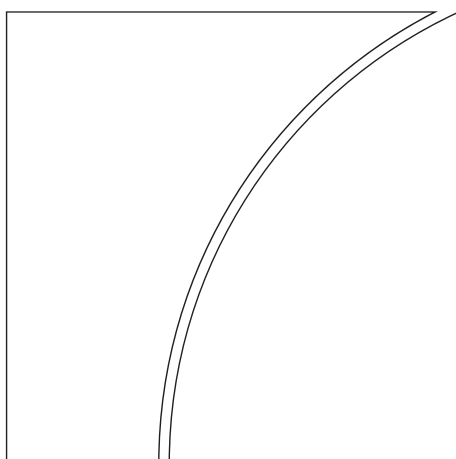




BANK FOR INTERNATIONAL SETTLEMENTS



# **76th Annual Report**

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# Contents

Letter of transmittal .....	1
 I. Introduction: resilience to mounting strains .....	 3
Meeting the challenges of recent success .....	4
Structural change and policy regime shifts .....	9
 II. The global economy .....	 11
Highlights .....	11
Overview of the global economy .....	12
<i>Continued buoyant growth and low inflation</i> .....	12
<i>Signs of a more balanced economic expansion</i> .....	13
<i>Outlook and risks</i> .....	15
Inflation and wage setting behaviour in the global economy .....	16
<i>Global inflation trends</i> .....	16
<i>Wage setting behaviour and globalisation</i> .....	18
<i>Outlook</i> .....	21
Private sector saving and investment .....	21
<i>Trends</i> .....	21
<i>Corporate profits and investment</i> .....	23
<i>Residential investment and housing markets</i> .....	25
Fiscal policy .....	28
<i>Challenges to fiscal sustainability</i> .....	29
Current account developments .....	31
<i>External imbalances widen further</i> .....	31
<i>Global rebalancing and oil revenue recycling</i> .....	32
 III. Issues in emerging market economies .....	 34
Highlights .....	34
Macroeconomic overview .....	34
<i>Pattern of demand</i> .....	35
<i>Rising inflation pressures</i> .....	38
<i>Outlook and risks</i> .....	38
Two major external challenges .....	40
<i>Shifts in the terms of trade</i> .....	40
<i>Strong demand for emerging market assets</i> .....	42
Fiscal policy .....	46
<i>How much fiscal adjustment?</i> .....	46
<i>Issues in revenue and expenditure adjustment</i> .....	47
<i>Issues raised by commodity price increases</i> .....	49
<i>Debt reduction and sustainability</i> .....	50
Monetary and exchange rate policy .....	51
<i>Implications of relative price shocks</i> .....	51
<i>Responding to exchange rate appreciation pressures</i> .....	53
<i>Policy responses and regimes</i> .....	54
<i>Consequences of policy responses</i> .....	56

IV. Monetary policy in the advanced industrial economies ..	59
Highlights .....	59
Review of developments .....	59
<i>United States</i> .....	59
<i>Euro area</i> .....	62
<i>Japan</i> .....	64
<i>Inflation targeting countries</i> .....	66
Globalisation and monetary policy .....	69
<i>Globalisation, central bank incentives and price stability</i> .....	70
<i>Globalisation and traditional monetary policy guideposts</i> .....	72
<i>Globalisation, the transmission mechanism and the policy room for manoeuvre</i> .....	75
<i>Challenges, risks and possible policy responses</i> .....	76
 V. Foreign exchange markets .....	 79
Highlights .....	79
Developments in foreign exchange markets .....	79
<i>Foreign exchange market conditions</i> .....	82
<i>Trends in official reserves</i> .....	83
Exchange rate movements: determinants .....	84
<i>Growth and interest rate differentials</i> .....	84
<i>The US external imbalance</i> .....	86
<i>Exchange rate policies in Asia</i> .....	87
Net income and the sustainability of the US external position .....	88
<i>Trends and determinants of net income</i> .....	89
<i>The sustainability of the US external balance</i> .....	94
 VI. Financial markets .....	 98
Highlights .....	98
Long-term yields remained low .....	98
<i>Flattening yield curves in the United States and the euro area</i> .....	99
<i>Subdued inflation expectations</i> .....	100
<i>Low volatilities and term premia</i> .....	101
<i>Institutional demand factors: pension funds and insurance companies</i> ...	102
<i>Foreign demand factors: Asian reserves and petrodollars</i> .....	103
Equity markets shrugged off rate increases .....	105
<i>Macroeconomic outlook underpinned equity gains</i> .....	105
<i>Releveraging and mergers accelerated</i> .....	106
<i>Conflicting signals about valuations</i> .....	109
Credit markets proved resilient .....	111
<i>Divergent appetites for different risks</i> .....	112
<i>Corporate balance sheets remained strong</i> .....	113
<i>Vulnerability of credit markets to a repricing</i> .....	115
Emerging market spreads at historical lows .....	116
 VII. The financial sector .....	 120
Highlights .....	120
The performance of the financial sector .....	120
<i>Commercial banks</i> .....	121
<i>Investment banking</i> .....	123
<i>Hedge funds</i> .....	124
<i>Private equity</i> .....	125

