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A primer on our toolkit and what it is telling us

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Ten questions and the tools we use

We provide a brief recap of some of the key issues that we run through in forming our market views, in the form of 10 questions and the tools we tend to use to answer them. We focus in particular on three basic areas: monitoring the economic outlook; monitoring the market and implementing a view.

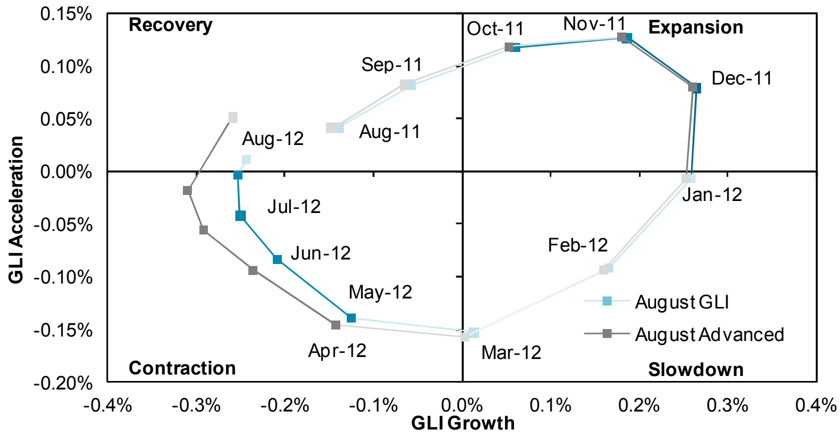
Mixed signals on the global outlook

Right now we see tentative signs of improvement in momentum in our Global Leading Indicator, a modest pick-up in US economic momentum and an attenuation of US negative surprises. But we see a softer global picture than our current forecasts suggest, with particularly disappointing momentum out of China.

Looking for policy developments in Europe and better data in US

We have focused our trading views primarily on two themes: a relaxation of European risks and the potential modest improvement in US growth views. For those expressions to remain appropriate, it will be necessary for forthcoming European policy developments to validate the improvement in risk premium already seen there, and for the US growth data to move more clearly towards generating positive surprises than has been the case so far.

GLI – swirling tentatively into 'Recovery'



Source: Goldman Sachs Global ECS Research.

What the tools we use are telling us

As the summer ends, investors are returning to a heavy economic calendar and a wide range of macro risks and uncertainties, many of them staples of the last year and longer: a muddy US growth picture with election and 'fiscal cliff' risks ahead; the ongoing battle between Euro area risks and policy response; and a still-weak growth trajectory in China.

Over the past few months, clients have often asked us to describe what the various tools we use are designed to do, and how they fit together. Here we provide a brief recap of some of the key issues that we run through in forming our market views, in the form of 10 questions and the tools we tend to use to answer them. In practice, our global views – both on the economics and market fronts – are informed by a very large set of different approaches and models across the group, so this list is incomplete and selective. But it provides a sense of the kind of checklist that we use to guide our own debates and how the array of tools we talk about fits together.

We focus in particular on three basic areas:

- **Monitoring the economic outlook**. Understanding both what is going on now and where things are heading is the primary building block for any macro investment thesis.
- **Monitoring the market**. It is at least as important to monitor the markets and attempt to see what they are pricing. Comparing this to our own views of current and likely future reality is the basis of assessing opportunities.
- **Implementing a view**. The third area – given these views – is to think about the most effective implementations.

Looking at this dashboard right now, we see tentative signs of improvement in momentum in our Global Leading Indicator (our Final August GLI marks a shift to 'Recovery'); a modest pick-up in US economic momentum (our CAI has risen a little since the June lows) and an attenuation of US negative surprises (according to our MAP scores). But we see a softer global picture than our current forecasts suggest, with particularly disappointing momentum out of China (including the latest PMIs). In terms of market pricing, much of the rally in markets over the last two months appears to have been driven by a relaxation with regards European risks (as our three 'risk factors' show). US growth views priced into the market have risen a little but (at sub-2% using our Wavefront tools) look to be slightly below our own forecasts, while the pricing of global growth (and Chinese growth in particular) remains quite depressed. We have focused our trading views primarily on two themes: a relaxation of European risks and the potential modest improvement in US growth views.

For those expressions to remain appropriate, it will be necessary for forthcoming European policy developments to validate the improvement in risk premium already seen there, and for the US growth data to move more clearly towards generating positive surprises than has been the case so far. If China's growth picture improves, there could ultimately be opportunities in discounted China-related assets, but the signs here are still too tentative for us to be comfortable with China-related risk.

