Special Report

Bank Systemic Risk Report

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Related Research

- *"Assessing Bank Systemic Risk", July 2005*
- *"Global Economic Outlook", April 2008*

This report updates the bank systemic risk indicators introduced by Fitch Ratings in 2005. The Banking System Indicator (BSI) measures a system's stand-alone strength on a scale from 'A' (very strong) to 'E' (very weak) and is derived from current bank Individual Ratings, both published and — for systemically important non-rated banks — unpublished. The Macro-Prudential Indicator (MPI) is designed to highlight potential systemic stress of a type that has often been preceded by a combination of rapid bank lending growth and bubbles in asset markets and/or the real exchange rate. It gauges this risk on a scale from '1' (low) to '3' (high), with the reference period in this report pushed forward a year to 2005-2007.

Large, global banks in several major developed countries have been hardest hit by the US subprime crisis, marking the current financial crisis out from more familiar, country specific banking crises. The BSIs of the **US** and **Switzerland** have both fallen to 'B' (strong) from 'A' (very strong). This is still on a par with most other developed country systems and Fitch does not expect any further fall, despite the likelihood of continued stress, especially in the US. Total losses and write-downs to date fall well short of aggregate US banking system capital, a conventional measure of the severity of a banking crisis and the one used to calibrate Fitch's MPI. Moreover, much of this has reduced profits rather than capital and Fitch has been impressed by the ability of US banks to raise capital of over USD60bn so far. Official action has also been aggressive. Both the US and Switzerland remain MPI 2, the same as two-thirds of developed-country systems, including the **UK**, where problems have been contained and which remains one of only five BSI A (very strong) systems — all in developed countries. In the US, although property prices were elevated on the eve of the crisis, they were no more so than in many developed countries. Four developed countries are in the highest (MPI 3) risk category — **Australia, Canada, Iceland** and **Ireland**, the latter rejoining the category in this report. Of these, Iceland continues to give most cause for concern, with the three main Icelandic banks placed on Rating Watch Negative last week.

Global real credit growth accelerated to a new peak of over 14% in 2007, though it was already slowing in developed countries and is now set to slow sharply to 9%. Growth remained around 30% on average in emerging Europe and helps explain the move of four more countries in the region to MPI 3 — **Kazakhstan, Romania, Slovakia** and **Turkey**, where they join **Azerbaijan** and **Russia**. All have weak (BSI D) banking systems except Slovakia, which at BSI C is relatively strong for an emerging market, and Azerbaijan, which is "very weak" (BSI E), but where credit/GDP is still low and a mitigating factor. Credit growth remains a concern where credit/GDP is already high and still growing rapidly, as in the **Baltics**.

In Gulf Cooperation Council (GCC) countries, evidence of potential stress first surfaced in 2005 with stock market bubbles in several countries. Although subsequent stock market falls did not cause banks significant problems, inflationary pressures have continued to mount and **Qatar** and **UAE** — each now with double-digit inflation and rapid property price appreciation — move into the MPI 3 category. GCC banking systems are generally strong (BSI B), however, on a par with the typical developed-country system. Fitch would therefore expect them to be able to withstand deterioration in the credit environment. **South Africa** is another example of a B3 banking system, along with **Korea**. **Brazil** also moves to MPI 3 this time — the first country in Latin America. **Nigeria** — with the fastest credit growth of any country in 2007 — moves to MPI 2.

Introduction

This report updates the bank systemic risk indicators introduced by Fitch in July 2005. Updates are published semi-annually.

The BSI, which measures a banking system's intrinsic quality or strength, abstracting from potential support, is driven by Fitch's latest Individual Ratings for banks. The MPI is based on an assessment of divergences from trend over a three-year period of three key indicators: the ratio of private-sector credit to GDP; the real effective exchange rate; and real equity prices. Such early warning indicators have helped anticipate some, though not all, previous cases of systemic stress.[1] Real property prices are also monitored but are not formally included in the analysis as there is no clear relationship between the degree of property overvaluation and previous banking crises. However, this is an area where Fitch intends to carry out further research. A modified methodology is applied to countries in Emerging Europe to address the difficulty of assessing credit trends where data have been subject to significant breaks and the region is undergoing rapid structural change. The reference period for MPI assessments in this report is pushed forward a year to 2005-2007.

The focus of this latest report is on changes since the September 2007 report. An extended regional section includes discussion of countries where banking systems are already under stress or where MPIs suggest future potential stress. A complete list of BSI and MPI indicators is provided in the annex, which also includes system-wide non-performing loan (NPL) data and risk-weighted capital ratios, as published in Fitch's annual sovereign reports. (The data underlying the MPI are also available in Fitch's quarterly "*Sovereign Comparator*" and the new Peer Analysis Tool (PAT).)

Banking System Indicator (BSI)

The BSI is a summary measure of intrinsic banking system quality, or strength, derived from Fitch's long-standing and current Individual Ratings for banks. The BSI measures system quality or strength on a scale ranging from 'A' (very high), through 'B' (high), 'C' (adequate), and 'D' (low), to 'E' (very low). The BSI deliberately abstracts from potential support from shareholders or governments (as measured by Fitch's bank Support Ratings) since the objective of the methodology is to highlight systemic weakness which might trigger the need for such support.

The BSI is essentially a rounded version (see table) of the System Average Individual Rating (SAIR), which is an asset-weighted average of Fitch's bank Individual Ratings for a critical mass — at least two-thirds — of banks in any banking system including, where necessary, systemically important unrated banks.

The resulting BSI may be modified where specific weaknesses are present in most banks in a system and Fitch regards the resulting systemic risk as not fully reflected in bank Individual Ratings. However, this has not in practice been necessary as Fitch regards the most important common risk factors as being already incorporated in Individual Ratings.[2] The BSI is therefore derived directly from the SAIR.

Table 1: Relationship of the SAIR to the BSI

SAIR	BSI
A	A
A/B	A
B	B
B/C	B
C	C
C/D	D
D	D
D/E	E
E	E

Source: Fitch

[1] For a description of the case history, see the original criteria report "*Assessing Bank Systemic Risk*", 26 July 2005.

[2] Nine risk categories have been identified, including high borrower indebtedness; common lending and deposit concentrations, including foreign-currency and sovereign exposure; interbank

Results

Fallout from the US subprime crisis explains the fall in the BSI scores of the US and Switzerland to 'B' from 'A'. The only other change is an improvement in Thailand's BSI to 'C' from 'D'.[3]

Table 2: BSI Changes

A	B	C	D	E
	Switzerland (from A) USA (from A)	Thailand (from D)		

Source: Fitch

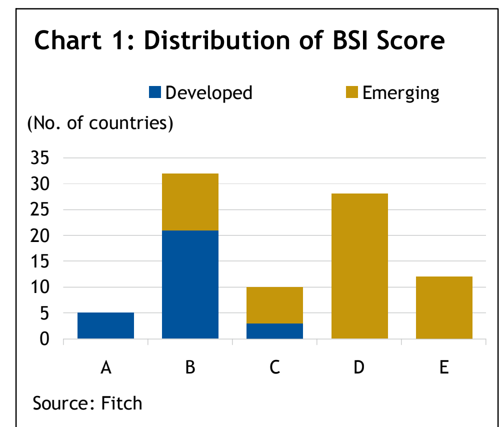
The US has seen Individual Rating downgrades affecting approximately 30 banks and bank groups over the past six months, including some of the biggest banks, notably Citigroup, mortgage banks notably Countrywide, and also securities houses including Merrill Lynch and most recently Bear Stearns. Further Individual downgrades are possible given the continuing stress in the system. However, Fitch regards a fall in the US BSI below 'B' as very unlikely. (The US is the focus of a special section later in this report).

The deterioration in Switzerland's BSI is entirely a reflection of the downgrade of UBS AG's Individual Rating to 'B' from 'A/B' in December following the disclosure of additional write-downs on its US subprime portfolio. 2007 trading losses in US MBS were USD18.9bn, amounting to 46% of Tier 1 capital and 36% of total regulatory capital at mid-2007. However, the net loss was much less, equivalent to just 9.4% of Tier 1 capital, and was subsequently more than offset by capital replenishment from the Government of Singapore Investment Corporation (GIC) and an undisclosed Middle East investor. On 1 April UBS announced additional losses and write-downs on its US real estate positions of approximately USD19bn, the result of which will be an estimated net loss for Q108 of around USD10bn. The scale of this loss, together with still difficult market conditions, makes it a real possibility that the group may not report a full-year profit for the second consecutive year. To compensate for the further write-downs, UBS has arranged a rights issue of approximately CHF15bn (USD12bn) to be underwritten by leading international banks. Assuming successful completion, the Tier 1 capital ratio is expected to be around 10.6%, which would remain strong relative to its peers. UBS AG's Individual Rating remains 'B'.

Other countries that have experienced fallout from the global financial crisis, notably the UK and Germany, have been able to contain its effects on the wider banking system. Changes to bank Individual Ratings have been confined to relatively small players such that BSI scores remain unchanged at 'A' and 'B' respectively.

The distribution of BSI scores across developed and emerging economies remains broadly the same as described in the last report (see chart). After the move of Switzerland and the US to BSI B, only five banking systems — all in developed countries — continue to attract the highest — BSI A — score: Australia, Luxembourg, Netherlands,

Chart 1: Distribution of BSI Score



Source: Fitch

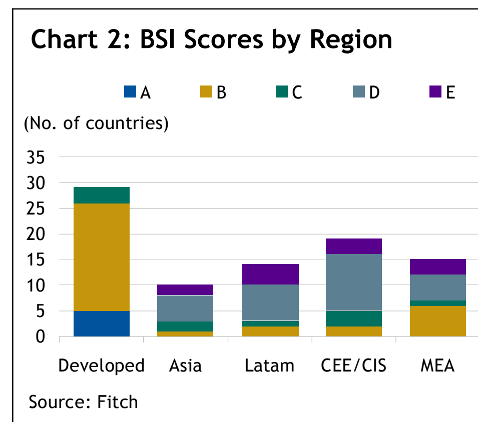
exposures; off-balance-sheet exposure; and weakness of supervision and/or transparency. For details, see the July 2005 criteria report.

[3] The improvement in Thailand stems from the upgrade of TMB Bank's Individual Rating to 'C/D' from 'D' in January 2008.

Spain and the UK. Australia and Spain, like Switzerland and the US before them — are close to the threshold of the BSI B category and could therefore move lower if a sufficient proportion of bank Individual Ratings were to be downgraded. The overwhelming majority of developed-country banking systems — fully 26 out of 29 or 90% — remain either "strong" (BSI B) or "very strong" (BSI A). Only three developed-country systems are BSI C (adequate) — Cyprus, Malta and San Marino — and none appear in the weaker 'D' and 'E' categories.

Almost 70% of emerging-market banking systems, by contrast, are designated either "weak" (BSI D) or "very weak" (BSI E). Virtually half of emerging-market systems are in the 'D' category and a fifth in the 'E' category. Just seven systems attract an "adequate" (BSI C) designation — Brazil, Latvia, Malaysia, Oman, Slovakia, Slovenia and now Thailand — but 11 continue to attract a "strong" (BSI B) designation — on a par with the typical developed-country system: Bahrain, Chile, Czech Republic, Estonia, Korea, Kuwait, Mexico, Qatar, Saudi Arabia, South Africa and UAE. Of these, Mexico, Qatar and the UAE are closest to the 'C' category.

Chart 2: BSI Scores by Region



Source: Fitch

Most emerging-market regions have a preponderance of relatively weak (BSI D) systems, especially Emerging Europe. The exception is the Middle East, where five of the six GCC countries (all except Oman) have strong (BSI B) systems.

