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Houses in the Industrial Countries: Built on Rock, Or on Sand?

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After reviewing the US housing downturn in recent *Weeklies*, we now direct our attention to current residential property market developments in the major industrial economies.

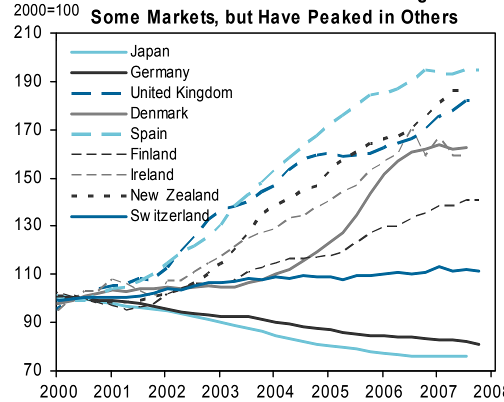
We find that a further cooling of real house prices is likely. In the **UK**, **Spain** and **Ireland**, much has been said about the drag to growth from residential investment, but whether the private sector's spending behaviour materially changes as a result remains a very open question.

Countries that look relatively more vulnerable to both a correction in home prices and possibly a broader economic adjustment are **New Zealand**, followed at a distance by **Denmark** and **Finland**. In New Zealand, we continue to recommend gaining long exposure to the front-end of the yield curve and shorting the currency.

The increase in real house prices in **Canada**, **Norway** and **Australia,** and the related deterioration in house purchase affordability, need to be viewed against the backdrop of a large favourable terms-of-trade shock from commodity exports.

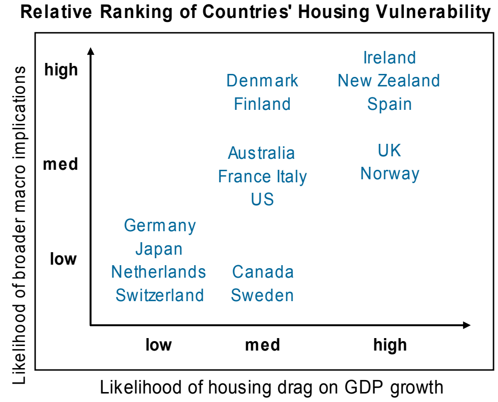
Property markets in **Germany**, **Japan** and **Switzerland** all stand to benefit from the decline in long-term interest rates that ensued from the bursting of the US housing bubble.

Real House Prices Are Still Increasing in Some Markets, but Have Peaked in Others



Source: OECD

Relative Ranking of Countries' Housing Vulnerability



Houses in the Industrial Countries: Built on Rock, Or on Sand?

In previous issues of our *Global Economics Weekly*, we examined the experience of residential housing 'busts' across the OECD since the 1970s and collated a list of 'stylised facts' provided by the historical experience. In general, housing busts have significant and long-lasting economic consequences, often leading to substantial growth slowdowns, prolonged economic weakness and, in many cases, banking system problems.

The analysis highlighted the scope for a significant decline in US real house prices (around 30% from peak to trough, half of which we have already witnessed), with residential construction spending set to remain a drag on activity growth until the end of this year. However, relative to the typified historical experience, we argued that the spillovers to the broader US economy could be less material. A less overheated economy and the rapid easing of financial conditions could act as important mitigating factors.

Here, we direct our attention away from the US to current developments in the major industrial economies, and attempt to answer three related questions: Where are house prices most likely to turn south, with negative implications for construction spending and related areas? Where is a house price bust (if realised) likely to condition the economy's broader performance? And, lastly, what are the broad implications for investment?[1]

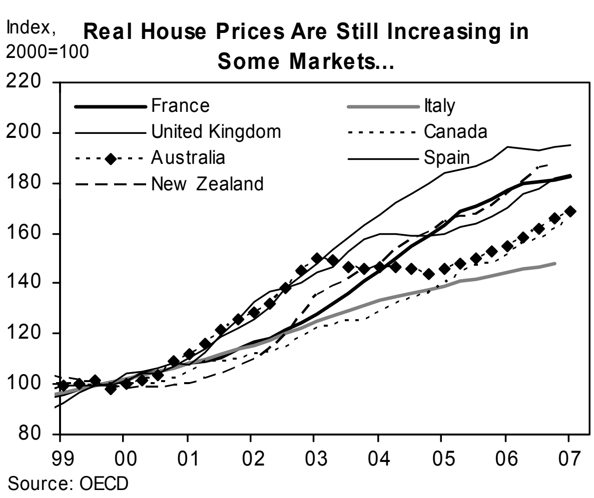
Relative Vulnerabilities in Developed Economies

