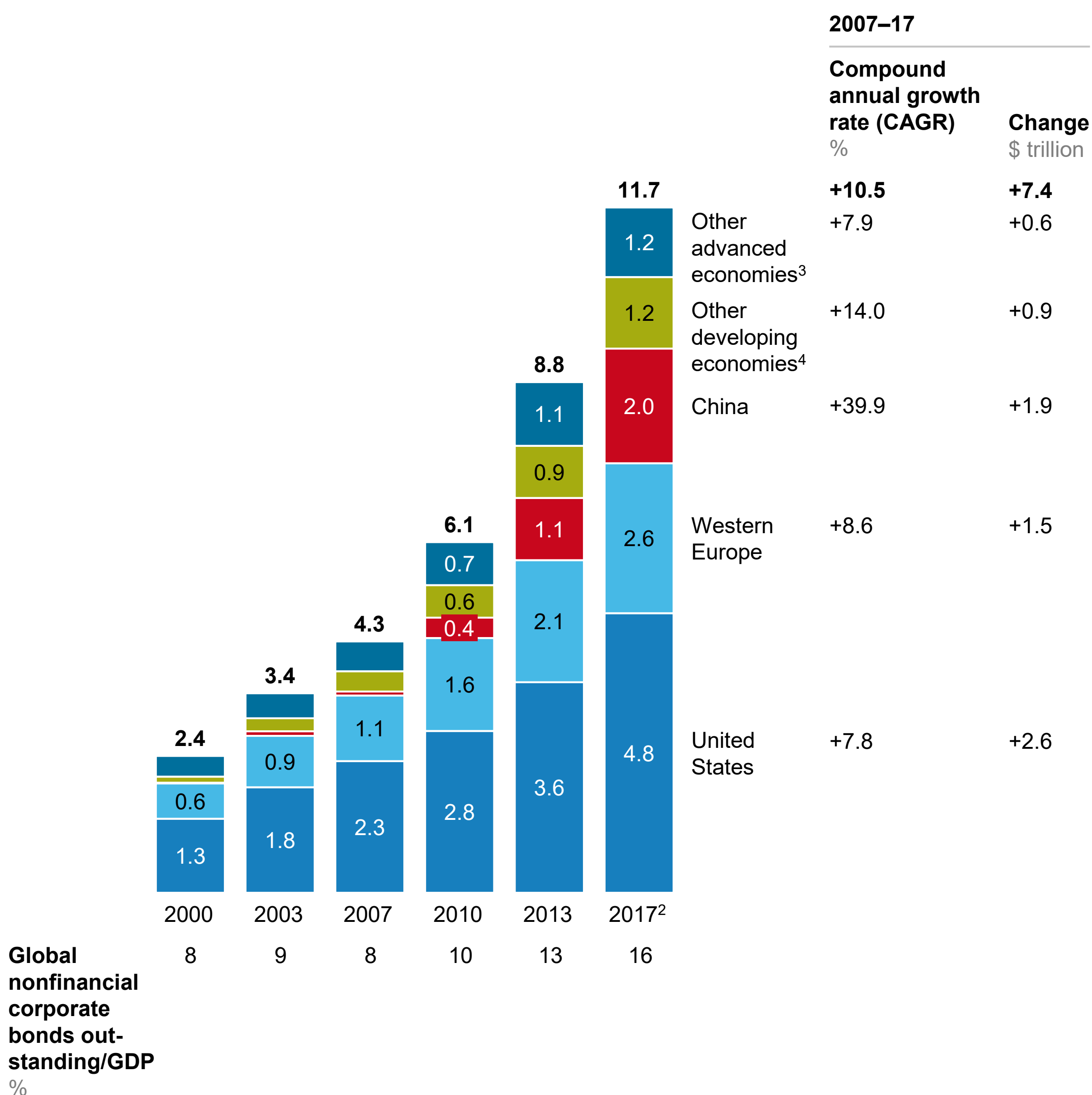
Companies in advanced economies have borrowed more as well. Although these economies are rebalancing away from manufacturing and capital-intensive industries toward more asset-light sectors, such as health, education, technology, and media, their economic systems appear to run on ever-larger amounts of debt.