Macro-Prudential Indicator (MPI)

The MPI seeks to highlight, in as objective a way as possible, the existence and severity of a set of macroeconomic circumstances that has been shown to anticipate a majority of past episodes of banking system distress and in some cases full-blown systemic crises.[4] The methodology identifies instances of rapid credit growth which bring the ratio of private-sector credit to GDP and the real exchange rate or real equity or property prices above long-run trend values by certain trigger amounts.[5]

High vulnerability to potential systemic stress is designated MPI 3 and is defined as:

- a ratio of private-sector credit to GDP more than 5 percentage points above trend *and*
- *either* real equity or property prices more than 40% above trend
- *or* a real effective exchange rate more than 9% above trend

Moderate vulnerability (MPI 2) occurs when the ratio of credit to GDP is either above or close to its trigger value and other indicators are close to or above their trigger values respectively, as summarised in Table 3. An MPI score of '1' denotes low potential vulnerability.

[4] The definition of a systemic banking crisis is a severe one, requiring much or all of banking system capital to be exhausted, see Caprio and Klingebiel, '*Episodes of Systemic and Borderline Financial Crises*', World Bank, 2003

[5] The primary data source is the IMF's *International Financial Statistics*. Private-sector credit is a broad definition, including bank lending and other debt instruments. The real effective exchange rate is based on relative consumer prices. An alternative data source for equity prices is Bloomberg. House price data is from a variety of national sources.

Table 3: Guidelines for Assigning MPI Scores

Exchange rate or asset price trigger	On	Close[a]	Off
Credit/GDP versus trend			
>5 Percentage points above	3	2	2
>3 Percentage points above	2	2	1
<3 Percentage points above	1	1	1

[a] Exchange rate and asset price triggers respectively more than 6% and 30% above trend
Source: Fitch

The assessment is based on three years of annual data, with a trigger in *any* of the three years being relevant to a country's MPI score. The MPI aims to highlight potential systemic stress which could materialise up to three years after an early warning is first indicated. The three-year horizon is designed to be long enough to take account of the time it can take for banking system stress to emerge but not so long as to reduce the indicator's analytical usefulness.[6]

The reference period is pushed forward a year in this report to 2005-2007. It is important to bear in mind that all the data on which the exercise is based are subject to sometimes major revision, are volatile and are difficult to forecast. Also, the trends against which developments are assessed are sensitive to the development of actual data and will therefore change over time.

Results

New MPI 3 countries include four of the five anticipated in the September 2007 report — Brazil, Kazakhstan, Romania and Turkey[7] — and four countries not anticipated six months ago: Ireland (previously MPI 3 but where data revisions caused it to move back to MPI 2 a year ago), Qatar, Slovakia and UAE. The addition of eight new countries doubles the total number of countries in the MPI 3 category to 16. Five countries move into the MPI 2 category. As in the September report, no MPI score improves.

Table 4: Changes to MPI Scores

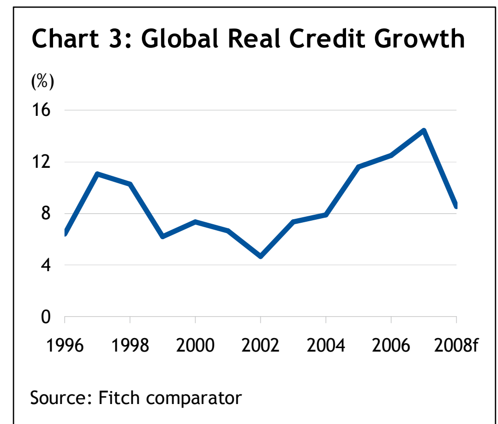
Deterioration	Improvement
New MPI 3	**New MPI 2**
Brazil	None
Ireland	
Kazakhstan	
Qatar	
Romania	
Slovakia	
Turkey	
UAE	
New MPI 2	**New MPI 1**
Chile	None
Cyprus	
Morocco	
Nigeria	
Poland	

Source: Fitch

[6] The equity price trigger works with an even longer lag, as equities have been a leading indicator of wider asset price trends, notably property, as well as developments in the real economy. A trigger in year *t* would not affect the MPI score for a further two years. Thus, banking system problems might materialise up to five years after an equity price peak in time *t*.

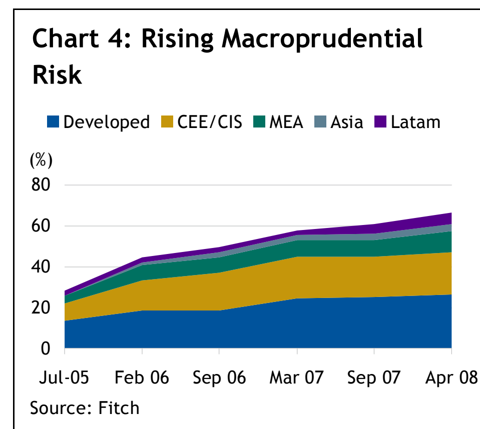
[7] The fifth was Armenia, which remains MPI 2 but is quite close to triggering MPI 3.

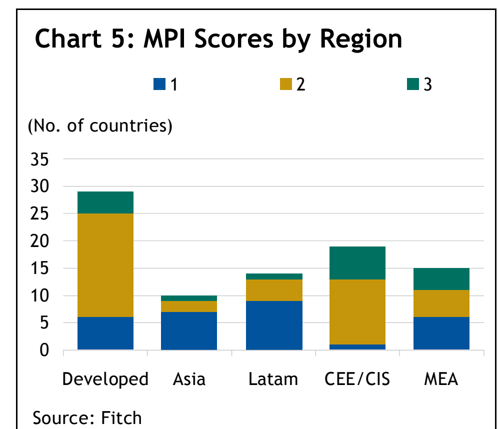
The move of more countries into higher MPI categories partly reflects continued rapid global credit growth in 2007. Median global real credit growth rose for the fifth year in a row to 14% — well above its previous peak on the eve of the 1997 Asian crisis. However, a sharp slowdown is now underway, with 2008 credit growth currently forecast by Fitch at only 9%.



The pattern of credit growth has differed between regions. In particular, the continued acceleration in credit growth in 2007 was a largely emerging-country phenomenon. Developed-country credit growth started to slow last year — particularly in countries where property markets have gone into reverse, in the US, Spain, Ireland and Iceland. By contrast, developing countries saw real credit growth accelerate, especially in Latin America, Asia and the GCC. A broad-based slowdown in credit growth is now underway.

As the chart shows, the proportion of countries in the higher MPI categories has increased consistently since the inception of this report in 2005 and is now around two-thirds. Virtually half of all countries are in the MPI 2 category and a further 18% in the MPI 3 category.





The risk profile of developed countries is slightly higher than that of emerging markets: 19 out of 29 developed countries or 66% fall into the MPI 2 category compared with only 40% of emerging markets. Emerging markets have a greater proportion of MPI 3 countries — 21% compared with 14% for developed countries. But taking these two higher-risk categories together accounts for 80% of developed countries but only 60% of emerging markets.

The US remains in the MPI 2 category, notwithstanding ongoing financial stress. This is discussed in detail in the next section. Most MPI 3 countries, including all four developed countries — Australia, Canada, Iceland and Ireland — are so classified because of the combination of above-trend credit/GDP and real exchange rate strength, which can reflect speculative short-term flows. The weakness of the US dollar is also putting upward pressure on real exchange rates in some countries. However, despite the strength of the euro, only Ireland in the euro area has seen real exchange rate appreciation of more than the critical 9% above trend. This is due to its relatively high inflation rate (in euro-area terms) and its higher proportion of non-euro-area trading partners, most obviously the UK and US.

Table 5: MPI 3 Countries

Combination of credit and real exchange rate trigger

	First triggered by data in:
Australia	2006
Azerbaijan	2006
Brazil	2007
Canada	2006
Iceland	2005
Ireland	2007
Kazakhstan	2007
Korea	2006
Romania	2007
Russia	2006
Slovakia	2007
South Africa	(and property prices) 2006[a]
Turkey	2007

Combination of credit and real equity price trigger

	First triggered by data in:
Iran	2006
Qatar	2007
UAE	2007

[a] South Africa was originally designated MPI 3 on the basis of 2004 data but this has subsequently been revised
Source: Fitch

Three emerging markets — Iran and now Qatar and the UAE — trigger MPI 3 because of the combination of real credit growth and past stock market developments. The time lag between a stock market peak and subsequent banking system stress has generally been longer than for the real exchange rate as equity prices are often a leading indicator of wider asset price appreciation — notably property. Iran's stock market peaked in 2004 and those of UAE and Qatar in 2005. Despite the subsequent correction, rapid credit growth has continued, with the combination now such as to trigger MPI 3. Inflation has risen to double digits in all three countries and property prices remain buoyant. Saudi Arabia shows a similar pattern of earlier stock market boom, accelerating credit growth and rising inflation and property prices, but credit/GDP has not risen as strongly and it remains MPI 2, as do Bahrain and Kuwait.

The US Financial Crisis and the Bank Systemic Risk Model

Downgrades of US banks over the past six months have reduced the US BSI to 'B' (strong) from 'A' (very strong). However, the US MPI remains '2', indicating only "moderate" risk of a systemic banking crisis, defined in the literature and in Fitch's Bank Systemic Risk model as one that essentially de-capitalises the banking system. Write-downs by US banks and financial institutions are estimated at virtually USD100bn so far, equivalent to less than 10% of total system Tier 1 capital (including investment banks) at the start of the crisis. Although this figure may increase, Fitch does not regard the likely ultimate hit to the US banking system as constituting a conventionally defined full-blown systemic banking crisis, such as the ones used to calibrate Fitch's MPI.

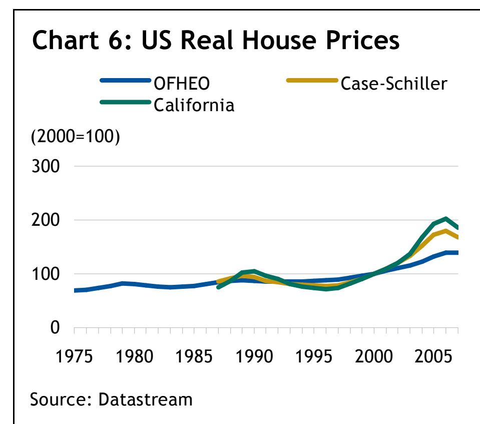
Since the first downgrades of major banks last October, more than 30 banks or financial groups have suffered Individual Rating downgrades. Although further downgrades are quite likely in the current environment, the US BSI is very unlikely to go lower than 'B', where it still matches most developed-country systems.

The MPI has remained in the "moderate" risk category rather than moving into the highest risk (MPI 3) category because the indicators of market bubbles used in this exercise continued to fall short of critical levels in the three years up to 2007. The US would, in fact, have scored MPI 3 in 2001, due to the coincidence that year of a previous credit bubble and a peak in the US real exchange rate. This would have indicated the possibility of a systemic banking crisis any time in the period up to 2004, but this period had expired by the time Fitch began publishing its Bank

Systemic Risk report in 2005. Subsequent credit developments caused Fitch to raise the US MPI to '2' in February 2006, but other indicators have not suggested a move into the MPI 3 category.

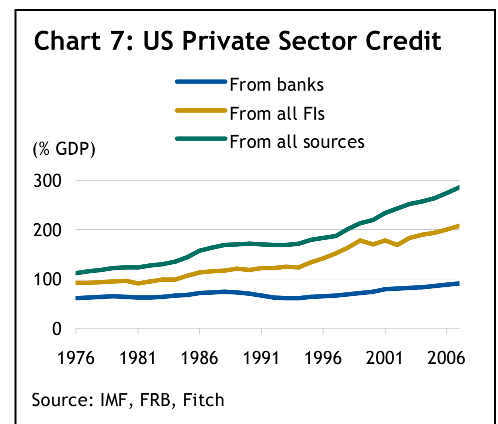
Of these additional indicators, the real effective exchange rate has been declining since 2001, and although real equity prices reached a new peak in 2007, this was only 3% above their 2000 peak and nowhere near the 40% above trend required to indicate a bubble. The indicator that has given most recent cause for concern is real house prices, which have certainly reached new peaks but have not in fact exceeded previous divergences from trend in the US. The US experience has also not been exceptional in a global context. Fitch uses the OFHEO[8] aggregate house price index as this has the widest geographical coverage and is available for the longest period (from 1975). However, it excludes subprime and jumbo mortgages. It shows real house prices to have reached a recent peak of almost 11% above trend in 2006 (similar to the deviation in 1979). However, this is amongst the lowest divergences from trend for the 30 countries for which Fitch has data, where the median peak deviation in the recent past is 14% (see table overleaf).[9]

Chart 6: US Real House Prices



Source: Datastream

Chart 7: US Private Sector Credit



Source: IMF, FRB, Fitch

Fitch reported in its September report the conclusion of an analysis of the contribution house prices might make to its early warning model of banking crises. Based on the behaviour of real house prices in the run-up to previous banking crises worldwide, "the case history shows a wide variation, with the degree of overvaluation in the year before a crisis in the low teens in Spain (1977) and Sweden (1991) but a much higher 25%-30% in Finland (1991), Japan (1991), and Norway (1987)". This makes it difficult to select a trigger value which maximises the success rate of predicting past crises while minimising false alarms, and for this reason Fitch has not formally introduced house prices into its model. However, this is an area which warrants further research.