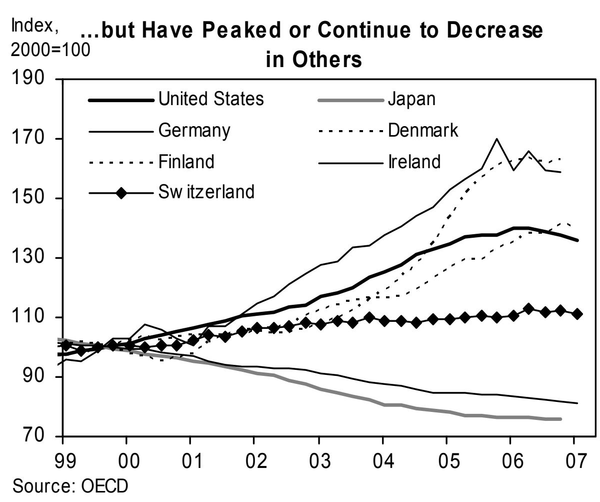
Services from residential property ownership are quintessentially non-tradable. Yet, empirical evidence suggests that housing cycles tend to co-move across countries. Econometric studies have revealed that house prices in individual industrial countries respond to a global 'housing factor' which, in turn, is frequently led by developments in US house prices.[2]

If history is of any guidance, the further decline in US residential property prices we foresee over the coming months is likely to lead to a deceleration in real house price growth overseas also. This has already happened in a number of countries, most prominently in Ireland, the United Kingdom and Spain, where house prices have already started to fall on a sequential basis in real terms.

Borrowing from the empirical literature on housing cycles[3], we rank the vulnerability of residential house prices in 17 major industrial countries, according to a range of criteria:

- **The size of the 'boom'**, measured by the increase in real house prices. The cross-country historical evidence suggests that the bigger housing busts typically follow larger booms. Our benchmark date is set at 4Q1999, right ahead of the big decline in the major stock markets. We 'normalise' real house price increases by the standard deviation of their quarterly changes, in an attempt to account for country-specific factors.
- **Price 'momentum'.** Cross-country evidence indicates that the growth rate of real house prices is very persistent, with estimated serial correlation coefficients as high as 0.5. We look at quarterly changes in nominal house price indices provided by the OECD, as well as monthly data from national sources, where available. Countries in which (standardised) price changes have already turned are more vulnerable to further adjustment.





1. Poor quality of data and issues related to differences in coverage and methodologies make international comparisons difficult. Our aim throughout is to make relative, rather than absolute, statements. The data we used throughout comes from the OECD, Haver Analytics and national sources.
2. Many empirical studies focus on the co-movement of international housing cycles. See, for example, Helbling and Terrones (2003) and the literature cited therein. These authors find that house prices in industrial countries tend to move together with the average cross-country correlation of house prices at 0.4. The highest correlation is in France, Sweden, the UK and the US. A comparison of the timing of housing price 'busts' across countries suggests that, during the recessions in the early 1980s and early 1990s, they were generally more synchronised than equity busts (IMF, September 2004).
3. See: "Eurozone Will Not Follow the US in a Housing-Led Downturn", *European Weekly Analyst*, October 25, 2007.

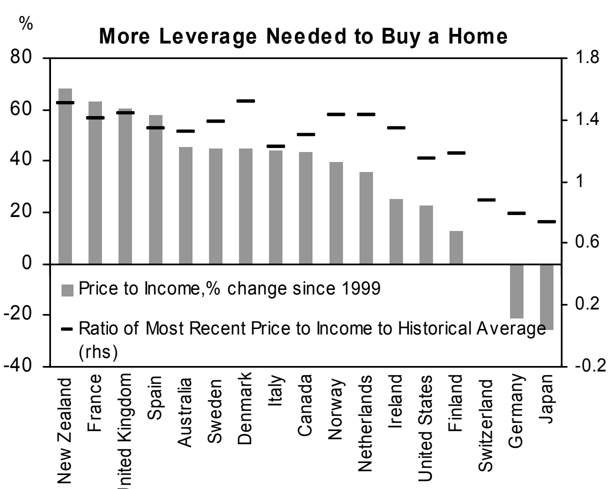
Real House Prices (% change from 1999 Q4)