Monitoring the economic outlook

The building blocks for any macro investing view come from how the current and future state of the global economy differ from expectations and pricing. Our global economic forecasts are, of course, focused on precisely this task, but a number of tools are central to monitoring some of the key questions on that front:

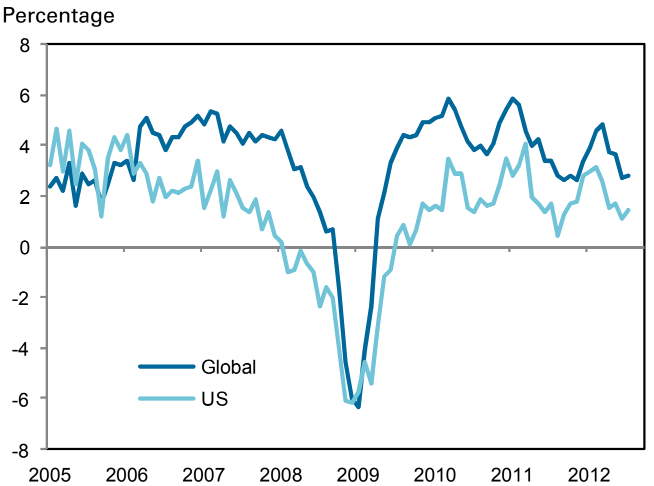
1. Where are we now?

Although in principle markets should already incorporate current information, in practice it is often tricky to figure out in real time where economies stand and whether even current reality is accurately reflected, particularly since GDP statistics are produced mostly quarterly and often with a significant lag. The main tools we use for that purpose are our Current Activity Indicators (CAI) (see *US Daily: CAI: A Measure for Tracking US Growth*, April 12, 2011), pioneered in the US but now used for a wide range of the major economies. The CAIs take the relevant data from the current month and use them to 'now-cast' the pace of GDP growth with which that configuration of data would normally be consistent.

The CAIs differ from GDP tracking estimates (which we provide in the US and UK) and from the GDP releases themselves because they rely on all the major data, not simply those used for the statistical 'bean-count' in the GDP release. They differ from our Global Leading Indicator (GLI) because they are designed to capture the situation now, rather than predict the direction in which things are heading, so they include not only leading but also coincident information about the economy. We now have enough country CAIs to produce a proxy for a global CAI. Given that the timeliness of data varies, we also produce a real-time estimate of global economic activity from the global PMI data (manufacturing and services) released in the first week of every month. We pay as much (if not more) attention to changes in the pace of growth signalled by the CAI as to the level of growth.

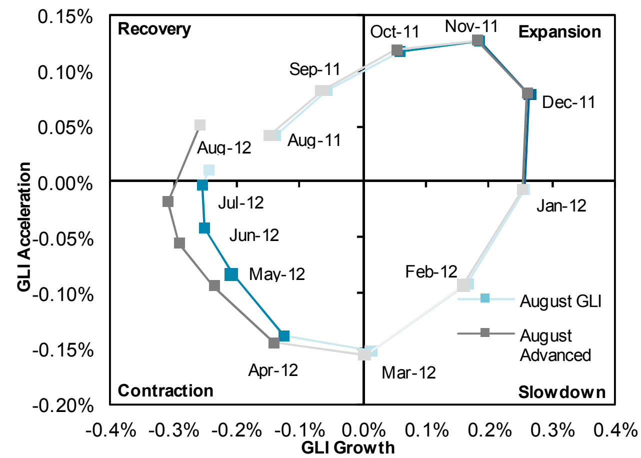
Bottom line right now: *Our US CAI shows a pick-up from a low of 1.1% in June to 1.5% in July and is likely to have gained further in August (Exhibit 1). That pick-up is less apparent in our global CAI, which remains relatively soft at 2.8% in July, similar to the message from our global PMI model.*

Exhibit 1: Our CAIs suggest that growth is soft everywhere, with a small improvement in the US



Source: GS Global ECS Research.

Exhibit 2: GLI – swirling tentatively into 'Recovery'



Source: Goldman Sachs Global ECS Research.

2. Where are we going?

The mainstay of any macro investing view is an accurate read on where the economic outlook is heading. Our main guides come from our country forecasts, which use a wide range of different tools to predict the outlook. But we also make extensive use of our Global Leading Indicator to get as early a read on the near-term outlook as possible. Our GLI aggregates close to 60 global economic series that we have found to have led the global industrial cycle in the past and filters them into 10 main components. It is designed to predict the trajectory of global industrial production 2-3 months forward, with an Advanced reading mid-month that uses a subset of components and a more reliable Final reading that appears on the first day of the following month. In judging the GLI's trajectory we pay particular attention to the 'momentum' measure, which shows the month-on-month change in the GLI.

