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Larger Supply No Threat to Bonds

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More expansionary fiscal policies, together with initiatives in support of the beleaguered financial industry, have raised concerns over what the associated increase in public-sector debt issuance could mean for government bond yields.

Whilst recognizing that certain sectors of the yield curve could be affected more than others, depending on how the extra issuance is distributed across the different maturity buckets, our historical cross-country analysis does not indicate that increases in supply pose a big threat to bonds once cyclical conditions are accounted for.

An outward shift in the supply of government securities should be accompanied by a similar increase in the demand for these instruments, as the private sector increases its desired savings rate and attempts to raise the credit quality profile of its financial holdings. In this context, we note that the share of Treasuries held by US commercial banks has reached a record low level in the second quarter.

A further dimension to our thesis is offered by the possibility that the Federal Reserve could start purchasing long-dated government securities as policy rates approach their zero nominal bound. With the overnight rates already hovering around 20bp, further cuts to the Fed Funds target would elevate the likelihood of such 'unorthodox' policies.

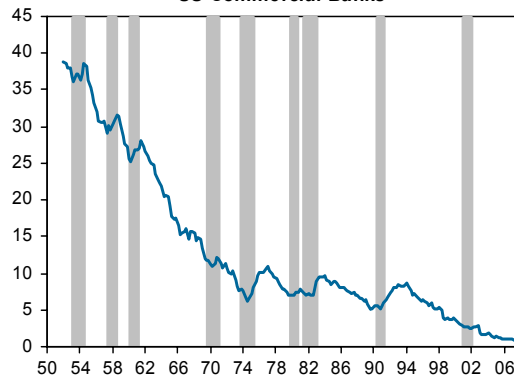
We reiterate our 3-month forecast for 10-yr Treasury yields at 3.6% and for German Bunds at 3.5%. As readers of our fixed income strategy research know, earlier in the week we recommended capitalizing on this view through long positions in Treasury futures.

Effect of 1ppt of GDP Increase in Budget Deficit on 10-yr Bond Yields

	Magnitude, bp	Statistical Significance
USA	0 to 23	no
Germany	-1 to 5	no
Japan	5 to 16	yes
UK	-5 to 31	mixed

Source: Goldman Sachs.

Holdings of US Treasuries by US Commercial Banks*



* as a % of total financial assets. Shaded areas are NBER recession periods. Source: Haver Analytics, Goldman Sachs calculations



Larger Supply No Threat to Bonds

A Lot More Government Bonds Coming Our Way...

More expansionary fiscal policies, together with initiatives in support of the beleaguered financial industry, have raised concerns over what the associated increase in public-sector liabilities issuance could mean for government bond yields.

Our estimates of the new borrowing requirements are indeed large:

- In the US, which is at the forefront of attention (particularly after the results of Tuesday's election), we expect the Federal government net supply of coupon debt to stand at around US\$1.1trn in fiscal year 2009, of which about US\$500bn related to TARP acquisitions alone. This constitutes a five-fold increase in net coupon issuance relative to fiscal 2008 (US\$216bn). In addition, we assume US\$300bn in net issuance of T-bills, over and above the coupons.
- In the Euro area, several governments are still finalizing their fiscal measures and rescue packages. We forecast the aggregate net supply of coupon bonds to amount to around EUR300bn next year, compared with EUR150bn in 2008. The size of the various recapitalizations and guarantee schemes for the financial industry (Germany's being the biggest, see table on this page) could be as high as EUR410bn. As the authorities have emphasized, however, only a portion of this amount is likely to translate into higher issuance of marketable securities.

Whilst acknowledging that certain sectors of the yield curve could be affected more than others, based on how issuance is distributed across the different maturity buckets, our historical cross-country analysis does not indicate that the upcoming increase in supply will pose a big threat to bonds after conditioning for the weak phase of the business cycle, the associated increase in the private sector's desired savings rate and a preference for higher credit-quality assets.

...But Against the Backdrop of a Weaker Economy...

