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Key Fault Lines in the Global Earthquake Zone

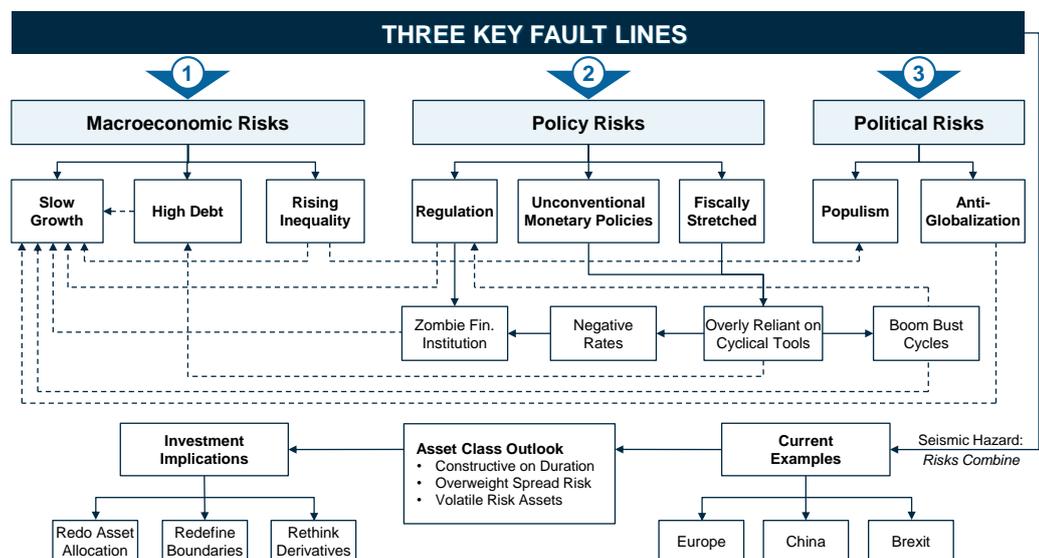
Diagnosing and positioning for tectonic shifts in the financial markets

The developed world is in the midst of a major slow motion crisis. In the past two decades, failures in two major systemic areas of the developed market economies—macroeconomic and policy—have created a third major fault line—political risk. By itself, each area carries the potential to create financial volatility, but they tend to be far more potent when they act together. We can trace many, if not most, of the recent major market selloffs and periods of financial distress to the unhappy confluence of two or more of these factors. These three ground faults are the key to our most serious future financial risks.

Geomorphology: Three Ground Faults

Slow economic growth. Mountains of debt. Massive central bank buying. Negative bond yields. Rising inequality. Mounting political populism on the right and left. China. Are there common fault lines linking these elements together? How do these risks interact and create market volatility? And what are their implications for portfolio risk and investment strategy?

Our analysis suggests that the current state of the fixed income markets—characterized by record low yields and global economic uncertainty—are rooted in two major institutional failures: a socioeconomic system failure and a policy response failure. In turn, these twin failures have inspired the meteoric rise of populist politics. When these elements combine, a financial earthquake zone is created, easily triggered by an event, such as a policy reversal or an election. This results in sharp and episodic market selloffs, similar to the ones surrounding Europe in 2011, China in 2015, and, most recently, Brexit.



Source: PGIM Fixed Income

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Your capital is at risk and the value of investments can go down as well as up.

The expected continuation of this process and its eventual denouement will have profound implications for asset markets. Until the world is ready for a substantially different growth paradigm, driven politically, we will continue to experience an inadequate rearguard action fought by conventional policies pushing against a secular backdrop of stagnant growth and an ongoing low-rate environment.

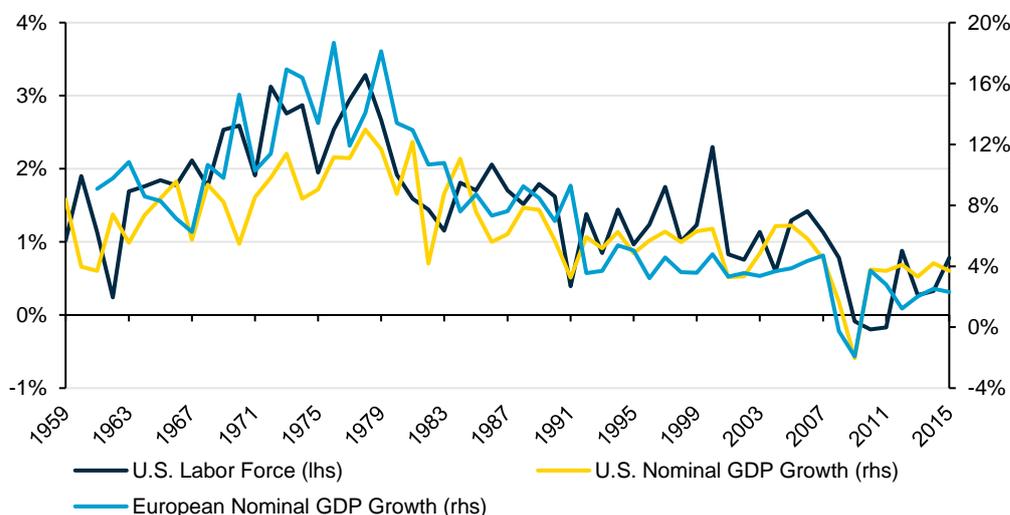
The interim will continue to be characterized by substantial episodic volatility in risky assets. It is an environment where spread products offer much better risk/reward profiles than government bonds. Despite low yields, rate duration warrants consideration as one of the few strategies that does well in a recessionary/deflationary shock scenario. Currency markets, which are natural safety valves for economic transmission and rebalancing, will remain choppy. Furthermore, the long-standing investment strategy that barbells traditional bond indexes with stocks is suboptimal at both ends, as low rates erode the income and recession protection offered by sovereigns, and binary policy and political outcomes make riskier assets more volatile. Three alternative strategies can help. The first is to consider larger allocations to spread products, including investment grade and high yield corporate bonds as well as structured products. The second is to consider allocations outside developed economies, including the full spectrum of assets—stocks, external debt, corporate debt, and local currency debt—given that most investors are underallocated to emerging markets relative to developed countries. Lastly, investors should not avoid or forbid the use of derivatives wholesale, but rather use them to hedge unwanted risks and isolate attractive risk/reward opportunities.

1. Rising Macroeconomic Risks: Slow Growth, High Debt, and Rising Inequality

Slowing Growth

The post-World War II reconstruction surge, the positive demographics of the baby boom generation, and the healthy productivity gains of the second half of the twentieth century were harbingers of healthy growth in the developed world. However, as shown in Figure 1, this growth boom has faded in the past three and a half decades along with the size of the labor force. Today, growth in the U.S. labor force is barely positive and is still slowing, while it is stagnant or declining in many other economically important developed regions.

FIGURE 1
U.S. LABOR FORCE GROWTH IS SLOWING, WHILE GROWTH IN MANY DEVELOPED REGIONS IS STAGNANT OR DECLINING
(U.S. Labor Force, U.S. and European GDP Growth: 1959-2015)



Source: Haver Analytics as of August 2016. European growth is based on an equal weighted composite.

Business productivity (Figure 2) and investment (Figure 3) have also been declining. One theory to explain this is secular stagnation. In economist Larry Summers’ words, “the evidence of unusually stagnant growth is overwhelming.”¹

The stagnationists attribute the slowing trend to a “set of forces that have pushed up the savings propensity and pushed down the investment propensity.”² Others have somewhat different explanations, but it is clear that there is

¹ Summers, Lawrence H., “U.S. Economic Prospects: Secular Stagnation, Hysteresis, and the Zero Lower Bound,” Keynote Address at the NABE Policy Conference, February 24, 2014.

² Summers, Lawrence H., “Secular Stagnation and Monetary Policy,” Federal Reserve Bank of St. Louis Review, Second Quarter 2016.

a savings glut and an investment shortfall, driven by rising life expectancy, aging populations, and risk aversion, along with rising inequality, as discussed below. At the same time, technology and deteriorating demographics may have lessened the need for physical investment as the economy “demassifies.” This phenomenon has been global, with Japan leading the way and Europe apparently falling into the same mold in the years after the 2008 financial crisis as the U.S. has emerged in the best shape, growth-wise, of the advanced economies. As we shall see, the secular stagnation hypothesis has important implications for interest rates.