<i>Insurance companies</i> .....	127
<i>Pension funds</i> .....	129
Vulnerabilities .....	130
<i>Potential sources of pressure on bank profitability</i> .....	130
<i>Exposure to property markets</i> .....	132
Financial reporting and financial risk management .....	134
<i>Financial reporting and prudential policy</i> .....	138
 VIII. Conclusion: coping with risks, today and tomorrow ...	140
What risks do we currently run? .....	140
How might current risks be reduced? .....	144
What to do if risks materialise? .....	147
Can we avoid similar risks in the future? .....	151
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Organisation, governance and activities .....	155
Board of Directors and senior officials .....	184
BIS member central banks .....	187
Financial statements .....	189
Report of the auditors .....	225
Five-year graphical summary .....	226

The chapters of this Report went to press between 1 and 9 June 2006.

## Graphs

II.1	Contributions to world growth .....	12
II.2	Oil and commodity prices and terms of trade .....	13
II.3	Financing conditions and credit growth .....	14
II.4	Global inflation .....	16
II.5	Trends in relative prices .....	18
II.6	Inflation, wages and wage share .....	18
II.7	Globalisation and wages .....	19
II.8	Import penetration and wages by industry sector .....	20
II.9	Corporate investment cycles .....	24
II.10	Private sector assets and debt .....	25
II.11	House prices and private consumption .....	27
II.12	Fiscal developments in different growth periods .....	30
II.13	Balance of payments indicators of oil-exporting economies .....	33
III.1	Contributions to real GDP growth .....	36
III.2	Household credit .....	36
III.3	External positions .....	40
III.4	Exports .....	41
III.5	Elements of demand for emerging market assets .....	44
III.6	Public finance developments .....	47
III.7	Government revenues, primary expenditures and public debt .....	48
III.8	Changing relative prices and inflation .....	52
III.9	Real policy rates .....	53
III.10	Real effective exchange rates .....	55
III.11	Financial market conditions .....	57
IV.1	Economic indicators for the United States .....	60
IV.2	Yield spread, inflation and business cycles in the United States .....	61
IV.3	Economic indicators for the euro area .....	62
IV.4	Monetary analysis and monetary policy in the euro area .....	63
IV.5	Economic indicators for Japan .....	64
IV.6	Interest rates in Japan .....	65
IV.7	Inflation targets and policy rates .....	67
IV.8	Import prices and inflation .....	69
IV.9	Global inflation .....	70
IV.10	Key indicators of globalisation .....	71
IV.11	Volatility of growth and inflation in advanced industrial countries ...	71
IV.12	Flattening Phillips curves in advanced industrial countries .....	73
IV.13	Global factors determining domestic inflation .....	73
IV.14	Non-accelerating inflation rates of unemployment .....	74
IV.15	Monetary policy and global liquidity in advanced industrial countries	76
IV.16	Monetary policy and global liquidity in emerging market economies	77
V.1	Exchange rates, implied volatilities and risk reversals of the dollar, euro and yen .....	80
V.2	Exchange rates of other industrial countries .....	81
V.3	Exchange rates in emerging markets .....	81
V.4	Current real effective exchange rates in a long-term perspective ....	82
V.5	Exchange rates and interest rate differentials .....	84
V.6	Exchange rates and Sharpe ratios .....	85
V.7	US current account balances and net foreign assets .....	86
V.8	Spot and forward exchange rates of the Chinese renminbi .....	88
V.9	Net equity and net debt .....	90
V.10	Income yields of US direct investment assets and liabilities .....	91
V.11	US foreign direct investment .....	93
V.12	US external position scenarios .....	95
V.13	Net portfolio debt assets and income of the United States .....	96