At a first level, an additional issuance of bonds represents an outward shift of their supply curve, leading to lower prices (i.e., higher yields), *ceteris paribus*. In order to assess the full impact, however, one should also take into account the related response of the demand curve, and this is trickier. We tackle the issue in two complementary ways:

- Firstly, using cross-country historical evidence, we estimate the effect of *unexpected* changes in budget deficits (a proxy for net supply) on changes in government bond yields, controlling for growth,

Table 1: Size of Financial Industry Support Initiatives

	Pre-bail-out 2009 Sovereign Debt Forecasts (% GDP)	Maximum Potential Additional Bond Issuance	New Maximum Potential Sovereign Debt Levels (% GDP)
Euroland	66.8	~EUR410bn	71.2
Germany	61.6	EUR100bn	65.5
France	64.9	EUR65bn	68.1
Italy	105.2	EUR30bn*	107.1
Spain	40.1	EUR55-60bn	45.0
UK	47.9	£37bn**	50.3
US	44.0***	\$500bn	47.5***

*According to Financial Times. **Already issued. ***Federal debt only.

Source: Goldman Sachs estimates

inflation and monetary policy shocks (in order to ensure that movements in yields are not caused by unexpected cyclical developments or surprise monetary policy decisions).¹

- Secondly, we take a snapshot of the present holdings of government securities across the main institutional sectors in the US, Germany and the UK, and relate them to historical norms. This allows us to infer where an increase in demand could potentially originate from.

To begin with, we regress the discrepancy between the realized level of 10-yr bond yields and the level of 10-yr yields expected four quarters before ($BondYield_t - E_{t-4}BondYield_t$, measured in percentages) on the difference between realized and expected budget deficits ($Deficit_t - E_{t-4}Deficit_t$, measured in percentage of GDP), controlling for unexpected shifts in real GDP growth, CPI inflation and 3-month interest rates, defined and measured in the same way. Inputs on expectations are taken from the *Consensus Economics* survey. Our sample consists of quarterly data for the US (1994:Q2-2008:Q2), Germany (1994:Q2-2008:Q1), Japan (1995:Q4-2008:Q2) and the UK (1994:Q2-2008:Q2).

As can be seen from the estimates presented in Tables 2A and 2B on the next page, unexpected additional issuance of government debt securities has historically had virtually no effect on bond yields in the US and Germany. There is some mixed evidence of a modest impact on yields in the UK (the effect of a 1%-of-GDP increase in bond issuance ranges between zero and 31bp). In Japan, the sign of the coefficient relating 'surprise' supply increases to yields is positive and statistically significant. Even so, the effect of a 1%-of-GDP increase in net supply is small and does not exceed 16bp.

1. This work has appeared in *Fixed Income Monthly*, October 2008, pp. 5-7.

Table 2A: Estimation Output - Drivers of Bond Yields Dynamics

	USA	Germany	Japan	UK	USA	Germany	Japan	UK
Dependent variable: $BondYield_t - E_{t-4}BondYield_t$								
Explanatory variables:	Without error autocorrelation correction [^] Without error crosscorrelation correction ^{^^}				With error autocorrelation correction [^] With error crosscorrelation correction ^{^^}			
Constant	-0.46***	-0.43**	-0.5***	0.15	-0.62*	-0.45	-1.18	-1.1
Deficit _t - E _{t-4} Deficit _t	0.19	0.01	0.05	0.31**	0.23	0.03	0.16*	0
Growth _t - E _{t-4} Growth _t	0.17**	0.38***	0.16***	0.52***	0.34*	0.08	0.04	0.29
Inflation _t - E _{t-4} Inflation _t	0	0.13	0.06	0.5**	0.5	0.34**	-0.03	0.07
ShortRate _t - E _{t-4} ShortRate _t	0.4***	0	0.61**	0.24*	0.2	0.35*	0	0.22
Adjusted R ²	0.40	0.39	0.34	0.31	0.48	0.76	0.47	0.79
Sample	43	56	36	43	28	55	22	27

* - significant at the 10% level, ** - significant at the 5% level, *** - significant at the 1% level. ^ - allowing for autoregressive error term. ^^ - allowing for cross-equation correlation of error terms (estimated using Seemingly Unrelated Regressions method).