The drop in productivity that has accompanied this slowdown is puzzling to many. Some, such as economist Robert Gordon, feel that the innovations of the early twentieth century, such as toilets, electricity, and mechanical transportation were far more potent productivity enhancers than those of the twenty-first century, such as manufacturing and service automation, the internet, social media, and instant communication.³ Others, such as the academics Brynjolfsson and McAfee, are more sanguine about the overall transformative impact of digital technology and artificial intelligence, but worry about the resulting economic displacement of many in today’s workforce.⁴ Regardless of how that debate resolves over the long term, the data on the U.S. productivity slowdown over the past two decades are undeniable (Figure 2). And the current low levels of private investment and the fact that most governments are tapped out fiscally do not augur well for near- to medium-term growth.

FIGURE 2
U.S. LABOR
PRODUCTIVITY
“GROWTH” SINCE 1999

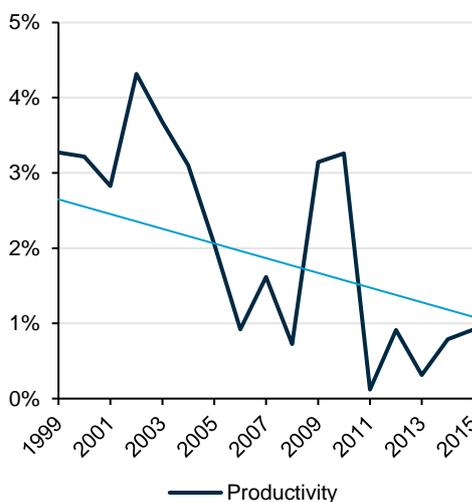
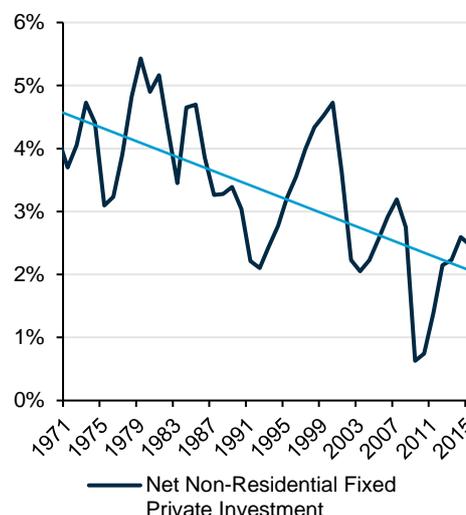


FIGURE 3
THE DOWNWARD
TRAJECTORY OF U.S.
BUSINESS INVESTMENT
SINCE 1971
(% of GDP)



Source Figure 2: Haver Analytics as of year-end 2015. Source Figure 3: U.S. Bureau of Economic Analysis as of year-end 2015.

In the following sections, we will highlight two likely culprits behind slowing growth, namely increased regulation and the use of cyclical tools in place of effective structural reforms. So far, the financial risks of slowing growth have risen only gradually and insidiously. Slow trend growth reduces the cushion against a demand shock that could cause a recession. As we argue later, such shocks could arise from any number of national or international sources, and their risk has risen with the threat of policy errors and political changes. And the slowdown is particularly worrisome in the context of rising private and public debt and rising inequality.

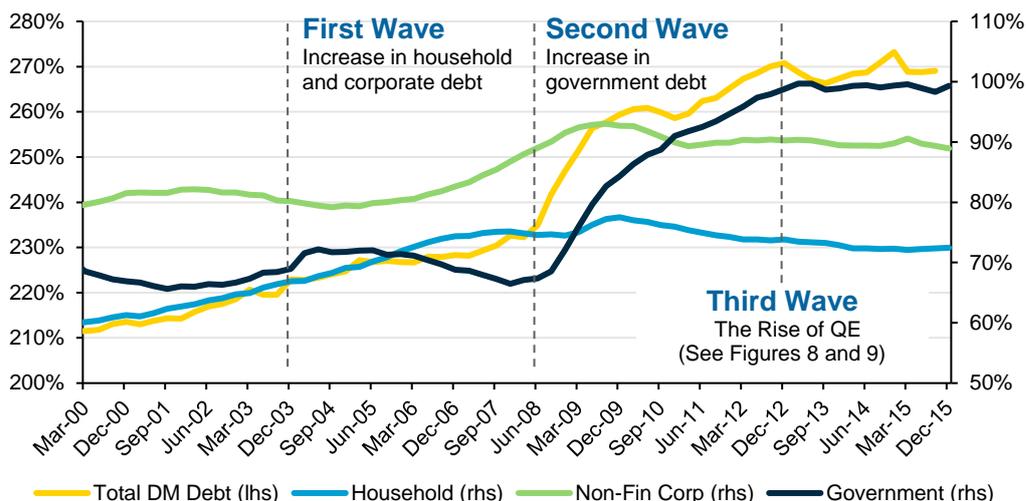
Increase in debt ratios

As growth has slowed, debt has risen dramatically. Together, the changes have made much of the world’s outstanding debt only sustainable at very low real interest rates, which, not coincidentally, have become the norm throughout the developed world. The rise in debt was, at least in part, the result of deliberate policy choices intended to boost growth, and over the past two decades, global debt levels increased in three waves (Figure 4).

³ Gordon, Robert J., “The Demise of US Economic Growth: Restatement, Rebuttal, and Reflections,” NBER Working Paper, February 2014.

⁴ Brynjolfsson, Erik and McAfee, Andrew, *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, W W Norton and Company, 2014.

FIGURE 4
GLOBAL DM DEBT LEVELS INCREASED IN THREE WAVES OVER THE PAST TWO DECADES
(Developed country debt and its components, % of GDP)



Source: Haver Analytics as of year-end 2015.

The **first wave** occurred in the mid-2000s following the technology-led crash and recession that occurred earlier that decade. Aided by regulatory easing, especially government programs designed to make housing more widely available, the largest housing bubble and credit binge of the previous half century developed, involving households, banks, and capital markets (Figure 4). A global savings glut was looking for a home and, when combined with easy credit conditions, regulatory arbitrage, and the originate-to-distribute model, the confluence also created a huge shadow banking system. Deregulation had allowed banks to become huge, complex, and interconnected. When the bubble was pricked, authorities applied uneven policies, allowing some financial institutions to go bust, while rescuing others. The ensuing unwind precipitated the Great Financial Crisis (GFC) of 2008.

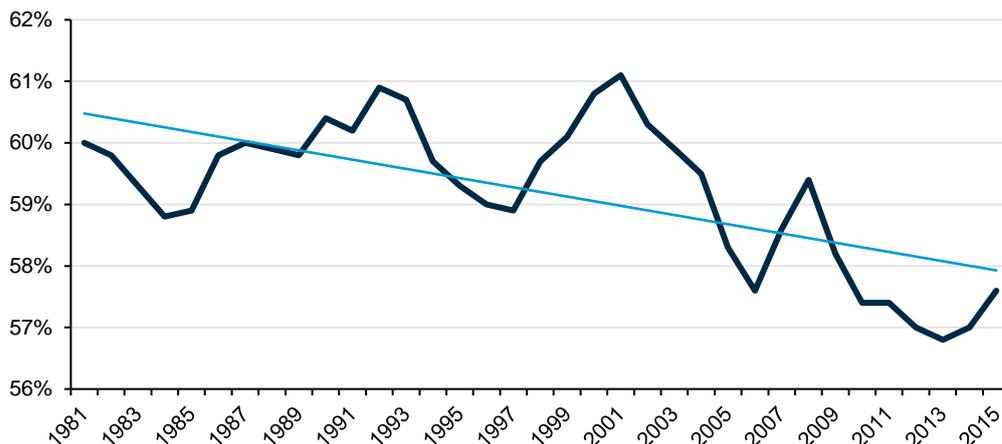
The **second wave** occurred in the wake of the crisis, as governments absorbed private debt onto public balance sheets and spent even more in attempts to revive growth (see Figures 4 and 7). The **third wave**, which has gathered steam in the past five years, broadly dubbed Quantitative Easing or QE, has involved the use of central bank balance sheets to boost developed country economies (see Figures 8 and 9). Throughout this period, unfunded off balance-sheet liabilities, including private and public pensions, social security, and medical insurance have also risen, adding an invisible layer to future debt.