VI.1	Interest rates .....	99
VI.2	Forecasts for 2006 and inflation compensation measures .....	99
VI.3	Forward curves .....	100
VI.4	Implied volatilities and term premium estimates .....	101
VI.5	Pension funds and bond spreads .....	103
VI.6	Investment in long-term US securities .....	104
VI.7	Equity prices .....	105
VI.8	Shareholder-friendly actions .....	107
VI.9	Mergers and acquisitions .....	108
VI.10	Valuations and volatility in equity markets .....	109
VI.11	US valuations and earnings .....	110
VI.12	Corporate bond spreads .....	111
VI.13	Risk appetite in credit markets .....	112
VI.14	Corporate leverage .....	114
VI.15	Outlook for corporate credit quality .....	115
VI.16	Emerging market bond spreads and credit ratings .....	117
VI.17	Predicting sovereign ratings and spreads .....	118
VII.1	Credit growth .....	122
VII.2	Indicators of investment banking activity .....	123
VII.3	Hedge fund size, performance and leverage .....	124
VII.4	Size of private equity funds .....	126
VII.5	Private equity: cash flows and performance .....	126
VII.6	LBO loan size and risk .....	127
VII.7	Insurance companies: equity holdings and performance .....	128
VII.8	Pricing of risk in syndicated loan and bond markets .....	131

## Tables

II.1	Growth and inflation .....	11
II.2	2005: an unusual year .....	15
II.3	Contribution of a common factor to inflation in advanced economies .....	17
II.4	Global saving and investment trends .....	22
II.5	Profit indicators for selected global industry sectors .....	23
II.6	Construction sector in selected economies .....	26
II.7	Recent fiscal performance and medium-term fiscal projections .....	28
II.8	Global current account balances .....	31
III.1	Output growth and current account balance .....	35
III.2	Fixed investment .....	37
III.3	Consumer prices .....	39
III.4	Net private capital flows to emerging market economies .....	43
III.5	Foreign exchange reserves .....	55
III.6	Policy indicators under different policy regimes .....	56
V.1	Annual changes in official foreign exchange reserves .....	83
V.2	US external assets and liabilities, 2004 .....	89
V.3	Foreign direct investment, 2000–04 .....	92
V.4	US external position .....	94
VII.1	Profitability of major banks .....	121
VII.2	Sensitivity of income to cyclical conditions .....	130
VII.3	Commercial property prices .....	132
VII.4	Residential property prices and mortgage debt .....	133





## Conventions used in this Report

lhs, rhs	left-hand scale, right-hand scale
billion	thousand million
...	not available
.	not applicable
\$	US dollar unless specified otherwise

Differences in totals are due to rounding.



# 76th Annual Report

*submitted to the Annual General Meeting  
of the Bank for International Settlements  
held in Basel on 26 June 2006*

Ladies and Gentlemen,

It is my pleasure to submit to you the 76th Annual Report of the Bank for International Settlements for the financial year which ended on 31 March 2006.

The net profit for the year amounted to SDR 599.2 million, compared with SDR 370.9 million for the preceding year. Details of the results for the financial year 2005/06 may be found on pages 180–2 of this Report under “Net profit and its distribution”.

The Board of Directors proposes, in application of Article 51 of the Bank’s Statutes, that the present General Meeting apply the sum of SDR 132.4 million in payment of a dividend of SDR 245 per share, payable in any constituent currency of the SDR, or in Swiss francs. This year’s proposed amount compares to the dividend of SDR 235 per share paid out last year.

The Board further recommends that SDR 46.7 million be transferred to the general reserve fund, SDR 6.0 million to the special dividend reserve fund and the remainder – amounting to SDR 414.1 million – to the free reserve fund.

If these proposals are approved, the Bank’s dividend for the financial year 2005/06 will be payable to shareholders on 3 July 2006.

Basel, 9 June 2006

MALCOLM D KNIGHT  
General Manager



## I. Introduction: resilience to mounting strains

This time last year, there was both satisfaction and surprise at the continuing excellent performance of the global economy. Satisfaction, because buoyant growth and persistently low inflation, particularly in many emerging market economies, meant generally higher living standards and a significant reduction in poverty. Surprise, because a whole set of imbalances, which some thought had clear potential to eventually threaten that good performance, had still not done so. Many key macroeconomic variables, which had exhibited substantial and sustained deviations from historical norms, surprised by showing none of the typical signs of reverting to the mean. Record and rising household debt levels and a further increase in oil prices did not weigh on spending in the United States. Nor did record high house prices collapse, anywhere. China's investment boom was not interrupted. The easy flow of funds to borrowers of all types did not falter. And an unexpected further leap in what were already unprecedented external imbalances did not lead to disorder in exchange markets.

One year later, the same sentiments could be invoked in even greater measure. There are still grounds for satisfaction. Not only has the good performance continued (Chapters II and III), but there are even indications that some aspects of the imbalances might themselves be receding. The recovery in Japan seems firmly established, and more sustained growth in Germany, as well as elsewhere in continental Europe, appears increasingly likely. This reduces the dependence of the global expansion on the previous two poles of growth, the United States and China. As a result of this broadening expansion, trade imbalances could also be lowered. And there are still more grounds for surprise. Over the course of the last year, other imbalances that had earlier seemed worrying grew even larger. In particular, another year of massive borrowing further raised debt and potential debt service levels. Yet the global economy has powered on, regardless.