Actual		Standardised	
United Kingdom	98	France	63
Spain	96	United States	37
France	90	Sweden	36
New Zealand	82	New Zealand	35
Sweden	76	Spain	34
Australia	70	United Kingdom	34
Denmark	67	Australia	33
Canada	66	Norway	28
Ireland	66	Canada	26
Norway	65	Denmark	23
Italy	53	Ireland	20
Finland	39	Italy	16
United States	39	Netherlands	14
Netherlands	37	Finland	14
Switzerland	11	Switzerland	5
Germany	-20	Japan	-14
Japan	-26	Germany	-24

Source: National data sources. GS calculations

- **'Affordability'**, measured as the deviation of average house prices relative to disposable income. If property prices are out of line with income, this misalignment tends to be corrected over time. We look at the change in affordability since 4Q1999 and the gap between current affordability and the average since 1990.[4]

The standardised increase in house prices since the end of the last decade was particularly pronounced in France and the US (at the peak in 1Q2007, real house prices had increased by 41% since 4Q1999). Spain, the UK, Sweden, New Zealand and Australia have also experienced sizeable house price gains, adjusting for relative price volatility.



Source: National data sources. GS calculations

House price increases have been large but not so eye-popping in Norway, Canada, Ireland, Denmark, Italy and Finland. By contrast, Japan and (particularly) Germany have witnessed a decline in real house prices. On the logic that what has risen the most risks falling harder, countries to watch outside the US include France, Spain, the UK, New Zealand and Sweden.[5]

As noted earlier, house prices in some countries have already started softening. On OECD figures, house prices in real terms peaked in 3Q2006 in Ireland and in 1Q2007 in the US, Denmark and Switzerland. Prices in Finland are also slightly off their 3Q2007 highs.

In all other countries considered here, real house prices made new highs at the end of 2007, though since the first quarter of this year, country surveys of nominal house price changes signal that more countries are experiencing weakening house price dynamics, particularly Spain, New Zealand, the UK, Australia and Denmark. Prices in Canada, Norway and Sweden remain *comparatively* more resilient.

To assess relative affordability across countries, we look at changes in the house price to income ratio since 4Q1999, and compare the most recent level of this measure with the average since 1990. Home prices relative to income have shown the largest increase in New Zealand (of around 70%), followed by France, the UK and Spain, with a decrease in affordability in the region of 60%.

To put things into perspective, the US has seen a 22% increase in prices relative to income—just one-third of the increase in New Zealand. Comparing the current level of house prices to income with the historical average tells roughly the same story. In Denmark and New Zealand, the current house prices to income ratio is 1½ times higher than its historical average. Switzerland, Germany and Japan rank towards the bottom on both measures.

Economic Spillovers: From The More Direct...

The international screening can be extended on price to include measures of economic activity related to the housing sector. Specifically, for each of the 17 countries analysed, we compute the share of nominal residential investment spending as a percentage of GDP, and compare it to its own average since 1991. We look at how the share of jobs in construction and housing-related services relative to total private-sector employment has evolved. A large deviation from trend can signal relatively higher scope for mean-reversion, particularly if house prices have also run ahead of their 'fundamentals'.

4. Admittedly, the price-to-income ratio is not an exhaustive valuation metric, as permanent shifts in real borrowing costs could affect its equilibrium value. In previous work, for example, we have shown that the bond risk premium fell considerably between 1997 and 1999, remaining low ever since. Kevin Daly and Saleem Bahaj find that the gap between rental yields and borrowing costs is most stretched in countries where the price-to-income ratio is highest, including the UK, US, France, Spain and Ireland. Hence, while imperfect, our measure of 'affordability' still conveys a sense of relative housing valuations across the developed countries considered here.

5. According to a model presented by Marco Terrones at the IMF, house price increases in the UK, France and Spain are about 20%-30% higher than justified by a set of fundamentals, including lagged values of real prices and the house price to disposable income ratio, real disposable income growth, interest rates, credit growth, and changes in equity prices and working-age population (see World Economic Outlook October 2007, pp.74, and the update included in the April 2008 issue of the same publication, pp.11-14).

