



INVESTMENT THEMES IN 2015

Dealing with Divergence

Citi GPS: Global Perspectives & Solutions

January 2015



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INVESTMENT THEMES IN 2015

Dealing with Divergence

Andrew Pitt

Global Head of Research

We are pleased to present our investment themes for 2015 and we wish all readers of our Citi GPS series successful investing in the year ahead. As in 2014, these themes are a mixture of macro and asset class views together with several ideas selected from our global industry analysis. At the end of each year we conduct a survey to ask users of Citi Research which themes they would like to see us tackle in the year ahead¹. We have used the intelligence of this survey to scope this annual Citi GPS Investment Themes report.

Economic divergences are likely to create material variances in monetary policy in 2015 and beyond. Overall our economists expect a slight pickup in global growth to around 3.1% in 2015, up from 2.7% in 2014, but also expect the growth gap between developed and emerging economies to be at its lowest level since the start of the millennium. Key downside risks in the year ahead center, in our view, on China's domestic economy, continued underperformance in the euro area, potential geopolitical shocks and the weakening support for global economic integration. Key upside risks would most likely center on the boost to consumers from lower commodity prices and the impacts of loose monetary policies, especially in advanced economies.

Across 2014 our asset allocation framework recommended an overweight position in equities but, while equities outperformed other asset classes, the margin was not as comfortable as expected, especially relative to government bonds. In the year ahead, our strategists still view equities as the asset class outperformer², buoyed by solid corporate earnings growth (we forecast 9% globally), highly accommodative monetary policy in advanced economies and valuations which look supportive by historic standards. After the stronger than expected performance in 2014, we forecast core government bond returns to be weak with higher yields forecast across the board. The expected back-up in benchmark rates creates a headwind for credit total returns, although expected QE from the ECB should support European credit over the US. In early December we were forecasting positive returns on major commodities through to end-2015 but below historical average returns. The continued precipitous fall in the oil price in the past year 6 weeks has taken the price well below what we see as an equilibrium level but the structural backdrop within the energy industry suggests that pressure may remain near term.

To provide context to our asset class predictions, we examine in detail in the first section of this report the issue of central bank policy and then follow this with analysis on inflation, energy prices and the position of China in the global economy. All four of these topics were of central concern to investors in our theme survey. We then examine the outlook for the globalization of trade and financial flows as well as the risk of exogenous shocks in a world where geopolitical risks have arguably risen to levels not seen since the fall of the Berlin Wall in 1989.

Several of our leading Equity analysts review three themes at the end of this report that have direct downstream implications for equity securities. These themes are e-commerce, where we examine the growth of the online retail sector, especially in emerging markets; battery storage, where we assess the market opportunity and also what this opportunity means for technology companies, utilities and commodities; and the impact of Fed policy on US banks.

¹ See Investment Theme Survey Results, Citi Research, 19 December 2014.

² See Asset Allocation: Citi House Views for 2015, Citi Research, 1 December 2014 and Global Equity Road Ahead 2015, Citi Research, 6 January 2015.

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Macro Themes

Mark Schofield

Head of Global Strategy & Macro Product

Central Banks: A Year in Transition

Citi forecasts see the US Federal Reserve (Fed) and the England's Monetary Policy Committee (MPC) tightening from the end of 2015, which we feel is consistent with the state-contingent policy objectives of the central banks. Clearly, however, the continually shifting sands of the macroeconomic and political backdrop make the current state anything but steady and so there are clear risks to the timing which, at the time of writing, appear to be skewed to a slightly earlier mid-2015 lift-off. Ultimately, however, rates will rise and we believe that the magnitude and pace of the eventual tightening is likely to be more important for markets than the exact date of the first move. Certainly, however, the consensus appears to be for earlier moves than Citi forecasts and, with that in mind, markets will soon begin assessing what a US (and UK) tightening cycle will mean for asset prices.

In the meantime, however, the European Central Bank (ECB) and the Bank of Japan (BOJ) look likely to continue easing. With this they will maintain an accommodative global policy stance and assume the mantle of liquidity provider from the Fed. Over the course of the next couple of years, however, the dominant theme in global policy is likely to remain that of divergence.

When and How Fast Will the Fed Hike Rates?

In the December 2014 Federal Open Market Committee (FOMC) meeting, Chair Janet Yellen was explicit about the preconditions for the liftoff of interest rates with participants expecting "some further decline in the unemployment rate and additional improvement in labor market conditions...and core inflation to be running near current levels but foresee being reasonably confident in their expectation that inflation will move back toward our 2% longer run inflation objective over time."

This implies the best "time" for liftoff would be where the economy is expanding at its maximum above-potential pace. In the face of the surprisingly sharp decline in the price of oil, GDP growth is expected to get a substantial boost in 2015. With the oversupply of oil expected to persist for some time, there may be a prolonged, albeit temporary, boost to GDP growth in the first half of 2015. This additional growth spurt would be sufficient to reduce the output gaps — and absorb labor market slack — more rapidly than forecasted even a month ago.

Consequently, the best time for liftoff would be the second half of 2015 when lower oil prices would have provided the additional lift to GDP growth to ensure that the Committee would be most confident in its forecasts for rising inflation towards but not above the 2 percent target. Consistent with this, our December 2015 liftoff call is predicated on the Committee delaying liftoff until there was sufficient information about the recovery to ensure its sustainability.

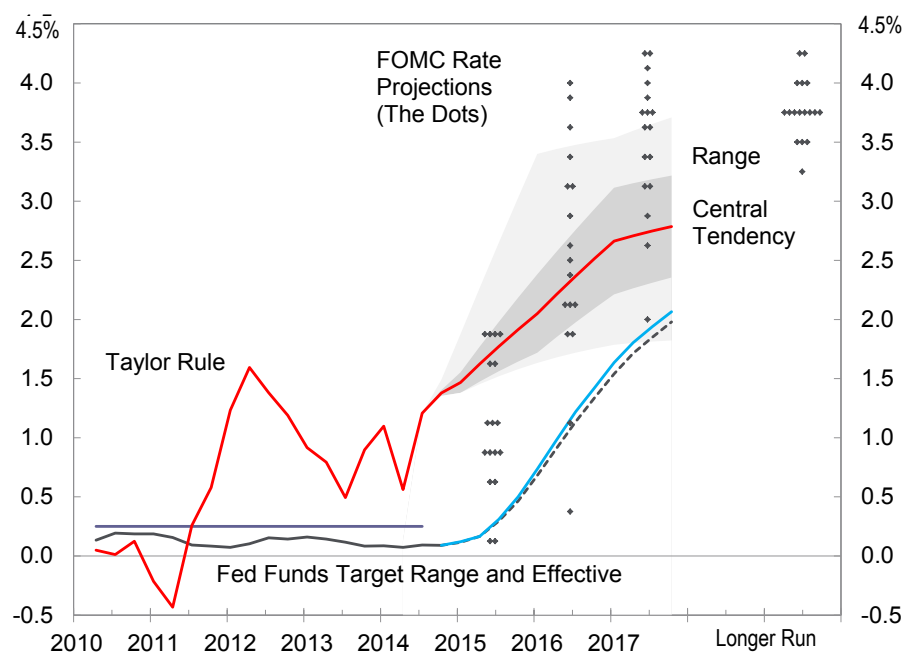
However, Chair Yellen raised an important consideration that raises the chances of an earlier move: The Committee would want to place the initial increase at the point of maximum growth — where GDP growth is well above potential and the output gap is diminishing rapidly such that inflation expectations and projected inflation would likely be rising, and financial markets would be least disrupted with a rate increase at that time.

We believe the trajectory for policy rates is by far much more important than the liftoff date for influencing long-term interest rates, economic growth and inflation. Regardless of the liftoff date — mid-2015 or end-2015 — we continue to project the trajectory toward normalization will rise slowly, approximately 75 basis points a year. We project a slow start (even slower if we have a mid-2015 liftoff), towards an eventual target of about 3.75%. Our policy path forecast is slower than the trajectory implied by the FOMC.

William Lee

Head of North American Economics

Figure 1. Patient Fed policy path continues to be cautious and normalizes after 2017



Source: Federal Reserve, Bureau of Economic Analysis, Citi Research

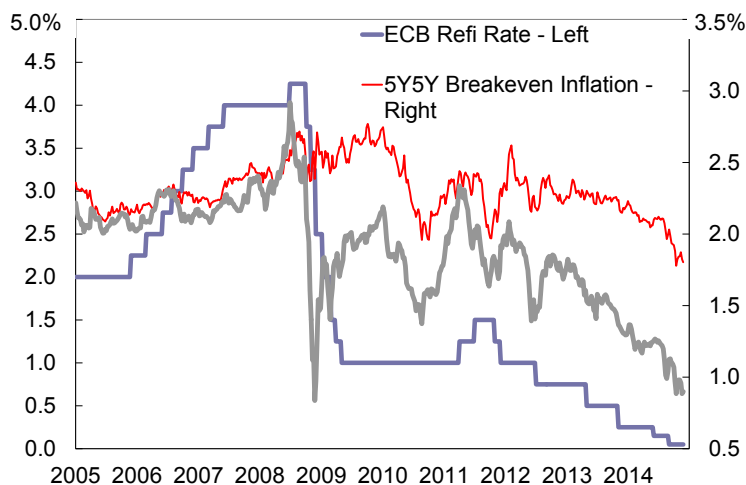
QE Moves East

Guillaume Menuet
European Economist

Ebrahim Rahbari
European Economist

At the November 2014 press conference, the European Central Bank (ECB) highlighted two contingencies for action: 1) a weak macroeconomic profile and 2) a failure of previous measures to reach the balance sheet target. We believe that both the inflation and balance sheet contingencies will likely be triggered soon, and estimate that a majority of the Governing Council members would favor additional policy action. We believe the doves and neutrals already currently outnumber the hawks, whose numbers will likely diminish as 'low-flation' persists.

Figure 2. ECB refinancing rate, 5Y5Y breakeven and 5Y inflation swaps (%), Jan05-Nov14



Source: Eurostat, Bloomberg, Citi Research

A key obstacle to QE is likely to be Germany. Although the Bundesbank is not alone in expressing concerns about large-scale purchases of government bonds, we nevertheless believe that this opposition is not unconditional and will probably be lessened over time by continued inflation undershoots and the preference by some of the budgetary hawks for monetary stimulus over fiscal easing.

Following President Draghi's Frankfurt speech on November 21, 2014, we remain convinced that ECB QE is only a matter of time and the Governing Council is likely to make a formal announcement at the January 22 meeting. However, a successful implementation of the private sector asset purchase program could enable the Governing Council to wait until March 5. A key uncertainty remains whether the Governing Council will be successful with its first QE attempt whereas it took a number of iterations for many central banks to deliver the appropriate stimulus their economies required. Our QE baseline contains €600 billion of private sector asset purchases to reach the intended €1 trillion target, alongside a generous €500 billion of targeted longer-term refinancing operations (TLTROs). Despite these assumptions, our central projection does not envisage headline inflation reaching the ECB's target over the forecast horizon. As a result, we argue that further rounds of QE could very well be on the ECB's mind at some stage during the second half of 2016.

Japan Remains Committed to 2% Inflation Target

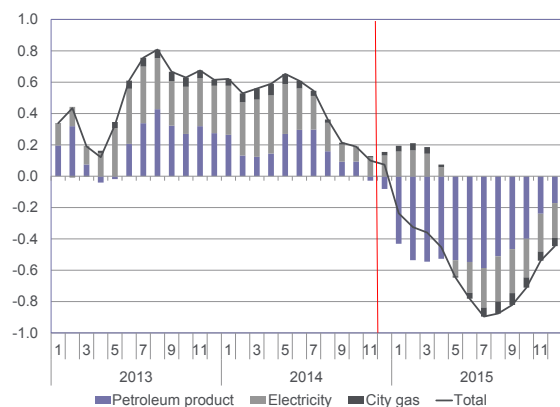
The Bank of Japan's (BOJ) surprise decision in October to ease monetary policy further indicates policymakers are more strongly committed to the 2% inflation target than the average market participant had assumed. However, unanswered fundamental questions remain on whether and how further increases in the monetary base and the BoJ's holdings of Japanese government bonds (JGBs) and risk assets can cause a sustainable convergence of Japan's inflation to 2% — apart from their direct impact on the currency rate.

In explaining the surprise easing, the BoJ noted that policymakers dealt with the rising risk that the oil-driven drop in inflation will push inflation expectations lower again. However, given that the BoJ's core inflation forecast of +1.7% YoY for fiscal 2015 is predicated on higher oil prices, the BoJ will probably need to ease further in 2015 if, as we anticipate, oil prices remain flattish into 2015.

Kiichi Murashima
Japanese Economics

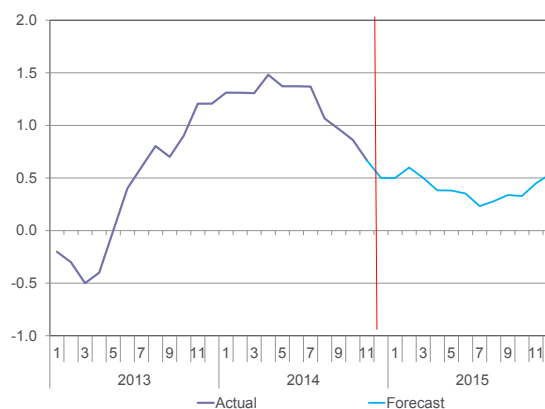
Naoki Iizuka
Japanese Economics

Figure 3. Citi estimate of energy's contribution to YoY changes in the core CPI (ppt)



Note: Energy includes petroleum products, electricity and city gas charges
Source: Ministry of Internal Affairs and Communication, Citi Research

Figure 4. Citi's estimate of core CPI inflation (YoY)



Source: Ministry of Internal Affairs and Communication, Citi Research

We currently expect additional BoJ easing in July 2015 in the form of increased purchases of risk assets and possibly JGBs. Assuming that the BoJ maintains the current pace of asset purchases in years to come, the BoJ's holding of JGBs will reach ¥280 trillion at end-2015 (57% of GDP) and ¥350 trillion at end-2017 (71% of GDP), which is unprecedented territory. We are skeptical that the 2% inflation target will be met in the foreseeable future on a sustained basis. And, at some point, the difficulties in making further large-scale JGB purchases from Japanese banks (who may need a certain amount of JGBs as collateral for transactions), plus a sense of fatalism about the extent to which QE can help achieve the 2% inflation target, might prompt the BoJ to taper bond purchases. But that time is probably distant at present, and in any case, the BoJ would still have options to buy other assets (e.g. ETFs).

Can ECB and BOJ QE replace Fed QE?

Jeremy Hale

Head of Global Macro Strategy

There is much speculation as to whether or not a dollar equivalent of ECB or BOJ QE will have the same impact as a dollar of Fed QE. Overall, the global balance sheet will continue to expand in 2015 and that, all other things being equal, should continue to be supportive for risk assets. The question is; to what extent?

Mark Schofield

Head of Global Strategy & Macro Product

The expected size of 2015 QE does not give us much to work with. As our Global Macro Strategy team has pointed out, a consolidated G4 Central Bank balance sheet in US dollar terms has risen 9.5% annualized since early 2009. Using Citi FX forecasts, and assuming the ECB takes two years to raise the balance sheet by €1 trillion, the consolidated US dollar balance sheet will still rise by a 6-7% annualized average over 2015 and 2016. This seems to imply slightly less support externally from QE than before. However, an alternative specification of the balance sheet GDP weights the change in the individual balance sheets and finds that local currency based balance sheet expansion will be around 21-27% in 2015 and 2016 vs. 19% annualized since early 2009. This view of reality says central bank largesse is getting bigger not smaller.

The more salient issue may be the transmission mechanism to global markets and on that front there is a clear risk that 2015 QE does not match previous years. While the US represents about 22% of world GDP against almost 30% for the ECB and Japan, the US equity market represents 40% of the global equity market capitalization against about 20% for the Euro zone and Japan combined. This suggests that while ECB and BOJ QE may have a meaningful impact on local assets, the effect on global markets may be more muted. When we consider too, that ECB and BOJ QE may soon be taking place against a backdrop of tightening US monetary policy, it is less obvious that QE will remain a major prop for financial assets through 2015 and into 2106.

Hope May Meet Change

Tobias M Levkovich

Chief US Equity Strategist

It has become more evident to us that investors have relatively short memories, possibly reflecting the experience base of so many investors overlaid with what psychologists call "recency bias". Keep in mind that we suspect that about 65-70% of Wall Street professionals probably have ten years or less of investment experience with maybe another 20-25% having 20 years under their belts leaving relatively few with a good memory of the secular bull markets of the 1980s and 1990s. In this context, not many within the investment community can even recall an era of inflation, the Plaza and Louvre accords on currency, energy shocks, LTCM and a host of other market/ economic events. In this sense, investors' perspectives on stocks are skewed by recent trends and patterns such that there is little understanding of what happens with the Fed lifts rates.

Figure 5 provides some insight and shows that equities generally climb for many more months after the first Fed move. There are clearly exceptions including the 1969 GM strike that hampered the economy, the Arab-Israeli war of October 1973, the October 1987 crash, the tech bubble bursting in 2000 and the financial crisis of 2008-09. And there is not that much consistency on what specific industry groups one should buy after the first interest rate hike.

An investment community that has not seen trends in interest rate policy headed higher for years adds to uncertainty, especially as so many have limited experience and still think that the global economy is typically synchronous when history suggests otherwise. We believe that the 2014 gains are behind us but we remain buyers on weakness for 2015 upside with a continued preference for large caps and value.

Figure 5. S&P 500 performance following first rate increase

Date of Hike	Performance After 1st Rate Increase				
	Date of Peak	% Change	# Days to Peak	Date of Trough	# Days to Trough
4/15/1955	8/2/1956	31.03%	328	5/17/1955	22
9/12/1958	12/12/1961	49.68%	817	N/A	
7/17/1963	9/25/1967	41.58%	1,056	7/22/1963	3
11/20/1967	11/29/1968	18.24%	235	3/5/1968	71
12/18/1968	N/A			5/26/1970	358
7/16/1971	1/11/1973	21.32%	376	11/23/1971	91
1/15/1973	1/18/1973	0.35%	3	10/3/1974	434
8/31/1977	9/22/1980	34.75%	773	3/6/1978	128
9/26/1980	10/10/1983	36.64%	767	8/12/1982	473
4/9/1984	8/25/1987	116.64%	854	7/24/1984	73
9/4/1987	2/2/1994	115.26%	1,622	12/4/1987	63
2/4/1994	2/18/1997	73.75%	766	4/4/1994	39
3/25/1997	6/30/1999	73.97%	571	4/11/1997	12
6/30/1999	3/24/2000	11.27%	186	10/9/2002	823
6/30/2004	11/11/2014	78.79%	2,611	3/9/2009	1,180
Average		50.23%	783	-18.61%	269
Median		39.11%	767	-9.61%	82

Note: April 1955-April 1984 rate hikes are based on increases in the discount rate; Sept-97-current dates are based on increases in Fed Funds rate.

Source: Federal Reserve, Haver Analytics, Citi Research

What Does Fed Tightening Mean for US Treasuries?

Amitabh Arora

Head of G10 Rates & Securitized Product Research

Fed tightening has historically resulted in a flattening of the yield curve and we expect a similar reaction in this cycle as well. There are some differences between the upcoming hiking cycle and past monetary tightening cycles. For one, the Fed is starting lift off from the unusually low zero bound, and the end point for this cycle is likely to be lower than in the past, potentially as low as 2 to 2.5%, given the benign inflation picture facing the Fed. Therefore, it is possible that the 5-year and 10-year rates at the end of the Fed's hiking cycle could be below 3%. Further, the Fed holds a large balance sheet as a result of its asset purchase programs, and the existing reinvestment program would continue for a brief period even after the lift off in rates. Thus, the impact of tightening on long term yields is likely to be muted. The pace of tightening may not be measured, as in past cycles. Therefore the front end of the curve could see some volatility as the market fine tunes expectations of the pace of hikes right up to, and beyond the point when the Fed starts liftoff.

What about the Treasury-Bund Spread?

Bunds have rallied relentlessly over the past 12 months, reflecting a deterioration of inflation expectations and the associated need for additional non-conventional monetary stimulus. As a result, the 10-year Treasury-Bund spread has widened by 55 basis points in 2014, confirming calls for a gradual de-coupling of these two

markets. Currently, there is a very high probability of the ECB announcing QE at its January meeting. We expect the Treasury-Bund spread to widen only in the case of a disappointing announcement, one which does not address the issue of excessive real interest rates in the euro area. In our baseline scenario, we project Bund yields to grind higher during the course of 2015 albeit at a very modest pace (1.15% at year-end). Our leitmotiv is best described as “buy the rumor, sell the fact”, when it comes to ECB QE. In terms of the Treasury-Bund spread, our projections do not imply a clear direction and we should end the year close to current levels. This contrasts to the 15 basis point widening priced in by the respective forward curves.