While the drop in interest rates has made the servicing of this mountain of debt affordable until now, the accumulation presents significant risks going forward. There is clearly the risk of episodic credit crises in specific countries/regions, whether caused by a recession, overt repudiation, or by a rise in interest rates or credit spreads. But even in the absence of a crisis, elevated debt levels hold back consumer spending and corporate investment, feeding the dynamic of slower growth. In addition, high government debt reduces the availability of fiscal tools to counter future economic slowdowns. Financial repression in the form of regulation-enforced holdings of government debt, sustained negative real rates, and monetary fiscal financing in advanced economies has gone from being a remote policy choice to being, in the absence of growth, the only option for sustaining current debt levels. Most of the developed world is stuck in a debt trap.

Rising Inequality

The last and critical ingredient of macroeconomic risk is rising inequality, which has driven large-scale economic fissures in the developed world. About 65-70% of households in developed countries saw their real income from wages and capital decline or stagnate between 2005 and 2014, compared to less than 2% in 1993-2005, according to the McKinsey Global Institute. Partly, this is a function of labor garnering a smaller share of national income (Figure 5). On top of that, as Figure 6 shows, the bulk of income gains over the past two decades have gone to the top 20% of wage earners.

FIGURE 5
LABOR'S SHRINKING SHARE OF NATIONAL INCOME
(Labor Income as % of gross domestic income)

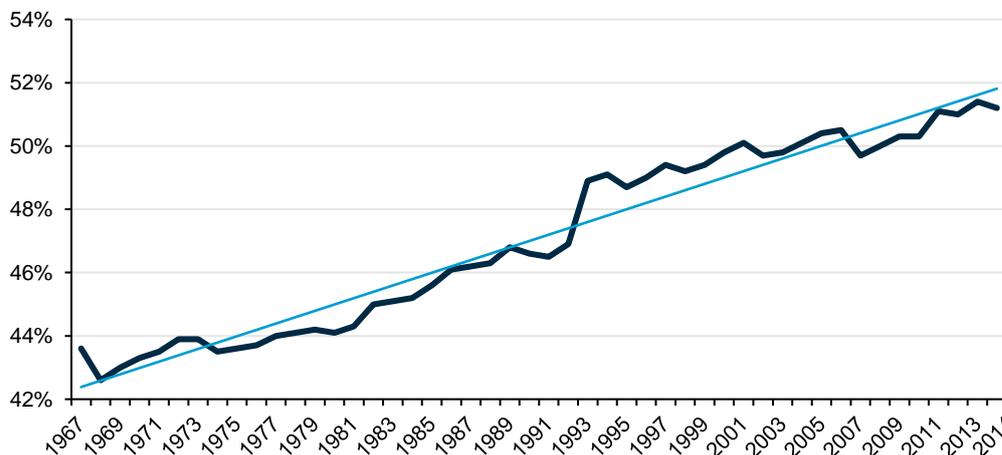


Source: Haver Analytics as of August 2016

At the bottom rungs of the socioeconomic ladder, the unemployed and underemployed languish. While the global financial crisis exacerbated the secular decline in the U.S. labor participation rate, broader unemployment measures, such as the U6 measure remain much higher than the reported unemployment rate of 4.9% (as of August 2016). Unemployment rates, particularly youth unemployment, are much worse in parts of Europe (20.7%, 43.9% in Spain, 11.50%, 39.2% in Italy and 23.5%, 50.3% in Greece, respectively), which has been slowly recovering from multiple economic tremors. Unemployment and underemployment are social destabilizing agents, a phenomenon driven by major changes in the structure of post-industrial economies.

Many have blamed globalization and free trade for their economic plight, and some of the criticisms are warranted. Of the three macroeconomic risks—growth, debt, and inequality—the last is by far the most directly felt, given human nature’s acute sensitivity, not to absolute levels of prosperity, but rather to relative levels and declines. As a species, we are given to "odious comparisons." As such, although all three factors are crucial to long-term prosperity, inequality, more than the other two phenomena, directly drives the pressure on policy and the massive ongoing changes in politics.

FIGURE 6
THE RISING SHARE OF AGGREGATE INCOME RECEIVED BY TOP 20% OF U.S. HOUSEHOLDS
(1967 to 2014)



Source: Haver Analytics as of December 2014

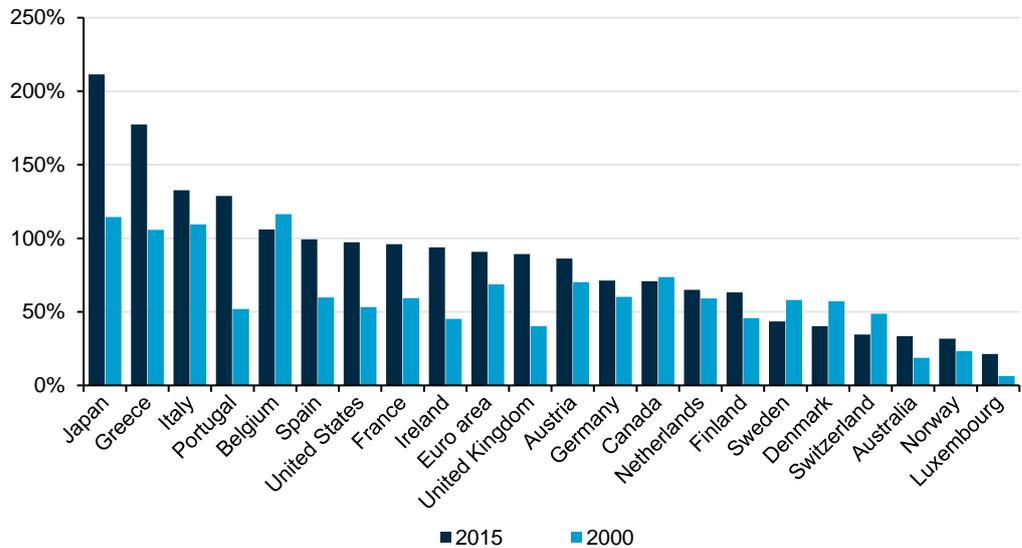
2. Policy Risks: Monetary Limits, Fiscal Burdens, and Regulatory Friction

The second major failure came from the attempts to prop up and prolong the prevailing global socioeconomic system. In particular, policy makers, anxious to maintain growth, were complicit in the creation of the slow-growth, high-debt trap. Following the stock market crash of 2000, the choices made by regulators, monetary authorities, and households conspired to create a housing and mortgage credit bubble over the next seven years. The world had become overly reliant on debt creation to fuel growth and specifically dependent on the overstretched U.S. consumer to spend in the face of rising levels of private and public debt. As laid out in Raghuram Rajan’s (the recently departed Governor of the Reserve Bank of India) prescient analysis in the book *Fault Lines*, rather than

retooling workers displaced by globalization, governments and policy makers instead facilitated easy credit creation—subprime housing finance, for example—as being an explicit and important component of policies intended to address inequality.⁵

FIGURE 7
HIGH AND RISING: THE DEVELOPED WORLD HAS BECOME OVERLY RELIANT ON DEBT CREATION TO FUEL GROWTH

(Ratio of government debt to GDP)



Source: Haver Analytics as of August 2016

In the aftermath of the GFC, the official policy response comprised an additional fiscal spending spree along with a tremendous amount of monetary easing by authorities in the U.S., Europe, China, and elsewhere. A sharp recession and a deflation shock had followed the crash, and most monetary authorities have some combination of controlled inflation and full employment as key mandate goals. Not fully recognizing the partially structural nature of the slowdown in global growth and inflation, G4 central banks indulged whole hog in monetary and, subsequently, quantitative easing measures (Figures 8 & 9). Liquidity from QE fueled further private debt creation. While monetary easing in its various forms was an appropriate response to the post-crisis cyclical slowdown, we have now become over reliant on it because of the lack of effective structural reforms, which could have better addressed the drop in productivity growth.

