Amundi
ASSET MANAGEMENT

Cross asset investment strategy

#7/8

Research, Strategy and Analysis

MONTHLY

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Document finalised at July 4, 2014

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Sectorial Highlight

Asset allocation: Amundi investment strategies

Monetary policy and economic recovery remain the key factors

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One of the biggest surprise in June was the downward revision of US GDP growth: first annualised quarter-on-quarter estimate (April 30) at +0.1%; second estimate (May 29) at -1.0%; third estimate (June 25) at -2.9% (expected at -1.8%). For the first two estimates, the disappointing surprise came from inventories. For the third estimate, the revision was mainly on two other items: (1) household consumption and (2) exports, which fell back more dramatically than anticipated due to the emerging slowdown at the start of the year. .So, a cyclical slowdown – or just a soft patch?

There is no reason to think the US economy is slowing down for long. The expansion cycle begun more than four years ago – the slowest one recorded in the post-war period – is not yet over. Employment has just barely regained its 2007 level (six years after the start of the Great Recession, a period this long has not been seen in the last 70 years); the economy is still far from full employment (low participation rate, forced part-time, and high long-term unemployment). Significant excess capacity remains and there are many arguments in favour of continuing expansion:

- Monetary and financial conditions are very accommodative,
- Wealth effects are in action : long-term interest rates have come back down since the new year, and the equity the market is at a high,
- Budgetary policy is becoming less restrictive,
- Consumers have deleveraged,
- The unemployment rate is down,
- Businesses are in good shape (high margins),
- Global growth has rebounded in recent months.

In these conditions, we expect a rebound in growth in Q2, then an average pace of expansion of this unfinished business cycle. The output gap (the divergence from potential activity) will not be closed before 2017.

One thing is certain: these data are fodder for the Fed's "doves", who will be sure to reiterate how fragile the recovery is. The question about the efficiency of the monetary policy and the transmission mechanisms is crucial.

Changes in key rates (conventional monetary policies) or in liquidity (non-conventional monetary policies) have impacts on the real economy, through changes in market equilibrium, changes in wealth and income, or change in market expectations. Several channels are at work.

- **Interest rate channel:** a decline in interest rate reduces the cost of capital et favours investment. It reduces also the service of the debt, which may stimulate consumption.
- **Exchange rate channel:** under flexible exchange rate and capital mobility, any rate cut leads to a depreciation of real effective exchange rate, which is supportive for net exports, production and growth.
- **Tobin's Q channel:** the value of the stock (present value of future dividends) depends on the level of interest rates. The lower the rate, the higher the value of the stock. It reduces the cost of capital and support investment.
- **Wealth effect channel:** higher asset prices resulting from lower interest rates lead to an increase in wealth, which is supportive for consumption.
- **Inflation expectations channel:** rates cuts may increase inflation expectations, reduce real interest rates and boost consumption and economic activity.

The essential

The downward revision of US growth confirms the view of the "doves" at the Federal Reserve and all those who, like us, expect interest rates to remain low. Meanwhile, the Argentine debt crisis has retaken centre stage and default risks have re-emerged; however, the risk of global repercussions is still minimal. Our allocation maintains pride of place for equities, particularly from the eurozone.

On the corporate bond side, there is clearly less and less value to be extracted from the unrelentingly narrowing spreads, and the current situation is rather more favourable to the United States. One of the difficulties is being able to clearly identify current default risks, which are very low as a consequence of QE. There is still potential for bond spreads to narrow against Germany, and it is becoming increasingly urgent to keep only those assets that offer liquidity and guarantee solvency. We are keeping durations long on the core countries of the eurozone (particularly Germany), since the equilibrium value of long-term rates has slumped: a short-duration stance is too costly. In fact, there is another reason we are seeking duration: to allocate capital into riskier assets. We continue to favour equities from the eurozone over those from the United States, Japan and the emerging markets overall. Within the emerging markets category, we favour the Gulf countries, Mexico, Brazil, Thailand, Peru and Greece. We remain neutral on China, Indonesia and Turkey, while Russia, South Africa, Malaysia, Taiwan and Chile retain an underweight position. In a context marked by weak growth and low interest rates, M&A activity will remain significant, with US companies finding it more advantageous to purchase (cheaper) European companies exposed to the US market than to buy back their own securities. All of this is favourable for equities from the eurozone.

- **Bank credit channel:** lower interest rates improves refinancing conditions of banks, which push money creation, credit activities, and therefor investment and consumption.
- **Balance sheet channel** (financial accelerator theory): the transmission mechanism of monetary policy depends also on the quality of balance sheets. Rate hikes will be more damaging to the economy if economic agents have too much debt.

In sum, the monetary policy channels are threefold: credit channel (the bigger the role of the banks, the bigger the impact), asset prices and wealth effects, and exchange rates.

The lessons from the 2008 crisis are multiple.

- **The interest rate and bank credit channels are ineffective when economic agents are in a deleveraging process:** European peripheral countries, such as Spain, are good examples.
- **The wealth effects channel through non-conventional monetary policies tends to be efficient in a situation of deleveraging.** The US represents undoubtedly a perfect example.
- **The exchange rate channel critically depends on the saving–investment situation.** as regard Europe, the excess of savings (i.e. the current account surplus) does not plead in favour of a weak euro. This channel is particularly efficient as regard Japan.
- **Conventional and non-conventional monetary policies have to be ample enough to create significant wealth effects.** Bond yields must decline below the expected GDP growth in order to encourage investors to buy risky assets.

Overall, the revision to US GDP is not alarming, and it supports the idea that interest rates will continue to remain low. The resurgence of risk in Argentina (see Box) does not prompt us to change our asset allocation.

> Argentina: a specific risk, not a systemic risk

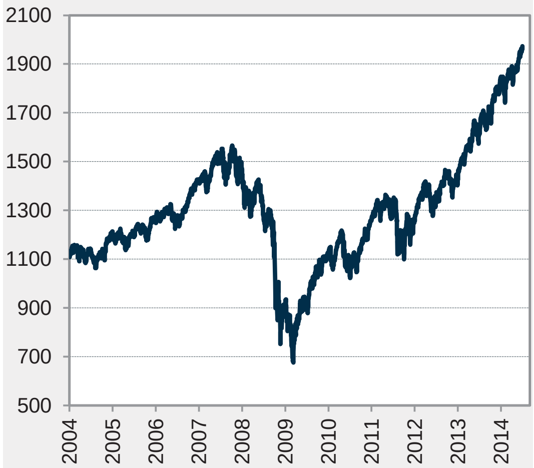
On Monday 16, the U.S. Supreme Court refused to hear Argentina's case regarding its debt payment, compelling that country to pay holders of its defaulted bonds $1.33 billion.

Review of the situation in Argentina. In the aftermath of the severe crisis that struck Argentina in December 2001 and its resulting inability to pay its foreign debt, the country should have begun restructuring a portion of its private sector debt, which at that point in time stood at $90 billion: more than 90% of the holders of Argentinian bonds agreed (in 2005 and in 2010) to the conditions "imposed" by the Argentinian government, which made provision for a valuation haircut of almost 70%. But 7% of these bondholders rejected the deal and have been battling Argentina in the courts ever since. Some of these funds (known as "vulture funds" because they tend to set their sights on distressed states) bought the bonds at knockdown prices when Argentina defaulted on its sovereign debt. Since then, they have been chasing Argentina for full repayment plus interest. Petitions were filed in several US courts. They finally won their case in a ruling by the United States Court of Appeal for the Second Circuit (New York) in 2013. It was this decision the U.S. Supreme Court upheld. As all legal remedies have been exhausted, Argentina has to pay the vulture funds.

According to S&P, which downgraded Argentina's credit rating by two notches, from CCC+ to CCC-, because the Supreme Court's decision "increases the risk of sovereign default", a default would occur only if Argentina is unable to pay its cooperating creditors. Not paying the "vulture funds" will not cause Argentina to default.

What are the risks? With foreign exchange reserves totaling $28.5 billion, (vs. $52 billion 3 years ago,, though!), Argentina would have no difficulty in paying $1.33 billion to the "vulture funds". But that is not where the risk lies. What everyone fears is that the other funds that rejected the restructuring deal will insist on the same

1 S&P 500



Source: Datastream, Amundi Research

> US growth: several factors suggest growth will continue

2 US: 10 y. yield

Source: Datastream, Amundi Research

> The effectiveness of monetary policy transmission channels: a legitimate concern

treatment (pari passu). In that case, Argentina would have to pay at least an additional $15 billion … and $90 billion if they have to reimburse the entire investor community (should we suppose they would able to obtain the same treatment). This would be an entirely different matter, and complicating matters is the fact that Argentina has not had access to capital markets since defaulting on its debt in 2001.

Can Argentina default on its debt? From a political, economic policy and financial standpoint, default would be a disaster. Argentina's President, Christina Kirchner declared that "Argentina will not default on its debts. We have an obligation to pay our creditors, but our country is not willing to be extorted". The President must come up with a solution to deal with this situation so that Argentina can return to the financial markets. With shrinking currency reserves and an economy on the edge of recession, the default risk is not negligible, especially given that Argentina will have to continue digging into its coffers to pay approximately $20 billion owed to creditors in 2014 and 2015.

What conclusions should we draw from this? The U.S. decision has no impact on the global financial system. Tools to counter the vulture funds are available. Collective action clauses can effectively stop an investor from blocking a restructuring arrangement where most of the creditors are willing to go along with it. Such provisions were applied to reduce Greece's debt in 2012. Argentina would be badly hurt if the funds that originally accepted the discounting agreement begin litigating for renegotiation - a veritable "sword of Damocles" that must be removed as quickly as possible. Stay out of Argentina at present is preferable (default risk, reputation risk …). An additionnal word of warning: the dispute over Argentina's debt can threaten future government debt restructuring agreements, giving incentive to creditors to hold out against any compromise with defaulting states.

Our asset allocation remains favourable to risky assets; however, our approach is becoming less aggressive.

A fundamental question concerns the rally on the fixed-income market: given current spreads (both sovereign and corporate), is what we are witnessing the final stretch of the rally, or is it the beginning of what might be termed "Japanisation"? (For a detailed analysis of the "Great Stagnation", see last month's issue.) If the former is true, we should prepare for a reversal of the trend. If it is the latter, we should expect the current state of affairs to continue. Here's a review of where we stand:

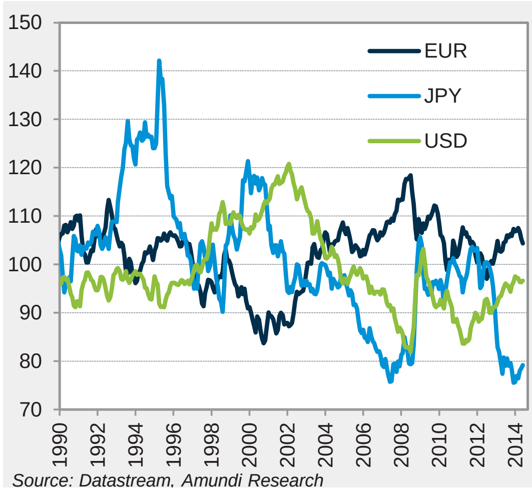
In **corporate bonds** there is obviously less and less value to be captured from spreads that have narrowed constantly; that said, we prefer high yield, ratings around BBB, and financials. The current situation (see above for commentary on the growth climate and monetary policy expectations) favours the United States. One of the difficulties is being able to clearly identify current default risks, which are very low. While growth may have returned, one of the consequences of QE has been to inflate the apparent solvency of entities that would have presented a greater risk of default under "normal" conditions. QE accounts for why HY default rates are below 2%.

In **sovereign bonds** there is still some potential for narrower spreads vs. Germany and it is increasingly urgent to stick to what is liquid and what is demonstrably solvent. Not because we expect a resurgence in the banking or sovereign debt crisis, but simply because questions on excessive valuations will be increasingly legitimate We are keeping durations long on the core countries of the eurozone (particularly Germany), since the equilibrium value of long-term rates has slumped: a short-duration stance is too costly. In fact, there is another reason we are seeking duration: to allocate capital into riskier assets.

With respect to exchange rates, we are maintaining our long positions on the USD, AUD and GBP at the expense of the JPY and RUB in particular, and of the EUR to a smaller degree. Several weeks ago we retook long positions on a number of major Asian currencies that we judged to be excessively devalued, while on other currencies our positions remain unchanged—namely, the INR, COP and KRW. The ZAR, meanwhile, is showing new signs for concern. Notably, there has been a sharp decline in the volatility of the emerging currencies, now very close to the volatility prevailing for developed currencies.

"The resurgence of risk in Argentina does not prompt us to change our asset allocation"

3 Real effective exchange rate (100 = LT average)



Source: Datastream, Amundi Research

"Corporate bonds: the current situation favours the United States"

4 Germany: 10 y. yield

Source: Datastream, Amundi Research

In **equities,** we still prefer the eurozone and Europe to the US, Japan and emerging markets as a whole. Within emerging markets we prefer the Gulf states, Brazil, Mexico, Thailand, Peru and Greece. We are neutral on China, Indonesia and Turkey, while we continue to underweight countries like Russia, Malaysia, Taiwan, Chili and South Africa. In a context marked by weak growth and low interest rates, M&A activity will remain significant, with US companies finding it more advantageous to purchase (cheaper) European companies exposed to the US market than to buy back their own securities. All of this is favourable for equities from the eurozone.

ASSET ALLOCATION SHORT TERM OUTLOOK

	- -	-	●	+	++
CASH					
USD			●		
EUR			●		
SOVEREIGN BONDS					
United States			●		
Eurozone (core countries)			●		
Eurozone (periph. countries)			●		
United Kingdom			●		
Japan			●		
Emerging market debts			●		
CORPORATE BONDS					
Investment Grade Europe			●		
Investment Grade US			●		
High Yield Europe				●	
High Yield US			●		
EQUITIES					
United States				●	
Eurozone					●
Europe excl. eurozone				●	
Japan				●	
Emerging markets				●	
CURRENCIES					
US dollar				●	
Euro		●			
Sterling				●	
Yen		●			
Emerging market currencies				●	

(--) Significantly underweighted (UW)
(-) Underweighted
(●) Neutral
(+) Overweighted (OW)
(++) Significantly overweighted

PORTFOLIO TYPE

Equity portfolios

- Prefer eurozone equities
- Stay neutral to overweight US
- Stay overweight on Japanese equities
- Beta of portfolio being reduced
- Stay underweight on EMG equities: wait for better entry points… and be highly selective
- Within emerging markets
  - Stay overweight Gulf States, Mexico, Peru, Brazil, Thailand and Greece
  - neutral China, Turkey and Indonesia
  - stay underweight Russia, Malaysia, Taiwan Chili and South Africa
- Stay selective on financial securities
- Maintain long USD, short JPY and EUR
- Long INR, COP and KRW

Bond portfolios

- Maintain overweight position on credit vs. sovereign bonds, especially on European HY
- Maintain overweight position on Italy, and to a lesser extent on Spain
- Maintain underweight/absent from peripheral countries having liquidity – solvency issues
- Long duration on core eurozone
- Maintain underweight position on emerging debt, selectivity required
- Remain selective on financial securities
- Maintain Long USD and GBP, short JPY and EUR
- EMG currencies… stay highly selective, long INR, COP and KRW

Diversified portfolios

- Neutral to underweight US equities
- Prefer eurozone and Japanese equities
- Stay underweighted on EMG equities… towards a gradual and selective comeback,
- Maintain long position on corporate bonds and convertibles
- Maintain overweight position on credit vs. sovereign bonds of core eurozone countries
- Stay underweighted on EMG debt
- Maintain overweight position on Italy
- Maintain Long USD, short EUR
- Maintain low cash exposure
- Long INR, COP and KRW