Employment in Construction & Housing-related Services

	% of total private sector employment		
	value at Q4:07	deviation from 1991 avg.	absolute chg. from end-99
Ireland	13	**2.3**	4.2
Spain	13	**2.3**	2.2
New Zealand	7	**1.6**	1.8
Norw ay	8	**1.5**	1.4
Australia	10	**1.5**	1.3
Canada	7	**1.1**	1.4
USA*	9	**0.9**	0.8
Italy	8	**0.8**	1.1
Finland	8	**0.6**	0.5
France	8	**0.6**	1
Sw eden	6	**0.5**	0.9
United Kingdom	7	**0.3**	0.7
Denmark	7	**0.2**	0.5
Sw itzerland	7	**-0.5**	0
Netherlands	5	**-0.7**	-0.9
Japan	9	**-1.5**	-1.6
Germany	5	**-1.6**	-1.9

* Relative to peak. Source: GS calculations

Nominal Residential Investment

	% of GDP		
	value at Q4:07	deviation from 1991 avg.	absolute chg. from end-99
Spain	9	**3.2**	3.5
Denmark	6	**2.2**	2.3
Canada	7	**1.7**	2.6
USA*	6	**1.7**	1.7
New Zealand	7	**1.1**	1.0
Finland	6	**0.9**	0.5
Norw ay	4	**0.9**	0.9
United Kingdom	4	**0.7**	1.1
Netherlands	6	**0.6**	0.4
France	4	**0.6**	0.8
Italy	5	**0.4**	0.8
Sw eden	3	**0.4**	1.5
Australia	6	**0.3**	0.1
Ireland	11	**-0.2**	2.8
Germany	5	**-1.1**	-1.7
Sw itzerland	9	**-1.3**	-0.1
Japan	3	**-1.3**	-1.2

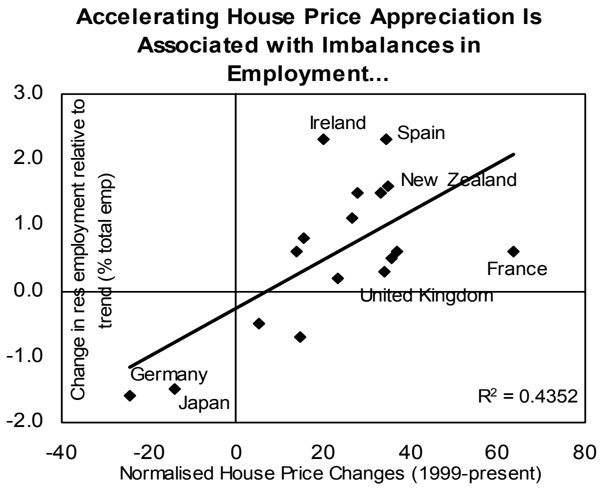
* Value and calulations at peak. Source: GS calculations

- In a group of countries that includes **New Zealand**, **Spain, Ireland**, and possibly **Denmark** and the **UK**, the fast rise in house prices has coincided with an equally material deviation from trend of construction spending and job creation. As house prices continue to deflate, economy activity in these economies is likely to mean-revert to its long-run mean, and possibly undershoot it as the correction unfolds.
- **Norway, Canada and Australia** form a related group of countries. All three have experienced strong increases in their housing markets and in construction activity. Although some correction in housing investment is likely, we would discount these developments, given the role played by the commodity sector and the associated positive terms-of-trade shock over the past several years. Interestingly, nominal house prices are still holding up comparatively well in these economies.

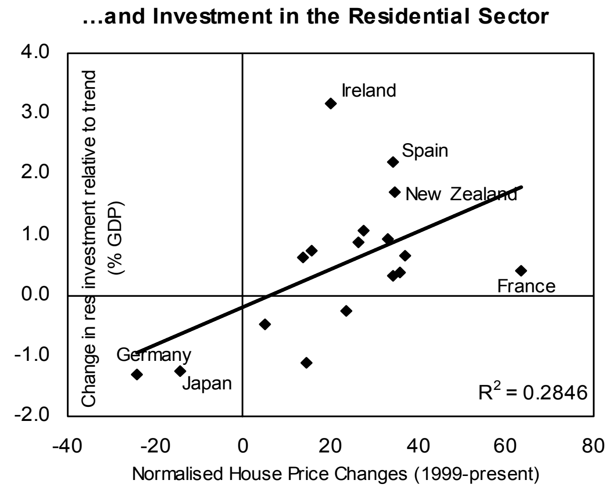
Ranking of Countries' Vulnerability to a Housing Downturn