We now regularly represent the GLI's trajectory over time in our 'Swirlogram', which maps the GLI according to whether momentum is positive or negative, and whether it is rising or falling. The four quadrants that this carves out correspond to four stages of the cycle: Recovery, Expansion, Slowdown and Contraction. We have shown (see *Global Economics Paper No. 214: Acceleration Matters: Asset Returns and the Business Cycle*, May 16, 2012) that the general behaviour of asset markets is quite different in each of these phases. Hence, judging which phase the global economy is moving into can be a big advantage in setting an overall market view, and we pay special attention to any signs that we are shifting from one phase to another. Because the GLI relies on filtering data, like most leading indicators, it is subject to revision through time. So some judgment is always necessary beyond the GLI reading itself about how likely it is that current readings will prove accurate as we look back on them with more information. By relying more on raw data, it may be possible to get earlier signals but they will also be much noisier. In practice, we look at both versions, paying attention also to some of the key GLI components (jobless claims, the major PMIs including our global/DM/EM PMI aggregates and equivalent industrial surveys) that are regular, reliable or early.

Bottom line right now: *August's Final GLI reading, released yesterday, shows the cycle phase moving (barely) from Contraction into Recovery (Exhibit 2). Although the latest signal is not very strong, we expect it to be confirmed by subsequent readings.*

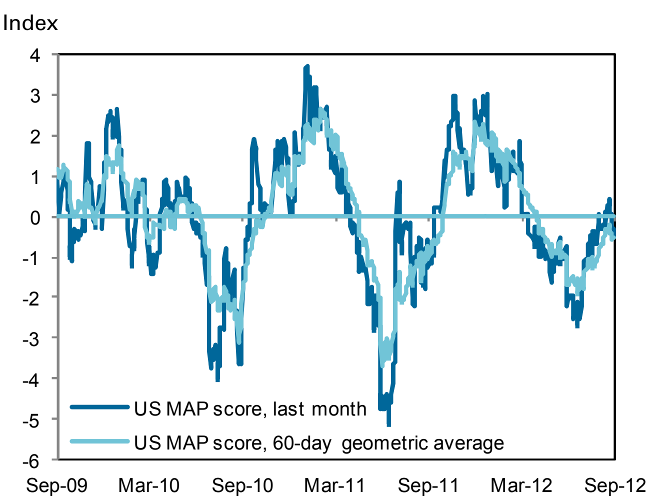
3. How does the trajectory differ from expectations?

Markets respond to surprises. What matters is not whether the outlook is weak or strong but whether it is weaker or stronger than expected. Analyst expectations and 'market' expectations are not always the same (more on this below), so we are on the look-out for periods when we believe the market is responding in ways that do not match the surprises in the economic news flow. To do that, we rely heavily on the systematic tracking of data release surprises using our MAP (Macro-data Assessment Platform) scores. Available in a wide range of countries, these 'score' data surprises according to their relevance either for asset markets (in the US) or GDP (see *European Weekly Analyst No. 10/01: Introducing EMEA-MAP*, January 14, 2010), (in most other economies) and provide a systematic way of tracking whether the economic news is proving better or worse than expected. The score is a combination of the size of the surprise (scaled relative to the standard deviation of past surprises) and the importance of the variable to the outlook.

These scores provide a reading for any given data release, but can also be aggregated to provide a snapshot of the overall tone of the data. Since US data surprises matter disproportionately for global asset markets, the US MAP score is particularly useful and has had a good correlation with broader market shifts. It is always somewhat arbitrary to know what time horizon to focus on in generating these aggregates (too short a window and the series will be noisy, too long and it will be slow to pick up changes), so in practice we use a range of windows from monthly tracking (which captures a full rolling month of releases) to a 60-day window that we often show in the US.

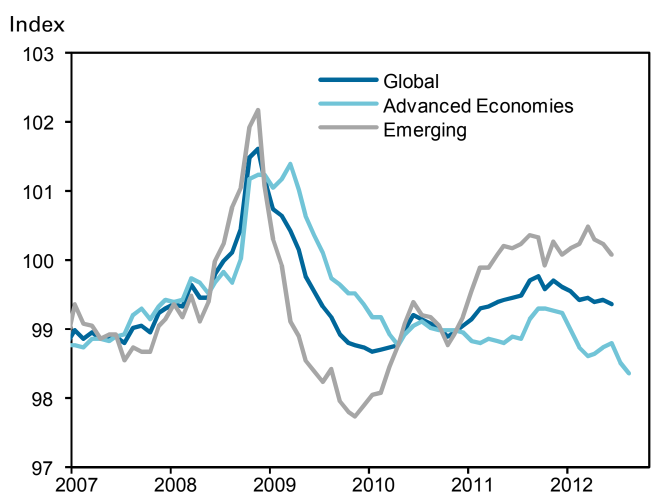
Bottom line right now: *Our US MAP scores suggest that surprises have moved from deeply negative a few months ago to close to neutral so far (Exhibit 3). But we are yet to see consistent positive surprises. In Europe, recent data has on average been a little better than expected after extended misses, while in China disappointments continue.*

Exhibit 3: US data surprises less negative than before



Source: GS Global ECS Research.