Credit: All Good Things Come to an End

Jason Shoup

Head of US High Grade Credit Products
Strategy Team

While global monetary conditions should remain bond market-friendly in the year ahead, the end of Fed QE leaves the market in a precarious position. If 2014 is anything to go by, the technical environment that was priced ‘just right’ for creating endless demand and suppressing volatility has passed. Investment grade (IG) spreads are unlikely to return to their mid-2014 tightness anytime soon and 2015 should provide further confirmation that the credit cycle has turned – albeit with a longer denouement than has been historically typical.

Apocalyptic talk aside, the US IG credit market enters 2015 in a position where the risks are far more symmetric relative to 2014. Thus, we begin the year with a neutral view of the asset class. Said differently, it is likely that the move wider in spreads experienced in the latter third of 2014 already appropriately reflects the deterioration in technical conditions. Still, the end of credit’s Goldilocks-era is likely to be felt in other ways. We expect more single-name volatility, issuance to remain heavy enough to warrant meaningful concessions, and an even greater emphasis on fundamental risk as the energy sector, M&A, and shareholders take center stage.

While spreads are likely to travel along a bumpier path in 2015, we expect the IG corporate cash index to end the year roughly unchanged, plus or minus 5 basis points. If that is the case, excess returns should fall somewhere in the 100-150 basis point range, absent a dramatic reshaping of the curve.

Hanz Lorenzen

Head of European IG Credit Products
Strategy Team

In Europe, our credit strategists are forecasting a 20-25% tightening of Euro credit spreads which is at the bullish extreme of expectations for 2015. Their premise is that the single biggest problem that credit faces is low returns. Ever more extreme scenarios are needed to generate just half decent performance. In 2015, Euro IG credit can only return 4% if the yield on the index drops below 1% (from 1.4% currently).

Specifically, our concern is that the ECB might end up squeezing corporate credit much more than consensus or even our forecasts imply, for instance by buying corporate bonds outright in size. This isn’t that farfetched an idea. From the day the ECB announced its asset-back security (ABS) and covered bond purchase program to the time when it got around to actually spending the first euro, spreads in both markets nearly halved. We understand that the ECB has been heavily involved in covered bond primary markets, buying 50% or more of some new deals, suggesting that it is prepared to crowd out private investors in size.

Where would we be if the same thing happened in Euro IG corporate credit? Well, that is exactly what would take the index yield sub-1% with a repressed level of volatility. Great for instantaneous performance, but return prospects from there would be almost non-existent, beyond a smidgeon of carry. Until the ECB backed off, there would be little scope for a cathartic correction. It could happen all too quickly: if the ECB launches full-scale QE in January, then credit just might be there already by the end of the first quarter.

How Far can Policy Divergence Move FX Markets?

Jeremy Hale

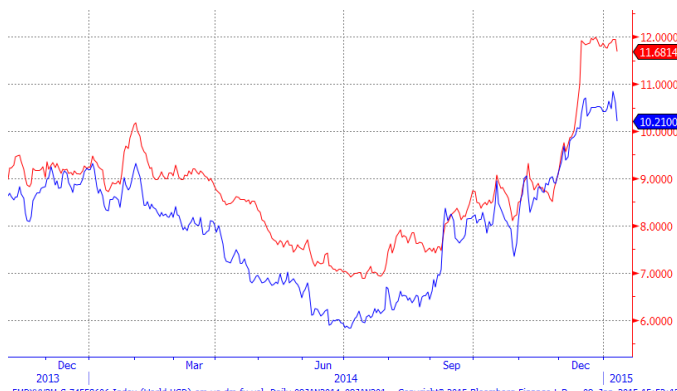
Head of Global Macro Strategy

Volatility in FX markets has increased (Figure 6) with policy divergence remaining a key theme in FX markets. Both Japan and the euro area are using aggressive monetary ease to try to ward off deflationary risks, with currency depreciation effectively the intermediate target. Compared with the Fed, for example, ECB QE cannot possibly have as large an effect through overall financial conditions given that credit spreads and yield levels are much lower, and equity valuations much higher, than when the Fed started QE. As this has become clearer to markets, US dollar gains have continued (Figure 7).

US dollar cycles tend to be quite long lasting once started, with rallies typically running for 5-6 years. This would imply that the current rally, which began in 2011, could run through to the end of 2016. Thus far, the gain in the G10 US dollar indices is around 17% from the lows compared with a typical 40% rally historically. In the real broad indices, which include emerging markets (EM), the gain is still less than 10% with 30% marking the typical historical move.

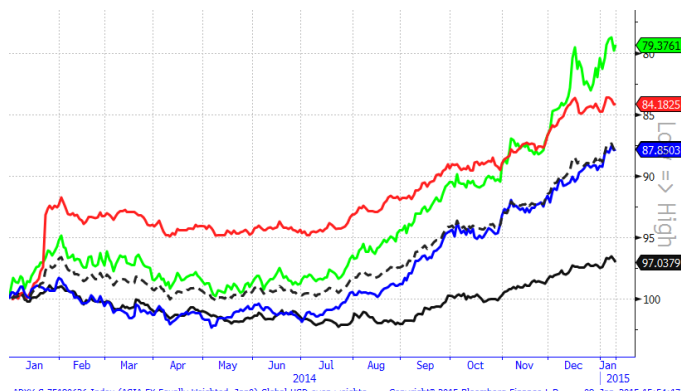
As a result, we see further US dollar upside over the medium to long term with US dollar gains vs. G10 currencies of the order of 10% over 12 months and 20% over two years. We still forecast less than this in the EM space where we expect US dollar gains of about 4% over the next 12 months. But it seems increasingly clear that key EM policymakers are less than happy with the combination of weak growth at home and FX depreciation in Japan and the euro area. China, for example, cut rates in November 2014 and other Asian country policymakers could also ease policy or step up intervention to offset European and Japanese policy impacting local inflation too much. Risks to the EM forecasts are likely to the weaker side.

Figure 6. Implied volatility: G10FX (blue) vs. EM FX (red)



Source: Bloomberg, Citi Research

Figure 7. USD vs. LatAm (red), CEEMEA (green), World (grey dash), G10 (blue), Asia (black)



Source: Bloomberg, Citi Research

Are Emerging Markets at Risk from Fed Tightening?

David Lubin

Head of Emerging Market Economics

The experience of the past 40 years suggests that capital flows to EM can go into reverse during periods of US monetary tightening, but there are three factors which should limit this fear in 2015. The first is that there has been an important change in the composition of capital flows in the last couple of decades: commercial banks are no longer the dominant supplier of cross-border flows to EM; institutional investors are. This is important because commercial banks are the creditors most likely to have the highest degree of sensitivity to an increase in the front-end of the US curve. The second is the evidence that 'home bias' among institutional investors has

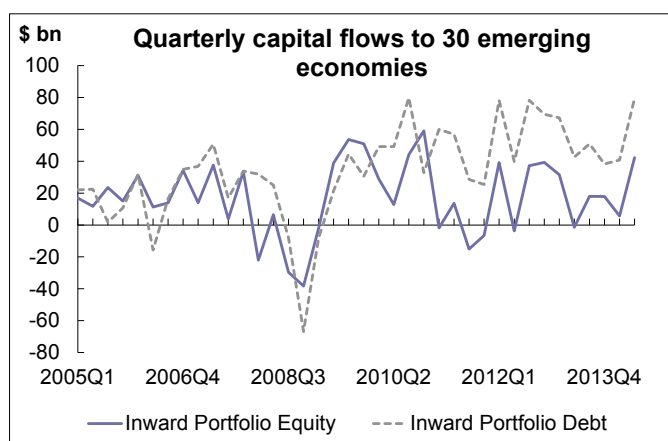
declined rather sharply. On a scale of 1 to 0, where 1 represents complete 'home bias' and 0 its complete absence, the advanced economy members of the G20 have seen their home bias fall sharply in recent years: from 0.76 in 1995 to 0.58 in 2011. This is likely to be a structural change. Finally, the expected US monetary tightening in 2015 will take place against a background of 'monetary policy divergence' in the advanced economies: the fact that rates in Japan and the Eurozone should stay very low will help to mitigate the impact of rising US rates.

Figure 8. Commodity exporters with current account deficits seem likely to remain among the most vulnerable countries within EM...

	Commodity Exporting	Manufactures Exporting
Current Account Surplus	Russia Nigeria Venezuela	Korea Hungary Poland Israel
Current Account Deficit	South Africa Brazil Indonesia Peru	India Turkey

Source: Citi Research

Figure 9. ...but there are reasons to be optimistic about capital flows to EM, possibly due to a sustained decline in global 'home bias'



Source: Institute of International Finance, Citi Research

But there is one country in which cross-border commercial bank lending has been very aggressive, and where capital outflows seem likely: China. Data from the Bank for International Settlements (BIS) on cross-border bank lending to EM show that international lending to China has risen very dramatically in the past few years. Since the first round of QE, China's international debt to banks has risen by almost \$900 billion, creating a stock of external bank debt of over \$1 trillion (more than half of this rise took place in the past 2 years) — some 10% of GDP. Of this stock, 80% has original maturities of less than one year. It is sensible to argue that the vast bulk of this largely short-term debt has been accumulated in the context of speculative capital inflows: China's currency has been a 'one-way-bet' since 2010, and dollar funding costs have been exceptionally low. Now these two factors are in transition: the Chinese currency has been exhibiting more two-way risk in recent months and, as US rates rise, there is a much greater chance that China suffers speculative outflows rather than speculative inflows — as has been the case in the past few months - particularly as Chinese rates fall next year. Of course, a large speculative outflow from China can easily be financed by the central bank. But a large capital outflow could, we think, increase some of the downside risks to Chinese growth, and could also set the stage for a more depreciated renminbi (which is in Citi's forecasts).

Conclusion: Testing Times Ahead

Overall, we think that central bank policy will continue to be supportive for financial assets in 2015, with equity markets likely to be the best performing. However, we would be wary of becoming complacent about the ability of QE alone to keep driving markets higher.

The early part of the year will likely be a period of further policy accommodation as QE shifts east from the US and UK to Europe and Japan. We expect this to continue to suppress volatility and support the ongoing reach for yields; however we suspect that the impact of 2015 QE may be more noticeable at the local market and local asset level than at the global level. As the US cycle starts to turn we think the risk of higher funding rates and some more exaggerated moves in currency markets could start to undermine confidence, boost volatility and raise risk premia.

As the Fed and the MPC begin to raise rates, equity markets are likely to focus on rising growth and better earnings. However the impact of higher funding rates and eventually rising bond yields cannot be ignored. Significant moves in currency markets (with the US dollar in particular expected to rise) will continue to act as a dampener on headline growth and to globalize low-inflation. So long as inflation remains subdued and policy rates are normalized slowly, the damage to risk appetite from higher rates is likely to be fairly limited. A meaningful shift back to fixed income from equity is highly unlikely while the yield gap is so low (or inverted) and while economic growth remains positive.

Equally, bond markets may not need to sell-off much at all, at least not until some of the fundamental drivers of yields (funding rates, inflation risk or default risk) begin to rise. With slow but steady growth, low inflation and such low interest rates globally, bond and equity markets can probably continue to co-exist for some time.

This does not, however, mean that 2015 will see the kind of returns that 2014 delivered. Further upside from current levels in equity markets and such low bond yields will be hard earned. The environment is becoming more conducive to lower absolute returns and with greater risk. With greater divergence geographically, across sectors and among individual names, picking the right asset is likely to be more important in 2015 than picking the right asset class.

Asset Allocation: Diversification, not Rotation

Mark Schofield

Head of Global Macro & Strategy Product

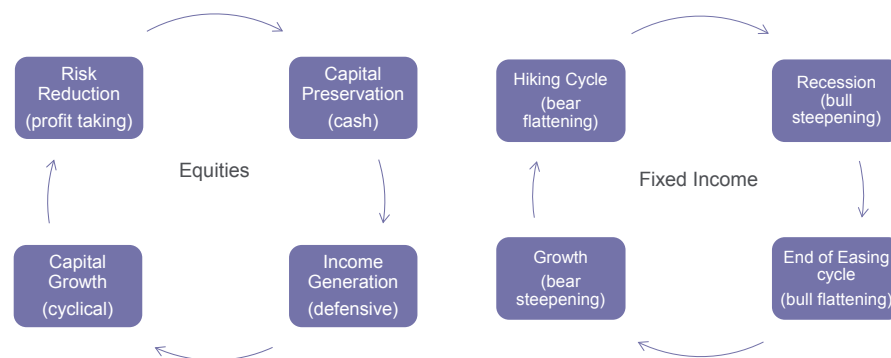
The big trends in asset flows going forward are likely to be driven by secular rather than cyclical factors. We see many good arguments for investors to raise equity allocations from their considerable cash holdings but we see little reason for large structural reductions in fixed income allocations at the current time.

Diversification, Not Rotation

Many commentators are anticipating a “great rotation” of assets out of bonds and into equities as economic and central bank policy cycles turn. However we believe that new trends in investor behavior, changing patterns in the global economy and a shifting regulatory landscape have probably consigned such cyclical “rotations” to history

Indeed, we question, whether such a dynamic ever existed. Certainly we believe that it is unlikely that we will see the return of cyclical cross-asset allocation moves of this nature any time soon. It is our contention that many of the apparent cyclical cross-asset flows in the past have been co-incidental rather than a result of a direct causative relationship, in which the selling of one asset is the direct trigger for buying of the other. There are cyclical risk allocations continually taking place in every asset class as investors buy and sell based on return expectations relative to a perceived risk-free rate. Due to the highly correlated pre-crisis global economy, the cyclical risk rotations in bonds and in equities have often been nearly simultaneous.

Figure 10. Intra-asset cyclical risk rotations



Source: Citi Research

As paths in economic growth around the world have diverged, global aggregate flows within the various asset classes have become more neutral. On top of this, there are a number of new trends that have emerged in recent years that are causing investors to diversify portfolios beyond the bounds of the traditional fixed-income and equity parameters. These include a changing investor base with growing demand for hedge funds and solution based mandates, the emergence of new asset classes, notably commodities, real estate and foreign exchange funds, and a continually changing regulatory environment.

Cyclically driven moves in risk allocation are now being played out in within asset classes in increasingly diverse portfolios. Weaker correlations between asset classes have meant that hedging traditional cyclical risks has become a more prevalent strategy than aggressive directional risk taking. Meanwhile lower volatility has meant that regional, stylistic and cross-sector trading strategies within asset classes have become the tools of choice for trading cyclical risk.

A secular shift to equities may be underway?

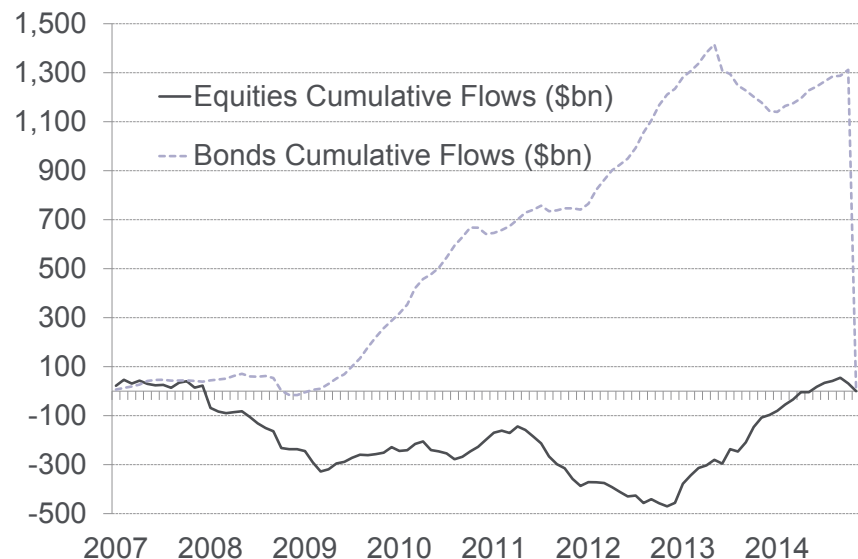
The biggest drivers of cross-asset flows going forward are therefore likely to be secular rather than cyclical (we actually believe that this has always been the case). In this space we do see scope for a meaningful reallocation towards equity markets.

The biggest reallocation of assets that has taken place in the past decade has been de-risking out of equities and into cash. The trend towards diversification means that this move is unlikely to be reversed in its entirety but low rates and low volatility could be the trigger for some secular re-risking which could generate a significant increase in demand for equities over the next few years. However, in the near term at least, we believe that this will be a reallocation out of cash and not from fixed income.

There is now a lot of cash in the system and low rates and low volatility are intensifying the pressure on investors and companies to put that cash to work. Based on current portfolio allocations and risk-adjusted return expectations equities may therefore be the beneficiary of a period of raised secular demand.

Flow data certainly suggest that the secular demand for equities may be turning after nearly two decades of contraction and we expect the aggregate demand for equities to continue to rise.

Figure 11. Cumulative Flows (\$bn)



Source: Citi Research, EPFR

We see three potential sources for a significant uptick in demand for equities: First, retail investors and the High Net Worth sector in particular have been extremely cautious since the financial crisis. This sector remains underweight and has not fully participated in the upturn. With the rally in bond markets last year, this has not been disastrous for them, but with 10-year US Treasuries below 2% and funding costs set to rise and with 10-year Bunds and 10-year JGBs yielding less than 0.5%, these investors will have little choice other than to reconsider equity allocations. Second, we see potential for a meaningful reallocation towards equities from insurance companies. Insurers have been huge sellers of equities over the past 10-15 years on the back of changes in capital regulation and an increased focus on asset-liability management. We do not expect a complete reversal of this move but the risk-reward case for equities has improved enormously. Last, but certainly not least, we expect to see further demand from the corporate sector as companies look to benefit from extremely low rates to refinance and buy back their equity. With low yields everywhere shareholders are increasingly demanding that companies return cash to them and this theme seems likely to be enduring.

The cult of the bond is not dead yet

The end of the twenty year bull market in bonds, when it comes, will likely have very little to do with what investors are doing in equities. The much anticipated "great rotation" out of bonds will probably not be as structural as many commentators believe. Certainly regulatory changes are generating some demand for bonds in sectors such as banking and the pension industry, however as outlined above, this is being offset by falling demand in sectors like insurance. Neither do we expect a strong secular drop in demand for bonds based solely on yield levels. Bond markets are, by nature, much more cyclical than equities over the long term. The current cycle is, however, extremely unusual. There is very little inflation risk to worry bond investors, funding rates are low, and in many regions likely to remain low for a long time.

When the bond market does turn, it will be a result of rising risk premia in one of the traditional drivers of bonds: interest rate risk, inflation risk or default risk. However with globalization trends slowing, and oil prices at half what they were a year ago, the inflation outlook remains very benign indeed, which means that even when bond yield so start to rise, they probably do not need to rise very far or very fast. Furthermore, the divergent regional economic outlook allows bond investors to rotate their duration risk across different geographies rather than to rotate across asset classes.

Will Advanced Economy Low-flation Persist?

Michael Saunders

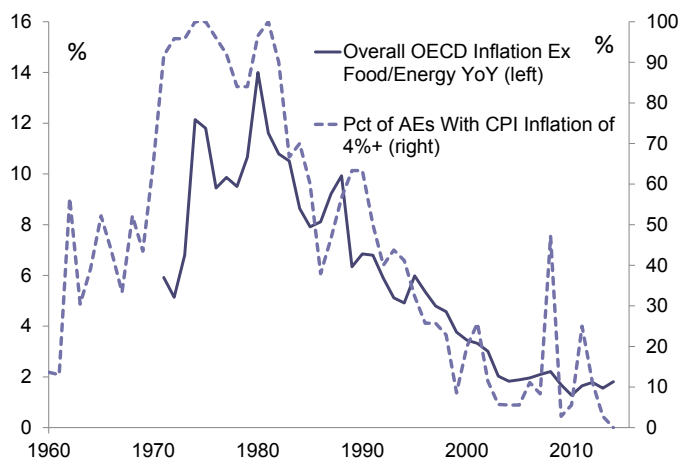
Head of West European Economic Research

Inflation has moved from coming in higher than expected to coming in lower than expected starting in 2012 in advanced economies

Across the OECD as a whole, CPI inflation (excluding the relative volatile food and energy items) has now been at or below 2% YoY each month since the start of 2009 – the longest period of sustained low inflation since data began 43 years ago. And low inflation is becoming more widespread. For the first time in at least 55 years, not a single advanced economy (AE) had CPI inflation of 4%-plus in 2014. To be sure, the number of advanced economies with inflation over 4% has been quite low over the last 10 years, but until 2014 it was never zero. Indeed, as recently as 2011, a quarter of advanced economies had inflation of 4% YoY or higher.