In another shift, corporate lending from banks has been nearly flat since the crisis, while corporate bond issuance has soared (Exhibit 3). The diversification of corporate funding should improve financial stability, and it reflects deepening capital markets around the world. Nonbank lenders, including private-equity funds and hedge funds, have also become major sources of credit as banks have repaired their balance sheets.

Exhibit 3

Nonfinancial corporate bonds outstanding have increased 2.7 times over the past decade to $11.7 trillion.

Global nonfinancial corporate bonds outstanding by region[1]
$ trillion, nominal exchange rate



1 Bond nationality is based on the location of the headquarters of the parent company of the company issuing bonds.
2 Data as of December 4, 2017.
3 Other advanced economies include Australia, Canada, Hong Kong, Japan, New Zealand, Singapore, South Korea, and Taiwan.
4 Other developing economies include Argentina, Brazil, Chile, Colombia, Czech Republic, India, Indonesia, Israel, Kazakhstan, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, South Africa, Thailand, and the United Arab Emirates.
NOTE: Figures may not sum to 100% because of rounding.

SOURCE: Dealogic; McKinsey Global Institute analysis

HOUSEHOLDS HAVE REDUCED DEBT, BUT MANY ARE FAR FROM FINANCIALLY WELL

Unsustainable household debt in advanced economies was at the core of the 2008 financial crisis. It also made the subsequent recession deeper, since households were forced to reduce consumption to pay down debt.

Mortgage debt

Before the crisis, rapidly rising home prices, low interest rates, and lax underwriting standards encouraged millions of Americans to take out bigger mortgages than they could safely afford. From 2000 to 2007, US household debt relative to GDP rose by 28 percentage points.

Housing bubbles were not confined to the United States. Several European countries experienced similar run-ups—and similar growth in household debt. In the United Kingdom, for instance, household debt rose by 30 percentage points from 2000 to reach 93 percent of GDP. Irish household debt climbed even higher.

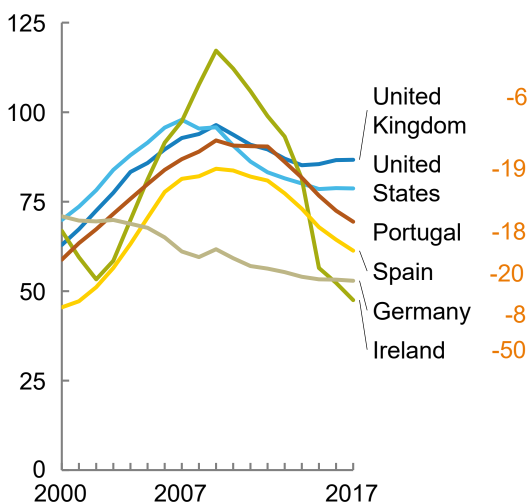
US home prices eventually plunged back to earth starting in 2007, leaving many homeowners with mortgages that exceeded the reduced value of their homes and could not be refinanced. Defaults rose to a peak of more than 11 percent of all mortgages in 2010. The US housing collapse was soon mirrored in the most overheated European markets.

Having slogged through a painful period of repayment, foreclosures, and tighter standards for new lending, US households have reduced their debt by 19 percentage points of GDP over the past decade (Exhibit 4). But the homeownership rate has dropped from its 2007 high of 68 percent to 64 percent in 2018—and while mortgage debt has remained relatively flat, student debt and auto loans are up sharply.