	Past (Std) Real House Price Increases	Latest House Price Momentum	Price to Income Increase	Housing Employment (deviation from trend)	Residential Investment (deviation from trend)	Likelihood of housing drag on GDP growth	Likelihood of broader macro implications
Australia	medium	neutral	high	high	medium	**medium**	**medium**
Canada	medium	neutral	medium	high	medium	**medium**	**low**
Denmark	medium	negative	medium	low	medium	**medium**	**high**
Finland	medium	neutral	low	medium	medium	**medium**	**medium**
France	high	neutral	high	medium	medium	**medium**	**medium**
Germany	low	neutral	low	low	low	**low**	**low**
United Kingdom	high	negative	high	medium	medium	**high**	**medium**
Ireland	medium	negative	medium	high	high	**high**	**high**
Italy	medium	neutral	medium	medium	medium	**medium**	**medium**
Japan	low	neutral	low	low	low	**low**	**low**
Netherlands	low	neutral	medium	low	medium	**low**	**low**
New Zealand	high	neutral	high	high	high	**high**	**high**
Norw ay	medium	neutral	medium	high	high	**medium**	**medium**
Spain	high	negative	high	high	high	**high**	**high**
Sw eden	high	neutral	high	medium	medium	**medium**	**low**
Sw itzerland	low	neutral	low	low	low	**low**	**low**
United States*	high	negative	medium	medium	high	**high**	**high**

Source: GS calculations; *: at peak of property market in Q1:07



Source: GS calculations



Source: GS calculations

- On the other hand, in continental European economies such as **France and Italy,** where house price increases have been material, residential housing activity has *not* been all that spectacular compared to trend and in an international context. This suggests that, for a comparable softening of real house prices, the drag to economic activity from construction could be less severe.

- Lastly, another group of countries (**Germany, Switzerland, Netherlands and Japan**) has not experienced real house price appreciation over the past decade (the reverse is the case in a few of these) and, consistently, has seen no increase in construction activity and employment jobs. In all these countries, the 'surprise' could be to the upside.

...To the More Distant, But Potentially More Harmful

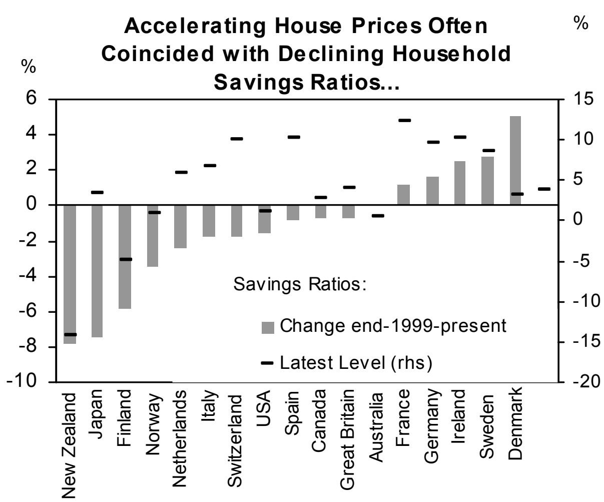
In our previous studies of housing busts across developed countries over the past four decades, we noted that what determined the economic damage that followed in the housing bust depended less on the imbalances in the housing sector itself, and more on the extent to which sharp house price appreciation translated into broad economic and financial imbalances, in particular overheating and rapid growth in consumer credit growth.

With this in mind, we rank countries in relation to factors that may signal the build-up of broader imbalance as the stock of residential property appreciated, such as the household savings ratio, the output gap, consumer credit growth and the private sector's financial position.

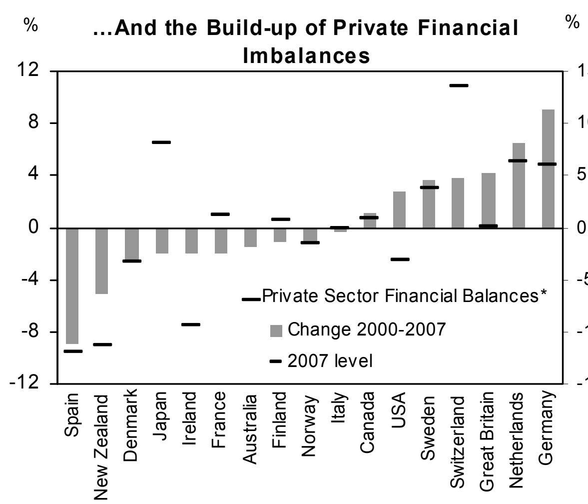
Admittedly, the mapping between housing cycle, resource utilisation and financial balances is not tight, so the analysis is more judgmental than elsewhere. Our takeaways are as follows:

- **New Zealand** tops the 'on negative watch' list outside the US. In addition to the vulnerability of the construction sector (large deviations from trend of investment and job creation), private-sector financial balances are also very stretched. The household savings ratio has fallen 8 percentage points to -12% since 4Q1999, dragging the private-sector financial balance to a deficit of around 11% of GDP. A correction in house prices and the construction sector has the potential to tip the economy into a deep contraction.