This continued strong economic growth has, however, begun to raise concerns about global inflationary pressures. As a result, policies which had previously contributed to extremely easy monetary conditions worldwide have begun to be modified (Chapter IV). Significant adjustments to policy over the last year or so include further monetary tightening in the United States and Europe, the end of "quantitative easing" and foreign exchange intervention in Japan, and the announced change in the exchange rate regime in China (Chapter V). The good news, again both welcome and surprising, is that these moves have not to date (late May) been accompanied by any severe tensions in financial markets. The fear, thankfully unrealised, was that higher policy

rates would interact with the underlying imbalances to affect both financial markets and spending proclivities, with a related effect on global growth and employment.

This does not mean that there has been no response to the recent policy restraint. A number of signs have emerged that some kind of turning point might have been reached. Long bond rates have finally begun to rise, more sharply since the turn of the year, and evidence has been accumulating that other financial markets are increasingly being affected (Chapter VI). Moreover, in the United States and a number of other countries, house price increases (Chapter VII) and construction activity have recently become less vigorous. Evidently, the wish of policymakers must be that this orderly deceleration will continue, and that a smooth adjustment to a sustainable rate of growth will be the eventual outcome. Indeed, this is the consensus forecast, as well as that of the IMF and OECD.

Yet, even if this is the expected outcome, how sure of it can we be? Perhaps the principal point to make is that the cycle of policy tightening globally, as opposed to that in the United States, is not well advanced. Moreover, it is only since early 2006 that long rates, which play a key role in so many financial markets, have risen noticeably. More disruptive effects could still materialise. The recent historical experiences of Japan, Germany and Southeast Asia all indicate that costly economic downturns are possible, even after long periods of exceptional performance. The same examples also suggest that long periods of price stability are no guarantee of future robust growth.

Prudent policymakers today should still be thinking about remaining risks, and how they might respond to them. In advance, what steps might they take to minimise both the likelihood of difficulties and the scale of the losses that could be incurred should they arise? During and after the emergence of problems, what could be done to reduce the collateral damage? The Conclusion of this Annual Report addresses these forward-looking and more normative issues.

Constraining our capacity to assess both emerging problems and potential solutions is the continuing process of structural change in the global economy. New technology and the opening-up of previously closed economies to cross-border influences are all profoundly affecting the real economy. The inflation mechanism has also changed, perhaps dramatically. The financial sector too has felt the combined impact of globalisation, consolidation and the increased influence of market forces. The good news is that central bankers seem well aware of these changes and the uncertainties they create. Existing policy frameworks were increasingly questioned last year, and signs emerged that they were being significantly adapted in response. Change is begetting change, which is no bad thing.

## Meeting the challenges of recent success

The strong economic growth during the period under review was shared by all major geographical areas. The impetus for this expansion had largely

originated in the United States and Asia, and first benefited others that exported to these regions. Higher demand led in turn to substantial increases in energy and other commodity prices. Through both volume and price effects, this benefited emerging markets more generally, including, for the third year in a row, Africa. In spite of being on the negative side of this same price shift, Japan and continental Europe also showed clearer signs of recovery.

Notwithstanding this welcome vigour at the aggregate level, the pattern of spending in some of the fastest-growing countries continued to be highly unusual. In the United States and a number of other countries, private consumption has been strikingly high, as has private residential investment. Both have been buoyed by easy credit conditions, rising house prices and a well developed financial capacity to extract housing equity. The associated effect has been a continuing very low rate of household saving (indeed, sharply negative in some countries) and a further increase in household debt. In contrast, in China it is the level of fixed investment that has been strikingly high. Here, too, easy credit conditions have played a prime role, as has political influence over loans for projects that might not meet normal credit risk criteria. Foreign direct investment has also been a significant factor, with much of the output intended for foreign markets. To oversimplify, the upshot of these unusual patterns is that the English-speaking countries have become the global pole accounting for increases in the consumption of tradables, while Asia, with China at the centre, has become the global pole of their increased production.

Elsewhere in the world, the most striking deviation from more normal spending patterns has been the persistently low rate of corporate investment, against the background of a continuing high level of household saving. The persistence of low investment in so many countries is particularly puzzling given generally high levels of measured profits and what still seem to be very accommodative financing conditions. Plausible explanations for this weakness could include hesitancy in the wake of earlier excesses as well as hurdle rates that are too high for a low interest rate world. The influence of such factors should diminish with time. A more fundamental explanation might be doubt about the profitability of investments looking forward. One reason might be a concern that past profit growth was largely due to non-repeatable factors: falling interest rates, tax breaks and cost cutting. Another might be the conviction that current elevated levels of household spending in countries like the United States are not sustainable. And still another might be fears about future competition, from China and India in particular.