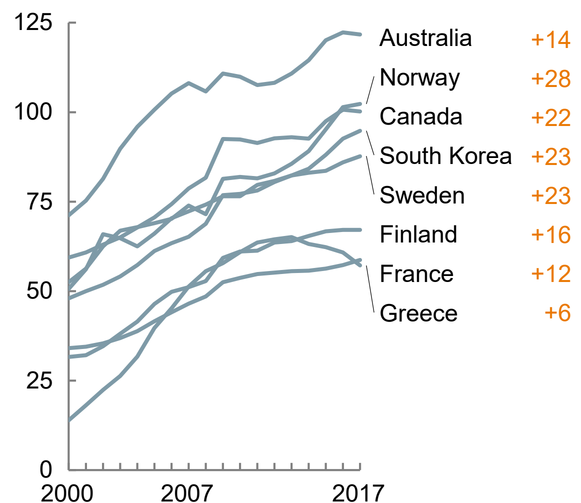
Exhibit 4

While households in the hard-hit countries have deleveraged, household debt has continued to grow in other advanced economies.

Household debt to GDP
%



Change in household debt to GDP ratio, 2007–17
Percentage points



SOURCE: BIS; McKinsey Global Institute analysis

Household debt is similarly down in the European countries at the core of the crisis. Irish households saw the most dramatic growth in debt but also the most dramatic decline as a share of GDP. The share of mortgages in arrears rose dramatically when home prices fell, but Ireland instituted a large-scale mortgage-restructuring program for households that were unable to meet their payments, and net new lending to households was negative for many years after the crisis. Spain's household debt has been lowered by 21 percentage points of GDP from its peak in 2009—a drop achieved through repayments and sharp cuts in new lending. In the United Kingdom, household debt has drifted downward by just nine percentage points of GDP over the same period.

In countries such as Australia, Canada, South Korea, and Switzerland, household debt is now substantially higher than it was prior to the crisis. Canada, which weathered the 2008 turmoil relatively well, has had a real-estate bubble of its own in recent years. Home prices have risen sharply in its major cities, and adjustable mortgages expose home buyers to rising interest rates. Today, household debt as a share of GDP is higher in Canada than it was in the United States in 2007.

Other types of household debt

Looking beyond mortgage debt, broader measures of household financial wellness remain worrying. In the United States, 40 percent of adults surveyed by the Federal Reserve System said they would struggle to cover an unexpected expense of $400.[6] One-quarter of nonretired adults have no pension or retirement savings. Outstanding student loans now top $1.4 trillion, exceeding credit-card debt—and unlike nearly all other forms of debt, they cannot be discharged in bankruptcy. This cycle seems likely to continue, as workers increasingly need to upgrade their skills to remain relevant. Auto loans (including subprime auto loans) have also grown rapidly in the United States. Although overall household indebtedness is lower since the crisis, many households will be vulnerable in future downturns.

BANKS ARE SAFER BUT LESS PROFITABLE

After the crisis, policy makers and regulators worldwide took steps to strengthen banks against future shocks. The Tier 1 capital ratio has risen from less than 4 percent on average for US and European banks in 2007 to more than 15 percent in 2017.[7] The largest systemically important financial institutions must hold an additional capital buffer, and all banks now hold a minimum amount of liquid assets.