FIGURE 8
CENTRAL BANKS INDULGED WHOLE HOG IN MONETARY AND QUANTITATIVE EASING MEASURES

(Assets as % of GDP)

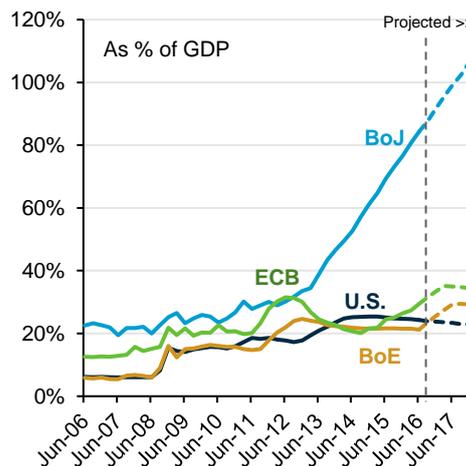
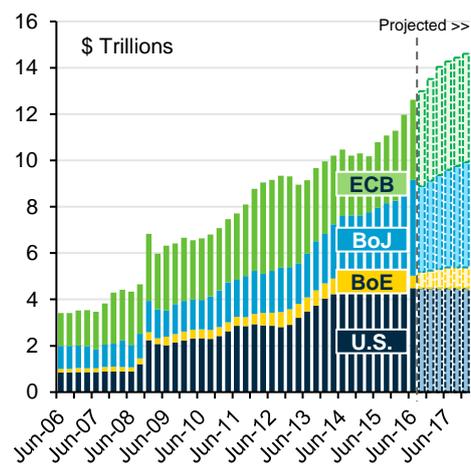


FIGURE 9
THE SURGE IN CENTRAL BANK ASSETS

(Assets in \$ trillions)



Source: Bloomberg and Haver Analytics as of August 2016. Source of projections: PGIM Fixed Income. The projections presented herein have been generated by PGIM Fixed Income for informational purposes as of the date of this presentation. They are based on proprietary models and there can be no assurance that the forecasts will be achieved.

These fiscal and monetary policies have failed developed countries in **three** significant ways. **First**, they have encouraged a sharp rise in private and public debt in both developed and emerging economies, as previously mentioned. **Second**, cyclical tools have been misapplied to a structural problem. Therefore, they have failed to

⁵ Rajan, Raghuram, *Fault Lines: How Hidden Fractures Still Threaten the World Economy*, Princeton University Press, 2010.

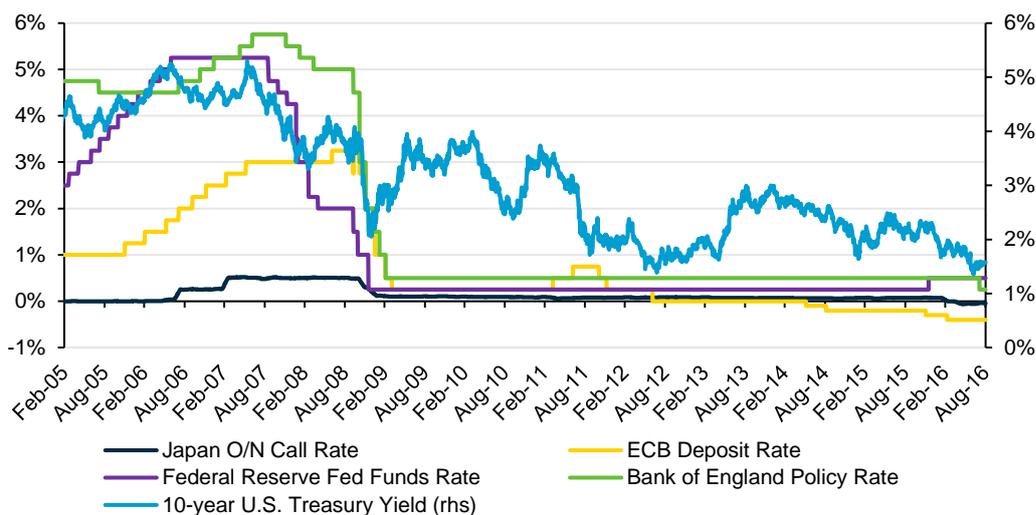
revive growth to desired levels—except arguably in the U.S.—and instead prompted even more extreme easing. As predicted by economists Rogoff and Reinhart in *This Time is Different*, the global economy’s growth response to all this stimulus was, and continues to be, anemic.⁶ Excess capacity continues to plague the advanced economies, and inequality and stagnation continue to pressure policy makers to ease and borrow more.

The **third** negative effect is that these policy measures created financial volatility by creating asset price distortions in some markets. The crash of 2008 and the European crisis of 2011 were clear evidence of the housing bubble of the mid-2000s. But even after that, several “mini-bubbles” have resulted in a series of financial mini-crashes, including commodities (2011-2015), energy (2014-2016), emerging markets (2013, 2015), and China (2015). These financial cycles have been very damaging to risk sentiment as well as to the real economy, introducing severe misallocations of capital early on and causing economic dislocation due to the subsequent financial distress. The busts also tend to trigger more growth-reducing regulation.

The financial world is now addicted to easy policy. Or perhaps current policy is more neutral than policy makers think, and the world couldn’t withstand attempts to tighten. The European Central Bank tried to withdraw monetary easing until the European crisis of 2011 forced it to reverse course again. In the U.S., the Fed similarly set off the taper tantrum when it brought QE to an end. The Fed’s subsequent attempts to lift rates along a sharp trajectory have been stymied—appropriately so, in our view—since sharp rate rises would threaten the recovery. As we argued recently (see “[Central Banks of the World: Yield to Markets!](#)” by Robert Tipp, Chief Investment Strategist) the U.S. is not and cannot act like an island; it is subject to strong global financial flows and to competitive devaluations from the rest of the developed world—notably Europe—and monetary authorities cannot flout the powerful feedback loop provided by markets. So, the Fed, too, has appropriately held off on its previously aggressive plans to raise rates and will likely be held to a very shallow hiking trajectory. Finally, in 2016, with monetary policy appearing to reach its logical limits with zero and even negative rates (Figure 10), many developed economies are turning towards opening the fiscal taps again.

Our recent papers have also laid out the risks and unintended consequences of the overuse of monetary policy, specifically negative interest rates (again, see [Central Banks of the World: Yield to Markets!](#) and [Are Central Banks Losing Their Mojo?](#)). Demand remains anemic in the face of these unprecedented stimulative actions by authorities, in part due to risk aversion by savers and investors concerned about future returns. Retirees face underfunded pension and defined contribution plans. Financial institutions face risks to earnings from flatter yield curves and negative yields. Consequently, bank stocks in negative-yielding jurisdictions have suffered (Figure 11).