Source: Goldman Sachs.

Table 2B: Estimation Output - Drivers of Bond Yields Dynamics

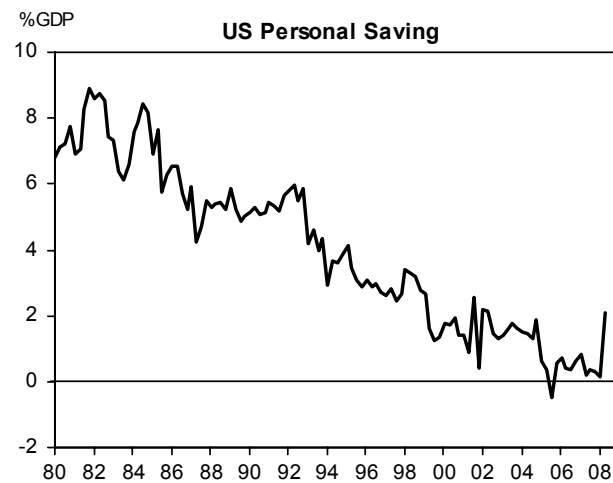
	USA	Germany	Japan	UK	USA	Germany	Japan	UK
Dependent variable: $BondYield_t - E_{t-4}BondYield_t$								
Explanatory variables:	Without error autocorrelation correction [^] With error crosscorrelation correction ^{^^}				With error autocorrelation correction [^] With error crosscorrelation correction ^{^^}			
Constant	-0.5***	-0.45***	-0.46***	0.06	-0.71***	-0.49	-1.08**	-1.51
Deficit _t - E _{t-4} Deficit _t	0.04	-0.01	0.05**	0.23**	0	0.05	0.13**	-0.05
Growth _t - E _{t-4} Growth _t	0.2***	0.24***	0.11**	0.29***	0.32**	0.06	0.06	0.11
Inflation _t - E _{t-4} Inflation _t	-0.02	-0.01	0.13	0.29*	0.48**	0.3***	-0.04	0.11
ShortRate _t - E _{t-4} ShortRate _t	0.3***	0.16	0.59***	0.34***	-0.07	0.32**	0.2	0.24*
Adjusted R ²	0.36	0.36	0.30	0.25	0.44	0.76	0.45	0.78
Sample	43	56	36	43	27	54	22	27

* - significant at the 10% level, ** - significant at the 5% level, *** - significant at the 1% level. ^ - allowing for autoregressive error term. ^^ - allowing for cross-equation correlation of error terms (estimated using Seemingly Unrelated Regressions method).

Source: Goldman Sachs.

One possible explanation for why Japan is the only G-4 economy showing a relatively more robust effect of bond issuance on yields could lie in the country's more 'insular' fixed income market. As a result, higher issuance (a domestic 'supply shock') is not followed by the reallocation of international players' portfolios in pursuit of higher yields (a relative demand shift), and it therefore leads to a more pronounced price response.

The lack of convincing evidence of a more material and widespread impact of higher issuance on bond yields can be explained by the following. Bond supply often increases at times when bond demand is also high. Typically this occurs at times of economic distress, as the private sector's desired savings rate increases (see accompanying chart for the US household sector), and investors attempt to raise the credit quality of their portfolio holdings.