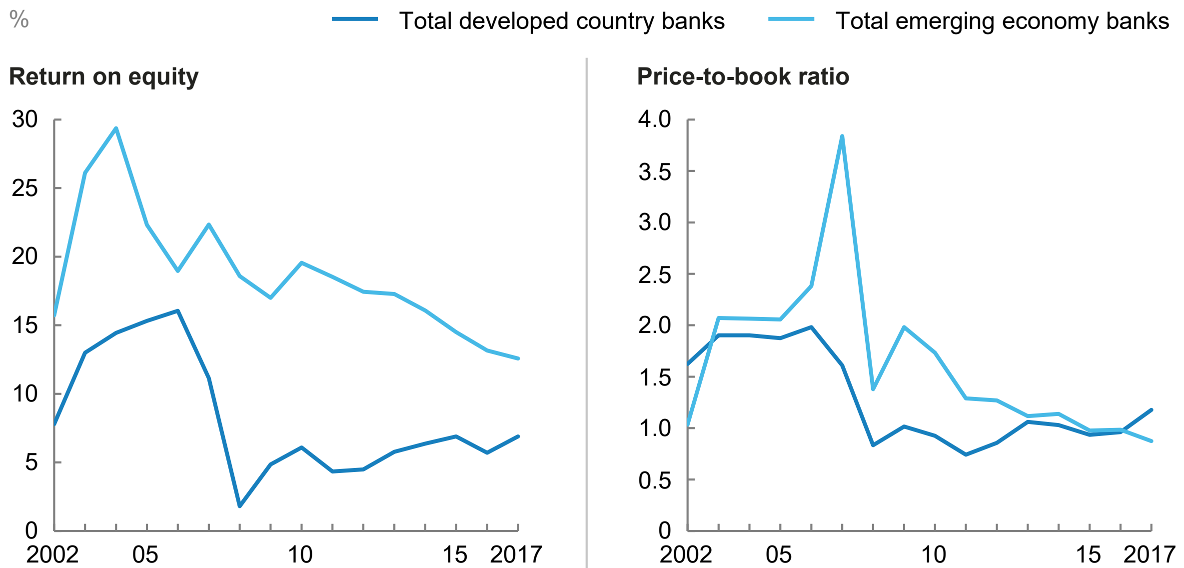
Scaled-back risk and returns

In the past decade, most of the largest global banks have reduced the scale and scope of their trading activities (including proprietary trading for their own accounts), thereby lessening exposure to risk. But many banks based in advanced economies have not found profitable new business models in an era of ultra-low interest rates and new regulatory regimes.

Return on equity (ROE) for banks in advanced economies has fallen by more than half since the crisis (Exhibit 5).[8] The pressure has been greatest for European banks. Their average ROE over the past five years stood at 4.4 percent, compared with 7.9 percent for US banks.

Exhibit 5

Banks have posted weaker financial performance since the crisis.



NOTE: Analysis includes ~1,000 banks in 70 countries, each with total assets exceeding $2 billion. They account for ~75 percent of global bank assets.

SOURCE: SNL; McKinsey Panorama; McKinsey Global Institute analysis

Investors have a dim view of growth prospects, valuing banks at only slightly above the book value of their assets. Prior to the crisis, the price-to-book ratio of banks in advanced economies was at or just under 2.0, reflecting expectations of strong growth. But in every year since 2008, most advanced economy banks have had average price-to-book ratios of less than one (including 75 percent of EU banks, 62 percent of Japanese banks, and 86 percent of UK banks).

In some emerging economies, nonperforming loans are a drag on the banking system. In India, more than 9 percent of all loans are nonperforming. Turkey's recent currency depreciation could cause defaults to climb.

The best-performing banks in the post-crisis era are those that have dramatically cut operational costs even while building up risk-management and compliance staff. In general, US banks have made sharper cuts than those in Europe. But banking could become a commoditized, low-margin business unless the industry revitalizes revenue growth. From 2012 to 2017, the industry's annual global revenue growth averaged only 2.4 percent, considerably down from 12.3 percent in the heady pre-crisis days.

Digital disruptions

Traditional banks, like incumbents in every other sector, are being challenged by new digital players. Platform companies such as Alibaba, Amazon, Facebook, and Tencent threaten to take some business lines, a story that is already playing out in mobile and digital payments. McKinsey's Banking Practice projects that as interest rates recover and other tailwinds come into play, the banking industry's ROE could reach 9.3 percent in 2025. But if retail and corporate customers switch their banking to digital companies at the same rate that people have adopted new technologies in the past, the industry's ROE could fall even further.[9]

Yet technology is not just a threat to banks. It could also provide the productivity boost they need. Many institutions are already digitizing their back-office and consumer-facing operations for efficiency. But they can also hone their use of big data, analytics, and artificial intelligence in risk modeling and underwriting—potentially avoiding the kind of bets that turned sour during the 2008 crisis and raising profitability.