FIGURE 10
AFTER IMPLEMENTING ZERO AND EVEN NEGATIVE RATE POLICIES, MANY DEVELOPED ECONOMIES ARE TURNING TOWARDS OPENING FISCAL TAPS AGAIN



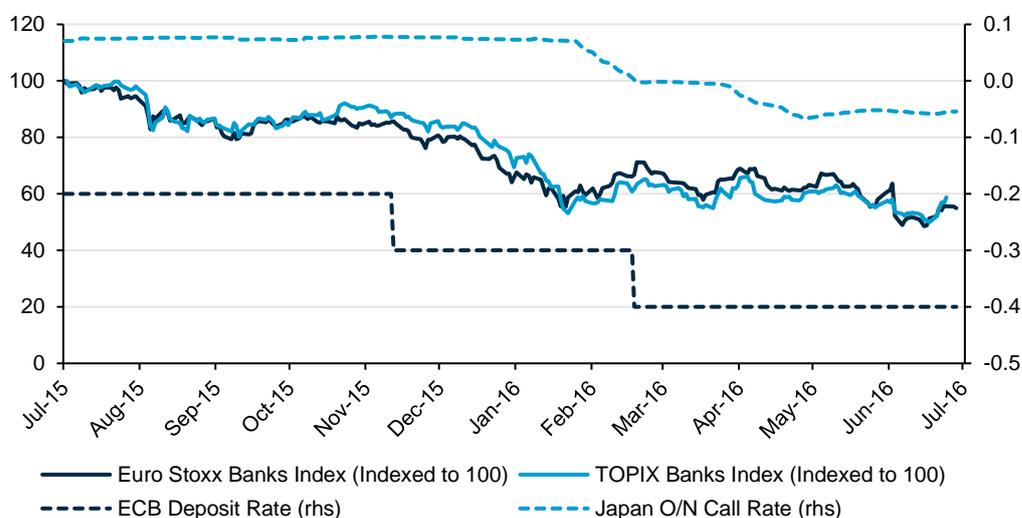
Source: Bloomberg and Haver Analytics as of August 2016

These policy measures—lower rates (intending to raise them later), competitive currency devaluations (beggar thy neighbor), debt bubbles (borrow from the future), underfunded future liabilities (steal from your kids/retirees), and negative real or nominal rates (punish the savers)—are all meant to be temporary or cyclical. But if the world is in

⁶ Reinhart, Carmen M. and Rogoff, Kenneth S., *This Time is Different: Eight Centuries of Financial Folly*, Princeton University Press, October 1, 2009.

fact in the throes of a long-lasting structural slowdown, potential growth rates cannot be revived with these cyclical tools, which are, after all, zero-sum games. As a result, the developed economies are fiscally constrained, while monetary policy may have reached the point where it is less effective. To summarize, given a structural slowdown, the overzealous application of cyclical tools has led to a series of policies that, directly or indirectly, have led the advanced economies into a debt and liquidity trap and has raised future financial risks.

FIGURE 11
THE SHARP SELLOFF IN
BANK STOCKS IN
EUROPE AND JAPAN
SINCE JULY 2015



Source: Bloomberg as of July 19, 2016.

Another unintended policy fault line is financial regulation, which has swung from arguably being too easy in the years preceding the 2008 crisis, when regulations allowed the build up of the too-big-to-fail banks, the housing bubble, and the shadow banking system, to being a net drag on growth after 2008 as a result of attempts to prevent a repeat of the GFC. By raising capital requirements and liquidity buffers, discouraging structured credit, dismantling the shadow banking industry, and introducing a host of risk and compliance rules into the banking system, regulation surely made a repeat of the 2008 crisis far less likely. But regulation also introduced a new host of risks. It exacerbated the growth slowdown by discouraging credit creation, turning U.S. and European banks essentially into risk-averse utilities. By preventing the collapse of bad banks, skewing capital requirements in favor of sovereigns, and forcing healthy institutions to bail out those in distress, Europe, following Japan's earlier lead, may also be creating essentially a zombie banking system that discourages lending to the more dynamic economic segments while allowing government debt to crowd out certain types of private credit creation. Government control and intervention simply does not deliver the same results as animal spirits. Regulation, therefore, partially cancels out other stimulative policies and slows growth further.

3. Political Risks: Populism and Anti-Globalization

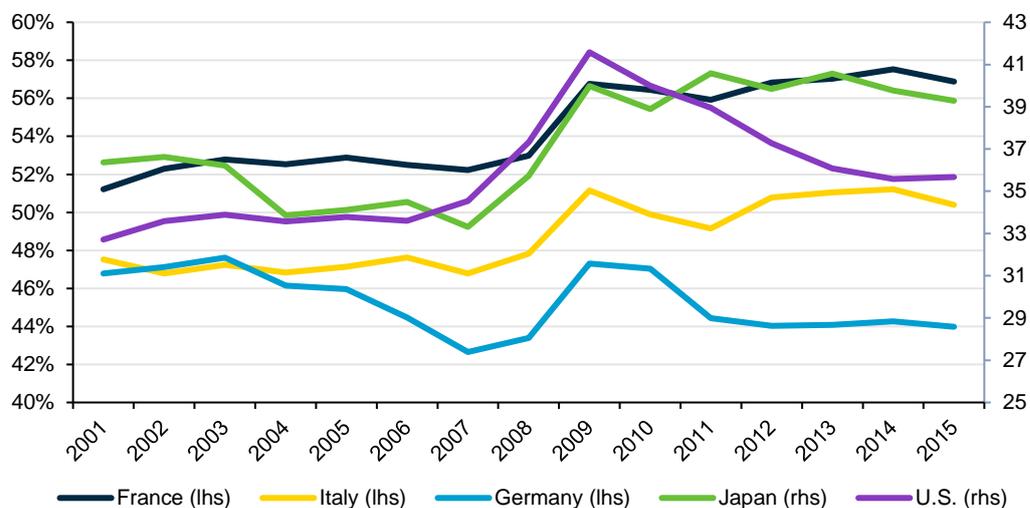
In the second half of the twentieth century, the working classes of the developed world made a grand bargain with policy makers and elites. They allowed the creation of a global free-market system with free-trade agreements. They allowed their labor unions to be weakened. They permitted the rise of capital markets and Wall Street finance. As the communist system in the Soviet Union collapsed under its own weight and China moved to a market-based socialist system, it seemed briefly that the capitalist system, with its free movement of capital, had won.

But there was a quid pro quo—the elites in turn were supposed to deliver prosperity for all, not just the few, and for a while they did. But the elites failed to keep their side of the bargain. Instead of strong growth, they have delivered slower growing economies with rising debt, highlighted by crises and recessions, bloated government bureaucracies, and rising inequality.

While free-market capitalism, globalization, immigration, and free trade have benefited most countries and people, its rewards have been unequally distributed. The knowledge worker in the Internet café has a very different view of these benefits than the much-clichéd blue collar or rust belt industrial worker, or for that matter, the educated underemployed or unemployed youth in Europe or North America. Among voters who backed Brexit, the share who

think life's prospects are worse now than 30 years ago is 16% greater than those who think it is better and 46% greater than those who voted to remain in the EU.⁷ Americans overwhelmingly (69%) think their country is on the wrong track and, along with many other developed countries, have come to view their governments, which account for a large and usually increasing percentage of economic activity (except for Germany as observed in Figure 12), as elitist, intrusive, ineffective, and corrupt.⁸

FIGURE 12
GENERAL GOVERNMENT EXPENDITURES HAVE REMAINED ELEVATED AT HISTORICALLY HIGH LEVELS (% of GDP)



Source: Haver Analytics as of year-end 2015

In response, disillusioned voters, both on the left and on the right ends of the political spectrum, have turned to populism. The negative consequences of globalism and rising inequality have formed the common thread of disparate local and national political populist agendas across the developed world, whether they are American voters “Feeling the Bern” (Sanders supporters) or wanting to “Make America Great Again” (Trump supporters)—who together constituted a majority of the American electorate in the 2016 presidential primaries—whether they are the UK majority that voted for Brexit, whether they are Italians that belong to the Five Star movement, or French supporters of the National Front party. These populist movements are gaining ground throughout the developed world, and they are already winning in referenda, such as Brexit, and even in elections, including in Greece, Poland, and Hungary. Figure 15 shows the rapid rise of populist and nationalist parties in Europe.