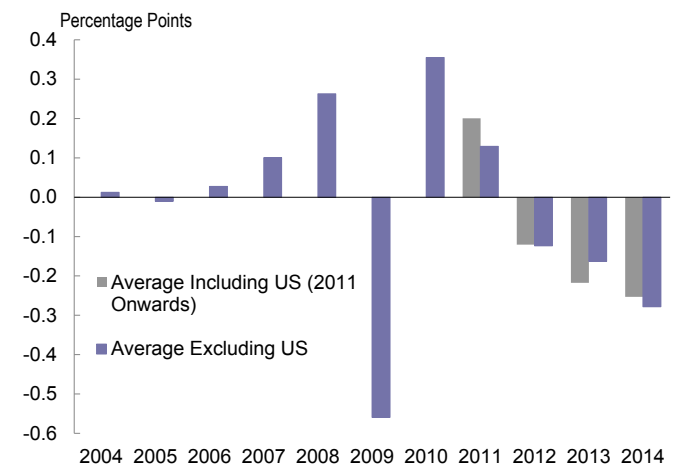
Moreover, recent advanced economies inflation outturns have generally been lower than expected. For example, in 2010-11, inflation outturns across advanced economies generally overshoot central bank forecasts from the end of the prior year, with an average overshoot of 0.5% in 2010 and 0.2% in 2011. By contrast, inflation generally undershot in 2012, 2013 and 2014 with notable undershoots in 2014 (at least 0.5%) for the euro area, UK and Sweden. Similarly, overall advanced economy inflation overshoot the IMF's forecast in 2010-2012 but undershot by 0.2-0.3% in 2013 and 2014. In turn, consensus forecasts for advanced economy inflation have been trending down since late 2012, the longest run of consensus downgrades since the late 1990s.

Figure 12. Advanced economies – average inflation and breadth of low inflation, 1960-2014



Source: Citi Research

Figure 13. Advanced economies – inflation outturns compared to central bank forecasts at end of prior year, 2004-2014



Note: We show the average for inflation outturns compared to central bank forecasts made at the end of the prior year for the US, EMU, Japan, UK, Canada, Australia, Sweden and Switzerland. Figures for Australia only from 2008 onwards.

Source: Datastream, Central Banks, Citi Research

Persistent weakness in AE inflation is caused by a mix of cyclical and structural factors

So what is going on? And will it continue? There have been some country-specific or temporary factors at work. For example, the embargo on various food exports to Russia may have contributed to downward pressure on goods prices in Western Europe, while UK and euro area inflation additionally had been depressed by the end of regulatory and tax-driven price hikes. But, in our view, the persistent weakness of advanced economy inflation mainly reflects a mix of cyclical and structural factors, both national and global.

Generally, growth prospects are overstated by central banks while disinflationary effects have been understated from large output goals plus high unemployment

Domestically, we suspect that the consensus (and central banks) have probably overstated growth prospects and understated the disinflationary effects from large output goals plus high unemployment. Across the advanced economies as a whole, the level of real GDP per head of the population in 2014 is only about 2% above the 2007 level, the weakest multi-year stretch of the last 30 years. In turn, the IMF judges that there is still a relatively large output gap for the AEs as a whole – the sixth consecutive year with a sizeable output gap. The overall OECD jobless rate has fallen by 0.6 percentage points (from 7.9% to 7.3%) over the last year but has not been above 7% for six consecutive years – the longest stretch for at least 3 years. With ample labor market slack, overall OECD pay growth has slowed from an average of 3.0% YoY in 1996-07 to an average of just 2.0% YoY since the start of 2010, with unit labor cost growth down from 1.4% YoY in 1996-07 to just 0.7% YoY since the start of 2010.

There also appears to be more labor market slack than implied by jobless rates reflecting part-time workers looking for full-time work

Moreover, there are signs in some countries that there may be even more labor market slack than implied by jobless rates alone. In the US, the jobless rate at 5.8% is fairly close to the pre-crisis average (1998-07 average was 4.9%, a period for which the IMF judged the output gap on average was close to zero), but wider measures of unemployment and under-employment remain well above pre-crisis norms. For example, the U6 measure³ is at 11.4% as of October 2014 versus the 8.5% average for 1998-07, reflecting a high number of people working part time but available and looking for full time work, as well as people who have recently looked for work but not in the latest month. We have calculated a similar U6-type jobless measure for the euro area and find the broader measure was at 23.5% in the second quarter among people aged 15-64 years, up from 17.4% in the second quarter of 2007 and more than twice the standard jobless rate. As with the US, the gap between this wider jobless measure and the standard jobless rate has widened markedly over the last 10 years – reflecting in particular a sharp rise in the number of involuntary part time workers who would like to work full time.

Migrant workers have increased sharply in the euro area and the UK

In addition, inflows of foreign workers via migration and internal company transfers add an extra aspect to labor supply across a wide range of areas. Since 2005, the number of foreign nationals in work has risen by 30% in the euro area and by 84% in the UK; whereas the number of domestic citizens in work has fallen by 0.6% in the euro area and has risen by just 0.4% in the UK. And in the UK, a series of tax and benefit reforms also have expanded internal labor supply – with the participation rate close to record highs – and added to downward pressure on real wages.

Pay growth in OECD countries as a whole has declined for a given jobless rate

There is tentative evidence that, across the OECD countries as a whole, the relation between unemployment and pay growth appears to have shifted downward since 2008 (i.e. pay growth is lower for a given jobless rate). We stress that this evidence is still only tentative at this stage. This is partly because this relationship is quite imprecise. But, in addition, the case for a structural break in this relation will only become more certain if and when jobless rates return to the pre-crisis norms. Moreover, this apparent shift in part reflects the limitations of the standard jobless rate as a guide to labor market slack at a time of structural change: the evidence for a shift in the link between unemployment and nominal wage growth probably would be much weaker if we use a wider U6-type jobless measure. But, at the very least, there is no evidence that hysteresis-type effects are preventing high unemployment from bearing down on wage growth.

³ U6 counts the unemployed, plus discouraged workers, people who have looked for work recently but not within the last few weeks and people working part time but who would like to work full time.

Strong global growth may have masked disinflationary conditions in AE

In addition, we suspect that central banks and investors probably have understated the spillovers to inflation in individual advanced economy countries from swings in global growth and capacity pressures, transmitted in particular via swings in commodity prices and prices of traded goods and services. For example, in 2010-11, advanced economies in general had disinflationary conditions of large output gaps, high unemployment and sluggish wage growth. However, global growth (using IMF data at constant prices) was above average, fuelled in particular by emerging markets, with the result that advanced economy inflation generally overshot consensus and central bank expectations. Conversely, in 2013-14, global growth slowed below trend, and the resultant weakness in commodity prices has reinforced the weakness in advanced economy inflation.

Whereas the correlation between the change in overall advanced economy inflation and the change in the overall advanced economy output gap has been fairly stable in recent years, the correlation between the change in advanced economy inflation and emerging market GDP growth (a proxy for the change in the emerging market output gap) has risen sharply to 80-90% over the last five years. Moreover, revisions to consensus inflation forecasts have tended to follow (with a lag) swings in global commodity prices (in SDR terms⁴): the fact that the adjustment to consensus inflation forecasts does not appear to be immediate suggests that the consensus sometimes may be slow to recognize the importance of external factors in driving each country's inflation.

AE inflation in general should remain subdued through 2018

We expect that advanced economy inflation in general will remain subdued, at about 1.25% YoY in 2015-18, close to the 2014 pace and reflecting much of the same factors as recently: there is still some spare capacity in the labor market while recent declines in food and energy prices will continue to feed through. Within that, we see even lower inflation in the euro area, slightly higher in the US, but do not expect an advanced economy to have inflation of more than 3% YoY in any year during 2015-19. If emerging market growth continues to disappoint, then renewed weakness in commodity prices may well add further downside to advanced economy inflation compared to our forecast and current levels.

What's Wrong with Low-flation?

There is widespread consensus among policymakers that both very high inflation and deflation are costly and should be avoided⁵. High inflation disrupts economic activity because of the adverse interplay with tax systems, difficulties in disentangling relative price changes from the general inflationary trend, and the inefficiencies as businesses, households and investors focus heavily on trying to avoid being on the wrong side of unexpected and large price hikes. Conversely, deflation magnifies debt burdens, especially given difficulties in setting interest rates significantly below zero.

But a long period of very low inflation (i.e. low-flation) can be costly as well. To be sure, it may be marginally easier for businesses and consumers to perceive relative price changes if inflation is 1% rather than 2%. But, with many central banks unwilling to push nominal policy rates significantly below zero and given nominal wage rigidity, very low inflation (and repeatedly lower-than-expected inflation) can make it harder to achieve declines in real interest rates and real wages, even if such declines are warranted by economic developments. In addition, if (as we believe is the case) persistent low advanced economy inflation is a symptom of persistent

⁴ The SDR is an international reserve asset which is valued based on a basket for four key international currencies.

⁵ See, for example, "Price stability Why is it important for you?", ECB, 2011.

high unemployment and sizeable output gaps across advanced economies, then very low inflation comes with a large economic and social cost of wasted resources. And, within the euro area, low aggregate inflation in coming years would probably imply that several under-performing economies will be in or near actual deflation, hence making it even harder to stabilize public debt burdens. Until recently, the BoJ for a long period tolerated conditions of economic stagnation and roughly zero (or negative) inflation. But, this attitude probably in part reflected the lack of mass unemployment. We doubt that other advanced economy central banks (or governments) would be willing to tolerate Japan-style persistent low inflation or deflation if (as is likely) this comes with persistent high unemployment.

Indeed, in our view, there is a good case in principle for central banks to aim for inflation of slightly higher than 2%, perhaps 3% or 4%, as suggested by a recent IMF paper⁶, in order to limit the frequency with which monetary policy or scope for real wage declines are constrained by the zero bound. Such an approach could be especially useful for the euro area, given the reluctance of some policymakers to countenance QE or other unconventional policies when inflation is below target, coupled with the risk that low aggregate euro area inflation with limited fiscal burden sharing is likely to produce deflation and fiscal strains on individual countries.

However, we do not expect any central banks will actually change their inflation target in coming years. Nevertheless, we do expect that risks of continued low-inflation will ensure that advanced economy central banks continue to run a loose (and in some cases loosening) monetary stance in 2015. The BoJ's QE program is likely to continue throughout the coming year, while the ECB also is likely to start a major QE program in the next few months. The central banks of Sweden and Denmark are also likely to loosen further, while the Swiss National Bank will probably maintain the zero rates and currency cap introduced in late-2011. We do expect that the Fed and Bank of England will start to hike rates in late-2015. But, with low inflation, we expect that both central banks will have an asymmetric policy bias, leaning more in the direction of low for longer rather than an early withdrawal of stimulus.

⁶ See "The Case for a Long-Run Inflation Target of Four Percent", Laurence Ball, June 2014, IMF.

Beware of Falling Oil

Edward L Morse

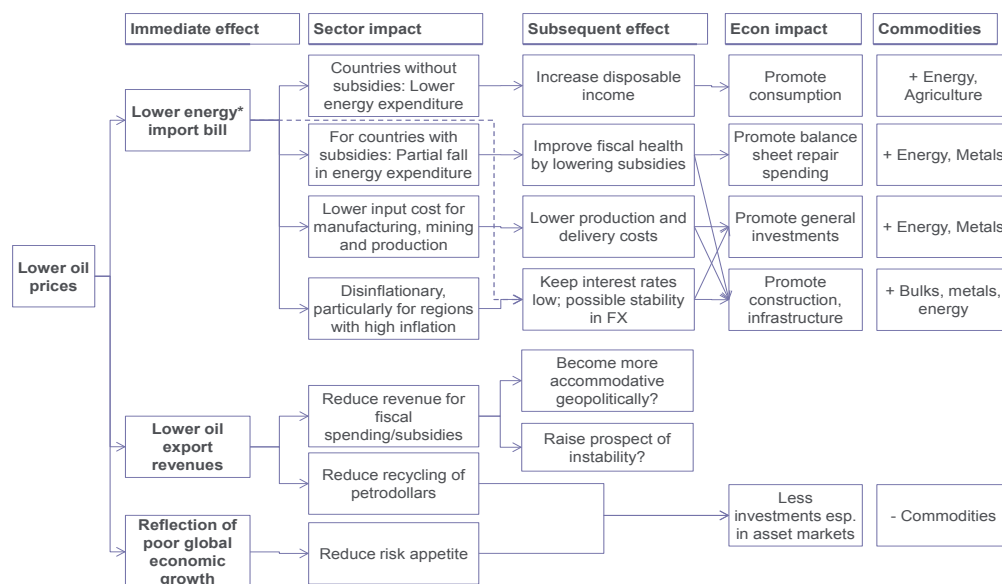
Head of Global Commodity Research

The sharp fall in oil prices touches almost every area of the global economy. The magnitude of the drop is significant – the more than \$60 Brent crude oil price decline from peak to trough generates about \$2 trillion of adjustments to energy costs on an annualized basis. Advanced economies, other major energy importers, energy-intensive industries and regular consumers are winners, while energy exporters face greater challenges. But the impact may not be so clear-cut elsewhere. Some energy importers may not benefit as much to the degree that lower oil prices may reflect global economic weakness and a reduction in risk appetite, affecting investments. The disinflationary impact could be good for keeping interest rates low, without helping to improve global economic conditions much. For commodities, lower energy costs should drive down production costs and support demand against headwinds of weaker global growth. But the need to reduce fiscal spending for some exporters could breed instability down the road.

At \$10/bbl drop in crude oil prices equates to a 0.08% increase to GDP

In a nutshell, results from our macroeconomic analysis show that a \$10 per barrel drop in crude oil prices would lead to an average 0.08% increase to GDP growth through the fourth quarter of 2018. The GDP impact could be 0.18% at its peak and 0.1% on average in 2015. But there is potential for the impact to be even higher due to structural changes in global oil demand. Last December, we wrote that a 50% drop in crude prices could drive feedback effects from oil-price-to-GDP-to-oil-demand, which could raise GDP by 0.25% to 0.3% while boosting oil demand by ~0.3 million barrels per day (m b/d). With potential stimulus measures in China, the likely postponement of Japan's consumption tax after October 2015 and other supportive policies globally, oil demand could rise by an additional 50 to 100 thousand barrels per day (k b/d) for a total demand boost of ~0.35 to 0.40-m b/d. The impact seems to be more pronounced in importing countries, particularly those without subsidies (mostly in Asia). Consumers and businesses that see an immediate pass-through of lower oil prices would spend; those with energy subsidies may see less impact; the reduction in "recycling" petrodollars may take more time to filter through.

Figure 14. Flow chart of lower oil prices' impact on different sectors in the economy



Note: *Energy import bill was lower largely because petroleum prices such as gasoline should fall, LNG prices are still generally tied to oil prices and transport costs of coal and other energy sources should fall.

Source: Citi Research

Impact of Lower Oil Prices on Advanced Economies

Lower energy prices in AE should be quickly passed onto users

Lower oil prices generally affect the economy in two ways: lower energy costs for consumers and businesses and disinflationary pressure. Lower energy costs could boost disposable income of consumers and lower fuel/ feedstock costs of business, even if there could be a delay of two to seven quarters. The impact of a \$10/bbl drop in oil prices could reach a maximum of 0.34% rise in GDP in the second quarter of 2016 for the US and a maximum of 0.17% in GDP in the second quarter of 2015 for Europe. But the disinflationary pressure may not be good for Europe and Japan, as both try to fend off deflation. Both the ECB and the BoJ are easing monetary policy, leading to currency depreciation. Further easing could be increasingly ineffective, as carry trades could strengthen the US dollar and other key EM currencies. The adverse impact on the economy could counter demand growth for commodities. Despite headlines, oil demand in advanced economies may be more responsive to low prices. These are economies with almost no energy subsidies (but in many cases high consumer taxes). Either way, lower energy prices should quickly be passed through to users. OECD oil demand could rise 0.018% for each 1% drop in WTI.

Impact of Lower Oil Prices on Emerging Markets

The impact on EM varies as US\$ strength could affect export growth

A 25% fall in oil prices is worth about 1% GDP for Asia, as net oil imports are about 4% of Asian aggregate GDP. But the impact varies. In places with generally high inflation, particularly EM countries, lower oil prices could keep interest rates low at a time when low rates would be preferable for promoting growth. With US dollar strength, EM exporters should benefit, but lackluster global economic conditions affect investment appetite and export growth. Generally such currency depreciation and high inflation call for raising interest rates, but low oil prices help to mitigate this. This should be good for growth and commodity demand. The impact on oil demand growth in EM may not be as strong as some expect. The fiscal health of governments' could in fact improve, as the amount spent on subsidies fall. They could repair their balance sheets and spend more on other projects. Fuel subsidies in some countries shield consumers from high prices. But as oil prices fall, retail prices may not necessarily fall by the same amount.

Impact of Lower Oil Prices on Oil Prices

Oil prices could reduce production costs further in a downward spiral

Lower oil prices could reduce production costs further in a downward spiral. Oversupply has eased the demand growth for oil field services and low oil prices are pressuring services companies to reduce costs. In North America, despite continued strong activities for shale drilling, shortages of equipment, labor and other inputs over the past few years are being eased as new machines enter the market while the labor pool expands. In addition, North American producers facing lower prices and lower revenue are opting to optimize their operations further. Some are pursuing further "downspacing" and other efficiency improvements. Some super majors and producers have announced cutbacks on capital expenditures (capex). Such reductions may lead to longer-term supply tightness, while short-term supply could also be curtailed in Russia, Venezuela, the North Sea, and for so-called "stripper wells" in the US which produce under 10 b/d, as well as faster decline rates for oil fields globally even as outperformance of shale output could partially mitigate this. But ongoing shale productivity gains may more than offset a reduction in shale-directed capex, which should boost US oil production further, keeping a lid on prices even as they look to recover over end-2015 to early 2016 as the oil market rebalances.

Lower energy prices means lower operating costs for miners

Impact of Lower Oil Prices on the Energy Intensities of Metals

The recent fall in commodity prices and associated strong dollar are likely to have a dramatic impact on cost curves. Energy prices generally make up between 30-40% of operating costs; local currency costs are in the range of 30-50% which suggests that cost curves are likely to move significantly lower. We have done a sensitivity analysis to determine the sensitivities of a 10% rise in the US dollar and a 20% fall in the oil price. This would result in the thermal coal cost curve shifting downwards by \$8 per tonne. On copper, it would translate to around a \$100/ tonne cut in operating costs while in iron ore, we calculate around a \$4/ tonne savings across the cost curve. Low oil prices also reduce the delivered cost of bulk commodities, as the costs of transport fuels also fall.

Lower energy prices could marginally help grain prices via a cut in input costs for upstream energy costs

Impact of Lower Oil Prices on Agriculture

Throughout the 1980s and 1990s, both staple grain and energy prices traded in a remarkably stable and narrow range. This reversed during the commodity super cycle which began in the early 2000s and prompted a nearly decade-long rally across all key commodity sectors and was only temporarily interrupted by the 2008 financial crisis. Petroleum markets marched steadily higher in 2002 but interestingly grains did not begin to rise in earnest until 2006-07, coinciding with the growth of commodity index investments that increased the co-movement of agriculture and energy commodity prices. Since the financial crisis, grain prices have traded at lofty levels until 2014. There are both structural and policy-related reasons behind this market divergence, including physical production properties and legislation requiring the development of corn and soy-based biofuel post-2005. And while weather-sensitive agricultures are unique markets, structurally lower energy prices could marginally help ease grain prices via a cut in input costs for upstream (supply) energy costs and related components (fertilizers) couple with a possible tapering of biofuel investment downstream (demand).

Edward L Morse
Head of Global Commodity Research

Tina M Fordham
Chief Global Political Analyst

Unintended Consequence and Geopolitical Fallout

Among the most worrisome outcomes stemming from lower oil prices are the potential for myriad unintended consequences, particularly an acceleration of geopolitical risks, occurring against a weaker security backdrop.

OPEC's expected 2014 revenues of \$445 billion are down more than 50% from their 2012 peak, increasing domestic pressure in OPEC and other producers, especially those facing sanctions and internal dissent such as Russia and Iran, where geopolitical tensions could strain further if prices are seen as being manipulated against them, perhaps most acutely by squeezing revenues to fund generous social benefits. In some cases, the state of public finances allows for some breathing room though.

Heightened global tensions may also be played out through the politics of lower oil prices. There are over and above pressures on producer countries, especially those facing some combination of high break-evens, internal dissent and/ or diminished political legitimacy and Western sanctions, such as Venezuela, Iran and Russia. Russia in particular, has articulated its concerns that prices are being manipulated, a factor which could exacerbate already high tensions between it and the West, potentially raising the risk of confrontation. Beyond Russia and Iran, other producer states also face intensified pressures. Fragmentation risk in Nigeria is heightened ahead of this year's elections and following an uptick in regional tensions and Boko Haram activity in 2014. Venezuela is at risk of not only political instability, with lower oil prices further pressuring President Maduro, but also increasing default risk beyond supplier credit to official debt.

Continued risks to Libyan supplies are a reminder that the geopolitical supply risk could spread elsewhere. In Libya it is due to the ongoing conflict between the country's post-Qaddafi government and competing Islamist militias. The battle for export terminals is likely to continue to feature prominently in Libya's bumpy transition, just as ISIS's own takeover of some 300-k b/d of combined Syrian and Libyan supplies could lead to disruptions of international flows in 2015.