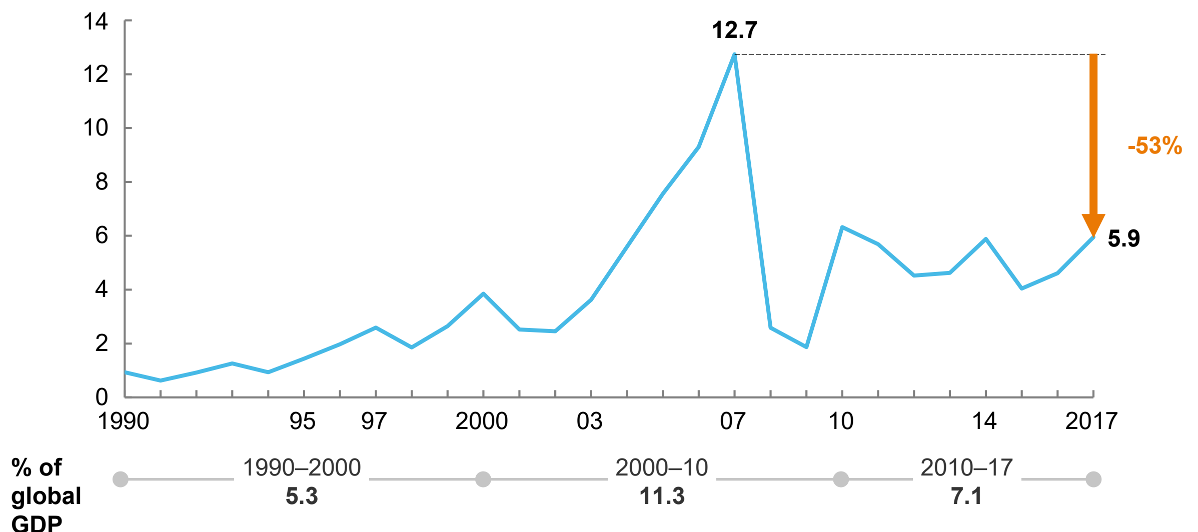
THE GLOBAL FINANCIAL SYSTEM IS LESS INTERCONNECTED—AND LESS VULNERABLE TO CONTAGION

One of the biggest changes in the financial landscape is sharply curtailed international activity. Simply put, with less money flowing across borders, the risk of a 2008-style crisis ricocheting around the world has been reduced. Since 2007, gross cross-border capital flows have fallen by half in absolute terms (Exhibit 6).

Exhibit 6

Global cross-border capital flows have declined 53 percent since the 2007 peak.

Global cross-border capital flows[1]
$ trillion



1 Gross capital inflows, including foreign direct investment (FDI), debt securities, equity, and lending and other investment.