An international implication of the fact that the United States and a number of other countries save so little relative to domestic investment, while other countries save so much, is that external imbalances have grown to record levels. The US current account deficit at the end of 2005 was equivalent to 6½% of the country's GDP, despite the net investment income account having remained stubbornly positive until very recently. Almost every region of the world has contributed to the offsetting surplus, but China, Japan and recently the oil exporters have contributed the most.

If robust global demand remained a source of satisfaction last year, so too did global inflation performance. While higher energy prices generally lifted

headline inflation, there was little pass-through to underlying measures of inflation. In most jurisdictions, wages and benefits remained generally well under control. Moreover, productivity increases tended to be higher in countries with faster-rising wage bills, like the United States, implying offsetting effects on unit labour costs. The fact that profits as a share of factor incomes hit record levels globally in 2005, in spite of higher commodity prices, also has favourable implications. New cost pressures could, for a time, be contained by margin compression.

But, as with the aggregate demand data, looking beneath the surface reveals latent issues that warrant attention. First, the data may not be reliably measuring the underlying inflation trends, already made difficult to identify by massive shifts in relative prices in recent years. For example, in most countries the costs of housing services have been rising sharply, but these tend to be either badly measured or even ignored in the calculation of consumer price indices. Second, the concept of “core” inflation is based on the exclusion of volatile price components, but the price of excluded energy has now been trending upwards for over three years. It is the reality of consumers facing higher costs for energy and housing services that could still pass through to wage settlements. Third, in many countries the effects of higher energy prices have been muted by regulatory constraints and fiscal subsidies, but these will have to be removed over time. And finally, as the global economy moves closer to full capacity, rising inflationary pressures might be expected.

The growing concern in recent quarters with the need for “vigilance” against potential inflationary pressures was reinforced against the backdrop of many years of highly accommodative monetary and credit conditions. Real policy rates in the United States and the euro area had been negative for some years, and well below potential rates of growth since the beginning of this decade. Monetary and credit aggregates tell much the same story. All have shown sharp increases in recent years, and most accelerated in the period under review. A similar pattern is discernible in emerging market economies, reflecting domestic tendencies towards more rapid credit creation and the effects on domestic liquidity of large capital inflows. The subsequent reflow of funds to the industrial countries, in the form of foreign exchange reserves, completes the process by which the official sector has increased liquidity globally.

Movements in other financial variables over the last fiscal year also indicated the influence of continuing easy monetary conditions. Perhaps the most important development, given its impact on a wide range of other markets, was the protracted refusal of the long bond rate in the United States to rise in response to sizeable increases in the federal funds rate accompanied by continued strong economic growth. Indeed, after earlier persistent declines in the long rate, it was only in March 2006 that its level returned to that prevailing when the Federal Reserve began to tighten in June 2004. Bond rates in other industrial countries traced out similar movements, albeit at the lower levels justified by weaker economic numbers. On the one hand, a number of studies seemed to indicate the influence of massive purchases of long-term bonds by foreign central banks, primarily in US dollars, and by pension funds



and insurance companies seeking to hedge their long-term liabilities. On the other hand, the possibility that the market was simply pricing in the increased likelihood of an extended economic recession, perhaps in response to current excesses, could not be ruled out completely.

Developments in other financial markets, however, seemed less supportive of these more pessimistic interpretations. Indeed, the prices of almost all longer-term financial assets have been consistently strong. Spreads on high-yield corporate bonds tightened back close to cyclical lows. The spreads on sovereign bonds fell even further to reach record lows, which have essentially been maintained to date. With the exception of the US markets, global equity prices showed at least steady gains almost everywhere in 2005, while gains in Japan and many emerging market economies bordered on the spectacular. And, as noted, house prices continued to advance in most countries. Finally, and also consistent with optimistic forecasts, the cost of insuring against expected volatility (as derived from option prices) has also been unusually cheap in recent quarters.

It is not hard to find specific factors in each of these markets to support an upbeat view about the future. For example, corporate bond defaults have, in recent years, been exceptionally low. Moreover, many sovereigns have benefited from better domestic policies, better external positions and less macroeconomic volatility in the industrial countries. Yet the fact that all these long-term asset prices were rising simultaneously also leads naturally to consideration of the possibility of a common cause. To varying degrees, they may all be manifestations of the extended period of easy credit conditions just referred to. Indeed, this interpretation of developments in financial markets is given further credence by the recent behaviour of commodity prices in general, and oil and gold prices in particular. The almost uninterrupted upward trend in all these prices began around the middle of 2003, when policy rates in the main industrial countries reached their lowest level in this cycle.