Exhibit 4: Financial conditions easy in the developed world



Source: GS Global ECS Research.

4. What is the effective influence of monetary policy settings?

We have long been advocates of the use of Financial Conditions Indices (FCI) as proxies for the broad influence that monetary policy has on the various channels through which it affects the economy. Essentially, the FCIs that we construct are weighted averages of major asset prices, with the weights chosen to reflect the importance of various asset market measures on the economy. Many central banks, particularly the Fed, have themselves shifted towards the language of 'financial conditions' in describing the impact of policy, and this framework has become particularly important as the links between conventional monetary policy and the economy have been broken during the crisis.

We revamped our long-standing US FCI (see *Global Economics Paper No. 213: The New GS Financial Conditions Index Peering through the Fed's Lens*, May 4, 2010) earlier this year, using model estimates of the impact of each of the major channels (credit spreads, equity prices, house prices, government bond yields and the exchange rate) on the broad economy to set the weights. All else equal, a 100bp shock in the FCI shaves 1.5% off GDP growth over the following year. We also continue to look at versions of the FCI that allow for the changing impact of oil prices on the economy, as a short-hand for comparing the joint impact of both areas. Because financial conditions are based on asset prices themselves (and are in economists' language 'endogenous'), some care needs to be taken in interpreting their relevance for the market outlook. And their impact on the economy tends to show up with a considerable lag. But sharp shifts in financial conditions will tend to inform our view on the economic trajectory above and beyond what may already be visible in leading indicators.

Bottom line right now: *Our FCI shows that US financial conditions remain very easy. And with easing in Europe too, financial conditions in the developed world have eased significantly in recent months (Exhibit 4). The global picture is less clear, since broad EM financial conditions (including in China) do not appear to have eased to the same degree.*

Monitoring the market

The next step is to compare the views on where the economy is tracking and where it might be heading with the outcomes that the market is pricing. This is a difficult area – and one where we continue to try to improve our own tools – but we use our current toolkit to seek answers to the following questions:

5. What growth assumptions are priced in?

A key issue for investing is whether current reality or our expectations for future growth are above or below what the market is expecting. Although in theory comparing our views to the 'consensus' is one way to do that, in practice what is priced into the market moves more quickly and can sometimes differ persistently from consensus forecasts. The most systematic way in which we do this is to use a version of our Wavefront tools in the US equity market. Our Wavefront models (see *Introducing Wavefronts: A new way of trading macro equity views*, April 1, 2004), which we introduced in 2004, rely on a detailed series of models that link economic shifts to shifts in company fundamentals and from there to changes in market value. This allows us to estimate the sensitivity of the major industry groups in the US equity market to the major macroeconomic shocks through fundamental channels, not simply through correlations. For a long time, we have used those sensitivities to 'reverse engineer' the set of movements in the market's views of growth accounting for shifts in the market's interest rate and oil price views. At a simple level, if cyclical industries are outperforming defensives, the market is turning more optimistic about growth.

The advantage of using these tools, however, is that they lead not just to qualitative but also to quantitative estimates about the shifts in growth views[1]. We can then compare these estimates to our own view of the current trajectory (through CAIs) or the future (as per our forecasts). Over time, we have become more conscious that the broad cyclical industries from which these are priced are substantially influenced by global as well as US growth. So, we now regularly look at estimates of the market's growth views using only those industries that we have found to be most sensitive to domestic US growth.

Bottom line right now: *Our Wavefront tools are currently consistent with GDP growth over the next year or two of 1.75% using only domestic cyclical industries but less than 1% using the broad (globally-influenced) set of industries. Both measures are below our near-term expectations of US GDP growth (Exhibit 5).*

6. How is the market changing its view on the three main 'risk factors'?

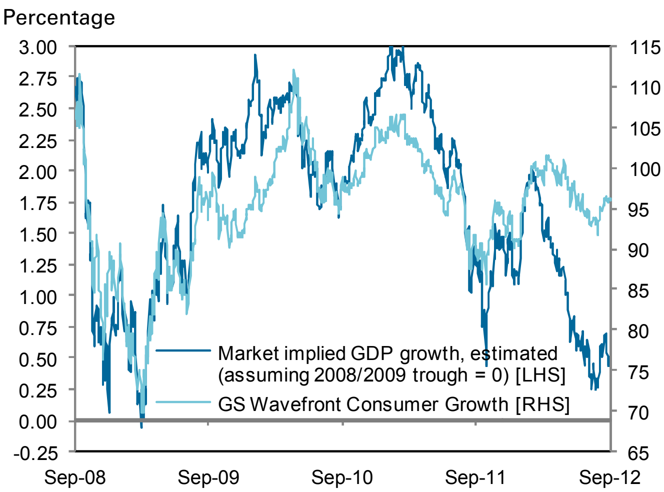
The disadvantage of our estimates of the US growth picture is that they rely on just one asset class and only look at one specific issue. This year, we have used another framework (see *Global Economics Weekly 12/15: Assets in a Three-Risk*

[1] In practice, as we often note, this method can only generate changes in the market's growth views not in the level, so even cumulating these changes requires a judgment about one particular point in time to anchor the series – we choose this point to provide a min, max and mean of the historical that we think is reasonable.