SOURCE: IMF Balance of Payments; McKinsey Global Institute analysis

Global banks retrench

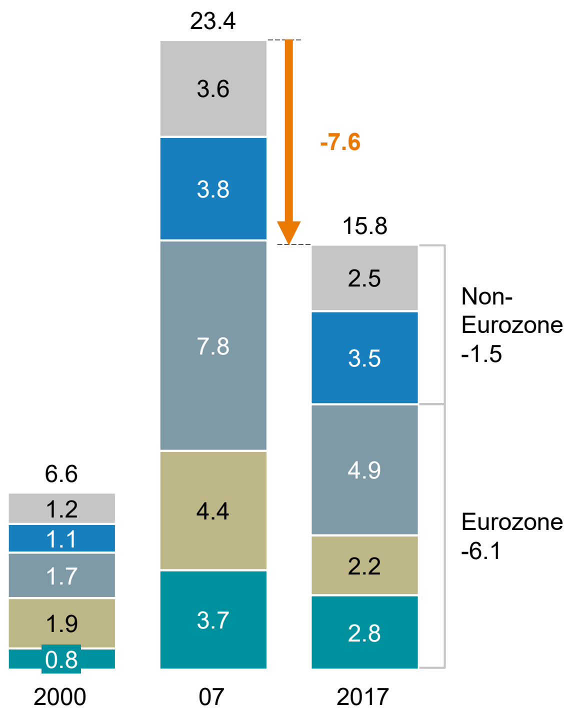
Eurozone banks have led this retreat from international activity, becoming more local and less global. Their total foreign loans and other claims have dropped by $6.1 trillion, or 38 percent, since 2007 (Exhibit 7). Nearly half of the decline reflects reduced intra-eurozone borrowing (and especially interbank lending). Two-thirds of the assets of German banks, for instance, were outside of Germany in 2007, but that is now down to one-third.

Exhibit 7

European banks have reduced foreign claims.

Foreign claims[1]

$ trillion, annual nominal exchange rates

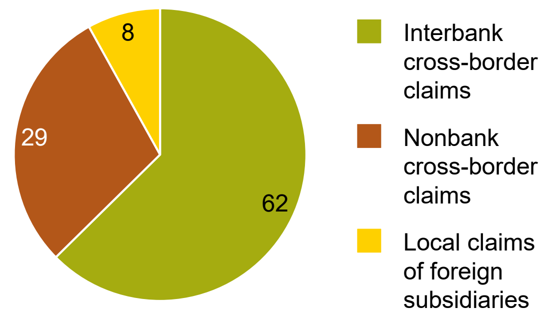


Decline in foreign claims of Eurozone banks, 2007–17

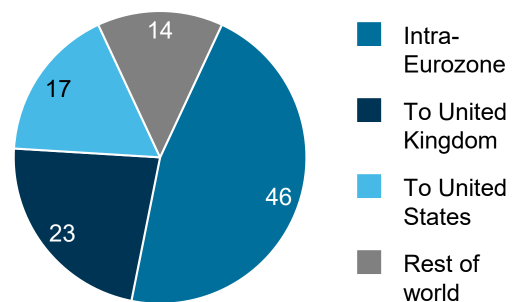
%

100% = $6.1 trillion

By type



By region



1 Foreign claims include cross-border claims and local claims of foreign affiliates. Claims include loans, deposits, securities, derivatives, guarantees, and credit commitments.

NOTE: Figures may not sum to 100% because of rounding.

SOURCE: BIS; McKinsey Global Institute analysis

Swiss, UK, and some US banks have reduced their international business. Globally, banks have sold more than $2 trillion of assets since the crisis. The retrenchment of global banks reflects several factors: a reappraisal of country risk, the recognition that foreign business was often less profitable than domestic business, national policies promoting domestic lending, and new regulations on capital and liquidity.

The world's largest global banks have also curtailed correspondent relationships with local banks in other countries, particularly developing countries. These relationships enable banks to make cross-border payments and other transactions in countries where they do not have their own branch operations. These services have been essential for trade-financing flows and remittances and for giving developing countries access to key currencies. But global banks have been applying a stricter cost-benefit analysis to these relationships, largely due to a new assessment of risks and regulatory complexity.

Some banks—notably those from Canada, China, and Japan—are expanding abroad but in different ways. Canadian banks have moved into the United States and other markets in the Americas, as their home market is saturated. Japanese banks have stepped up syndicated lending to US companies, although as minority investors, and are growing their presence in Southeast Asia. China's banks have ramping up lending abroad. They now have more than $1 trillion in foreign assets, up from virtually nil a decade ago. Most of China's lending is in support of outward foreign direct investment (FDI) by Chinese companies.