The geopolitical implications of lower oil could also force more positive outcome; potentially increasing the impetus for Tehran to cut a deal with the P5+1 on its nuclear program. Arguably, the impending reality of reduced revenue from Venezuela, a longstanding donor to Cuba, helped encourage the diplomatic breakthrough that brought the end of the 51-year US embargo. It could also mean petro-states with wider ambitions will be obliged to curtail funding for de-stabilizing regional activities, such as militias, foreign government, sponsorship and terrorist attacks.

In a similar vein, low prices have been the primary stimulus for agreement between Baghdad and Erbil, aligning the more autonomous Kurdistan Regional Government with Iraq's central government on revenue sharing and marketing arrangements that should see Iraq's overall production grow by over 300-k b/d within the first half of the year if not the first quarter, with more to come. It remains to be seen how stable and durable this arrangement will become.

But we fear such benign outcomes will likely be limited and underscore that the combination of the rapid fall in oil prices and increased geopolitical tensions will likely prompt an extended period of fluid and more highly-charged relations between the West and more empowered regional actors, at the same time as the international system is fragmenting and ruling classes are under pressure from restive populations. Contrary to widespread expectations, heightened economic pressures from lower oil prices are unlikely in the short- to medium-term to alter the strategic calculus for those regimes most vulnerable to them. To the contrary, we think the risks of greater emphasis on geopolitical considerations and suppression of domestic dissent is more likely than olive branches for regimes with the most reduced room to maneuver.

Equity View of Lower Oil Prices

Robert Buckland
Chief Global Equity Strategist

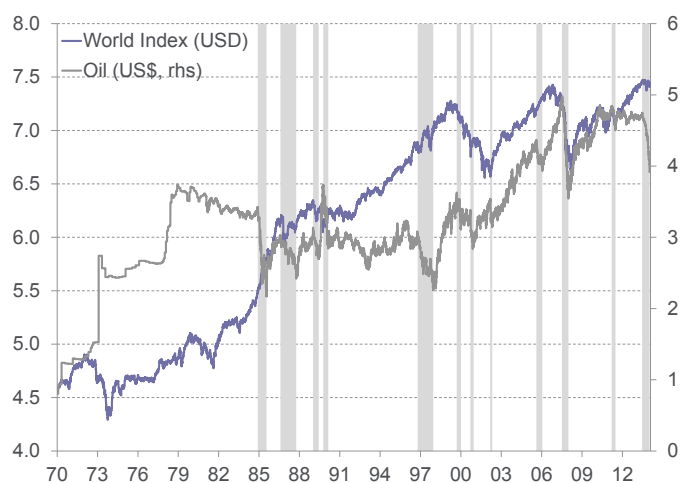
Oil prices and US Treasury yields have a consistent relationship while global equities are mixed

Global equities continue to grind higher despite falling oil prices. Since June, oil prices have halved 50% while global equities are flattish in the US\$ terms and up in local terms. This sounds unusual as recent experience (2008-09) suggests that investors think sharp falls are associated with lower equities prices. Both have been part of the risk-off trade.

To analyze this further, we looked at the previous episodes when oil prices fell by more than 30%. There seems to be a consistent relationship with the moves in the US Treasury yield. Yields fell by an average of 61bps. That makes sense; a drop in the oil price is disinflationary which should be helpful for fixed income assets.

But the performance of global equities is mixed. They went up during six out of the ten oil price drops (3% on average). The two episodes when global stocks fell most (2001 and 2008) were during global recessions. Also, we found that oil prices are not great forecasters of recessions. In fact, big economic slowdowns are more likely to be preceded by sharp spikes, not falls, in oil. Given that our economists are expecting global growth to accelerate in 2015, it seems that the recent fall in oil prices is more supply than demand related. A demand related drop in the oil price would be more troublesome for global equities.

Figure 15. MSCI World vs. Oil (log scale)



Note: Shaded areas are periods when oil fell more than 30%

Source: Citi Research, Datastream

Figure 16. Episodes when oil fell > 30%

	Start	Duration (months)	Oil	Equity (US\$)	UST Yield (bps)
Period 1	11/25/1985	8	-72%	33%	-248
Period 2	8/3/1987	14	-46%	-5%	6
Period 3	1/5/1990	5	-35%	-7%	47
Period 4	10/9/1990	5	-59%	14%	-92
Period 5	10/13/1997	14	-54%	13%	-162
Period 6	9/7/2000	4	-41%	-11%	-64
Period 7	9/14/2001	3	-41%	5%	56
Period 8	3/4/2003	2	-32%	9%	31
Period 9	8/9/2006	5	-35%	12%	-17
Period 10	7/3/2008	6	-76%	-35%	-183
Period 11	6/19/2014	5	-36%	0%	-40
Average		6	-48%	3%	-61

Source: Citi Research, Datastream

Falling oil prices also play out in the currency market

In a falling oil price scenario, energy and material stocks underperform while defensive stocks outperform

Next we looked at whether there has been any relationship between oil prices and relative equity performance of markets around the world. As one would expect, Russia, Norway, Canada and Brazil are amongst the markets with the highest correlations. They underperform when oil prices fall and outperform when oil prices rise. We would emphasize that we look at returns in US dollar terms, so a big portion of this plays out through the currency markets. On the flipside, the US and Japan seem to outperform the global benchmark when oil prices fall. We think this is partly because of the defensive nature of US and Japanese equities. Japanese stocks are defensive in US dollar terms, as the yen usually strengthens in a risk-off environment. Japan also benefits from lower oil prices as it is a big energy importer, especially after the earthquake and the shutdown of nuclear power plants.

When we look at global industries, the relationship with oil prices seems clearer. Unsurprisingly, Energy and Material stocks tend to underperform when oil prices fall. Defensive sectors including Utilities, Food & Staples, Pharmaceuticals and Telecoms seem to outperform with falling oil prices. We suspect this is because falling oil prices in the past 10 years mostly moved as a part of the risk-off trade and we might not expect defensive to do well this time around. Cyclical sectors which tend to outperform when oil prices fall are Transportation, Retailing and Consumer Services.

Why Capital Markets Matter for the Shale Sector's Adjustment to Lower Oil Prices

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Commodity Strategist

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Commodity Strategist

Deep liquid US capital markets were key to “Made in America” story

Investment for shale development was funded in debt markets

Cash flows for the industry have been negative, and debt markets plugged the capex and liquidity gap.

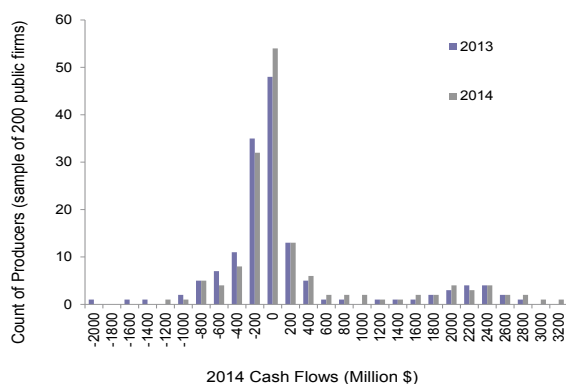
Heavily indebted shale producers have relied on the high-yield market to fund growth, and in the aggregate, the industry has become cash flow negative. With the sharp oil price drop and the corresponding hit to future revenues, shale producers need to reduce capital expenditures to protect balance sheets and liquidity in the short term, even if underlying assets have favorable returns.

Deep liquid capital markets were a key part of shale’s “Made in America” story and once again they are playing a key role in its future. Shale oil and gas is found under the ground all over the world, from China to Russia and Argentina. But several key factors in particular made shale a “Made in America” story: among a long list of ingredients, the US has a favorable mineral rights regime, tinkering entrepreneurs and wildcatters and deep capital markets willing to back them.

The early phases of shale development required substantial investment to build out infrastructure, as well as acquire and prove-up acreage. Producers, particularly smaller players which have continued to innovate in the key techniques of fracking, relied on capital markets to finance their growth. In particular, debt markets – high yield markets for producers below investment grade – were a crucial source of growth capital at a time when yields were at historical lows following the financial crisis.

Like most growth companies in the start-up phase, spending exceeded revenues and free cash flows were negative, even through 2013. The result has been a financing gap funded by strong growth in high yield issuance by oil and gas producers. This led to the energy sector becoming the largest single segment of the high yield market, at around 18% of total.

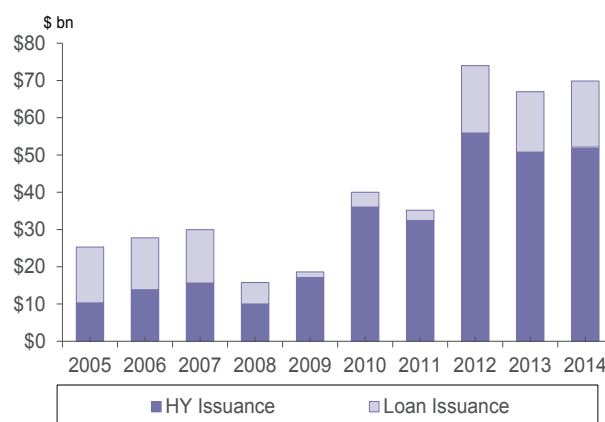
Figure 17. The bulk of US producers are cash-flow negative or near cash flow neutral, but had been improving



Source: Woodmac, Citi Research. Note: users sample of 140 firms

As energy has depended more on high yield markets, high yield has become more dominated by energy

Figure 18. Issuance in the high yield energy sector (2005-14)



Source: Citi Research

Citi’s High Yield (HY) strategy team notes that high yield market’s outsized exposure to oil prices is clear. What isn’t clear is how much of a threat it is to the solvency of high yield energy companies. While energy is 18% of Citi’s high yield market index, the subsector breakdown in high yield reveals substantial diversity. Pipelines make up 19% of high yield energy, while Exploration & Production companies and Services constitute about 70%.

Lower oil prices push out when producers go cash flow positive

Given the need to service high debt levels and raise capital for growth, the question of when producers would go cash flow-positive became a question of intense focus that has been greatly exacerbated by the recent oil price drop. The markets are now confronting fears that the funding gap means that if debt markets pulled back, drilling would collapse. Prior to the price decline of recent months, Citi expected the industry to go free cash flow positive in 2015. Recent price declines push that date out further into the future.

Debt servicing as well as the hunt for new capital are issues with lower oil prices

High yield markets will therefore influence shale production in two very important ways. First, lower oil prices mean greater difficulty servicing existing debt. Thus capital expenditures may have to be cut to stay in lenders' good graces and maintain important financial metrics. Second, with negative cash flows likely to persist longer, a significant portion of shale production may be dependent on raising new debt capital to fund growth in future years.

Plugging the Cash Flow Gap Relies on Combination of Capex Cuts and Access to Credit

The industry is already starting to announce capital expenditure (capex) cuts and Citi expects this will be one of the primary strategies producers pursue in a lower price environment to protect balance sheets and liquidity. While capex cuts reduce cash outflows today, they also reduce investment in future production, which reduces cash inflows tomorrow.

Not all capex cuts have the same impact on production

Shale producers have various levers they can pull to improve cash flow over the short- to medium-term without significantly hampering production. Citi expects that exploration and acquisition capex are the first to be cut in a short-term defensive move with an oil price crunch, which would have limited impact on production in the near term. Historically, cutting these items would have reduced about a third of total capex. Thus, firms may be able to cut total capex by some level up to ~30% before meaningfully cutting into development programs and significantly affecting short-term production growth, although this cannot all be cut. Beyond this, cuts to development capex would mean fewer rigs are deployed, meaning fewer wells drilled and completed and ultimately, less new-well production; with already-drilled legacy wells seeing relatively rapid production declines, a certain amount of new-well production is needed to maintain a company's production volumes.

In order to assess how firms and firm cash flows might react to the new price environment, Citi reworked the historical financials for the US oil and gas sector to reflect firms taking an extremely "defensive position" in 2013, greatly reducing exploration expense to focus on already proved inventories. Looking backward, if firms had done this, free cash flow would go positive without greatly affecting production in the near term. Over the long term, of course, the industry has to both further exploit existing reserves and add new reserves.

Pressure on cash flows is meaningful with the drop in recent drop in oil price

Even with capex cuts to non-producing activity, with prices falling more than 50% in six months, the pressure on cash flows is already meaningful. This makes access to credit a key issue. The marriage of shale and easy credit looks stressed, just as cash flows are about to get worse. High yield markets are showing signs of shunning shale, at least for now.

A key question is what level of production the industry can sustainably finance as it faces a brave new world for both oil prices and high yield markets. Stronger and well-hedged producers will feel less acute impacts in the near term, but weaker producers who have already heavily utilized debt markets and credit facilities may get squeezed, impacting drilling programs and production.

Our analysis suggests that a capex cut of up to 60% would still see US oil production growth in 2015 due to inertia, but could keep production volumes constant (“maintenance capex”) in 2016 (but with growth from 2017 onwards), while a smaller capex cut of 40-50% would keep cash flows level, after the recent oil price fall. (This was under various productivity gains scenarios of a modest 10-20%.) But market pressure, investor pressure, and management pressure could mean productivity gains could surge even more, which could ultimately play a large role in determining how much capex can be cut while maintaining or growing US oil production in 2016 and 2017 too. Superficially, assuming strong productivity gains indicates that US shale producers might be able to jump out of the frying pan and improve cash flows through defensive strategies.

But leveraging large productivity gains to improve cash flows and continue growing production would mean US shale producers might be jumping out of the frying pan and into the fire. US shale production growth cannot sustainably out-produce the global appetite for shale oil without putting further pressure on global oil prices. Ongoing robust US shale production growth – based on massive productivity gains – keeps downward pressure on prices in the short-term, and the pace of global demand growth as well as supply cuts elsewhere in the world will be essential to determining how much headroom shale producers have in the coming years.

Cleaning up Oil Misconceptions in the US Economy

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US Economist

Malcom Splittler

US Economic Analyst

Dana M Peterson

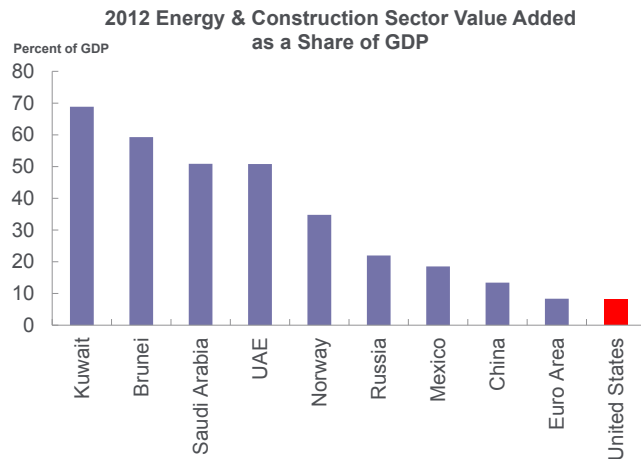
North American Economist

A growing number of naysayers have been claiming that the direct damage to the US petroleum industry from lower prices may offset the economic benefits. These claims overstate the importance of the petroleum industry to the US economy. Many analyses have misrepresented spurious associations and correlations as “facts” and measures of the causal impact of the oil sector on the rest of the economy. There is no doubt that the energy industry, which has been a solid growth sector throughout the current expansion, will take a hit in the coming year. However, the US oil industry, unlike that in most other large oil producing countries, is far too small a share of the economy to undermine the powerful boost to demand from the massive real income gains.

Real consumer spending is expected to advance to about 4% from a run rate of 2.75% based on lower energy prices

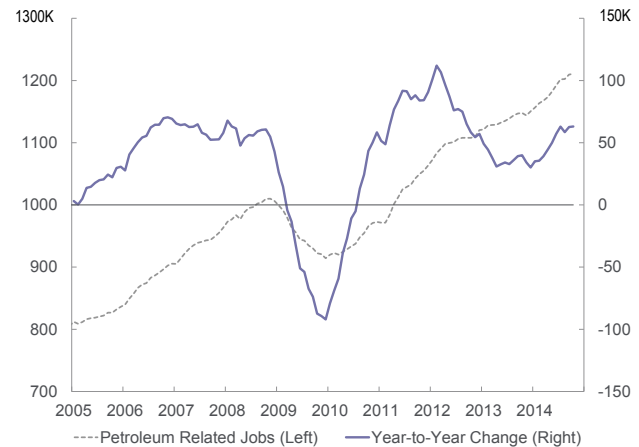
The damage to the petroleum industry would have to be huge to offset the obvious positive boost from lower energy prices. The implied decline in oil prices over the past half year should add about \$130 billion to the US consumers’ net spendable income. On average, this essentially acts like a \$1,400 per household tax cut, which represents nearly 3% of the medium family income. Based on a conservative spend of half of the windfall over the next six months, real consumer spending would advance by about 4 percent annualized in the first half of 2015, up from a run rate closer to 2.75%. The benefit to US consumers has been greater than in many countries, partially because oil is priced in dollars and the dollar has been appreciating across a broad range of currencies, implying that the price of gasoline in those weakening currencies has not fallen nearly as much.

Figure 19. US oil valued added as a share of GDP is small relative to other oil producing nations



Source: World Bank: World Development Indicators

Figure 20. Employment in the oil industry is growing quickly, but still too small to matter



Source: Bureau of Labor Statistics, Citi Research

The US is Not Russia

Despite the growth of oil & gas production in the US, these industries are still small relative to the size of the economy

The US has become a major oil and gas producer and exporter of petroleum products. Despite the dominant positions the US holds in global oil and gas markets, these industries are small relative to the size of the economy. Oil and gas production accounts for just 3% of US GDP. According to the World Bank, in 2012 the US ranked 123rd in energy and construction value added as a share of GDP. Even a massive pullback in this industry's output would not cause a hit to overall growth on a scale that could offset the likely boost to consumer spending. Furthermore, the US federal government does not rely on state owned oil revenues to fund its expenditures, unlike most other major energy producers. The Citi Commodities team estimates the government revenues from oil are only 1% of federal, state and local government revenues, significantly lower than other advanced economy oil producers. Alaska is the only US state that is highly vulnerable to a decline in oil prices with oil and gas revenues accounting for 92% of the unrestricted state budget in 2013.

Oil Employment and Capex are Too Small to Matter

The oil & gas sector employs about 1.2 million people, or 0.8% of the US labor force

Falling oil prices may not curtail domestic production significantly. No doubt some small highly leveraged wildcat drilling and extraction companies could go out of business and therefore stop producing immediately. But, even those companies may be bought up and resume production. The share of employment directly related to the oil and gas sector is even smaller than the production share of GDP, because the industry is so capital intensive. These jobs employ approximately 1.2 million people, or 0.8% of the 155 million US labor force. And despite the rapid growth in the oil-producing sector, these industries have accounted for only about 150,000 new jobs in the past three years.

Is Globalization a Fad?

Willem Buiter

Global Chief Economist

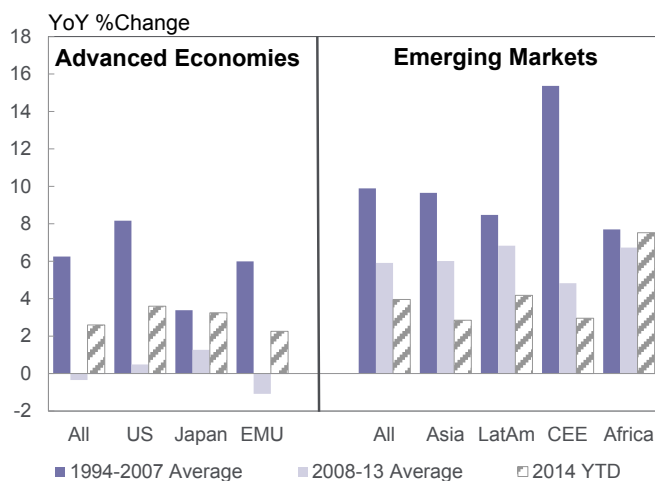
Globalization, i.e. the increased integration of trade, financial services, information and people around the world, is changing. Along significant dimensions – most notably for trade and financial flows – it is stalling. Even the World Wide Web is threatened with balkanization through the imposition of national firewalls. Along other dimensions, e.g. migration, globalization continues, even though its pace has slowed.

