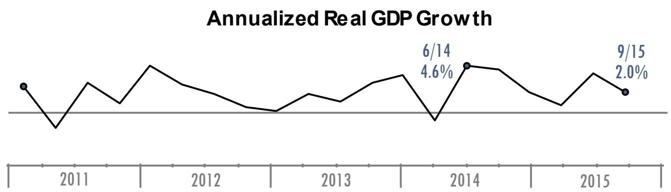
Bellwether
CONSULTING

Your Quarterly Update on the Financial Markets
December 31, 2015

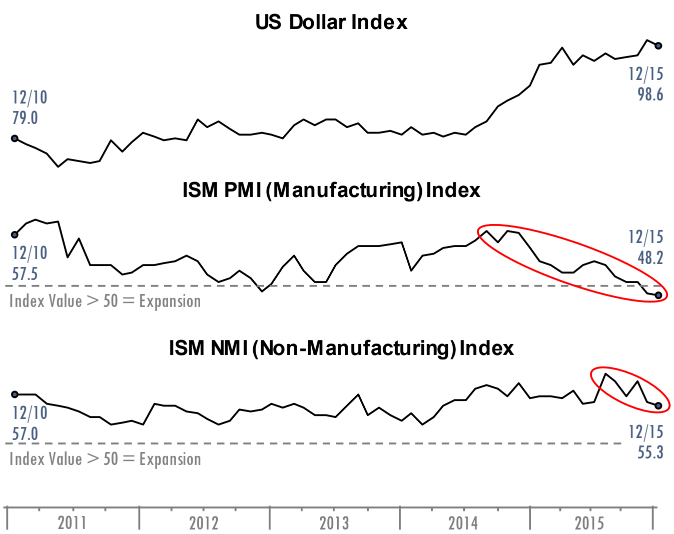
MARKET Recap

The US Economy: "Dollar Good?"

US economic growth decelerated in the third quarter, back to its recent central tendency of 2% per year. Personal consumption and private inventory expenditures slowed modestly, and while both imports and exports slowed, exports slowed more.



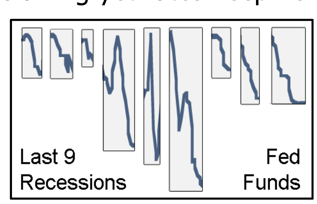
Except for a small respite in December, the dollar resumed its climb against other currencies. Dollar strength comes along with mounting evidence of gradual slowing in productive activity, particularly in the manufacturing sector. The Institute for Supply Management's Purchasing Managers Index, which measures an array of business productivity indicators, cracked the key level of 50 in November, suggesting that activity in manufacturing is now contracting. Falling commodity prices have curtailed activity in the energy, mining, and equipment manufacturing sectors throughout 2015, but the strong dollar is slowly reverberating through other industries.



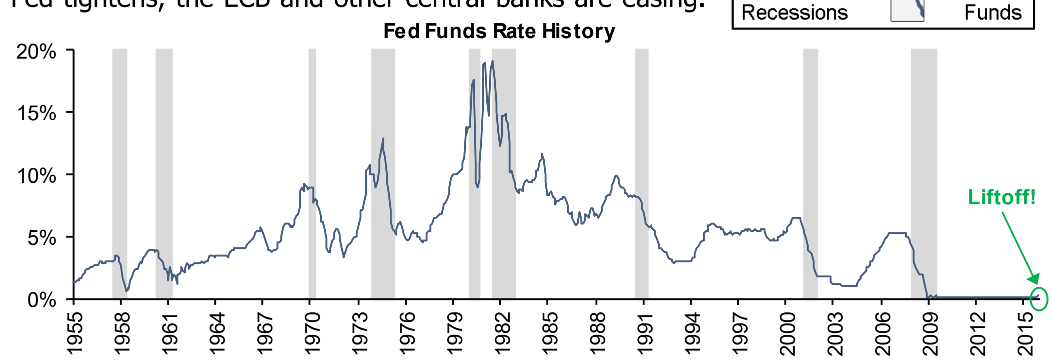
With the credit crisis of 2007 fresh in our memories, it's useful to recall that there is a softer side to the business cycle. Not all slowdowns are dramatic, system-threatening events, and normally there are natural checks and balances which tend to keep activity at reasonable, healthy levels. The relative value of the dollar is one example; when the business cycle slows, one expects interest rates to fall. Falling rates sends capital overseas seeking better returns, weakening the dollar. A weaker dollar makes goods and services produced in the US cheaper to buy, which drives up activity. The reverse is true when the economy runs hot and inflation is nigh.

Looking back to the inception of Fed Funds rate data in 1954, there have been 9 official episodes of recession. Their causes, duration, and magnitude vary, but they have one thing in common – falling rates were part of the solution, whether that occurred naturally or at behest of the central bank.

Today's rates still round to zero. Readers wishing to observe the impact of the Fed's recent hike in the graph below will need to set their browser to maximum magnification. What happens if business activity keeps slowing yet rates keep rising? A recession, one would think. But reversal of overdue policy normalization could send shockwaves through markets.