Risk Factors

JULY	RISK LEVEL
UNITED STATES: LABOUR MARKET IMPROVEMENT INSUFFICIENT	
The labour market remains the dominant concern in determining the pace of monetary policy normalization, but it is not the sole indicator to be monitored closely. The markets are now positioned for an end to QE in Q3 2014 and the first interest-rate increase six months later, but the recent GDP figures reinforce the dovish camp. The Fed predicts the Fed funds rate to reach 1% at the end of 2015 and 2.25% in 2016.	MODERATE RISK
UNITED STATES: A RAPID AND WIDESPREAD INCREASE IN LONG-TERM INTEREST RATES	
One of the major risks for the US real estate sector, equity markets and the emerging markets resides in the rise in long-term US interest rates. If this rise is too sharp and too rapid, it will significantly weaken these asset classes. It will be critical for the Fed to steady the pace and its volatility. Surely one of the Fed's biggest challenges. The current context (fears of “major stagnation”) is postponing any fear of a rapid, extensive rise in long-term rates.	LOW RISK
JAPAN: INVESTMENT REMAINS SLUGGISH	
Growth has returned to Japan, and corporate profits are rising again. The recovery in investment just revived; without it, growth is unlikely to accelerate, while concerns about the sustainability of growth (and of the equity markets) and the country's creditworthiness will once again be raised. Without more solid growth, the equity market will be at risk.	MODERATE RISK
EUROZONE: BANKING CREDIT REMAINS AT A STANDSTILL	
Banking credit to SMEs continues to suffer in the peripheral countries. Deleveraging by banks and businesses is continuing in some of the southern countries, and this has not been without consequence for employment (SMEs account for between 75% and 85% of jobs in the eurozone), investment, overall domestic demand and, consequently, growth. The ECB’s recent decisions (T-LTRO) reduce this risk significantly, especially since the troughs in activity have been reached.	LOW RISK
EUROZONE: DEFLATIONARY RISKS INTENSIFY	
The economic recovery is weak, and the signs of deflation are easily read. The ECB has taken this into account and has been sending clear messages for several months. The very recent decline in rates is one more move in the right direction, and another drop in the euro would be good news besides. For now, the financial markets have hailed the ECB’s decisions. They are seen as neither too little nor too late.	LOW RISK
EUROZONE: LONG-TERM INTEREST RATE HIKE AND EURO APPRECIATION	
Sovereign spreads are narrow, but financial stress is very weak. Even though the risks are increasingly imbalanced, there are no hikes in long-term rates or widening spreads in store. US long-term rates should not increase in the coming months, and the same is true for European rates. The euro should stay between 1.30 and 1.40 over the coming quarters, and capital (in)flows should offset the (slight) widening of interest-rate differentials.	LOW RISK
CHINA: DEBT, LOW PRODUCTIVITY, SHADOW BANKING, WEAK POTENTIAL GROWTH... TOO HEAVY A BURDEN?	
China will now need to scale back debt (rein in lending and shadow banking; reduce debt and doubtful loans), restore stronger potential growth and achieve higher productivity (population dynamics will hinder rather than help in this regard). Future growth will be weaker, but it should be of better quality. Wages in China are now higher than in some of its neighbouring direct competitors. China has still room for manœuvre to accompany such a - long – transition, but the stake and task to come are nevertheless colossal.	MODERATE RISK
EMERGING ECONOMIES: A MORE PRONOUNCED DECLINE IN GROWTH	
The emerging economies now must now face (i) the end of the US QE programme, ii) a rise in long-term US interest rates; and (iii) a deterioration of their own economic fundamentals (financial vulnerability in some countries, a weak currency in others, inflationary fears, excess credit). The downfall of certain emerging countries’ currencies will impact the growth of profits in the developed world, namely in the US and in Europe, while concerns about growth in the developed countries also present a risk, since these accentuate concerns about the emerging economies.	LOW RISK
CURRENCY WARS	
The depreciation of the yen has led to a deterioration in Asian trade relations. The distortions resulting from Japan's competitive advantage have been so strong that many countries have seen their economic and financial situations worsen. In the past months, number of emerging currencies depreciated too … but it is not the case for the Chinese Yuan. That is the reason why the Chinese central bank has recently modified its FX policy. Currency war, renewed protectionism and competitive devaluation are still high on commentators' agendas.	MODERATE RISK

Macroeconomic picture

	JULY	RISK FACTORS
AMERICAS		
UNITED STATES	> **Growth takes off again after a soft patch.** After the heavy disappointment of Q1 (GDP down 2.9% year-on-year due to poor weather and other non-recurring factors), the majority of indicators are pointing to a significant rebound starting in Q2. However, it is unlikely to be as strong as those seen in recent years. Excess capacities will not disappear until 2017 at the earliest. In these conditions, there is no risk of accelerating inflation. > **Households:** Now that they have deleveraged, households will benefit from upcoming wage growth, falling unemployment and positive wealth effects (rebound of the real estate market and record-breaking stock performance). > **Firms:** Companies are benefiting from high margins. Tobin's q (the ratio between an asset's market value and its replacement value) rose above 1 in Q1 2014, the first time since 1996—a very favourable sign for investment. > **Fed:** Tapering is likely to end in October, with interest rates rising by mid-2015.	> **Structurally weak investment despite promising signs** > **Weak productivity gains and diminished long-term potential growth**
BRAZIL	> **Industry remains sluggish.** As anticipated, industrial production declined in May. However, production growth in the petroleum sector was robust. Of lingering concern is the production of capital goods for domestic and industrial use, which is down significantly. The central bank's Brazilian Economic Activity Index (IBC-Br), the main indicator of Brazil's GDP, was down 0.7% year-on-year in April, its lowest level in two years. > **Inflation risk remains high.** Expectations of higher inflation coupled with upward pressures on wages suggests there will be little respite on the inflation front. A depreciation of the Brazilian real would exacerbate the inflationary pressure. Starting this month, inflation should exceed the Central Bank of Brazil's "upper limit" of 6.5%.	> **Risk of stagflation** > **Depreciation of the real**
EUROPE		
EUROZONE	> **Recovery slowly continuing.** While Q1 figures slightly disappointed, the most recent indicators suggest that the recovery is continuing, but without significant acceleration. > **Core/periphery gap narrowing.** Germany remains the main driver in the region (despite a slowdown in Q2), while the figures for France are disappointing. To the south, indicators for Spain remain on an upward trend (albeit from very low starting points), while in Italy the recovery has been much less robust. > **Banking credit still down.** Interest rates on loans to SMEs are still too high in the peripheral countries. Real interest rates are rising as deflationary pressure mounts. > **Deflationary pressure persists.** Inflation remains very low on average across the eurozone as a whole (+0.5% year-on-year) but also in Germany (+1%). > **Measures announced in June by the ECB do not fundamentally change the picture** but may nonetheless help free up bank lending channels and boost securitisation. > **Austerity is losing steam,** with several nations incorporating mild recovery measures into their budgets. The idea of introducing fiscal adjustment targets has been increasingly raised by political heavyweights, including in Germany.	> **Persistent deflationary pressure** > **The ECB's measures may not be enough to revive lending**
UNITED KINGDOM	> **Recovery continuing at a steady pace.** New revisions to past figures suggest significantly improved productive investment dynamics. > **Unemployment still decreasing.** However, productivity, real wages and exports lag behind. > **The Bank of England has signalled that interest rates may rise earlier than anticipated** (starting in late 2014). It also announced macroprudential measures aimed at preventing a new housing bubble.	> **Housing bubble** > **Early interest rate hike slowing down economic activity**
ASIA		
CHINA	> **More signs of recovery.** China's official manufacturing PMI reached a six-month high (51), confirming that the industrial sector is expanding. > **Outlook remains mediocre.** Export growth is gaining speed, while investment has slowed down. Investment growth (+17.3% year-on-year) has returned to 2001-levels. > **Real estate market correction continuing**. Across China's 70 largest cities, 35 saw housing prices decline in May, while in 20 prices were stable and in 15 they rose. > **The Chinese authorities are likely to further loosen monetary policy.** Uncertainty over external demand should lead China's central bank to ease lending conditions in targeted fashion and reduce the value of the yuan in order to support fragile domestic demand.	> **Further deterioration of credit quality** > **Sharp decline in housing prices**
INDIA	> **Concerns over inflation and budget.** A weak start to the monsoon season has raised the spectre of a resurgence of inflationary pressure due to higher food prices. Drought would also limit the ability to make spending cuts, as resources would have to be devoted the agricultural sector.	> **New interest rate hikes by the central bank**
JAPAN	> After posting positive figures in Q1, **Q2 will see a downturn as a consequence of the VAT hike** in early April. The latest indicators suggest that the economy is holding up better than expected. > **The government has given more details about its plans for structural reforms,** which will be needed to prevent a return to deflation. > The Bank of Japan will wait several more months before announcing new monetary easing measures.	> **Return to deflation after the Abenomics stimulus programme ends**

Macroeconomic and financial forecasts

MACROECONOMIC OUTLOOK

- **United States:** the expansion phase is not over yet. The GDP decline in Q1 is a hiccup related to very diverse temporary factors (weather, Obamacare, global trade). The environment favours a continued increase in consumption (decreased unemployment, stock markets hitting new highs) and a rebound in corporate investment. After four years of uninterrupted recovery, excess capacity persists. There is therefore no risk of inflation.
- **Japan:** a slow exit from deflation. GDP likely declined in Q2, but the impact of the April VAT increase appears to be limited. Changing wages is the key to the recovery, after households saw their purchasing power erode (increase in the price of imported products due to the decline of the yen and the VAT increase).
- **Eurozone:** outlook of low growth and inflation. 1) Nearly every country returned to positive growth in 2014, but unemployment will remain high (with the exception of Germany). 2) Germany will remain the main growth driver. Spain, Portugal and Ireland are accelerating, but Italy and France are still far behind. 3) Bank loans to SMEs are still blocked up in peripheral countries, a major obstacle to investment.
- **Emerging countries:** signs of recovery in China and more favourable market conditions (decline in currency volatility, reduced credit spreads, increase on equity markets) are both supporting emerging economies, particularly the most fragile markets. After a stable 2014, growth will likely accelerate in 2015.
- **Asia** will likely remain the most dynamic region among emerging markets.
- **Brazil:** growth remains sluggish in the context of inflation that is already above the maximum for the threshold targeted by the central bank.
- **China:** growth will likely stabilise at approximately 7.5% in 2014. Worries of a hard landing are abating as authorities will probably continue their strategy of targeted easing.

Annual averages (%)	Real GDP growth. %			Inflation (CPI. yoy. %)		
	2013	2014	2015	2013	2014	2015
US	1.9	1.9	3.0	1.5	1.7	1.9
Japan	1.5	1.5	1.5	0.3	2.4	1.9
Eurozone	-0.5	1.1	1.4	1.3	1.0	1.2
Germany	0.5	2.0	1.8	1.6	1.4	1.6
France	0.3	0.8	1.1	1.0	1.0	1.1
Italy	-1.9	0.6	0.9	1.3	0.8	1.0
Spain	-1.2	1.2	1.5	1.5	-0.2	0.9
UK	1.8	2.7	2.3	2.6	1.9	2.0
Russia	1.3	0.8	2.0	6.5	6.0	6.0
Turkey	4.3	2.5	3.0	7.4	7.0	6.5
China	7.7	7.5	7.5	2.8	3.2	3.0
India	4.4	5.0	5.5	9.5	8.0	7.5
Indonesia	5.8	5.0	5.8	7.0	6.0	5.5
Brazil	2.3	2.2	2.5	5.8	5.5	6.0
Developed countries	1.3	1.7	2.3	1.3	1.6	1.7
Emerging countries	4.7	4.8	5.1	4.5	4.5	4.2
World	3.0	3.3	3.7	2.9	3.1	3.0

Source: Amundi Research

KEY INTEREST RATE OUTLOOK

- **FED:** the Fed will continue its QE3 tapering policy by lowering its monthly purchases by \$10bn per FOMC and the QE program will end in October/November. No intention to hike key rates before H2 2015.
- **ECB:** after June's announcements, the ECB will do more only if inflation stays too low too long. Rate normalization will not occur before at least 2017.
- **BoJ:** further quantitative easing measures expected in the coming months.
- **BoE:** BoE officials indicated that the first hike may come sooner than expected. With the normalization of the labour markets, the BoE may hike rates before the end of the year.

	02/07/2014	Amundi + 6m.	Consensus Q4 2014	Amundi + 12m.	Consensus Q2 2015
US	0.25	0.25	0.25	0.25	0.38
Eurozone	0.15	0.15	0.13	0.15	0.13
Japan	0.10	0.10	0.10	0.10	0.10
UK	0.50	0.75	0.63	1.00	0.88

LONG RATE OUTLOOK

- **United States:** we maintain the view that long-term yields will rise in 2014. The acceleration of growth as well as technical factors (the decrease of the Fed's purchases will be larger than the decrease of the net supply of US treasuries in 2014) will put a upward pressure on yields. The rise of yields will be the most important on intermediate maturities. The traditional bear flattening, associated with a rise in key rates, already began but the 2 y. yield remains anchored by the Fed's qualitative forward guidance.
- **Eurozone:** the yields of core countries will rise only slowly as growth and inflation will remain low in 2014 and 2015 and also as the ECB will keep a zero rates policy for a long time. The peripheral spreads should continue to tighten over the coming months.
- **United Kingdom:** the solid growth trend and the gradual recovery of the labour market mean that we are pricing in a rise in yields in line with the United States, if not more rapid.
- **Japan:** the BoJ controls all the Japanese yield curve. As long as QE continues, there is no reason for rates to move significantly.

2 Y. Bond yield forecasts

	02/07/2014	Amundi + 6m.	Consensus Q4 2014	Amundi + 12m.	Consensus Q2 2015
US	0.46	0.60/0.80	0.76	1.00/1.20	1.12
Germany	0.02	0.20/0.40	0.16	0.20/0.40	0.31
Japan	0.07	0.10/0.20	0.12	0.10/0.20	0.15
UK	0.90	1.00/1.20	1.43	1.40/1.60	1.91

10Y. Bond yield forecasts

	02/07/2014	Amundi + 6m.	Consensus Q4 2014	Amundi + 12m.	Consensus Q2 2015
US	2.55	2.80/3.00	3.12	3.00/3.20	3.39
Germany	1.24	1.60/1.80	1.71	1.80/2.00	1.96
Japan	0.56	0.60/0.80	0.78	0.80/1.00	0.91
UK	2.70	3.00/3.20	3.20	3.20/3.40	3.45

CURRENCY OUTLOOK

- **EUR:** downside bias on the EUR/USD. The short-term interest rate differential between the US and Germany will progressively widen with the divergence of the Fed and ECB policies.
- **USD:** the gradual reduction in securities purchases by the Fed, the less dovish tone from the FOMC and the growth perspectives (better than in other advanced economies) are expected to underpin the US dollar.
- **JPY:** the yen is expected to continue to weaken, especially with new announcements from the BoJ and with the rising trade deficit.
- **GBP:** moderately to the upside. Fundamentals are improving more sharply in the United Kingdom. The rate spread is expected to underpin the pound.

	30/06/2014	Amundi + 6m.	Consensus Q4 2014	Amundi + 12m.	Consensus Q2 2015
EUR/USD	1.37	1.30	1.32	1.30	1.28
USD/JPY	101.47	105	106	110	109
GBP/USD	1.72	1.71	1.68	1.76	1.67
USD/CHF	0.89	0.96	0.93	0.96	0.98
USD/NOK	6.17	6.15	6.07	6.08	6.24
USD/SEK	6.71	7.00	6.82	7.00	6.98
USD/CAD	1.06	1.15	1.11	1.15	1.13
AUD/USD	0.95	0.95	0.90	0.95	0.88
NZD/USD	0.88	0.90	0.84	0.90	0.81

1 ECB: from the role of lender of last resort to one of buyer of last resort?

DIDIER BOROWSKI, *Co Head Strategy and Economic Research – Paris*

By switching to a zero-interest rate policy (ZIRP), the ECB has just run up against the zero nominal lower bound on interest rates, which sounds the death knell for "conventional" instruments. Questions about tools, effectiveness and the objectives of monetary policy have returned to centre stage. Can the ECB's interest rate cuts and liquidity injections kick-start economic growth and contain deflationary pressures? Can an ABS purchase plan alone solve the problem of the high cost and limited availability of credit to SMEs? And, if not, what more can the ECB do to meet is objectives? The ECB has just opened Pandora's box by hinting at outright securities purchases financed by monetary creation (QE). The frontier between fiscal and monetary policy has never been so porous in an area where the segregation of roles is vital. The ECB's role may well shift from lender of last resort (LLR) to buyer of last resort (BLR): something of a small revolution for this institution.

The essential

Questions about the tools, effectiveness and objectives of monetary policy are being debated again in the eurozone. The measures announced by the ECB are aimed at lowering financing costs, diversifying the sources of funding for businesses and lifting the constraints that are weighing on the supply of bank lending. However, it cannot be said that once these constraints are lifted, deflationary pressures will dissipate.

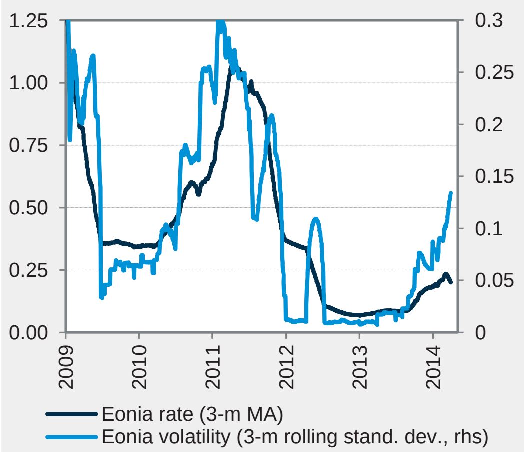
The next step will involve combining fiscal policies with accommodating monetary policy. The ECB's role may well shift from lender of last resort (LLR) to buyer of last resort (BLR): something of a small revolution for this institution, which, in return, will undoubtedly require robust assurances from governments (based on a clear timetable for structural reforms or reduced public expenditure on unproductive programmes).