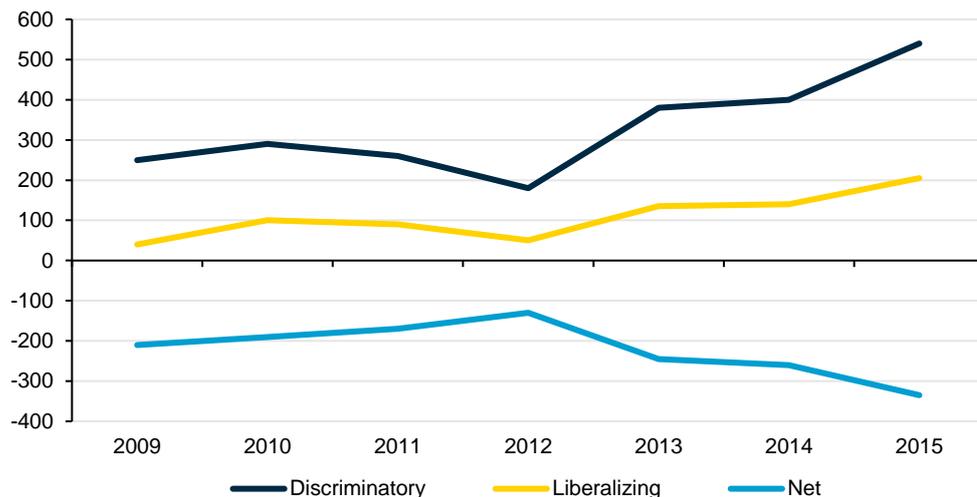
Thus, precisely because the economics, financial markets, and policies of the existing system have delivered developed economies into a slow growth cul-de-sac, a rising fraction of the electorate has come to believe that the way out of the trap lies through massive political paradigm shift and socioeconomic model change. In this sense, the macroeconomic environment, the monetary, fiscal and regulatory response, the market reaction, and the public move to populist politics all make sense as part of the same global backdrop.

Clearly, such tectonic political shifts can create significant market risks. Even gradual and peaceful political change involves binary moments (elections) and sudden shifts in policy. When politics turn chaotic (as in Greece in recent years), or involve a major political shift (as in Brexit), a flight to quality often ensues. Markets fear most populist leaders, who tend to be heterodox on the most basic economic policy issues. Where populist economic policies have been articulated, they range from the untested, namely various forms of libertarianism on the right, to the tried and proven disastrous, such as big-government redistributionism on the left. But while the real economic effects of populism are so far unclear, the long-term effect is likely to be to slow overall economic growth by curbing free trade, immigration, and globalization—a clear negative for return on capital. The effects of the anti-free-trade movement are already apparent in global trade policy measures, which have become more discriminatory since 2012 (Figure 13).

⁷ Survey data are from Lord Ashcroft Polls as of June 24, 2016.

⁸ U.S. survey data are from RealClear Politics as of September 7, 2016.

FIGURE 13
**THE MOVE TOWARD
 MORE PROTECTIONIST
 TRADE MEASURES**
 (Number of measures
 implemented worldwide)



Source: Conference Board, PGIM Fixed Income, and Global Trade Alert as of year-end 2015

The current economic discontent is also the perfect excuse—and populism the perfect vehicle—for various types of extremist elements, causing populist movements on the right to become infected with xenophobia, fascism, racism, bigotry, and white supremacy. On the left, the elements include extreme forms of anarchy, violent overthrow, and communism. These immediately bring to mind the many spectacular revolutions and extreme regimes in Europe in the twentieth century, notably Fascism and Communism, which took root in many countries and regions, and proved to be economically and financially disastrous in addition to their socially destructive characteristics. Hence, it would not be an exaggeration to say that political populism is a direct threat to the fabric of our financial system, one that can be inherently unsettling to the markets.

Seismic Hazard: How Risks Combine to Create Potent Negative Financial Impacts

The financial market risks created by this historically unique environment are also unique in a few respects. **First**, we are in uncharted macro territory, so responses calibrated to our historical experience are not necessarily appropriate. Being out-of-sample increases the likelihood of policy decisions being wrong. For example, QE and negative interest rates have brought monetary policy into an unknown realm. **Second**, financial markets like continuous rather than binary variables, whereas both policy and politics—especially from a fed-up electorate—carry significant binary risks, which can usher in sweeping changes in international relations, trade, monetary, fiscal, or tax policy. **Third**, debt levels are high enough for a policy change to raise default and/or inflation fears, intentionally or otherwise.

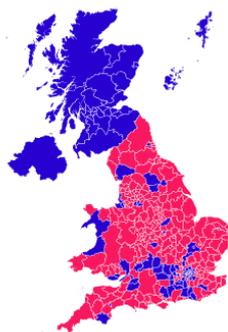
Three examples amply illustrate how a confluence of macro, policy, and political shifts can unleash financial quakes.

Brexit

The UK’s decision to leave the EU is a perfect example of the unfortunate nexus of fault lines described in this paper. Markets can adjust to almost any change as long as it is continuous, but they simply loathe categorical variables, with their binary outcomes. The policy measures undertaken in the UK after the GFC created a revival of asset prices, notably in the stock and property markets, but the underlying economic recovery was relatively anemic and narrowly based. The elite, the financial sector, and the City, and especially the EU bureaucrats in Brussels, were seen as culpable by the British working class. The stagnation of England’s economy away from London, the loss of manufacturing jobs, rising inequality, anti-immigrant sentiment, and dissatisfaction with the perceived indifference and ineffectiveness of a distant EU government all combined to create conditions ripe for Brexit in the heartland of England (Figure 14).

FIGURE 14

WHO VOTED TO BREXIT AND WHO DIDN'T



Regional Totals	Remain	Leave
Scotland	62.0%	38.0%
London	59.9%	40.1%
Northern Ireland	55.8%	44.2%
South East	48.2%	51.8%
Wales	47.5%	52.5%
South West	47.4%	52.6%
North West	46.3%	53.7%
East of England	43.5%	56.5%
Yorkshire & the Humber	42.3%	57.7%
North East	42.0%	58.0%
East Midlands	41.2%	58.8%
West Midlands	40.7%	59.3%

Source: Bloomberg as of June 24th, 2016

The single issue referendum on June 23rd, 2016 regarding whether the UK should leave the EU allowed populists to bridge the traditional left/right divide and gain what appears to be an important victory. The country has been living with significant uncertainty regarding the exit negotiations ever since. Populism, unlike capitalism or communism, typically lacks a well defined agenda; it is intent on overturning the status quo, but may lack consensus on a replacement political agenda. For example, the various factions in Prime Minister Theresa May's post-referendum government are still arguing over what type of exit they want to negotiate, which suggests that the Brexiteers had not built up a detailed plan beyond the desire to leave. Populist leaders who campaigned for Brexit are seemingly not of one mind, and some, such as Boris Johnson, have recently appeared to backtrack on the most basic negotiation stances. These reversals bring to mind similar posturing in the current U.S. presidential election on key issues, such as taxes and immigration.

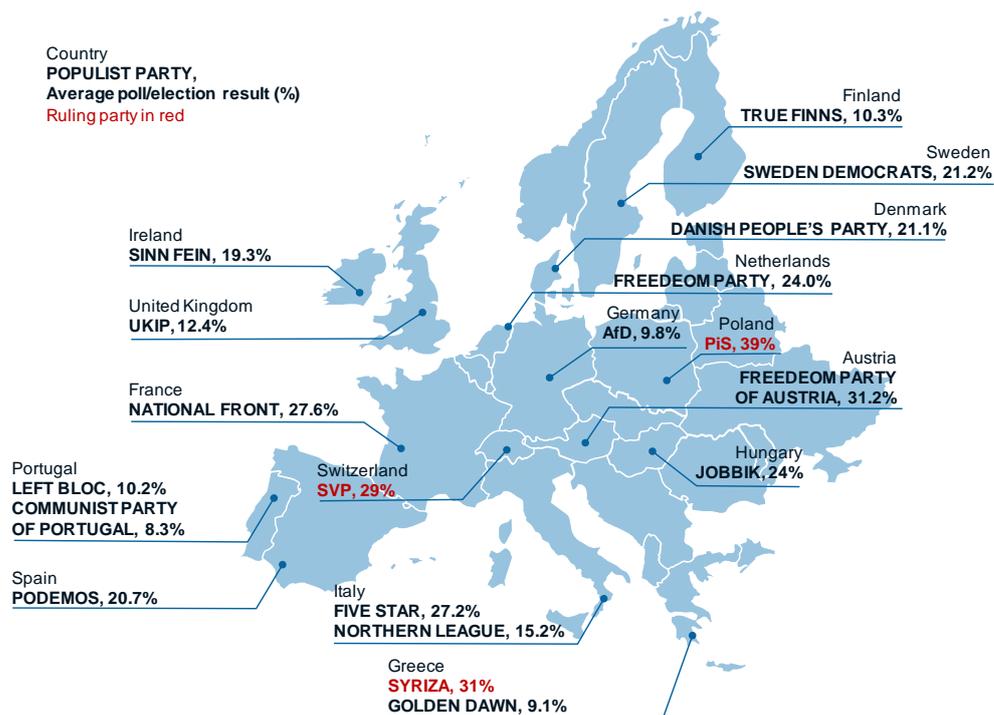
Unsurprisingly, the Brexit vote was marked by a plummeting British pound and a selloff in UK and European equities, especially in financial stocks. Although some of these declines have reversed since, with an exit timeline that could range from two to 10 years, the uncertainty facing the UK financial sector, and a final trade arrangement that could resemble anything from the World Trade Organization to Norway to Switzerland, we believe there is likely to be plenty of continued volatility as Brexit takes concrete shape.