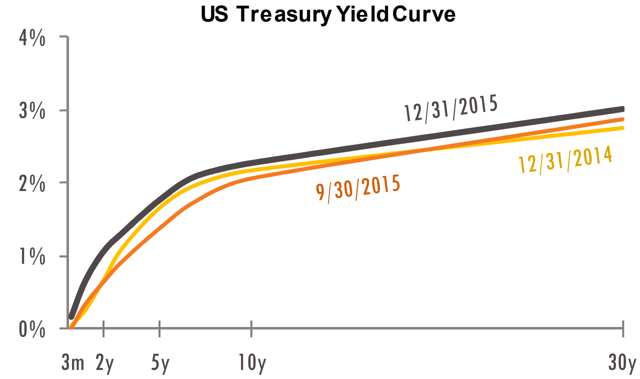


Will monetary policy be effective if the next slow-down arrives too soon? Notwithstanding the Fed's copious toolkit of monetary gadgets, the link from rates to the dollar and the trade balance is not as clear today. As the Fed tightens, the ECB and other central banks are easing. Growing tensions in the Middle East and South China Sea, and economic turmoil in China, make the US dollar an increasingly attractive safe haven. In short, there is upward pressure on the dollar even if the Fed decides to slow or (gasp) reverse its rate hike program, and the stimulative impact of a weaker dollar may prove elusive.



The US Bond Market

US Treasury yields rose across the curve on the Federal Reserve's December 16th decision to finally raise overnight borrowing rates from near zero to a range of 0.25%-0.50%. The move, albeit small, marks the beginning of a period of normalization in US monetary policy as other countries around the world implement monetary easing. The Fed's guidance suggests further rises will be cautious and gradual. Positive employment data was the main driver of this first increase, however inflation, currently benign, will likely be the focus going forward. Yields moved highest towards the shorter end of the curve with the 2-year rate rising most (+0.42%) to 1.06%. The 10-year rate ended the year at 2.27%, far from 3.0% which many had predicted just a year ago. At the long end, the 30-year yield rose 0.14% to 3.01%.



Almost all bond sectors experienced losses amid rising rates, with the exception of municipal bonds. Despite negative news surrounding Puerto Rico and its potential default on a portion of January 1st payments, high demand and lack of supply drove positive performance for the municipal sector and led to strong performance for the year. Mortgage-related bonds were also a notable outperformer although they still experienced negative absolute performance in Q4. Confidence in the US housing market remains, while prepayment speeds have slowed and banks have been net buyers of the assets through year-end. US Treasuries slightly underperformed investment-grade corporates of similar maturities over the three months as credit spreads tightened modestly after significant widening in Q3. High-yield corporate debt did not fare as well however. Declining oil prices continued to weigh on the energy sector in the space, driving down both prices and liquidity. The default rate of below-investment-grade energy sector issuers is predicted to be 11% in 2016, with most defaults expected in the second half of 2016. Default rates outside of energy and metals & mining are forecasted below average at only 1.5% (Fitch).

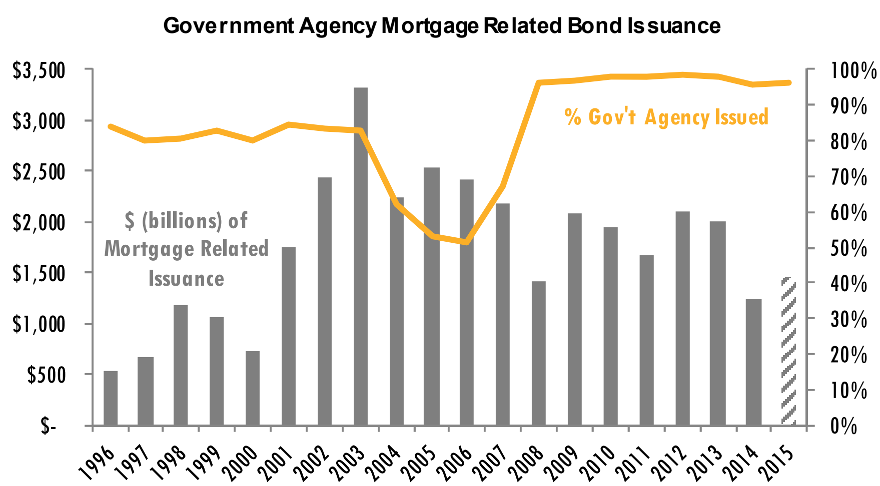
US Bond Index Total Returns

Barcap Indices	4Q15	YTD
Aggregate	-0.57%	0.55%
Interm. Gov't	-0.84%	1.18%
Long Gov't	-1.38%	-1.16%
TIPS	-0.64%	-1.44%
Municipal	1.50%	3.30%
Interm. Credit	-0.45%	0.90%
Long Credit	-0.66%	-4.56%
High Yield	-2.07%	-4.47%
MBS	-0.10%	1.51%

Corporate bond issuance declined during the fourth quarter, most notably in December. Despite this, investment-grade issuance set a new record during 2015 of $1,228 billion, up 9.2% from 2014 record levels. Conversely, high yield issuance fell -16.3% in 2015 to $260.5 billion, its lowest level since 2011.

