Global Macro Research

Top of Mind

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Issue 29

Is Europe the Next Japan?

From the editor: A slowdown in Euro area growth momentum from an already anemic pace, combined with ongoing concerns about deflation risks, has made comparisons with Japan's so-called "lost decades" Top of Mind. We ask three experts whether the Euro area is set to repeat Japan's prolonged period of stagnation and deflation: former BOJ Governor Masaaki Shirakawa (unclear, but Euro area recovery requires addressing the underlying problem of economic integration and not its symptom, deflation), GS Chief European Economist Huw Pill (low growth and even some deflation similar to Japan, in terms of outcome if not in terms of causes, are likely in the short term, but – also akin to Japan – a deflationary spiral is not), and LSE Professor Paul De Grauwe (there is a real risk of this outcome or worse unless policies change). We conclude that Euro area economies and assets could escape Japan's fate but warn that Euro area stagnation would have a greater impact on the global economy than did Japan's.

Source: www.istockphoto.com

Inside

"I don't see why [sovereign QE] couldn't be as effective [in the Euro area] as in the US and in the UK. But even full-blown QE would lose full effectiveness if fiscal policies don't change…It is the mix of monetary and fiscal policies that has been so wrong."
Paul De Grauwe

"People often frame problems both in Japan and in the Euro area in terms of deflation…[so they] tend to think that they are monetary problems that can be easily solved by monetary policy, and poor policy prescriptions can result."
Masaaki Shirakawa

"We view the current weakness as temporary… We forecast Euro area real GDP growth of around 1% ann. There is some similarity to the Japanese experience in the 1990s: growth fluctuated around low levels, but activity never collapsed."
Huw Pill

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Macro news and views

We provide a brief snapshot on the most important economies for the global markets

US

Latest GS proprietary datapoints/major changes in views

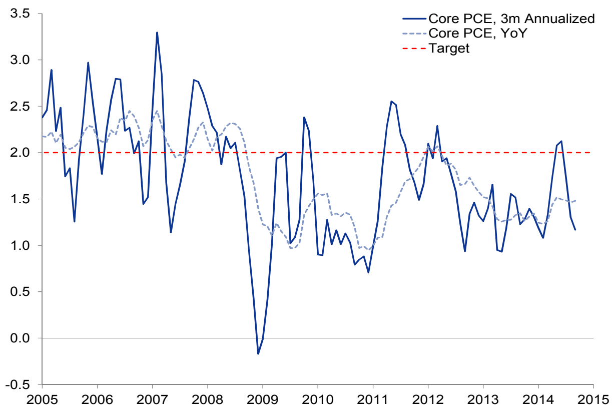
- At 4.4%, our CAI reading for October is the highest since 2006; we expect that domestic strengths will allow the US to maintain a pace of economic growth well above potential, even in the face of external vulnerabilities.
- We continue to believe that the labor market is still a ways from normal and expect the first Fed rate hike in September 2015.
- In view of dollar appreciation and lower oil prices, we see core PCE inflation at 1.5% through 2015.

Datapoints/trends we're focused on

- Risks to the inflation forecast and the implications for Fed liftoff.

A target slipping away

US PCE, percent change



Source: Department of Commerce.

Japan

Latest GS proprietary datapoints/major changes in views

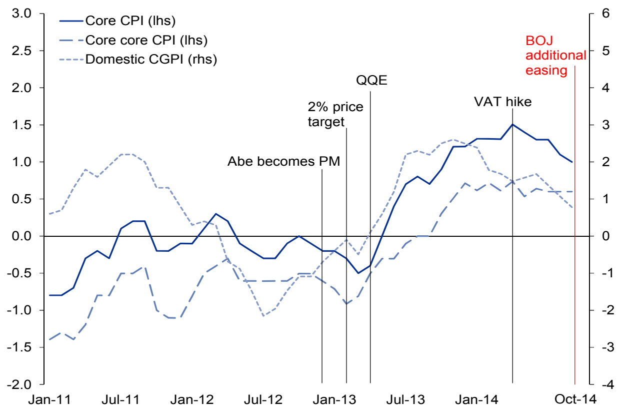
- Despite unexpected further easing recently announced by the BOJ, we maintain that achieving the 2% price stability target appears difficult and will require significant yen depreciation.
- In light of a shifting political landscape and an early general election likely to happen this year, we now expect the second consumption tax hike planned for October 2015 to be postponed, most likely to April 2017.

Datapoints/trends we're focused on

- The continuous decline in real wages, which is restricting consumer spending in spite of large one-time bonuses.

Bold BOJ measures

Japanese Inflation, percent



Source: Ministry of Internal Affairs and Communications, Bank of Japan.

Euro Area (EA)

Latest GS proprietary datapoints/major changes in views

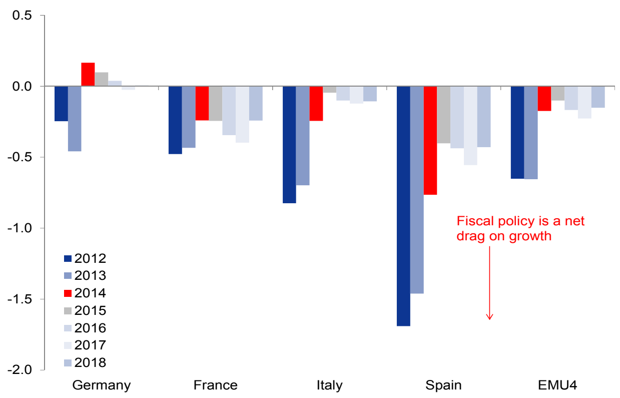
- Despite the conventional narrative that EA macroeconomic conditions warrant sovereign QE, we maintain that the high political fixed costs of such a path make the ECB more likely to wait and focus on bolstering existing credit easing measures.

Datapoints/trends we're focused on

- Member country fiscal policies, as national governments and the EU Commission bargain over supporting growth vs. achieving debt sustainability; we expect an outcome of marginal area-wide fiscal tightening next year (~0.1% of GDP).

Easing up on fiscal drag

Fiscal drag, pp (GS estimates: 2012-13, GS projections: 2014-18)



Source: Goldman Sachs Global Investment Research.

Emerging Markets (EM)

Latest GS proprietary datapoints/major changes in views

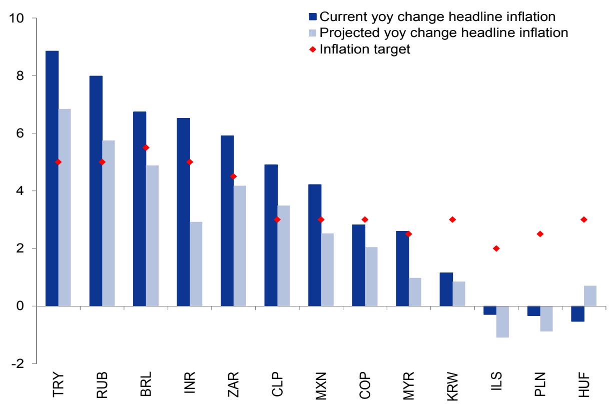
- No major changes in views.

Datapoints/trends we're focused on

- Policy measures in China to support demand; we expect continued targeted easing going into year-end but believe that full RRR/benchmark interest rate cuts are less likely.
- A broad-based decline in the momentum of Brazil's real business cycle suggested by PMIs in contractionary territory.
- Commodity-related downside to inflation across EMs, with potentially large drops in Brazil, Russia, and India, among others.

Declining inflation coming right up

Inflation, actual and GS projections, percent



Source: Haver Analytics, Goldman Sachs Global Investment Research.

Is Europe the next Japan?

A slowdown in Euro area growth momentum from an already anemic pace, combined with ongoing concerns about deflation risks, has pushed the question of whether the Euro area will follow in the footsteps of Japan's so-called "lost decades" to Top of Mind. The question is a complicated one. For starters, what do we really mean by Japan's "lost decades?" In general, the phrase seems to refer to a prolonged period beginning in the early 1990s when Japan's economy was characterized by two features that are distinct but often muddled together: stagnation – which denotes low growth – and deflation – which denotes declining prices.

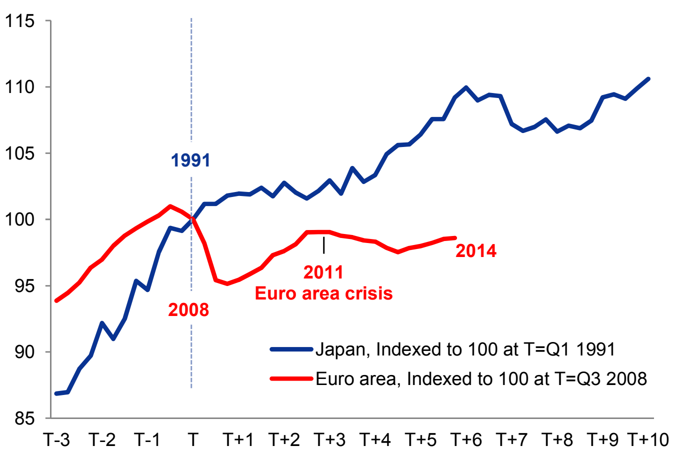
But we interview former Bank of Japan Governor, Masaaki Shirakawa, who laments that the last two-plus decades of Japan's economic history are often conveniently – but misleadingly – lumped together. In his view, there have been two phases of the stagnation that characterized the "lost decades" with very different underlying problems: initially, deleveraging post the bursting asset bubble in the early 1990s, followed by a rapid decline in the working-age population over the recent decade.

The notion of "Japanese-style" deflation also often seems misunderstood. Shirakawa clarifies that while Japan has experienced mild declines in consumer prices in recent decades, it has not experienced the more malign so-called "deflationary spiral" in which price declines lead to declines in economic activity, which lead to further prices declines and, ultimately, a vicious, demand-destroying spiral. He believes that drivers of this deflation were related to – but not the same as – the drivers of stagnation, with wage flexibility playing a prominent role. Naohiko Baba, Goldman Sachs' Chief Japan Economist, agrees.

With all of that in mind, Shirakawa emphasizes that Japan's underlying problems in recent decades are very different from the fundamental challenge facing the Euro area today -- the lack of economic integration. So in some sense, the Japanese experience has little insight to offer to the Euro area. But the key lesson Europe can take from Japan is that focusing on fixing the underlying problem is the only path to recovery. In Shirakawa's view, framing Japanese and Euro area problems in terms of the monetary phenomenon of deflation rather than fundamental drivers gives the misguided impression that the problems can be solved by monetary policy; he does not hold out much hope that monetary policy can improve the outlook for the Euro area economy.

Concerning comparisons (1)

GDP, Index



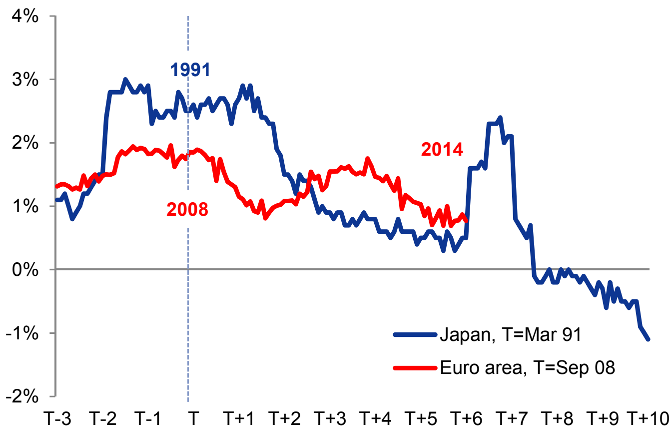
Source: Japan Cabinet Office, Eurostat, GS Global Investment Research.

Goldman Sachs' Senior Rates Strategist Silvia Ardagna is more optimistic about the ability of policy activism to lead to a stronger Euro area economic and asset market recovery than what Japan experienced. But she emphasizes that demand-boosting monetary and fiscal policies alone will not be a panacea for the Euro area.

And Goldman Sachs' Chief European Economist Huw Pill sees a near-to-medium term path for the Euro area that is not dissimilar to Japan's past experience – very low but still positive growth and potentially some bouts of benign (owing to drivers such as declining commodity prices), and more malign (with Italy most vulnerable) deflation, even though the causes of these developments are, in large part, different from those in Japan. He also maintains that – similar to the Japanese experience – the likelihood of a malign deflationary spiral akin to the Great Depression remains remote.

Concerning comparisons (2)

Core inflation



Source: Goldman Sachs Global Investment Research.