Eurozone

The Eurozone is perhaps the best current example of how the nexus of macro conditions, policy, and politics can create dangerous financial conditions. Factors that precipitated the 2011 euro crisis include what, in hindsight, could have been one of the biggest policy errors of the past 50 years: namely the creation of a common currency in 1999 without fiscal, banking, and, ultimately, political integration. Subsequently, peripheral economies endured a huge boom/bust cycle, which left massive unemployment, wounded banks, and massive inequality in the aftermath. The entire Eurozone experiment was thus called into question.

Greece had to be rescued and had to restructure its sovereign debt, which is still unsustainably high. A blame game ensued, pitting nations against each other, especially the core vs. the peripheral countries. Yet, many commentators have acknowledged the deeper macroeconomic causes of the malaise, especially the cross-border imbalances and half-baked political governance framework. But these remain unaddressed, resulting in an insidious trend of rising populism within several countries, further fueled by recent terrorist attacks and the ongoing migrant crisis. Populist parties, such as Greece's Syriza, Spain's Podemos, Italy's Five Star, France's Nationalists, and Britain's National Party have gained political ground at the expense of the elite establishment represented by the center right and center left parties (see Figure 15). So far, right- and left-wing populists have not found common ground, impeding their progress. But clearly, political changes from a fed-up electorate have the potential to have binary effects. Many elections and referenda, including those in Austria, Italy, France, and Germany over the next two years, will test the mettle of the integrationists. New governments may be elected on anti-Euro platforms, with obvious binary risks.

FIGURE 15
THE RAPID RISE OF
POPULIST POLITICAL
PARTIES IN EUROPE



Source: Eurasia Group as of August 2016

The new unconventional policy measures that the ECB introduced, such as QE, corporate bond purchases, TLTRO, etc. have had mixed success.⁹ Negative interest rates in the EU (and in Japan) have brought monetary policy into an unknown realm, with the potential to destroy the enterprise value of financial institutions and to create discontinuous responses by savers and a dilemma for investors with long-term liabilities. So, the negative interest-rate policy may be near the limits of its usefulness, creating new uncertainties. Fiscal deficits intended to keep growth going have raised debt levels in the periphery.

Apart from the ECB's massive monetary stimulus, there have been some fiscal and structural reforms in the periphery, but peripheral growth has yet to expand sufficiently and deficits have yet to drop sufficiently to put Euro sovereign debt on a sustainable path. While a new European crisis is not our base case, it is clearly an ongoing risk. Financial stocks are trading at a fraction of book value as overall stock valuations remain in the doldrums with volatile financial markets experiencing no less than three sharp selloffs over the past year. Enormous slack remains in the peripheral economies, and their debt levels keep climbing, so in the coming years, a political outcome, a banking crisis, or a policy mistake could trigger a market selloff, such as the one that occurred in 2011.

China

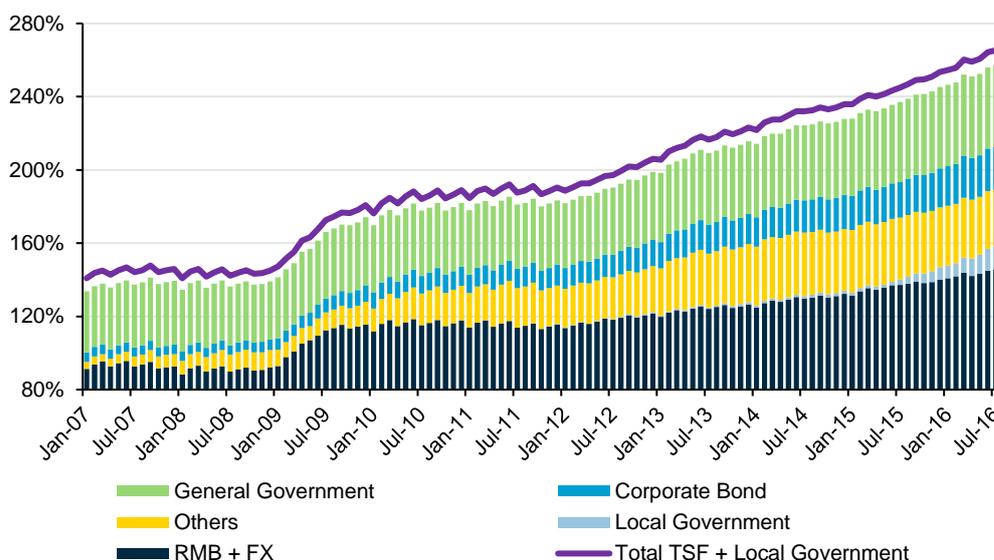
While China clearly has unique problems that are distinct from those of the developed world, disturbing connections and parallels emerge when these problems are viewed through the lens of macroeconomic imbalances, policy mistakes, and politics. In fact, a significant part of the global imbalances over the past 15 years have intimately involved China, which exported goods and disinflation and ran large current account surpluses against a U.S. deficit, and hence, contributed to the global savings glut, which in turn was a contributing factor in the creation of various asset bubbles.

No one should be surprised by slowing Chinese growth, which is a natural result of the limits reached by the country's export and investment led model, rising debt, global market saturation as China moves up the value chain, and aging demographics. China too, like the developed world, has experienced rising inequality amid sub-par returns to labor. Inequality has held back the consumer economy, which remains too small a fraction of GDP to have a meaningful effect on growth.

⁹ TLTRO refers to the ECB's Targeted Longer-term Refinancing Operations.

China initially responded to the global financial crisis with a massive fiscal stimulus. This was followed by massive bank-led credit creation. Basically, like their developed country counterparts, Chinese policy makers have propped up growth by doubling down on the old model, pumping more credit through the banks and local governments into the state owned enterprises (SOEs) and real estate markets. By some measures, total Chinese debt is approaching three times GDP, astonishing levels for a developing economy (Figure 16). Financial repression, with savings trapped in the domestic banking system and a mostly closed capital account, has blown asset bubbles in domestic stocks and real estate. Chinese policy makers have also created additional volatility with a stop-and-go ad hoc approach to managing the economy and by mis-sequencing reforms—putting financial liberalization ahead of balance sheet cleanup.

FIGURE 16
THE COMPONENTS OF CHINA'S RISING DEBT LEVELS
(% of GDP)



Source: Haver and National Stats, PGIM Fixed Income July 2016

So far, powerful vested interests—SOE bureaucrats and local governments—have resisted structural reform. Although difficult, reforms must be undertaken as the increase in credit is providing diminishing benefits to growth. Otherwise, at some point in the not-too-distant future, rising debt, falling net earnings, and non-performing loans (NPLs) will trigger a hard landing. Perhaps in preparation for difficult reforms, the single party system is further centralizing and consolidating power with the President. Although, on the surface, China may seem immune to populism, the leadership's avoidance of difficult choices suggests that the government feels very much beholden to maintain full employment and rising prosperity and wages to preserve the governed's consent. These goals seem incompatible with the large job losses associated with shutting down bloated SOEs. Massive fiscal transfers will also be required to the household sector to cushion the blow. Unless these difficult choices are made soon, unproductive investment and rising debt and NPLs will either usher in a prolonged period of even slower growth—a Japan-like zombie economy—or trigger a hard landing. Thus, the risks to China's own economy and the global financial ramifications are truly troubling.