In 2016, government-sponsored mortgage giants Fannie Mae and Freddie Mac will begin to rapidly increase securities offerings with a similar structure to the synthetic collateralized debt obligations (CDOs) which helped fuel the financial crisis in 2008. These securities were first created back in 2013 but have been offered on a limited basis, in many cases to handpicked money managers. Prior to the crisis, MBS issuance was split almost evenly between Agency and non-Agency parties. Upon the federal government's placement of Fannie Mae and Freddie Mac under "conservatorship" and capital infusions of up to $100 billion for each in 2008, the non-Agency issued portion of the MBS market collapsed as Agency MBS essentially became backed by the US government like a Treasury bond. Seven years later, the two government-sponsored enterprises (GSEs) remain under conservatorship and Agency-issued MBS comprises 96% of total MBS issuance.

As a reminder, parties structuring MBS purchase mortgages from originators which are pooled together based on underlying characteristics. Securities are then created on these pools of mortgages. The securities pay interest and principal similar to a traditional bond, however their interest payments and market value are determined by the experience on the underlying mortgages. MBS issuers like Fannie and Freddie continue to hold these mortgages on their balance sheets along with the risk of default, however through the MBS they have transferred the interest rate risk to investors.



Source: Securities Industry and Financial Markets Association (SIFMA). Data as of 11/30/15

Having issuance comprised almost entirely by GSEs presents a significant structural problem from a risk management perspective. While much consideration has gone into privatizing or winding down Fannie and Freddie, officials have failed to come to any sort of consensus. Meanwhile, in an attempt to reduce their mortgage credit risk, the two GSEs created new securities to sell to private institutional investors. These synthetic CDO-like securities allow Fannie and Freddie to continue to hold the mortgages on their balance sheets, but transfer the default risk to the investors who are compensated through regular interest payments. It is expected that by 2016 year-end, 50% of the total credit risk held will have been shed through the securities offerings.

Overall, the public has mixed feelings about such securities. Proponents believe the idea of transferring large amounts of concentrated risk is prudent and that an attractive investment opportunity is created for yield-starved institutions. Those against the new security have an issue with the existence of Fannie and Freddie in general. They believe that the government has no business being part of housing finance, particularly around the notion of taxpayers acting as a backstop, and that the creation of these new securities simply allows for the two controversial organizations to remain a going concern. This development will be important to monitor going forward, as it may open the door for inclusion into institutional bond portfolios and lead to greater acceptance for non-Agency MBS.

The US Stock Market

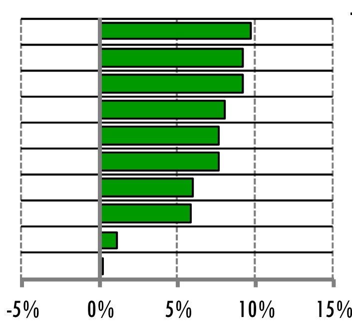
After a volatile Q3, US equities rebounded nicely in the final quarter of the year. The majority of price appreciation came in October, fresh off the August and September losses on concerns of global economic growth, predominantly surrounding China. Fears began to subside, and it became clear that a Chinese slowdown would impact US companies less than the sell-off indicated. Performance in November was flat on mixed economic indicators. In December, less-than-expected monetary easing from the European Central Bank and commodity price declines more than offset gains on the Federal Reserve's decision to raise short-term rates.

Stock Indices - Total Returns

Large-cap Stocks	4Q15	YTD	Mid-cap Stocks	4Q15	YTD
S&P 500	7.04%	1.38%	S&P Midcap 400	2.60%	-2.18%
Russell 1000	6.50%	0.92%	Russell Midcap	3.62%	-2.44%
Growth	7.32%	5.67%	Growth	4.12%	-0.20%
Value	5.64%	-3.83%	Value	3.12%	-4.78%
Broad Markets			**Small-cap Stocks**		
Russell 3000	6.27%	0.48%	S&P Smallcap 600	3.72%	-1.97%
Growth	7.09%	5.09%	Russell 2000	3.59%	-4.41%
Value	5.41%	-4.13%	Growth	4.32%	-1.38%
			Value	2.88%	-7.47%

Large-cap stocks again outpaced their mid- and small-cap peers in Q4, in addition to growth outperforming value. Mid-cap companies did underperform small-caps over the three months, however. For the year, large-caps finished in positive territory, while mid- and small-cap stocks experienced negative absolute performance. The dispersion in performance between growth and value stocks for 2015 was significant, a result of weakness in the utility and financial sectors combined with outperformance of consumer discretionary, technology, and healthcare.

S&P 500 Economic Group Components - Total Return



Sector	4Q15	YTD
Materials	9.69%	-8.38%
Health Care	9.22%	6.89%
Info. Technology	9.17%	5.92%
Industrials	8.00%	-2.53%
Consumer Staples	7.64%	6.60%
Telecom	7.61%	3.40%
Financials	5.96%	-1.53%
Consumer Discret.	5.79%	10.11%
Utilities	1.07%	-4.85%
Energy	0.20%	-21.12%

Source: Standard & Poor's

The materials sector outperformed over the three months, almost entirely attributable to the announced merger of DuPont and Dow Chemical. Share prices for the two diversified chemical industry giants rose 39.0% and 22.5% respectively. Until this point, the sector underperformed the broader market considerably during 2015 as significant declines in commodity prices weighed on metals and mining companies. Technology was also a top performer in the fourth quarter, led by Alphabet (Google) and Microsoft. Shares of Alphabet gained 24.7% on higher-than-expected earnings driven by growth in mobile search revenue, while Microsoft (+26.2%) benefitted from strong sales of its Surface and Lumia products in addition to growth of its cloud services. The sector's performance for the year can be attributed mainly to its internet constituents. In healthcare, sector outperformance was again due to biotechnology and pharmaceutical companies. A late Q3 sell-off on negative sentiment over drug pricing proved to be short-lived, as the two industries quickly regained strength and rose 12.9% and 16.5% respectively for Q4.