London School of Economics Professor Paul De Grauwe is far more concerned about the outlook for the Euro area. He is perhaps the most optimistic that the combination of the right fiscal and monetary policies, namely, a rolling-back of austerity and full-blown sovereign QE, could jump-start Euro area growth. But he sees little scope for these policy shifts given the large political obstacles to both. In his view, the Euro area remains materially vulnerable to a return of a liquidity crisis, a solvency crisis, and even political upheaval should the region continue on its current path.

Even barring this worst-case outcome, Goldman Sachs Senior Economist Jose Ursua underscores that Euro area stagnation could be more costly to the global economy than was Japan's earlier experience given the Euro area's larger economic weight and stronger financial linkages with the rest of the world.

Finally, Goldman Sachs Senior European Portfolio Strategist Sharon Bell zeroes in on equity market parallels between Japan and Europe. She concludes that despite worrying similarities between recent, lackluster profitability of European companies and Japanese corporates in the 1990s, more reasonable starting valuations suggest that European equity performance is unlikely to repeat Japanese equities' dismal experience in decades past.

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Interview with Masaaki Shirakawa

Masaaki Shirakawa served as Governor of the Bank of Japan (BOJ) from 2008 to 2013. In addition to his career of more than 30 years at the BOJ, he has held the positions of director and vice chairman at the Bank of International Settlements. He is currently a member of the Group of 30 and a special professor at Aoyama Gakuin University. Below, he addresses how the current Euro area situation compares to that of Japan over its so-called "lost decades," and why addressing underlying problems through structural reforms is the only path to sustainable recovery.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.

Allison Nathan: What were the key drivers of Japan's prolonged period of stagnation?

Masaaki Shirakawa: You often hear the expression of Japan's "lost decades." But it is inappropriate and misleading to lump together the past two decades. In terms of stagnation, the first ten years or so of low growth were caused by the aftermath of the bursting of the asset bubble; deleveraging by both borrowers and lenders significantly affected the economy. But the trajectory of real GDP after the bubble burst is notable, especially when compared to the recent US experience; if we measure the level of GDP relative to the peak of the bubble in each country, interestingly, the trajectory of GDP in Japan is slightly better than that in the United States where "aggressive" monetary policy has been deployed since the crisis.

In contrast, the recent decade of low growth owed to a problem of demographics. Ten years is long enough for us to neglect the impact of rapid aging and the decline in the labor force population. Again, the international comparison is interesting. If we calculate the growth of real GDP since the start of the year 2000, Japan's growth rate is the lowest among the major economies. But if we calculate the growth of GDP per capita, then Japan is just average. And if we calculate the growth of GDP per working age population, then Japan's growth is actually the highest, and higher than that of the United States. This shows how serious the impact of rapid aging has been.

> "Japan's wage setting is quite flexible, which allowed us to avoid higher unemployment rates but also led us to experience mild deflation. In contrast, wage setting in Europe is rather rigid, so unemployment is quite high, even though the inflation rate does not decline as easily when compared with Japan."

Allison Nathan: What drove Japan's long bout of deflation?

Masaaki Shirakawa: The issue of deflation is a bit different from that of stagnation, though related. Again, we cannot lump together the past two decades. Up to the middle of the 1990s, the decline in the inflation rate was mainly due to the decline in demand after the asset bubble burst, yen appreciation, and supply factors. But since the late 1990s, deflation has largely been a reflection of flexible wage setting. After Japan faced weaker demand, Japanese society prioritized maintaining employment over maintaining wages, and workers accepted wage reductions. That's why Japan's unemployment rate is rather low and stable compared with other advanced economies. But the flip side of the low unemployment rate has been a mild decline in prices, that is, deflation.

I would emphasize, however, that even though we experienced mild deflation in terms of CPI, we did not experience a so-called "deflationary spiral." The reason we worry about deflation is because deflation can bring about a deflationary spiral, in which a decline in prices leads to declines in economic activity, which lead to a further decline in prices and ultimately a vicious spiral. Japan escaped such a spiral for two reasons. The first reason, as I said, was flexible wage setting, and the second reason was that despite all of our difficulties we avoided a collapse of the financial system, which is characteristic of almost all historical episodes we know under the heading of "deflation."

Allison Nathan: Is Europe subject to the same set of drivers today? What parallels or differences do you see?

Masaaki Shirakawa: If I compare the current European situation with Japan in the past 20 years, I can point to a lot of similarities as well as a lot of differences. But when it comes to the issues of stagnation and deflation, I think the best way to organize our thinking is to look at labor markets. As I said, Japan's wage setting is quite flexible, which allowed us to avoid higher unemployment rates but also led us to experience mild deflation. In contrast, wage setting in Europe is rather rigid, so unemployment is quite high, even though the inflation rate does not decline as easily when compared with Japan. So to frame the problem in terms of whether the Euro area will slip into "Japanese-style deflation" misses the point: we have to go back to the basics about why we worry about deflation.

The key similarity between Japan and Europe, in my view, is a lack of horizontal labor market flexibility. In Japan, society prioritized the maintenance of employment, which meant that labor and capital did not move easily or quickly within firms and across industries or farms. This has inhibited the efficient allocation of resources, which ultimately affects productivity growth. My impression is that Europe suffers from the same lack of flexibility, which similarly does not bode well for its long-run productivity growth.

Allison Nathan: What lessons can be learned from the Japanese experience? Are they applicable to Europe today?

Masaaki Shirakawa: The lesson that Japan can offer Europe is to recognize the economy's fundamental problems and tackle them earnestly. The most important regret I have is that the initial root of Japan's problems – non-performing loans (NPLs) – was not addressed more swiftly in the early 1990s. We at the BOJ tried to persuade the government to address this issue, but were not successful owing to several of the same reasons that the United

States faced in 2008; the prior period of reckless lending had made banks quite unpopular with the general public and with politicians, so the idea of injecting public money into the banking sector was not well-received. We also lacked a framework that would enable an orderly resolution of troubled banks; in order to devise such a framework, we had to explain the severity of the problem and its implications for the macroeconomy, which risked destabilizing the financial system. So bank recapitalization was delayed, which was perhaps the biggest mistake during these so-called lost decades. Today – given that the underlying problem in Japan is rapid aging – efforts need to be made to increase the labor participation rate, especially for females and seniors, and to raise productivity by inviting so-called structural reforms.

For the Euro area, the most fundamental challenge is economic integration; governments and fiscal policy are not unified despite the fact that Euro area countries have adopted a common currency. Unless further measures are taken in the direction of integration, Euro area countries cannot enjoy higher growth.

My concern is that rather than focusing on these fundamental issues, people often frame problems both in Japan and in the Euro area in terms of deflation. But if we frame the problems in terms of deflation, people tend to think that they are essentially monetary problems that can be easily solved by monetary policy, and poor policy prescriptions can result. Deflation is the effect rather than the cause of the problem. On top of that, the word "deflation" is often used vaguely as a word expressing unsatisfactory economic situations, at least in Japan. We have to address the root cause of the problem.

"My impression is that Europe suffers from the same lack of [horizontal labor] flexibility [as Japan], which similarly does not bode well for its long-run productivity growth."

Allison Nathan: Are we expecting too much from the ECB in terms of keeping the Euro area from deflation and stagnation?

Masaaki Shirakawa: I think so. I am a strong believer in the potential power of central banks, but we also have to recognize their limits. The biggest contribution that central banks can make is to safeguard the financial system by acting aggressively as a lender of last resort. For all the world's difficulties over the last six years, it has been these types of efforts that have kept the global economy and financial system from experiencing a collapse as it did in the 1930s. Central banks also play a critical role as the "plumber" of the financial system, in terms of improving payment and settlement systems. For example, even though financial markets became destabilized during the Global Financial Crisis, disruptions in foreign exchange markets were avoided; continuous functioning of these markets owed to improvements in the payments systems such as the introduction of simultaneous settlement of a pair of currencies in foreign exchange transactions, which was implemented as recently as 2002.

Given what I just mentioned, I strongly supported Mario Draghi's famous remarks in July of 2012 to do "whatever it takes" to save the euro, which effectively stabilized the financial markets. But these words were perhaps too effective in the sense that the strong momentum for reform in the Euro area has since waned. And without these reforms backing central bank words, it is difficult to be optimistic about the future of the Euro area.

"My concern is that rather than focusing on these fundamental issues, people often frame problems both in Japan and in the Euro area in terms of deflation. But if we frame the problems in terms of deflation, people tend to think that they are essentially monetary problems that can be easily solved by monetary policy, and poor policy prescriptions can result."

Indeed, you raised the question of similarities between Japan and Europe, and there are many similarities in terms of monetary policy: a zero or slightly negative interest rate in the money market, the use of forward guidance, central bank purchases of asset-backed securities (ABS), the "only game in town" phenomenon, a tendency to frame the problem in terms of deflation, calls for quantitative easing, and too much focus on exchange rates. And there is also the similarity that monetary policy cannot solve the underlying problem. In this area, the powers of central banks are limited, and central banks must clearly explain the nature of the problem and what is needed to secure sustainable growth.

Allison Nathan: Given your experience in Japan, what is the right policy prescription for the Euro area today?

Masaaki Shirakawa: Implementation is much harder than just talking about the "right policy." I cannot grasp the subtleties of the problems facing Europe; it is up to the Europeans to decide how to implement policies to benefit their economy. I know when faced with challenges in Japan, we received a lot of advice and policy proposals from different countries. Some were useful, others were not. I'm afraid that Europe is facing the same onslaught of opinions. In general, though, I don't think that monetary policy alone can change the basic picture of the European economy; structural reforms are necessary. In this regard, the recent introduction of the Single Supervisory Mechanism (SSM) was a positive step, but more integration of economies and markets is needed given that Euro area countries have already adopted a common currency.

Headed for Japanese-style deflation?

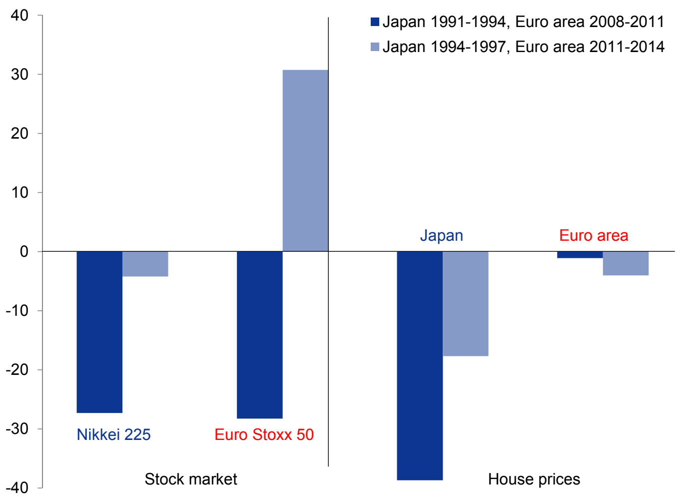
Silvia Ardagna discusses why the Euro area should escape Japan's fate, but will need some luck or bold actions to do so

A quarter of a century from its start, the roots of Japan's period of deflation are still debated. There are ominous similarities between the Euro area now and Japan in the 1990s, but there are also pertinent differences that foreshadow that the Euro area can escape Japan's fate.

Comparing the source of the crisis and the policy response in both economies, our own view is that the Euro area is not yet set for a Japanese scenario, but that to surely escape it, it will need some "luck" under the current fiscal, monetary and financial policy stance and/or some more bold actions from policymakers. Markets seem to share our conditional view: while the spread between front-end and long-end Euro interest rates is even lower than it was in Japan in the mid-1990s – signalling perhaps less optimism about Euro area recovery – stock market indices are up and house prices are flat in the Euro area from the start of the 2011 sovereign crisis, in contrast to their steady fall post crisis in Japan.

Looking on the bright(er) side

Percent change



Source: Bloomberg, Haver Analytics, Goldman Sachs Global Investment Research.

Boom and bust in Japan versus the Euro area's "triple" crisis

The Japanese crisis was fuelled by the bursting of the property and stock market bubbles at the beginning of the 1990s; in the Euro area, property price booms and busts have only been experienced by Ireland and Spain and only to a much lesser degree.

In contrast, the whole Euro area was hit by the subprime mortgage crisis in 2008, from which countries were recovering smoothly, and the Euro area crisis in 2011, which became a "triple" *sovereign, banking and institutional* crisis. As a sovereign default in Greece became a reality, this triple crisis unfolded, fuelling financial turmoil and fears of a euro break-up that affected countries (core and periphery) through a variety of different channels. The current weaker economic environment is largely the result of these crises, pre-existing supply bottlenecks, and economic policies and reforms (or lack of them) that have hit confidence and domestic demand.