The evidence

World trade growth is running only slightly above global growth in GDP

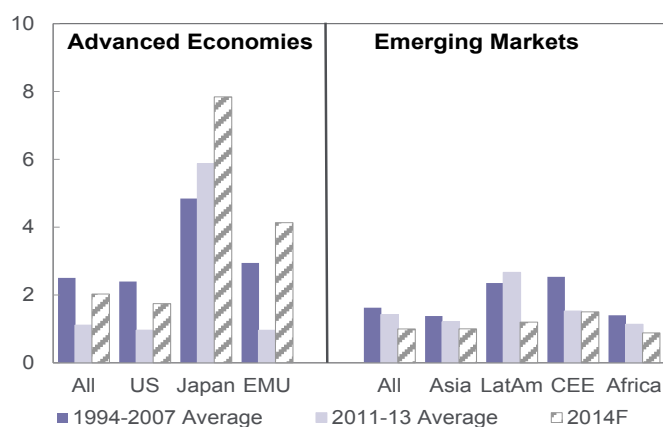
Global growth of goods imports in volume terms was 3.3% YoY on average from January through September in 2014, according to CPB data. Even though that is higher than the 2.7% YoY growth in 2013, it is less than half the average growth rate of 7.5% YoY from 1994-2007. World trade growth is running only slightly above global growth in GDP or industrial production. The slow pace of trade growth has meant that, relative to GDP, world trade (the sum of global imports and exports) has remained stuck at around 60% of GDP since 2008, after rising steadily from around 40% of GDP in 1990.

Figure 21. Global: Goods import growth in volume terms (%), 1994-14



Source: CPB, Citi Research

Figure 22. World: Ratio between import growth % GDP growth, 1994-14



Source: IMF, Citi Research

Global gross capital inflows also remain sharply below pre-crisis levels...

Financial flows have also remained sharply below pre-crisis levels. In the first half of 2014, annualized global gross capital inflows amounted to 6% of GDP, after they were 9% of GDP in 2013. The pre-crisis period has seen a large and fairly steady rise in global gross capital inflows of 2-5% of GDP per year in the first half of the 1990, reaching more than 20% of GDP in 2007. The fall in capital inflows has meant that the rise in gross international investment positions has slowed sharply.

... and global migration rates have slowed

The rate of global migration has also fallen somewhat. According to the United Nations, the total international stock of migrants (i.e. the foreign or foreign-born population) rose on average by 1.6% per year in 2010-2013, after growing by 2.3% per year in 2000-2010. However, global migration rates remain relatively high in the historical context (migrant stock grew 1.2% per year in 1990-2000) and migrant populations continue to rise faster than the global population as a whole (growth from 2010-13 has been 1.2% per year). Even though migration rates have slowed, the globalization of labor markets has continued.

Why have some dimensions of globalization stalled?

In our view, there are a number of reasons why global growth in trade, financial and migration flows have fallen in recent years. We highlight:

Multilateral trade negotiations are not getting done

Policies are less favorable to globalization: Multilateral trade negotiations are going nowhere. The World Trade Organization's (WTO) Doha Development Agenda negotiations, which have been ongoing since 2001, broke down in 2008. The attempts to revive the Doha Round since then may just about have birthed the Bali Accord, dealing with bureaucratic barriers to commerce – better than nothing but a small step indeed for mankind. Regional and bilateral trade negotiations, with their inevitably ambiguous effects on global trade liberalization, now rule the roost.

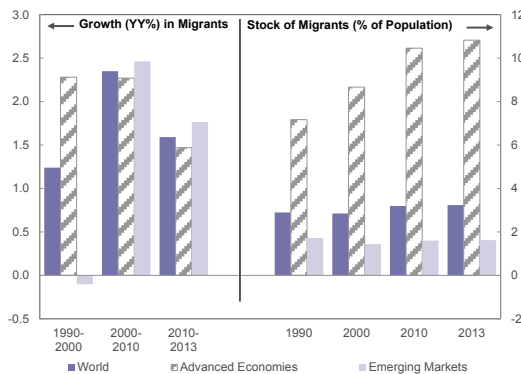
Protectionist measures are on the rise

In addition, a number of recent reports have highlighted a rise in protectionist measures since 2008. The WTO's I-TIP database suggests that the number of new 'net' non-tariff barriers imposed globally amounted to more than 2,500 in 2012 and 2013 and looks to exceed that level again in 2014, significantly above pre-crisis levels. And the European Commission's recent Report on the Monitoring of Potentially Trade-Restrictive Measures noted that more new protectionist measures were introduced between June 2013 and June 2014 than in the previous 13 months and that fewer protectionist measures were withdrawn.

Protectionism is being seen in both financial areas and in migration

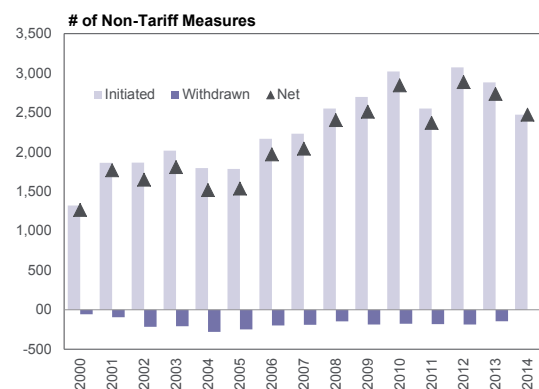
Financial protectionism and migration restrictions have also increased since 2008, according to the GTA database. But it is worth noting that many policies which impeded globalization are not principally motivated by their foreign effects. For example, many recent initiatives to boost financial stability have made cross-border banking flows more difficult or expensive.

Figure 23. World: Growth in the stock of migrants, 1990-2014



Note: Migrants are foreign and foreign-born residents
Source: UN, Citi Research

Figure 24. World: Number of newly introduced & withdrawn non-tariff barriers to trade, 2000-2014



Note: Net measures are newly introduced measures minus the measures withdrawn
Source: WTO, Citi Research

Some agreements have been reached, but less the historical levels

There are some exceptions to the rise in protectionism. The WTO's regional trade agreement (RTA) database notes seven more RTAs that went into force in 2014, after 11 RTAs in 2013. On the financial side, both China and India have somewhat reduced restrictions on capital inflows (including foreign direct investment) in recent years and the Banking Union initiatives in the Eurozone may over time reduce the still-remaining national focus of some Eurozone supervisors.

A lack of policies to support or enhance globalization is also a consequence of the falling popular and political support for globalization more broadly. Part of that is related to the post-crisis environment: economic crises and weak economic growth

often strengthen the voices of the losers and potential future losers from international trade. A rise in protectionism and less globalization-friendly policies can be (and were) therefore expected in the aftermath of the Great Financial Crisis (GFC) given the persistent weak growth and high unemployment in many part of the world. In our view, the fall in political support for globalization probably reflects disillusionment with the post-cold war consensus, at least in advanced economies, that trade and financial liberalization would bring widely shared prosperity, and that beyond that free trade and global financial integration would also help spread the idea of liberal democracy and therefore ultimately increase political stability and global security.

Emerging markets are leading the rise of protectionism

That the bulk of the increase in protectionism has occurred in emerging markets, in our view is partly due to many emerging markets only partly buying into this consensus in the first place, and partly because institutional constraints (including WTO rules) and the greater integration of advanced economies into the global economy made it more difficult for the advanced economies to reverse globalization comprehensively.

Lack of global leadership has harmed support for globalization

The fall in support for globalization is also a result of a lack of global leadership, and in turn makes it harder to achieve global leadership or even agreements. Protectionism remains mostly a 'large country' issue as smaller countries have smaller hopes for self-sufficiency and may be more exposed to the risk of foreign retaliation. And despite the repeated assurances of the G20 that they would avoid resorting to protectionism, there is no longer a consensus among the large countries that trade, financial and migration liberalization is in their common interest.

A shift from advanced economies to emerging market-driven demand growth means growth is less trade intensive

A less trade-intensive mix of global demand: During 1995-2007, advanced economies accounted for 59% of global growth according to the IMF (at market exchange rates). By contrast, during 2010-13 emerging markets accounted for 70% of global growth. The shift from AE- to EM-driven growth matters for trade growth as advanced economy growth tends to be more trade-intensive, with the ratio of import growth to GDP growth at 2.5 on average for AEs in 1995-2007 compared to 1.6 for EMs. In addition, advanced economy growth itself is less trade-intensive than it used to be, in part due to a shift from investment spending towards less trade-intensive consumption in the post-crisis period (the ratio of import growth to trade growth fell to 1.1, on average, in 2011-13, lower than the 1.4 in EMs), and, as we noted above, AEs still account for the bulk of global trade. Weaker domestic demand in AEs and the shift away from investment may in part be because of lower credit availability after the GFC and rising external vulnerabilities and at least, qualitatively, the drivers of the very recent fall in import growth in EMs may be similar.

Internationalization of supply chains and technological boost to trade look to have leveled off

Fewer trade-supportive supply-side developments: Developments in transport and information technology provided major boosts to international trade in previous decades, with the growth in container traffic particularly important. The internationalization of supply chains boosted trade both directly, but also indirectly (through a drop in the relative price of tradables). There are some signs that the internationalization of supply chains and technological boosts to trade may have levelled off recently.

Lower demand for commodities also lowers trade growth prospects

Commodity-related supply-side developments may also weigh on trade growth prospects. A fall in the natural resource intensity of production would be expected to reduce trade growth, other things equal. In addition, the shale oil and gas boom in North America, for instance, reduces the import needs of what was previously the largest net importing region for oil and gas in the world. Beyond the impact on oil and gas trade, the fall in North American energy prices may also lower

manufacturing trade due to some on-shoring of energy-intensive and other carbon-intensive manufacturing in North America as a result of lower oil and gas costs. Falling relative cost competitiveness of some EM exporter countries (such as China) may also reduce the scope for some of the AE-EM trade links that have developed over the last two or three decades, even though the overall impact of the rising prosperity in EMs that it was associated with may end up boosting the prospects for trade growth. The growth of international terrorism and the greater awareness of the threat of pandemics have acted as form of “technical regress”, raising the cost of doing cross-border business generally. However, it is worth noting that supply-side and technological arguments cannot explain the stalling of all dimensions of globalization. For instance, population aging in advanced economies as well as improvements in information technology could in principle boost the prospects for migration.

Financial regulation and restructuring: The growth of finance was a major driver of global financial flows but probably also of trade flows (both by boosting trade-supporting demand and through easy availability of trade finance) in the run-up to the GFC. The post-GFC retrenchment of the financial sector and in particular of banks has hit cross-border financial flows particularly hard, for two reasons: cross-border positions were often viewed as ‘non-core’ and therefore an easy target for restructuring and cutbacks, and cross-border flows were often among the most under-regulated areas of finance. A shortage of access to foreign (notably dollar) funding and the rise of local players (mainly in EM) further affirmed the retreat from cross-border banking in particular. The change in business models and in the financial and regulatory environment shifted the type of financial flows away from bank lending and towards FDI, particularly in the EMs. Along with the fall in cross-border capital flows, trade growth is also helped back by lower credit availability in general, and specifically for trade finance, compared to the pre-crisis years.

The Outlook for Globalization

In our view, the outlook for the globalization of trade and financial flows remains subdued, as we expected the above-mentioned factors which stand in the way of further rapid globalization to persist. But it is worth highlighting that the pre-crisis period was probably unusually benign for globalization, with rapid (and partly trade-related) technological progress, significant trade and financial liberalization and easy availability in finance. We expect global imports to rise by 3.9% in 2015 and 4.5% in 2016, after 3.1% growth in 2014, implying a moderate pick-up from current growth rates but still clearly behind pre-crisis norms and also below the forecasts of the IMF (which expects world imports to grow by 5.0% in 2015 and 5.5% in 2016).

The outlook for financial flows is probably mixed. EM capital inflows are falling and deteriorating growth prospects, rising external vulnerabilities and the prospect of (even a delayed) monetary tightening in the US suggest that a durable recovery in EM capital inflows may be some way away. But additional large monetary easing by the BoJ and the ECB is likely to provide a boost to global capital flows over the next two years. And over the medium-term, the further gradual liberalization of the capital accounts of India and China may dominate the restrictive impact on cross-border financial flows of much of the recent financial regulation. Continuing progress on banking union in the EU should boost intra-EU member state gross financial flows and may also boost financial flows between the EU and the rest of the world.

The outlook for legal migration is poor, as populist political entrepreneurs in the AEs exploit the fear of job losses to immigrant competitors, the fear of benefit tourism, nationalism, xenophobia and racial tensions. Illegal immigration will be much harder to restrict in countries with extensive land-borders and/ or easy access by sea.

Globalization outlook for both trade and financial flows to remain subdued

The outlook for legal migration is poor

Falling support for globalization is probably bad news for global growth

Other things equal, the falling support for globalization is probably bad news for global growth. This is because international trade, finance and migration have historically been important conduits to diffuse technological progress and to exploit international economies of scale and scope. In addition, global trade and financial flows also allowed fast-growing countries to pull along weaker economies. Falling support for globalization is also symptom of a more polarized and conflict-prone global policy environment. This raises the prospect of political tensions lessening the likelihood of policy cooperation and coordination across countries, which could also harm global growth prospects.

The Future Opportunities & Future Shocks of Globalization

Ian Goldin

Professor of Globalization & Development
and Director of the Oxford Martin School at
the University of Oxford

Our world will change more this century than during any other time in human history. Change will happen faster than ever before. It will also affect more people than ever before.

Globalization has linked us all together, with countries, companies and individuals connected as nodes in a global system of unprecedented complexity. Economic fortunes will rise and fall dramatically. Demographic shifts will transform geopolitics and growth prospects. Technology, education and income growth will drive innovation. All of these changes present extraordinary new opportunities but simultaneously new systemic risks that threaten the entire system. Good governance will mitigate those risks and created unparalleled opportunity. Bad governance will invite chaos and crises.

The next century could be an era of unprecedented prosperity or usher in cataclysmic shocks

Those who grasp the direction of the wind and harness its power will be separated from anyone stuck in outdated 20th century ways of understanding this new world. We are confident about the key choices that are coming. The 21st century could hail an era of unprecedented prosperity. It could also usher in cataclysmic shocks, making the recent financial crisis a harbinger for more severe storms to come. The changes created by globalization, demographics, technology, economic growth, systemic risk and governance will serve as a guide to 21st century business, investors and governments.

Since the Berlin Wall fell and the Iron Curtain was drawn back at the end of 1989, the world has become significantly more interconnected. Political borders have opened. Economic flows have expanded and accelerated. Digital networks draw us closer together with cables and clicks. These changes have been disruptive, with positive and negative effects. On the one hand, globalization has helped disrupt the vicious cycle of poverty, lifting billions of people out of its devastating trap with rapid economic growth. On the other hand, rapid change inevitably produces shocks, disrupting societies and dislocating workers.

Globalization could be reversed...but this would be a mistake

Globalization is not an inevitable force. It could be reversed. That would, however, be a mistake, although there are some who do not see it that way. This is particularly the case for a significant minority of global citizens – perhaps as many as 1.5 billion – who have not felt the benefits of globalization. The answer is not to reject globalization. Instead, it should be expanded, and made more inclusive, creating a wider web of beneficiaries. And, because globalization inevitably brings more shocks and surprises, not least in the form of systemic risks, more safeguards are required to protect against shocks and short term dislocation. This will be a choice in the 21st century if the global community rises to the challenge and creates a more inclusive and resilient globalization, shared prosperity is forecast. If not, the progress of the last two decades could be reversed by a storm of isolationism, protectionism and cascading systemic risk.

Seizing Opportunities and Managing Risk

Increased integration of world markets creates opportunities

The greatest opportunity for firms and investors is the increased integration of world markets and the potential this brings for global growth. Existing hubs of growth are likely to remain as the fastest growing economies in the near term. Investors should ensure they have sufficient exposure to these markets. Firms should continue to seek access to emerging markets, negotiating trade arrangements, suitably locating production and innovating with new products and services that cater to these markets.

A rising middle class should boost consumption

The rapidly growing middle class will unlock unprecedented demand for a wide range of consumer goods. By 2050 it is expected that the middle class' share of global consumption will grow from one-third to two-thirds. In the short and longer term, this represents a shift away from catering to basic needs and a movement up the value chain to products that are dependent on consumer preferences. The emerging middle class could provide a much-needed impetus for balanced global growth by boosting consumption, investing in healthy, education and renewable energy and driving productivity and sustainable economic development. The risk for society is that if some companies and governments fail to take advantage of this opportunity, it may widen the gap between nations and compound both environmental and other dangers.

Risks to globalization exist, including pandemic, cyberattacks and an increasing and frequency of natural disasters

On the flipside, there are risks with globalization that must be recognized. In terms of likelihood and potential damage that may be caused, pandemics pose a significant risk to both global health and economic stability. In an increasingly digitized world, the vulnerability of everyday goods and services to cyberattacks marks a new challenge facing governments, businesses and individuals. Natural disasters are increasing in frequency and imposing higher costs on society due to increased interconnectedness and the density of population and asset, not least in vulnerable locations, such as low-lying urban centers. Finally, the growth of global markets has depended on the development of the financial sector. The recent financial crisis spilled over rapidly to other sectors in the economy causing a prolonged fall in global output. Going forward, it is vital that credit lines stay open to ensure the functioning of the world economy.

Global governance needs to be revamped to reflect the new world order

In terms of global governance, looking to the future, countries with diminishing geopolitical strength increasingly are unable to provide world leadership, while the new economic powerhouses have not yet shown the capacity to resolve global challenges, either alone or in concert with the old powers. As a result of the failure to establish global management systems that are fit for 21st century purposes, systemic risks are festering. The ability to resolve these is the challenge of our time and will determine whether the 21st century will be the best of times, or the worst of times.

Is This the Start of the Breakdown?

The Return of Geopolitical Risk

Tina M Fordham

Chief Global Political Analyst

Geopolitical risks in 2014 are widely regarded as having increased to levels not seen since the fall of the Berlin Wall, yet markets took little notice; in our view this complacency is unlikely to continue into 2015. Measures of the uptick in risks include a rise in the number of conflicts and coups, an increase in the rate of terrorist attacks — a risk we had flagged prior to the tragic events in Paris, Peshawar and Nigeria in recent weeks — and the number of NATO-Russia “incidents”, which have nearly returned to Cold War levels⁷. At the same time, the rate of *Vox Populi* risk events (mass protests, rising support for non-mainstream parties and government collapses) as tracked in our own research also remain high, evidenced by the so-called “umbrella protest” movement in Hong Kong and large-scale protests in Mexico as well as the growing popularity of European protest parties. This phenomenon has increased in relevance following the announcement of early parliamentary elections Greece on January 25, which seem likely to result in far-left Syriza emerging as the largest party, reviving fears of “Grexit”. Meanwhile, reluctance for military intervention — and lack of political capital — is increasing reliance upon alternative means of projecting power, from sanctions to regulation to cyber-attacks, with unintended economic consequences. Add the political risks of falling oil prices and declining cooperation to combat global threats, and the mix is potent. From the grass roots to the geopolitical, the global system is under immense pressure. In some places, it is cracking. Here we examine some of the most important themes that will affect the business and investment environment in 2015.

War and Peace – The Post Post Cold War Era

The aftershock of Russia annexation of Crimea plus the emergence of IS will dominate 2015

The outlook for 2015 will almost certainly be dominated by the aftershocks of the two key geopolitical events that marked 2014: Russia’s annexation of Crimea and the emergence of IS from Syria to Iraq, which was followed by the almost immediate declaration of the end to the Middle East’s 1912 Sykes-Picot borders that have divided many regional tribes and ethnic groups. These two developments differ in the scale of their impact, but we regard them as a significant change in trend. In our view, these events suggest that the erosion of the post-War system and the relationships and institutions that underpinned it will continue, leading to greater instability, with the potential to negatively impact growth and reverse globalization.

A return to conflict over borders and territory could occur as global governance loses relevance

Taken together, the regional disputes in the former Soviet Union and Middle East have raised the specter of a return to conflict over borders and territory, a risk compounded by fears that collective defense agreements such as NATO — the cornerstone of Western security in the post-Cold War era — no longer retain their relevance. From jihadism to populism to revanchism, politically-generated challenges to globalization are transforming the landscape. Yet policymakers have few levers with which to address these developments, and populations have little patience for bearing the costs of prevention, deterrence, or conflict—beyond limited, piecemeal measures — in times of continued fiscal and budgetary concerns.

Despite the increase in tensions, financial markets have failed to take notice

Yet, remarkably, despite the significance for the global political and security environment, these developments have, until recently, had limited impact upon financial markets over the course of 2014 — in stark contrast to previous crises such as the 1973 oil price shock. The intensification of the Russia crisis in recent days has underscored the extent to which this disconnect cannot last indefinitely;

⁷ USIP; Rand Database of Worldwide Terrorism Incidents; European Leadership Network

indeed the increase in geopolitical risk is already contributing to the drag on the global economic recovery and weighing upon investor sentiment. And the return of political risks in Greece following the announcement of snap presidential elections has prompted a sense of déjà vu amongst investors.

“Ya me canse” Vox Populi Risk Continues – Even Where Growth Has Returned

The continuation of the *Vox Populi* phenomenon that we first identified in 2012 — shifting and more volatile public opinion posing a new type of risk to the business and investment environment — presents significant challenges to political and business elites. In a more divided and uncertain world, marked by lower, slower growth and where leaders are more sensitive to public opinion than ever before, policy options are limited.