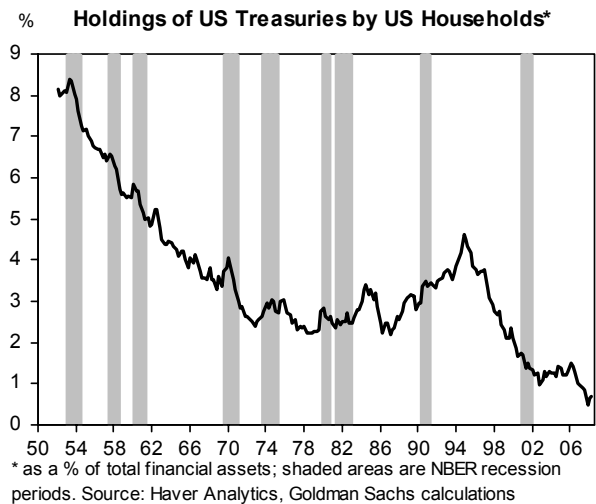
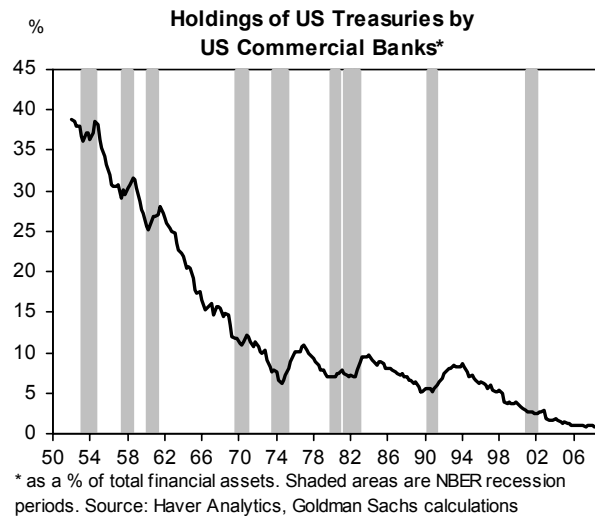
Source: Haver Analytics, Goldman Sachs calculations

...And Low Domestic Holdings of Paper

In order to assess the potential for an outward shift in the demand for government securities, we look at the current holdings of Treasuries by institutional sectors in the US, where investors' focus is currently largest. Some evidence is also presented for the Euro area and the UK.

As can be seen in the charts on the next page, the US private sector has seen its holdings of government bonds fall precipitously since the mid-1990s. The position of commercial banks is particularly striking.

At the end of Q2:08, the share of Treasuries in total financial assets at US banks stood at a tiny 0.9%, or US\$100bn, down from 7%-8% in 1994-95. The latter also corresponds to the average level of holdings over the



period spanning the mid-1970s to the mid-1990s. We calculate that if banks aimed to bring the current ratio back to that historical average, this would translate into bond purchases amounting to around US\$800bn-900bn. Note that, with the exception of the 2001 downturn, banks have *always* increased their absolute and relative allocation to government securities in the aftermath of an economic or financial crisis.

securities by financial institutions and households as a percentage of their total assets are thin on an historical comparison, and particularly so relative to the aftermath of the recession in the early 1990s.

Households are another sector where we are likely to witness a shift in the demand for government bonds. If the share of Treasuries in households' total financial assets were to increase from the current 0.7% to 2%, for example, this could be associated with a US\$300bn additional demand. Pension funds, currently holding 2% of their total financial assets in the form of Treasury securities, are a further likely source of additional demand, either as they reduce their allocation to stocks, or replace other fixed income instruments (agency paper holdings alone account for 5% of total).

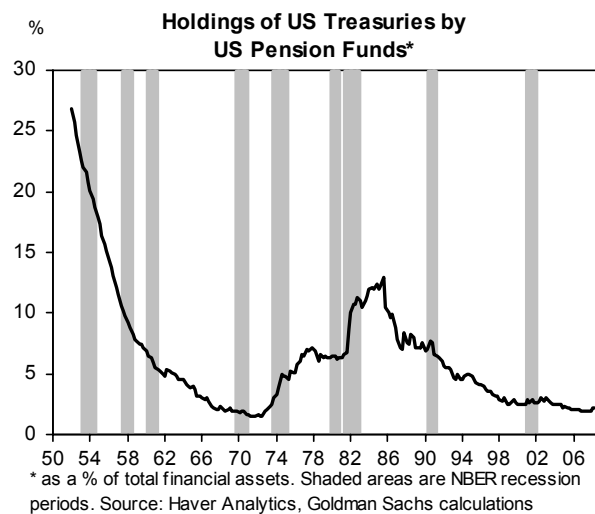
Larger Supply Unlikely to Push Bond Yields Higher