The Euro area's policy response: Not as "aggressive" as in the US, or as "slow" as in Japan

The Euro area is currently demonstrating many symptoms of Japanese-style deflation: weak economic activity with decelerating inflation hovering around zero, low productivity, negative credit growth, very low nominal wage growth, and an increasing rate of non-performing loans, just to name a few. But there are also structural differences between the two economies. For example, the Euro area is more open to trade and immigration than Japan, and the corporate governance structure of its banks and firms makes the "zombie" lending practice (whereby Japanese banks were incentivized to lend to unprofitable borrowers) less of an issue than it was in Japan.

More importantly, lessons from the Japanese experience are shaping the policy response in the Euro area. First, even if policymakers have intervened at a much slower speed in the Euro area than in the US, "policy activism" has been a more prominent feature in the Euro area than in Japan. Monetary policy has been more expansionary: policy rates have been cut to zero and unconventional policy measures have been implemented over a much shorter time horizon in the Euro area than were in Japan. Problems in the banking sector are being addressed more quickly and decisively in the Euro area through measures fostered by the ECB and/or the IMF and the European Commission in countries that received financial aid. In Japan, it was only after the second phase of the banking crisis at the end of 1997 that an effective restructuring and recapitalization of the banking system began.

Second, to some extent, several other roots of the Euro area crisis have also been tackled. Countries with large fiscal imbalances have cut budget deficits. This has hit aggregate demand but improved government debt sustainability. Policymakers in select countries have implemented structural reforms to liberalize labor and product markets, as well as pension and tax reforms. And a focus on a more growth-friendly composition of the fiscal budget is emerging. Finally, the Euro area institutional upgrade is progressing: the ECB has become the Single Supervisory Authority of European Monetary Union (EMU) banks, and other features of the banking union will become effective in the next few years; the Euro area now has in place a financial stabilization mechanism (the ESM) that, starting from 2016, will be able to directly recapitalize banks.

This combination of policy measures and a gradual stabilization of financial markets should slowly support a pick-up in growth. That said, there is still a high risk that the Euro area's "policy activism" is not sufficient to prevent Japanese-style deflation. Aggregate demand is weak and supply-side reforms have not yet been implemented to a sufficient extent in some countries, particularly in Italy and France. To jumpstart the Euro area, some more bold actions along the lines recently highlighted by ECB President Mario Draghi might be needed. The good news is that the Euro area has space for fiscal and monetary measures to support domestic demand. However, such demand-boosting policies alone will not be a panacea.

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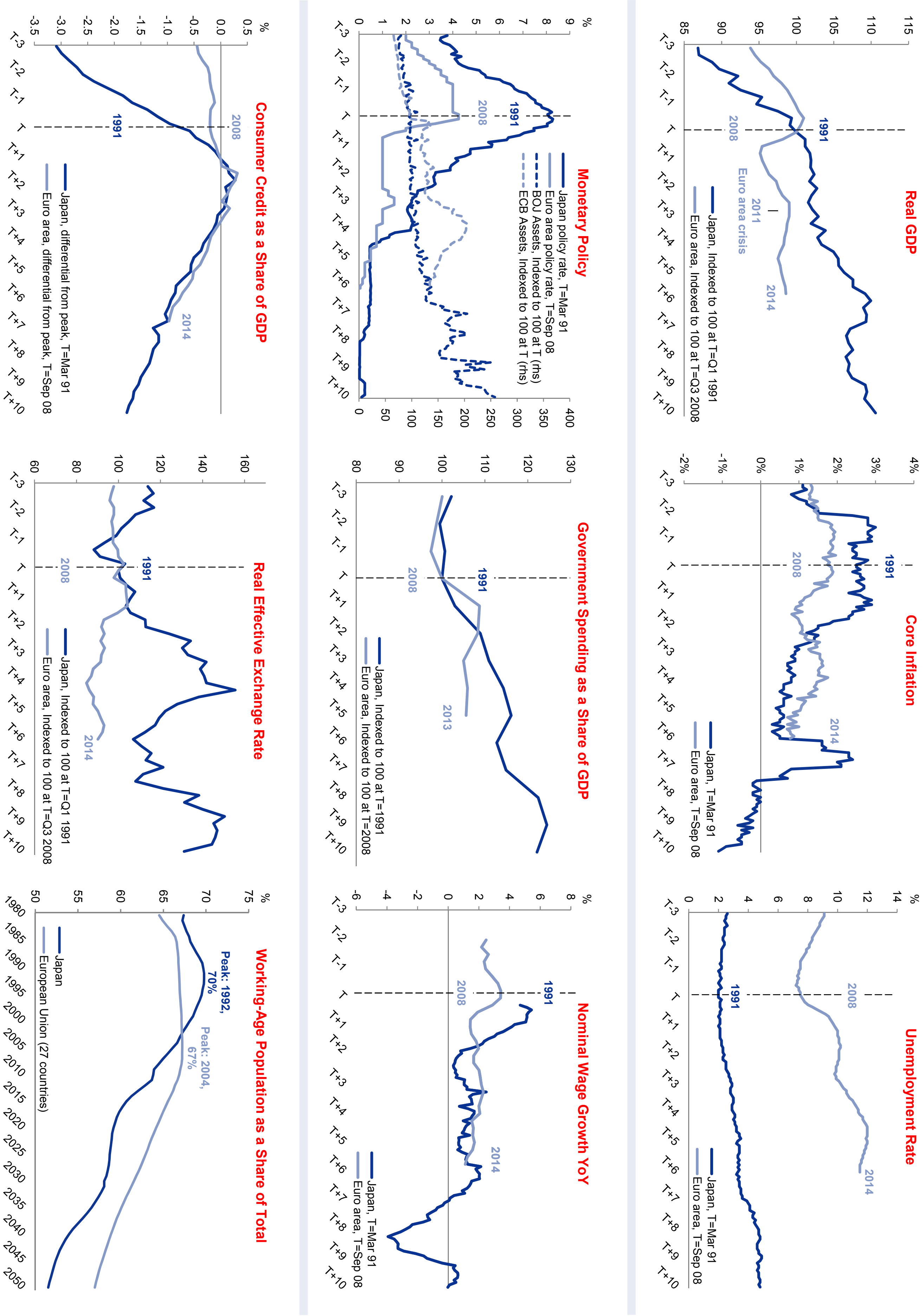
A tale of two economies



Source: Association of Call & Discount Companies/Nikkei, BOJ, ECB, Eurostat, IMF, Japan Cabinet Office, Japan MIC, OECD, Haver Analytics, Goldman Sachs Global Investment Research. Special thanks to Silvia Ardagna, Mariano Cena, and Mauro Moretto.

Interview with Huw Pill

Huw Pill is Goldman Sachs' Chief European Economist and co-head of the economics team in Europe. Below, he discusses his outlook for Euro area growth, inflation, and ECB policy.

Allison Nathan: Why has European growth continued to disappoint?

Huw Pill: The level of economic activity in the Euro area at the end of 2Q was broadly in line with our expectations this time last year. But, for several reasons, momentum into the second half has proved weaker than anticipated. First, the Russia/Ukraine situation has weighed on sentiment (and thus investment). Second, the mid-year slowdown in the Chinese economy has weighed on external demand. Third, when compounded by weather-related US weakness at the start of the year, lower external demand led to an unexpected inventory buildup in the manufacturing sector in Europe in the first half of this year. Fourth, seasonal and calendar-related effects have played a role. And, finally, the loss of momentum over the summer in itself has created a self-fulfilling negative dynamic via the impact of a "growth scare" on confidence.

Allison Nathan: How concerned are you about signs of weakness in Germany, arguably the strongest economy in the Euro area?

Huw Pill: Trend growth in Germany is not much more than 1%. Outturns of 0.1% or 0.2% quarter-on-quarter real GDP growth fit within that frame, especially since Germany – unlike the rest of Europe – is already running close to its potential level of activity: there is not much slack and therefore little scope for "catch-up" growth. A large part of the weakness in Q2 and in conjunctural indicators over the summer has owed to seasonal and calendar effects. Of course, growth momentum has slowed, but underlying dynamics in the economy are still consistent with positive growth. Overall, German growth in H2 and into 2015 is unlikely to be as strong as we expected a year ago, but we do not see reason to be very pessimistic and have leaned against recent market pessimism on Germany, which we view as overblown.

Allison Nathan: Will growth improve?

Huw Pill: We view the current weakness to be temporary and continue to expect an expansion – albeit at an anemic pace – next year. We forecast area-wide real GDP growth of around 1% on an annualized basis, slightly lower than what we thought a year ago. There is some similarity to the Japanese experience in the 1990s: growth fluctuated around low levels, but activity never collapsed. Where does the 1% come from? A stronger global economy from the weakness in 1H, led by US and Chinese growth, should help. Domestic demand should be sustained in Germany, where unemployment is low, wages are rising and financial conditions are easy, and in Spain, where reforms are bearing fruit and the pace of fiscal consolidation and economic restructuring has slowed. Smaller peripheral economies that implemented substantial adjustment via troika programs are also likely to grow. While not a driver of area-wide expansion, France is unlikely to be a substantial drag on area-wide growth. This owes to the strength of automatic stabilizers coming from the overbearing size of its public sector, which reduces the risk of a sharp economic contraction. We are most worried about Italy, which has been in a long-standing recession, and growth prospects remain dim in the near term. But taking all elements together suggests a modest expansion of economic activity in the Euro area as a whole. It will take a recovery in confidence and a return of "animal spirits" to break decisively out of this anemic pattern. We expect neither anytime soon.

Allison Nathan: How helpful is the current weakening of the euro to the prospect of Euro area recovery?

Huw Pill: It will help. The European authorities, and the ECB in particular, view the weakening of the euro as an important channel of transmission for easy monetary policy to stimulate the economy. Yet experience demonstrates that a weaker euro in and of itself does not have a significant impact on economic activity. A lot of Euro area exports to the rest of the world are high-end goods from Germany. Demand for these is not very price sensitive. Nevertheless, a weaker exchange rate – other things equal – raises import prices, and thereby supports price developments. With inflation still undesirably low, this will help the ECB pursue its price stability mandate and guard against a dis-anchoring of longer-term inflation expectations. In turn, this may help to convince wage and price setters that inflation is not irretrievably stuck at low levels. The tight German labor market may see stronger wage growth if companies believe the pressure on their profitability coming from a strong euro has diminished with exchange rate depreciation.

Allison Nathan: How helpful is the decline in energy prices to the prospect of Euro area recovery?

Huw Pill: Lower energy prices will support real incomes and growth in the Euro area. Even though domestic energy prices are less sensitive to global commodity price developments in Europe because of higher taxes, the impact on growth is similar to elsewhere (including the US) owing to the less flexible structure of European economies and the resulting costs of adjusting to lower energy prices. At the same time, lower oil prices will weigh on headline consumer price inflation: in the current environment of prolonged low inflation, there is a danger that this could further drag down inflation expectations, creating a malign, self-fulfilling deflationary dynamic.

Allison Nathan: Will Europe sink into a deflationary spiral? What will keep it from that fate?

Huw Pill: Europe is unlikely to end up in a "true" deflationary spiral. But, in saying that, it is important to define deflation and distinguish among various scenarios in which prices fall. First, inflation may be low (or even negative) owing to declining commodity prices and/or the impact of successful supply-side reforms. Price falls in themselves are benign in this context: they even support the economy. For example, lower commodity prices increase real incomes and support spending in a commodity importer. By the same token, regaining international price competitiveness by driving down domestic wages and costs can generate growth via external demand, even as domestic prices fall. Second, one can think of an outright deflationary spiral, akin to what we observed during the Great Depression. Expectations of falling prices in the future prompt a postponement of consumption and investment expenditure, which in turn weakens demand and thereby – via the traditional output gap effect – leads to actual falls in prices and a strengthening of the expectation they will fall further in the future. Such effects can be compounded by the very high real interest rates and rising real debt burden implied by falling nominal prices and incomes. This case would be malign. Third, we can refer to the Japanese experience: a prolonged period of modestly negative consumer price inflation, which never really descends into the destructive vicious deflationary spiral. Growth continues, albeit at modest rates. This case stands in between the clearer-cut benign and malign outcomes.

In the EA, we already see falling prices in some countries (e.g., Spain). But much of this reflects lower commodity prices and the impact of reform: it can therefore be seen, in itself, as benign. But the situation is not uniform: in Italy, one can point to a more malign Japan-like situation. The immediate threat of a truly malign "demand-destroying" spiral in the manner of the Great Depression still seems remote.