Petro-states and EU countries going into elections are most vulnerable to continued *Vox Populi* risk

We identify two sets of countries particularly vulnerable to *Vox Populi* risk: 1) Petro-states, especially those with high break-even prices, weak government institutions, and competing elite factions, will be particularly vulnerable to political instability amid falling oil prices and declining revenues 2) the spate of European Union countries heading to the polls: the United Kingdom, Spain, Portugal, Greece, Denmark, Finland and Poland. Of these, the most systemically significant are Greek, UK and Spanish elections, none of which are expected to deliver single-party majority governments. In each contest, we expect anti-establishment parties to have a significant impact, though fall short of attaining a majority, with the exception of Greece, where far-left Syriza has consistently polled as the largest party.

Figure 25. The Return of EU Political Risk



Source: Citi Research

Corruption and evidence of elite misbehavior continues to be a key catalyst for *Vox Populi* risk events

Figure 26. Selected 2015 Political Signposts

Country	Date
Nigeria	February 14
Finland	April (TBD)
United Kingdom	May 7 (TBC)
Turkey (legislative)	June 13
Mexico (legislative)	July 5
Iran (expiration of Iran nuclear deal)	July 15
Denmark	September (TBD)
Argentina	October (TBD)
Canada	October (TBD)
Poland	October (TBD)
Portugal	October (TBD)
Spain	December (TBD)

Source: Citi Research

In Mexico, impressive reform momentum under President Pena Nieto has been undermined not only by falling oil prices, but outcry against police excess, crystallized following the suspected deaths of 43 university students. Mexican public anger toward perceived corrupt politicians has sparked protests, galvanized by the expression “*Ya me canse*” (I’ve had enough) which reverberated on social media following its attribution to a public official answering an investigation about the case. “*Ya me canse*”, in one form or another, is a slogan likely to continue to resonate in the year ahead.

A key catalyst for *Vox Populi* risk events identified in our empirical analysis is corruption concerns and evidence of elite misbehavior. For petroleum-dominated economies with weaker government institutions and falling living standards, increased corruption perceptions could act as a catalyst political instability protest activity. Venezuela, Nigeria, Iran and Russia may be particularly tested by this risk.

Among the most closely-watched political signposts for investors in 2015 will be the UK general elections, the outcome of which will also determine the likelihood of a so-called in/out referendum on British membership in the European Union, or “Brexit”. The performance of non-mainstream political parties in Europe in 2014 was striking, most notably the 25% support for the UK Independence Party (UKIP) in the European Parliamentary elections despite a robust economic recovery and comparatively low unemployment levels. The UKIP result is significant not only in that it highlights the extent to which the linkage between aggregate growth and support for mainstream political parties has blurred, but also the potential for the party to pose a meaningful threat to a stable political outcome in the 2015 general election, a fact which is having considerable impact on the British political debate. Significant proportions of citizens of industrialized and emerging market democracies do not trust their leaders to represent interests other than their own in the midst of a process of globalization that is perceived to be delivering dramatically uneven benefits.

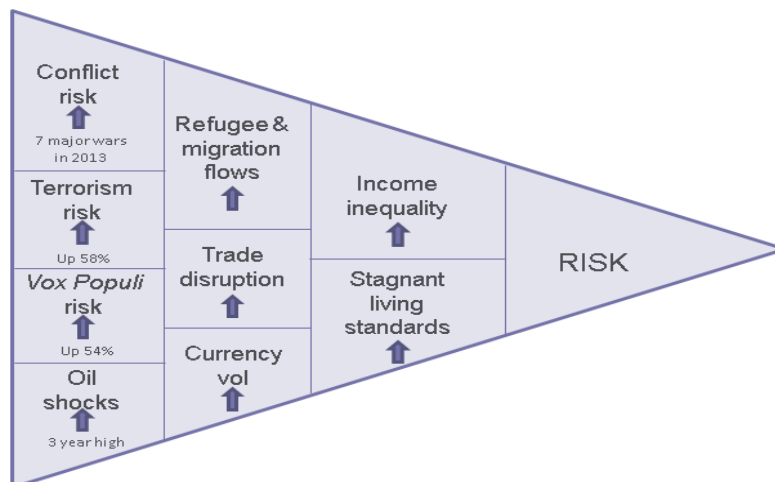
Anti-establishment parties continue to gain in popularity in developed markets

Future developed country elections will continue to see the popularity of new — and not so new — anti-establishment parties, from France’s decades-old National Front to new political enterprises like Greece’s Syriza and Spain’s up-and-coming far-left Podemos. The proliferation of new parties increases the risk of fragile multi-party coalitions and reduces the already limited political capital of leaders. Developments like the terrorist attacks in Paris could increase support for anti-immigrant parties, even if the immediate public response was an outpouring of national unity. Germany for its part has also seen an increase in protests against Islam — although these have been outnumbered by counter-marches organized to combat the group that organized them, known as “PEGIDA” (Patriotic Europeans Against the Islamization of the West).

The most important immediate implication of political fragmentation in Europe is that it acts as a drag on already sluggish growth; if continued, it could further undermine fragile EU cohesion

In our view, the appetite for political alternatives will endure for many years to come, and their public support could increase in the event of a triple-dip European recession, a non-negligible risk, particularly if future Russian sanctions spark retaliation that hits the fragile eurozone recovery. Conversely, growth in real wages, moves that regain the confidence of younger and disenfranchised cohorts of the population and reduced perceptions of elite abuses could stem support for alternatives. The most important immediate implication of political fragmentation in Europe is that it acts as a drag on already sluggish growth; if continued, it could further undermine fragile EU cohesion.

Figure 27. Conflict, terrorism and political risks all on the rise



Source: United States Institute for Peace, Rand Institute, Citi Research

Fear has been one of the few drivers of policymakers

Fear and Loathing

We also observe the disproportionate impact, relative to the statistical likelihood, of risks such as Ebola and terrorism on both popular and investor perception. Perhaps fueled by social media, the “fear factor” seems to be one of the few sources of urgency for otherwise hamstrung policymakers, as evidenced by rapid, albeit highly erratic efforts, to control Ebola in the US and to attack ISIS in Iraq. According to a 44-country survey by the Pew Foundation, in developing Asia and Latin America, pollution and environment concerns were viewed as the greatest dangers; in parts of Africa, AIDS and pandemics; in numerous EMEA countries (Turkey, Ukraine and Nigeria) as well as Pakistan and Japan, nuclear weapons were most feared.

Other fears are less existential; in much of Europe, fears of inequality came out on top; with the exception of the UK, which shared as top fear of ethnic and religious hatred with Lebanon, Tunisia and Nigeria. These almost existential fears underscore additional challenges for policymakers working with limited political capital and increasingly focused on short-term considerations.

Figure 28. Greatest Dangers in the World

Religious & Ethnic Hatred	Inequality	AIDS & Other Diseases	Nuclear Weapons	Pollution & Environment
Lebanon	Spain	Uganda	Japan	Colombia
Palestinian Territory	Greece	Tanzania	Ukraine	Thailand
Tunisia	Germany	South Africa	Turkey	Peru
UK	Argentina	Kenya	Nigeria	Philippines
Nigeria	France	Senegal	Chile	China
Egypt	Italy	Nicaragua	Pakistan	Vietnam
France	Poland	Venezuela	Russia	Nicaragua

Source: Pew Research Global Attitudes Project, Citi Research

Optimism can be found in the US return to diplomatic relations with Cuba, a possible accord on Iran's nuclear program, and less US political risks

Is it All Bad News? Definitely Not As We See Silver Linings

After 18 months of back channel diplomatic talks, the Obama administration announced on December 17 that it would return to full diplomatic relations with Cuba, an historic shift that follows a 50-year embargo; this alone underscores how, once relations are suspended, they become difficult to restore. It also highlights how leaders are increasingly limited to actions that can be achieved without legislative support. There is also modest reason to be optimistic this year about an accord on Iran's nuclear program, though the window for diplomacy may be closing, as domestic opponents on both sides seek to undermine a deal. Although polarization remains high, US political risks may be lower this year, as an incoming Republican-led Congress focuses its attention on a legislative agenda that will help the party gain the White House in 2016; a prize which could limit the potential for future fiscal cliffs or shutdowns, though not eliminate it altogether. Also on the US legislative agenda is trade. Prospects for Congressional approval of trade promotion authority are another reason for modest optimism, a move that could pave the way for the approval of the Trans-Pacific Partnership (TPP) trade agreement, a deal which could bring significant economic and geopolitical benefits.

US-China relationship remains constructive, even professional, with the potential to find areas of common agreement, as evidenced by the breakthrough deal on climate change

Although the global political outlook is undeniably fraught, full of new and old challenges and riven by social and political divides, it is not all bad news. Crucially, the US-China relationship remains constructive, even professional, with the potential to find areas of common agreement, as evidenced by the breakthrough deal on climate change. The recent agreement at the APEC conference between the US and China on cutting greenhouse gas emissions was described as historic, and followed months of talks. Nevertheless, commentators at the gathering still resorted to Kremlinology-style observations about handshakes and other cues in the hopes of de-coding relations between world leaders, suggesting that even the rise of “Big Data” cannot necessarily predict geopolitical outcomes in a highly-charged global environment. Old geopolitical habits, it seems, die hard.

Emerging Market Prospects and the China Factor

David Lubin

Head of Emerging Markets Economics

Economic developments in China are becoming increasingly less emerging market-friendly

Emerging market prospects for 2015 will be governed by familiar themes: 1) China's slowdown and its consequences; 2) the impact of falling commodity prices; and 3) the risks associated with US monetary tightening. Perhaps the most reliable observation one can make about all three of these forces is that they will continue to pressure emerging economies to find a 'new model' for GDP growth. The biggest rewards will be for countries making efforts to introduce structural reforms. That helps explain why Mexico and India – the two most promising reform stories in emerging markets today – are likely to see some of the biggest gains in GDP growth over the next two years.

Why did Chinese policymakers fail to implement a bigger stimulus when it was clear that GDP growth would undershoot their target?

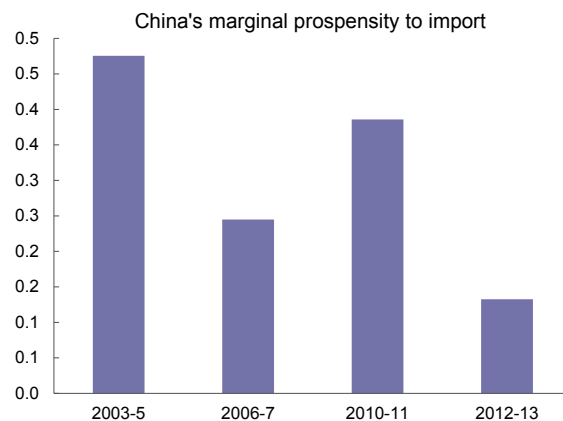
One puzzle in 2014 was this: why did Chinese policymakers fail to implement a bigger stimulus when it was clear that GDP growth would undershoot the 7.5% target which, earlier in the year, had seemed so important to them? There are two likely answers to this puzzle, neither of which is very promising for emerging markets. The first is that Chinese policymakers are making a more serious effort to defuse the risk of a recession by managing down the rate of credit growth in an orderly way. Since the stock of credit rose from 128% of GDP in 2007 to 200% in 2013, an effort to manage this risk should be no surprise. And it certainly seems that the growth of credit extension – particularly from the shadow banking system – is visibly under downward pressure. The flow of Total Social Financing in the first 10 months of 2014, for example was 26% of GDP, down from 31% in the same period in 2013. And the composition of Chinese financing is coming out of the 'shadows': in recent months, plain vanilla yuan loans have made up over three quarters of total financing, while that ratio was less than one half in late 2012 and early 2013. And another possible answer to the China puzzle this year is that employment growth was very strong, possibly thanks to the strong performance of the under-recorded services sector (services growth has been faster than industrial growth since 2012). If Chinese policymakers can achieve their employment targets with slower GDP growth, then a slowdown may be more tolerable to them.

Figure 29. Not only is weaker Chinese import growth contributing to lower commodity prices...



Source: Citi Research

Figure 30. ...but the entire relationship between Chinese income growth and Chinese imports is becoming less EM-friendly



Source: Citi Research

The consequences of diminished Chinese credit stimulus and a stronger services sector weakens the link between China and emerging markets. As credit stimulus diminishes, so does import growth, and Figure 29 highlights the link between declining Chinese import growth and the fall in global commodity price inflation. In addition to this, we think the rise of China's services sector may be leading to a change in the entire relationship between Chinese income growth and import growth: the marginal propensity to import is falling (Figure 30). One further implication of the rise in China's services sector is that it provides some evidence of a 'domestic rebalancing' of the Chinese economy, by which the economy becomes less investment-driven over time, while the ratio of consumer spending to GDP rises. Indeed, the data up to 2012 – the latest for which we have a breakdown – suggests that imports of consumer goods had been growing more rapidly than imports of capital goods. And since the biggest suppliers of consumer goods to China are to be found in developed markets rather than emerging markets, it makes sense to expect China to be a less-friendly factor for emerging markets over the next few years.

Tackling the 'Old Normal' Chinese Economic Model

The Chinese economy is probably entering a new cycle with further, albeit slower-paced, growth moderation in 2015 and beyond. According to President Xi Jinping, under his call for a new normal, economic growth should come down from the "high-speed growth" to a new phase of "medium-to-high-speed growth". It's not immediately clear what level of growth rates meets the criteria, but it does indicate that the leaders are willing to abandon the old model and test a new growth bottom line. In our view, this could imply that the government's GDP growth target could be reduced to 7% and actual growth of sub-7% is possible as early as 2015.

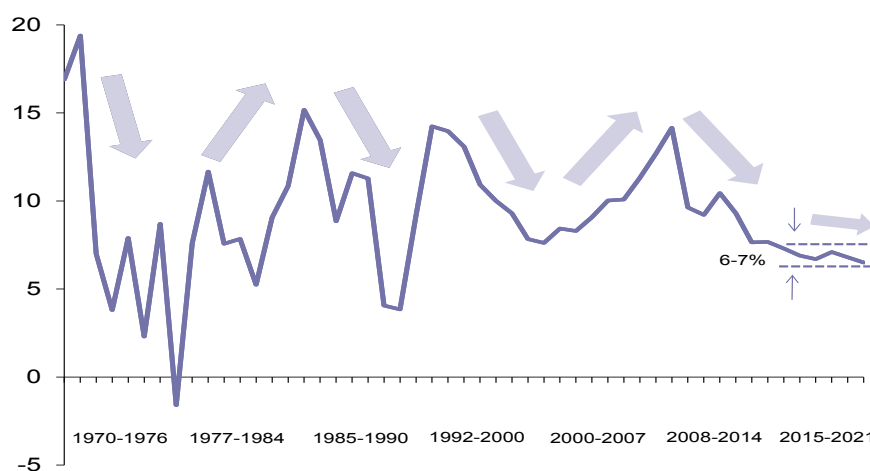
The Chinese economy has been roughly following seven-year cycles since 1970 and the Chinese GDP growth rate is already half of the rate seen seven years ago in 2007. Downward pressure in the economy remains in the near term with a correction in the property sector. We argue that compared to the share slowdown of the past seven years, it's more likely that the economic growth rate will stabilize within the 6-7% range in the coming new cycle for the following reasons:

- **Political mandate:** Chinese leaders vowed to double 2010 GDP in real terms by 2020. This requires 6.8% annualized growth from now through 2020. However, China's National Bureau of Statistics will shortly shift its GDP accounting method to the 2008 UN System of National Accounts. This new method will recognize research and development (R&D) as gross fixed-capital formation in GDP and adopt a rent-based approach to estimate the service provided by owner-occupied housing. Both R&D and housing services are likely to scale up nominal GDP by an estimated 2.5%-5% (based on 2011 data). The revision should boost GDP scale more in recent years due to rising R&D spending and property prices and rents. This should reduce the need to grow by economy at 6.8% in coming years.
- **Economic mandate:** Early this year, Premier Li Keqiang hinted that 7.2% GDP growth is needed in order to keep the urban registered unemployment rate below 4.5%. This threshold could have been moved down to 6.5% as the job market remains resilient despite slower growth. It's more likely that the government would take this level of growth as its near-term bottom line, the slowest growth Chinese policy-makers can tolerate. But we expect policymakers will soon realize even 6% growth is enough to keep the job market alive.

Minggao Shen
Head of China Research
Shuang Ding
Senior China Economist

- **Potential GDP growth rate:** This is the best level of growth an economy can achieve at a reasonable level of inflation. We estimate China's potential growth (with adequate utilization of the labor and capital stock) at around 7.4% for 2015 and 6.4% for 2020. But self-sustained growth is estimated at 6.0-6.5% by 2020 due to weak demand, a consequence of over-investment and excess capacity.
- **The Chinese medicine approach to reform:** It has become clear, and is reinforced by the recent policy rate cut, that the Chinese government tries to avoid short-term pain. Reforms that may cause near-term pain should be very gradual and some of them could be delayed. China's balancing on the steep and narrow path between growth and reform and has lately swung to the growth end as growth stabilization tops the governments' agenda

Figure 31. China's GDP growth: The 7-year growth cycles



Source: CEIC, Citi Research

The new cycle will likely feature slower growth, driven by cyclical and structural forces, but more aggressive easing and decisive reform could start in 2015. Policymakers will be fighting two battles simultaneously, defining the near-term growth bottom-line with accommodative monetary and fiscal policies and achieving necessary structural reform to tackle longer-term concerns.

Is China Trying to be a Friendlier Neighbor in 2015?

The early phase of President Xi Jinping's leadership has been marked by increased territorial assertiveness. Highlights include the establishment of an "air identification zone" in 2013 which covers a large swathe of marine territory claimed by other nations, China's reclamation of land in the distributed Spratly Islands, its presence in the Scarborough Shoal which is claimed by the Philippines and Chinese national oil company CNOOC's temporary placement of a gigantic oil rig off the coast of the Paracel Islands, sparking a stand-off with Vietnam. China's actions were seen as potentially damaging diplomatic relations, derailing efforts at regional cooperation and shifting diplomatic allegiances even more strong towards the West, with the notable exception of the signing of the Philippine-US Enhanced Defense Cooperation Agreement in April and the lifting of a 40-year ban of US arms sales to Vietnam in October.

While we doubt that geopolitical tensions will cease completely, there has been somewhat of a shift in China recently towards a “softer” approach with its neighbors. In particular, China has made great symbolic strides to expand its role in global development finance, dubbed the “Marshall Plan” in three major initiatives this year; 1) China, along with other BRIC members launched a New Development Bank (NDB) in July; 2) under China’s leadership and along with 20 other founding Asian members, the Asian Infrastructure Investment Bank (AIIB) was unveiled in October and 2) China announced a \$40 billion Silk Road Fund during the APEC meetings in Beijing in November. While these institutions are unlikely to be operational until after 2015, we think they set the stage for greater competition for both geopolitical influence and development finance flows in the region.

Figure 32. Comparing China’s new development finance initiatives with existing ones

Date	Entity	Members	China’s Voting Share	Capital	Potential Loan Capacity	Notes
Jul-14	New Development Bank (NDB)	Brazil, Russia, India, China & South Africa	Initially equal share (20%)	\$50bn, to be increased to \$100bn	\$35bn initially	Start lending in 2015
Oct-14	Asian Infrastructure Investment Bank (AIIB)	China & 20 other countries (BD, BD, KH, IN, KZ, KW, LA, MY, MN, MM, OM, NP, PH, PK, QA, SG, LK, TH, UZ, VN)	Voting rights undecided; China likely to have largest vote share in terms of capital contribution of GDP/ PPP*	\$50bn, to be increased to \$100bn		Articles of agreement to be completed in end of 2015
Nov-14	Silk Road Development Fund	China	N/A	\$40bn	\$20bn	Focus on Silk Road Economic Belt & the 21st Century Maritime Silk Road initiative; aim to build roads, railways, ports and airports across Central Asia & South Asia
1944	World Bank (WB)	188 countries (IBRD), 172 countries (IDA)	5% for IBRD (3rd), 2% for IDA (10th)	\$233bn	Outstanding Loans: \$286bn; Undisbursed Loans: \$105.3bn	Created at the end of World War II, the Bank provided financing to fund reconstruction efforts
Dec-66	Asian Development Bank (ADB)	67 countries (48 from Asia)	5.5% (vs. 12.8% each for US & JP)	\$162.8bn	\$85.2bn or disbursed & undisbursed loans (2013)	ADB was conceived amid postwar rehabilitation and reconstruction efforts, vision was to be Asian in character and foster economic growth and cooperation

Source: Reuters, Indian express, World Bank, ADB, Citi Research

Note: Reuters article dated 11-Nov14 (“Three major nations absent as China launches World Bank rival in Asia”) mentioned China’s capital contribution may be up to half of the fund.