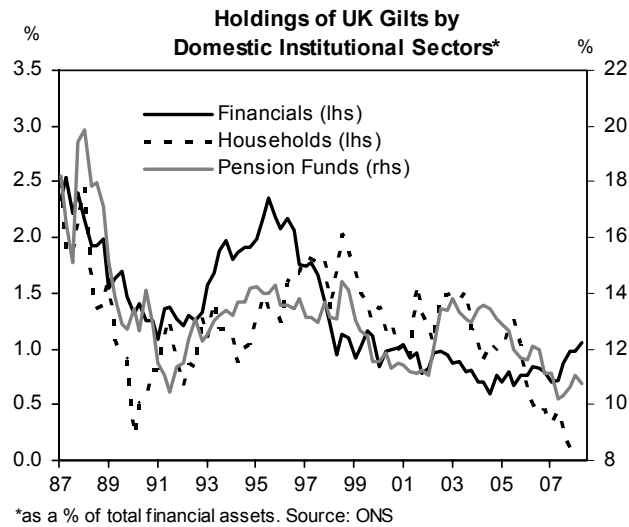
The main conclusion from our analysis is that an increased supply of government bonds should not command a significant upward correction in their yield, particularly as the private sector's desired savings rate is increasing against the backdrop of weak income growth and high uncertainty. The unusually 'risky' composition of commercial banks' balance sheets suggests that they may well become the marginal buyer of government securities going forward.

Similar trends have been evident in the UK and Germany, both of which are under the spotlight for the likely increase in bond issuance over the next few years. Specifically, in both countries holdings of government

A further dimension to our thesis is offered by the possibility that the Federal Reserve could start purchasing long-dated government securities in an attempt to stimulate the economy.

In 1999, a then Princeton professor of economics by the name of Ben Bernanke presented a paper discussing alternative 'unorthodox' options for monetary policy





when the nominal policy rate is close to zero and therefore cannot be used effectively to provide a further impulse to demand. Among these options, the author mentions the purchase of long-term government bonds at a ‘fair market value’.

*“The object of such purchases” – Bernanke writes – “would be to raise asset prices, which in turn would stimulate spending (for example, by raising collateral values). I think there is little doubt that such operations, if aggressively pursued, would indeed have the desired effect”.*²

With the same Bernanke now at the helm of the Federal Reserve operating under ‘unusual and exigent circumstances’ and with overnight rates already hovering around 20bp, further cuts to the Fed Funds target, currently at 1%, would elevate the likelihood of such unconventional policies.

We reiterate our 3-month forecast for 10-yr US Treasury yields at 3.6% and for those on German Bunds at 3.5%. As readers of our fixed income strategy research know, earlier in the week we suggested capitalizing on this view through long positions in Dec-08 Treasury futures.

Francesco U. Garzarelli and Sergiy Verstyuk

2. Ben Bernanke, "Japanese Monetary Policy: A Case of Self-Induced Paralysis?", Princeton University, December 1999.

Main Economic Forecasts

	2006	2007	2008	2009
Real GDP, % chg, yoy				
USA	2.8	2.0	1.4	-0.2
Japan	2.4	2.1	0.7	0.5
Euroland	3.0	2.6	1.1	0.5
Germany	3.2	2.6	1.5	0.4
France	2.4	2.1	0.9	0.6
Italy	1.9	1.4	0.1	0.5
Netherlands	3.4	3.5	2.3	0.9
Spain	3.9	3.7	1.4	-0.1
Sweden	4.4	2.9	1.2	0.9
Switzerland	3.4	3.3	2.1	1.3
UK	2.8	3.0	0.8	-0.3
EU27	3.3	3.0	1.4	0.6
Canada	3.1	2.7	0.7	0.5
Australia	2.7	4.2	2.0	1.9
G7	2.7	2.2	1.1	0.1
Advanced Economies	3.1	2.7	1.5	0.5
Asia	7.6	7.8	6.2	5.6
Central and Eastern Europe	6.2	6.1	4.8	3.4
Latin America	5.5	5.6	4.7	2.3
Emerging Markets	8.3	8.4	6.8	5.6
World	5.0	4.9	3.6	2.6