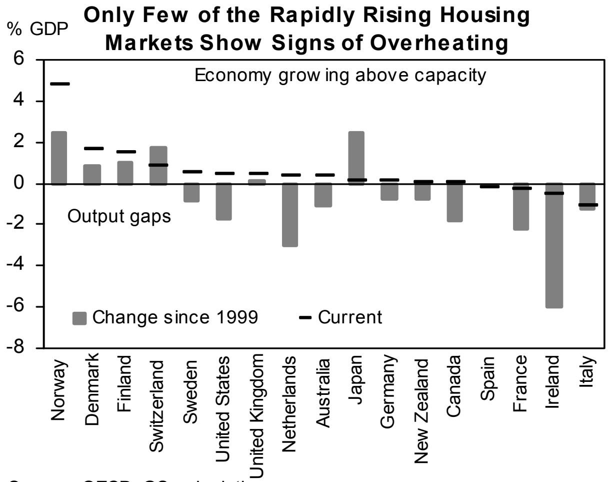
- **Spain, Ireland, Australia** the **UK and France** follow on this watch list. A drag on GDP growth from residential construction is highly likely. However, none of these economies show signs of large



Source: OECD



Source: IMF



Source: OECD. GS calculations

household imbalances, so the adjustment could be relatively contained within the housing sector itself.

- **Denmark and Finland** are not countries commonly associated with housing troubles, but nonetheless deserve monitoring. Construction activity has overshot its trend in both in response to the increase in house prices. Both economies are growing above capacity, and their household savings ratios have fallen and are now close to zero. A slowdown in the housing sector in both these economies would probably be desirable at this cyclical juncture.

Some Considerations for Investment

We draw the following broad conclusions:

- A further cooling of real house prices across the main industrial economies is a likely scenario. In countries where these dynamics have already started to unfold, and where affordability is stretched, including the US, the UK, Spain, Ireland and Denmark, outright real price declines are on the cards. Although investments to express this theme have largely been exploited, they should not be faded yet.

- In the **UK**, **Spain** and **Ireland**, much has been said about the possible negative implications of a housing decline for the broader economy. Granted, the drag from household investment (typically a function of housing turnover) may be severe over the coming several quarters. But whether the broader private sector's spending behavior materially changes as a result remains a very open question. As a result, we expect the UK easing cycle to be a relatively shallow one (with the trough for rates at 4% next year) and the ECB to refrain from easing. In **Sweden**, the strength in house prices against the backdrop of a healthy economy reinforces our view that pressures are for policy rates to increase further.

- Countries that look relatively more vulnerable to both a correction in home prices and possibly a broader economic adjustment are **New Zealand**, followed at a distance by **Denmark** and **Finland**. In the former, we continue to recommend gaining long exposure to the front-end of the yield curve and shorting the currency. In our view, weakness in the housing sector has the potential to tip New Zealand into recession.

- The increase in real house prices in **Canada**, **Norway** and **Australia,** and the deterioration in house purchase affordability, need to be seen against the backdrop of a large favorable terms-of-trade shock from commodity exports. We expect the contribution from residential construction to GDP growth to decline, and policy rates to fall, in Canada and Australia, while in Norway we think rates will not increase further. But the correlation with the commodities boom makes the housing story difficult to isolate in these countries.

- **Germany**, **Japan** and **Switzerland** all stand to benefit from the decline in long-term interest rates that ensued from the bursting of the US housing bubble. Seeking long exposure to the residential sector in these markets as the US residential property market finds its feet during the next 12-18 months seems to us a good risk-reward proposition.

Francesco U. Garzarelli and Raluca Dragusanu

Central Bank Policies

	Current Situation	Next Meetings	Expectation
UNITED STATES: FOMC	Fed funds rate cut by 25bp to 2.0% on April 30, 2008.	June 25 August 5	We expect the FOMC to keep the Fed funds rate on hold for the indefinite future.
JAPAN: BoJ Monetary Policy Board	The BoJ raised the overnight call rate by 25bp to 0.5% on February 21, 2007.	May 20 June 13	We expect the BoJ to keep rates on hold through to the end of FY2008.
EUROLAND: ECB Governing Council	The ECB raised rates by 25bp to 4.0% on June 6, 2007.	June 5 July 3	We expect the ECB to keep rates on hold at 4% for the foreseeable future.
UK: BoE Monetary Policy Committee	The BoE cut rates by 25bp to 5.0% on April 10, 2008.	June 5 July 10	We expect the Bank rate to fall to 4.5% by the end of 2008.