ZIRP and negative deposit rates: for what purpose?

In theory, nominal rates should remain in positive territory lest economic players begin converting the liquid assets in their deposit accounts into banknotes. However, some rates can, if only marginally, cross over into negative territory, as demonstrated by the ECB's move to cut the deposit rate from 0% to -0.10%. The measure had been discussed at length and was long in coming. The objective being pursued is twofold:

1. **Reducing money market rates and their volatility.** With the reduction in surplus cash, the rate at which banks are lending money overnight (Eonia) has settled at the ECB's main refinancing rate (a 0.25% repo rate). Going forward, this rate is expected to move within a narrower band, somewhere between the deposit rate (-0.1%) and the repo rate (cut from 0.25% to 0.15%). The longer the level of surplus cash remains high, the more the rate is steered to the lower bound. Then, when private sector lending recovers (2015-2016), it will shift back to the upper bound. We expect the Eonia rate to remain along the lines of 5 bp on average during the second half of the year, without ruling out occasional dips into negative territory.
2. **Motiving the banks to hoard less cash.** Insofar as the banks' surplus cash was already draining away (due to paying back their loans (LTRO) to the ECB), it made no sense to have a negative deposit rate unless accompanied by new injections of liquidity (new LTROs and halting the sterilisation of the SMP scheme[1]). For commercial banks, the interest charged (0.1%) amounted to a warehousing fee on their cash. This encouraged the banks to either lend to one another or to increase credit to the private sector, both of which exert downward pressure on financing costs.

1 Volatility vs. level of the Eonia rate



Source: Datastream, Amundi Research

Any further lowering of the deposit rate can be ruled out. Investors would be motivated to climb up the risk ladder to safeguard their capital. This is not what the ECB has in mind. In the latest issue of its Financial Stability Review, the ECB ranked the hunt for higher-yielding investments among the top macro-financial risks (the search for yield by investors often disregards the intrinsically higher risk that these higher-yielding assets pose).

> "Any further lowering of the deposit rate can be ruled out"

A policy of enhanced forward guidance to anchor expectations

Cutting key interest rates would be meaningful if it were accompanied by a commitment by the ECB to keep them unchanged for an extended period of time. The ECB intends to use this channel to influence the entire yield curve.

1 In May 2010, the ECB decided to start the Securities Markets Programme (SMP) in order to address tensions in certain market segments. Under the SMP, the ECB bought, on the secondary market, peripheral sovereign bonds. The last SMP purchases took place in February 2012 and the programme was terminated in September 2012. The liquidity created through the SMP (€ 167bn in May) was fully sterilised on a weekly basis until June 2014.

Injections of liquidity at fixed rates and the extension of the unlimited allocation period (at fixed rates) until 2016 are aimed at anchoring expectations of long-term zero interest rates and cheap funds. It is hard to imagine higher key interest rates - even if there are no technical obstacles standing in the way - as long as the banks can avail themselves of the LTRO (that is, before the end of 2016).

Among other things, this enhanced forward guidance is aimed at decoupling the correlation between European and US interest rates. This correlation was particularly evident at the short end of the curve (two years) due to the synchronisation of past monetary cycles (see chart). Furthermore, between May and September 2013, we saw it at work at the long ends: European rates rose in the wake of US rates with little fundamental justification. The ECB's enhanced forward guidance is all the more important as the Fed will start sending signals, perhaps before the end of the year, on a potential hike of its key interest rates sometime in 2015.

Forward guidance signals a change in the objectives and the tools of monetary policy. This is what was reflected in recent statements by the governor of the Central Bank of Austria, who explicitly referred the ECB's objective of 2% growth for the eurozone, and by the words of Vítor Constâncio, the Vice-President of the ECB, who characterised forward guidance and the asset purchase programmes as major innovations: "*In theoretical debates, other proposals were made namely, to change the targets of monetary policy to price level targeting or to nominal GDP or simply, to increase the established objective of 2% in inflation targeting regimes to 3% or 4%. For practical reasons, these proposals were not retained and forward guidance and QE were the new instruments of choice for many central banks*"[2].

The ECB, the champion of economic and financial "defragmentation"

It is unusual for a central bank to relax its credit conditions at a time when economic activity is recovering. The reason is simple: economic recovery is continuing in the eurozone, but at a pace that is much too slow to contain deflationary pressures:

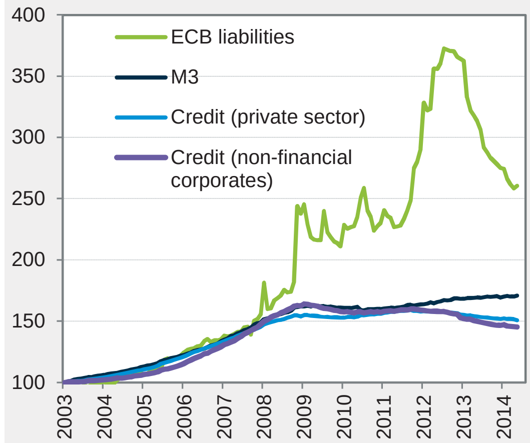
- **A genuine difference of opinion persists and is even on the increase.** You cannot simply compare and contrast the economies of the North with those of South. Within each of these regions, the same old country narratives are being repeated. For instance, in the North, Germany continues to be the main growth driver as the Netherlands lingers in recession and France stagnates. In the South, Spain is clearly back on a growth track but there is not much improvement in Italy or in Portugal (where GDP fell in the first quarter). It should be pointed out that:

1. despite the fact that economic activity is picking up, real GDP in the peripheral countries is still far from its pre-crisis level, unlike the countries of the core. Such a huge gap between North and South is unprecedented in the short history of the eurozone,
2. the disparity in per capita GDP levels and unemployment rates has not been this high since the 1990s. Only current account positions and inflation rates are trending toward convergence: current balances are now mostly in surplus (with the exception of France) and inflation rates are well below the ECB's target of 2%, including in the core countries, which – unlike the countries of the South – have not had to contend with excessive inflation since the birth of the euro. Strictly nominal convergence is not sustainable over the medium term in a monetary union.

- **From a financial standpoint, fragmentation continues to linger,** dimming the prospects of true convergence. The drop in sovereign yields was spectacular following the announcement of OMTs in the summer of 2012. Both in Italy and in Spain, yields fell to all-time lows. By contrast, the flow of lending to businesses (in particular SMEs) is at a virtual standstill in the countries of the South. Spanish or Italian SMEs can only obtain financing at a rate of 5% (compared to 3% in France and Germany). Deflationary pressures are responsible for the reversal in real interest rates. Very sharp for the past year in the countries of the South, this increase can be now seen in the countries of the North, too. Since the adoption of the euro, never has the disparity between the real interest rates of the four

2 "Monetary Policy and Economic Growth", speech by Vítor Constâncio in Athens (19 June 2014).

2 Eurozone: Credit vs. Liquidity (Janv. 2003 = 100)



Source: Datastream, Amundi Research

"Abundant liquidity is not enough to stimulate lending"

3 Major central banks: monetary base and outright purchases of assets

	Total assets (*)	Monetary base (*)	Outright purchases (*)	Outright purchases % assets
ECB	**18.7**	**12.8**	**2.2**	**11.9**
Peak (**)	32.5	18.8		
Pre-crisis (***)	14.4	9.1		
Fed	**25.7**	**23.4**	**24.2**	**99.0**
Pre-crisis	6.2	5.8		
BoJ	**51.5**	**46.4**	**44.8**	**87.6**
Pre-crisis	21.7	17.7		
BoE	**25.0**	**22.9**	**26.5**	**99.6**
Pre-crisis	**7.2**	**5.3**		

(*) % of GDP; (**) June 2012; (***) 2007

Source: ECB, Fed, BoE, BoJ (May 2014)

largest economies of the eurozone (Germany, France, Italy and Spain) been so wide (see chart).

A priority for the ECB: repair the credit channel

- **What the eurozone's recent experience shows is that abundant liquidity is not enough to stimulate lending.** The growing size of the balance sheets of the central banks is having different effects depending on the underlying reason. Since the beginning of the crisis, the ECB has been proactive and generous when it comes to injecting liquidity (which has resulted in a bigger balance sheet). However, the banks did not pass on the easier money conditions granted to them to other economic players. **In other words, the credit multiplier broke down:** credit extended to the private sector fell in every segment and in most countries notwithstanding the increase in the monetary base. Deleveraging by banks and regulatory constraints are dampening the supply of bank loans while the anaemic economic recovery (and debt reduction by private agents) accounts for weak demand. When the economy is in a recovery phase, demand for loans should rise, which is what recent surveys have confirmed. It is up to the ECB to take the necessary step to guarantee that the credit supply is ready and waiting.

Two areas of strategic focus are now being prioritised: incentive and diversification

1st area: incentive (to banks). This time, the banks must be prevented from using[3] the funds they are getting from the ECB to engage in carry trades through the purchase of sovereign debt. This is all the more necessary because the growing proportion of the assets that banks are holding in the form of government bonds is increasing their vulnerability (entanglement of bank and sovereign risk). Easing credit conditions to businesses (SMEs) and households is what is needed, not making it easier for sovereigns to borrow. Any banks that fail to cooperate with the ECB (i.e. liquidity in exchange for loans to the private sector[4]) will have to repay the amounts borrowed under the first two targeted longer-term refinancing operations (TLTRO) in September and in December 2014, two years ahead of maturity. Furthermore, the quarterly TLTROs to follow (in 2015 and in 2016) will be directly conditioned on the flows of credit granted.

2nd area: the diversification of sources of funding (for businesses). Unlike what is transpiring in the United States, businesses in Europe are getting their financing mainly through the banks. Moreover, it is primarily the SMEs that are having the most trouble with accessing credit (higher rejection rates and interest rates than for large corporates), which was not so during the throes of the Great Recession (2008-2009).

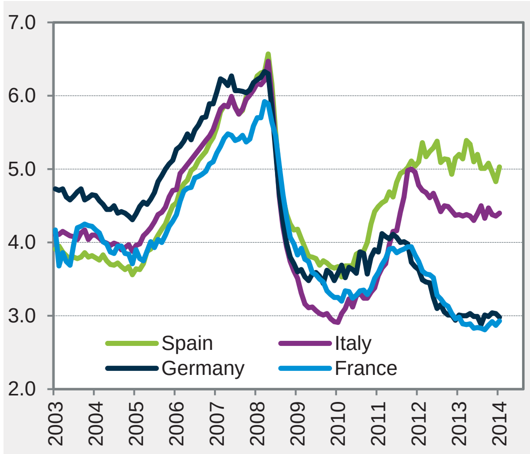
This explains the ECB's level of interest in ABS, in particular those backed by loans to SMEs. These securities, whose numbers are small, are mostly held by banks and not by end-investors, reflecting the lack of appetite for these instruments. Under these circumstances, it should come as no surprise that the European authorities are seeking to increase the percentage of marketplace financing. In an environment of low interest rates for as far as the eye can see (per forward guidance), investors, in their search for yield, will continue to be attracted by the risk-return on corporate debt issues (among which securitisation could be a part).

To sum up, the ABS purchase plan under consideration[5] has a number of objectives: (1) giving banks the power to the lay off a portion of the credit risk (specifically that related to credit granted to SMEs[6]), (2) motivating them to securitise more (the ECB is insisting on the necessity of rebuilding a simple and transparent offering of securitisation products) and, last, (3) reviving the interest of private investors for this asset class, which has been largely abandoned since the subprime crisis.

On balance, the scheme introduced by the ECB is geared toward giving

3 The VLTRO mainly resulted in purchases of government bonds by commercial banks. The high prevailing levels of yield made lucrative carry trade transactions possible.
4 In the near future, the ECB will announce what it expects of the banks in terms of distribution of credit.
5 The ABS purchase plan (designed for banks) has been formally accepted by the institution; discussions are now centred on the technical aspects.
6 This programme is mainly (but not exclusively) aimed at the countries of Southern Europe (Italy, Spain and Portugal) where SMEs account for more than 70% of jobs and value added.

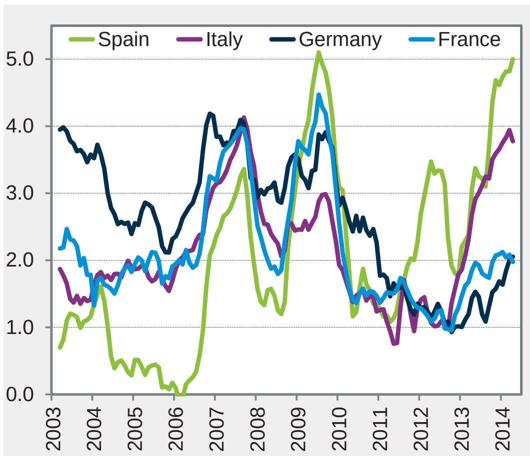
4 TInterest rates on new loans to non-financial corporations, up to 1 mln €



Source: Datastream, Amundi Research

"The ECB is seeking to diversify sources of funding for businesses"

5 Real interest rates on new loans to non-financial corporations, up to 1 mln €



Source: Datastream, Amundi Research

businesses and households access to cheap lines of credit. But will it be enough to contain deflation pressures? There's no telling. Weak credit demand is also linked to the dim outlook for growth, high unemployment (impacting household demand), deteriorated profit margins (for businesses) and levels of debt that are too high[7]. All told, weak aggregate demand may stem more from deflation pressures than from the supply constraints that are weighing on bank lending.

Moving toward purchases of sovereign debt securities to finance infrastructure expenditure?

This may seem surprising insofar as (1) sovereign yields have come down significantly, (2) systemic risk is contained and (3) the ECB's charter prohibits it from financing governments[8].

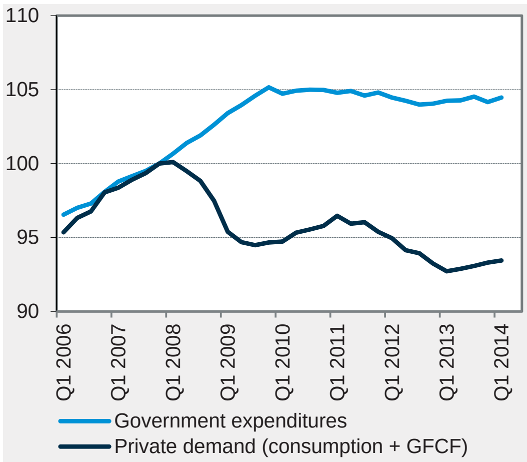
Obviously a bolt was loosened by the unanimous decision to stop sterilising SMP purchases. Halting sterilisation means implicitly accepting that, in some exceptional circumstances, purchases of sovereign securities by the ECB can be financed by monetary creation. The reasoning behind this reversal is obvious. When the sovereign bond purchase scheme was set up, inflation in the eurozone was greater than 2%; today it is far below the ECB's target in every country. Without growth, the risk of inflation linked to an abundance of liquidity is low.

Should deflationary pressures worsen, the Vice-President of the ECB, Vítor Constâncio, has opened the way for broad-based asset-purchase programmes (and not only ABS). In this respect, the ECB has ample room for manoeuvre when you compare its asset purchases with those of other central banks (see table). Interestingly, Mr Constâncio also made mention(1) of the potential risk of secular stagnation in his speech, and emphasised that structural reforms and redirecting public spending towards public investment in infrastructures and education are necessary to keep the prospects for medium-term growth in ageing economies bright. A new tone has been struck and the message is more balanced. We can already see the outline of the economic policy that is likely to be implemented should deflationary pressures persist. The ECB, which is fully playing its role of lender of last resort, could well assume the role of buyer of last resort by fostering – through QE broadened to include sovereign debt – the financing of new expenditure (infrastructures and education). The expansionist impact would be in addition to other identified channels of transmission (reallocation of successful portfolios toward risk assets, wealth effects to spur demand and exchange rate depreciation).

Conclusion: the dividing line between fiscal policy and monetary policy is breaking down

The measures announced by the ECB are aimed at lowering financing costs, diversifying the sources of funding for businesses and lifting the constraints that are weighing on the supply of bank lending. However, it cannot be said that once these constraints are lifted, deflationary pressures will dissipate. The next step will involve combining fiscal policies with accommodating monetary policies. The role of increasing aggregate demand will be restored to fiscal policy through targeted expenditure on projects designed to foster growth (infrastructures and education). Similarly, the role of financing private agents and, indirectly, governments, will be restored to monetary policy This would be nothing less than a revolution for this institution, which will undoubtedly require robust assurances (based on a clear timetable for structural reforms or reduced public expenditure on unproductive programmes) from governments in return (to address concerns about moral hazard). In other words, lining up behind the central banks, it is now time for governments to formulate their own forward guidance.