On the downside, the energy sector continued to underperform in Q4 on falling oil prices. Although prices rebounded in October, a sustained sell-off through year-end led to a quarterly decline of -21.4% for West Texas Intermediate (WTI) crude. This drove large losses in the oil storage & transportation, exploration & production, and equipment & services industries. Conversely, integrated oil & gas companies, drillers, and refiners posted strong gains over the three months, helping drive slightly positive absolute performance for the sector. Expectations in 2016 for the energy sector are low as oil hedging contracts begin to expire and companies directly linked to the commodity's price will report losses. Negative effects are also expected for those providing services to these companies as capital expenditures continue to shrink. Utilities underperformed during the fourth quarter as well, less affected by fundamentals and more so by sentiment around interest rates. This high-yielding sector is often used by investors as a bond proxy, and share prices are typically negatively correlated to interest rates. November saw two significant sell-offs for utility stocks, the first on reports of strong US payroll data, a signal of a likely December rate hike, and the latter on weak US industrial production due to the utilities and mining sectors. Against conventional wisdom, utilities outperformed the broad US market by 3.75% in December as the Federal Reserve raised short-term rates.

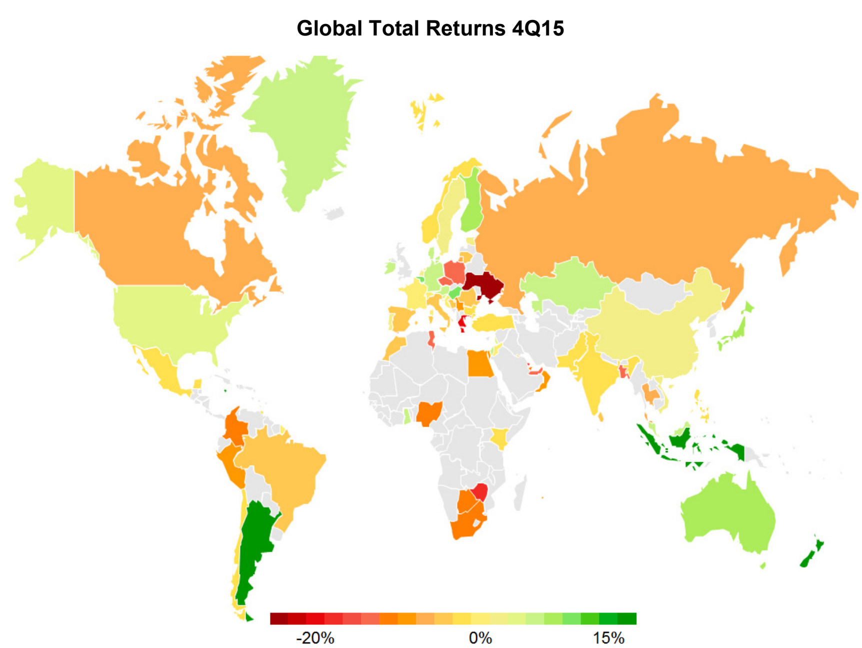
Overseas Markets

The final quarter of 2015 saw continued global market volatility as geopolitical events once again drove investor preferences. The Chinese economy slowed for another quarter and its central bank made additional attempts to jumpstart growth. In Europe, a fledgling recovery and muted growth forced the ECB to continue its battle against the specter of deflation. Emerging markets again took the brunt of the global slowdown as commodity prices remained under pressure and major Latin American economies dealt with ongoing political turmoil.

Foreign Stock & Bond Indices - Total Returns

MSCI Broad Indices	**4Q15**	**2015**	**Barcap Global Indices***	**4Q15**	**2015**
World Index	5.50%	-0.87%	Global Aggregate	-0.92%	-3.15%
EAFE (Developed)	4.71%	-0.81%	Pan-Euro	-2.41%	-8.24%
Emerging Markets	0.66%	-14.92%	Asian-Pacific	0.91%	-0.47%
			Eurodollar	0.07%	2.33%
MSCI Regions	**4Q15**	**2015**	Euro-Yen	-1.08%	-2.54%
Europe	2.49%	-2.84%	Other Currencies	-2.59%	-15.14%
Japan	9.34%	9.57%	**Unhedged*		
Pacific ex-Japan	8.29%	-8.47%			
Latin America	-2.70%	-31.04%			

In Europe, the ECB announced a package of measures designed to foster growth after lackluster 3Q data on economic progress was released. The package included a cut in deposit rates by 0.10% (from -0.20% to -0.30%), an extension of the €60 billion per month bond purchase program by six months (an additional €360 billion in liquidity), a commitment to reinvest the principal repayments on its holdings in bonds, and expansion of the range of securities to be purchased to include regional and local government debt. Markets expected action by the ECB, however, there was general disappointment with the level and magnitude of the measures. Expectations were for deeper rate cuts and an acceleration of bond purchases. Following the announcement, the blame game ensued with the ECB pointing its finger at the markets for hyping higher expectations while the investors blamed ECB guidance, which they felt hinted at a more aggressive package of measures.