World, April 18, 2012) for analysing the market's views of the three big risk areas (US growth, Euro area sovereign and financial risks, and China growth) that relies on a different set of asset market information. We have created proxies for each risk factor using the 'common component' of a set of assets that are closely linked to each area. We can then use that information to track the way the market's views are shifting over time with respect to each of the main areas. Unlike the Wavefront tools, the shifts here are not as easily mapped into a quantitative view of what is priced. But they do rely on information from multiple asset markets and allow us to see the extent to which markets have been driven by shifts in views in each of these areas.

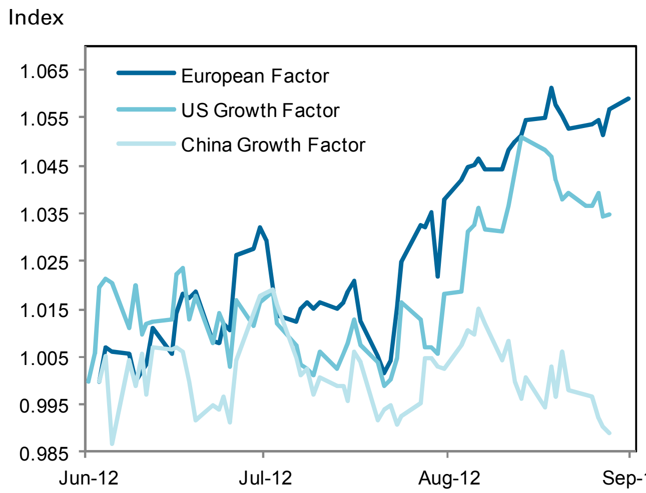
Bottom line right now: *Over the past month, the market has made significant upgrades to its views of Euro area risks, more modest upgrades to its US growth views and no upgrade to its China growth views (Exhibit 6). There has been some stalling in momentum in each area in the last two weeks.*

Exhibit 5: Equities pricing soft US growth, but much weaker global growth



Source: Goldman Sachs Global ECS Research.

Exhibit 6: Market's view of Euro area risks has been upgraded most



Source: Goldman Sachs Global ECS Research.

7. How do other asset market configurations shed light on the picture?

Beyond these frameworks, we rely on a wide range of other related techniques (see *Global Economics Weekly 12/26: Reading Macro Themes from Equity Markets*, July 7, 2010) to broaden that picture. Our (long-short) Wavefront equity baskets allow us to look at a broader set of economic factors (housing, China, consumer), while our Global Compass estimates of the sensitivities of the major equity indices to macro factors allow us to monitor baskets of indices to check the consistency of market pricing there. In a similar vein, the many equity baskets developed by our Portfolio Strategy teams are designed to isolate how the market is changing its views on an even broader set of issues, particularly geographic exposures, balance sheet quality and hedge-fund positioning.

We also regularly use other more *ad hoc* attempts to decompose the drivers of specific asset markets. On the macro equity side, we attempt to separate the extent to which shifts in the S&P 500 are driven by changes in the market's growth views (proxied by our Wavefront tools) by financial conditions or by pure 'risk premium'. Our *Sudoku* and other bond models allow us to look at the mix of macro shifts and common risk premia that are driving global bond markets. And our FX team has conducted similar kinds of risk decompositions for looking at FX movements, particularly the contributors to EUR/$ movements, as well as recently updating their analysis of positioning indicators. These all help to add flesh to the bones of the market picture.

Bottom line right now: *Consistent with the story from our three risk factors, the rally in the US market appears to have been driven more by declining risk premia than by improving growth views. Views of the US housing outlook have improved, but broadly in line with better data there.*

8. Which assets are behind or ahead of the overall shifts in market views?

Most of these tools rely on extracting the common message from multiple assets to come up with a broad picture of what the markets 'on average' are telling us. We increasingly use the same basic tools (see *Global Economics Weekly 12/22: Two Frameworks for Assessing the Damage*, June 6, 2012) to examine in a more formal way whether any assets are clearly behind or ahead of the broad shifts in markets. In simple terms, that exercise involves estimating what each asset would normally be 'expected' to do given the broad shifts in the market's views and how actual price performance deviates from those predictions.

Our International Macro Equity Monitor provides that information every week for the major global equity indices, relative to what would be predicted by broad shifts in growth, oil, rates and risk views using our Global Compass tools. We also used our 'three-factor' framework to do the same thing in June (oil, the biggest outlier at that time, has now closed that gap). Aleks Timcenko regularly looks at the statistics for us to see whether one or other of a pair of assets that historically move together or 'converge' are behind or ahead, a technique we first used in thinking about the relationship between oil prices and energy stocks.