	2006	2007	2008	2009
Consumer Prices, % chg, yoy				
USA	3.2	2.9	4.2	1.1
Japan	0.2	0.1	1.6	0.8
Euroland	2.2	2.1	3.4	1.8
Germany	1.8	2.3	2.9	1.7
France	1.9	1.6	3.3	1.4
Italy	2.2	2.0	3.6	2.2
Netherlands	1.7	1.6	2.3	1.9
Spain	3.6	2.8	4.2	1.9
Sweden	1.4	2.2	3.8	2.3
Switzerland	1.1	0.7	2.7	1.6
UK	2.3	2.3	3.8	2.2
EU27	2.2	2.3	3.6	2.1
Canada	2.0	2.1	2.9	2.1
Australia	3.5	2.3	4.5	2.5
G7	2.3	2.2	3.5	1.3
Advanced Economies	2.3	2.2	3.7	1.6
Asia	2.8	3.6	6.5	2.8
Central and Eastern Europe	2.1	3.4	5.1	4.2
Latin America	5.4	5.8	7.8	7.0
Emerging Markets	5.3	6.0	9.4	5.8
World	3.4	3.6	5.9	3.3

	2006	2007	2008	2009
Real GDP, % chg, yoy				
China	11.6	11.9	9.8	8.7
India	9.6	9.0	7.5	7.0
Hong Kong	7.0	6.4	3.0	2.2
Indonesia	5.5	6.3	5.8	3.5
Malaysia	5.8	6.3	5.0	3.4
Philippines	5.4	7.2	4.0	3.2
Singapore	8.2	7.7	3.0	2.0
South Korea	5.1	5.0	4.3	3.9
Taiwan	4.9	5.7	3.0	2.2
Thailand	5.1	4.8	4.3	3.3
Brazil	3.8	5.4	5.7	2.5
Argentina	8.5	8.7	6.4	2.0
Mexico	4.9	3.2	2.0	1.2
Venezuela	10.3	8.4	5.6	3.4
Russia	7.4	8.1	6.2	4.0
Turkey	6.9	4.5	3.0	1.7
South Africa	5.4	5.1	3.1	2.4
Central and Eastern Europe	6.2	6.1	4.8	3.4
Asia ex Japan	9.2	9.4	7.6	6.8
Latin America	5.5	5.6	4.7	2.3
BRICs	9.4	9.8	8.2	7.0
Emerging Markets	8.3	8.4	6.8	5.6

	2006	2007	2008	2009
Consumer Prices, % chg, yoy				
China	1.5	4.8	6.3	1.5
India	5.5	4.6	11.5	5.3
Hong Kong	2.0	2.0	4.8	2.0
Indonesia	13.1	6.4	10.5	8.2
Malaysia	3.6	2.0	6.0	4.1
Philippines	6.3	2.8	9.6	6.8
Singapore	1.0	2.1	6.5	3.4
South Korea	2.2	2.5	5.5	3.0
Taiwan	0.6	1.8	4.1	2.0
Thailand	4.6	2.2	7.5	5.0
Brazil	4.2	3.6	5.8	6.5
Argentina	10.9	8.8	8.8	8.3
Mexico	3.6	4.0	5.0	5.0
Venezuela	16.1	20.2	32.8	25.5
Russia	9.7	9.0	14.2	12.5
Turkey	9.6	8.8	10.2	9.4
South Africa	4.6	6.5	11.3	7.5
Central and Eastern Europe	2.1	3.4	5.1	4.2
Asia ex Japan	3.6	4.7	7.8	3.3
Latin America	5.4	5.8	7.8	7.0
BRICs	4.2	5.6	8.6	4.4
Emerging Markets	5.3	6.0	9.4	5.8

For India we use WPI not CPI. Asia consists of China, Hong Kong, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand and Vietnam.

For our latest Bond, Currency and GSDEER forecasts, please refer to the Goldman Sachs institutional portal (<https://360.gs.com/gsp/portal/research/econ/econmarkets/>).