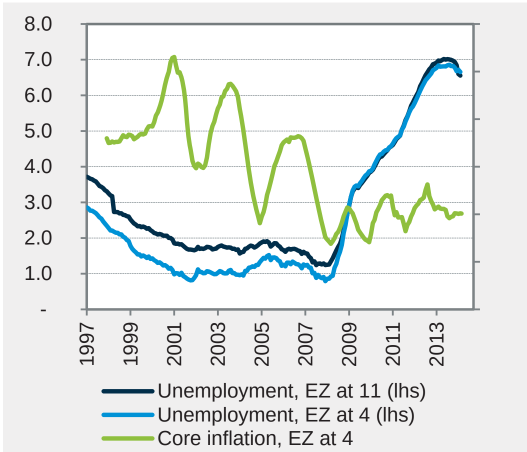
6 **Eurozone: private demand vs. publicdemand (100 = Q4 2007)**



Source: Datastream, Amundi Research

> "Now that the central banks are providing forward guidance, we expect the same from governments"

7 **Dispersion (weighted standard deviations): unemployment vs. inflation rates (%)**



Source: Datastream, Amundi Research

7 France (which is experiencing little or no supply constraints on bank lending) is not seeing its growth resume while the growth rate in Spain is recovering despite rising real interest rates.

8 But bear in mind that only purchases of sovereign bonds on the primary market are subject to this ban.

2 In the end, the Riksbank will go further

BASTIEN DRUT, *Strategy and Economic Research – Paris*

Inflation in Sweden has averaged 0% over the last 24 months. This is well below the eurozone's average inflation of 1.5% over the same period, while the ECB itself is considered to have reacted much (too much?) later compared to the Fed and the Bank of England.

The Riksbank's failure

However, urgent action is needed because inflation is currently in negative territory (-0.2% in May) and because inflation expectations are in decline, both among consumers and professional forecasters (one of the factors that finally drove the ECB to act). As in the eurozone, low inflation is concomitant with a strong Swedish krona. Meanwhile, the unemployment rate has held stable at around 8% for the last three years, which is relatively high compared to recent Swedish history. Whereas the Riksbank's target inflation is 2%, the actual rate is dangerously close to zero and the risk of a prolonged period of deflation is greater than ever. The situation is precarious because Sweden's household debt is one of the highest in the world (174% of the disposable income) and negative inflation would drive up its real value.

Krugman and sadomonetarism

Clearly, something has gone awry in the Riksbank's strategy. In April, Paul Krugman penned a highly controversial article («Sweden Turns Japanese», 20 April, New York Times) ironically labelling the Riksbank as «sadomonetarist» due to its excessively restrictive monetary policy: from mid-2010 to mid-2011, the central bank rapidly raised its key interest rate from 0.25% to 2%; shortly after, the unemployment rate stabilised at a high level and inflation plummeted. In Krugman's view, these interest rate hikes, which were too early and which came at a time when the global economy was still too fragile, hampered the Swedish economy. Of course, the European situation was no help—with the outbreak of the eurozone crisis—and battered the Swedish economy: the search for safe havens involved a substantial appreciation in the Swedish krona, albeit to a lesser degree than the Swiss franc. However, the Riksbank has clearly not been proactive since 2012: it has slowly lowered its key interest rates, but, in contrast with the major developed central banks (ECB, Fed, BoE, BoJ, SNB), it did not enlist its balance sheet as a monetary policy tool, reflecting an extremely conservative Riksbank. One of the reasons for this approach is that the Riksbank was worried about stimulating household debt and the real estate bubble.

In the end, the Riksbank will go further. But when?

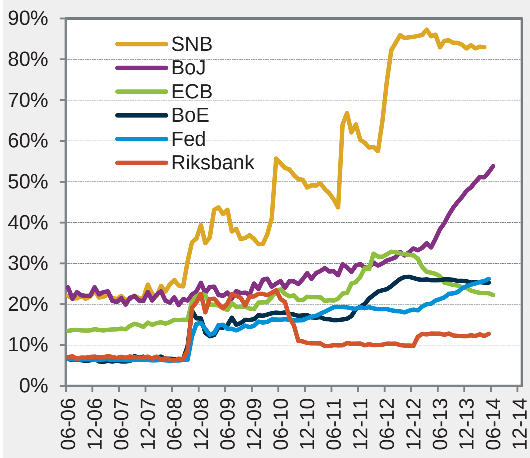
Forced to reflect on its policy, the Riksbank ordered an external audit of its monetary policy by Mervyn King and Marvin Goodfriend, a former advisor at the Federal Reserve Bank of Richmond. We recall that it was under King's watch that the BoE implemented its quantitative easing policy (from 2009 to 2012). In March, Deputy Governor Karolina Ekholm explained that in the future, the Riksbank should give less weight to the high household debt in its interest rate policy and that the strategy of raising interest rates to limit this debt brought more costs with it than benefits. Meanwhile, parliamentary elections will be held in October and some political parties are already calling for reforms to the Riksbank's objectives, a sign of widespread dissatisfaction with the bank's results. Just as the ECB on 5 June finally announced a series of measures to combat deflationary risk, the Riksbank will likely end up taking more meaningful action. For example, we note the possible introduction of a new floor for the EUR/SEK exchange rate, as the SNB and Czech National Bank have done. In the Swiss case, the currency lost 8% as soon as the floor was implemented. Likewise, the Czech koruna dropped by 5%. In terms of bond markets, the interest rate spread between Sweden and Germany will tighten along with the convergence of monetary policies. Like the ECB, change will come to the Riksbank. But, also like the ECB, change will come slowly.

The essential

With 0% average inflation over recent years in Sweden, the Riksbank has clearly failed in its monetary policy strategy.

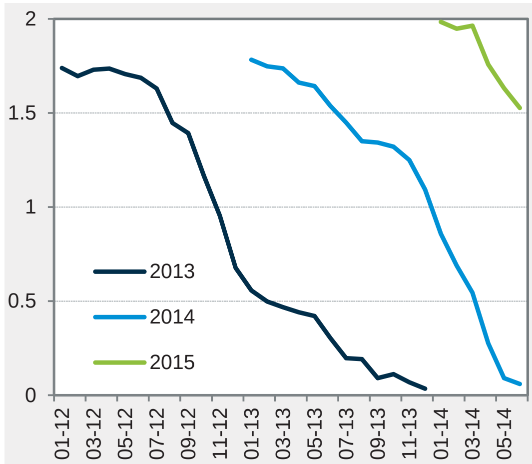
Like the ECB, the Riksbank must evolve in order to function and move more toward easing measures. The decision, taken on 3 July, to cut its main key rate by 50bp (to 0.25%) is a first step in this direction

1 Central banks' balance sheet size (as of GDP)



Source: Datastream, Amundi Research

2 Sweden: evolution of the consensus' inflation forecast



Source: Datastream, Amundi Research

3 The ECB must come to the rescue of France with a QE-Z or deflation is likely

NICOLAS DOISY, *Strategy and Economic Research– Paris*

Internal and external deflationary pressures are feeding into France's growing liquidity trap

The sources of deflationary pressure in France are twofold: (i) internal, with still rising domestic excess capacity in capital; and (ii) external, from Spain, Germany, the United States or now China (see Charts 1 to 3). In this respect, the deflationary pressure exported by Germany and Spain to France (and, to a similar extent, to Italy) also comes from the accumulation of excess capacity in capital in both countries: that inherited from the German Reunification, which peaked in 2004 and then 2008; and that coming from the Spanish housing bubble, which has not peaked after five years.

These deflationary forces are translating into a trend decline in France's price and wage inflation rates, which are not only below the 2% target now but also edging closer to 0% (see Chart 4). Indeed, while it has remained safely at an average mark of 2% ever since mid-2009, wage inflation has now crossed the 1½% mark and remains stuck on the downward trend it has taken back in mid-2012. Meanwhile, if on a few occasions, price inflation has never been above 2%, averaging 1½% over the 2000s: having reached 0.5% in 2014Q1, it is now pretty close to the zero lower bound (ZLB).

As these deflationary pressures take root, France is now in an economic situation seemingly similar to, but actually worse than in 1995-96, with inflation at its lowest and unemployment at its highest:

- while the large drop in price inflation of last January (0.1% yoy) is related to the VAT hike, the February rebound to 0.7% has not survived the spring with a meagre 0.2% in May;
- the prospects of seeing unemployment decline now (as after 1996) to lift inflation appear out of reach, if only based on INSEE's forecast of a slight rise from 10.2% to 10.4% this year.

A negative exogenous shock can only push France towards deflation in today's global context

Put simply, France is at a turning point where it could go either way (reflation vs. deflation) depending essentially on whether it is hit by a (positive vs. negative) exogenous economic shock:

- back in 1995-96, growth and inflation were to remain low for another two years, i.e. until the US and then peripheral bubbles started to develop, thus reflating France until the mid-2000s;
- today, the US and eurozone prospects are much less enticing, while France is yielding to excess productive capacity four times as large, at 4% GDP compared to barely 1% in 1994.

More specifically, it seems that two factors will play a large role in determining the endgame for France, i.e. the way (i) the rest of the world evolves and (ii) the eurozone policy mix is modified:

- an aggravating global factor compared to the mid-1990s is that both the United States and China are under deflation forces, while none of them was in that position in the mid-1990s;
- in this context, despite the ECB announcing an additional € 400bn of bank liquidity, the risk remains real that deflationary forces internal to the eurozone keep spreading to France.

The essential

Internal and external deflationary pressures are feeding into France's growing liquidity trap, due to still large and sometimes rising excess capacity at home and in the rest of the world, i.e. the United States the eurozone, and now China. Accordingly, price and wage inflation are now edging down towards the Zero Lower Bound (the 0% level), putting France in a situation that is actually worse than in the previous such episode of low inflation and activity (back in 1995-96) because, today, the rest of the world is also resisting or yielding to deflation.

While France is thus susceptible to any negative exogenous shock, two key negative policy risks keep hanging over it (and the eurozone at large, of which it is an essential part):

i. while the United States can be expected to reverse gear on its monetary stance, China's bubble burst could be damaging, given the depth of its liquidity trap;

ii. the eurozone could continue forcing deflationary fiscal austerity and structural reforms on countries that are already at risk of deflation, including France.

Only the ECB can roll out a QE to cushion France's fiscal austerity and structural reforms, as it is becoming key for the survival of the euro due to its pre-deflation and complex politics. If France is to continue delivering a minimum on fiscal austerity and structural reforms, then the deflationary impact of this policy will have to be cushioned with some reflation strategy. Otherwise, the main risk is that of a return to the conditions that led to the eurozone crisis of 2011-12: this puts the ECB in a position to deliver beyond its promises, if and when need be.

All in all, France's situation is less desperate than solely based on its nascent liquidity trap, because France's fate is central to that of the eurozone and its main institution, the ECB. As a result, the ECB will very likely remain under pressure to go for a proper Quantitative Easing for the eurozone (QE-Z). Meanwhile, Germany has already agreed implicitly not to pressure France too much on both fiscal austerity and structural reforms, when Ms Merkel and Mr Hollande met on the Baltic coast for a show of unity. The reason is the alternative above.

In this respect, two specific negative policy risks/shocks hang over France (and the eurozone at large, as France is an essential part of the euro bloc) and deserve close scrutiny given their weight:

- while the United States can be expected to reverse gear on its monetary stance if need be, the fallout of China's bubble burst could prove damaging, given the depth of its liquidity trap;
- the eurozone leadership could stick to the strategy of forcing deflationary fiscal austerity and structural reforms on countries that are already at risk of deflation, including France now.

Only the ECB can cushion France's fiscal austerity and structural reforms with a large QE

The specificity of France is that in a low inflation environment, unemployment tends to drive all variables of interest: both corporate and total investment as well as both wage and price inflation. As a result, it seems that France's liquidity trap is indeed growing rather than waning, to the extent that this overwhelming role of unemployment is a sign of the composition effect described above: while France is struggling with its own excess capacity, it must also weather large demand effects from the rest of the world, i.e. the United States, the rest of the eurozone, and now growingly China.

Since both are recessionary, forcing further fiscal austerity and liberalisation reforms could indeed push France into deflation: both should thus be put on hold, if not reversed until France normalises. Indeed, the fact that unemployment commands investment as well as price and wage inflation shows that France is getting trapped into a Keynesian under-employment equilibrium (see Box 1). The economic policy prescription would be for France to go for a fiscal stimulus with monetary financing and no market liberalisation yet; but the eurozone political compromise is about putting both on hold.

> Anatomy of the French nascent liquidity trap: it's the unemployment, stupid!

The central feature of France's pre-deflation is the driving role of unemployment in its unfolding: indeed, unemployment drives (i) productive capacity investment and (ii) price and wage inflation (see equations below). France's incipient deflation is thus due to the wrong policies: forcing fiscal austerity and liberalisation reform (both deflationary) at a time of low aggregate demand. The driving role of unemployment is typical of Keynes' under-employment equilibrium, if only because of the worldwide low aggregate demand, making France a victim of a global pre-deflation.

From an economic flow perspective, no rise in either productive investment or price and wage inflation is to be expected if the unemployment rate does not start to decline consistently soon. Indeed, an econometric analysis of the statistical relationships of unemployment with (i) investment and (ii) inflation shows that, in a low inflation environment (such as in France ever since the mid-1990s, i.e. the launch of the euro project), slow activity comes from low aggregate (internal and external) demand insufficient to keep all installed capacity busy and profitable.

A few key structural macroeconomic relationships can characterise the French economy ever since 1994 by connecting unemployment, wage and price inflation, total and productive investment[1]:

$$price\ inflation = -0.5239.unemployment + 0.06 + \varepsilon$$

$$wage\ inflation = -0.3546.unemployment + 0.0555 + \varepsilon$$

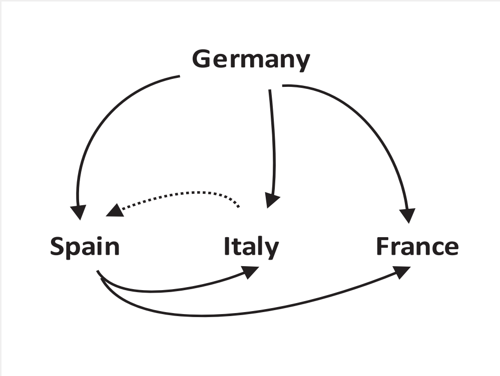
$$price\ inflation\ = 0.5826.wage\ inflation + \varepsilon$$

$$corporate\ investment\ = -0.2308.unemployment + 0.1468 + \varepsilon$$

$$total\ investment\ = -0.5339.unemployment + 0.2643 + \varepsilon$$

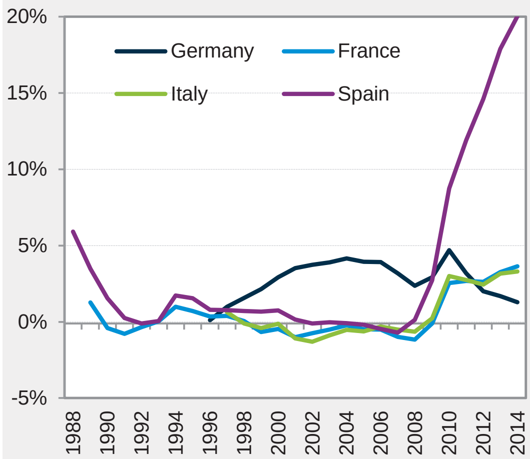
1 All relationships have been estimated in VECM; results are available upon request.

1 Eurozone: the inter-connection of de-/in-flation pressure



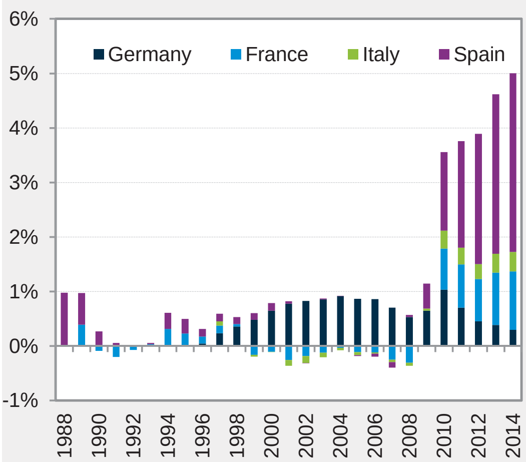
Source: OECD (data), Amundi Research (estimations)

2 France, Germany, Italy & Spain: excess capacity in capital (in % domestic GDP)



Source: OECD, Amundi Research

3 Eurozone: excess capacity in capital (in % Eurozone GDP)



Source: OECD, Amundi Research

At the end of the day, due to this pre-deflation and its complicated politics, France is becoming key for the very survival of the eurozone; this, in turn, will surely prompt the ECB to go in QE mode, if and when need be (see Box 2). Indeed, if France was to follow Italy onto a (proper if mild) deflation path with no prospect of any outside intervention, question marks would be soon raised over the fate of both France and the euro project, pretty similarly to the French Franc crisis of July 1993. Being the only federal institution of the eurozone, the ECB will want to prevent such a turn for the worst.