While their precise motivations clearly differed somewhat, the central banks in almost all the larger industrial economies tightened policy in the period under review. This process continued to be most advanced in the United States, where each meeting of the Federal Open Market Committee resulted in a 25 basis point rise to a level of 5% by the middle of May 2006. While the Federal Reserve's preferred measure of core inflation remained well under control, headline inflation peaked around 4½% in 2005 under the particular influence of higher energy prices. Moreover, reductions in measures of domestic excess capacity indicated the potential for further inflationary pressures, as did the continued and rapid increase in house prices. The ECB also raised rates twice, in spite of relatively higher levels of excess capacity, with concerns being expressed about developments in both of the pillars supporting the ECB's policy strategy: higher oil prices pushed up headline inflation, further reinforcing the need for vigilance against subsequent wage increases, while credit growth, especially in the form of household mortgages, accelerated sharply.

Even in Japan, where the authorities had for years been focusing on the need to eliminate deflationary tendencies, emerging signs that the policy had

finally succeeded led the Bank of Japan to conclude that it could begin to carefully remove its policy of “quantitative easing”. However, the Bank of Japan also made it clear that this was quite distinct from a decision to raise short-term policy rates. As with the “measured” increases in policy rates in the United States, this was designed to avoid any disruptive unwinding of the financial exposures built up during the long period of extremely low Japanese interest rates. Elsewhere in the industrial world, monetary policy was also tightened cautiously for very similar reasons.

This tightening process had an unwelcome side effect. In response to the fact that policy rates rose more in the United States than elsewhere, the dollar actually strengthened materially on an effective basis during most of 2005 before subsequently falling back somewhat. This confounded the expectations of those who had focused on the growing, indeed unsustainable, size of the US external deficit. Moreover, the strengthening of the dollar perhaps contributed to making the deficit larger than would otherwise have been the case. Imports rose sharply as a share of GDP, and only partly as a result of higher oil prices. In other industrial economies, weaker currencies helped reduce the generally negative effects on current account balances of higher commodity prices and deteriorating terms of trade.

The strengthening of the dollar, in association with higher policy rates in the United States, might also have been expected to reduce the flow of capital to emerging market economies. This in turn would cause their currencies to weaken. But, again confounding expectations, most such currencies strengthened, some significantly, over much of the period under review. In part, this was due to improved trade balances, related to commodity gains and better domestic policies, but capital inflows in a wide variety of forms also rose to sharply higher levels. Apparently, as US rates rose, the funding for “carry trade” purchases supporting such inflows simply shifted to other industrial countries with lower interest rates.

Emerging market economies reacted to these pressures with various combinations of exchange rate appreciation, exchange rate intervention and easier domestic monetary policy. There was generally a greater willingness than hitherto to accept stronger currencies. Yet, other than in Latin America, real interest rates in many emerging markets were kept close to zero throughout much of the period under review, a situation very similar to that seen in most of the industrial countries. As for recourse to intervention, the level of reserves held by emerging market countries rose to record levels, albeit more slowly. While virtually every country showed some gains, those recorded by China were huge.

Between February and mid-May 2006, as the pattern of stronger growth and monetary tightening in the industrial countries became more generalised, signs began to emerge of a change in the financial climate. Of perhaps greatest significance, long bond rates moved up sharply in the United States, as they also did in Europe and Japan. In addition, the dollar began to weaken once more, indeed at an accelerating pace from April onwards, while the yen and euro strengthened. High-yield currencies like the New Zealand dollar, the Hungarian forint and the Icelandic króna, previously much favoured by

speculators, fell sharply as attention refocused on both domestic imbalances (such as rapidly rising house prices and low private saving rates) and associated large external deficits. Stock markets in the Middle East, a region which had benefited greatly from higher energy prices, fell even more dramatically as regional investors reined in their earlier exuberance. Equity markets in many other emerging market economies also fell back in May as foreign investors withdrew. Whether these events foretell a more widespread and longer-lasting return to more cautious behaviour on the part of investors remains an open question. Many false predictions of such a change have been made in the recent past, albeit not against the background of a global tightening of monetary policy.