For China, these initiatives make a lot of economic sense and achieve several goals at the same time: First, they demonstrate the geopolitical ascendance of China not reflected in the existing institutional structures due to slow reforms in governance structures (i.e. the IMF). Second, it gives room for China to export its excess capacity and boost productivity of its engineering and construction services capabilities by finding outward investment opportunities. Third, it will give China the opportunity to develop future export markets and destinations for other overseas direct investment flows. Fourth, it allows China to diversify and possibly enhance returns of its FX reserves. And lastly, it also further facilitates better use of the renminbi for both international trade and investment flows, which in turn will help negate the need of China to hold such excessive FX reserves to begin with. We think the establishment of a separate “Silk Road Fund”, which seems largely China-funded, has another strong incentive – to enhance the development of China’s interior to Western Region, including Chengdu, Chongqing and Kashgar.

While implementing these initiatives takes time, we think China-led initiatives can provide a valuation alternative of external funding, especially for smaller, lower income and capital-dependent economies in Asia. China funding can be important where there is already strong/ favorable geopolitical ties with China, e.g. possibly Bangladesh, Cambodia, Myanmar, Pakistan and Sri Lanka, and where the role of Chinese foreign direct investment and financing can be quite large given the small size of the recipient country. Our China team believes countries that are already net exporters with China are more likely to be eager in engaging in the “Marshall Plan” – Malaysia (though Malaysia’s infrastructure is already better than China’s), Thailand and Mongolia could be good candidates, with Thailand playing a key role in developing infrastructure along the Mekong Delta.

However, we think some countries that run a trade deficit with China, but run a huge surplus with the rest of the world — e.g. Vietnam — may also be less resistant despite a complicated relationship. Similarly, the richer economies that are also net exporters to China – Korea and Australia – are also the ones that have significantly progressed on finalizing a free trade agreement deal with China, and given domestic growth challenges at home, are also probably most motivated to do so.



Sector Themes

E-Commerce and Delivery

Global Online Retail Growth Explodes

Richard Edwards

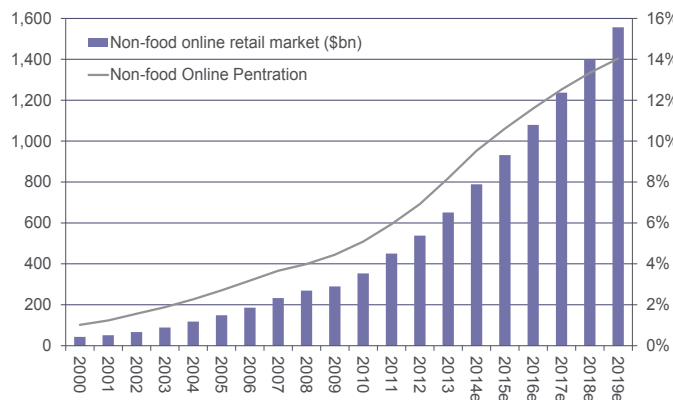
Head of Global Consumer Discretionary
Research

Shoppers in developed economies are moving from store-based retail to online while developing economies is growing in both areas

In the context of ever-increasing Internet, broadband and smartphone penetration, coupled with a proliferation of Internet-based services and tools, the importance of the online world as a fundamental driver of commercial growth will become ever more important. The global online non-food retail market is expected to grow more over the next five years than it has in the last 25 years. From the current ~\$800 billion revenue base, we expect the global online non-food retail market to grow at about 15% per year over the next five years, broadly doubling to about \$1.6 trillion, taking the online penetration of non-food retail sales from 9% to 14%. Looked at another way, before 2014, around \$3.5 billion of non-food sales had been made online globally; we expect there to be at least \$3.2 trillion made in the next three years alone.

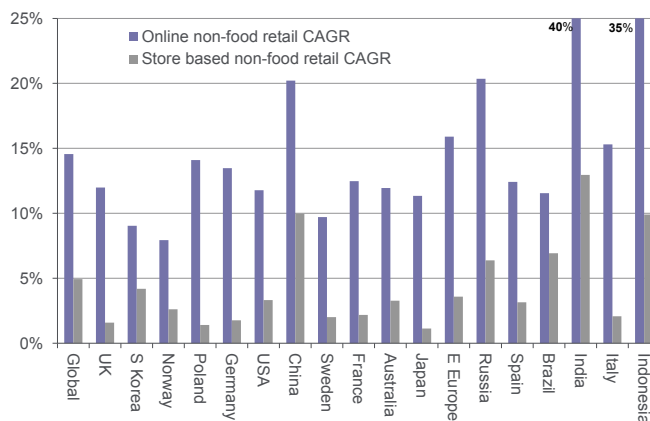
In developed economies, the store-based retail market is likely to stagnate (or even decline) as consumers change shopping habits. In developing economies, both channels are expected to grow but we expect the online channel to significantly outperform traditional retailing. This is in-part because traditional retail is not very developed in many developing countries. By geography, online penetration of non-food retail remains the highest in the UK (about 20%), followed by South Korea (16%), Northern Europe (13%), the US (12%) and China (12%). Importantly, the online channel is contributing to +100-200 basis points annually to total global non-food retail sales growth. Notably, this forecast implies 14% non-food online penetration in 2019E, while anecdotal evidence suggests 40% could be the long term figure.

Figure 33. Global online non-food retail, market size and penetration, 2000-2019E (\$bn)



Source: Euromonitor International, Citi Research

Figure 34. Non-food retail, Store and online, 2014-2019E CAGR



Source: Euromonitor International, Citi Research

What's driving this growth? We see three primary drivers of online retail sales:

Three drivers of online retail growth: Internet penetration and use, mobile data revolution and website assortment, functionality and fulfilment

1. **Internet penetration and use** – Internet access and broadband access have increased dramatically since inception in 1989. Globally, Internet users have increased from 0.41% of the global population in 1994 to over 38% in 2013. Looking at more developed nations such as the US, Japan, the UK, France and Germany, in the early 1990s less than 5% of the populace used the Internet; currently well over 80% do.

2. **Mobile data evolution** – The advent of mobile Internet and increasing ability and willingness of customers to browse and purchase goods over mobile devices through specialized websites and applications is opening up a new channel of online growth which is likely to drive the majority of online growth in the future. Mobile phone penetration is above 80% in every major region with the exception of Africa. As affordable smartphone proliferate and mobile data services and access such as Wi-Fi networks increase, this will allow consumers that may not have access to fixed-line Internet infrastructure to access the Internet and online shopping channels.

Mobile data also allows consumers to spend a much larger amount of time browsing and shopping online, often in locations and at times when shopping (fixed online or traditional) would not otherwise be possible. The mix of mobile shopping as a proportion of online shopping has increased rapidly in recent years and now represents almost 20% of all online purchases. In the UK it is over 30% of online purchases, from less than 5% in 2011.

3. **Website assortment, functionality and fulfilment** – Online retailers are able to offer a much wider variety of items on one website due to the virtue of having a limited number of stock holding locations. Retailer investment in functionality and m-commerce should ensure the purchasing process becomes more simple and intuitive, particularly as new technology is developed. This can be seen with initiatives such as virtual fitting rooms and sizing tools to provide shoppers with more confidence when buying online. The ability of retailers to offer different payment methods should also drive growth as it lowers hurdles that consumers need to overcome in order to purchase goods. Finally, an increasingly diverse and sophisticated range of delivery mechanisms including nominated delivery, timed delivery, “Reserve and Collect” and “Pick Up Drop Off” points has meant that customers are not committed to being at home in order to collect goods, therefore allowing more frequent use of online purchasing.

Aggregator Websites are Likely to Remain Dominant

Retail aggregators to remain dominant form of online retailing and outperform market growth

Retail operations that allow consumers to shop multiple products in one location are not new. Department stores, shopping centers and even High Streets have for a long time been the applicable retail model in most Western countries. The advance of online retail has changed this dynamic. Sites such as Amazon have demonstrated that if it is easy to browse and convenient to receive, then consumers will quickly convert to online shopping.

We think these aggregator business models will remain the dominant form of online retailing and will continue to outperform market growth. Therefore, while large established retailers with a very strong brand offering are likely to continue to attract consumers, we think those stores that rely on displaying a selection of third-party brands are going to be largely replaced by online shopping. The foundation and growth of an online aggregation website creates a virtuous circle between the website, the customers and the brands

Business Model Positioning is Large Determinant of Importance of Online

Positioning of the retailer is important factor in determining the effect of online retail

As well as the type of products sold, the positioning of the retailer is also important when determine how online will affect the business model.

Using Citi’s Global Consumer Discretionary positioning Framework, we show that online works best in the mass market at scale.

- **Pure Price/ Discount** – due to low average basket sizes and low gross margins, the economics of selling discount goods online is very difficult to make feasible. We therefore expect that discount retail remains a predominantly offline activity.
- **Luxury** – Luxury is a sector where the strength of the brands remains paramount and sales volumes are comparatively low. In order to protect brand strength, luxury brands are likely to be highly selective on the distribution channels used and we do not expect a large migration to aggregation websites.
- **Mid-price/ Mass Market Brands** – In these segments, the price and average basket size makes online a viable option economically. It is also an area of the market where scale is important. It is these areas where online is likely to be the dominant growth channel. While brands may have to adapt to reflect new distribution channels, growth avenues and marketing methods, mass market retailers are having to significantly adapt to different selling channels.

Delivering E-Commerce

Roger Elliot

European Transport Analyst

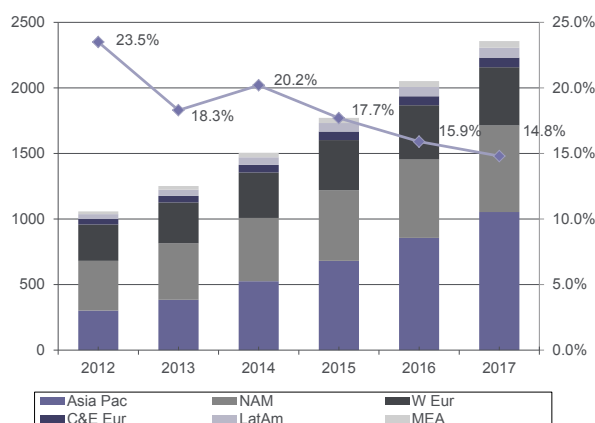
The traditional small package delivery business is mostly business-to-business (B2B) (>80% of sales), including components and spare parts for healthcare, automotive and technology verticals. Business-to-consumer (B2C) is a process for selling products directly to the consumer from a website where customers browse product information, select and pay for them pre-delivery using a card or other electronic payment mechanism. B2C requires a different delivery infrastructure from B2B (vehicle size, routing, personnel, etc.) with different requirements placed on delivery staff. B2B requires more complex business systems to accept different orders in different formats and integrate order capture with invoicing, customer records and accounting. In addition B2B also generate larger and heavier consignments, including both loose parcels and pallets sometimes for the same delivery address.

E-commerce growth will continue to drive delivery volume growth

We expect the evolution of e-commerce to have delivery implications for package delivery companies. We concur with industry expectations that rapid e-commerce growth will continue to drive further delivery volume growth, albeit at a slower rate of 8-10% per year, with developed countries generally lower.

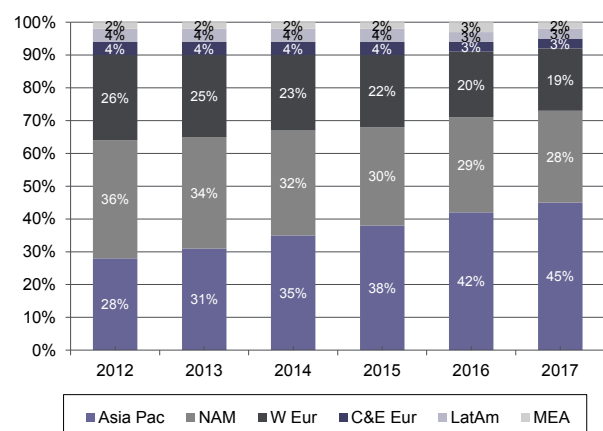
Global B2C e-commerce sales (including food and drink) are expected to grow 17% CAGR 2012 to 2017 to reach \$2.4 trillion Internet retailing by value is expected to grow 16% CAGR 2008 to 2019E vs. 12% for all non-store retail and 6% for all retail.

Figure 35. B2C Ecommerce sales by region 2012-17 (\$bn)



Source: eMarketer

Figure 36. B2C Ecommerce sales by region 2012-17 (%)



Source: eMarketer

Not all e-commerce generates physical volume for delivery companies while segments including clothes, shoes and accessories generate strong volume

Not all e-commerce (all services and the online sale of goods that are digitally fulfilled such as music, books, films and games) generates physical volume for parcel delivery companies. E-Commerce Europe estimates that in most European countries, physical goods requiring delivery account for between 50% and 65% of e-commerce sales, while services account for 35-50%. However, some e-commerce segments, particularly clothes, shoes, and also accessories, generate a substantial flow of return parcels, reflecting purchasing habits in some markets such as ordering multiple sizes and colors and returning all the unsuitable combinations.

Transport Intelligence reports that the global express and small parcel market grew 6.8% in 2013, with growth led by Asia Pacific, South America and the Middle East and assisted by improving economic conditions in the US. Transport Intelligence expects the global express and small parcel market to grow at a 9.8% CAGR to 2017 with Asia Pacific, Africa and North America seeing the most rapid growth.

The Emerging Market Opportunity

Emerging markets will be the driver of growth for delivery going with faster population growth, a rapidly growing middle class, positive demographics, infrastructure investment and increasing smartphone penetration

While we expect all Internet markets to grow at a double-digit rate for the foreseeable future, we believe the scope in emerging markets is significantly more enticing than the US and other developed markets. Not only is the aggregate population in regions such as Latin America, Asia Pacific, Africa and the Middle East materially larger than the developed markets and Internet growth is starting from a much lower penetration rate, there are additional positive drivers, including: 1) faster population growth; 2) rapidly growing middle classes in these countries as GDP per capital increases; 3) reverse population age demographics, with significantly higher proportions of younger people in emerging economies (with a higher propensity to use online services); 4) infrastructure investment; and 5) rapidly increasing smartphone penetration.

It is the last effect which is key for emerging markets Internet business growth, given the lack of infrastructure and relative low levels of broadband penetration. Moreover, in these markets, physical retail opportunities are not present, meaning that e-commerce does not have to share the customer wallet with more traditional forms of retail. This should mean that growth rates in Internet businesses in emerging markets should be significantly higher than more developed markets such as the US.

Storage Batteries: A Third Growth Market

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We view energy storage as a technological advancement that can tie together all the other disruptive changes that we have seen in the energy markets, both on the commodity front (coal, oil, gas) and on the utilities end, over the past decade. On the one hand, storage is going to create a new revenue stream for technology companies, but on the other it could permanently alter the utilities' business models, with very negative repercussions for conventional power generation and end-user supply, only partially offset by new opportunities for regulatory asset based/ rate based growth and energy services development.

We estimate that a reduction in system costs of battery storage to \$230/MWh, which is possible within 7-8 years, combined with solar generation, would make self-consumption financially attractive in a number of developed economies. That should further accelerate development lowering system costs toward \$150/MWh, thus eliminating subsidies. We estimate up to a 240GW global market for energy storage by 2030 (>\$400 billion), excluding car batteries.

How Battery Storage Fits into Power Markets

Depending on the targets that battery storage will be utilized to achieve, as well as the installation cost of each storage unit, battery storage can be located on any part of the value chain: generation, distribution and end-customer. According to a 2000 report from the Sandia National Laboratories and sponsored by the US Department of Energy, "if storage were very inexpensive and efficient, it would all be located at customer sites". However, this would assume adequate space in each house, a larger number of storage units than under other scenarios, and substantial costs associated with the maintenance of the multitude of decentralized storage units. As such, the optimum mix according to the report would be for storage to be located primarily at the distribution level, which resonates to us.

The sharp drop in installation costs for renewables and particularly solar is starting to marginalize conventional generation in certain parts of the world and particularly Europe. It has also started raising expectations about the full decarbonization of electricity markets, with Germany already having an ambitious target in place to reach 55-60% power generation from renewables by 2035 and 80% by 2050.

These two factors of 1) increased growth in renewables and 2) reduced utilization of conventional generation have brought storage technologies to the forefront of recent discussions on the future of electricity markets. As a market for storage grows, we expect that costs will show a similar path to that of renewables, creating a virtuous circle of increased deployment and lower system costs.

Storage Batteries: A Third Growth Market

We believe storage batteries will be the third major driver of demand for rechargeable batteries after the consumer electronics and auto battery markets. Storage batteries are being incorporated into renewable energy systems and smart grids. In Japan, power shortages became a serious national issue after the March 2011 disaster and interest in storage battery systems as a way of stabilizing power supply is increasing. The market for storage batteries is embryonic and unlikely to affect investment behavior any time soon, given its small size. However, the long-term potential is substantial. In our view, and as the market gathers real momentum, we expect large benefits for related companies.

Although it makes economic sense to locate storage at customer site, it most likely would be located at the distribution level

As costs decrease for renewables, expectations for full decarbonization are increasing

Rechargeable batteries are already strong in consumer electronic and autos but will also be driven by storage

Cost, lifespan and safety are the most important specs for storage batteries

For storage batteries, cost, lifespan and safety are the most important specs. The volume of electricity generated by solar power and wind power fluctuates because of vagaries in the weather. Storage batteries used in these power systems must be able to cope with minute changes in power output. Also, it is assumed that storage batteries will be used for many years as part of the industrial infrastructure, and as such they must have longer lifespans than consumer electronics and auto batteries. Safety is also non-negotiable as fires could potentially cause significant damage to power grid infrastructure and large-scale outages. Energy density and power density are not so important.

Lithium-ion batteries are likely the best option for storage batteries

We see lithium-ion batteries as the best option for storage batteries. Depending on the materials used, they can have long lifespans, be extremely safe and cope with small changes in power output. We believe lithium-ion batteries are the technology most likely to be used for storage batteries because a certain level of production know-how and cost competitiveness has already been acquired in the development of consumer electronics and auto batteries and they can easily be adapted for various applications.

Will Storage Batteries be Cost Effective?

The cost of storage batteries is the biggest obstacle to widespread adoption

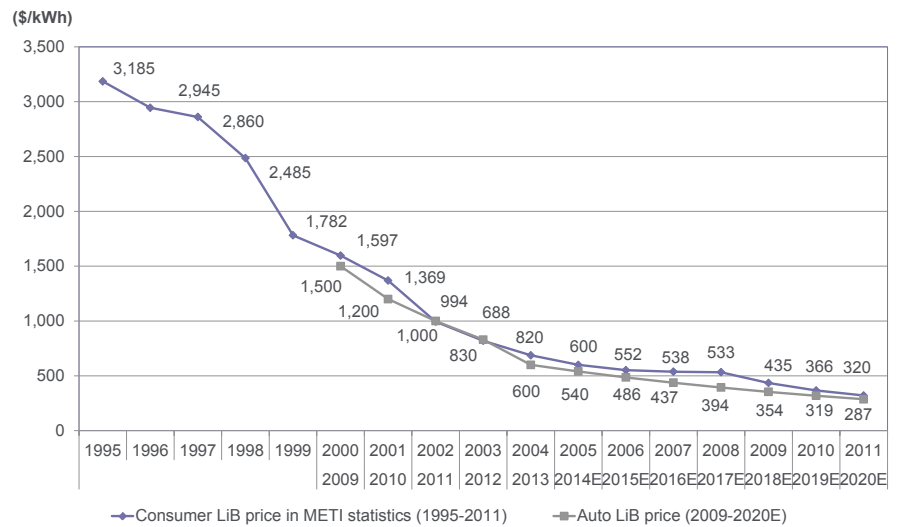
Cost is the biggest obstacle to the spread of storage batteries. The cost of rechargeable batteries for energy storage would have to be reduced drastically for the storage battery market to gain real momentum. In 2012, Tohoku Electric ordered a storage battery system from Toshiba for a pilot project. The battery system has storage capacity of around 20MWh and the order was worth around ¥10 billion (~\$90m). Based on this, we estimate the grid-introduction cost for storage battery systems at ¥500,000/kWh (around \$5,000/kWh). This is 20 times higher than the cost of pumped storage hydroelectricity (PSH). Many Japanese electronics makers sell residential-use storage batteries, but most products cost more than \$1,000/kWh, still a long way from a mass-market product pipe.

We consider a cost of \$230/kWh, equivalent to PSH grid cost, to be the target for storage batteries

We consider the PSH grid cost of \$230/kWh as a future target for storage batteries to be a variable industrial infrastructure. PSH stores energy by drawing water from reservoirs to a higher elevation, using nighttime surplus power (off-peak electricity) to drive the pumps. In a sense, PSH can be described as a storage battery system that uses a dam. At this time, PSH is the only energy storage method capable of providing enough capacity suitable for grid use. However, dams must be built to provide the reservoir or water needed, and location and environmental destruction are major issues. If storage battery costs can be reduced to below \$230/kWh, we believe demand for storage batteries as grid surplus storage infrastructure could expand.