Another issue that deserves highlighting is the increased role played by credit extended to the financial sector by non-bank financial intermediaries. For most countries included in this report, banks are the main source of credit creation. Consequently, the series Fitch tracks for most countries is bank credit to the private sector, including to the rest of the financial sector where material. In the US, however, credit extended by non-bank financial institutions has increased in importance in recent years, to the extent that it now exceeds credit extended by banks (see chart). As a result, for the US Fitch has been using this broader measure of credit. However, the choice of narrow or broad measures of credit makes no difference to the US MPI score: both are consistent with the MPI 2 designation.

[8] Office of Federal Housing Enterprise Oversight.

[9] The Case-Schiller index shows a peak deviation in 2006 nearer the 20%+ seen recently in Belgium, Denmark, France, Sweden and the UK, but that is still less than the historical US peak for that index of 27% in 1989. Some regional house price indices show bigger deviations from trend.

Table 6: Peak Divergence of Lending and House Prices from Trend[a]

	Lending (% GDP)	Real house prices (%)	MPI
Iceland	100 (07)	8 (05)	3
Denmark	32 (07)	22 (06)	2
Ireland	44 (07)	15 (06)	3
Spain	40 (07)	13 (06)	2
UK	21 (07)	19 (07)	2
Sweden	17 (07)	22 (07)	2
France	12 (07)	22 (07)	2
Finland	14 (07)	16 (07)	2
Belgium	10 (07)	20 (06)	2
New Zealand	13 (07)	15 (06)	2
Italy	11 (07)	14 (06)	2
Netherlands	22 (07)	6 (07)	2
Canada	9 (06)	13 (07)	3
Australia	7 (07)	13 (03)	3
Norway	11 (07)	8 (07)	2
Switzerland	10 (07)	7 (07)	2
USA	6 (07)	11 (06)	2

[a] Countries ranked by descending geometric average of lending and real house price divergence; peak year in brackets
Source: Fitch

Regional Commentary

The US (B2)

The summer of 2007 brought an end to what was probably one of the most prolonged and deep bull markets for banks in many decades. For the better part of the past 15 years, the industry reported year-over-year profit improvement, setting new records in most years. However, following a period of spectacular growth and rapid escalation in home prices, problems began to emerge in the area of subprime residential mortgages in late 2006. The pace of growth and spread of subprime mortgages in the early 2000s was only exceeded by the pace at which investor appetite subsequently dried up and market sentiment for securities backed by these loans evaporated.

The impact on banks came from many directions. The asset-backed commercial paper conduits (ABCP) and structured investment vehicles (SIV) sponsored by banks were often significant investors in subprime-related assets. Banks themselves often had significant mortgage origination platforms that had been expanded to accommodate the growth in new mortgages. When investor appetite for mortgage-backed products dried up, there remained a significant volume of originations in process which originators were left holding. Mortgage servicing operations were saddled with a larger portfolio of problem loans that needed attention, putting pressure on costs. Investment banking divisions of commercial banks and independent investment banks were also left with an inventory of structured products.

Despite the scale of the problem, banking system stress has been significant but contained. Fitch does not believe the US is experiencing a fully fledged systemic banking crisis. The most significant risk that has emerged is liquidity risk. The lack of trading in many mortgage-related assets has made it difficult for their holders to assess true market value. Valuations have slumped while the market strives to find a level where trading can resume. The distressed valuations must be reflected in banks' reported financial statements through mark-to-market accounting rules. This has been the source of many of the headline losses reported by the large banks. But very little of the loss has actually been realised to date, and current valuations may underestimate ultimate value. Even so, write-downs to date are only a small fraction (Fitch estimates less than 10%) of aggregate system capital.

Another important aspect of the current crisis is its focus on the large banks and financial groups. While the rest of the US banking system has not been immune,

the pain has been much more manageable. Thus, the decline in the US BSI to 'B' has been driven by downgrades of Individual Ratings amongst the largest US banks. The magnitude of the downgrades has been less than one might expect given the magnitude of the loss valuation to date, but the affected institutions have been able to raise significant levels of new capital surprisingly quickly, given the market's concern with their immediate prospects. The largest US banks have raised in excess of USD60bn to date, often in amounts that represent 10% or more of a firm's capital base. Fitch expects that ratings pressure will remain for the remainder of 2008, but a further decline in the BSI is not envisaged. Multi-notch rating declines are expected to remain relatively rare events.

The stress experienced by banks has not been wholly confined to mortgages. Nor has the stress in mortgages been restricted to liquidity and valuation issues. The concern in mortgages, to the extent that it extends to the broader mortgage universe, is rooted in expectations of increased delinquencies and defaults, the early signs of which are just being seen. The emerging stress in other consumer loans such as home equity lines, credit cards and auto loans are also just beginning to emerge. Troubling trends are also apparent in the leveraged loan market, which has exhibited similar strain from illiquidity and market devaluations. The Federal Reserve has been highly responsive to the problems in the banking industry. As well as a significant cut in interest rates it has implemented many programmes aimed at providing the market and specific institutions with liquidity to help ease the strain presented by banks having difficulty adjusting to a market that is not providing liquidity for assets that were readily tradable just a few months ago.

Fitch expects the market to remain challenging in coming months. In a market with more than 7,500 depository institutions, there will be winners and losers but overall, the system has the capacity to absorb the expected challenges. Thus, from a systemic risk perspective, while a quick recovery in profit momentum is not likely, the combination of deep-pocketed large players and a regulator seemingly willing to use the many resources at its disposal to prevent the market from falling into deeper paralysis should result in this crisis being less painful in hindsight than it feels like for many players today.

Other Developed Countries

The UK (A2)

A number of pressure points appear to be building for UK banks. While strong performance was evident in 2007 and earnings appear fairly resilient, largely driven by client businesses, 2008 is likely to be a weaker year for several reasons. Given the write-downs we have seen in large international banks in Q108, it seems likely that those banks with exposure to the troubled US real estate sector will require additional write-downs in H108. Barclays Bank (approaching GBP15bn of ABS CDO Super Senior and other US subprime and Alt-A net exposures still outstanding at end-2007) and The Royal Bank of Scotland Group (including ABN Amro) (GBP7.4bn reported as at end-2007) appear most exposed. HSBC is the only UK banking group with significant direct exposure to US subprime borrowers (through its HSBC Finance subsidiary). Despite a very substantial increase in arrears and credit costs in 2007, HSBC still reported very strong profitability for the year as other regions (notably Asia) compensated for ongoing weakness in parts of its US business. Fitch expects HSBC's profitability to remain satisfactory, even though HSBC Finance's problems are likely to continue in the medium term.

In the UK there are clear signs of a slowdown in the housing sector and at best this seems likely to result in weaker revenues for the banks, and moderately higher arrears and credit costs as higher funding costs are passed on to borrowers, some of whom are already fairly stretched. At present Fitch expects this to be manageable and is not anticipating a housing problem of a similar scale to that in the early 1990s, given the structural supply/demand elements that underpin UK house prices.

Profit growth in recent years has been driven in some cases by strongly performing wholesale and investment banking businesses where the earnings outlook looks less favourable over the near term. However, a focus on client-relationships and a low appetite for proprietary trading should offer some protection.

Since the Northern Rock failure in H207, funding has been tighter for some mortgage lenders, particularly those with funding profiles more reliant on secured or unsecured wholesale funding. The sector appears to be managing these challenges, but access to funding is both more restricted and more expensive. The major UK banks appear comfortably placed to manage a prolonged liquidity squeeze and are likely to be beneficiaries of any "flight to quality".

With the consistent exception of HSBC, the major UK banking groups have not been amongst the best capitalised, and therefore have less flexibility than many international peers to absorb the impact of a systemic deleveraging which could result in additional assets coming back onto balance sheets. Historically strong profitability has counterbalanced this in the past but now seems likely to come under some pressure.

Just over six months have passed since problems emerged at Northern Rock, which is now in temporary public ownership. The government has guaranteed the vast bulk of its liabilities and directly provided c.GBP25bn of funding. New senior management has been installed and published its business plan. For 2007 the bank reported a loss, stemming largely from valuation write-downs on treasury and other assets, and credit impairments on mortgages, unsecured loans and investment assets. After reporting three further years of losses, it expects to break even in 2011 and to generate profits thereafter. Management plans to shrink the bank's balance sheet to c.GBP50bn by end-2011, compared with GBP107bn at end-2007, repay all government funding by end-2010 and dispense with the government guarantee by end-2011. The ultimate objective is to return the bank to the private sector. Fitch has not yet seen the plans in detail but acknowledges the demanding nature of the goals. The more hesitant prospects for economic growth, falls in asset values, constraints on funding and, for the next year or two, probable moderate deterioration in credit quality will add to the difficulties in returning the bank to profitability.

Systemic Risk Matrix: Developed Countries

	MPI		
BSI	1	2	3
A		Luxembourg Netherlands Spain UK	Australia
B	Austria Bermuda Germany Hong Kong Japan Singapore	Belgium Denmark Finland France Greece Italy New Zealand Norway Portugal Sweden Switzerland USA	Canada Iceland Ireland
C		Cyprus Malta San Marino	
D			
E			

Source: Fitch

Iceland (B3)

Iceland was raised to MPI 3 in February 2006. The crisis weathered by the Icelandic banks shortly thereafter was country specific and reflected concern over macroeconomic imbalances as well as weaknesses inherent in a small, concentrated and rapidly growing banking sector. What this crisis did do, however, was trigger a response from the banking sector and regulatory bodies that resulted in a drive to diversify funding bases and maturities as well as improve transparency across the sector. An important consequence was an effort by the banks to diversify funding maturities, pre-fund borrowing needs and maintain a stronger liquidity buffer in case of need, as well as a recognition that their rapid expansion rates were not sustainable. These initiatives have left the sector better placed than it would otherwise have been to weather the current market disruption. As a result of manageable or non-existent exposure to US structured credit products, the direct impact on Icelandic banks from the US subprime crisis has been very limited compared with many other European and US financial institutions. However, the turmoil and nervousness that have gripped the financial markets over the past six months has been felt heavily by a sector that remains reliant in general on wholesale funding, and weakening investor sentiment is reflected in CDS prices that have widened to unprecedented levels.

What the banks now face is a situation where longer-term funding is scarce and expensive — not only for Icelandic banks but for the market generally. On a group basis, the banking sector has a significant volume of maturities requiring refinancing in 2009, and this poses a potential problem for the banks should market access remain difficult for a prolonged period. The banks have successfully tapped the private placement market, and liquidity buffers can absorb some of the refinancing pressure. The banks also have some flexibility to manage their asset base, and it is likely that asset growth will be much more moderate than in recent years. Even if markets return to some semblance of normality in the coming months a natural hierarchy suggests that higher-rated issuers will regain quicker market access with the result that, at the very least, funding costs are likely to be significantly higher for Icelandic issuers.