Allison Nathan: Is the ECB pursuing the right course?

Huw Pill: There is a strong case for policy to strengthen aggregate demand in the Euro area. Albeit belatedly, the ECB is making an important contribution in this direction. Their recent measures should serve to expand the ECB balance sheet, via the TLTROs and covered bond and Asset Backed Securities (ABS) purchases. But the provision of liquidity that this expansion will accomplish is, of itself, unlikely to stimulate a strong recovery. Banks remain reluctant to make loans to households and smaller businesses, particularly in the periphery, because they are concerned about credit risk. This is of concern for the Euro area corporate sector, since companies are typically smaller and therefore more dependent on banks than in other jurisdictions.

Allison Nathan: Would undertaking sovereign QE in the Euro area meaningfully improve the situation?

Huw Pill: Through its low rates, forward guidance and OMT backstop, the ECB has already engineered many of the supposed benefits of sovereign QE: the risk-free yield curve in the Euro area is lower and flatter than were the yield curves in other jurisdictions prior to QE, and credit spreads are already tight. If QE is going to work, it will be because of the strong signal it would send that the ECB – which is seen to be reluctant to undertake sovereign QE because of the well-known political obstacles in a multi-country currency union – is adopting a more active stance in its pursuit of price stability. This "announcement effect" could lead to a relatively large and immediate shift in longer-term inflation expectations and in the exchange rate. The ECB is likely to be bold in any implementation of sovereign QE, to maximize the signaling channel. But given political opposition and legal complications, the ECB is likely to continue to pursue easing via other methods, such as credit measures. The macro data would have to deteriorate further for the ECB to deliver sovereign QE.

Allison Nathan: What role should fiscal policy play in the recovery? In particular, should Germany loosen fiscal policy?

Huw Pill: From an area-wide perspective, the case for more public spending in Germany is quite strong. There is clearly a shortfall of aggregate demand and investment in the EA. Fiscal policy may offer more effective support than monetary policy in the current environment of already very low interest rates and risk averse banks. Even with the restrictive European rules, Germany has scope to ease its own fiscal stance. But, while there is a need for some public infrastructure spending on energy and transport in Germany, from a narrowly German viewpoint, the case for fiscal easing is weaker. Germany is already at full employment and, in itself, does not need stimulus. Moreover, a broad consensus exists across a wide swathe of the German political spectrum in favor of achieving a balanced budget in 2015 and meeting (even stricter) nationally-imposed fiscal rules. That said, over time there is likely to be somewhat higher public spending and/or tax cuts to meet domestic (perhaps electoral) goals. But this is unlikely to be either quick or large enough to have a significant impact on the Euro area as a whole, at least during its current period of vulnerability over the next 9-12 months.

> "The provision of liquidity that this [monetary] expansion will accomplish is, of itself, unlikely to stimulate a strong recovery. Banks remain reluctant to make loans to households and smaller businesses, particularly in the periphery, because they are concerned about credit risk."

Allison Nathan: How concerned are you about a rift between the ECB leadership and the German authorities?

Huw Pill: Mr. Draghi and Mrs. Merkel both likely realize they need each other. Their relationship is – of necessity – symbiotic rather than confrontational. Ultimately, if the situation deteriorated to the extent that Mr. Draghi felt there was no alternative to sovereign QE, Mrs. Merkel would probably acquiesce. Both the ECB leadership and the German government accept the logic of doing "whatever it takes." But short of that extreme situation, it is clear that Mrs. Merkel would prefer other policies and adjustments to be made: other parts of the Euro area must show progress in terms of discipline and a willingness and ability to adjust in order to build trust and enhance the effectiveness of any risk-sharing measures. Mr. Draghi likely understands that.

Allison Nathan: What worries you the most about the prospects for EA growth?

Huw Pill: There are plenty of external risks – geopolitical, global health, etc. – that all economies face, although the vulnerability in the Euro area means that for a given risk the potential knock-on effects are greater. But many internal challenges remain – low growth, unsustainable fiscal positions, lack of international competitiveness, intra-EA economic and financial imbalances, poor demographics. Many of these problems cannot be resolved solely by using central bank instruments: ECB actions are just buying time. At some point, more lasting solutions need to be implemented, and little progress has been made on this front. In the meantime, financial markets and national electorates may lose patience, with implications of their own. Were financial markets to come to doubt the credibility of Mr. Draghi's pledge to do "whatever it takes," sovereign debt markets would re-price. And – more likely in the coming year – if electorates prove unprepared to continue to accept the costs associated with necessary but painful economic adjustment, the political viability of making the Euro area more workable may again come into question.

Euro area stagnation and its discontents

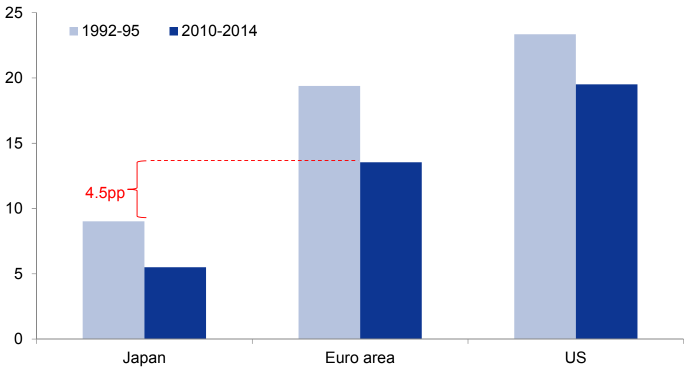
Jose Ursua highlights the implications of Euro area stagnation, which has already taken hold in some European economies

The persistent sluggishness of growth in the Euro area has become an increasing source of concern in market discussions, as it appears to be tracking unpleasant patterns associated with the Japanese experience of the 1990s. This has led commentators to hypothesize about a so-called "Japanization" of the Euro area. But the phenomenon of stagnation actually belongs to some continental European economies as much as it belongs to Japan. And the stagnation of the Euro area could be more costly to the global economy than Japan's earlier experience.

Concerns around the stagnation of the Euro area are not entirely unwarranted. Western Europe has featured prominently in the list of the most serious stagnations, and recent trends in France, Italy, Spain and other countries in the region already qualify as stagnation experiences. As a result, average GDP growth in the Euro area over the ten years leading to 2014 will likely print below 0.8%, similar to Japan's 0.9% average growth during its primary stagnation experience (1992-2003).

A bigger piece of the pie

Average share of world's GDP (PPP terms), percent



Source: IMF, Goldman Sachs Global Investment Research.

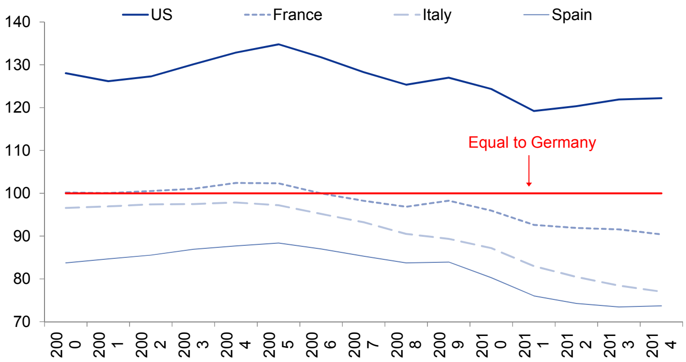
And Euro area stagnation could have even more worrying global ramifications. Consider that Japan's weight in global output was around 9% when its stagnation started, compared with roughly 14% for the Euro area in the aftermath of the financial crisis. Thus, continued stagnation in the Euro area would be potentially more damaging for the global economy than Japan's 1990s experience because of its larger economic weight and stronger financial linkages with the rest of the world. In this context, we highlight three discontents associated with stagnation in the Euro area:

The *growth* discontent

Recently stagnating economies in the Euro area have been growing at rates that are not only lower than their post-WWII average, but also substantially lower than those of their peers. Over time, these differences have opened sizeable wedges in levels of GDP per capita with respect to what they would have attained if they had grown at the average rate of their peers. Those wedges are already substantial (as of 2013): Spain (18%), Italy (27%), Portugal (21%), Belgium (13%) and France (18%). Among these, Italy and Spain are noteworthy. Italy's GDP per capita as a share of Germany's declined from 97% in the early 2000s to around 77% at present; while Spain's declined from 85% to 74%.

Growth falling behind

Percent of Germany's GDP per capita (PPP terms)



Source: IMF, Goldman Sachs Global Investment Research.

The *market* discontent

Stagnations tend to be characterized by lower stock returns and higher bond returns than normal. Recently stagnating economies fit those patterns. Total returns on stocks for these economies average -1.4% per year in real terms (considerably below the historical average of around 8%). In turn, total bond returns for these economies average 3.7% (above the historical average of around 3%). Finally, total bill returns have been slightly negative, at -0.2% (compared with a historical average of around 1%). So the overall picture of financial returns in recently stagnating economies has been unfavorable for risky assets, reflecting persistent downgrades in growth prospects.

The *competitiveness* discontent

A third problem is the lack of progress in competitiveness, if not actual setbacks. In terms of Goldman Sachs Growth Environment Scores (GES, our proprietary measure of growth friendliness), Euro area economies are already at relatively high levels and should be expected to make slower progress. But over the past ten years, the GES for stagnating economies have actually been declining (by around 0.1 index points per year on a 0-10 scale), compared to marginally increasing patterns for all developed economies. While growth conditions and growth outcomes are mutually-reinforcing (or sometimes mutually-dampening), improving the former generally leads to higher subsequent growth. And until that happens, growth tends to remain disappointing.

A challenging exit path

Even after lengthy spells, stagnations do not always end on a happy note (as some morph into deeper crises). But most of them eventually do, finally pushing growth towards potential and beyond. Successful exits from stagnation generally involve higher trend growth, higher fiscal balances, slower debt accumulation, alleviated legacy problems from crises and, eventually, an orderly normalization of monetary conditions. A mix of these is likely to lead the way out of stagnation experiences in the Euro area. And financial markets are likely to reward those improvements, sometimes as early as the first signs of a decisive turnaround. But if the Japanese experience is anything to go by, and despite many differences between the two, the path will be as challenging as the depth of its ongoing discontents.

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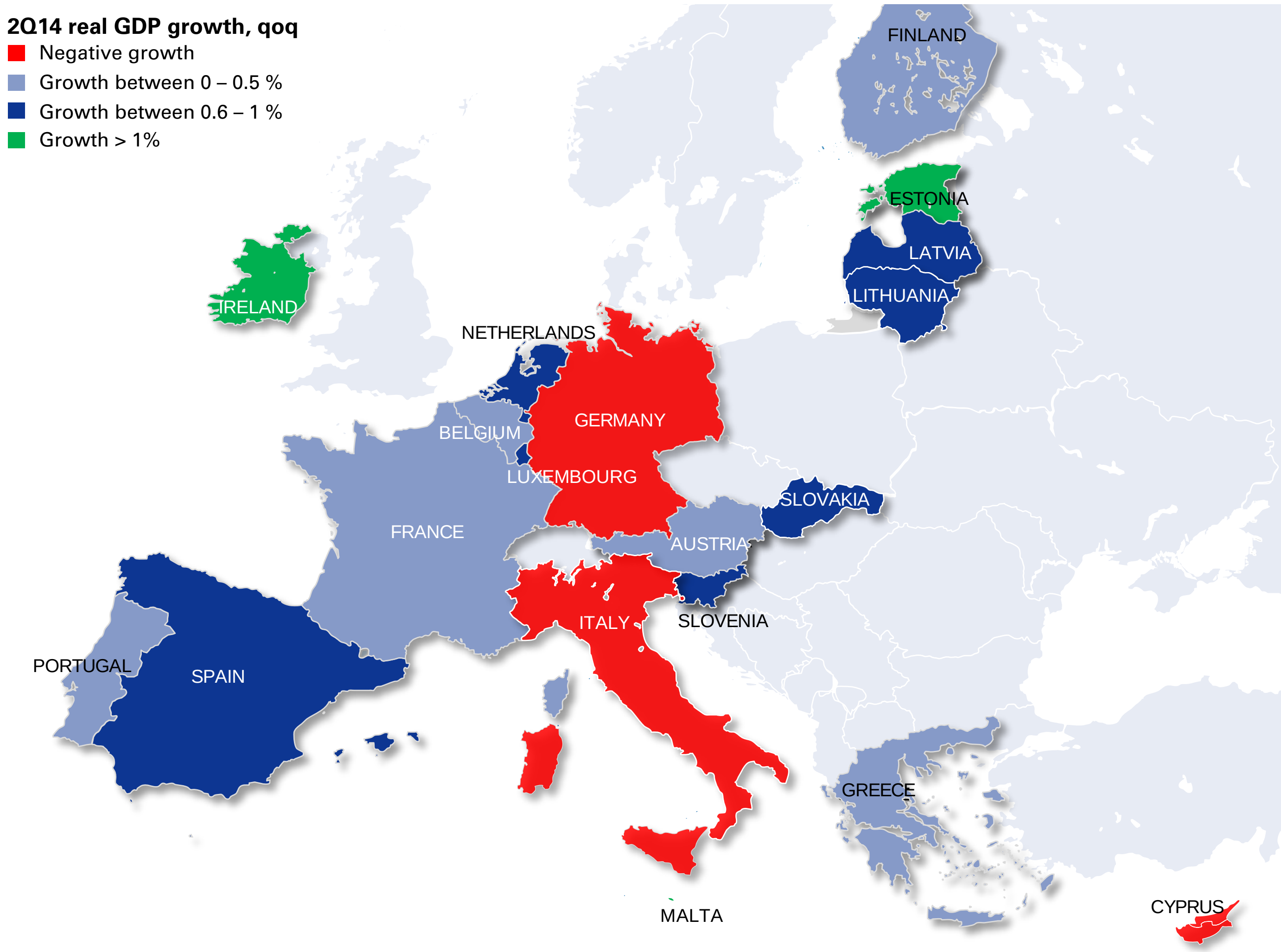
The Euro area macro picture