Historically, prices declines have been seen in lithium-ion batteries as they've been adopted in both the consumer and autos markets

Consumer electronics and auto battery price trend are a useful reference when analyzing storage battery costs. Lithium-ion batteries were first used in electronics products in the 1990s. Initially, the cost was more than \$2,000/kWh and they were only used in high-end products. Eventually, mobile phone market expansion resulted in the cost falling at an annual rate of more than 10%, and now lithium-ion batteries used in low-end handsets cost less than \$200/kWh. In 2010, when the first commercial electric vehicles appeared, auto batteries cost \$1,000/kWh. With market growth in the electric vehicle sector, the cost is now around \$500/kWh and with volume growth and improving cost of goods sold, we expect an annual decline of 10% going forward. Based on this history, we expect the cost of energy storage lithium-ion batteries to be high in the nascent market stage and then steadily decline as demand expands.

Figure 37. Historical price declines in consumer and automotive lithium-ion batteries

Note: We assume ¥100/\$ for consumer lithium-ion battery prices.

Source: Company data, TSR, METI, Citi Research

Battery Storage Economics - \$230/MWh is the Medium-Term Target

It's not just the cost of the system, but the opportunity cost that's important in battery storage

One element that all academic research agrees upon when it comes to the economics of battery storage within an electricity system is the difficulty that exists in quantifying them. This is because a big portion of the benefits relate to opportunity costs, i.e. avoided expenditures, and also because battery storage can fulfill more than one role at the same time, e.g. it can be used to store electricity produced during low-price hours and sell it at high-price hours but also to delay the investment into a new peaking/ back-up power plant.

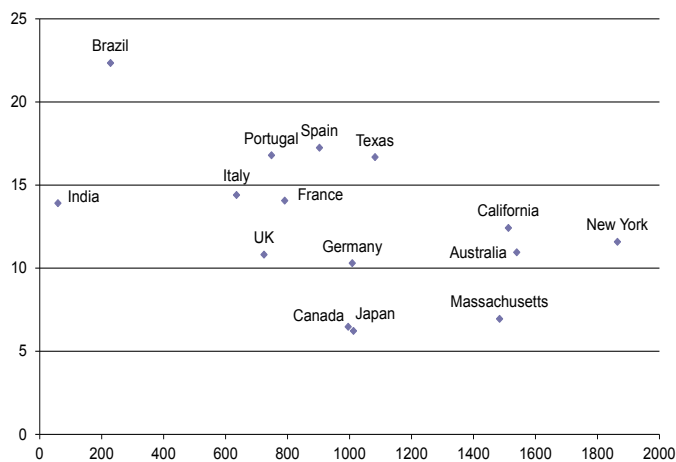
The simplest metric that is relevant for battery storage economics is the price differential at different times, e.g. peak vs. off-peak or winter vs. summer. The bigger the differential the stronger the incentive for battery storage to be developed. Looking at data for Europe and the US, it is clear that in Europe there is on average a €10/MWh margin to be had from pricing differentials at different times of the day and year. In the US that spread is closer to €15/MWh on average but varies by geography.

Battery storage can replace investment in new thermal power plants and avoid reliance on the grid

Beyond just time shifting in the wholesale market though, battery storage can also be utilized to avoid investment in new thermal power plants, which will be used only as back-up to renewables. In the retail market, it can be used in conjunction with solar, as a way to avoid reliance on the grid and therefore minimize bill payment. Excess output could then be sold to the grid generating extra income.

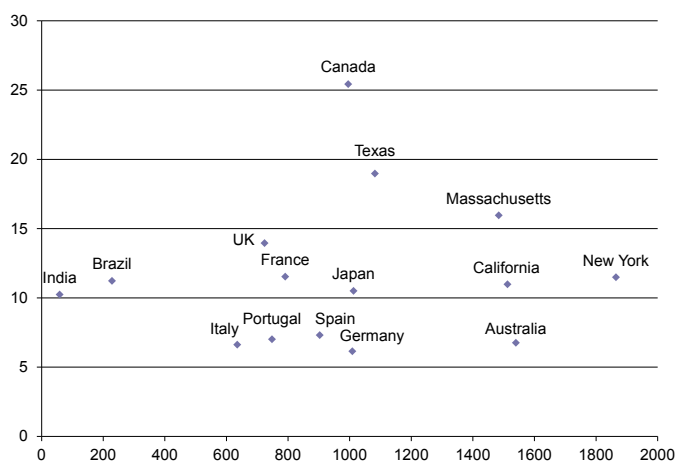
Socket parity (where the cost of getting electricity from solar is equivalent to the cost of getting electricity from the grid) was reached as early as 2013 in Italy, Spain, Germany, Portugal, Australia and the South West US while Japan is expected to reach parity shortly and both South Korea and the UK by the end of the decade. If we look at payback periods for solar PV systems, we find the global average at the end of 2014 is about 13 years for standalone systems. By 2020, the same solar PV system with battery storage falls to less than 12 years on average.

Figure 38. Payback in years (Y axis) vs. average annual household electricity bill in € (X axis) for solar PV at end-2014



Source: Citi Research estimates

Figure 39. Payback in years (Y axis) vs. average annual household electricity bill in € (X axis) for solar PV with battery storage at end-2020



Source: Citi Research estimates

A combination of policy and technology advancement will lead to increased deployment

What Will Catalyze Battery Storage Commercialization?

In a similar manner to how renewables evolved, we expect battery storage to become more widely deployed through a combination of policy and technology advancement.

On the policy front, we would identify the December 2015 UN Climate Change Conference in Paris, which aims to reach a global and binding agreement on greenhouse gas emissions, as key. Such an agreement, if reached, would necessitate a bigger push for energy efficiency, demand response, renewables and e-mobility, making battery storage a crucial piece of the energy system puzzle.

But even if a global binding agreement is not reached, the EU is likely to agree on 2030 environmental targets, which should end up promoting the use of battery storage in the region. The new market energy design to be implemented in the UK and the energy transition debates taking place in France and Germany are all likely to involve battery storage as an option at a first stage and as a driver at a second stage. In the US, the success or not of California's mandated 1.3GW of battery storage procurement plan for utilities by 2020 and its potential replication by other states, will also be an important driver facilitating battery storage commercialization.

On the technology front, the increased penetration of electric vehicles should continue to push down the cost of batteries for cars with parallel effects for energy systems battery costs. Projects such as Tesla's Gigafactory to be set in Nevada with plans for 2020 battery production (in GWh) from that setting alone to exceed today's global production, will substantially contribute on that front. In addition to the large technology players, a number of independent companies all have ambitious commercial plans and the more they grow in customer numbers and partnerships, the more likely it is that battery storage costs will be declining.

Storage creates winners and losers in the utilities industry

Implications for Utilities

Improvements in battery storage both in terms of operational performance and economic terms should expand and accelerate the trend for corporates and households to become self-sufficient in terms of electricity generation. Our key takeaway when thinking about solar distributed generation and battery storage and the impact on utilities is that we do not ascribe to the notion that solar is the death of the utility model. We see winners (i.e. regulated utilities who will earn a fair return on what they spend including transmission and distribution wire related expenditures, which will increase as more renewables are built) and losers (i.e. certain unregulated/ hybrid utilities whose outlook is predicated primarily on the economic dispatch of power generating assets) within the US utility sector. Our key takeaway is that US utilities will eventually adapt and join the party. Why? Three main reasons include 1) it makes economic sense to do so, 2) it helps diversity the utilities fuel mix to help insulate them from volatility and 3) it is a good hedge against upcoming EPA environmental legislation.

Will Storage Batteries be Profitable for Tech Companies?

Both investors and companies have honed in on the growth potential of consumer electronics and automotive lithium-ion batteries. However, battery business earnings have not necessarily been strong. This is because battery makers are squeezed by severe pricing pressure from users on the demand side, and unavoidably high procurement costs on the supply side. This is a structural issue as battery makers' earnings are prone to unprofitability because of their position between process assembly industries and commodity industries.

Tech company business models need to change in order for storage batteries to be profitable

But we believe storage batteries could be highly profitable, although this will depend on the business model. Compared with consumer electronics and auto batteries, pure price competition is less likely to be a problem because storage battery systems must meet stringent reliability standards, which require high-level quality control and technical expertise. Also, the storage battery market is likely to develop as an infrastructure business that involves the supply of services and solutions, not just hardware.

To compete in the storage battery market, we believe battery makers will have to convert from a hardware sales business model to a service model that includes aftermarket services and the ability to propose solutions. In addition to reducing battery costs, we think battery makers will have to come up with solutions that increase the convenience for users and make a long-term commitment to infrastructure.

Identifying Long-Term Transformational Implications for Commodities

From a macro perspective, the rise of economically competitive, widely deployed energy storage would have a profound impact on traditional, fossil energy sources. Six overarching impacts include:

1. **Renewables:** Storage would reduce both the cost of intermittency and the physical grid constraints that prevent deeper renewables penetration. The result would be a boost to the growth of renewables.
2. **Coal:** If storage can be competitively used to “firm” intermittent resources, renewables can become a true substitute for baseload generation. In many markets, baseload is dominated by coal-fired power. And because of growing policy pressure to displace coal in markets ranging from the US to China, policy is likely to emphasize the substitution of firm renewables for coal-fired generation.
3. **Oil:** Where oil is still used in the global power sector, it is often used in a peaking capacity. If storage is also deployed as a utility-scale peak shaving asset, storage might start to push out the stubborn oil-based generation still holding on as peaking capacity.
4. **Natural gas:** In the near to medium term, natural gas’s complementarity with renewables makes gas a winner in any scenario with increased renewables, as gas continues to be the best option to balance intermittency in many places. But it too would pose challenges to the utility model in many countries, as any former base load fuel supply would bring lower returns to the utility based on lost peak/ high priced demand loads.
5. **Gasoline:** If storage were developed that promoted the growth of electric vehicles, this would significantly erode gasoline demand let alone demand growth, which, along with strong North American production of oil and gas, would put pressure on oil prices.
6. **The structure of power markets:** Electricity is one of the few non-storable commodities. Large scale storage could change that, linking spot prices to forward prices in a transformation that would make electricity markets trade more like oil or gas markets. The implications for power forward curves and asset finance would be significant.

Impact of QE on US Banks

Keith Horowitz, CFA
US Banks & Broker Analyst

We think there is still considerable confusion among investors about how the Fed will raise rates and what impact that may have on the banks. We have attempted to step back and look at the issue of monetary policy and the banks from a ten thousand foot view, employing macroeconomic theory and what we know about the banking system to clear up the confusion about the intent and effects of the Fed's policies and give our best guess about how rising rates and the unwind of QE will play out. We're leveraging basic money and banking concepts to speak about how the banking system acts as a whole. Some of the rules that govern our approach differ from the way most investors and bank executives think about banks, which we believe is appropriate, as most individual institutions don't directly feel the impact of the rules that govern the way the industry as a whole behaves. Each institution acts independently, but macroeconomics tells us that the system as a whole will behave in certain ways that are counterintuitive and that many aren't fully aware of.

QE's Effect on Banks

The Fed's QE policy has created about \$2.5 trillion in deposits

Over a long period of time, the amount of deposits in the banking system has closely tracked the amount of outstanding loans and the growth rates track each other closely. This should not be a major surprise as lending is the primary way which money (deposit) creation occurs. However, post-crisis, deposits have decoupled from the amount of loans outstanding. The Fed's QE policies have created large amounts of deposits, as the reserves that were added through open market purchases of securities created deposits one-for-one in the name of the sellers of the securities. In fact, deposits have outgrown loans by ~\$2.5 trillion, roughly the amount of cash the Fed has injected into the system. When we look at where these deposits have landed, we see the majority of the increase in deposits at US domestic banks, despite foreign banks having attracted over half of the cash in the system. Breaking down the composition of deposits, we believe that more of the deposits that have been created as a result of QE are retail in nature than is commonly believed, which is contrary to the conventional wisdom that the majority of QE cash is trapped in the financial sector.

Figure 40. We see about \$2.5 trillion in excess deposits as a result of QE

[illegible]

Source: Citi Research, Federal Reserve H.8 data as of Sep 29 2015 *QE Deposits calculated as change in deposits less change in loans

We believe the full \$2.5 trillion of deposits are at risk as the Fed's balance sheet contracts

We believe substantially all of the ~\$2.5 trillion in deposits are at risk as the Fed has stated its intent to bring its balance sheet to a more normal level over time. Just as bank reserves and deposits were created out of thin air as the balance sheet expanded, the excess deposits will disappear as the balance sheet contracts. Our first instinct was to look at which banks hold the most excess reserves as a proxy for which banks are most exposed to deposit outflows. Based on our work, however, we think that the drain on deposits will not follow the distribution of reserves, as the rapid turnover of deposits from interbank payments makes trading “QE deposits” nearly impossible.

We believe the amount of retail deposits created as a result of QE is likely greater than is commonly thought

Greater than Expected Impact on Retail Deposits

Tracking deposits on an aggregate level is an imperfect science. If we ballpark US deposits at ~\$10-11 trillion, then roughly 30%, or ~\$3 trillion of funds turns over every day through interbank transfers on the Fedwire system alone. Nonetheless, with the knowledge that there are ~\$2.5 trillion in excess deposits in the system, we can look at the aggregate data and see where the largest increase in deposits have been since QE began. Our conclusion is that while there is a large portion of QE cash in wholesale deposits from corporates and financial institutions, we think that the amount of retail deposits have been created as a result of QE is likely greater than is commonly thought.

There are many avenues that QE cash can take once introduced into the system. As the Fed has bought securities from the public, the sellers of the securities received newly printed cash from the Fed. In all likelihood, the seller of the security does not want to permanently hold higher cash balances and thus deploys that cash into a new asset. From there, the newly created deposit passes from person to person in the economy. Financial institution deposits are likely the first-order products of QE as the most likely sellers are large holders of treasury securities such as asset managers. Since these firms typically don't want to hold outsized cash positions in equilibrium, they will likely purchase new securities, thus transferring the newly created deposits to another holder, typically to corporate deposits through capital market activity. QE deposits can flow into retail accounts as cash can transfer into the retail sector when households sell assets through banks and money managers or receive distributions such as interest payments and dividends from their holdings.

A simple calculation based on data from the flow of funds gives us an estimate of about \$1.2-\$1.5 trillion in retail deposits from QE

Using the limited data on deposits by sector, we can attempt to back into excess retail deposits. The consensus view is that much of the QE cash is sitting in low liquidity value deposits. Thus, as the thinking goes, when these deposits leave, the impact will be limited. Based on our work, however, we think a larger portion of QE cash lies in retail deposits than is commonly thought. Based on data from the flow of funds, growth in household deposits outstripped other sectors. Backing out changes in deposit balances in the financial, corporate, government, and foreign sectors from the Flow of Funds, we get to an estimate that ~\$1.7 trillion in excess retail deposits were created as a result of QE, or more than half of the total. Due to limitations with the data, we believe the real number is probably closer to \$1.2-\$1.5 trillion.

Figure 41. Backing out other sectors, we think it is likely that QE has had a larger than expected effect on retail deposits than commonly thought

Total Change in Deposits since 3Q08	3,049
Less: Loan Growth	545
Total QE Deposits	2,504
Less: Change in Financial Deposits	164
Less: Change in Corporate Deposits	438
Less: Change in Gov't Deposits	(53)
Less: Change in Foreign Deposits	234
Excess Retail Deposits	1,721

Source: Citi Research, Federal Reserve Flow of Funds, H.8 Data, as of 3Q14

Given that banks have still managed to grow retail deposits despite consumer deleveraging and lackluster consumer credit growth, we believe it is reasonable to assume that QE has had an impact on retail deposits. In addition, given the vast majority of the growth has been in uninsured deposits (over \$250k) we attribute it to high net worth clients. This conclusion is corroborated by the outsized growth we found at the individual bank level with exposure to high net worth clients, as well as a strong online presence.

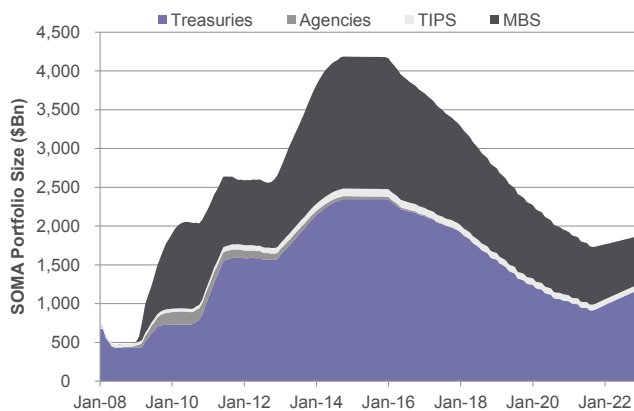
How We See the Unwind Affecting US Banks

In the short-term, we believe investors will enjoy the rate upside from the banks as the Fed raises rates, as we don't see any major obstacles to higher earnings from the banks well-telegraphed asset sensitivity. If the Fed can't control the short end of the curve, we see additional upside as higher interest on excess reserves (IOER) will raise what banks receive on deposits at the Fed while lagging deposit pricing at market rates. Firms like the trust and money center banks will feel some relief as excess deposits leave for the Fed's repurchase facilities, improving returns and reducing leverage with little hit to earnings.

We anticipate headwinds for banks as the Fed balance sheet starts to shrink

Once the Fed begins letting the balance sheet mature, which could happen in 2016 at the earliest, we anticipate some headwinds for banks as this will reduce deposits all else being equal. However, we do not think you can just look at the impact of a smaller Fed balance sheet in isolation, since in that environment one would expect relatively good economic growth which fuels loan demand and leads to organic growth in deposits. As a result, we see only low single digit deposit growth through 2021, and then growth should improve as the Fed balance sheet stabilizes.

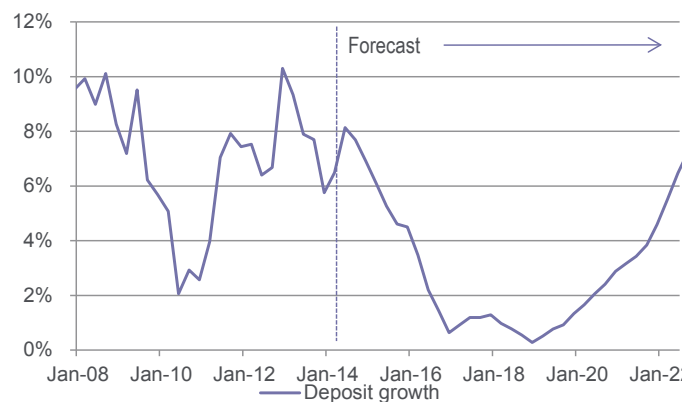
Figure 42. The Fed's balance sheet is due to shrink starting in 2016...driving a decrease in bank reserves...



Source: Citi Fixed Income

The effect from the runoff of QE deposits will hit banks differently depending on their deposit growth, exposure to high net worth clients and internet franchises

Figure 43. ...which poses a headwind for deposit growth...leading to low single digit deposit growth in the intermediate term



Source: Citi Research. Note: Assumes 7% loan growth

We believe that US banks hold much of the QE deposits despite foreign banks holding half of the cash from QE, which likely means that there are US banks that are funding their loan and securities portfolios with QE deposits. The runoff of QE deposits likely will not affect all banks equally, and some banks may get caught offside, i.e. using QE deposits to fund longer term assets. Banks with outsized deposit growth post-crisis and higher exposure to high net worth clients and large internet franchises may be potential candidates, but it is impossible to pick winners and losers since we have limited disclosure on banks assumptions on deposit pricing in a higher rate environment. The banks that have been hurt in prior rate environments tend to be the ones which overestimate the ability to lag deposit pricing.

A shrinking Fed balance sheet will likely lead to more aggressive deposit pricing by banks and reduced asset sensitivity

Nonetheless, funding issues at banks while the Fed shrinks its balance sheet will likely lead to more aggressive deposit pricing as these banks seek to stem deposit outflows. In a competitive marketplace, this dynamic may cause spillover effects, causing the rest of the industry to adjust pricing as well. Furthermore, loan growth coupled with flat deposits means that deposits will be at a premium, as the only way to grow deposits will be to gain market share. Thus, we think the biggest effect of the unwinding of QE will be reduced asset sensitivity, as banks' ability to lag deposit pricing may be somewhat diminished.

Despite headwinds in the intermediate term, however, we still look forward to the initial rise in rates while the Fed's balance sheet is constant. Our work about how the Fed's balance sheet will affect industry deposits reinforces our view that the trust banks are the best vehicle to play higher rates. Trust banks allow investors to realize the benefit of higher rates more quickly, i.e. before the Fed's balance sheet begins to shrink, as they experience much of the benefit in the first 50 basis point move and the re-pricing characteristics of their balance sheets are more contractual.

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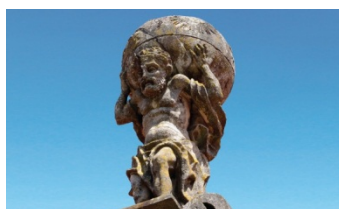
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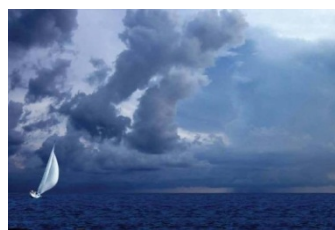
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