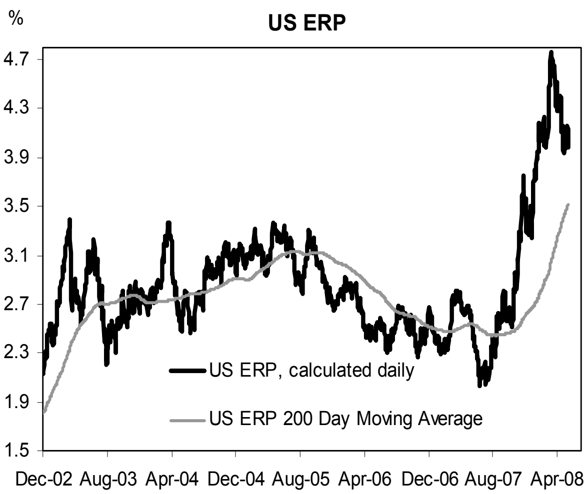
Equity Risk and Credit Premiums

Updated Estimates for the Equity Risk Premium*

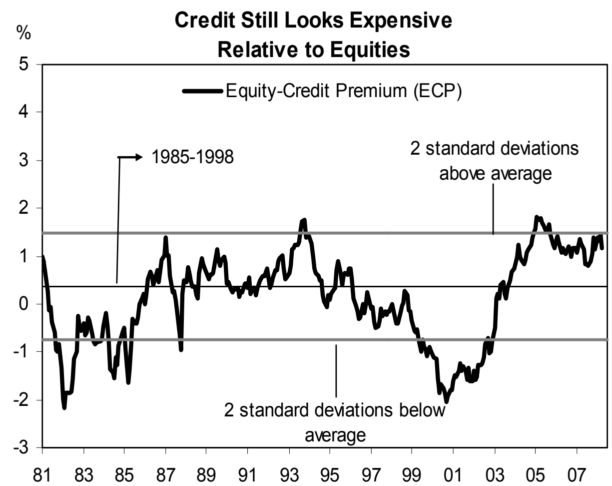
	Real GDP Growth	Real Earnings Growth	+	Dividend Yield	=	Expected Real Return	-	Real Bond Yield	=	Implied ERP	Expected Inflation	Expected Nominal Return
US	3.0	3.0		2.1		5.1		1.1		4.0	2.0	7.1
Japan	1.5	1.5		1.7		3.2		1.1		2.1	0.5	3.7
UK	2.8	2.8		3.7		6.5		1.6		4.9	2.0	8.5
Europe ex UK	2.3	2.3		3.0		5.3		1.6		3.7	2.0	7.3
World	2.5	2.5		2.4		4.9		1.3		3.7	1.8	6.7

*Calculated as of 13 May 2008.
Source: Datastream; real GDP grow th and expected inflation are GS Economics Research forecasts.

The US ERP is now 80bp below the last peak reached in mid-March due to the steady increase in real bond yields.



Our ECP declined by 27bp in April as the US ERP decreased by 36bp in April.



Main Economic Forecasts

	2006	2007	2008	2009
Real GDP, % chg, yoy				
USA	2.9	2.2	**1.1**	**1.0**
Japan	2.4	2.1	**1.1**	**1.6**
Euroland	2.9	2.6	**1.6**	**1.9**
Germany	3.1	2.6	**1.5**	**1.8**
France	2.2	1.9	**1.5**	**1.6**
Italy	1.9	**1.7**	**0.8**	**1.3**
Netherlands	3.0	3.5	**2.7**	**1.8**
Spain	3.9	3.8	**2.1**	**2.1**
Sweden	4.5	2.8	**2.8**	**2.5**
Switzerland	3.2	3.1	**2.2**	**1.5**
UK	2.9	3.0	**1.8**	**1.6**
EU27	3.2	**2.9**	**1.9**	**2.1**
Canada	2.8	**2.7**	**1.6**	**2.2**
Australia	2.8	**3.9**	**2.5**	**2.7**
G7	2.7	**2.2**	**1.2**	**1.4**
Advanced Economies	3.1	**2.7**	**1.7**	**1.8**
Asia	7.7	**7.7**	**6.5**	**6.6**
Central and Eastern Europe	6.1	5.9	**5.0**	**4.7**
Latin America	5.4	5.7	**4.9**	**3.9**
Emerging Markets	8.5	**8.5**	**7.4**	**7.2**
World	5.0	**4.8**	**3.8**	**3.8**