The ECB's actions call into question President Draghi's assertions that prior rounds of QE have been successful in fostering growth and increasing inflation. Economic activity in the eurozone appears to be losing steam, with Spain and Portugal showing slower growth during Q3. Italy and France have also exhibited weak or slowing growth while Finland and Greece contracted -0.6% and -0.5%, respectively, during the quarter. Real GDP growth in the sector remained low and slow at 0.30%. Unemployment has fallen to 10.7% from 11.5%, but remains near 20% in a number of the weaker, peripheral economies. At the same time, inflation is stuck near zero, although above 2009's record low of -0.70%.

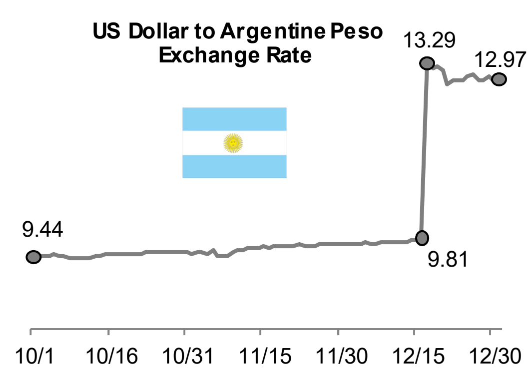
With respect to its policy measures, the ECB is also in a bind. There are limits to the amount of bond purchases it can make due to single issuer and concentration limits. Its buyable universe may shrink further as well, as government bonds trade at lower yields. The ECB limits government and agency debt purchases to bonds with yields above the deposit facility rate of -0.30%. Negative deposit rates have triggered large capital outflows, estimated at around €500 billion, leading to depreciation of the euro. While a weak euro is beneficial to competitiveness, weakness in emerging markets, which account for about 25% of eurozone exports, will continue to provide a drag on growth.

The slowdown in China continued during the fourth quarter as Beijing remained committed to restructuring away from dependence on exports and manufacturing and towards consumption and services. In an effort to spur growth, the People's Bank of China cut interest rates on October 23rd for the sixth time in less than a year. The Bank cut its benchmark one-year lending rate by 25 basis points to 4.35% and lowered the one-year deposit rate by the same amount to 1.50%. Additionally the reserve requirement ratio (RRR) for all commercial banks was cut by 50 basis points in October, and banks that lend to agricultural firms and small companies received another 50 basis point reduction to their RRR. This decision came after official data showed that the economy expanded 6.9% year-on-year during the third quarter, its weakest growth rate since 2009. While this rate is China's official story, many economists feel that growth might be closer to 4% or 5% and is likely to weaken further. Other statistics show startling slow growth in the country. Imports fell 8.7% in November in dollar terms, the thirteenth straight month of declines and exports fell for their fifth straight month by 6.8%. In the meantime it looks like China may be starting to experience deflation. In Q3, the annualized nominal GDP growth of 6.2% was less than the officially reported real growth of 6.9%. Additionally, industrial profits were down 1.4% in November, marking the sixth consecutive month of declines with the largest fall in profits seen in China's mining sector. In more positive news, the IMF agreed in November to add the Chinese yuan to its reserve currency basket, acknowledging the yuan as a notable international currency.

Neighboring Japan narrowly avoided recession during the third quarter of 2015, and many fear that the country may suffer a contraction during the fourth quarter amidst nearly flat prices and weak household spending. CPI was up 0.1% from a year earlier in November, its first rise in five months, but still a long way from the Bank of Japan's (BOJ) 2% inflation target. Household spending fell for its third consecutive month in November, down 2.9%. However, not all Prime Minister Shinzo Abe's economic revival efforts have fallen short; corporate profits are up sharply, lifting stock prices, and demand for workers is also on the rise. The jobs-to-applicants ratio rose from 1.24 to 1.25 from October to November, showing that there were 125 jobs for every 100 applicants. This worker shortage is also beginning to lift wages, particularly at the larger firms. But rising wages have not been significant enough to encourage consumer spending, leaving the economy vulnerable. Meanwhile, Japan's factory output fell in November for the first time in three months. Manufacturers expect to increase their output in the coming months, particularly automakers, but the weak November data is discouraging. The BOJ has made it clear that they will expand stimulus if risks threaten Japan's potential recovery. The government plans about $800 billion in record spending in the budget for the next fiscal year that begins on April 1, 2016.

Latin American economies suffered for another quarter as commodity prices continued to fall and political upheaval plagued the region. 2015 marked the third year in a row for declining exports in Latin America. The region's exports fell by 14% this year, primarily due to the steep drop in commodity prices. The Bloomberg Commodity Index has tumbled more than 26% during 2015. This will be the index's fifth straight losing year and its worst yearly fall since 2008. This overall price decline in commodities is, in part, due to slowing growth in China and a decrease in demand for commodities there. China is the biggest buyer of Latin American commodities with raw materials accounting for more than 70% of Latin America's exports to China. As China moves away from an industrial-based economy and towards a more service-based, consumer-driven economy, demand for commodities could continue to decline. Mining countries such as Chile and Peru will likely be hit particularly hard by this economic shift if they are unable to diversify their exports.