Foreign direct investment is now a larger share of capital flows, a trend that promotes stability

Global FDI has fallen from a peak of $3.2 trillion in 2007 to $1.6 trillion in 2017, but this drop is smaller than the decrease in cross-border lending. It partly reflects a decline in corporations using low-tax financial centers, but it also reflects a sharp pullback in cross-border investment in the eurozone.

However, post-crisis FDI accounts for half of cross-border capital flows, up from the average of one-quarter before the crisis. Unlike short-term lending, FDI reflects companies pursuing long-term strategies to expand their businesses. It is, by far, the least volatile type of capital flow.

Global imbalances between nations have declined

Ben Bernanke pointed to the "global savings glut" generated by China and other countries with large current account surpluses as a factor driving interest rates lower and fueling the real-estate bubble.[10] Because much of this capital surplus was invested in US Treasuries and other government bonds, it put downward pressure on interest rates. This led to portfolio reallocation and, ultimately, a credit bubble. Today, this pressure has subsided—and with it, the risk that countries will be hit with crises if foreign capital suddenly pulls out.

The most striking changes are the declines in China's current account surplus and the US deficit. China's surplus reached 9.9 percent of GDP at its peak in 2007 but is now down to just 1.4 percent of GDP. The US deficit hit 5.9 percent of GDP at its peak in 2006 but had declined to 2.4 percent by 2017. Large deficits in Spain and the United Kingdom have similarly eased.

Still, some imbalances remain. Germany has maintained a large surplus throughout the past decade, and some emerging markets (including Argentina and Turkey) have deficits that make them vulnerable.

NEW RISKS BEAR WATCHING

Many of the changes in the global financial system have been positive. Better-capitalized banks are more resilient and less exposed to global financial contagion. Volatile short-term lending across borders has been cut sharply. The complex and opaque securitization products that led to the crisis have fallen out of favor. Yet some new risks have emerged.

Corporate-debt dangers

The growth of corporate debt in developing countries poses a risk, particularly as interest rates rise and when that debt is denominated in foreign currencies. If the local currency depreciates, companies might be caught in a vicious cycle that makes repaying or refinancing their debt difficult. At the time of this writing, a large decline in the Turkish lira is sending tremors through markets, leaving EU and other foreign banks exposed.

As the corporate-bond market has grown, credit quality has declined. There has been notable growth in noninvestment-grade "junk" bonds. Even investment-grade quality has deteriorated. Of corporate bonds outstanding in the United States, 40 percent have BBB ratings, one notch above junk status. We calculate that one-quarter of corporate issuers in emerging markets are at risk of default today—and that share could rise to 40 percent if interest rates rise by 200 basis points.

Over the next five years, a record amount of corporate bonds worldwide will come due, and annual refinancing needs will hit $1.6 trillion to $2.1 trillion. Given that interest rates are rising and some borrowers already have shaky finances, it is reasonable to expect more defaults in the years ahead.

Another development worth watching carefully is the strong growth of collateralized loan obligations. A cousin of the collateralized debt obligations that were common prior to the crisis, these vehicles use loans to companies with low credit ratings as collateral.

Real-estate bubbles and mortgage risk

One of the lessons of 2008 is just how difficult it is to recognize a bubble while it is inflating. Since the crisis, real-estate prices have soared to new heights in sought-after property markets, from San Francisco to Shanghai to Sydney. Unlike in 2007, however, these run-ups tend to be localized, and crashes are less likely to cause global collateral damage. But sky-high urban housing prices are contributing to other issues, including shortages of affordable housing options, strains on household budgets, reduced mobility, and growing inequality of wealth.

In the United States, another new form of risk comes from nonbank lenders. New research shows that these lenders accounted for more than half of new US mortgage originations in 2016.[11] While banks have tightened their underwriting standards, these lenders disproportionately serve lower-income borrowers with weaker credit scores—and their loans account for more than half of the mortgages securitized by Ginnie Mae and one-third of those securitized by Fannie Mae and Freddie Mac.