The sector has reported sound profitability for 2007 and capital ratios remain good and are regularly stress-tested by the local regulator. However, currency and interest rate volatility have resurfaced as a potential concern for the sovereign and the banking sector, increasing the likelihood of a hard landing for the economy and bringing with it potential negative pressure on earnings and asset quality for the banks. The underlying earnings outlook for the sector looks weaker for 2008 given higher funding costs, constraints on asset growth and the likelihood of macroeconomic deterioration.

Ireland (B3)

Ireland has been hovering near the MPI 3 category for some time. Credit/GDP has been above the trigger level since 2005, sufficient for MPI 2, but only last year did another indicator, specifically the REER, appreciate above the relevant trigger point, supporting a move into the higher risk category. A factor in recent REER appreciation is the importance of the UK and US export markets, and therefore the higher weight of depreciating currencies in the Irish basket. House prices were at their most elevated level — 15% above trend — in 2006 and though not formally incorporated in Fitch’s model are clearly a potential source of pressure, with prices down 8% in the year to January 2008. GDP growth is clearly slowing — Fitch expects it to more than halve this year from 5.3% to 2.7% — and unemployment will rise modestly. The environment for banks is therefore becoming more challenging, with bad debts likely to rise after many years of unsustainably good asset quality. However, in view of the Irish banks sound levels of profitability, capital and impaired loans, Fitch considers the current challenges to be manageable.

Spain (A2)

Despite its exposure to a declining property sector there have been no changes to Spain's systemic risk scores. Key fundamentals that have prevented any large scale impact from the US subprime crisis are banks' strong retail franchises and retail focus which has supported their customer deposit bases; good earnings and cost efficiency; healthy asset quality indicators with a large component of generic loan impairment reserves required by the Bank of Spain; and sound capital levels. Fitch also takes comfort from the sound regulatory framework imposed by the Bank of Spain. In particular, Spain's major banks continue to post strong performance indicators and good solvency levels and they are well-placed to face a complex operating environment. Their 2007 results were not affected by the spill-over effects of the US subprime crisis, with minimal or no exposure to complex structured products such as SIVs or ABCP conduits and hardly any direct exposure to the US subprime market. While Spanish banks have increasingly accessed wholesale markets for funding, the main funding source continues to be customer deposits with wholesale funding, in most cases, well-diversified by maturity and instrument.

Fitch does not expect any large-scale impact on Spanish banks' ratings. However, negative rating actions cannot be ruled out for some weaker and more exposed institutions. Should the slowdown in the housing sector become more severe, Fitch expects that there could be selective ratings pressure on certain smaller institutions that have had above-average real estate loan growth in recent years, and/or have high risk concentrations, particularly in individual names, combined with tight capital levels and weaker funding.

Australia (A3)

Banks remain in good shape, with strong profitability and excellent asset quality, and appear well placed to handle the current market turmoil.[10] Holdings of high-quality liquid assets have increased substantially since last August. Exposure to US subprime would appear minimal. The biggest impact so far has been substantially higher wholesale funding costs and if the global credit squeeze is prolonged, lending growth may moderate.

Canada (B3)

Canadian banks have weathered recent turmoil reasonably well, with some encountering more challenges than others but all well positioned to manage their individual difficulties. Following dislocations in the global asset backed commercial paper (ABCP) market last summer, the Canadian ABCP market also froze, although the majority of the market, which was bank-sponsored, quickly adopted global-style liquidity back-up facilities and returned to more normal operations. However, the relatively small, non-bank-sponsored ABCP market had meaningful exposure to securities that became illiquid. A restructuring plan, dubbed the Montreal Accord, was initiated and is ongoing with current plans calling for the ABCP to be termed out over the life of the underlying securities. Aside from this, the banks have benefited from a very strong Canadian economy during the past few years. The economy is now slowing, but with unemployment expected to rise only slightly. The strong CAD presents headwinds for certain industries, particularly tourism, heavily reliant on the US.

Scandinavia

Scandinavian countries have all had credit/GDP at an elevated level for some time and the housing market has shown significant divergence above trend in Denmark, Sweden and Finland. However, this has not reached levels that would suggest a move into the highest MPI 3 category for any country.

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[10] "Australian Banks – Semi-Annual Review and Outlook", 5 February 2008.

Emerging Europe

Systemic Risk Matrix: Emerging Europe

BSI	MPI 1	MPI 2	MPI 3
A			
B		Czech Republic Estonia	
C		Latvia Slovenia	Slovakia
D	Hungary	Bulgaria Croatia Georgia Lithuania Poland Ukraine	Kazakhstan Romania Russia Turkey
E		Armenia Belarus	Azerbaijan

Source: Fitch

As explained in previous reports, Fitch uses a modified methodology to assess macro-prudential risk in Emerging Europe. Because of the difficulty of assessing trend credit levels where data series are relatively short or display major discontinuities and, more fundamentally, major structural change is taking place, Fitch has shifted the focus of its analysis to real credit growth rather than deviations of credit/GDP from trend. Specifically, real credit growth above a "speed limit" of 15%[11] per annum over a two-year period is sufficient to attract an MPI 2 score, with an additional trigger based on the behaviour of either the real exchange rate or stock markets needed for an MPI 3 score.[12]

Table 7: Emerging Europe Credit Growth

	Annual real credit growth (% p.a.)			Change in credit/GDP	Credit/GDP	
	2006	2007	2006-7 average	2005-7 (%)	(%, 2007)	MPI score
Azerbaijan	69.8	53.2	61.3	5.6	15.1	3
Georgia	44.4	62.2	53.1	13.4	28.1	2
Kazakhstan	69.2	36.7	52.1	22.3	59.5	3
Romania	46.6	52.6	49.6	15.4	35.4	3
Armenia	26.6	72.5	47.7	5.5	13.3	2
Ukraine	49.4	39.2	44.2	26.1	58.3	2
Lithuania	35.3	32.3	33.8	18.6	59.9	2
Russia	27.8	38.5	33.0	13.7	39.5	3
Latvia	45.2	21.7	32.9	41.5	101.8	2
Estonia	35.9	26.5	31.1	26.4	94.9	2
Belarus	37.5	20.6	28.8	8.2	24.4	2
Bulgaria	15.2	43.7	28.7	20.6	64.2	2
Poland	22.7	28.4	25.5	11.0	39.9	2
Slovenia	23.3	24.6	23.9	23.0	82.1	2
Turkey	29.7	14.9	22.1	7.8	29.7	3
Czech Republic	16.9	22.9	19.9	13.3	50.2	2
Slovakia	17.8	19.4	18.6	7.0	42.1	3
Croatia	18.8	11.9	15.3	12.1	72.7	2
Hungary	9.5	3.1	6.3	9.4	60.6	1
Median	**27.2**	**30.4**	**30.0**	**13.1**	**47.8**	**n.a.**

Source: Fitch estimates

[11] Analysis of previous banking crises reveals this to be close to the median pace of real credit growth in the two years prior to all crises in the past 30 years.

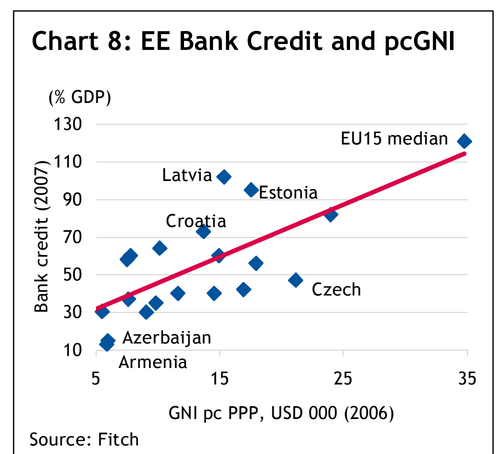
[12] The approach is similar to the one adopted by the EBRD in its 2005 Transition Report.

Regional real credit growth continued at around 30% in 2007 — much the same as since 2005 and double the global average, despite a slowdown in some countries. Average real credit growth still exceeds the 15% trigger value for 2006-2007 everywhere except Hungary. Hungary is therefore the only country in the region to attract a score of MPI 1; all other countries are at least MPI 2 and six are now MPI 3.

Russia and Azerbaijan have been MPI 3 for some time. These two and the four new MPI 3 countries — Kazakhstan, Romania, Slovakia and Turkey[13] — trigger the higher score because of the strength of their real exchange rates. The new MPI 3s were anticipated in the September report, based on forecasts for 2007. However, as explained in previous reports, Fitch has preferred not to base MPI scores on forecasts since the indicators used are quite difficult to forecast. The formal move into the higher MPI category had therefore to await this report, which includes 2007 actuals for the first time. In the case of the four new MPI 3 countries, credit has been growing for some time at a pace which would have supported an MPI 3 score; it is the strength of the real exchange rate in 2007 that has finally pushed them into the higher risk category, notwithstanding recent currency weakness in Turkey and Romania. In Slovakia and Turkey, credit growth is towards the lower end of the range seen in Emerging Europe and less of a cause for concern than in the other MPI 3 countries in the region.

Countries with higher credit growth than these trigger MPI 2 rather than MPI 3 because neither the real exchange rate nor stock market display evidence of excessive appreciation. Of these MPI 2 countries, only Armenia comes close to MPI 3, with high and accelerating credit growth and strong real exchange rate appreciation. (In Armenia, Azerbaijan, Belarus and Georgia, stock market series are not readily available and their MPI scores are therefore not based on as full information as for other countries. Property price data are also sparse. This could result in MPI scores in these countries being biased downward.)

Chart 8: EE Bank Credit and pcGNI



Source: Fitch

The deepening of financial intermediation throughout Emerging Europe is part of the process of countries' financial structures and income levels converging with Western European levels. Unfortunately, economic theory does not provide clear answers about the appropriate "equilibrium" level (i.e. in line with fundamentals) of credit/GDP or a safe speed to converge on it. The general conclusion is that credit/GDP ratios are still generally below equilibrium, with the exception of those countries with the highest ratios (Estonia and Latvia, at near 100%) and approaching it in Croatia with a ratio of over 70%. The 15% speed limit for the MPI 2 designation is certainly conservative given the pace of credit growth seen in the region in recent years. Rapid credit growth is clearly of more concern where credit/GDP is already high, especially in Latvia and the other Baltics, but also in Ukraine and Kazakhstan, notwithstanding the more recent slowdown there. Rapid credit growth is less of a concern where credit/GDP is relatively low, as in Azerbaijan and Armenia.

Countries can now be divided into three groups according to whether credit growth is slowing, stabilising or still accelerating. Countries where credit growth is clearly slowing are Belarus, Croatia, Estonia, Kazakhstan, Latvia and Turkey, though in

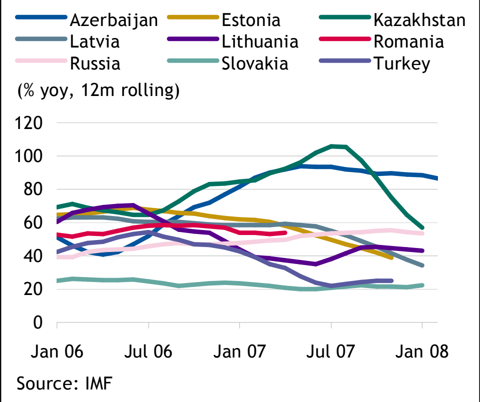
[13] Turkey is the only country in this section to which the conventional methodology is applied.

Kazakhstan and Belarus nominal credit growth is still around 50% y-o-y. Credit growth is stabilising in Azerbaijan, Hungary, Lithuania, Romania, Russia, Slovakia and Ukraine, though apart from Hungary and Slovakia credit growth remains rapid. The third group of countries, where credit growth is still accelerating, includes Armenia, Bulgaria, Czech Republic, Georgia, Poland and Slovenia, with growth particularly rapid in Armenia, Georgia and Bulgaria.

The beginning of a slowdown in credit growth, especially in some countries with relatively high credit/GDP, has begun to bring a more plausible negative correlation between the level and growth rate of credit across the region, as shown in chart 10.