Brazil, Latin America's largest economy, has shrunk even more than expected over the last year due to falling commodity prices and a widening corruption scandal involving the state-run oil company, Petrobras. Some of the biggest names in construction in the country have been ensnared by the Petrobras case, halting many ongoing projects. Additionally, Brazil's economy has contracted for three straight quarters and is now 5% smaller than it was at the beginning of 2014. Political turmoil combined with what appears to be Brazil's longest recession since the Great Depression resulted in the nation's credit rating being cut to junk by Fitch Ratings in December. This comes three months after S&P cut Brazil's rating to the same level. Furthermore the country's inflation rate is over 10.5%, more than double the government's target, and the real has fallen over 30% against the dollar this year. To add to the economic and political upheaval, President Dilma Rousseff is now the target of an impeachment investigation.



A potential bright spot in Latin America is Argentina. In November Mauricio Macri was elected president, replacing Cristina Fernandez de Kirchner. Macri has been quick to shake things up. His administration cut personal income taxes, eliminated most farm and industrial export taxes and replaced the central bank president. But his most significant move, thus far, was his decision to let the Argentine peso float, which resulted in an immediate 30% depreciation of the peso to the dollar. Kirchner's government put capital controls in place in 2011 in order to protect reserves used for paying the national debt. The restrictions became increasingly tighter as dollar reserves continued to fall, driving up inflation and deterring investment. Kirchner's policies left the country with a fiscal deficit of 6.5% of GDP and inflation of 25% after four years of economic stagnation. By cutting export taxes and easing import restrictions Macri hopes to increase business profits and promote reinvestment. However, in the near-term there is the potential to fuel inflation as the devaluation of the peso is expected to make imports more expensive in local currency terms. Macri's administration has arranged between $15 billion and $25 billion in investment in Argentina over the next month from foreign banks and investors, as well as crop exporters, to help ease inflationary pressures. While it is possible that Argentina will suffer from a recession in the near-term, many economists believe Macri's moves are putting the country on the right track.

Focus On: *A Resurgence of Debt*

Used strategically, debt can help individuals build credit and assist businesses in fueling growth. Governments use debt to provide needed public services and infrastructure, as well as to finance responses to emergencies. Readily acknowledged as a useful tool, it is also a powerful tool prone to misuse and capable of severe economic destruction. As recently popularized by a former regional manager of Dunder Mifflin along with a former Batman, leverage afforded by debt triggered the last global recession. This strong and clear message on the dangers of debt left a lasting impression on financial markets worldwide, but it may have faded already, despite Hollywood's best efforts in *The Big Short*.

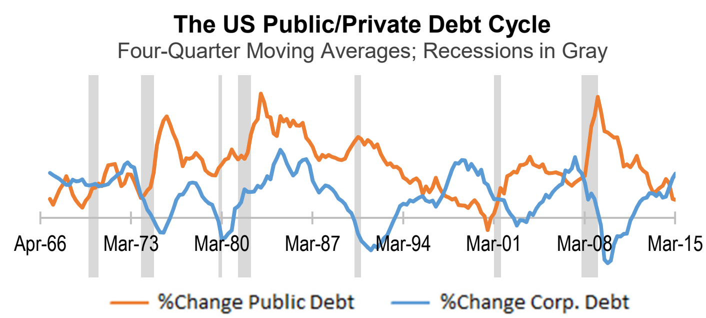
Debt levels, both public and private, seem to be increasing globally. Japan is making quarterly headlines as its central bank continues to pile up record debt, garnering comparisons to Greece and other debt-burdened eurozone countries with tepid economies. Are we on the brink of another global recession caused by public and private over-expenditures, or are these expanding balance sheets a benevolent and appropriate means of fostering normal economic growth and development?

Definitions, Metrics and Cycles

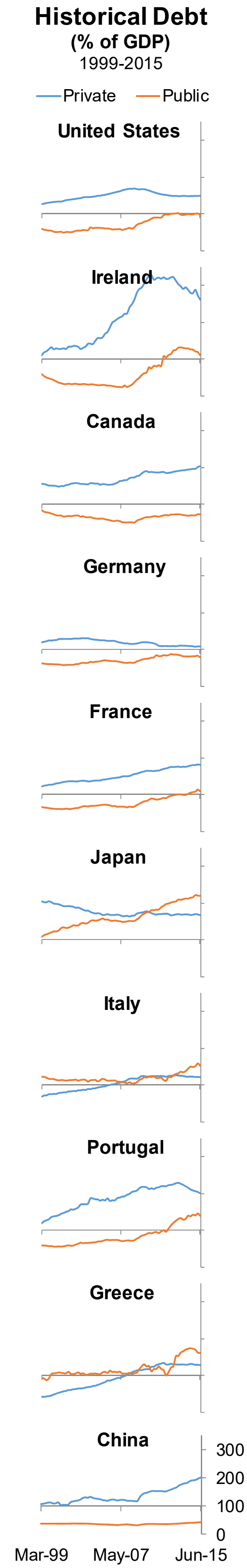
Public debt - also referred to as national or government debt - is the sum of the financial obligations incurred by a county. It can be internal (borrowed from domestic banks, citizens of the country, or itself) or external (borrowed from banks and investors, including other governments outside the country). In contrast, private debt is amassed by individuals or private businesses through personal loans, credit cards, corporate bonds, business loans, etc. A subset of private debt, household debt is the amount owed to financial institutions by private citizens, including consumer debt and mortgage loans.