Disaster Preparedness: Investment Strategy Implications

While reducing the risks of a global financial earthquake will require a profound shift in paradigms, this change is likely to occur only gradually. In the meantime, the global economy is likely to continue experiencing historically slow growth and continued monetary and fiscal policy accommodation, punctuated by significant bouts of volatility, which may stem from both current policy and from policy experimentation. Policies are likely to promote transfers of wealth from savers and retirees to consumers and workers. We expect the continued rise of populist politics, public support for redistribution of wealth and income, and rising anti-globalist sentiment, including reversals in immigration and free trade. We should expect an even more highly regulated financial industry, rising challenges to the profitability of economic models and countries that rely heavily on open borders and global labor markets, and curbs on the unfettered reach and influence of multi-national corporations. While the risks discussed fall into the realm of “known unknowns,” they are so pervasive that opting out of affected asset classes or regions is not easy for a global investor, although we can and do position for specific risks. More broadly, we see clearly differentiated outcomes for asset markets:

- **Government bond markets:** Financial repression, disinflation, and accommodative monetary policies will likely keep rates low. Monetary experiments, such as helicopter money, as well as more conventional attempts by the Fed and others to reverse out of the liquidity trap, are likely to bring risks and periodic instability over time. Eventually, some combination of these political policies and monetary experiments will reverse the low-rate regime we are trapped in today. But this is a prolonged process because it involves qualitative and transformative changes to the socioeconomic and political system, not just tweaks to its parameters. Interest-rate duration warrants consideration as one of the few strategies that does well in a recessionary/deflationary shock scenario. However, low- or negative-yielding government bonds are an expensive way to own duration, and there are better potential alternatives as we suggest below.
- **High-quality spread markets:** Globally, spread markets remain attractive on a long-term historical basis, even as stocks and government bonds have soared to new highs. Despite poorer liquidity across the fixed income markets, a handsome risk premium remains embedded in credit spreads. This is because retail investors are under allocated to spread products, regulators prevent broader participation by banks, insurance, and sovereign funds through capital and liquidity requirements, and they are often misunderstood by both retail and institutional constituencies. In these difficult times, spread products may be the best remaining systematic source of reliable, long-term excess returns in public capital markets. Therefore we remain consistently overweight spread risk, albeit with careful sector and bottom-up name and issue selection.
- **Riskier markets (including equities and below investment grade bonds in high yield and emerging markets):** While we remain broadly constructive on riskier assets as the chief way to seek returns over long-term inflation, these markets are trickier than high-quality spread markets given the propensity for severe downturns in the current economic configuration. For example, within just the past year, we have had two episodes of the S&P 500 dropping by 11%–12%. The glut of savings and the global hunt for yield will still provide a bid to risky markets and may keep them trading at relatively high multiples of future cash flows, but ongoing volatility will require investors both to analyze the fundamentals by country, sector, and industry while remaining willing to add exposure during the inevitable risk-off episodes.
- **Currencies:** Accommodative monetary policy, competitive devaluations, and financial flows will cause large currency selloffs in weaker economies, but in the developed economies, these would tend to be self limiting, as reversals of external accounts, real effective valuation changes, and cross FX basis trades restore market equilibrium. Meanwhile, currencies will continue to provide the chief economic safety valve for countries, and currency levels will remain prone to overshoots. At present, in the wake of the large commodity price drop and the divergence between the U.S. and the rest of the developed world, the U.S. dollar may have peaked and EM currencies may have bottomed. Currencies remain a tactical allocation and a liquid way to put on or hedge macro risk.

Rethinking Investment Strategy

While "lower for longer" has become a consensus refrain, we still haven't seen wholesale behavioral change by long-term bond investors, although changes have occurred, with some opting for alternative investments and spread products and others taking an LDI (Liability Driven Investing) approach. For the past half century, the starting point of many investment strategies comprised a barbell consisting of traditional bond indexes and stocks, which has been rendered suboptimal at both ends. At the safe end, government and agency bonds, which dominate the bond indexes, no longer offer as much disaster protection and yield. At the risky end, investors are completely exposed to asset bubbles and the binary risks of policy and politics. To meet these challenges, investors should take a fresh look at portfolio construction in three ways:

- 1) **Consider Alternatives to Government Bonds:** Investors have historically seen government bonds as safe, stable bedrock for a fixed income portfolio, turning to spread products only to enhance yields. But today, global government bond yields are often negative and returns are simply too low to form the core of a bond portfolio as they provide little possibility for capital appreciation or substantial income. Spread products can

provide a potential solution. We believe a wealth of opportunity lies not only in corporate bonds, but also in sovereigns, quasi-sovereigns, and structured products, such as ABS, CMBS, and CLOs, all of which are shunned because of backward looking concerns about the 2008 crisis and prior emerging market crises. But the variety in spread products is richer than ever before with structured products, in particular, demonstrating stronger underwriting standards following the freewheeling conduct of the mid-2000s. Regulators should take note that blanket regulations discouraging the use of structured products will only encourage unwanted risk taking in other spheres.

- 2) **Redefine Borders and Emerging Markets:** Faltering growth in developed economies will force investors to look beyond their borders. Developed country institutional investors remain hugely underallocated to the emerging markets. Hard currency sovereign debt offers an attractive long term risk premium. With EMFX having potentially turned the corner, locally denominated EM debt may significantly outperform its developed-market counterpart in the coming decade. But institutions should also question the usual categories of international investing and avoid artificial one-size-fits-all classifications such as "Global," "International," "Emerging Markets," and "BRICS." A European pension no longer has to potentially invest in or avoid emerging markets bonds as a single category and can instead tailor its exposure with investment-grade and high-yield sovereigns, quasi-sovereigns, and emerging corporates. Investors can choose their regions and countries, modulate duration exposure, hedge out FX risk, choose between domestic and foreign bonds, limit regional and country-specific exposures, and even control exposure to risk factors, such as oil prices. Such global customization, designed to discard labels and optimize alpha and beta sources, needs to replace old classifications and become the norm.
- 3) **Rethink the Use of Derivatives:** A sophisticated approach begins by understanding the underlying risks in global equity, fixed income, and currency markets and seeks high information ratio strategies in multiple, uncorrelated risk dimensions. Derivatives have been famously derided as weapons of mass destruction. But taking full advantage of opportunities in rates, credit, currency, and volatility markets requires isolating those risk dimensions. Traditional allocations to a global or international bond index that bundles interest-rate, credit, and FX risks together, forcing a "take it or leave it" approach, simply no longer works. For example, with highly-liquid rates and currency markets, an Australian superannuation fund can access the much broader corporate bond markets in Europe and the U.S., while avoiding currency risk and converting U.S. rate risk to the appropriate amount of Australian rate risk to match its liability profile.

Even as some aspects of portfolio construction need a thorough revamping, in other respects, its fundamental tenets have not changed. In particular, a bottom-up approach to issuer and security selection, a broad set of alpha and beta sources, and very strong risk management emphasizing diversification will remain key to withstanding the financial tsunamis of the future.

What Lies on the Other Side?

It is no exaggeration to say that the developed world is on the cusp of a profound transformation. It is difficult to see much beyond the envelope of changes occurring in the developed economies to the new world that awaits. A lot about the future of the developed world remains unclear, most importantly whether we will arrive there by a gradual evolution or by radical change and revolution, peacefully or otherwise, and how the emerging countries will respond to it. The last question is particularly important as emerging market countries constitute the majority of people and represent the future, and they are profoundly impacted by these seismic changes in the developed world. A prognostication about this brave new world will have to await another paper and perhaps a more clairvoyant writer.

Brexit provides a tantalizing modestly sized crucible to observe these historic forces in action—and its outcome is far from preordained. On the one hand, it is a symbol of how all the forces described can come together in one crucial moment and force momentous and binary political change, with concomitant market volatility and disruption. But on the other hand, it throws up the possibility that the UK, which once led the way out of a sclerotic medieval European system with a world beating industrial, trade, and maritime transformation, while building an empire in the bargain, might—just might—surprise yet again by showing how a country can adapt, keep the best of the free-market system developed over the past century, address the grievances of its citizens, and show the way, or at least one way, out of the global liquidity trap.

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Source(s) of data (unless otherwise noted): PGIM Fixed Income as of September 2016.

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