Indicator	FRANCE	GERMANY	ITALY	SPAIN	CYPRUS	GREECE	IRELAND	PORTUGAL
Real GDP Growth								
qoq SA (2Q14)	0.0%	-0.2%	-0.2%	0.6%	-0.3%	0.4%	1.5%	0.3%
yoy SA (2Q14)	0.1%	1.3%	-0.3%	1.2%	-2.5%	-0.3%	6.5%	0.9%
Inflation (Sept. 2014)								
Headline	0.4%	0.8%	-0.1%	-0.3%	0.0%	-1.1%	0.5%	0.0%
Core	0.9%	1.2%	0.5%	-0.2%	0.2%	-1.4%	1.0%	0.6%
Gov't. Surplus/Deficit, Share of GDP (2013)	-4.1%	0.1%	-2.8%	-6.8%	-4.9%	-12.2%	-5.7%	-4.9%
Gross Gov't. Debt, Share of GDP (2013)	92%	77%	128%	92%	102%	175%	123%	128%
Fiscal Tightening, Share of GDP (2013)	0.7%	0.3%	0.5%	1.5%				
Net International Investment Position, Share of GDP (2012)	-12%	37%	-30%	-94%	-85%	-113%	-116%	-120%

Source: EU Commission, Eurostat, IMF, national statistical offices, Goldman Sachs Global Investment Research.

Euro area policy timeline

Mar-08

ECB expands **long-term refinancing operations (LTRO)** to 6-month maturities.

+25bp to 4.25%.

Sep-08

-50bp to 3.75%.

ECB conducts a special term refinancing operation.

ECB announces liquidity measures including a new fixed-rate, full-allotment refinancing procedure.

-50bp to 3.25%.
-75bp to 2.50%.
-50bp to 2.00%.

Mar-09

-50bp to 1.50%.
-25bp to 1.25%.
-25bp to 1.00%.

ECB announces launch of 12-month **LTROs** and a EUR60 bn **covered bond purchase program (CBPP)**.

Sep-09

EA finance ministers agree on EUR110 bn loan package for Greece.

Mar-10

EU member states announce the **European Financial Stability Mechanism (EFSM)** and the **European Financial Stability Facility (EFSF)**.

ECB announces the **Securities Markets Program (SMP)**.

ECB completes the **CBPP** on schedule.

Sep-10

EA finance ministers establish the **European Stability Mechanism (ESM)**.

European finance ministers and IMF agree on EUR85 bn package for Ireland.

Mar-11

+25bp to 1.25%.

EU Council approves EUR52 bn in aid to Portugal.

+25bp to 1.50%.

ECB announces 6-month supplementary **LTRO**.

Sep-11

EA member states approve amendments granting the **EFSF** more flexibility.

-25bp to 1.25%.

ECB announces EUR40 bn **CBPP2**.

ECB announces 36-month **LTROs** and allots EUR489 bn in the first operation.

-25bp to 1.00%.

ECB allots EUR530 bn in 2nd 36-month **LTRO**.

Mar-12

EA finance ministers agree to second bailout for Greece.

European leaders sign the **"fiscal compact."**

-25bp to 0.75%.

EA agrees on aid to Spanish banks.

Mario Draghi pledges to do "whatever it takes" to protect the euro.

Sep-12

ECB terminates the **SMP** and announces the **outright monetary transactions (OMT)** program, which it has yet to use.

Mar-13

EA finance ministers agree to EUR10 bn bailout for Cyprus.

-25 bp to 0.50%.

ECB introduces forward guidance, a significant step from its previous "we never pre-commit" mantra.

European Parliament votes to establish a **Single Supervisory Mechanism (SSM)**, under which the ECB would oversee the EA's major banks.

Sep-13

-25bp to 0.25%

Ireland exits its bailout program.

Portugal exits its bailout program.

Mar-14

-10bp to 0.15%; negative deposit rate of -0.10% introduced.

ECB announces plans to conduct **targeted long-term refinancing operations (TLTRO)** over a two-year period.

-10bp to 0.05%.

Sep-14

ECB allots EUR82.6 bn in first **TLTRO**.

SSM enters into force, with the ECB assuming oversight of 120 banks.

ECB announces details of ABS program and **CBPP3**.

◆ Interest rate decision (final rate refers to main refinancing rate)
◇ Other policy measure/announcement
◆ Bailout package
Blue text refers to terms in glossary

Source: ECB, various news sources, Goldman Sachs Global Investment Research.

A refresher on the EA's (many) terms

VLTRO	**(Very) Long-Term Refinancing Operations.** An ECB initiative to lend money at low central bank rates for an extended period to Euro area banks. The ECB has conducted LTROs at progressively longer maturities since 2008. A 36-month LTRO took place in two tranches in December 2011 and February 2012 and lent more than €1 trillion to at least 800 banks. This injection of cheap money was intended to improve funding conditions for banks and therefore avoid a repeat of the "liquidity crisis" in the banking sector that occurred in the autumn of 2008.
TLTRO	**Targeted Long-Term Refinancing Operations.** LTROs aimed at boosting bank lending to the non-financial sector. The ECB first announced TLTROs in June 2014 with plans to conduct a total of eight operations: two initial operations in September/December 2014 and quarterly operations starting in Q1 2015 and lasting until mid-2016. The rate on the operation is fixed for the entirety of the loan at the ECB's main refinancing rate (+10bp) prevailing at the time of the take-up. The TLTROs mature in September 2018 for banks satisfying certain benchmarks related to new loan creation (otherwise the operation matures around mid-2016). In the first TLTRO on September 18, 2014, the ECB allotted €82.6 billion – a take-up below expectations – to 255 counterparties. The next TLTRO will be allotted on December 11, 2014. Market participants will be watching the take-up and, more broadly, whether the operations succeed in stimulating the real economy.
CBPP 1-3	**Covered Bond Purchase Program**. An ECB program to purchase euro-denominated covered bonds (debt securities backed by cash flows from private-sector loans or mortgages). The first CBPP was announced in May 2009 and ended in June 2010 with total purchases of €60 billion. A second program was launched in November 2011 and completed in October 2012. While CBPP2 initially targeted €40 billion in purchases, the ECB ultimately purchased only €16 billion. The ECB viewed that the aim of improving the functioning of the covered bond market in the Euro area had been achieved with this amount of purchases. In September 2014, the ECB announced CBPP3; the program launched in October 2014. The newly announced covered bond program forms part of the ECB's aim to increase its balance sheet size.
EFSF	**European Financial Stability Facility.** A temporary special purpose vehicle created in May 2010 to address the European sovereign debt crisis by providing financial assistance to Euro area member states in economic difficulty. Until its replacement by the ESM in July 2013, the EFSF could issue bonds or other debt instruments to raise funds needed to provide loans to Euro area governments facing financing difficulties, recapitalize banks through loans to governments, or buy Euro area sovereign debt. Member states' capital guarantees totaled €780 billion, and the facility had a lending capacity of €440 billion. The EFSF lent money to Ireland, Portugal, Greece, Spain and Cyprus. Once its last outstanding assistance program (Greece's) concludes at the end of 2014, the facility will continue to operate only to roll over outstanding bonds.
EFSM	**European Financial Stabilization Mechanism.** An emergency funding program established in May 2010 for EU member states in economic difficulty. The EFSM relied upon funds raised in the financial markets and guaranteed by the European Commission (EC) using the budget of the European Union as collateral. It had the authority to raise up to €60 billion and made loans to Ireland and Portugal (in conjunction with the EFSF). It has been replaced by the ESM.
ESM	**European Stability Mechanism.** This so-called "bailout fund" is a permanent agency that manages rescue funding for Euro area member states, replacing the temporary EFSF/EFSM. The ESM is intended to flexibly stabilize financial markets and support vulnerable sovereigns. It can lend to governments directly as well as buy sovereign debt in both the primary and secondary market. Since its inauguration in October 2012, the ESM has provided assistance to the Spanish banking sector and to Cyprus. The ESM is backed by €80 billion in paid-in capital and €700 billion in subscribed capital, with a lending capacity of €500 billion. EA governments have authorized the ESM to eventually recapitalize banks directly (rather than through loans to governments); this "last-resort instrument" has a capacity of €60 billion.
OMT	**Outright Monetary Transactions.** A program established in September 2012 allowing the ECB to purchase short-term Euro area sovereign bonds in the secondary market, so long as the issuing country has committed to fiscal adjustment with the ESM. The OMT program has not yet been used, but its unlimited size – and the ECB's abstention from claiming senior credit status – helped calm financial markets in 2012 amid a sell-off of peripheral sovereign bonds. In February 2014, the German constitutional court referred the case to the European Court of Justice for an opinion.
SMP	**Securities Markets Program.** A program introduced by the European Central Bank (ECB) in May 2010 and laid dormant in September 2012, under which the ECB and the Euro area national central banks could buy government bonds of financially-strained Euro area governments in the secondary market in order to improve the monetary transmission mechanism.
Fiscal Compact	**Fiscal compact.** Also known as the Treaty on Stability, Coordination, and Governance, the fiscal compact builds on prior legislation to maintain the stability of the European Economic and Monetary Union (EMU) through fiscal monitoring and sanctions. It entered into force in January 2013. The compact sets deficit and debt targets for the EMU, as well as rules to impose sanctions when agreements are breached. It has required members to pass a national law or an amendment of the national constitution that limits the structural budget deficit to 0.5% of nominal GDP, except in rare instances.
SSM	**Single Supervisory Mechanism** A mechanism that assigns the ECB central responsibility for supervising EA banks. The European Commission first proposed SSM in 2012 as an initial step toward a European banking union (a scheme that, if fully implemented, would also involve establishing a common authority and pool of resources to wind down failed banks and/or restructure viable ones, as well as Euro area-wide common deposit insurance). In November 2014, the ECB assumed oversight of 120 of the EA's largest banks.

Source: ECB, European Council, various news sources, Goldman Sachs Global Investment Research.

Interview with Paul De Grauwe

Paul De Grauwe is a professor of European Political Economy at the London School of Economics and a research fellow at the Centre for European Policy Studies. He has been a visiting scholar at the ECB and other central banks, as well as an advisor to Jose Manuel Barroso with the Group of Economic Policy Analysis. His research interests include monetary integration and international monetary relations. Below, he shares his concerns about the prospects for Euro area growth.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.

Allison Nathan: Is the comparison between the Euro area today and Japan in the 1990s fair?

Paul De Grauwe: Only to a certain degree. It is fair to the extent that they both faced deflationary dynamics. But the obvious, key difference between the two is that Japan is one country while the Euro area is eighteen countries with very divergent experiences in terms of inflation; some countries are struggling with deflation and others not at all. The fact that Euro area inflation is so diversified makes the problem much more difficult to respond to. The likelihood that the Japanese – who were dealing with a uniform deflationary process – probably didn't get the response right, underscores the challenge that the Euro area faces.

Allison Nathan: Where does Euro area growth go from here?