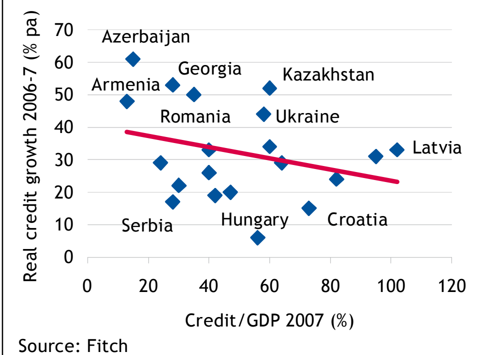
Even where fundamentals suggest there is room for credit to grow rapidly, however, excessive optimism and banks' aggressive pursuit of market share in the context of low interest rates, open capital accounts and, in many countries, pegged exchange rates may give rise to over-lending or poor-quality lending and subsequent problems in banking sectors, particularly in the event of negative shocks. These were amongst the concerns leading Fitch to take negative rating actions in a number of countries in the region earlier this year.

Chart 9: Credit Growth in MPI3s and Baltics



Source: IMF

Chart 10: Emerging Europe Credit Level vs Credit Growth



Source: Fitch

Of the existing and new MPI 3 countries, Slovakia is the only with a relatively strong banking system in emerging-market terms, scored BSI C. At the other extreme, Azerbaijan has one of the weakest systems in the region, at BSI E, though in this case the low level of credit/GDP is a mitigating factor. The other four MPI 3 countries — Kazakhstan, Romania, Russia and Turkey — are all BSI D systems.

BSI D scores are typical of emerging markets, reflecting banking systems that are relatively small and undeveloped, with high risk concentrations and greater exposure to potentially more volatile operating environments. Most banking systems in the region have become increasingly foreign owned, primarily by strong banks. This has benefits in terms of support, access to improved management, new products and systems, access to capital etc. However, the high price investors have been willing to pay has been based on a rapid-growth business model. This process has risked becoming unsustainable, with recent entrants having to pay even higher multiples, necessitating even more aggressive growth. While such growth is often from a low base, it is taking place in untested markets, some of it in hard currency, and in some cases funded internationally (often by the bank's parent if foreign owned) and leading to tighter capital ratios. These risks have tended to outweigh the benefits of foreign ownership and as a result there has not been a significant improvement in BSIs in the region to date. Where foreign ownership is limited, rapid growth has still been a feature, with a sizeable proportion funded internationally (e.g. Kazakhstan). Risks relating to this funding reliance are currently being highlighted, with the pressures leading to a rapid slowdown in credit growth, raising asset quality concerns as the economy slows.

Kazakhstan's transition to MPI 3 comes as credit growth is slowing sharply from the triple-digit rates of summer 2007, precipitated by a severe tightening in Kazakh banks' access to international funding. Nevertheless, credit growth in 2007 as a whole remained above the relevant trigger level and combined with real exchange rate appreciation to move Kazakhstan into the higher risk category. The financial system faces a challenging period as loans extended during the period of rapid growth, when credit standards may well have eased, season in a difficult macroeconomic environment of slowing growth and a steep rise in inflation, which has boosted the REER. The KZT has been stable despite the bank external funding shock, causing the REER to appreciate, sustained by the authorities' decision to supply FX liquidity to the economy and allow reserves to fall, a decision motivated partly by concerns over the impact on the heavily dollarised financial system of a fall in the KZT.

Credit growth in **Romania** has also exceeded the reference "speed limit" for some time and the move to MPI 3 in 2007 was also precipitated by currency appreciation in the first half of 2007 and, when that was more than reversed in the second half of the year, rising inflation. Volatility of the nominal and real exchange rate, and the strength of pass through to inflation, is a risk to the stability of Romania's economy and financial system, particularly as 55% of loans are FX-denominated.

Rapid lending growth in **Russia** remains a concern, although it is mitigated by the still moderate level of penetration and currently favourable credit environment. The growth is likely to slow in 2008 due to the reduced availability of global and domestic capital market funding. The funding squeeze has also resulted in a tighter liquidity environment and higher interbank rates, although the Central Bank of Russia has taken a number of measures to support sector liquidity. Asset quality has been sound in recent years, supported by the buoyant economy, but impairment is increasing in unsecured retail portfolios, albeit mitigated by still high lending rates.

In **Azerbaijan**, extremely rapid credit growth is a major concern, making it difficult to maintain credit underwriting standards and increasing operational risks. However, this is mitigated by the banking sector's very small size (end-2007 credit/GDP was just 15%), and a generally favourable credit environment on the back of the buoyant economy, resulting in historically low loan impairment levels to date.

Middle East and Africa

Systemic Risk Matrix: Middle East/Africa

	MPI		
BSI	1	2	3
A			
B		Bahrain Kuwait Saudi Arabia	Qatar South Africa UAE
C	Oman		
D	Benin Israel Lebanon	Morocco Nigeria	
E	Egypt Tunisia		Iran

Source:

South Africa has been MPI 3 since this report was first published in 2005. Since then, monetary policy has been tightened in response to rising inflationary pressures and rapid credit growth. The latter has also been a factor in the widening current account deficit, which has increased South Africa's vulnerability to rand weakness, particularly given the deterioration in global financial conditions. Inflation remains above the South African Reserve Bank's target range and interest rates may

increase further. All this makes for a continuing challenging environment for banks. Credit growth has fallen slightly from its end-2006 peak but at over 20% remains rapid. Consumer spending and retail credit growth are expected to slow further, however. Property price increases have moderated. Fitch expects non-performing loans to increase to more normal levels, of up to 3%. However, the banking system remains strong (BSI B), with overall levels of profitability likely to remain resilient as a consequence of higher levels of corporate activity as the government continues to roll-out its infrastructure development programme.

Elsewhere in Africa, **Nigeria** moves to MPI 2 due to a virtual doubling in the stock of lending to the private sector in 2007, which took credit/GDP from 14% to 25% of GDP — amongst the largest increases globally. Although credit/GDP remains relatively low, and an increase can be expected given the growth in the economy and the structural reforms taking place, the pace of growth warrants close monitoring. A buoyant stock market and pressure for real exchange rate appreciation could eventually push Nigeria into the MPI 3 category.

Banking consolidation has been one of Nigeria's major successes. Banks have raised capital well in excess of minimum requirements, asset quality is improving, the NPL ratio has declined to 8% and corporate governance, risk processes and reporting standards are being strengthened. Nevertheless, given the rapid increase in the size and complexity of the financial sector, banking supervision needs to be strengthened and remain vigilant. In global terms Fitch judges the banking system still relatively weak, notwithstanding ongoing improvements, and on a par with the typical emerging-market system with a BSI of D.

Qatar and the **UAE** are the first GCC countries to enter the MPI 3 category, as lending growth continues apace against the background of booming economic growth, buoyant property prices and rising inflation. As well as the boost from high oil revenues, real interest rates have become increasingly negative as the region's USD pegs force central banks to match the Fed's interest rate cuts. Private credit growth is highest in Qatar, at 51% in the year to December, despite a slowdown from its peak. The 30% lending growth seen in the UAE is not so unusual, with similar growth rates seen in all other GCC countries except Saudi Arabia, where lending growth was only 21% in the year to December. What distinguishes Qatar and the UAE is the strength of inflationary pressures, with inflation rising to 14% and an estimated 12% respectively in 2007. The proximate cause of the move to MPI 3 for these two countries is the combination of rising credit/GDP and the stock market peak in 2005, which has in the past been a leading indicator of property price appreciation and banking system pressures. Property price data is sparse though anecdotal evidence suggests they remain buoyant in both countries. By contrast, stock markets in Bahrain and Kuwait did not rise as much and inflationary pressures are less strong. In Saudi Arabia and Oman, both the level and growth of credit/GDP are lower than in other GCC countries.

Table 8: GCC Credit Growth

	Annual real credit growth (% p.a.)			Change in credit/GDP 2005-7 (%)	Credit/GDP (%, 2007)	MPI score
	2006	2007	2006-7 average			
Qatar	30.5	32.9	31.7	16.6	52.0	3
Bahrain	16.6	34.7	25.3	13.0	65.1	2
Kuwait	22.5	27.9	25.2	14.4	64.5	2
UAE	21.6	20.5	21.0	12.5	72.3	3
Oman	16.3	22.9	19.6	5.9	36.6	1
Saudi Arabia	6.8	16.5	11.5	3.9	40.8	2
Average	**19.1**	**25.9**	**22.4**	**11.1**	**55.2**	**n.a.**

Source: Fitch estimates

Fitch continues to regard GCC banking systems as generally strong, however. All except Oman are BSI B, which puts them on a par with the typical developed-country system and marks them out within emerging markets, which generally have weaker systems. The region has five of only 11 BSI B rated systems in emerging markets. Strengths include competent supervision, healthy profitability, sound asset quality and capitalisation and a largely retail deposit base. However, rapid loan growth could lead to future asset problems as loan books season.

Iran has been MPI 3 for the past year for the same combination of strong credit growth and rising inflation caused by expansionary fiscal and monetary policies that was first reflected in the 2005 stock market boom. In contrast to the GCC, Iran's banking system is judged by Fitch to be very weak (BSI E) and rapid credit growth is therefore of more concern.

Latin America

Brazil is the first Latin American country to move into the MPI 3 category. Credit/GDP and the REER have been rising strongly for three years, leading to a move into the MPI 2 category in the last report. Both indicators rose further in 2007 to exceed the relevant MPI 3 thresholds. Real equity prices have been rising for five years and reached an all-time high in 2007, but this is not the reason for the move into the higher risk category. Reliable house price data are not available.

Credit/GDP has increased by over 20% of GDP over the past four years and at over 50% of GDP is its highest since the late 1970s.[14] While Brazil's improved economic performance, rising disposable income, increasing bank penetration and the decline in government credit demand underpin the increase, the pace of lending growth rose to a rapid 47% in the year to November. It has since slowed and is likely to slow further, while remaining in double digits. The effects of the global financial crisis have been little felt to date: banks had no direct holdings in the most affected classes of securities and foreign funding is relatively low on a system-wide basis. The banking system continues to produce strong profitability, while maintaining reserve cushions larger than non-accrual loans and good levels of capitalisation. Aggregate figures for impaired lending have not shown signs of deterioration.

Systemic Risk Matrix: Latin America

	MPI		
BSI	1	2	3
A			
B	Mexico	Chile	
C			Brazil
D	El Salvador Panama Peru	Colombia Costa Rica Venezuela	
E	Argentina Bolivia Dominican Republic Ecuador Uruguay		

Source: Fitch

Colombia remains in the MPI 2 category but credit and REER indicators are nearing levels that could trigger a move to MPI 3 if current trends persist. Rising interest rates will likely moderate credit growth in 2008, although demand for credit remains strong.

[14] Note that the IMF figures used in this report are higher than the ones published by the Brazilian authorities due to wider coverage of the IMF figures, to include all banks' debt claims and not just lending as well as credit to non-bank financial institutions. However, the MPI result is the same whatever credit series is used as both show the same pattern.

Chile moves into the MPI 2 category due to rising loan growth and an appreciating REER. However, neither indicator currently breaches MPI 3 thresholds. Loan growth accelerated to over 20% last year and credit/GDP reached more than 74% of GDP. Although asset quality is strong there are signs of deterioration as the lending portfolio matures and lending penetrates riskier segments of the population. This has led banks to restrain consumer lending growth.

Asia

Korea rose to MPI 3 in the last report and remains the only Asian country in this highest risk category. The proximate cause — the combination of rising credit/GDP and an appreciating real exchange rate — remains intact. Nominal loan growth has stabilised though is still strong at just over 14%, in part driven by competition amongst banks for market share. Fitch views this growth with some concern given softness in Korea's property development market and, in particular, current uncertainties regarding the outlook for the Korean economy more generally in light of its export-oriented nature and the slowing US economy. House prices have slowed to a two-year low of 3% in December. However, Fitch regards banks' property exposure as manageable. That said, most of the banks' recent loan growth appears to have been to larger, sounder SMEs and relatively low-risk mortgage borrowers. To the extent it was to riskier smaller SMEs and smaller property developers, Fitch notes that collateral tends to be substantial.