Equity Risk and Credit Premiums

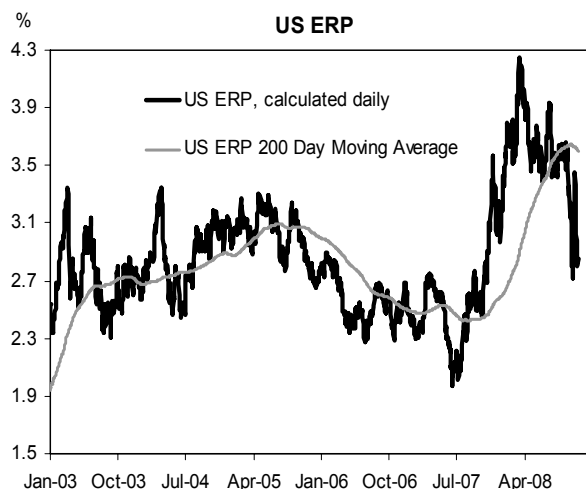
Updated Estimates for the Equity Risk Premium*

	Real GDP Growth	Real Earnings Growth	+ Dividend Yield	= Expected Real Return	- Real Bond Yield	= Implied ERP	Expected Inflation	Expected Nominal Return
US	3.0	3.0	2.9	5.9	3.1	2.9	2.0	7.9
Japan	1.5	1.5	2.6	4.1	1.0	3.1	0.5	4.6
UK	2.8	2.8	5.0	7.8	2.5	5.3	2.0	9.8
Europe ex UK	2.3	2.3	4.7	6.9	2.5	4.5	2.0	8.9
World	2.5	2.5	3.6	6.1	2.5	3.6	1.8	7.9

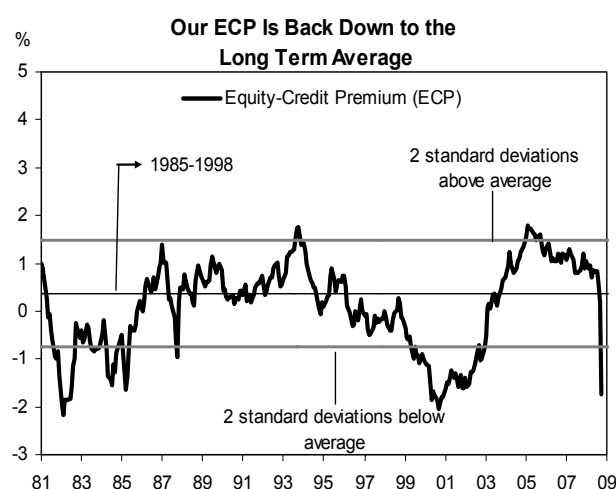
*Calculated as of 04 November 2008.

Source: Datastream, real GDP growth and expected inflation are GS Economics Research forecasts.

The US ERP remains 70bp below its 200-day moving average.



Our ECP posted the first negative print of -1.73% since January 2003, on the back of high corporate bond yields.