Several statistics and measures have made it into the debt vernacular. Common measures used to gauge household debt include total debt, debt to pre-tax or disposable income, and household debt service ratio (DSR) – or the ratio of total required household debt payments to total disposable income. In the US, the Federal Reserve breaks household debt service ratios into two components: Mortgage DSR and Consumer DSR (for all other consumer debt payments). Corporate debt is tracked, most notably, through both short-term and long-term debt as a percentage of the business' value or market cap. Measures used to gauge national debt include the absolute value of external and internal sovereign debt and the current deficit, while ratios range from debt to GDP, debt to tax revenue, debt service to GDP, and debt service to tax revenue.

Regardless of the statistics or metrics used, tracking the patterns of debt accumulation and reduction can be useful to help anticipate potential economic states, locally, nationally, or globally. For instance, private debt often expands ahead of a recession. Encouraged by a healthy economy, businesses and households increase their appetite for leverage while financial institutions lower credit standards. As private debt grows, it can lead to slack in the economy as debt capacity continues to grow and eventually exceeds the inflated levels of demand. As private debt growth slows, demand falls to a level below the new supply. Excess slack produced by expanded debt, such as housing and inventories, prompts cuts in production, such as new construction and factory orders. Decreasing output requires fewer inputs in the form of labor, raw materials, industrial products, etc. Unemployment subsequently increases, and the economy enters a recession.



Public debt may be substituted (with delay) for private debt as the corporations and households tighten their belts. Because loose monetary policy during a typical recession results in lower short-term (and often long-term) interest rates, public debt seems to be the cheap and logical solution to fill the void. Yet, public debt is often less effective. Cash raised from public debt is not spent in the same way as cash from private debt. Government spending may fail to significantly chip away at the slack in the economy if it is not directed appropriately. Additionally, jobs created by accommodative fiscal and monetary policy may reduce unemployment overall but increase structural unemployment due to mismatches in the skills that were promoted prior to recession and those currently in demand – potentially lowering productivity and wage growth. For these reasons, public debt may need to grow faster than the private debt it is replacing. Post-recession, a government paying down its debt risks a stagnant economy or even a renewed recession. Failure to pay down debt through budget cuts or tax hikes, however, can encourage the private sector to re-engage in the same behavior that led to the last recession and gives the central government less dry powder to combat the next recession.



The Global State of Debt

According to Institute of International Finance (IIF) estimates, household debt has risen by $7.7 trillion globally since 2007 to over $44 trillion in Q1 2015. While the majority is associated with emerging market households, outstanding debt in the household sector in developed countries has risen by about $1.5 trillion. However, global debt-to-GDP ratios for the household sector in developed countries has actually declined since the end of 2007, although this is driven by a relatively small group of countries, starting with the US and including Ireland, Spain, UK, Germany, Portugal, and Austria. Most of these countries, especially the US, had seen a run-up in household debt levels prior to the 2008 financial crisis. *See our 4Q 2006 Market Recap Focus on "Leverage, Leverage Everywhere" where we explored the prevalence of leverage throughout the US economy.*

In the US, the decline of the debt-to-GDP ratio for the household sector has been driven predominantly by a fall in mortgage debt resulting from defaults and foreclosures in the wake of the credit crisis. While mortgage debt has declined, other consumer debt has increased. Most notably, outstanding student loans and auto loans have swelled to record levels. Currently, debt service/disposable income ratios are supported by low interest rates. However, high debt levels intensify the vulnerability to adverse economic developments such as slow growth, rising interest rates, or declining house prices. *See our 1Q 2013 Market Recap Focus discussion on the re-leveraging of the US consumer.*

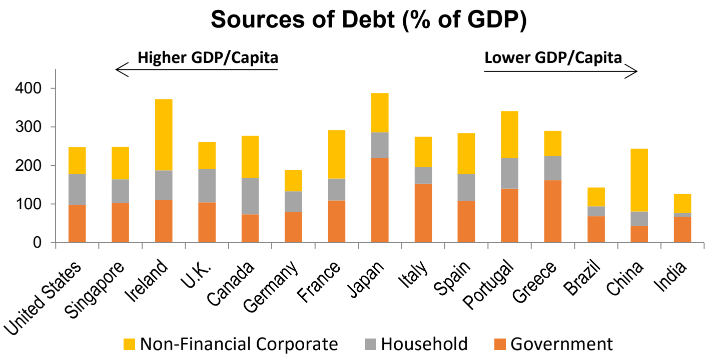
When examining government (or national) debt, IIF 2015 data shows a marked increase in developed markets since 2008 with a lesser increase in emerging markets. In their February 2015 report "Debt and (not much) deleveraging" the McKinsey Global Institute noted that "all major economies today have higher levels of borrowing relative to GDP than in 2007," with government debt unsustainably high in some countries.