Paul De Grauwe: I'm not too optimistic that there will be improvement in the near-to-medium term because Euro area governments are pursuing fiscal policies that are focused on balancing budgets just as their economies are turning down again. I am not that optimistic over the longer run either because public investment has declined significantly to extremely low levels. There is too little investment to generate an increase in productive capacity, which is necessary for long-term growth.

Allison Nathan: Will the region end up in a deflationary spiral?

Paul De Grauwe: The different inflation experiences across countries make this difficult to forecast. But there is certainly a threat that a deflationary spiral takes hold. And even if the Euro area does not end up in deflation, the very fact that inflation has declined so sharply to such low levels still creates huge problems in countries that have high debt levels. The real debt burden is increasing, which is very problematic and risky because it could lead to further deflationary momentum. And the desire to avoid this deflationary dynamic could intensify austerity efforts, which is exactly what these economies don't need right now.

Allison Nathan: Will the recent ECB measures be effective in boosting growth?

Paul De Grauwe: They will likely be less effective than one could have hoped. ECB measures would be much more effective if they had the whole range of assets to work with. Political obstacles are keeping the ECB from freely purchasing government bonds, which Germany adamantly opposes. There has been some recent optimism about the potential for the ECB to purchase corporate bonds. This would be a positive development, but it would have limited impact because the corporate bond market is not as developed in the Euro area as it is in the US; it is mostly reserved for large companies, whereas it is mainly the small and medium-sized companies that have difficulty accessing credit.

Allison Nathan: Some have argued that full-blown QE would not be as effective in the Euro area as it has been in the US and the UK because of institutional differences and fragmentation in Euro area markets. Do you agree?

Paul De Grauwe: I don't agree. If the ECB were not restricted for political reasons from operating in certain markets and particularly in the government bond markets, I don't see why it couldn't be as effective as in the US and in the UK. But even full-blown QE would lose full effectiveness if fiscal policies don't change. The Euro area is in a classic liquidity trap. You can expand the liquidity in the system, but if people don't want to invest and consume because fiscal policies are so restrictive, its effectiveness will be limited. It is the mix of monetary and fiscal policies that has been so wrong in the Euro area.

"There is certainly a threat that a deflationary spiral takes hold. And even if the Euro area does not end up in deflation, the very fact that inflation has declined so sharply to such low levels still creates huge problems in countries that have high debt levels."

Allison Nathan: How much of the current problems can be blamed on austerity?

Paul De Grauwe: Again, both monetary and fiscal policies have been problematic. But Euro area fiscal policies have been a terrible failure up to now. Private sector deleveraging in the wake of the Global Financial Crisis has been understandable and probably constructive in itself. But the fact that sovereigns have been called upon to do the same thing at the same time has been very ill-advised. The paradox is that the intensity of austerity in a number of countries has led to such deep recessions that government deficits have in fact risen rather than declined. This situation has been exacerbated by the actions of the creditor nations. One could reasonably argue that austerity in debtor nations is inevitable. But the creditor nations that have current account surpluses could have made life easier for the Euro area by stimulating their economies. Yet they have refused to do so, instead following relatively deflationary policies that have created a real risk of a deflationary environment for the Euro area as whole. Given the creditor nation actions, I am not surprised that that Euro area has ended up in a deflation trap.

Allison Nathan: What should the German government do now?

Paul De Grauwe: It is clear that it should step back from its focus on balancing the budget and increase public investments, which are at a very low level compared to other European countries. All creditor nations – not just Germany – should be investing in public goods and infrastructure, which would not only stimulate demand in the short term, but also increase productive capacity over the long term and ultimately boost private investments as well. But in Germany the willingness to move in this direction is weak because there is a view that government debt is like the devil; there is no acknowledgment of the notion that if you make sensible public investments, there is nothing wrong with having debt. So I don't expect much. I would only expect the German government to set aside this dogmatic approach if a new recession were to hit Germany, as occurred in 2008; only when the economy was in deep recession were they willing to act.

Allison Nathan: Given recent deterioration in Germany's economic indicators, how concerned are you that it ends up in recession?

Paul De Grauwe: Given that global demand growth is declining and there are very few sources of demand growth in the Euro area, I think that there is a real risk that Germany's export-focused growth model runs into trouble, and a recessionary outcome is certainly possible.

Allison Nathan: Do you see a rift between the ECB leadership and the German government?

Paul De Grauwe: I don't see a rift between the ECB leadership and the German government. The German government has in fact backed the Outright Monetary Transactions (OMT) program, which was the necessary condition for ECB President Draghi to move forward with the program. But I do see a rift between ECB leadership and the Bundesbank and its allies. So it is really an internal problem between central bank authorities. The Bundesbank is dead-set against any move towards quantitative easing or a guarantee program. The worrisome aspect of this is that public opinion in Germany seems to agree with the Bundesbank's stance, which may compel the German government to get more involved. But I don't see that happening right now.

Allison Nathan: France has implemented less austerity. Has that served it well?

Paul De Grauwe: France has also applied some measure of austerity, although less than other countries. But France still has the problem of low growth. When economic growth is low and declining, fiscal deficits rise. So France is trapped like many others in a deflationary environment that makes it very difficult to use austerity to turn around debt levels.

Allison Nathan: How important will the recent weakening in the euro be to a recovery in the Euro area?

Paul De Grauwe: It is certainly going to be an important contributing factor to a recovery, but the exchange rate is still too high. Recall that the EUR/USD rate was 1.17 at the inception of the euro and even dropped below parity at some point, so it could weaken quite a bit further from here. Another 10-15% depreciation of the euro would not be exceptional compared to what we had in the early stages of the Euro area's existence. Such a drop would likely provide a substantial boost to the Euro area's significant external trade and to the overall recovery. But this depreciation can likely only be achieved if the ECB materially expands its balance sheet at the same time that the Fed shrinks its balance sheet. Given that the ECB is limited in what it can do with QE, it is not obvious that they will be able to accomplish this.

Allison Nathan: How helpful will the recent collapse in energy prices be for the recovery?

Paul De Grauwe: The decline in energy prices will also help the recovery given how dependent the Euro area is on imported energy. It will increase the purchasing power of consumers and allow them to spend more on domestic goods and services.

Allison Nathan: Could a liquidity crisis in the Euro area reemerge?

Paul De Grauwe: Sure, it could reemerge. We saw a glimpse of this very recently in Greece, when it signaled it may terminate its IMF program early. Such a crisis would almost certainly reemerge if we don't stop the deflationary process that will lead to an increasing debt burden of a number of highly indebted countries. If this process is not halted, at some point markets will react and fear will set in again, triggering a liquidity crisis. The ECB's actions will also play a role. As long as the market believes that the ECB will not allow these developments to materially affect liquidity and solvency, the likelihood of such a crisis reemerging will be limited. But if market participants start doubting the resolve of the ECB, then we could have a real problem. This doubt could arise because there is a strong effort to prevent the ECB from using the OMT; Germany's Federal Constitutional Court has sent a case to the European Court of Justice that claims the OMT program is illegal. As a result, restrictions on its use could be imposed. So it is unclear whether the ECB will be able to act if a new crisis develops.

> "A [liquidity] crisis would almost certainly reemerge if we don't stop the deflationary process that will lead to an increasing debt burden of a number of highly indebted countries."

Allison Nathan: Could such a liquidity crisis turn into a solvency crisis?

Paul De Grauwe: Yes, it could certainly lead to a solvency crisis because rates would spike again, which would exacerbate the debt problems and further increase calls for austerity. At some point, the willingness to endure austerity will just be exhausted, and if countries say they don't want to go through the austerity process any longer, then a solvency crisis could result.

Allison Nathan: What is your biggest worry?

Paul De Grauwe: My biggest worry is that if the Euro area is not able to pull itself out of the current dynamics and countries find themselves with deflation, higher unemployment levels and the hopelessness of millions of people, the conditions are set for huge political upheaval. So my worry is not so much the economic effects themselves, but the political effects that these economic conditions will create, which could destabilize countries politically and socially.

Allison Nathan: Is there anything to be optimistic about?

Paul De Grauwe: We can only grab onto the hope that we can act together and set aside the dogmas that exist in Europe. That is what it will take for the Euro area to move forward economically and politically, and I have not given up hope that we can achieve it.

European equities: a different story

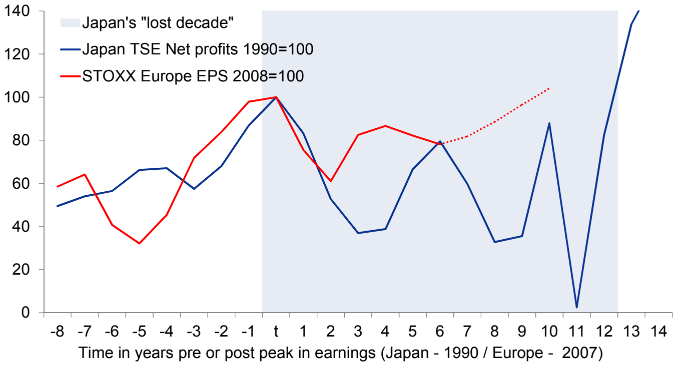
Sharon Bell argues that European equities are not likely to repeat Japan's dismal experience

A Japan-style deflation scenario for the Euro area is very worrisome in terms of equities. After the TOPIX's initial 61% drop from its peak in late 1989 to August 1992, it bounced and fell again several times, with each drop marking a new low in 1998, 2003 and 2009. The full decline from end 1989 to 2009 was 76% in yen terms. Despite a meaningful rebound since, the TOPIX is still 52% lower today than at end of 1989.

In comparison, European equities are only 16% below their 2007 peak. A look at recent patterns reveals both worrying similarities between Japanese and European equities in terms of earnings and more comforting differences in terms of valuation. Good reasons to believe that the Euro area will end up with a better overall outcome than Japan, combined with less bubbly starting valuations, suggest that European equities should be insulated from a Japan-style prolonged period of negative equity returns.

Troubling similarities

Earnings for Japan TSE and STOXX Europe, indexed to peak



Source: Goldman Sachs Global Investment Research.

Earnings…not so different

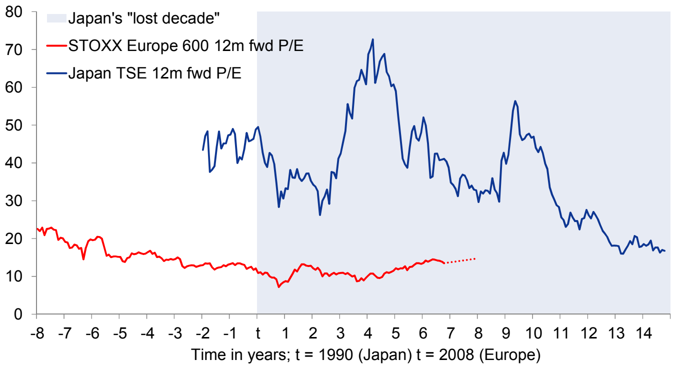
The recent path of European earnings has been very weak and not dissimilar to the experience of Japan in the early 1990s. European companies' profitability has suffered from several factors:

- **Weak domestic economic recovery.** Low economic activity has clearly constrained earnings; in some countries such as Italy there has been almost no measurable recovery since the sovereign crisis, with industrial output languishing at 2008 levels.
- **A still-elevated euro.** While the euro has recently weakened versus the US dollar, it continues to trade in the range it has held for the last five years (1.20 to 1.40) – there has been no "convenient" devaluation to stimulate earnings. The comparison with Japan is especially apt as yen strength through most of the 1990s was a key factor that constrained the Japanese recovery.
- **The slowdown in EM growth and commodity-related areas.** European listed corporates are far more international than corporates in either Japan or the US (a slightly bleak take on this is that no company got large by selling merely to Europe). For both S&P500 and TOPIX companies, nearly 70% of sales are made domestically, whereas for the STOXX Europe index only 53% of sales are to Europe. European companies' international positioning should arguably be a good thing if domestic growth is weak. But much of this exposure is to China where growth has slowed and/or in commodity-related areas where the super-cycle that drove earnings has recently come to an abrupt end.
- **Relatively little technology exposure or genuinely high-growth companies.** Technology has materially boosted S&P500 margins; the tech sector represents 16% of index market cap in the US, 6% in Japan, but just 3% in Europe.
- **A banking drag.** One of Japan's biggest problems was the prolonged sense of denial over its non-performing loan (NPL) crisis (causing the fits and starts of the market during much of the past 20 years). In Europe, banks have also dragged on earnings through higher provisioning, loan losses, litigation charges, regulation and capital requirements. Notably, banks were worth around 20% of market cap in Japan in the early 1990s, similar to Europe in 2007. They have fallen to 8% of market cap in Japan, but are still 12% in Europe.