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The World in a Nutshell

THE GLOBAL ECONOMY		
	OUTLOOK	KEY ISSUES
UNITED STATES	The US economy appears to have stalled in the third quarter, as consumers cut back spending and housing activity continued to tumble. The economy lost even more momentum in September and early October as credit conditions tightened sharply. With employers also cutting payrolls, we expect an outright contraction in real GDP this quarter and in the first quarter of 2009, and below trend growth into 2010. We see unemployment rising to 8% by end-2009.	Sharp drops in asset prices hurt consumer confidence and deter spending, while credit restraint that results in heightened risk aversion, as well as efforts to deleverage balance sheets, cuts off funding to households and business firms alike. TARP should free up capacity on banks' balance sheets and encourage recognition of losses. A second round of fiscal stimulus would be in order, in addition to the Fed easing monetary policy.
JAPAN	Our forecast calls for growth of +0.7% from +0.8% in 2008, and +0.5% down significantly from +1.3% in 2009. Our forecast is now below the market consensus, rather than above. We are looking for a recovery in 2H2009, but expect growth to remain below the economy's potential growth rate. We expect the BoJ to keep the policy rate at 0.3% throughout FY2008-09, while there is a 20% probability of an additional rate cut to 0.15% by the end of FY2009. We expect core CPI inflation to trend around +1% over the next ten years.	Our own GDP forecast was revised down due to a change in our consumption tax assumption and unexpectedly weak demand. Foreign demand is weaker than expected and signs of a slowdown in exports to Asia are growing more pronounced. The BoJ has eased policy and established a regime for ample liquidity supply by setting up a facility based on interest payments on excess bank reserves. This change in policy will enable the BoJ to contain yen appreciation, so we expect the US\$/¥ rate to begin rising again.
EUROPE	The outlook for Euro-zone GDP has worsened substantially. We expect the economy to contract in 2008H2 and gather some momentum only in 2009H2. We expect bank lending to become much tighter and hence curb economic growth. This is combined with other downward pressures: weak domestic demand in trading partners, higher unemployment, rising household saving ratios and a struggling industrial sector.	In response to the credit crisis and the possibility of recession, the ECB, Bank of England and others have taken various steps by easing interest rates, increasing liquidity, guaranteeing inter-bank lending, and injecting capital into the banking system. We have changed our ECB forecast to a trough of 2.0% by end of 2009Q1. We have also downgraded UK 2007 growth estimates to -0.4% from +0.3%, and expect the BoE to cut rates to 2% in 2009.
NON-JAPAN ASIA	Asia had weathered the global credit crisis relatively well until recently, but now currencies and sovereign CDS are coming under greater pressure. Moves in currencies and equities are likely to be heavily driven by views on the efficacy of the US and other bank bailouts. Our 2008 AEJ growth forecast of 6.7% is below consensus, with downside risk.	For China, 3Q2008 growth was moderated by the declining contribution from domestic demand. We expect further rate cuts, in addition to recent cuts, of 100bp-150bp over 4Q2008 and 1H2009. With supportive policies and lower commodity prices, we expect China's growth to trough in 1H2009 and gradually recover in 2H2009.
LATIN AMERICA	We have revised our forecasts for 2008 and 2009, reflecting lower global growth, lower commodity prices, and higher risk aversion. The key transmission channels for the global shocks to LatAm will be lower trade volumes, lower commodity prices, and lower net capital inflows.	Our real GDP growth forecast for LatAm is now 2.3% in 2009 from 4.7% in 2008. We forecast CPI will initially rise to 8.5% in 2008 followed by a drop to 6.9% in 2009. Central bankers will be tempted to ease monetary policy, however, very few countries would enjoy such freedom without boosting inflation rates.
CENTRAL & EASTERN EUROPE, MIDDLE EAST AND AFRICA	We have revised our forecasts for many of the countries to reflect three recent developments: reduction in commodity price forecasts, slowing growth in major markets, and the deterioration in global financial conditions. The EM are experiencing strong capital outflows, putting strains on balances of payments and currencies in the most vulnerable countries.	We have made more modest downward revisions to the growth outlook in Turkey, South Africa, Central Europe, Kazakhstan and the GCC. With the IMF and major Euroland countries potentially providing support to Central Europe, we do not expect default on sovereign debt there. In Russia, expect the current account surplus to disappear in 2009, while in the GCC, the surplus will remain and inflation moderate.

CENTRAL BANK POLICIES			
	CURRENT SITUATION	NEXT MEETINGS	EXPECTATION
UNITED STATES: FOMC	Fed funds rate cut by 50bp to 1.00% on October 29, 2008.	December 16 January 31	We expect the funds rate to remain unchanged for the foreseeable future.
JAPAN: BoJ Monetary Policy Board	The BoJ cut the overnight call rate to 0.3% on October 31, 2008.	November 20/21 December 18/19	We expect the BoJ to keep the policy rate at 0.3% throughout FY2008-09.
EUROLAND: ECB Governing Council	The ECB cut rates by 50bp to 3.75% on October 8, 2008.	November 6 December 4	We expect the ECB to cut rates to 2% by the end of Q1 2009 with 50bp in Nov.
UK: BoE Monetary Policy Committee	The BoE cut rates by 50bp to 4.5% on October 8, 2008.	November 6 December 4	We forecast rate cuts to 2% in 2009 starting with 100bp at the next meeting.