	2006	2007	2008	2009
Consumer Prices, % chg, yoy				
USA	3.2	2.9	**3.8**	**2.3**
Japan	0.1	0.0	**0.8**	**0.6**
Euroland	2.2	2.1	**2.9**	**2.3**
Germany	1.8	2.3	**2.4**	**2.2**
France	1.9	1.6	**2.9**	**2.3**
Italy	2.2	2.0	**3.0**	**2.0**
Netherlands	1.7	1.6	**2.3**	**2.6**
Spain	3.6	2.8	**3.9**	**2.8**
Sweden	1.4	2.2	**3.2**	**2.4**
Switzerland	1.1	0.7	**2.0**	**0.8**
UK	2.3	2.3	**2.9**	**2.0**
EU27	2.2	2.3	**3.1**	**2.4**
Canada	2.0	**2.1**	**2.0**	**1.7**
Australia	3.5	**2.3**	**3.7**	**2.7**
G7	2.3	**2.1**	**2.9**	**2.0**
Advanced Economies	2.3	**2.2**	**3.1**	**2.2**
Asia	2.7	**3.2**	**4.7**	**3.0**
Central and Eastern Europe	2.4	3.8	**5.4**	**4.0**
Latin America	5.2	5.3	**6.4**	**5.6**
Emerging Markets	5.0	**5.5**	**7.6**	**5.3**
World	3.3	**3.4**	**4.7**	**3.3**

	2006	2007	2008	2009
Real GDP, % chg, yoy				
China	11.6	11.9	**10.5**	**10.0**
India	9.6	**8.7**	**7.8**	**8.2**
Hong Kong	7.0	6.3	**5.2**	**5.8**
Indonesia	5.5	6.3	**5.5**	**5.8**
Malaysia	5.9	6.3	**5.2**	**5.6**
Philippines	5.5	7.3	**6.0**	**6.2**
Singapore	8.2	7.7	**5.5**	**6.1**
South Korea	5.1	5.0	**4.8**	**5.3**
Taiwan	4.9	5.7	**3.8**	**4.6**
Thailand	5.1	4.8	**4.0**	**4.5**
Brazil	3.8	5.4	**5.4**	**3.4**
Argentina	8.5	8.7	**7.0**	**4.5**
Mexico	4.8	3.3	**2.8**	**3.8**
Venezuela	10.3	8.4	**5.5**	**3.7**
Russia	7.4	8.1	**7.0**	**7.0**
Turkey	6.9	4.5	**4.0**	**5.5**
South Africa	5.4	5.1	**3.0**	**4.3**
Central and Eastern Europe	6.1	5.9	**5.0**	**4.7**
Asia ex Japan	9.5	9.8	**8.5**	**8.4**
Latin America	5.4	5.7	**4.9**	**3.9**
BRICs	10.0	**10.2**	**9.1**	**8.7**
Emerging Markets	8.5	**8.5**	**7.4**	**7.2**

	2006	2007	2008	2009
Consumer Prices, % chg, yoy				
China	1.5	4.8	**6.8**	**3.0**
India	5.5	4.5	**6.0**	**4.5**
Hong Kong	2.0	2.0	**8.0**	**7.0**
Indonesia	13.1	6.4	**10.5**	**8.2**
Malaysia	3.6	2.0	**3.2**	**3.0**
Philippines	6.3	2.8	**5.5**	**4.2**
Singapore	1.0	2.1	**5.5**	**2.9**
South Korea	2.2	2.5	**4.0**	**3.3**
Taiwan	0.6	1.8	**2.5**	**1.5**
Thailand	4.6	2.2	**4.6**	**3.3**
Brazil	4.2	3.6	**5.2**	**5.2**
Argentina	10.9	8.8	**8.8**	**8.5**
Mexico	3.6	4.0	**4.0**	**3.9**
Venezuela	16.1	20.2	**26.6**	**20.1**
Russia	9.7	9.0	**13.8**	**11.8**
Turkey	9.6	8.8	**9.3**	**6.8**
South Africa	4.6	6.5	**9.8**	**8.1**
Central and Eastern Europe	2.4	3.8	**5.4**	**4.0**
Asia ex Japan	2.8	4.2	**6.4**	**3.5**
Latin America	5.2	5.3	**6.4**	**5.6**
BRICs	3.6	**5.0**	**6.8**	**4.3**
Emerging Markets	5.0	**5.5**	**7.6**	**5.3**

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