While some of these weights on profitability are likely to persist, there are reasons to be optimistic that earnings will move away from the Japan scenario. GS economists expect economic growth in the Euro area to remain low – similar to Japan – but to avoid deflation, a key factor behind Japanese corporations' inability to boost ROE. We also expect the euro to weaken further to parity versus the dollar in 2017 largely owing to increasingly divergent monetary policy. And, to the extent that European banks/regulators are proactively confronting issues in the banking sector, that is another potential difference in Europe's favor. On net, we expect earnings to rise by 5% and 8% in 2014 and 2015, respectively – a weak earnings recovery reflecting a weak economic one, but substantially better than the Japanese experience.

Comforting differences

12-month forward P/E for Japan TSE and STOXX Europe



Source: Datastream, I/B/E/S, Goldman Sachs Global Investment Research.

Valuation…very different

But the key area where Europe today differs markedly from Japan in the early 1990s is equity market valuation. The 12m forward P/E on the TOPIX rose to 50x in the late 1980s and then rose again in the early-to-mid 1990s to over 70x – a function of the rapid decline in earnings estimates. In mid-2007 – the peak of the market – Europe traded on 13.5x forward earnings. Today, the market trades on 13.6x and the range over the last decade has been between 7x and 14.5x. A similar story can be told with price-to-book values – Japan's peaked at 4x in 1990, Europe was at 2.4x in 2007 and today stands at 1.8x. The Japanese stock market has only in the last couple of years de-rated from "bubble-level" valuations to ones comparable with those in Europe (or indeed the rest of the world). More reasonable starting valuations are perhaps the most compelling reason why European equity performance is unlikely to repeat the dismal Japanese experience.

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Snapshot of our views

Implications of the Euro area macroeconomic outlook

FX
Robin Brooks
Fiona Lake
(DM)

- We continue to expect significant depreciation of the euro versus its G10 peers, especially the US dollar.
- Supporting this view, we anticipate restrained growth, persistently below-target inflation and easing monetary policy in the Euro area while the US continues to grow at an above-trend pace and the Fed moves towards normalization. While this is already being reflected in FX markets to some degree, we think it has further to run and expect EUR/USD to trade at 1.15 in 12 months and parity by end-2017.
- Should the situation in the Euro area deteriorate further, prompting the ECB to act more forcefully, we expect that this euro depreciation would accelerate. While the current price likely reflects some probability of further easing, should the ECB undertake a sovereign QE program, the euro would likely fall further and faster in the near term.
- If the ECB failed to react and the Euro area slipped towards a Japan-style "lost decade," a much less likely scenario in our view, this would ultimately prolong the depreciation process that we expect.

Rates
Francesco Garzarelli
Silvia Ardagna
(DM)

- We continue to think that core Euro area rates are expensive from a macro standpoint in our baseline scenario in which growth and inflation gradually improve. However, the ECB's accommodative monetary stance will affect the pace at which bonds will reprice. Under the baseline scenario in which the ECB pursues more credit easing policies and potentially expands the target set of private and supranational (EIB, EFSF, ESM bonds) assets it can buy, we expect a steepening of the Euro area curve. Our forecast for 10-year German government bond yields remains above the current forward, but below the fair value implied by our macro model Sudoku.
- In a scenario in which macro data disappoint and QE on sovereign bonds is announced, the repricing of core rates would likely be pushed further out in time. On the one hand, sovereign QE should hasten the rebuilding of the term premium by lifting inflation expectations. This points to higher yields on long-dated bonds. On the other hand, the ECB purchases will remove German duration available for private sector investors, pushing yields in the opposite direction. We would expect that initially the second effect dominates and keeps the curve flatter. But, over time, the first effect will ultimately prevail as QE helps reflating the Euro area economy.
- If the ECB were to initiate a program of sovereign purchases, we would expect peripheral EMU bonds to rally.

Credit
Charlie Himmelberg
Lotfi Karoui
(DM)

- A stronger technical backdrop coupled with a lagging and friendly credit cycle has allowed the European investment grade market to strongly outperform its US counterpart this year.
- While we do not expect European credit spread to widen from here, this outperformance prompted us to reverse our long-standing preference for European credit and shift our relative value view to favor the US market.
- In our view, the current razor-thin spread differential between the European and US markets does not reflect the better state of current and expected US credit quality.
- Barring a recession scenario, a deterioration of European macro fundamentals followed by an aggressive balance expansion by the ECB would cause European credit spreads to further compress.
- A Japan-style stagnation featuring anemic growth and near-zero inflation would weigh on credit quality for lower-rated and domestically exposed issuers. For the investment grade market, we think this likely implies a carry-friendly environment similar to the one that prevailed in Japan.

Equity
Peter Oppenheimer
Sharon Bell
(Europe)

- For European equities, easing policy in the Euro area, combined with a modest improvement in economic growth, suggests some further upside (13% Eurostoxx 50 returns over the next 12 months).
- We see the market as a value play, supported by a still very high risk premium and increasingly loose financial conditions. A falling euro is supportive too, although this means returns in dollars for investors will be considerably lower.
- Should the macroeconomic picture in Europe remain weak or weaken further with no sequential recovery, then European equities would likely experience a setback as they did in October, with the equity risk premium (ERP) rising back up above 8% (the peak in the ERP was over 9% in mid-2012, and we think that is unlikely). If this were to occur, however, the ECB is likely to act more aggressively in easing policy; and at least initially we think the market would respond positively to that catalyst.
- Thus, while our base case is a reasonable rise in equities through 2015 driven mainly by a modest pick-up in earnings, the alternative scenario where growth fails to recover would mean more volatility for equities and a drop to a lower base, but probably high returns from that lower level on the back of policy support.

Commodity
Jeff Currie
Damien Courvalin
Max Layton
Christian Lelong
Roger Yuan

- Given the fairly low contribution of Europe to oil demand growth, continued weak economic growth in the region would have limited impact on our oil balance and price forecasts. The impact from lower oil prices on economic growth is in fact significantly larger, with our economists estimating that a 10% decline in the Euro price of oil (close to moves year-to-date) will add around 0.3%-0.4% to the level of Euro Area real GDP.
- We maintain that the key factor behind commodity, and especially oil, price moves will be supply rather than demand, as production growth remains high in the current Exploitation Phase of the commodity cycle.
- Continued weak European growth would likely continue to exert downward pressure on DM rates, limiting the magnitude of the US rate increase that we expect. As we view US rates as the predominant driver of USD denominated gold prices, further declines in EU real rates would ultimately slow the decline in gold prices that we expect, as has been the case so far in 2014.

A look back at Japan's deflation drivers

Japan is well known as a pioneer in chronic deflation and stagnation since the late 1990s. Yet the main reasons for its situation are less well known. GS Chief Japan Economist Naohiko Baba looks back at the Japanese experience and identifies key trends that contributed to the deflation of the "lost decades."

Nominal wage cuts, the precursor to an entrenched deflationary mindset

Japan's wage deflation began in the late 1990s, when the accumulation of post-bubble bad debt culminated in financial crisis. Japanese firms encountered the urgent need to undertake tough restructuring. However, unlike their counterparts in other developed economies, Japanese firms' ability to restructure was constrained by regulations that limited laying off workers even with pecuniary compensation. At the same time, workers strongly preferred job security over wages and therefore tolerated nominal wage cuts. The outcome was a shift to low-paid part-timers and other non-regular staff to reduce overall labor costs. This tendency was particularly notable in labor-intensive services and other non-manufacturing sectors, which have chronically suffered from low productivity. Since these sectors account for more than 70% of Japan's GDP, deep-rooted deflationary expectations gradually took hold in Japan in a vicious wage-inflation cycle.

Demographics, a drag on demand

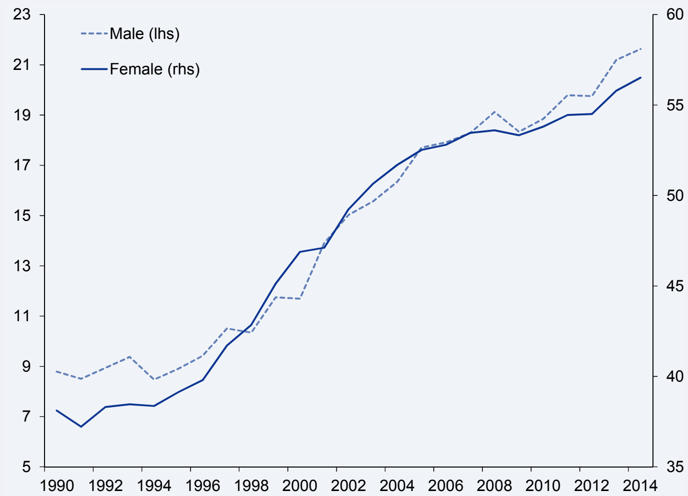
Japan's shrinking and rapidly aging population, exacerbated by a downtrend in the net marriage ratio, gradually dampened housing and other construction, as well as durable goods consumption (which, in turn, reduced demand for incidental goods and services). This trend weakened domestic demand at a faster pace than the capacity to produce goods, gradually increasing the amount of slack in the economy.

Over time, the downtrend in domestic demand became entrenched in the corporate mindset, prompting the corporate sector – which had routinely tapped high Japanese household savings via bank borrowing to pursue corporate investment – to shift from a user of funds to a saver by the mid-1990s by curbing capex. Firms became increasingly motivated to outsource manufacturing and other operations to what were perceived as more promising markets abroad, further eroding domestic capex. Falling prices also relaxed firms' typical concerns about sitting on retained earnings. In sum, consumers and companies approached the future with increased cautiousness, setting the stage for the deflationary mindset and economic weakness to become deeply entrenched.

Naohiko Baba

Not good news for inflation

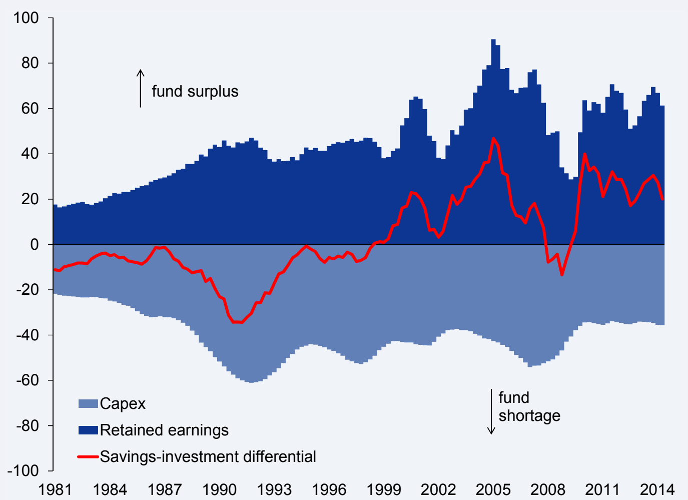
Proportion of non-regular workers, %



Source: Japan Ministry of Internal Affairs and Communications.

Changing corporate behavior

Corporate investment/savings balance, ¥ trillion, 4Q average



Source: Japan Ministry of Internal Affairs and Communications.

Euro area worries in pics

A special thanks to the GS European economics team for these pics.

Rare DM deflation

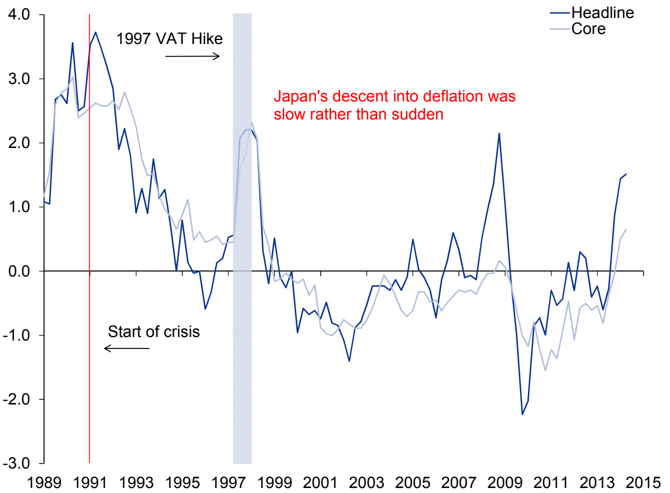
Instances of deflation in sample of 180 countries from 1960-2013 using annl. CPI inflation (defined as 3 years or more of negative inflation)

DM	EM
Hong Kong	Argentina
Japan (x2)	Bahrain (x2)
Malta	Central African Republic
	Libya (x2)
	Niger
	Saudi Arabia (x2)
	Senegal
	Syria

Source: OECD, IMF.