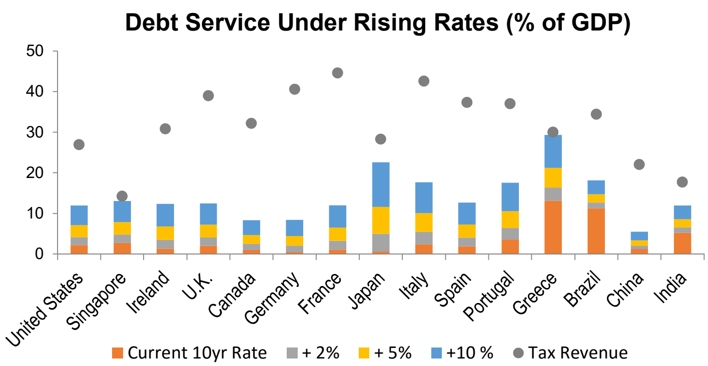
Intuitively, we understand that a country may sustain debt no larger than it can reasonably service into the foreseeable future. Therefore, debt service (interest paid on debt annually) should not exceed some reasonable portion of future tax revenues, which is a function of current tax revenues, current tax rate, and GDP growth. A country with a low current tax rate (like the US, Mexico, etc.) and high GDP growth has flexibility going forward to increase tax revenue and thus can sustain a higher debt service. Countries that are contracting and unable to raise taxes, like Greece or US-territory Puerto Rico, are limited. Typically, there are three options to reduce the debt: consolidation (issuing new debt to pay off existing debt), monetization (increasing the money supply to pay off existing debt), or default. While the first two methods are regularly employed by governments, it is default – or even the specter of default, that consistently grabs the headlines.

Outliers in Public Debt

When looking at the debt profile of a country, most often the focus is on public (or national) debt, and there are many ways to measure or categorize it. When your focus is to establish a probability of default over some time frame, identifying the weakest link can be useful. In the case of Iceland, it was an overextended banking system that had proffered to serve as the capital casino house for the world in the 21st century. For Greece, the weakest link is, perhaps, the dramatically underfunded pension system. Other major red flags may result from a high debt-to-GDP, debt-to-tax-revenue, debt service as a percent of total spending, and so on. Whatever the cause for concern, these measures are considered within the context of the country's economic growth, assets, ability to inflate its debt, workforce demographics, interest rates paid on debt, ability to increase tax revenue, and which parties hold the country's debt, among other metrics.

At some point, a negative feedback loop can result between owing too much and having to pay higher and higher interest rates. Prior to such crises however, it is not always obvious whether a sovereign entity is approaching default or not. Take Japan, for instance. As a country that has endured a stagnant economy with low growth and low inflation for decades, Japan holds the distinction of the highest debt-to-GDP ratio of any developed nation – a major red flag. Yet, Japan has been able to finance its debt at ultra-low interest rates for decades. Bets on a Japanese implosion have yet to payoff. Despite its lack of growth, Japan is a wealthy nation with assets well in excess of its total debt. Additionally, much of the debt is held domestically where presumably the government has more sway over investors and where the investment culture – especially among individuals, is conservative and risk-averse. Although Japan faces headwinds from an aging population, privately-held debt in Japan remained steady after declining in the late 1990's to the early 2000's. As for its assets, Japan is a net creditor to the world – it carries more external assets than external liabilities on its balance sheet. In fact, Japan recently overtook China as the primary foreign holder of US government debt. If pressured, Japan could liquidate these external assets to fund the purchase of Japanese Government Bonds (JGBs) and keep the yield on its debt suppressed. With such high debt-to-GDP, Japan has become the focus of speculation as to how it will choose to manage its debt going forward. Currently, the Bank of Japan is extending the duration of issuance modestly, and the Japanese government is projecting a balanced annual budget (excluding debt service) by 2020.





If rates on JGBs were to rise, perhaps by 500 bps, then Japan would be facing similarly onerous annual debt service payments as Greece is currently. And such a scenario may create a cliff event where credit spreads on JBGs hastily widen, compounding the problem. Yet, how likely is Japan to become the next Greece? Greece's national debt, while a lesser percent of its GDP than Japan's, is predominantly externally-held. Greece also has an unmanageable public pension problem, far higher unemployment, relies heavily on tourism, and struggles with tax evasion. Most importantly, Greece lacks control over its own currency. Greece does not have the monetary policy tools that Japan possesses and cannot simply print more money and inflate away its debt. Italy, Spain and Portugal compare similarly. For these countries, the context of their debt greatly exacerbates the magnitude of their debt.

A Tsunami on the Horizon?

In 2015, the IMF expressed concerns about Japan's level of public debt, which it projected would reach almost 300% of GDP by 2030. Earlier in the year, Fitch Ratings downgraded Japan's sovereign rating from AA- to A+. (By comparison, Fitch rates the US at AAA, and Standard & Poor's rates it AA+.) Is a mounting level of public-sector debt truly a cause for concern? Perhaps, yet the circumstances of public-sector debt can be a critical mitigating consideration.

What then, is the link between recession and debt? Historically, it appears that private-sector debt is more causal when it comes to economic slowdowns than its headline-grabbing counterpart. Witness the run-up in household debt in the US in advance of the credit crisis. While it gets more attention, public-sector debt appears to be more often a response to, and not a cause of, economic contraction in general. Private sector debt is prone to over-extension and sharp retraction without long-term macroeconomic concern. Public debt may not function as effectively in boosting the economy, but generally contributes much more to the stability of the economy, not unlike how equity and government securities function in an investment portfolio.

With each year, we become more and more impacted by the economic fates of our global neighbors. Keeping appraised of the potential impact of debt cycles abroad is a critical risk focus for any investor, as is the run-up in US private debt that has quietly been occurring for the past 5 years or more.

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