> Political populism can and will be contained by the French institutions

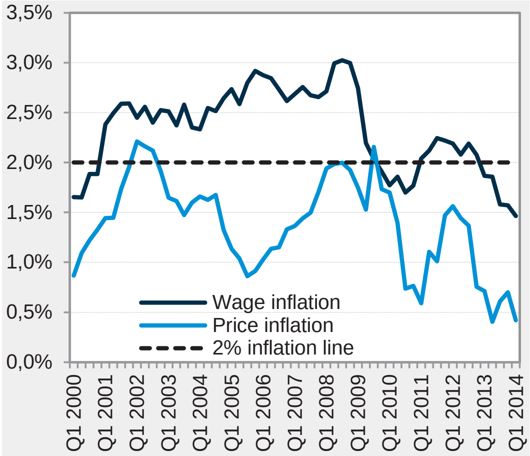
Deflation is developing in France just when the political context appears risky as ever. Accordingly, one could fear that, if deflation was to prosper in France, it would feed into a further rise of extremist parties in next year's regional and local elections as well as, two years later, in the 2017 Presidential and Parliamentary elections. The question would then be: can such a further rise endanger France's political stability and especially lead to the election of an extremist President?

A few institutional backstops are in place to substantially reduce a tail risk, starting with the very spirit and letter of the French Constitution and the majoritarian electoral system with two rounds. Indeed, the Constitution of France was designed, in 1958, to precisely ensure political stability, essentially with a few tricks: (i) the election of the French President directly by the popular vote, (ii) the French President's power to call for early elections and referenda, and (iii) placing the legislative elections right after the President's election to ensure a stable majority in Parliament.

As a result, the largest tail risk would be the following combination: (i) a proper (if mild) deflation with a financial crisis and (ii) a subsequent strong rise in protest votes (but no extremist victory): this means Germany would not allow the ECB to come to the rescue with its own Quantitative Easing for the eurozone (QE-Z) on time. Such a risk would matter in 2017 and take the form of (i) the presence (not the victory) of an extremist candidate in the Presidential election and (ii) no stable majority to back the new President in Parliament: a close shave, to be sure, but a shave.

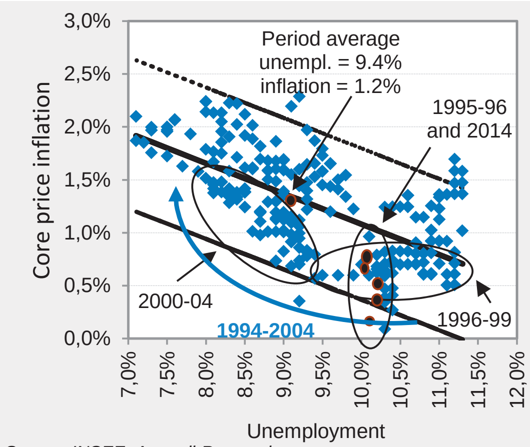
All in all, France's situation looks less desperate than solely based on its nascent liquidity trap: this is because France's fate is central to that of both the eurozone and its main institution, the ECB. As a result, the ECB will very likely remain under pressure to go for a proper Quantitative Easing for the eurozone (QE-Z). Meanwhile, Germany has already agreed implicitly not to pressure France too much on fiscal austerity and structural reforms both deflationary, when Ms Merkel and Mr Hollande met on the Baltic coast to show an image of unity. The reason is the alternative: another euro-crisis.

4 **Core price and wage inflation**



Source: INSEE, Amundi Research

5 **France's Phillips curve**



Source: INSEE, Amundi Research

4 What should we expect from the US-German yield differential?

BASTIEN DRUT, *Strategy and Economic Research– Paris*

Since May 2013 and Ben Bernanke's speeches about the QE3's tapering, the spread between US and German yields widened on all maturities. The economic divergence of the US and Germany implied a monetary policy divergence and then a bond yield divergence. However, this is striking that this spread widened more on long-term maturities than for short-term maturities. What should we expect for the coming months?

The amplitude of the spreads' movements is higher for short term maturities, in general...

First, we should analyse the evolution of the bond yield spread between the US and Germany in the long run. Over the last decades, when the monetary policy of the US and Europe diverged, the amplitude of the spread movement has been far higher for short-term maturities than for long ones. That is logical as there are less reasons for growth and inflation in the US and in the eurozone to diverge in the very long-run than in the short-run. The economic situation can diverge sharply in the short run: for instance, growth and inflation are currently low in Europe while inflation is around 2% and growth is close to 3% y-o-y in the US. In order to give a graphical illustration of this, we computed the average of the yield spreads' peaks (in absolute value) since 1994 (5 peaks). In average, the amplitude of the spreads between the US and Germany has been of 215 bps for the 2y. maturity, 155 bps for the 5 y. maturity, 125 bps for the 7y. maturity, 90 bps for the 10y. maturity and 45 bps for the 30y. maturity.

The current situation is atypical

Currently, the 2y. spread is very low and the 5y. spread is below the 7y. spread. This is atypical compared to the previous cycles. According to the historical study that we have done above, the 2y. and 5y. spreads may rise more over the coming quarters while the 10y. and 30y. spreads are already above their historical amplitude. The 2y. spread has especially huge room for widening! Actually, the current cycle has been different from other cycles, mainly because of the Fed and the ECB's forward guidance. These forward guidance policies, by anchoring the expectations of central banks' key rate close to zero for a long period, anchored the short-term interest rates close to 0% and thus, the 2 y. spread remained low (zero minus zero). Meanwhile, the 10 y. and 30 y. spread widened strongly since May 2013.

What should we expect in H2 ?

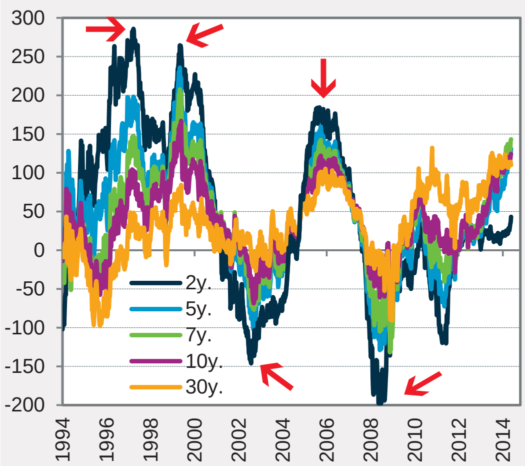
Now that the Fed is likely to hike the fed funds around mid-2015 (this has been confirmed by the projections for the fed funds of FOMC members in June), the 2y. yield is giving some signs of life and will gradually increase in H2 2014: we have a target of 0.8% for the end of 2014 As the ECB will keep a ZIRP policy for several years, the 2y. spread will gradually widen and will exceed in some quarters the spread on long term maturities. The 5y. yield has also some (but less) room for widening but it seems now too late to expect further substantial widening of the 10y. and 30y. spreads from the current levels.

The essential

Over the last twelve months, the spread between the United States and Germany has widened on all maturities.

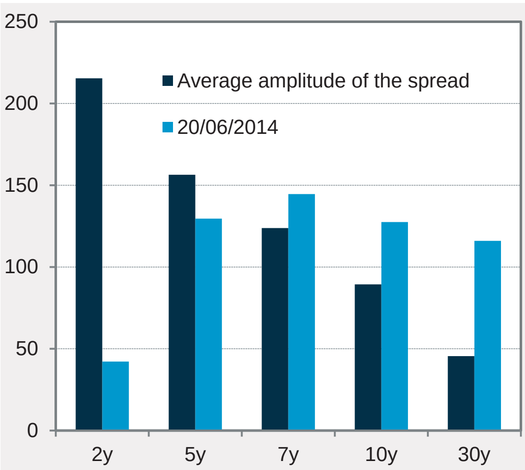
We should expect this trend to continue over the second half of the year, on short maturities especially.

1 **Bond yield spread between the US and Germany (in bps)**



Source: Datastream, Amundi Research

2 **Spreads between US and Germany: current values vs average amplitude**



Source: Datastream, Amundi Research

5 In the United Kingdom, the fixed-income markets are preparing for monetary tightening by the BoE

BASTIEN DRUT, *Strategy and Economic Research – Paris*

On 12 June, Mark Carney, the governor of the Bank of England (BoE) indicated during a speech that the BoE could raise interest rates sooner than expected, since UK economic growth was surprisingly higher and the unemployment rate had fallen more rapidly than expected. Let us look here at the consequences for the fixed-income markets.

The UK economy is returning to normal, justifying some tightening of the monetary policy by the BoE

Economic growth has positively surprised in the last few quarters, in terms of the level but also the composition since investment was one of the main contributors to the growth. Growth has therefore become more and more balanced and the production capacity utilisation rate has returned to above its long-term average. The labour market has continued to rapidly improve: job creations are very strong and the unemployment rate fell to 6.6% of the working population in March (well below the 7% threshold mentioned in the BoE's defunct forward guidance). However, this improvement needs to be qualified by highlighting the fact that the self-employed account for a substantial proportion of the jobs created (80% of job creations since 2008 according to the May 2014 quarterly inflation report) and that the number of people working part-time, since they are unable to find full-time work, remains very high. Meanwhile, wage growth remains sluggish. However, the BoE is confident of it returning to a normal rate in the medium term ("Spare Capacity and Inflation", M. Wheale, 18 June 2014). Overall, as indicated in the MPC's latest Minutes: "The economy is starting to return to normal. Part of this normalisation would be a rise in Bank Rate at some point."

Moreover, BoE members have stressed the imbalances caused by having a zero interest rate policy for too long. In particular, the zero interest rate policy has stimulated the property bubble, which is jeopardising financial stability. The BoE seems determined to act, even though the extent of monetary tightening will probably be less significant than in the past.

The UK yield curve is likely to continue to flatten

The substantial declines in BoE rates in 2008/2009 caused a historical steepening of the UK yield curve. Moreover, the increase in the unemployment rate generally contributed to the steepening of the curve. The latter has embarked on a bear-flattening trend, typical of periods preceding increases in interest rates, where short rates rise faster than long rates. The 2-year rate has much greater future upside potential than long rates. Historically, on average, the curve flattening trend has occurred on all segments (2 years – 5 years, 5 years – 10 years, 10 years – 30 years) until at least the actual rise in BoE rates. This is expected to be the case in the second half of 2014. The 2 years – 5 years segment is the segment with the greatest flattening potential.

Sterling is likely to continue to appreciate against the euro

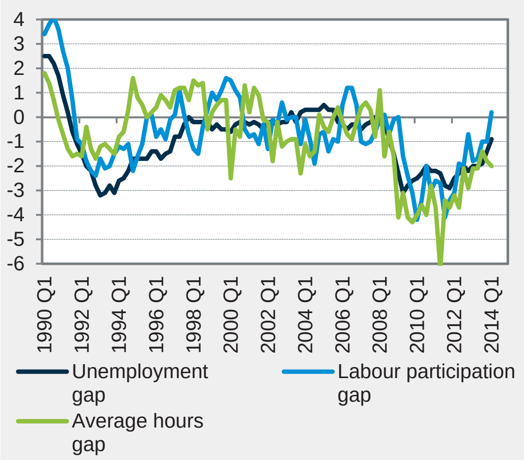
The BoE's monetary policy will clearly differentiate itself from that of its European counterparts: the BoE is the only European central bank likely to raise interest rates over the next few quarters. Its monetary policy is even in complete contrast to that of the ECB which has recently announced unconventional measures to combat deflation and is expected to maintain a zero interest rate policy for a number of years. Sterling is expected to continue to appreciate against the euro over the next few quarters, with the EUR/GBP exchange parity being highly correlated to the differential in short rates.

The essential

According to declarations by BoE members, the first Bank Rate increase could happen sooner than expected.

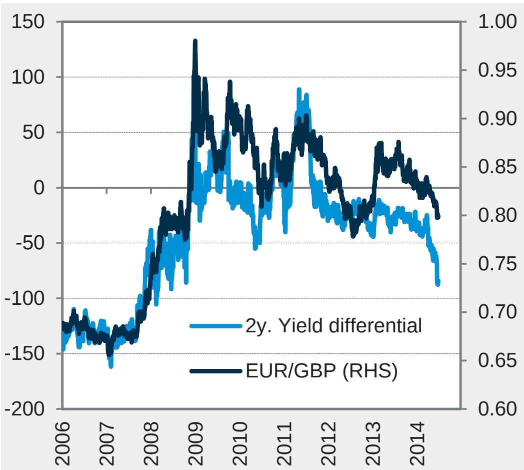
The slope of the yield curve is expected to continue to flatten and sterling looks set to continue to appreciate against the euro.

1 UK: labour market slack computed by the BoE (in number of standard deviation)



Source: BoE, Amundi Research

2 EUR/GBP vs 2y. Yield differential between Germany and UK



Source: Datastream, Amundi Research

6 The euro remains "strong" despite the ECB's announcements. Why?

DIDIER BOROWSKI, *Co Head Strategy and Economic Research – Paris*

The ECB's announcements have driven all eurozone (EZ) money-market and bond rates down. However, the euro has not depreciated. We have already pointed out the link between the euro and the factors that influence it (interest rate spread with the United States, and the relative size of the Fed's and the ECB's balance sheets), which should weigh down the single currency[1]. Here we return to the close link that exists between the euro and the basic balance[2] of the EZ, which is now working in the opposite direction. Its development clearly retraces the euro's overreaction phases, both upward and downward, since its inception.

2000-2002: a shock of diversification in eurozone residents' portfolios

When the euro fell to its lowest point in October 2000, the basic balance was in deficit by nearly 5% of GDP due to massive capital outflows from the eurozone. After its introduction at an exchange rate of $1.18 (1 January 1999), the euro then continually depreciated, falling to an all-time low against the dollar ($0.83 in October 2000). This decline was due in large part to the diversification of EZ residents' portfolios. With the arrival of the single currency, these residents found themselves holding too large a share of their assets denominated in the same currency. The diversification of their portfolios was especially visible on the equity side: Between 2000 and 2002, the EZ recorded €200 billion per year in capital outflows as equities! The upshot was that the euro stayed below parity against the dollar throughout that period.

2008-2009: the euro draws foreign investors

The euro's "overreaction" increases ($1.60 in November 2008 and $1.50 in October 2009) were also the result of portfolio diversification, but this time from foreign (esp. Asian) investors. Indeed, during this period, purchases of EZ money-market paper and bonds soared, alongside the increase in the euro-denominated portion of central banks' foreign exchange reserves. These movements were – not surprisingly – closely correlated to interest-rate spreads between the United States and Germany.

2013-2014: the euro gets a shot in the arm from capital inflows and the trade surplus

Today, the EZ is benefiting from a dual movement of a different kind:

1. **An increase in the trade surplus.** At nearly 3% of GDP, it is at an all-time high. The current account balances of Southern European countries are back in positive territory, while those of the core countries, which already have large surpluses (Germany, Netherlands), have not diminished. This is partly a surplus tied to the compression of imports (recession, then a weak rebound in domestic demand) and partly the result of competitiveness efforts waged in the Southern countries (internal devaluations).
2. **An increase in net capital inflows (direct investments, equities),** which totalled €120 billion over the past 12 months. Foreign investors, who had abandoned risky European assets at the peak of the debt crisis, are back to capitalise on the "normalisation" of asset prices, which seem discounted in relative terms.

Result: The EZ's basic balance has virtually doubled in one year, reaching its all-time high (nearly 4% of GDP).

What should we expect?

It is highly likely that in the absence of forward guidance from the ECB, the euro

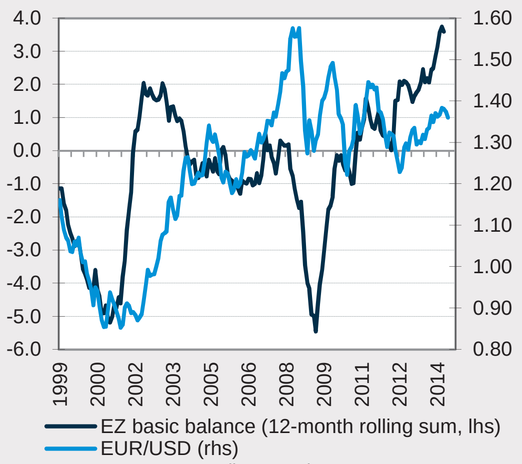
1 *These are the factors behind our projection of $1.30 by year's end.*
2 *The basic balance combines the balance of current transactions with foreign direct investments and net inflows in equity.*

The essential

The ECB's announcements have driven all eurozone money market and bond rates down. However, the euro has not depreciated. The basic balance is pushing the euro upward. And it is very likely that without any forward guidance from the ECB, the euro would be even stronger.

By the summer of 2015, the basic balance should subside, and bearish arguments should prevail in the end. We are upholding our projection of $1.30 over the same timeframe.