China saw an improvement in its BSI to 'D' a year ago. Despite strong credit growth, aggressive increases in real estate prices and a resurgence — and subsequent correction — of the equity market, China has remained in the lowest MPI 1 category since Fitch began publishing this report in July 2005. The last credit and stock market boom earlier this decade would have put China in the MPI 3 category in 2002-2003, and the sovereign moved to address elevated NPL levels in its recapitalisation operations that began in 2003. For now, however, although credit growth accelerated to over 20% last year, it rose only slightly as a share of GDP and at 126% of GDP remains well below the 142% peak in 2003. Nevertheless, such levels are very high for a developing country and indeed they exceed the level in many developed countries. Even so, it would take a huge near-term boost in bank lending to raise China's MPI to a higher risk category. Given the authorities' intention to slow lending growth and curb inflation, with higher interest rates and reserve requirements and administrative controls, this seems very unlikely. Indeed, loan growth already shows sign of slowing.

Systemic Risk Matrix: Asia

	MPI		
BSI	1	2	3
A			
B			Korea
C	Malaysia Thailand		
D	China Indonesia Philippines Taiwan	India	
E	Sri Lanka	Vietnam	

Source: Fitch

Bank Systemic Risk and Sovereign Ratings

Changes to BSI and MPI scores do not necessarily have any implications for sovereign ratings, although both indicators are factored into the assessment of sovereign risk.

The BSI measures the intrinsic strength of the banking system, abstracting from potential support. It is therefore used in conjunction with a banking system's size as a guide to the potential contingent liability the banking system poses to the sovereign. Larger, weaker systems will weigh more heavily on the sovereign rating than smaller, stronger systems.

The MPI aims to identify cases of potential systemic distress, such that might require support from parents or, in the final analysis, the sovereign. However, a rise in the MPI score to the highest level — MPI 3 — will not necessarily trigger sovereign rating action. The MPI score must first be considered alongside the BSI score. The two indicators are complementary: stronger banker systems will be better able to cope with increased systemic stress while weaker systems are likely to be more vulnerable. Other factors that are considered in the sovereign rating assessment include the size of the banking system and its net external liabilities.

The analysis used to assess MPI scores serves to highlight trends in credit growth, real exchange rates and asset prices. This can have broader ramifications than the implications for bank systemic risk, important though that is. It is also a useful input to the assessment of the overall macroeconomic situation with, for example, rapid credit growth often accompanied by rising inflationary pressures and widening current account deficits, which may have negative rating implications.

Bank Systemic Risk Matrix

The matrix below brings together the two systemic risk indicators — the BSI and MPI — to emphasise their complementarity. Fitch regards high MPI scores as a greater concern when the banking system is already weak, as indicated by the BSI. Weak banking systems are less able to absorb increased stress of the type that a high MPI may portend. Thus, for a given BSI, countries with a higher MPI present more cause for concern and for a given MPI, countries with a weaker BSI suggest potentially more problematic situations.

Bank Systemic Risk Matrix

	Macro-prudential indicator			
Banking system indicator	**1**	**2**	**3**	**No.of countries**
A		Luxembourg Netherlands Spain UK	Australia	5
B	Austria Bermuda Germany Hong Kong Japan Mexico Singapore	Bahrain Belgium Chile Czech Republic Denmark Estonia Finland France Greece Italy Kuwait New Zealand Norway Portugal Saudi Arabia Sweden Switzerland USA	Canada Iceland Ireland Korea Qatar South Africa UAE	32
C	Malaysia Oman Thailand	Cyprus Latvia Malta San Marino Slovenia	Brazil Slovakia	10
D	Benin China El Salvador Hungary Indonesia Israel Lebanon Panama Peru Philippines Taiwan	Bulgaria Colombia Costa Rica Croatia Georgia India Lithuania Morocco Nigeria Poland Ukraine Venezuela	Kazakhstan Romania Russia Turkey	27
E	Argentina Bolivia Dominican Republic Ecuador Egypt Sri Lanka Tunisia Uruguay	Armenia Belarus Vietnam	Azerbaijan Iran	13
Number of countries	**29**	**42**	**16**	**87**

Source: Fitch

Bank Systemic Risk Indicators

Banking System Indicator (BSI) and Macro-Prudential Indicator (MPI)

	BSI	MPI		BSI	MPI
Argentina	E	1	Korea	B	3
Armenia	E	2	Kuwait	B	2
Australia	A	3	Latvia	C	2
Austria	B	1	Lebanon	D	1
Azerbaijan	E	3	Lithuania	D	2
Bahrain	B	2	Luxembourg	A	2
Belarus	E	2	Malaysia	C	1
Belgium	B	2	Malta	C	2
Benin	D	1	Mexico	B	1
Bermuda	B	1	Morocco	D	2 (1)
Bolivia	E	1	Netherlands	A	2
Brazil	C	3 (2)	New Zealand	B	2
Bulgaria	D	2	Nigeria	D	2 (1)
Canada	B	3	Norway	B	2
Chile	B	2 (1)	Oman	C	1
China	D	1	Panama	D	1
Colombia	D	2	Peru	D	1
Costa Rica	D	2	Philippines	D	1
Croatia	D	2	Poland	D	2 (1)
Cyprus	C	2 (1)	Portugal	B	2
Czech Republic	B	2	Qatar	B	3 (2)
Denmark	B	2	Romania	D	3 (2)
Dominican R.	E	1	Russia	D	3
Ecuador	E	1	San Marino	C	2
Egypt	E	1	Saudi Arabia	B	2
El Salvador	D	1	Singapore	B	1
Estonia	B	2	Slovakia	C	3 (2)
Finland	B	2	Slovenia	C	2
France	B	2	South Africa	B	3
Georgia	D	2	Spain	A	2
Germany	B	1	Sri Lanka	E	1
Greece	B	2	Sweden	B	2
Hong Kong	B	1	Switzerland	B (A)	2
Hungary	D	1	Taiwan	D	1
Iceland	B	3	Thailand	C (D)	1
India	D	2	Tunisia	E	1
Indonesia	D	1	Turkey	D	3 (2)
Iran	E	3	Ukraine	D	2
Ireland	B	3 (2)	UAE	B	3 (2)
Israel	D	1	United Kingdom	A	2
Italy	B	2	United States	B (A)	2
Japan	B	1	Uruguay	E	1
Kazakhstan	D	3 (2)	Venezuela	D	2
			Vietnam	E	2

Figures in brackets are results from the September 2007 report
Source: Fitch

Bank Systemic Risk Indicators Since 2005

Bank Systemic Risk Indicators

	Jul 05		Feb 06		Sep 06		Mar 07		Sep 07		Apr 08	
	BSI	MPI	BSI	MPI	BSI	MPI	BSI	MPI	BSI	MPI	BSI	MPI
Argentina	E	1	E	1	E	1	E	1	E	1	E	1
Armenia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	E	2	E	2	E	2
Australia	A	2	A	2	A	2	A	3	A	3	A	3
Austria	C	1	C	1	B	2	B	1	B	1	B	1
Azerbaijan	E	1	E	3	E	3	E	3	E	3	E	3
Bahrain	C	1	C	2	B	2	B	2	B	2	B	2
Belarus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	E	2	E	2	E	2
Belgium	B	1	B	1	B	1	B	2	B	2	B	2
Benin	D	1	D	1	D	1	D	1	D	1	D	1
Bermuda	B	1	B	1	B	1	B	1	B	1	B	1
Bolivia	E	1	E	1	E	1	E	1	E	1	E	1
Brazil	D	1	D	1	C	1	C	1	C	2	C	3
Bulgaria	D	2	D	2	D	2	D	2	D	2	D	2
Canada	B	1	B	1	B	1	B	3	B	3	B	3
Chile	B	1	B	1	B	1	B	1	B	1	B	2
China	E	1	E	1	E	1	D	1	D	1	D	1
Colombia	D	1	D	1	D	1	D	1	D	2	D	2
Costa Rica	D	2	D	2	D	2	D	2	D	2	D	2
Croatia	D	2	D	2	D	2	D	2	D	2	D	2
Cyprus	D	1	D	1	D	1	C	1	C	1	C	2
Czech Republic	C	1	C	1	B	2	B	2	B	2	B	2
Denmark	B	1	B	1	B	1	B	2	B	2	B	2
Dominican R.	E	2	E	2	E	2	E	1	E	1	E	1
Ecuador	E	1	E	1	E	1	E	1	E	1	E	1
Egypt	E	1	E	1	E	1	E	1	E	1	E	1
El Salvador	D	1	D	1	D	1	D	1	D	1	D	1
Estonia	B	2	B	2	B	2	B	2	B	2	B	2
Finland	B	2	B	2	B	2	B	2	B	2	B	2
France	B	1	B	1	B	1	B	2	B	2	B	2
Georgia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	D	2	D	2	D	2
Germany	C	1	C	1	B	1	B	1	B	1	B	1
Greece	B	2	B	2	C	2	B	2	B	2	B	2
Hong Kong	B	1	B	1	B	1	B	1	B	1	B	1
Hungary	D	3	D	2	D	2	D	1	D	1	D	1
Iceland	C	2	B	3	B	3	B	3	B	3	B	3
India	D	1	D	1	D	2	D	2	D	2	D	2
Indonesia	D	1	D	1	D	1	D	1	D	1	D	1
Iran	E	2	E	2	E	2	E	3	E	3	E	3
Ireland	B	2	B	3	B	3	B	2	B	2	B	3
Israel	D	1	D	1	D	1	D	1	D	1	D	1
Italy	B	2	B	1	B	1	B	2	B	2	B	2
Japan	D	1	D	1	C	1	C	1	B	1	B	1
Kazakhstan	D	1	D	2	D	2	D	2	D	2	D	3
Korea	C	1	C	1	C	1	C	1	B	3	B	3
Kuwait	B	2	B	2	B	2	B	2	B	2	B	2
Latvia	D	2	D	2	C	2	C	2	C	2	C	2
Lebanon	D	1	D	1	D	1	D	1	D	1	D	1
Lithuania	D	2	D	2	D	2	D	2	D	2	D	2
Luxembourg	A	1	A	2	A	2	A	2	A	2	A	2
Malaysia	C	1	C	1	C	1	C	1	C	1	C	1
Malta	C	1	C	2	C	1	C	2	C	2	C	2
Mexico	C	1	C	1	B	1	B	1	B	1	B	1
Morocco	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	D	1	D	2
Netherlands	A	2	A	2	A	2	A	2	A	2	A	2
New Zealand	B	1	B	2	B	2	B	2	B	2	B	2
Nigeria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	D	1	D	2
Norway	B	1	B	3	B	2	B	2	B	2	B	2
Oman	D	1	D	1	C	1	C	1	C	1	C	1
Panama	D	1	D	1	D	1	D	1	D	1	D	1
Peru	D	1	D	1	D	1	D	1	D	1	D	1
Philippines	D	1	D	1	D	1	D	1	D	1	D	1
Poland	D	1	D	1	D	1	D	1	D	1	D	2
Portugal	B	2	B	2	B	2	B	2	B	2	B	2

Bank Systemic Risk Indicators Since 2005 (continued)