Bottom line right now: *Both our 'three-risk' and our Global Compass frameworks suggest that since the rally began in early June, European equity indices have run ahead of their normal growth and risk drivers, while China-related indices have underperformed (Exhibit 7). Several EM currencies have also done worse than "expected", while oil has done better. Spanish and Italian bonds, and EUR/$, have lagged the wider upgrade to European risk views.*

Implementing the view

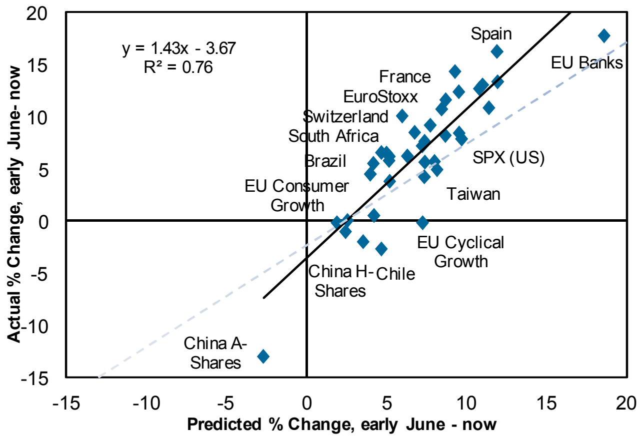
Having formed a view on where our views differ from the market's pricing of current or future economic developments, the final questions are about the most efficient implementation of that view. In many cases, the same analyses that are used to look at what markets are pricing can be used to think about implementation.

9. Which assets reflect the desired risk characteristics?

The first order judgment is how to pick an asset that has the desired characteristics given the view. Within the equity market, some of our baskets are designed specifically to take views on these areas (growth versus risk premium or particular geographic exposures). Our Compass estimates of the sensitivity of different global indices also give us a sense of which equity markets are most responsive historically to shifts in growth, overall risk sentiment or oil and other commodity prices. But we have increasingly also used our 'three-risk' framework to map out the sensitivities of different assets to the three different areas, represented by the triangle in Exhibit 8. This maps out the relative exposures of a wide range of assets to US growth risk, China-related risk and Euro sovereign risks. Those exposures can be used to think about how best to implement a view that has exposure to some of those areas but not all of them. For instance, assets in the bottom right hand corner of the triangle have relatively high exposure to US growth but low exposure to China and Euro area risks. Moving left along the bottom of the triangle adds China exposure, while moving upwards means taking on more European risk. We therefore spend a lot of time thinking about whether we want, in general, to have active positive, negative or neutral exposure to each of these three areas given our views.

Bottom line right now: *We have focused on taking on positive exposure to Europe since late July (the upper end of the triangle, through recommended longs in EUR/$, peripheral sovereigns and European credit), and more recently to improvements in the US growth picture (through our Wavefront Growth basket). We are uncomfortable taking on China exposure and have suffered in our Wavefront Growth recommendation from leaning too far in that direction lately, where focus on the bottom right hand corner of the triangle would be closer to our current view.*

Exhibit 7: European indices have run ahead, China indices have run behind 'macro drivers'



Source: GS Global ECS Research.

Exhibit 8: Triangle of risks guides the desired asset exposures

Source: GS Global ECS Research.

10. Do particular assets with the desired risk exposures stand out?

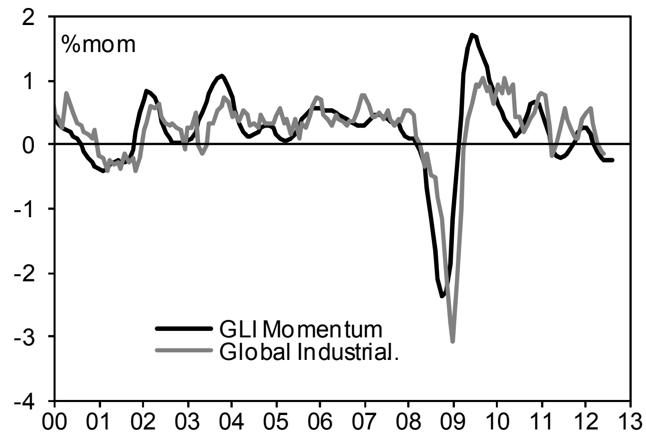
In addition to trying to pick assets with exposures that match our overall macro views as cleanly as possible, two other considerations also matter. The first is what might happen in alternative scenarios to the one we expect. In general, assets that pay off (or are insulated) in a larger number of scenarios are likely to be superior, for obvious reasons. We also pay some attention to whether assets appear to have over- or under-traded the broad themes, based on the analyses described already (Question 8), with a preference for those that not only have not reflected our views of where the economy is heading but that may have under-reflected changes that have already taken place. A more sophisticated view may then also take into account the relative cost of expressing these views in options, something we do occasionally and are thinking about more.