1 **Basic balance (% of GDP) vs. EUR/USD**

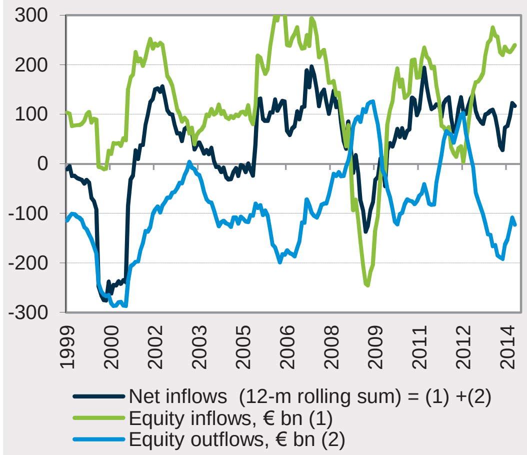


Source: Datastream, Amundi Research

> "The euro is currently being driven by the trade balance and capital inflows"

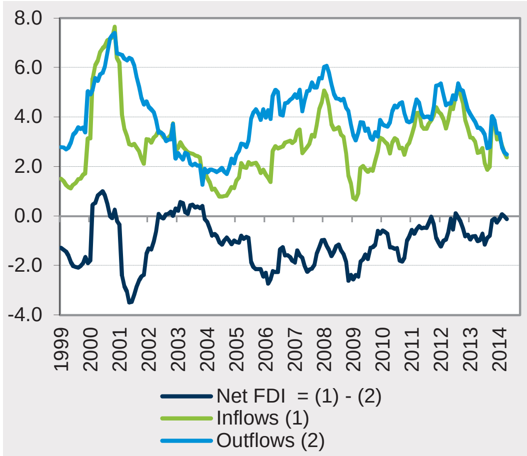
would have appreciated further, driven by the basic balance surplus. In 2014-2015, this surplus should, however, subside. On the one hand, the EZ's trade surplus will decline in line with the recovery of domestic demand (rise in imports); on the other, capital inflows will collapse as the relative discounts on European equities disappear (since the diversification shocks are in essence temporary). In conclusion, bearish arguments should ultimately prevail, leading to a weaker euro. But this could take a little more time than we foresee, especially if the internal recovery in the EZ is a disappointment and the ECB takes its time announcing a QE programme.

2 **Eurozone: equity flows (12-month rolling sum)**



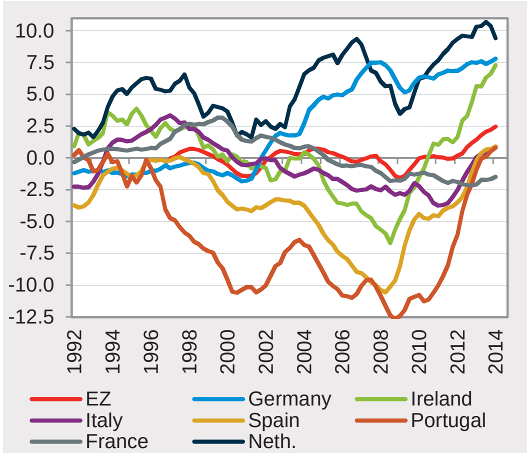
Source: Datastream, Amundi Research

3 **Eurozone: net FDI Flows (12-month rolling sum, % of GDP)**



Source: Datastream, Amundi Research

4 **Current account (% of GDP, 4-q MA)**



Source: Datastream, Amundi Research

7 United States: the longest cyclical bull market in history!

ÉRIC MIJOT, *Co Head Strategy and Economic Research – Paris*

The US market has established new all-time highs, volumes are low and volatility, minimal. Are these signs of complacency or of a lasting trend?

To answer this question, let us first look at market cycles

A market cycle begins with a major equity market low (in this case, the S&P 500) under its 200-day moving average, after which the market reaches a high point above this reference after testing it one or more times. Since the late 19th century, 27 market cycles have been identified. On average, the upward phase of a market cycle lasts 32 months. The current cycle began in March 2009 and has now lasted 63 months, or longer than the longest-ever recorded cycle (61 months), which began in 1982 and ended… with the 1987 crash (see Charts 1 and 2)!

Our intention is not to be alarmist, but the US market is becoming more vulnerable as the end of the year draws near. A correction could be triggered by an escalation of the Middle East crisis. It could also result simply from an acceleration of the US economy after very disappointing first quarter results—good news for economic activity could spell bad news for monetary policy. In such a case, the Fed's communication exercise, which has been increasingly qualitative, could become more complicated. The Fed's quantitative easing is scheduled to end in October, just before the mid-term elections (on November 4), which are meant to renew the entire House of Representatives and one-third of the Senate. These elections could also reopen the budgetary debate at a time when the debt ceiling must be renegotiated, i.e. by March 15, 2015. In 2011, the repercussions of the end of QE2, which was scheduled for August, were felt as early as May of that year.

And now a look at economic cycles…

According to the NBER, which officially lists economic cycles in the United States, the last cyclical downturn dates back to June 2009 (see chart 3). This was five years (60 months) ago, or slightly longer than the average since the 1930's (59 months from through to peak). However, the upward phases of the last two cycles (March 1991 to March 2001, and November 2001 to December 2007) were much longer than average (120 and 73 months), due largely to highly accommodative monetary policies. Both of these cycles lead to a market bubble. Note that each of these economic cycles (from trough to trough) included two market cycles (1998 to 2003 and 2006 to 2009) and that the last one, in both cases, concluded by the bubble.

Given the deleveraging but also the aging of the population, economic recovery is slower than in the past. This suggests that the current economic cycle will again be longer than the historical average. It also supports the thesis of weaker potential growth and therefore, of lower real interest rates than in the past; there is even a possibility that the long-term rates forecast by the Fed, which the FOMC has just revised downwards to 3.75% (from 4%) are still too high if an inflation regime of 2% is assumed. But starting with high rates is perhaps part of the Fed's qualitative arsenal in steering market expectations. If the Fed is successful in systematically reassuring the markets in order to avoid an economic slump, this could lead once again to an equity bubble.

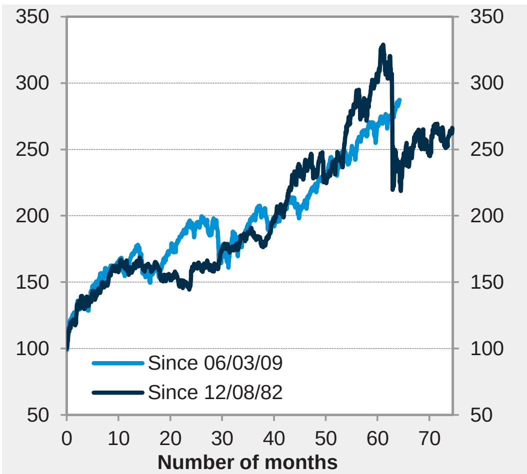
US equities are expensive

In this publication, we often refer to a P/E ratio equilibrium level in the US market, which would be around "20 minus inflation" (see Cross Asset, March 2014 edition). At 17x the profits of the last 12 months, the market is close to entering bubble territory. Assuming 2% inflation, 18x would actually be the limit. We should remember that this threshold was crossed in particular before the 1987 crash, in December 1996 when Mr. Greenspan spoke about irrational

The essential

The US market seems vulnerable to profit-taking by the end of the year. After that point, setting aside the possibility of a failed "exit strategy" by the Fed and a looming global recession, the risk of a bubble should not be overlooked.

1 S&P 500 Bull market (basis 100 on March 2009 and August 1982)



Source : Datastream, Amundi Research

> "The current bull market, begun in 2009, has lasted longer than that of 1982 to 1987"

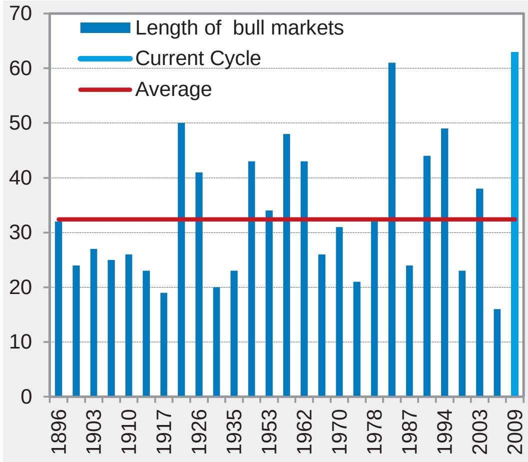
exuberance and in January 2008 before the Lehman crisis. It is rare for a market to stop rising at equilibrium level. So although equities are expensive, there is still room to inflate a bubble. In this respect, Mrs Yellen has just affirmed that markets were not currently overvalued.

The argument of a higher risk premium is more and more used to justify the attractiveness of equities compared to bonds. It is true that the risk premium (5.9% according to the following definition: inverse P/E minus real rates) remains above its historical average (4.5% since 1989), which could attract capital to equities. But keep in mind that the lower the real rates, the higher the equilibrium level of the risk premium. And the risk premium is now exactly on the regression line between these two variables. Again, crossing that line would mean inflating a bubble, which remains possible.

Conclusion

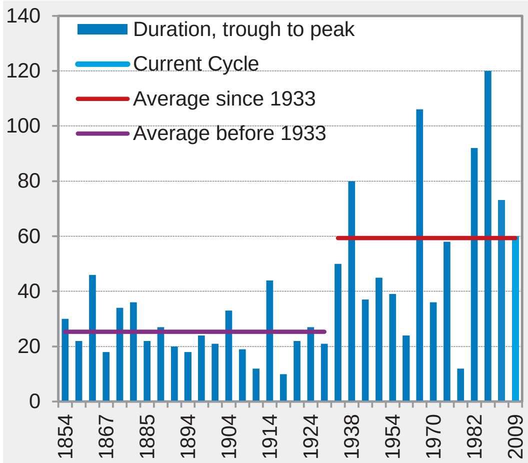
With geopolitical tensions, ups and downs of the economy and demanding valuation, the US market seems vulnerable to profit-taking by the end of the year. This could probably happen before the end of QE, scheduled around the time of the mid-term elections. After that point, setting aside the possibility of a failed "exit strategy" by the Fed and a looming global recession, the risk of a bubble should not be overlooked. This situation deserves some cautiousness on the short term but without panicking.

2 Length of Cyclical Equity bull markets (S&P500 - Number of months)



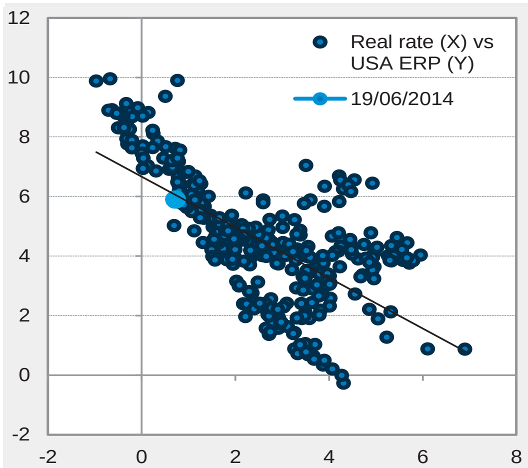
Source : Shiller Data, Amundi Research

3 Duration of Economic Cycle, trough to peak (number of months)



Source : NBER, Amundi Research

4 USA Equity Risk Premium vs Real Interest rate



Source : Datastream, Amundi Research

8 Investment flows have changed considerably since last year

IBRA WANE, *Strategy and Economic Research– Paris*

On 22 May 2013, nearly a year ago to the day, the Fed made waves by announcing that it would eventually taper its Quantitative Easing program. This outlook, suggesting US long-term interest rates would ultimately rise, led to a massive outflow from emerging markets, for which the yield premium compared to US Treasuries were at risk of falling, as well as a desperate search for yield, which in turn explained why the rotation to equities and high yield compared to investment grade sped up. At the end of May 2014, four months after tapering began, the direction of flows has changed considerably since the second half of 2013. Chart No. 1 therefore shows that of the three major trends mentioned above, only the outflow from emerging markets has continued, whereas the momentum of High Yield has greatly slowed and the Great Rotation to equities has even reversed.

With regard to emerging market flows (equities and bonds), a more detailed breakdown shows the change occurred in three stages (see Chart No. 2):

- from 1 January to 22 May 2013, the day eventual tapering was announced, flows continued to increase in line with the previous decade (excluding 2008 and 2011), amounting to nearly $45 billion for the entire period (green arrow);
- then, from 22 May to 31 December 2013, at the height of concern over the Fed's intentions and their repercussions, emerging assets saw an $82 billion outflow balanced fairly evenly between equities and bonds (red arrow);
- finally, from 1 January to 28 May 2014, the outflow continued, but at a slower pace than in the second period in 2013 (orange arrow). Meanwhile, this normalization was essentially seen on emerging bonds (with outflows declining nearly 80% to -$5 billion), whereas emerging equities continued to experience significant outflows (with outflows declining by barely 20% to -$27 billion).

More specifically for emerging equities, it is also interesting to note the respective changes between Solid 5 and Fragile 5 flows. This expression was very much in vogue last year to differentiate between countries simultaneously presenting fragile current account balances, budget deficits and high inflation (Brazil, India, Indonesia, Russia and Turkey), and the most stable countries (China, Mexico, Saudi Arabia, South Korea and Taiwan). In the second half of 2013, in a risk-off environment, we see essentially that countries considered to be the most solid fared better, with "only" $12 billion in outflows, compared to $17 billion for the most fragile countries. However, since the beginning of the year, between real estate and Chinese PMIs which signaled low activity and fading fear of tapering (decline in US long rates, disappointment over Q1 growth and more conciliatory tone from the Fed), the situation has reversed. Since 1 January 2014, Solid 5 outflows have been nearly three times greater than Fragile 5 outflows, at -$15 billion versus -$5 billion, which explains the significant outperformance by the latter with growth of +9% on stock markets since the beginning of the year (in local currency) compared to +3% for the Solid 5. Meanwhile, we note that this recovery among the most fragile countries began in mid-March, meaning the rebound was even greater after this period, both in local currency (+14%) and in euros (+19%). Finally, as for the Fragile 5, with the exception of Russia (slowed by events in Ukraine), the rebound beginning in mid-March has been fairly widespread, suggesting that apart from specific factors (elections in South Africa and India, etc.) it is more the common factors, such as the Fed's softer stance, which proved the real triggers.

In terms of developed assets, there has been a net inflow on equities since the start of the year, but its pace has greatly slowed, with +$74 billion at 28 May 2014 versus +$116 billion for the same period last year and +$156 billion for the entire second half. Given that at the same time, bond inflows have significantly recovered, the Great Rotation to equities has slowed. This slowdown of inflows to developed equities was essentially due to the US because over the same time period Japan and certainly Europe continued to gain inflows.

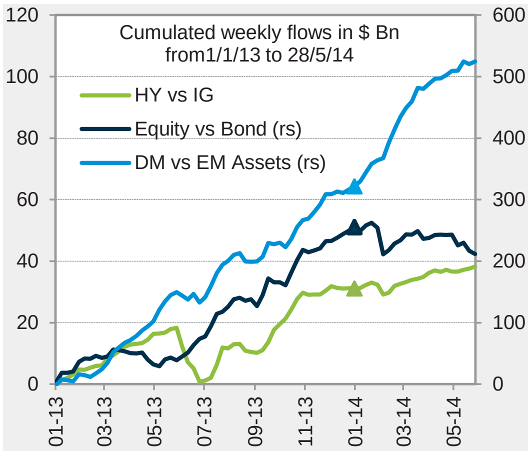
The essential

Last year, saw three major flow trends: a shift from bonds to equities, from investment grade to high-yield and from emerging markets to the developed countries. Some months later, this landscape has again considerably changed. Great rotation to equities has reversed, momentum of high yield has greatly abated and emerging assets interest is reviving.

The Fed's more qualitative communications has probably reassured, which explains improved bond flows and the start of a return to emerging assets. Secondly, the relatively high price of US equities and high yield probably fuelled trades in favor of eurozone equities and, more recently, emerging debt.

> "Equity inflows has abated because of the US, but Europe continue to do well"

1 Flows key trends of H2 2013 have considerably changed Ytd



Source: EPFR, Amundi Research

Although Europe was the big winner in terms of inflows since the beginning of the year, **it was mainly peripheral eurozone countries** such as Spain and Italy **that led the pack** (see Chart 3) by exiting the recession and risk aversion returning to normal, as proven by their equity market performances, up +13% from the start of the year for all peripheral markets (at 2 June) compared to +3% for the rest of the eurozone.

In contrast, while Germany was at the top in terms of economic growth in the first quarter, inflows remained sluggish. Among the possible explanations, with the dissipation of the sovereign debt crisis and the end of the recession in the eurozone, the need for a *safe haven* was less urgent. Meanwhile, Germany's overexposure to China and tensions in Ukraine also played in its disfavor. As for France, since the beginning of the year, it has generally seen above-average inflows and stock market outperformance, which was not the case in 2013. Given that French growth and budget normalization are lagging behind the rest of the eurozone, it may be the competitiveness measures announced in January that were welcomed.