Bank Systemic Risk Indicators

	Jul 05		Feb 06		Sep 06		Mar 07		Sep 07		Apr 08	
	BSI	MPI	BSI	MPI	BSI	MPI	BSI	MPI	BSI	MPI	BSI	MPI
Qatar	C	1	C	2	B	2	B	2	B	2	B	3
Romania	D	1	D	2	D	2	D	2	D	2	D	3
Russia	D	2	D	3	D	3	D	3	D	3	D	3
San Marino	C	2	C	2	C	2	C	2	C	2	C	2
Saudi Arabia	B	1	B	2	B	2	B	2	B	2	B	2
Singapore	B	1	B	1	B	1	B	1	B	1	B	1
Slovakia	D	1	D	1	D	2	D	2	C	2	C	3
Slovenia	C	1	C	1	C	2	C	2	C	2	C	2
South Africa	B	3	B	3	B	3	B	3	B	3	B	3
Spain	B	2	B	2	A	2	A	2	A	2	A	2
Sri Lanka	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	E	1	E	1	E	1
Sweden	B	1	B	1	B	1	B	2	B	2	B	2
Switzerland	B	1	B	1	A	1	A	1	A	2	B	2
Taiwan	D	1	D	1	D	1	D	1	D	1	D	1
Thailand	D	1	D	1	D	1	D	1	D	1	C	1
Tunisia	E	1	E	1	E	1	E	1	E	1	E	1
Turkey	D	1	D	2	D	2	D	2	D	2	D	3
Ukraine	D	1	D	2	D	2	D	2	D	2	D	2
United Arab Emirates	C	1	B	1	B	1	B	2	B	2	B	3
United Kingdom	A	2	A	2	A	2	A	2	A	2	A	2
United States	A	1	A	2	A	2	A	2	A	2	B	2
Uruguay	E	1	E	1	E	1	E	1	E	1	E	1
Venezuela	D	1	D	1	D	1	D	2	D	2	D	2
Vietnam	E	1	E	2	E	2	E	2	E	2	E	2

Data Annex

Bank Credit to Private Sector (% of GDP)

	2002	2003	2004	2005	2006	2007e
Argentina	15.1	10.6	10.3	11.4	12.6	13.9
Armenia	6.8	5.7	7.0	8.0	8.8	13.3
Australia	90.9	98.3	102.0	107.5	113.2	123.0
Austria	104.5	104.3	105.3	113.3	114.4	114.1
Azerbaijan	5.6	7.0	9.3	9.5	12.2	15.1
Bahrain	50.6	48.1	51.7	52.1	52.5	65.1
Belarus	9.1	11.7	14.0	15.9	20.2	24.4
Belgium	74.2	74.1	71.5	74.1	82.5	92.1
Benin	11.4	14.2	14.6	16.3	16.9	19.5
Bermuda	105.8	116.0	123.5	121.3	133.0	131.1
Bolivia	51.0	47.9	42.7	40.3	36.1	35.0
Brazil	32.2	29.9	30.1	34.1	41.9	52.2
Bulgaria	19.7	27.4	36.3	43.6	47.4	64.2
Canada	122.0	117.1	119.5	125.8	138.8	127.3
Chile	68.8	66.1	66.7	67.9	67.7	74.3
China	132.4	141.6	130.3	123.6	123.6	122.0
Colombia	39.0	33.7	33.8	32.1	39.2	42.1
Costa Rica	29.9	31.2	31.9	35.4	38.4	44.8
Croatia	50.2	52.8	55.8	60.6	68.7	72.7
Cyprus	164.8	163.8	164.0	164.9	177.7	209.7
Czech Republic	30.8	31.8	32.6	36.9	40.9	50.2
Denmark	145.5	151.6	158.2	171.5	184.7	202.5
Dominican Rep.	26.5	27.6	17.8	17.0	16.1	17.9
Ecuador	21.3	20.0	22.4	22.9	24.6	26.2
Egypt	54.7	53.9	54.0	51.2	49.3	46.4
El Salvador	42.2	43.5	43.1	43.1	42.8	42.4
Estonia	44.6	50.6	60.0	68.5	82.4	94.9
Finland	58.2	64.0	67.6	75.1	78.2	82.0
France	85.6	88.2	90.5	92.8	98.7	106.7
Georgia	8.1	8.7	9.7	14.8	20.6	28.1
Germany	116.7	115.3	112.5	111.8	109.2	105.3
Greece	60.1	64.6	70.2	77.4	83.1	91.3
Hong Kong	148.0	148.8	147.6	146.1	139.3	140.0
Hungary	34.9	42.3	45.8	51.2	55.4	60.6
Iceland	105.7	130.7	165.3	248.9	327.0	372.0
India	32.8	32.1	36.6	40.6	44.8	48.3
Indonesia	20.8	22.7	26.4	26.4	24.6	25.4
Iran	22.3	26.3	29.0	30.3	33.5	38.1
Ireland	109.3	114.9	134.9	161.4	184.2	203.8
Israel	92.8	87.8	87.2	91.7	88.5	91.4
Italy	80.0	83.6	85.4	89.8	95.5	101.7
Japan	179.6	172.7	166.0	163.1	155.6	154.1
Kazakhstan	19.9	22.7	26.5	35.4	48.2	59.5
Korea	93.2	95.6	90.1	93.0	102.0	108.7
Kuwait	58.3	59.5	56.4	49.1	50.9	64.5
Latvia	37.0	44.8	56.2	76.1	94.7	101.8
Lebanon	85.7	80.9	78.1	78.9	79.0	76.6
Lithuania	16.2	22.8	28.8	41.3	50.6	59.9
Luxembourg	103.7	103.6	106.3	130.2	154.7	187.8
Malaysia	141.8	136.8	126.3	123.9	118.5	114.4
Malta	91.2	101.2	107.4	107.3	115.6	119.7
Mexico	30.1	28.4	25.4	25.8	27.8	30.6
Morocco	57.0	57.2	58.2	62.5	65.3	79.5
Netherlands	141.2	148.0	157.8	170.5	174.1	196.4
New Zealand	112.8	116.4	121.0	132.4	141.8	152.9
Nigeria	16.6	16.5	12.8	13.2	13.7	24.2
Norway	74.7	77.3	77.7	81.4	86.9	99.3
Oman	38.6	36.5	34.1	30.7	32.0	36.6
Panama	90.4	87.1	85.1	87.1	88.4	95.6
Peru	22.7	20.4	18.1	19.1	17.4	20.5
Philippines	37.3	34.9	32.4	28.6	27.3	26.2
Poland	27.4	28.1	28.1	28.9	33.4	39.9
Portugal	141.1	140.2	140.8	145.6	157.4	168.9
Qatar	28.7	30.0	29.0	35.4	41.6	52.0
Romania	9.9	13.7	15.8	20.1	26.3	35.4

Bank Credit to Private Sector (% of GDP) (Continued)

	2002	2003	2004	2005	2006	2007e
Russia	17.7	21.0	24.1	25.7	30.7	39.5
San Marino	91.3	102.5	127.4	137.1	172.1	203.0
Saudi Arabia	29.1	28.4	33.4	36.9	36.4	40.8
Singapore	107.2	110.8	102.5	97.7	94.8	98.9
Slovakia	39.3	31.9	30.4	35.1	38.6	42.1
Slovenia	40.1	42.9	49.7	58.6	67.2	82.1
South Africa	62.4	69.1	70.0	75.2	84.2	89.6
Spain	105.7	113.2	124.9	145.5	166.6	182.7
Sri Lanka	28.6	29.9	31.5	32.8	34.2	33.8
Sweden	100.0	101.0	102.7	109.2	114.6	123.5
Switzerland	152.6	156.9	158.8	164.4	171.0	178.0
Taiwan	120.8	122.6	130.0	137.8	139.9	134.6
Thailand	117.0	111.8	107.2	103.6	96.5	90.8
Tunisia	61.3	60.6	61.1	62.6	61.0	61.8
Turkey	16.1	15.8	18.2	21.9	26.6	29.7
Ukraine	18.0	24.9	25.2	33.5	44.9	58.3
UAE	53.4	51.3	53.0	59.8	64.4	72.3
United Kingdom	140.9	145.9	153.1	162.2	174.0	190.0
United States	168.5	183.5	190.4	194.5	201.4	206.6
Uruguay	66.7	44.5	30.3	27.2	26.2	25.7
Venezuela	9.7	8.6	11.1	12.8	16.6	23.0
Vietnam	43.1	48.4	58.7	66.0	71.3	70.0

Source: IMF and Fitch estimates

Data Annex (Continued)

Real Effective Exchange Rate Index (2000 = 100)

	2002	2003	2004	2005	2006	2007e
Argentina	44.6	47.7	46.0	45.9	45.2	44.9
Armenia	91.2	82.6	87.2	97.5	106.3	122.0
Australia	100.6	112.6	121.2	124.8	124.8	133.3
Austria	101.0	104.2	105.7	105.7	105.4	106.7
Azerbaijan	87.0	75.0	74.0	86.0	89.0	95.0
Bahrain	100.7	93.0	86.7	84.2	81.7	76.6
Belarus	70.1	67.9	66.2	66.1	64.5	66.0
Belgium	102.2	107.0	108.6	109.4	109.4	110.8
Benin	108.6	113.1	116.0	118.9	121.9	121.9
Bermuda	100.3	101.2	102.1	101.9	101.7	102.5
Bolivia	99.3	89.1	83.4	79.8	79.5	81.8
Brazil	78.5	76.0	79.4	98.4	110.3	119.9
Bulgaria	109.6	114.0	119.6	120.2	125.4	133.9
Canada	96.3	107.0	112.8	119.7	126.8	132.3
Chile	87.4	82.0	87.0	92.3	96.6	94.9
China	101.9	95.2	92.7	92.5	94.4	99.1
Colombia	95.3	84.9	92.8	105.3	103.7	115.9
Costa Rica	101.5	94.9	91.9	91.9	92.7	95.3
Croatia	104.8	105.4	107.6	109.7	111.8	112.9
Cyprus	104.1	111.0	113.0	112.8	113.0	113.0
Czech Republic	118.7	116.8	118.3	125.3	132.3	136.8
Denmark	103.0	108.2	109.3	108.4	108.4	109.7
Dominican Rep.	99.3	74.6	79.3	104.5	99.1	100.9
Ecuador	159.2	162.5	154.5	147.9	147.1	138.5
Egypt	83.4	59.1	56.7	61.5	64.5	67.3
El Salvador	100.1	97.1	96.4	98.7	98.5	97.7
Estonia	103.9	105.7	107.1	108.2	108.6	111.8
Finland	102.0	106.9	107.0	104.8	104.0	106.2
France	101.3	106.7	108.4	107.9	107.6	109.0
Georgia	93.3	87.3	91.9	95.3	98.7	100.1
Germany	101.0	106.3	107.7	106.9	106.7	108.9
Greece	104.3	111.0	113.0	113.6	114.6	116.8
Hong Kong	96.0	89.3	84.5	82.8	81.9	77.4
Hungary	118.9	121.6	130.0	132.6	127.0	142.5
Iceland	93.0	98.9	101.6	114.6	106.8	112.8
India	95.0	96.5	99.0	104.4	102.6	112.3
Indonesia	114.7	122.5	116.7	114.8	134.0	134.3
Iran	125.7	124.4	123.8	129.2	135.3	143.1
Ireland	109.3	120.3	123.1	123.5	125.9	133.1
Israel	89.6	84.8	79.7	78.0	78.0	79.4
Italy	103.9	110.3	112.1	110.9	110.8	112.3
Japan	83.0	83.7	84.6	79.4	72.0	66.6
Kazakhstan	91.3	88.9	94.4	100.3	100.9	111.2
Korea	98.8	99.6	100.7	112.5	120.6	120.5
Kuwait	104.3	96.7	91.8	93.7	94.7	96.1
Latvia	92.4	88.1	88.1	89.4	93.4	96.2
Lebanon	99.0	88.4	82.4	79.1	80.8	78.7
Lithuania	101.9	102.8	101.7	96.8	97.7	98.1
Luxembourg	101.8	105.4	106.6	107.1	108.0	109.6
Malaysia	105.0	99.2	94.9	95.2	99.0	102.4
Malta	104.6	108.5	112.9	112.7	113.8	117.3
Mexico	107.3	95.1	90.8	94.2	94.2	94.0
Morocco	95.6	94.6	93.5	91.8	92.9	92.6
Netherlands	106.2	112.5	113.3	112.8	111.9	113.5
New Zealand	107.3	121.7	130.2	137.6	128.1	137.8
Nigeria	111.0	104.9	107.9	124.2	133.1	129.3
Norway	112.3	111.0	106.9	111.1	111.3	112.2
Oman	103.9	95.3	89.6	89.1	89.8	87.1
Panama	95.3	93.9	92.9	94.3	95.3	95.3
Peru	102.3	99.1	98.2	104.0	105.9	106.1
Philippines	96.2	89.1	86.2	92.3	102.5	112.3
Poland	108.1	96.3	96.2	107.5	109.9	114.2
Portugal	104.9	109.6	110.7	110.8	111.5	113.5
Qatar	101.2	95.5	95.4	102.1	110.6	117.8