A slow deflation descent

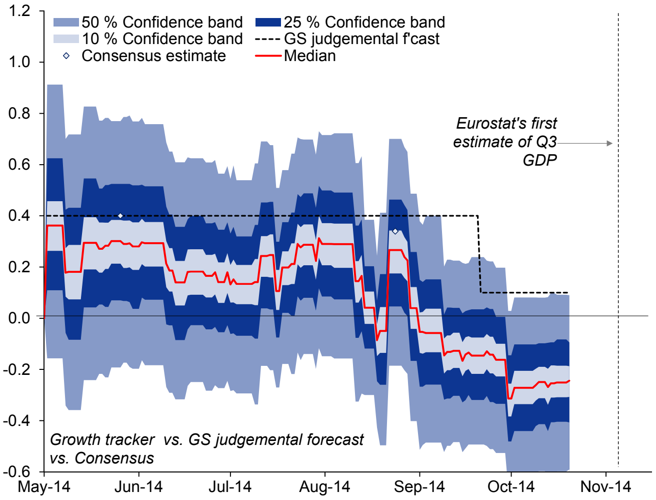
Japanese Headline and core CPI inflation



Source: Japan Ministry of Internal Affairs and Communications.

Concerning conjunctural indicators

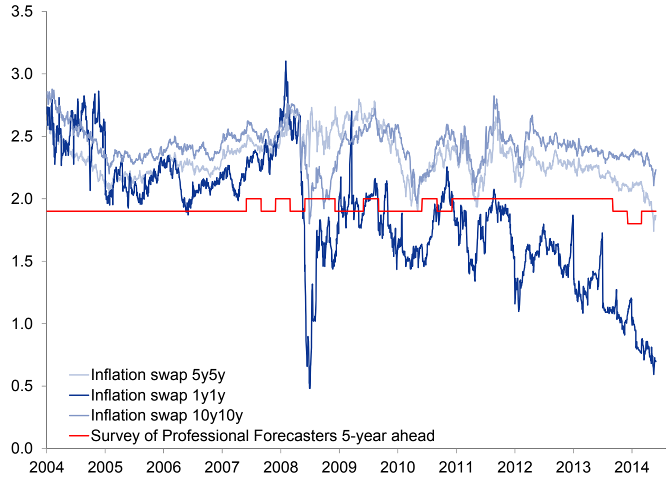
GS RETINA tracker for EA 2014 3Q real GDP growth, % qoq



Source: Goldman Sachs Global Investment Research.

Price stability looking less stable

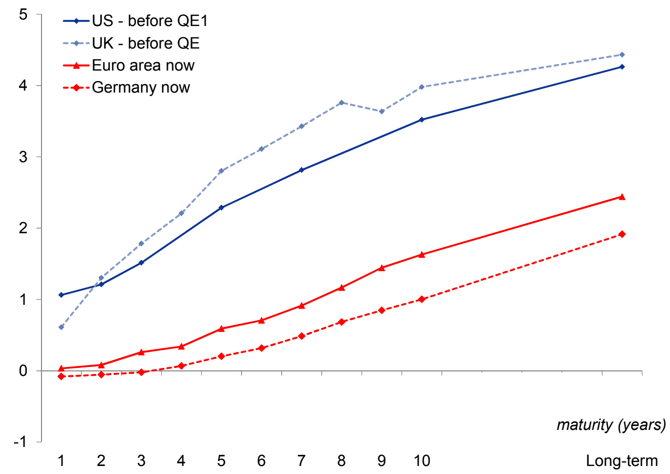
Euro area HICP, %pa



Source: Bloomberg.

Looks like QE, but with no QE

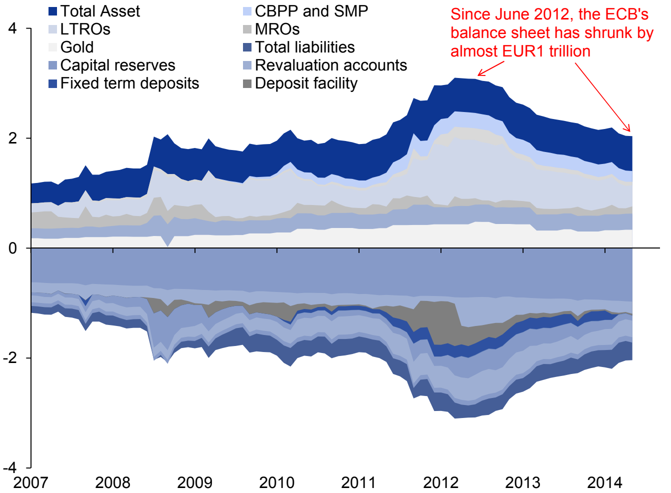
Sovereign yield curves, %



Source: Bloomberg.

Headed in the wrong direction (but not for long)

ECB balance sheet holdings



Source: ECB, Haver Analytics, Goldman Sachs Global Investment Research.

Snapshot of our key forecasts

	GDP Growth (% yoy)				FX				Equity				Rates (% eop)				Revision Notes
	2014		2015		3-mth		12-mth		3-mth		12-mth		Policy*		10-yr		
	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	2014	2015	2014	2015	
Global	3.0	3.0	3.5	3.5	-	-	-	-	-	-	-	-	-	-	-	-	
					EUR/$		EUR/$		SP500		SP500						
US	2.2	2.2	3.0	3.1	1.23	1.24	1.15	1.20	2050	2022	2150	2181	0.00 to 0.25	0.50 to 0.75	2.50	3.00	
					EUR/$		EUR/$		Eurostoxx 50		Eurostoxx 50						
EURO AREA	0.7	0.8	1.0	1.2	1.23	1.24	1.15	1.20	3200	3307	3500	3478	0.05	0.05	-	-	
					EUR/$		EUR/$		DAX		DAX						
GERMANY	1.4	1.4	1.1	1.5	1.23	1.24	1.15	1.20	-	-	-	-	-	-	1.00	1.50	
					$/CNY+		$/CNY+		HSCEI		HSCEI						
CHINA	7.3	7.3	7.1	7.1	6.16	6.11	6.15	6.04	-	-	12300	-	3.00	3.50	-	-	
					$/BRL		$/BRL		BOVESPA		BOVESPA						
BRAZIL	0.2	0.3	1.3	1.0	2.45	2.40	2.65	2.50	-	-	-	-	11.50	12.25	-	-	After the central bank unexpectedly hiked the Selic policy rate by 25bp to 11.25% on October 29, we brought forward our policy rate path. We now forecast the Selic at 11.50% for 2014 and 12.25% for 2015, from 11.00% and 12.50% previously.
					$/JPY		$/JPY		TOPIX		TOPIX						
JAPAN	0.9	1.1	1.1	1.2	116	113	120	116	1450	-	-	-	0.10	0.10	0.65	0.90	On October 24, we lowered our forecasts for 10-year JGB yields to 0.65% (2014) and 0.90% (2015) from 0.75% and 1.00%, respectively; this change reflects global growth concerns, a sharp decline in oil prices, and a bumpy transition between the end of Fed QE and the start of the ECB's asset purchase program that together prompted October's strong rally in government bond markets. On November 5, we revised our 3/6/12-month USD/JPY forecasts to 116, 118, and 120, respectively, from 109, 112, and 115, owing to the BOJ's unexpected easing at its Octoer 31 meeting. On November 5, we raised our 3-month TOPIX target to 1,450 from 1,300, also in response to the BOJ easing as well as new target allocations for the Government Pension Investment Fund (GPIF); these measures will significantly increase the BOJ and GPIF's exposure to Japanese equities. Our 6/12-month TOPIX targets, 1450/1550 previously, are currently under review.

Commodities	Brent crude oil ($/bbl)				Copper ($/mt)				Gold ($/toz)				Corn ($/bu)				
	3-mth		12-mth		3-mth		12-mth		3-mth		12-mth		3-mth		12-mth		
	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	
	85	91	85	94	6600	-	6200	6825	1195	1231	1050	1229	3.00	-	3.75	-	On October 26, we brought forward our bearish oil outlook, lowering our Brent crude forecasts to $85/bbl from $100/bbl. This change reflects (1) our confidence in the scale and sustainability of US shale oil production, (2) expectations for accelerating non-OPEC production growth outside North America to outpace demand growth, and (3) our view that the US will replace OPEC as the first-mover swing producer.

Note: Recent revisions marked in red; GDP consensus is Consensus Economics, all other consensus is Reuters except for S&P500 equity consensus, which is GS calculation; commodity 12-mo consensus is Reuters for 2015 average.

+ CNY daily fix * China rate is 7-day repo rate.

Source: Goldman Sachs Global Investment Research.

Glossary of GS proprietary indices

Current Activity Indicator (CAI)

Measures the growth signal in the major high-frequency activity indicators for the economy. Gross Domestic Product (GDP) is a useful but imperfect guide to current activity. In most countries, GDP is only available quarterly, is released with a substantial delay, and initial estimates are often heavily revised. GDP also ignores important measures of real activity, such as employment and the purchasing managers' indexes (PMIs). All of these problems reduce the effectiveness of GDP for investment and policy decisions. Our CAIs are alternative summary measures of economic activity that attempt to overcome some of these drawbacks. We currently calculate CAIs for the following countries: USA, Euro area, UK, Norway, Sweden, China, Japan, Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, Australia and New Zealand.

Financial Conditions Index (FCI)

Financial conditions are important because shifts in monetary policy do not tell the whole story. Our FCIs attempt to measure the direct and indirect effects of monetary policy on economic activity. We feel they provide a better gauge of the overall financial climate because they include variables that directly affect spending on domestically produced goods and services. The index includes four variables: real 3-month interest rates, real long-term interest rates, real trade-weighted value of the exchange rate and equity market capitalization to GDP.

Global Leading Indicator (GLI)

Our GLIs provide a more timely reading on the state of the global industrial cycle than the existing alternatives, and in a way that is largely independent of market variables. Global cyclical swings are important to a huge range of asset classes; as a result, we have come to rely on this consistent leading measure of the global cycle. Over the past few years, our GLI has provided early signals on turning points in the global cycle on a number of occasions and has helped confirm or deny the direction in which markets were heading. Our GLI currently includes the following components: Consumer Confidence aggregate, Japan IP inventory/sales ratio, Korea exports, S&P GS Industrial Metals Index, US Initial jobless claims, Belgian and Netherlands manufacturing surveys, Global PMI, GS Australian and Canadian dollar trade weighted index aggregate, Global new orders less inventories, Baltic Dry Index.

Goldman Sachs Analyst Index (GSAI)

Our US GSAI is based on a monthly survey of Goldman Sachs equity analysts to obtain their assessments of business conditions in the industries they follow. The results provide timely "bottom-up" information about US economic activity to supplement and cross-check our analysis of "top-down" data. Based on their responses, we create a diffusion index for economic activity comparable to the ISM's indexes for activity in the manufacturing and nonmanufacturing sectors.

Macro-data Assessment Platform (MAP)

Our MAP scores facilitate rapid interpretation of new data releases. In essence, MAP combines into one simple measure the importance of a specific data release (i.e., its historical correlation with GDP) and the degree of surprise relative to the consensus forecast. We put a sign on the degree of surprise, so that an underperformance will be characterized with a negative number and an outperformance with a positive number. We rank each of these two components on a scale from 0 to 5, and the MAP score will be the product of the two, i.e., from –25 to +25. The idea is that when data are released, the assessment we make will include a MAP score of, for example, +20 (5;+4)—which would indicate that the data has a very high correlation to GDP (the '5') and that it came out well above consensus expectations (the '+4')—for a total MAP value of '+20.' We currently employ MAP for US, EMEA and Asia data releases.

Real-Time Inflation and Activity Framework (RETINA)

RETINA provides a comprehensive econometric methodology able to filter incoming information from the most up-to-date high frequency variables in order to track real GDP growth in the Euro area. Along with a GDP tracker, RETINA also captures the interrelated mechanisms of the area-wide pricing chain, providing a short-term view on inflation dynamics.

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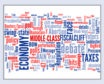

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Source of photos: www.istockphoto.com, NOAA-NASA GOES Project.

Disclosure Appendix

Reg AC

We, Allison Nathan, Marina Grushin, Silvia Ardagna, Huw Pill, Naohiko Baba, and Jose Ursua, and, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

I, Sharon Bell, hereby certify that all of the views expressed in this report accurately reflect my personal views about the subject company or companies and its or their securities. I also certify that no part of my compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

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