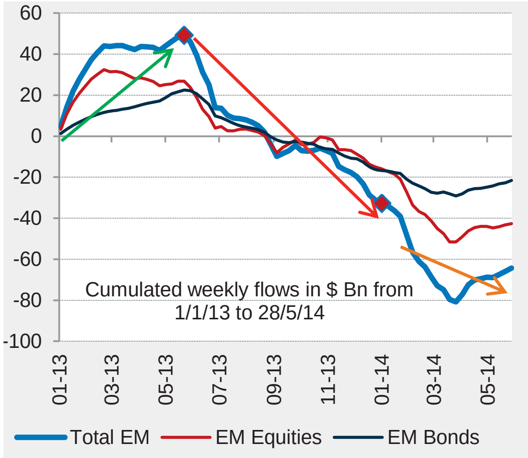
As for Japanese equities, Chart No. 4 shows the breakdown in monthly flows between domestic and foreign investors on one hand, and the trend for the MSCI Japan index on the other. We note that since October, foreign investors have continuously reduced their inflows to the extent that they have virtually evaporated since April. In contrast, domestic market operators have returned over the last two months, likely encouraged by the upcoming change to the portfolio of public-pension reserve funds (EUR 890 billion in assets under management, of which 32% in equities, 53% domestic): public authorities are strongly encouraging the GPIF to increase its allocation to Japanese equities.

With regard to emerging debt, this asset, which was very much in vogue before 22 May 2013, experienced massive outflows, but is staging a comeback after it recently bottomed out at the end of January, returning to positive territory since mid-March. This recovery is largely at the expense of US and European High Yield, which began to reach their full value. This further illustrates that once concerns that the Fed would tighten its policy too quickly had faded, investors renewed their search for yield. We note, meanwhile, that in a calm period, when there are net inflows, the percentage of USD-denominated debt, which is logically owed to foreign debtors, dominates the market at 61% on average from 1 May 2012 to 1 May 2103 or 72% since the beginning of April 2014. In contrast, when the situation is more turbulent, as from May 2013 to January 2014, this percentage falls to around 50%, meaning domestic investors are less volatile.

To conclude. Four months into tapering, investment flows have considerably changed versus the second half of 2013: Great rotation to equities has reversed, momentum of high yield has greatly abated and emerging assets interest is reviving.

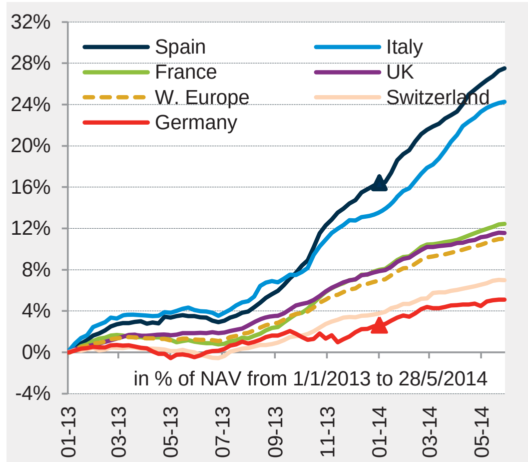
What is the real common thread behind all this? Two factors appear to be crucial. First, the Fed's communications reassured market operators that its monetary tightening—and, consequently, increases to long rates—would remain very gradual, which explains improved bond flows and the start of a return to emerging assets. The second factor is related to valuation: the relatively high price of US equities (see Article 7) and high yield probably fuelled trades in favor of eurozone equities and, more recently, emerging debt.

2 Emerging Flows changes occured in three steps



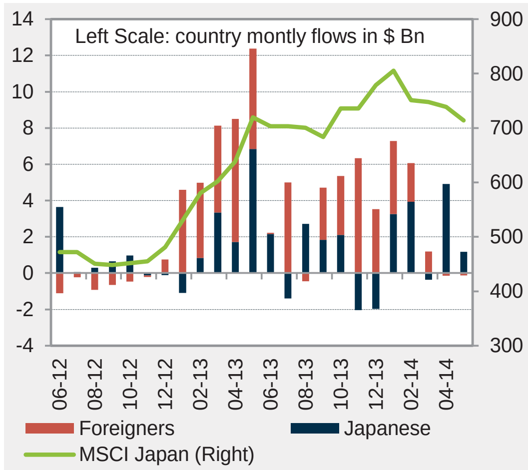
Source: EPFR, Amundi Research

3 Europe Equities: Flows breakdown by country



Source: EPFR, Amundi Research

4 Japan Equity flows by origin and MSCI Japan



Source: EPFR, Amundi Research

9 Emerging equities: a few thoughts on geographical portfolio allocation in a period of low currency volatility

MARC-ALI BEN ABDALLAH, *Strategy and Economic Research – Paris*
DELPHINE GEORGES, *Strategy and Economic Research – Paris*

Since the beginning of the year, local currency equity returns for the major emerging markets have ranged from -1.8% (Russia) to 16.8% (India), while the performance of their currencies has been limited to a range between -5% (Chilean peso) and +5% (Brazilian real). In US dollars, the performance generated by the countries in our sample[1] ranges from a low of -6.6% (Russia) to a high of 19.5% (India) with the average at around 9%, all of which combine to give us a standard deviation of 8. If we perform these calculations for data starting from the announcement of tapering, i.e. the phasing out of the Fed's purchasing programme for long-dated bonds announced on 22 May 2013 by then-Chairman Ben Bernanke, it is surprising to see that we get the same orders of magnitude.

In fact, since last summer's severe turmoil, very few currencies aside from the Korean won, the Polish zloty and the Romanian leu have bounced back to the exchange rates against the dollar that prevailed prior to the announcement of tapering. The current changing economic landscape in emerging markets helps explain most of the disparity in the performance of emerging currencies. However, in an environment where expectations of volatility are falling, we think understanding the interplay between currency risk and equity risk is important. In fact, renewed currency volatility could have devastating consequences for the equity markets we discuss in this article. First, we will attempt to cast some light on the interplay between currency risk and equity risk. Second, we will attempt to map those countries where equity exposure is currently becoming less advisable due to the volatility we've seen or can expect to see in their local currencies.

The essential

The correlation between emerging market currencies and emerging market equities is unravelling. While most emerging markets continue to rise, emerging currencies have posted fairly disparate performance.

Several factors account for this decorrelation, in particular the fact that equities are essentially long-term assets, which means that only long-term trends are relevant to the returns generated by this asset class. However, this decorrelation does not mean that equities are immune from short-term currency volatility. Quite the opposite, in fact. Our aim in this article is twofold: understanding how the interplay between currency risk and equity risk and creating a map of countries where equity exposure is currently becoming less advisable due to the volatility we've seen or can expect to see in their local currencies.

Underpinning returns on equity: macroeconomic volatility and risk premium

Over a specified time horizon, the performance posted by a particular country's equities can be explained by combining its prospects for future earnings growth (profits, or, more accurately, dividends) and the pattern of changes in its country risk (the risk premium). The relationship between the earnings effect and the risk premium is not too difficult to understand. The increase or decrease of a multiple, such as the price-to-earnings ratio, over a specified time horizon is determined by the algebraic sum of returns and earnings growth over the period being considered2. Consequently, the expected return – which includes both capital gains and payments of dividends – stems from the interaction between macroeconomic risk (growth of earnings and future dividends) and specific risk (the country risk premium).

Strictly speaking, currency risk mainly involves the outlook for earnings but that is not all. To understand this, it should first be noted that the variability of multiples is important only to the extent that it reflects a change in the long-term return expected by investors[3]. Where emerging market economies are concerned, this return component is often substantial. In fact, equities are really long-term assets. Duration reflects the sensitivity of asset prices to the return expected by investors. In other words, equity prices are very sensitive to fluctuations in this return. Moreover, using the standard dividend discount model (DDM), it can be shown that the equity "duration" is exactly equal to the inverse of the difference between this expected return and the long-term growth of dividends (See box). But can currency risk also

> “Over a specified time horizon, the performance posted by the equities of a particular country derives from tensions between the outlook for future earnings and changes in country risk”

1 Brazil, Mexico, Chile, Colombia, Peru, Russia, Turkey, Poland, Hungary, Czech Republic, Romania, South Africa, South Korea, India, Indonesia, Malaysia, Philippines and Thailand.
2 $\partial \ln\left(\frac{P}{E}\right) = R + \frac{\partial E}{E} = R + g$ *where E denotes earnings per share, g represents earnings growth and R is the return or performance over a specified time horizon.*
3 The spread between the expected return and the risk-free rate is precisely the implicit risk premium.

> Equity Duration

By definition, equity duration is equal to $D = -\frac{\partial \ln P}{\partial \ln(1+\hat{R})}$ où $\hat{R}$ where is the return expected by the market. This duration can be approximated by $\hat{R} \approx -D\,\partial \ln P$ since $\partial \ln(1+\hat{R}) \approx \hat{R}$. . Furthermore, discounting a series of dividends over an infinite horizon yields the formula known as the Gordon growth model:

$$P = \frac{(1+\bar{g})E}{\hat{R}-\bar{g}}$$

where E denotes earnings in the current period, $\bar{g}$ represents their long-term growth and a is a constant representing the payment in perpetuity of dividends.

From this formula, we can deduce that.

The equity duration is therefore equal to $-\frac{1}{\hat{R}-\bar{g}}$, i.e. the inverse of the spread between expected return and long-term dividend growth. Where emerging market economies are concerned, this spread is often smaller than that for advanced economies for the simple reason that earnings growth is also stronger in these economies.

have an impact at this level? The answer is yes if domestic currency trends can cause expected return on capital to vary. To show what we mean, the expectation of an orderly depreciation of a particular currency can be an important long-term factor underpinning earnings of exporting firms.

Assessment of currency risk by breaking down the volatility of stock returns

How should we introduce currency risk at this point? The above-mentioned elements indicate that stock return volatility can be broken down into three components. The first relates to the short-term component of equity volatility. This volatility can be influenced by a myriad of factors, including both specific and more general factors. The second is associated with the volatility of future earnings, including the rate of economic expansion in the country under discussion and the medium-term performance of its domestic currency. Finally, the third component is associated with the country risk premium, that is to say, the variation in the return expected by investors.

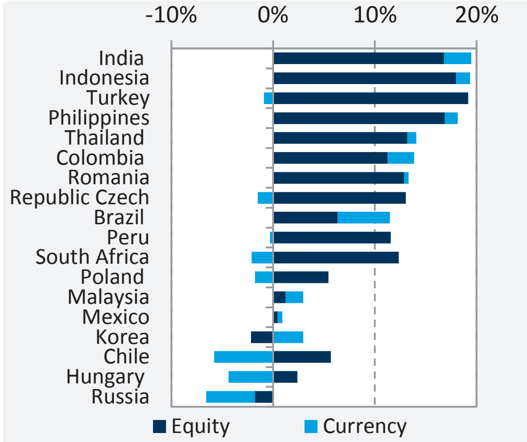
We computed the variance of returns in dollars for the different countries in our sample. It can be expressed as the sum of the variance of returns in local currency and the currency variance adjusted by the comovement between the currency and that same equity market[4]. Therefore, equity risk can be defined as the ratio of the variance of returns in local currency to the variance of returns in dollars. Equity risk is therefore expressed as a percent. Currency risk is made up of two components: the volatility of the currency itself and the correlation between the equity market and the national currency. As expected, the sum of both risks (equity risk and currency risk) is 100%.

An equity market is said to be dominated by its currency risk if its equity risk is less than 50%. In other words, an equity market is dominated by its currency risk when the volatility of returns in the local currency is more than two times lower than that for its dollar returns. However, it should be underscored that the currency's long-term risk is also factored into in the equity risk. However, in this article we restrict our focus to medium-term currency risk. What can we observe? Firstly, average equity risk has been trending lower since 2003 and as a result, currency risk is increasing. Secondly, the standard deviation of equity risk is stable over the period – 15% on average. This upswing in currency risk is a broad trend affecting all emerging equities markets. It quite probably reflects the way the growing integration of emerging market economies into the global economic environment has led to the abandonment of fixed rates (pegs) and the gradual opening of capital accounts. The ongoing emerging market transition could fuel greater uncertainty surrounding

4 We use R to represent the return in dollars, R^* for the return in local currency, e for the exchange rate and $\frac{\partial e}{e}$, for its variation. The variance of equity returns in US dollars is equal to the variance of returns in local currency plus the variance of the currency itself and a co-movement factor between currency variation and the local return on equities.

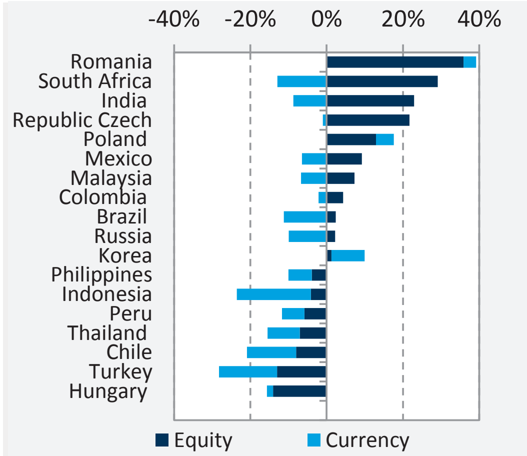
$$Var\ R = Var\,(R^*) + Var\left(\frac{\partial e}{e}\right) + 2cov\left(R^*, \frac{\partial e}{e}\right)$$

1 USD Returns + FX effect (since 12/31/13)



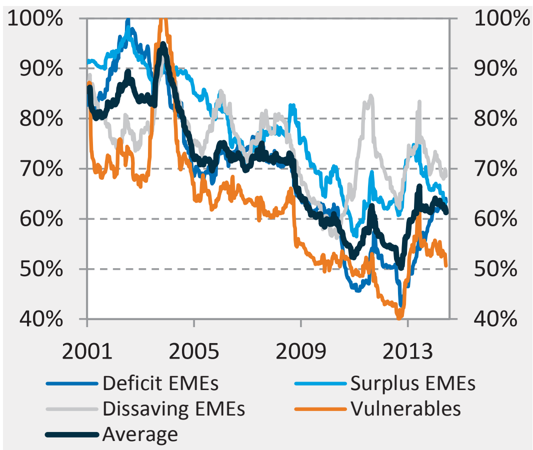
Source: Datastream, Amundi Research

2 USD Returns + FX effect (since 22/05/13)



Source: Datastream, Amundi Research

3 Emerging Clusters - Equity Risk



Source: Datastream, Amundi Research

the individual trajectories of these countries. We expect currency risk to stabilise at its present level with an increase in the standard deviation for risk.

Geographical portfolio allocation in a period of ultra-low volatility

Following up on last month's discussion on the segmentation of emerging market economies (Cross Asset Investment Strategy No. 06, *"A classification of emerging market economies following the stress of 2013"*), we saw that equity risk is on the rise and that it has reached above-average levels for the commodity-exporting countries of Latin America (Chile, Colombia and Peru) and Indonesia. In contrast, this risk is below average for the most vulnerable economies, namely South Africa, Turkey, Brazil and Russia. Currency risk is therefore dominant for the most vulnerable economies. What are the consequences for these equity markets? The main consequence is excessive volatility relative to other emerging markets. They tend to outperform when expectations of emerging currency volatility are low due to the appreciation of their currencies relative to the dollar. On the other hand, these markets underperform when expectations of volatility are high as their performance can be impacted by the depreciation of their national currencies and by capital flight. Recently, falling expectations of volatility have made it possible for countries with the highest currency risk to turn in the strongest performances.

The implied volatility of emerging country currencies – volatility of foreign currency derivatives – is now falling sharply in the wake of declining currency volatility for G7 currencies since January. VXY indexes for emerging market currencies (EM-VXY) and G7 currencies (G7-VXY) are expected to fall to levels below the lows recorded in 2007. This trend is unsurprising. The policies of the major central banks, in particular the Fed and the ECB, continue to be ultra-accommodative and global economic indicators are pointing up. That being said, the lower the volatility, the more it can surge without, however, starting an uptrend. Against this background, we recommend showing a preference for markets where the currency risk is low (Indonesia, Latin America excluding Brazil, EMEA except for Turkey and Russia) at the expense of the most vulnerable equity markets (South Africa, Turkey, Russia and Brazil).

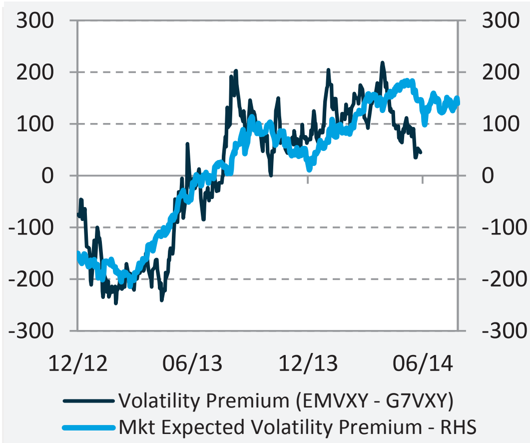
In terms of diversified allocation, emerging equity markets are nevertheless in a stronger position than developed markets. Generally speaking, they have clearly benefited to a lesser extent from investors' increased appetite for risk. A little regression analysis can be used to measure expectations of emerging currency volatility based on the performance of emerging market equity relative to developed market equity. This reveals that emerging equity markets are betting on renewed currency volatility that is high enough to translate into a 1.5 point spread between the EM-VXY and G7-VXY implied volatility indexes over a two-to-three month horizon. Ultimately, this will be a factor underpinning the performance of emerging market equity.