China's rapid growth in debt

While China is currently managing its debt burden, there are three areas to watch. First, roughly half of the debt of households, nonfinancial corporations, and government is associated, either directly or indirectly, with real estate.[12] Second, local government financing vehicles have borrowed heavily to fund low-return infrastructure and social-housing projects. In 2016, 42 percent of bonds issued by local governments were to pay old debts. This year, one of these local vehicles missed a loan payment, signaling that the central government might not bail out profligate local governments. Third, around a quarter of outstanding debt in China is provided by an opaque "shadow" banking system.

The combination of an overextended property sector and the unsustainable finances of local governments could eventually combust. A wave of loan defaults could damage the regular banking system and create losses for investors and companies that have put money into shadow banking vehicles. Yet China's government has the capacity to bail out the financial sector if default rates reach crisis levels—if it chooses to do so. Because China's capital account has not been fully liberalized, spillovers to the global economy would likely be felt through a slowdown in China's GDP growth rather than financial contagion.

Additional risks

The world is full of other unknowns. High-speed trading by algorithms can cause "flash crashes." Over the past decade, investors have poured almost $3 trillion into passive exchange-traded products. But their outsized popularity might create volatility and make capital markets less efficient, as there are fewer investors examining the fundamentals of companies and industries. Cryptocurrencies are growing in popularity, reaching bubble-like conditions in the case of Bitcoin, and their implications for monetary policy and financial stability is unclear. And looming over everything are heightened geopolitical tensions, with potential flash points now spanning the globe and nationalist movements questioning institutions, long-standing relationships, and the concept of free trade.

The good news is that most of the world's pockets of debt are unlikely to pose systemic risk. If any one of these potential bubbles bursts, it would cause pain for a set of investors and lenders, but none seems poised to produce a 2008-style meltdown. The likelihood of contagion has been greatly reduced by the fact that the market for complex securitizations, credit-default swaps, and the like has largely evaporated (although the growth of the collateralized-loan-obligation market is an exception to this trend).

But one thing we know from history is that the next crisis will not look like the latest one. If 2008 taught us anything, it is the importance of being vigilant when times are still good.

This briefing note was authored by MGI partner Susan Lund; MGI chairman and director James Manyika; Asheet Mehta, a senior partner with McKinsey & Company's financial services practice; and Diana Goldshtein, a McKinsey & Company knowledge specialist.

Endnotes

[1] Raghuram G. Rajan, *Fault Lines: How Hidden Fractures Still Threaten the World Economy*, Princeton University Press, 2010.

[2] Carmen M. Reinhardt and Kenneth S. Rogoff, "Recovery from financial crises: Evidence from 100 episodes," *American Economic Review: Papers & Proceedings 2014*, Volume 104, Number 5. See also Reinhardt and Rogoff, *Is this time different? Eight centuries of financial folly*, 2009.

[3] MGI's body of research includes *Debt and (not much) deleveraging*, February 2015; *The new dynamics of financial globalization*, August 2017; and *Rising corporate debt: Promise or peril?* June 2018.

[4] International Monetary Fund, *Regional economic outlook: Sub-Saharan Africa*, April 2018.

[5] *Debt and (not much) deleveraging*, McKinsey Global Institute, February 2015.

[6] Board of Governors of the Federal Reserve System, *Report on the economic well-being of households in 2017*, May 2018.

[7] The Tier 1 capital ratio, a measure of financial health, is calculated by dividing a bank's core capital by its risk-weighted assets.

[8] When measured by return on assets (which includes loans, securities, cash, and other assets), bank profitability has recovered globally and is now nearing precrisis levels (now 0.65 percent globally and 1.3 percent in the United States). However, we focus on return on equity as the appropriate metric for economic value creation.

[9] McKinsey & Company Financial Services practice, *Remaking the bank for an ecosystem world*, October 2017.

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[11] *Liquidity risks in nonbank mortgages*, Brookings Papers on Economic Activity, March 2018.

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Further reading

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