### Structural change and policy regime shifts

Production processes in the global economy have become significantly more integrated over time, particularly since the early 1990s. This has implied both higher levels of global productivity and massive increases in the effective supply of global labour. Together, these factors have continued to put direct downward pressure on the prices of traded goods and services, although perhaps less so in 2005 than in previous years. But there have also been continuing indirect effects, with attendant implications for wage and price setting behaviour. Not only has foreign labour become increasingly available to deal with bottleneck problems, but threats to move whole factories to lower-cost jurisdictions have become increasingly credible. Last year, merger and acquisition activity further contributed to these longer-term trends, particularly in Europe. Moreover, what became distinctly more noticeable last year were the efforts of enterprises from emerging market countries to seek control over companies in other emerging markets, as well as in industrial countries. This marks a significant and politically more sensitive phase in the globalisation process.

As the year wore on, there were growing signs of resistance to all these forces. In the United States, the rising bilateral trade deficit with China led to an intensification of the political pressure for an increase in the exchange value of the renminbi. The slight revaluation in July 2005, and the associated announcement of a new framework based on an exchange rate basket, were seen by many in the United States as less than adequate. As a result, a number of bills were introduced in the US Congress threatening to impose punitive tariffs on Chinese imports. Political forces in the United States also showed strong resistance to attempts by first Chinese and then Middle Eastern companies to buy controlling stakes in certain US interests. In Europe, the resistance took the form of measures to impede the liberalisation of service industries within the European Union and to prevent cross-border takeovers, particularly in the financial and energy sectors. In France, widespread protests in opposition to measures to liberalise labour markets further attested to the uncertainties and fears generated by the globalisation process.

Ongoing structural change also characterised global financial markets in the period under review. One welcome development was the increased

capacity of borrowers in emerging market countries to issue bonds, sometimes of quite long maturity, denominated in local currencies. Indeed, in the course of the year, this seemed to develop into a new asset class of interest to pension funds and many others. On the face of it, this development appears to refute the doctrine of “original sin”, according to which countries with a history of bad macroeconomic performance would never again be offered such borrowing opportunities. Of course, it could also be asked whether this renewed access will prove to be only a temporary by-product of easy monetary conditions and an enhanced appetite for risk.

Another notable development was the continued spectacular growth in markets for the transfer of credit risk, in particular various forms of structured debt obligations backed by a widening range of risky assets, including commercial property. Again, this constitutes a significant step towards making markets more complete and efficient, even if it also implies attendant risks. A private sector working group on these markets, which reported last year, drew particular attention to frequent shortcomings in the supporting legal documentation and to other operational risks. Supervisory authorities in New York and London, where most of these markets operate, immediately responded with forceful steps to encourage improvements.

The work of central bankers has been affected, for better and for worse, by these structural developments. In particular, positive supply side shocks, including the effects of globalisation on labour markets, have made it easier than it would otherwise have been to maintain inflation at low levels. Less helpfully, this development may also have led to a certain complacency that the war against inflation has been won for good. Moreover, more complete and generally more efficient financial markets seem to have experienced occasional phases when risk has been underpriced and credit has grown excessively. This combination of easy money and low risk premia could eventually lead to future inflation, or financial imbalances, or both.

Over the last few years, central banks have shown a greater willingness to factor such concerns into their policy frameworks. Central bankers have been making increasingly frequent reference to the need to raise policy rates back towards more “normal” or “neutral” levels. More formally, the Bank of Japan has announced that its future policy moves will be guided by two “perspectives”: the prospects for near-term inflation and the need to avoid longer-term problems of the sort that emerged in the late 1980s. The ECB’s two-pillar approach also seems to have been evolving in a similar direction. All of these changes have been supported by a growing body of empirical research indicating that, when it comes to ensuring longer-term macroeconomic stability, money, credit and financial conditions might still matter after all.

## II. The global economy

### Highlights

The world economy grew strongly in 2005 but inflation remained subdued despite a further jump in oil and non-oil commodity prices. While the United States and China led the global expansion in early 2005, the recovery gained breadth in the course of the year, extending to Japan and continental Europe.

Global growth and inflation outcomes last year exceeded the optimistic forecasts of early 2005 despite headwinds from changes in the macroeconomic environment. First, inflationary pressures remained muted even as commodity prices rose further in the third consecutive year of buoyant world growth. Second, the US economy retained considerable strength despite the energy price hike and hurricane-related disruptions. Third, global financing conditions continued to be very supportive to growth, notwithstanding the progressive removal of monetary accommodation in the United States and, albeit less advanced, in the euro area. Finally, financial markets stayed calm despite the further massive and unexpected deterioration of the US current account balance during 2005. Although the US external deficit exceeded forecasts by about \$100 billion in 2005, the dollar appreciated in real effective terms during the year.