4 **Equity risk - dispersion**

Source: Datastream, Amundi Research

> "An equity market is dominated by its currency risk if the volatility of its return in the local currency is more than two times lower than that of its return in dollars"

5 **Excess EM volatility: equity mkt projections**



Source: Datastream, Amundi Research

10 Revolution in view for the lighting market

LUC MOUZON, *Equity Analysis – Paris*

The lighting market, in the broadest sense, is about to undergo an accelerated transformation. The traditional technologies used as a lighting source for more than a century are very likely to disappear during the next 5 to 10 years. Incandescent bulbs' ban is already subject of an actual regulatory decree in the majority of developed countries. China, which remained one of the last markets for traditional 60w bulbs, ratified the banishment of these bulbs at end- 2014.

The degree of technical maturity of LED light sources and the mass production of high/medium-brightness LEDs now make it possible to envisage all types of application in the area of lighting and especially a substitution for the older technologies, including the most efficient ones such as CFL (compact fluorescent lamp) or halogen. The advantages are significant. In addition to lower consumption, LEDs last longer with more than 10,000 hours of use. The maintenance and replacement costs for LED-based lighting systems are very significantly reduced throughout the lifetime, which represents a major advantage for professional markets. The diodes can also compose colours, variable intensities and be controlled remotely with simple electronic controls. Their versatility will allow the deployment of complex, modular solutions and the emergence of new uses for residential (variable lighting), commercial (showing jewellery off to advantage through high-brightness beams), or infrastructure (underground railway lighting, street security) purposes. Since it is important to remember that residential applications are not the majority of the market in volume terms: 13% residential, 45% commercial, 30% industry 12% outdoor (source: Yole Développement).

By 2015, Digitimes (Chart 2) estimates that over 30% of sales of bulbs and lighting systems in the world will already be based on LED-based technologies. This compares with an estimated penetration rate close to 8% in 2012. According to McKinseys' latest report, the compound growth rate for the LED lighting market – in the broadest sense – is expected to exceed 30% per year between 2013 and 2006 (Chart 1). The scheduled decline in production costs remains a strong catalyser. The US Department of Energy (DoE) estimates the expected decline in the public price for a LED bulb at close to 40% between the average prices employed in 2013 and those expected for 2015. The underlying trend is now well established and tends to be in the process of accelerating according to our analysis.

Lighting represents around 20% of the world's electricity consumption

The massive adoption of lighting technologies based on LEDs could make a significant contribution to the energy savings sought in the medium/long term. Japan appears to be a forerunner in the wake of the Fukushima's disaster consequences. The remark is however valid for all countries wishing to modify their energy mix. Initiatives in terms of tax incentives are increasing in Europe and North America, but it is mainly in emerging countries with a high external energy dependence such as China that the momentum is rapidly materialising.

For example, the adoption of LEDs as main lighting sources by 2020 in Germany could represent of the annual production of 3 nuclear reactors (table 6). The impact of accelerated adoption would be massive both on household electricity consumption and, of course, the consumption of companies with, in particular, the increased energy efficiency of offices, shops and other industrial buildings.

The example of Japan

Following the dramatic accident in Fukushima in March 2011, Japan decided to suspend nuclear-based electricity production which represented 48 nuclear reactors, or the equivalent of nearly 30% of national production. As early as 2012, the Japanese authorities therefore introduced exceptional measures aimed at encouraging effective energy savings and the rapid take-off of renewable energy sources on a national scale.

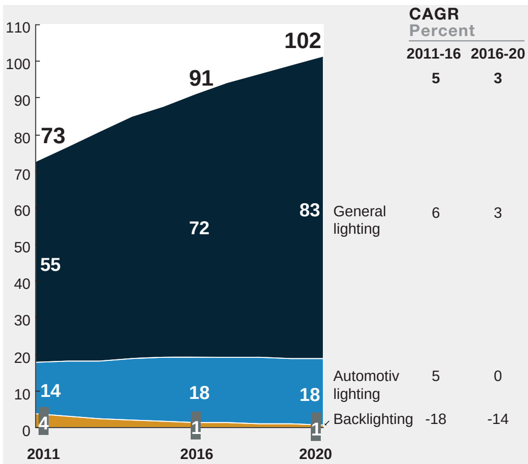
The essential

The adoption of light-emitting diode (LED) technology is revolutionising the conventional lighting market. By 2015, nearly 40% of lighting equipment sold around the world will be based on LED.

The drop in costs for electronic components has made these products competitive in terms of prices and has sparked accelerated adoption in all applications (automobiles / light bulbs / professional lighting fixtures).

Lighting accounts for nearly 20% of electricity consumption around the world. A general shift to LEDs by 2020 would produce massive energy savings—enough even to support energy transitions such as the planned closure of German nuclear plants. The Japanese experience in this regard is particularly instructive. Lighting industry players are seeing a fast-paced technological revolution. The need to quickly adapt has become vital. Managing essential patents and LED (HB) supply, and controlling distribution channels (B2B) have become critical components for anyone who hopes to plug into the explosive growth of LED-based lighting equipment (> 30% per year).

1 **Global Lighting product market by sector EUR Billions**



Source: McKinsey, Amundi Research

Initial studies by the IEEJ (the Institute of Energy Economics Japan) in 2011 estimated that lighting consumed 16% of electricity in Japan. If all the lighting systems switched to a LED-based system, the savings generated would represent 92 terawatts/hour and could theoretically reduce Japan's total electricity consumption by 9% (chart 4) over a decade. Pragmatically, Japan has rapidly introduced tax benefits for individuals and small companies as from end-2011attached to the purchase of LED lighting. The proposed plans have been established at local level with a precise selection of eligible lighting products.

The impact will have been more than significant. The Japanese LED bulb market increased 42% in 2013 vs. 2012 in Japan. The penetration rate is estimated at more than 50% as from 2013 for the individual market but also for the professional market (in the case of commercial buildings and office buildings). The government's explicit target of achieving 100% penetration for residential installations, commercial buildings and office buildings now seems to be credible.

From cutting-edge technology to pragmatism

In the space of a few years, LEDs have gone from the status of specific, complex and expensive technologies to the status of accessible and affordable components enabling mass adoption. Barely two years ago, LEDs offered a reduced application scope covering a few niche markets concentrated around television manufacturers (backlighting incorporated in LCD panels) and the high-end automotive's lighting car makers.

The situation is now changing. Increased efficiency (lumens per watt) and the price's decline in the associated electronic components have made it possible the build-up of affordable substitution bulbs whose retail price for the general public is now fixed at below USD 10. According to electronic laws, the prospects for reducing costs associated with mass production point to further price reductions. Compared with the situation in 2010, the costs associated with the production of the equivalent of 1,000 lumens have been divided by three. In fact, the performances of LED components continue to increase and their price to fall. The technology has gradually become competitive even in relation to latest-generation CFL and halogen products. (table 5) The momentum is favourable for manufacturers of lighting solutions, especially for those who are vertically integrated in high-brightness LED.

While the LED price declines affect bulbs and some professional products, the deployment of LED technologies in the lighting market, in the broadest sense, tends to have a beneficial effect for the value chain. Average prices for lights or complex systems using LEDs are tending to increase. Customers accept the idea of paying a higher price for a system if the savings achieved are verifiable, especially in terms of electricity consumption and maintenance.

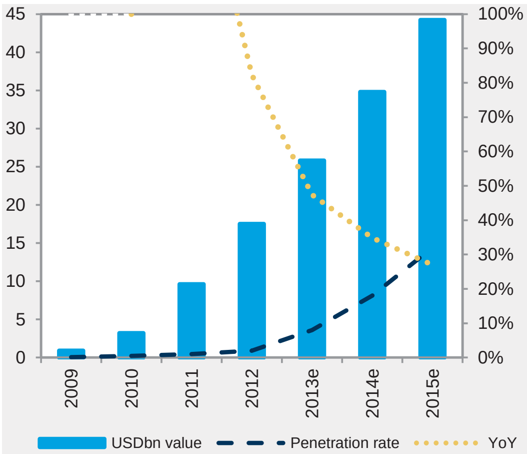
The transfer of added value is particularly rapid. Upstream, LED producers who benefit from economies of scale and are fully conversant with the production processes (HB LED) have the possibility of extracting very good margins on the components. Downstream, systems manufacturers, who are more focused on professional markets and have good prescription and distribution channels, have found a dynamic market with margins that are higher than those for traditional lighting.

In the middle, there is a high risk of seeing a rapid "commoditisation" of the bulb market in which only economies of scale will have a positive effect. In the same vein, undifferentiated positions taking in consumer luminaires' markets are likely to prove difficult to sustain and painful for margin. These markets are getting closer to the basic consumer electronics markets. The recent entrance of players such as Samsung Electronics, LG Electronics or major Japanese groups (such as Toshiba) points to a possible fragmentation and potentially epic price battles in the bulb markets.

Fundamental changes ahead for traditional players

Industrial players in the lighting world have enjoyed a virtually oligopolistic situation for nearly two decades. Philips, OSRAM (subsidiary of Siemens) and GE Electric controlled more than 60% of the lighting market (including bulbs) and generated double-digit operating margins. The distribution channels for lighting products

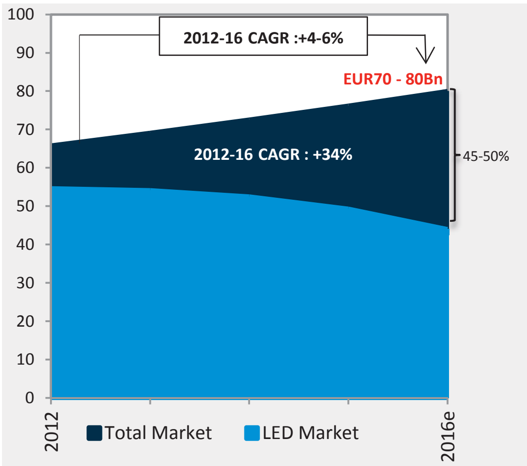
2 Global LED Lighting market size (USDbn) and penetrate rate



Source: Digitimes, Amundi Research

> LEDs have changed their status over the past few years moving from high-end complex technologies into accessible, affordable and easy to implement products for mass adoption in Lighting

3 Global Lighting product related market 2012 / 16



Source: Philips, Amundi Research

remained locked (particularly for professional distribution) and, apart from emerging countries, few players succeeded in obtaining the equivalent economies of scale to the three dominant sector players.

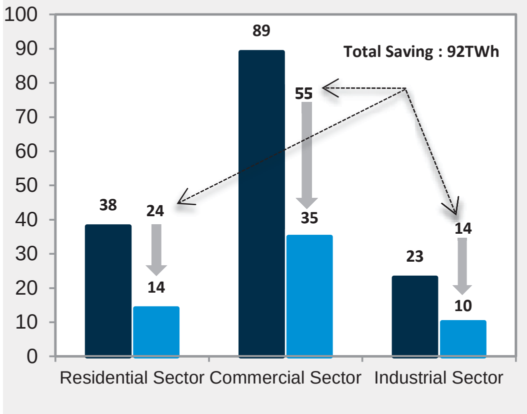
This period is clearly past. The last few years have seen an unprecedented acceleration for the market's three historical players. Their economic model has gradually been called into question.

- The industry is switching from a vertical integration model to a subcontracting-based manufacturing model meeting the standards of the electronics industry. This approach which is largely favoured by Philips and, more recently, OSRAM aims to both rapidly reduce production capacities for "traditional" products (such as CFL or halogen) but also diversify and subcontract the production of LED products – especially the most standard products such as bulbs.
- A command of critical components such as high-brightness LEDs, rare earth (phosphorus) supplies and the holding of patents seem to be the most important common points to the industrial players that have relatively successfully undertaken the transition to LED technologies. Low power diodes (mainly dedicated to the backlighting of consumer products) have become commodities and can be used for bottom-of-the range products with, however, the quality of products based on these LEDs, which remains questionable. On the other hand, high power LEDs offer enormous potential in terms of reducing costs (1,000 lumens < USD 2 of costs in components) and increasing both the quality of products and durability.
- Deployment downstream to professional markets (with a portfolio of extended offerings in terms of systems and lights) is a third very important dimension of industrial players' strategy. The most recent studies – in particular the McKinsey study updated in 2014 – explicitly demonstrates the transfer of added value in favour of systems and lights over the long term. We are convinced that players who will be capable of consolidating the downstream segments of LED lighting systems and lights have much more solid growth and margin prospects than players specialising in bulbs. The LED bulb segment, currently attractive in terms of size and growth, is therefore likely to be the most vulnerable to price declines and the fragmentation of competition over the next two to three years.

McKinsey expects the global LED lighting market to be worth between USD 90bn and USD 100bn by 2020. In value terms, products based on LED technology are likely to represent more than 60% of the lighting market at that date. Conversely, traditional technologies such as CFL or halogen are now destined to decline. The winners from the rapid transformation of the lighting market in the industrial sense will be the most agile players with the largest advanced intellectual property and excellent upstream positions.

We are convinced that companies with an extensive portfolio of professional solutions, controlled distribution channels and adaptive innovation/design capacities will be able to capitalise on this LED revolution. For the latter, the industrial and economic model will tend to approach that of electrical equipment players such as Schneider or Legrand with, de facto, comfortable and more stable margins over time.

4 LED Lighting's maximum electricity saving potential, in TWh



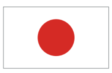
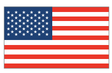
Source: IEEJ, Amundi Research

> "Fundamental changes are happening fast for the traditional lighting of players who need to strengthen their portfolio of offerings to professional markets and master the specific distribution channels"

5 - Comparison Chart LED Lights vs. Incandescent Light Bulbs vs. CFLs

	Light Emitting Diodes (LEDs)	Incandescent Light Bulbs	Compact Fluorescents (CFLs)
Energy Efficiency & Energy Costs			
Life Span (average)	Up to 50,000 hours 10,000/15,000 por current products	1,200 hours	8,000 hours
Watts of electricity used (equivalent to 60 watt bulb) LEDs use less power (watts) per unit of light generated (lumens). LEDs help reduce greenhouse gas emissions from power plants and lower electric bills	6 - 8 watts	60 watts	13-15 watts
Kilo-watts of Electricity used (30 Incandescent Bulbs per year equivalent)	29 KWh/yr.	3285 KWh/yr.	767 KWh/yr.
Annual Operating Cost (30 Incandescent Bulbs per year equivalent)	$32.85/year	$328.59/year	$76.65/year
Environmental Impact			
Contains the TOXIC Mercury	No	No	Yes Mercury is very toxic to your health and the environment
Carbon Dioxide Emissions (30 bulbs per year) Lower energy consumption decreases: CO2 emissions, sulfur oxide, and high-level nuclear waste.	205 kgs/year 451 pounds/year	2046 kgs/year 4500 pounds/year	478 kgs/year 1051 pounds/year
Important Facts			
Sensitivity to low temperatures	None	Some	Yes may not work under negative 10 degrees Fahrenheit or over 120 degrees Fahrenheit
Sensitive to humidity	No	Some	Yes
On/off Cycling Switching a CFL on/off quickly, in a closet for instance, may decrease the lifespan of the bulb.	No Effect	Some	Yes can reduce lifespan drastically
Turns on instantly	Yes	Yes	No takes time to warm up
Durability	Very Durable - LEDs can handle jarring and bumping	Not Very Durable - glass or filament can break easily	Not Very Durable - glass can break easily
Heat Emitted	3.4 btu's/hour	85 btu's/hour	30 btu's/hour
Failure Modes	Not typical	Some	Yes may catch on fire, smoke, or omit an odor
Light Output			
Lumens	Watts	Watts	Watts
> 450	4-5	40	9-13
> 800	6-8	60	13-15
> 1,100	9-13	75	18-25
> 1,600	16-20	100	23-30
> 2,600	25-28	150	30-55

6 - LED can contribute to reducing energy demand, supporting the feasibility of phaseouts/curbing the number of new nuclear power plants needed

					
Nuclear policy	Currently debating phaseout	Phaseout by 2022	No major change announced	Increase in nuclear power generation	
2011 reactor units	48	9	104	15	20
LED impact 2020 model base case[1]	7X	3X	19X	17X	9X

1 - Equals the number of nuclear reactors that would become redundant based on energy savings through LED penetration, ceteris paribus

Source : McKinsey&Company

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