Real Effective Exchange Rate Index (2000 = 100) (Continued)

	2002	2003	2004	2005	2006	2007e
Romania	102.3	99.1	101.6	119.8	128.9	140.5
Russia	123.6	127.3	137.3	149.2	163.4	172.7
San Marino	103.9	110.3	112.1	110.9	110.8	112.3
Saudi Arabia	99.0	90.5	84.4	82.1	80.8	78.5
Singapore	97.9	94.3	93.3	92.1	94.3	95.7
Slovakia	105.1	119.1	130.5	134.4	142.7	158.1
Slovenia	100.0	104.2	104.1	104.8	100.6	100.8
South Africa	73.9	97.4	107.6	108.5	104.2	95.1
Spain	104.2	109.2	111.4	113.0	114.9	117.3
Sri Lanka	100.9	98.8	95.1	103.6	110.0	117.8
Sweden	94.1	100.2	101.2	96.9	96.8	98.9
Switzerland	106.3	106.4	105.6	104.0	101.7	98.1
Taiwan	92.6	86.6	85.3	87.8	84.8	80.2
Thailand	96.8	94.8	94.5	96.0	103.8	110.0
Tunisia	97.5	92.6	89.3	85.3	84.6	82.2
Turkey	89.6	94.9	98.0	108.1	107.3	116.7
Ukraine	107.1	98.3	96.1	105.9	110.7	112.2
UAE	104.9	97.7	94.3	96.9	102.0	107.1
United Kingdom	98.7	96.1	101.8	101.3	103.2	107.9
United States	105.4	98.7	94.1	92.8	92.4	88.8
Uruguay	88.1	68.6	68.3	76.6	78.1	79.6
Venezuela	83.6	72.4	70.0	69.0	73.4	81.1
Vietnam	98.3	90.6	89.3	93.2	96.7	100.6

Source: IMF, BIS, Eurostat and Fitch estimates

Data Annex (Continued)

Real Equity Price Index (2000=100)

	2002	2003	2004	2005	2006	2007e
Argentina	62	102	141	175	181	195
Armenia	...	...	...	...	...	...
Australia	94	87	98	114	130	150
Austria	102	110	164	244	316	364
Azerbaijan	...	...	...	...	...	...
Bahrain	95	99	129	156	146	159
Belarus	...	...	...	...	...	...
Belgium	78	63	80	97	116	129
Benin	...	...	...	...	...	...
Bermuda	146	139	170	182	230	247
Bolivia	...	...	...	...	...	...
Brazil	59	67	94	110	145	196
Bulgaria	116	254	408	599	655	1012
Canada	72	71	83	94	109	120
Chile	96	114	141	159	158	198
China	81	74	70	51	67	130
Colombia	132	193	306	536	820	833
Costa Rica	101	92	65	67	84	128
Croatia	126	119	128	185	256	423
Cyprus	21	17	15	19	39	65
Czech Republic	74	93	132	201	233	272
Denmark	75	68	82	101	115	136
Dominican Rep.	547	273	184	85	107	127
Ecuador	107	123	149	165	188	189
Egypt	115	120	133	193	232	228
El Salvador	...	...	...	...	...	...
Estonia	112	150	208	337	353	429
Finland	43	37	39	46	56	70
France	58	47	54	62	73	80
Georgia	...	...	...	...	...	...
Germany	56	44	53	61	77	93
Greece	50	45	57	74	90	102
Hong Kong	69	72	94	104	123	164
Hungary	76	77	103	164	176	189
Iceland	72	89	161	225	288	338
India	66	76	103	132	194	255
Indonesia	72	78	114	138	156	225
Iran	125	192	264	212	155	131
Ireland	79	72	88	102	124	129
Israel	70	83	111	135	155	193
Italy	60	53	59	69	78	84
Japan	65	62	76	88	114	117
Kazakhstan	99	104	146	258	1069	1525
Korea	97	85	101	131	165	206
Kuwait	151	256	355	455	455	490
Latvia	149	176	223	305	333	341
Lebanon	68	69	85	133	211	175
Lithuania	89	142	225	398	381	451
Luxembourg	58	50	63	78	100	120
Malaysia	83	80	91	93	94	123
Malta	52	51	67	91	131	114
Mexico	88	90	124	159	222	301
Morocco	70	79	97	101	151	214
Netherlands	58	40	44	50	58	65
New Zealand	111	120	149	175	188	212
Nigeria	171	182	245	180	201	316
Norway	74	66	95	122	153	190
Oman	90	113	148	179	182	220
Panama	86	94	106	120	158	201
Peru	83	122	188	259	476	1032
Philippines	71	67	84	97	110	155
Poland	72	85	115	137	197	229
Portugal	51	44	54	55	68	83
Qatar	169	237	331	534	356	302
Romania	134	161	240	385	472	501
Russia	147	171	178	189	299	354

Real Equity Price Index (2000=100) (Continued)

	2002	2003	2004	2005	2006	2007e
San Marino	...	...	...	...	...	...
Saudi Arabia	117	155	253	420	392	304
Singapore	78	74	92	106	121	156
Slovakia	129	173	212	425	381	388
Slovenia	130	141	180	182	192	352
South Africa	104	87	100	127	168	205
Spain	60	54	63	73	87	103
Sri Lanka	115	155	192	259	269	275
Sweden	47	40	51	60	72	83
Switzerland	73	64	76	90	114	131
Taiwan	66	66	78	80	99	123
Thailand	104	135	179	179	178	183
Tunisia	70	68	76	81	99	132
Turkey	35	31	46	65	79	89
Ukraine	85	88	176	338	398	711
UAE	112	129	182	466	349	282
United Kingdom	68	59	64	71	79	84
United States	82	79	88	87	91	103
Uruguay	...	...	...	...	...	...
Venezuela	70	108	165	108	132	113
Vietnam	130	96	139	141	254	468

Source: IMF, Bloomberg and Fitch estimates

Real House Price Index (2000 = 100)

	2002	2003	2004	2005	2006	2007e
Australia	123.1	140.5	144.8	140.7	144.9	154.4
Austria	100.1	99.1	94.6	97.2	98.5	99.6
Belgium	110.5	115.5	124.9	144.3	157.6	...
Canada	106.7	109.7	113.2	115.0	123.8	128.9
China	102.7	105.4	108.1	109.9	110.7	113.1
Denmark	104.6	106.1	112.8	129.5	153.7	153.1
Estonia	158.6	171.0	218.1	263.4	380.6	382.7
Finland	102.6	109.3	116.2	123.0	131.6	136.1
France	111.9	122.7	139.1	157.8	172.9	179.8
Germany	99.0	97.0	94.7	93.2	92.6	91.5
Greece	129.2	131.6	130.2	139.8	151.7	...
Hong Kong	82.4	77.3	101.6	119.9	120.8	131.2
Iceland	96.6	107.4	118.1	135.5	139.4	142.9
Ireland	108.9	121.3	132.5	137.9	153.2	150.5
Italy	111.7	119.5	128.0	134.5	141.0	...
Japan	93.4	89.5	85.3	82.4	81.0	81.6
Korea	114.0	121.0	119.0	120.2	128.0	136.9
Malta	107.1	117.9	139.4	148.7	149.7	145.4
Netherlands	103.2	101.1	102.5	106.1	109.0	117.6
New Zealand	107.3	124.7	142.4	159.8	172.2	191.1
Norway	109.5	110.3	117.4	116.6	127.6	132.3
Singapore	85.3	84.0	80.9	82.7	87.6	104.1
South Africa	110.8	128.3	160.4	187.5	201.7	219.8
Spain	113.1	122.4	135.7	146.8	156.5	159.8
Sweden	110.5	115.5	126.0	136.0	149.9	159.9
Switzerland	105.3	107.4	109.3	110.1	111.1	111.8
Taiwan	91.8	93.2	104.6	107.9	109.6	114.1
Thailand	100.6	104.0	110.3	114.1	113.3	107.5
UK	134.8	151.1	167.7	169.2	189.2	197.7
US	110.0	114.5	122.0	132.2	138.6	138.8

Source: National sources and Fitch estimates

Data Annex (Continued)

Banking System: Key Facts (Data for 2006-2007)

	NPL ratio (%)	Risk weighted capital ratio (%)	Public ownership (% assets)	Foreign ownership (% assets)
Argentina	5	15	41	26
Armenia	2	34	0	53
Australia	0	11	n.a.	n.a.
Austria	3	15	n.a.	3
Azerbaijan	2	20	43	19
Bahrain	5	16	13	n.a.
Belarus	3	24	87	8
Belgium	2	12	0	25
Benin	12	8	90	n.a.
Bermuda	1	15	0	40
Bolivia	6	14	0	30
Brazil	5	18	41	20
Bulgaria	2	15	0	78
Canada	0	13	n.a.	n.a.
Chile	1	13	15	40
China	7	11	65	8
Colombia	3	11	17	18
Costa Rica	2	14	67	23
Croatia	5	14	4	91
Cyprus	12	13	4	13
Czech Republic	4	12	3	97
Denmark	0	12	n.a.	n.a.
Dominican Republic	5	12	28	9
Ecuador	6	13	14	2
Egypt	20	10	58	14
El Salvador	2	14	4	27
Estonia	0	13	0	97
Finland	1	17	2	57
France	3	11	n.a.	10
Georgia	3	21	0	75
Germany	5	12	50	4
Greece	3	12	23	10
Hong Kong	1	15	0	92
Hungary	2	11	1	82
Iceland	1	13	0	0
India	5	13	75	7
Indonesia	5	20	37	48
Iran	6	8	95	0
Ireland	1	12	0	32
Israel	8	11	9	9
Italy	5	11	n.a.	n.a.
Japan	3	12	n.a.	n.a.
Kazakhstan	4	16	0	12
Korea	1	13	30	45
Kuwait	3	18	12	0
Latvia	1	10	4	57
Lebanon	15	22	0	19
Lithuania	3	11	0	86
Luxembourg	0	16	n.a.	95
Malaysia	8	13	37	22
Malta	3	22	0	75
Mexico	3	14	0	83
Morocco	16	12	24	16
Netherlands	1	12	n.a.	8
New Zealand	n.a.	n.a.	n.a.	85
Nigeria	8	25	5	9
Norway	2	11	n.a.	n.a.
Oman	7	19	n.a.	25
Panama	1	19	13	52
Peru	2	13	13	49
Philippines	6	18	11	16
Poland	7	14	20	69
Portugal	2	11	24	19
Qatar	4	22	n.a.	20

Banking System: Key Facts (Data for 2006-2007) (Continued)

	NPL ratio (%)	Risk weighted capital ratio (%)	Public ownership (% assets)	Foreign ownership (% assets)
Romania	4	20	6	88
Russian Federation	2	15	38	17
San Marino	4	22	0	27
Saudi Arabia	2	22	32	13
Singapore	2	15	n.a.	n.a.
Slovakia	4	22	4	92
Slovenia	3	11	18	38
Spain	1	12	n.a.	12
South Africa	2	13	0	30
Sri Lanka	5	12	45	15
Sweden	1	7	n.a.	n.a.
Switzerland	0	13	n.a.	n.a.
Taiwan	2	9	23	7
Thailand	8	13	16	7
Tunisia	19	12	42	26
Turkey	4	21	29	15
Ukraine	2	14	9	35
UAE	8	17	n.a.	n.a.
UK	2	12	0	55
US	1	13	n.a.	n.a.
Uruguay	4	10	52	39
Venezuela	1	16	9	26
Vietnam	15	5	75	13

Source: Fitch Country Analysis reports and IMF Global Financial Stability Report

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