Bottom line right now: *In general, the market is making it more difficult to identify viable laggards to the key themes. Those areas where asset exposures look most appealing (those with domestic US exposures and some exposure to significant Euro area risk) have already performed strongly. And those areas that offer the biggest discounts to broad macro shifts generally have exposures to themes (China and global growth, in particular) where our confidence is lower. As a result, we think that focusing on laggards is likely to be risky unless the non-US growth picture, and the outlook in China in particular, changes more convincingly. It is comforting, however, that although key areas where we are still recommending long European risk (EUR/$, peripheral bonds) have rallied, they have not overshot the broader upgrades to risk views.*

Dominic Wilson

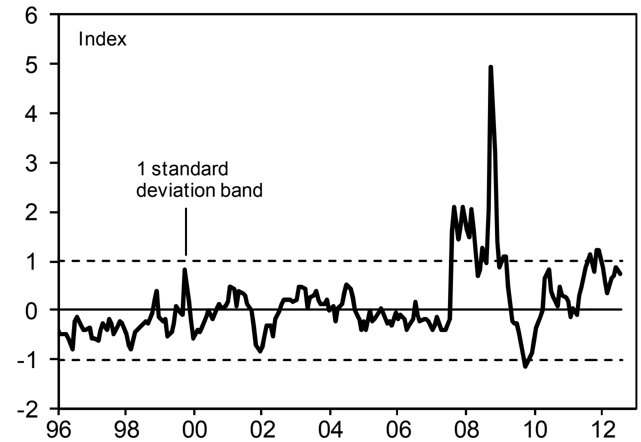
Key Charts: The GLI, GS FSI, ERP and the Credit Premium

GLI Momentum vs. Global Industrial Production*



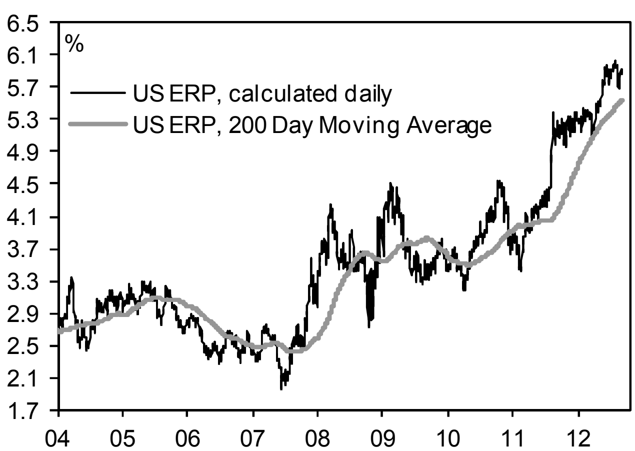
** Includes OECS countries plus BRICs, Indonesia and South Africa*
See Global Economics Paper 199 for methodology
Source: OECD, Goldman Sachs Global ECS Research.

GS Financial Stress Index



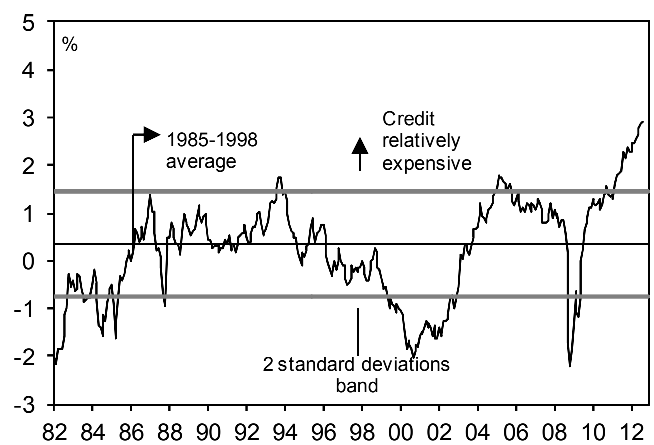
See the November 2008 Fixed Income Monthly for methodology
Source: Goldman Sachs Global ECS Research.

US Equity Risk Premium



See Global Economics Weekly 02/35 for methodology
Source: Goldman Sachs Global ECS Research.

US Equity Credit Premium



See Global Economics Weekly 02/35 for methodology
Source: Goldman Sachs Global ECS Research.

The World in a Nutshell

THE GLOBAL ECONOMY

	OUTLOOK	KEY ISSUES
UNITED STATES	We expect growth of 2.3% and 2.0% in 2012 in 2013, respectively. On a sequential basis, growth should pick up slightly to 2.4% in 2012Q3, before settling at 2.0% in 2012Q4 and 1.5% in 2013Q1. Despite weak growth, we expect the unemployment rate to drift down to 8.0% by end-2013 as long-term unemployment continues to depress labour force participation.	Our forecast of around 2.0% growth over the coming quarters is supported by factors that should support growth from falling further from here. These include strong real disposable income (from falling energy prices), a gradual housing recovery and an end to the inventory drag on manufacturing. We expect the Fed to ease further, including a return to balance sheet expansion in late 2012 or early 2013.
JAPAN	We expect real GDP growth of 2.7% and 1.5% in 2012 and 2013, respectively. The relative robustness of growth this year reflects (1) the statistical boost from January-March strength and (2) the current role of domestic demand as the key source of growth. With public-sector reconstruction demand gradually fading, we expect real GDP growth to decline slowly through the rest of the year.	Exports are key for Japan's production activity. Although production has support from post-quake reconstruction demand, external demand is becoming a key determinant again now that damage from the earthquake has largely been repaired. With uncertainty hanging over the global manufacturing sector at present, we expect Japanese production plans to become gradually more cautious.
EUROPE	The Euro area-wide macroeconomic picture has deteriorated in recent months. As a result, we downgraded our forecasts and now foresee a contraction of 0.5% in 2012, followed by sub-trend growth of 0.2% in 2013. Cross-country divergence remains a key theme in this baseline scenario, with economic weakness expected to be more marked in peripheral economies. Our baseline remains that the Euro area will 'muddle through' but remain intact. We see the evolution of 2-year sovereign yields as the key determinant of further ECB interventions.	The open question remains whether the follow-through on fundamental political decisions (periphery reform programmes, the building of a new regime of macroeconomic discipline and the intra-Euro area risk-sharing inherent in an enlarged EFSF/ESM) turns out to be weak or lacking. We perceive the ECB as willing to lend substantial support in the process but only see this as an incremental step in a long cumulative process to deliver a governance structure sufficient to create a better functioning Euro area.
NON-JAPAN ASIA	For Asia ex-Japan, we expect growth of 6.5% and 7.3% in 2012 and 2013, respectively. In 2012, we expect below-trend growth throughout the region, while in 2013 the smaller AEJ economies are likely to recover to around trend as the external environment improves. We do not currently expect precautionary policy easing in most of the region.	In China, we expect below-trend GDP growth of 7.9% in 2012 and 8.5% in 2013. Going forward, we expect further easing in macro policy (via rate cuts, an easing in bank lending restrictions, less currency appreciation and new investment projects) and a pick-up in sequential growth. With growth still below trend, inflation should remain at a low level.
LATIN AMERICA	We forecast that real GDP growth in Latin America will slow to 3.4% in 2012, and then rebound to 4.4% in 2013. We expect monetary policy stances to remain mixed across the region, with some cuts in Brazil and Colombia ahead in the near term and subsequent broad tightening in 2013.	In Brazil, we expect real GDP growth of 2.4% and 4.5% in 2012 and 2013, respectively. Brazil is already in the middle of an easing cycle, including interest rate cuts and macro-prudential measures to ease credit conditions, and we expect this to continue in the quarters ahead until mid-2013.
CENTRAL & EASTERN EUROPE, MIDDLE EAST AND AFRICA	We expect CEEMEA to continue on its sluggish path to recovery, with growth well below potential. Recent renewed stresses in the Euro area have led the region to underperform LatAm and NJA, and present persistent downside risks to our forecast. In 2013, we expect growth to reaccelerate, in line with a more benign global growth environment.	Within the region, we see balance sheet strength and domestic demand robustness as the key macro differentiation theme coming out of the 2012 soft patch. We expect Russia, South Africa and Israel to be more resilient to the current slowdown, while the more leveraged, smaller open economies like Turkey face a bumpier road ahead.

CENTRAL BANK INTEREST RATE POLICIES

	CURRENT SITUATION	NEXT MEETINGS	EXPECTATION
UNITED STATES: FOMC	The Fed cut the funds rate to a range of 0%-0.25% on December 16, 2008.	September 13 October 24	We expect the Fed to keep the funds rate near 0% through the end of 2013.
JAPAN: BoJ Monetary Policy Board	The BoJ cut the overnight call rate to a range of 0%-0.1% on October 5, 2010.	September 19 October 5	We expect the BoJ to keep the policy rate near 0% through the end of 2013.
EURO AREA: ECB Governing Council	The ECB cut refi/deposit rates by 25bp to 0.75%/0.00% on July 5,2012.	September 6 October 4	We expect the ECB to keep policy rates on hold through the end of 2013.
UK: BoE Monetary Policy Committee	The BoE cut rates by 50bp to 0.5% on March 5, 2009.	September 6 October 4	We expect the BoE to cut the policy rate to 0.25% at the November meeting.

Disclosure Appendix

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We, Dominic Wilson, Kamakshya Trivedi, Jose Ursua, George Cole and Julian Richers, 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.

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