Growth and inflation								
Average annual changes, in per cent								
	Real GDP				Consumer prices <sup>1</sup>			
	Average 1991–2003	2004	2005	2006 <sup>2</sup>	Average 1991–2003	2004	2005	2006 <sup>2</sup>
Total <sup>3</sup>	3.6	4.8	4.3	4.4	11.8	3.1	3.2	3.2
Advanced industrial economies <sup>3</sup>	2.3	3.0	2.6	2.8	2.2	2.0	2.3	2.3
United States	2.9	4.2	3.5	3.4	2.7	2.7	3.4	3.2
Euro area	2.0	1.8	1.4	2.1	2.4	2.1	2.2	2.1
Japan	1.1	2.3	2.6	3.0	0.5	−0.0	−0.3	0.4
United Kingdom	2.4	3.1	1.8	2.3	2.4	1.3	2.1	2.0
Other <sup>3, 4</sup>	2.6	3.1	2.6	3.0	2.2	1.6	2.0	2.1
Emerging economies <sup>3</sup>	5.4	7.3	6.9	6.7	25.9	4.9	4.5	4.4
Asia <sup>3, 5</sup>	7.2	7.9	8.0	7.7	6.1	3.8	3.3	3.7
Latin America <sup>3, 6</sup>	3.4	5.9	4.3	4.6	57.5	6.7	6.0	5.4
Central and eastern Europe <sup>3, 7</sup>	0.5	6.9	5.9	5.6	80.4	8.7	8.6	6.9
Other <sup>3, 8</sup>	2.3	4.8	5.4	5.0	5.5	1.0	2.3	2.9

<sup>1</sup> For the euro area and the United Kingdom, harmonised index; for Latin America, end-year data. <sup>2</sup> Consensus forecasts published in May. <sup>3</sup> Weighted average based on 2000 GDP and PPP exchange rates. <sup>4</sup> Australia, Canada, Denmark, New Zealand, Norway, Sweden and Switzerland. <sup>5</sup> China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan (China) and Thailand. <sup>6</sup> Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. <sup>7</sup> The Czech Republic, Hungary, Poland, Russia and Turkey. <sup>8</sup> Saudi Arabia and South Africa.

Sources: Eurostat; © Consensus Economics; national data.

Table II.1

The consensus forecast for 2006 is for a continuation of firm growth and low inflation worldwide (Table II.1). Strong business confidence and low or declining unemployment support this optimism about the near-term outlook for growth. However, several features of the current global upswing are less positive: fiscal deficits are large; household saving seems unsustainably low in a number of advanced economies; corporate investment levels remain low; and global current account imbalances have reached unprecedented levels. At the same time, the inflation outlook has become more uncertain as oil prices have risen to new record highs and output gaps are narrowing or even closing in many countries.

## Overview of the global economy

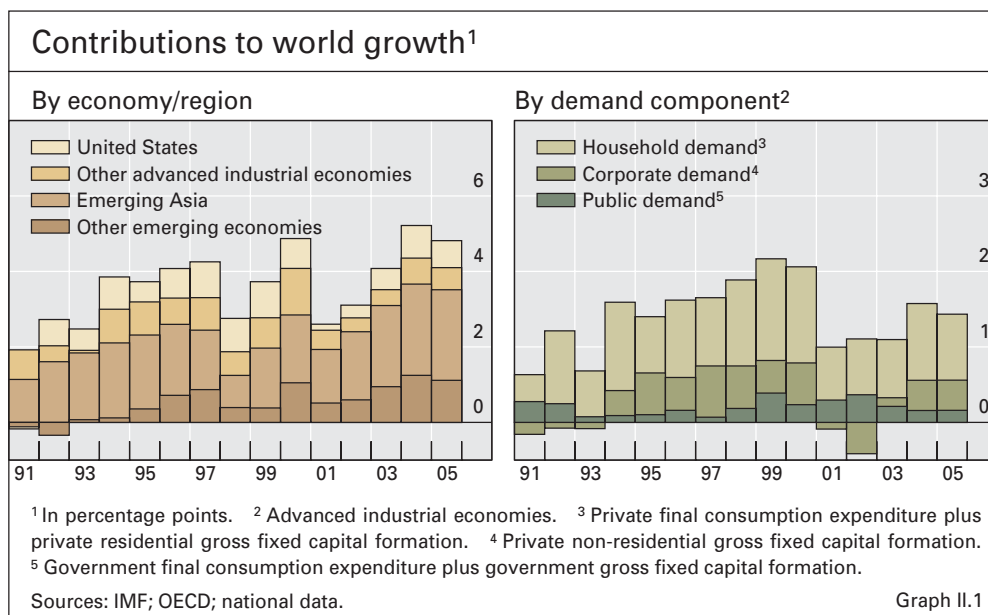
### *Continued buoyant growth and low inflation*

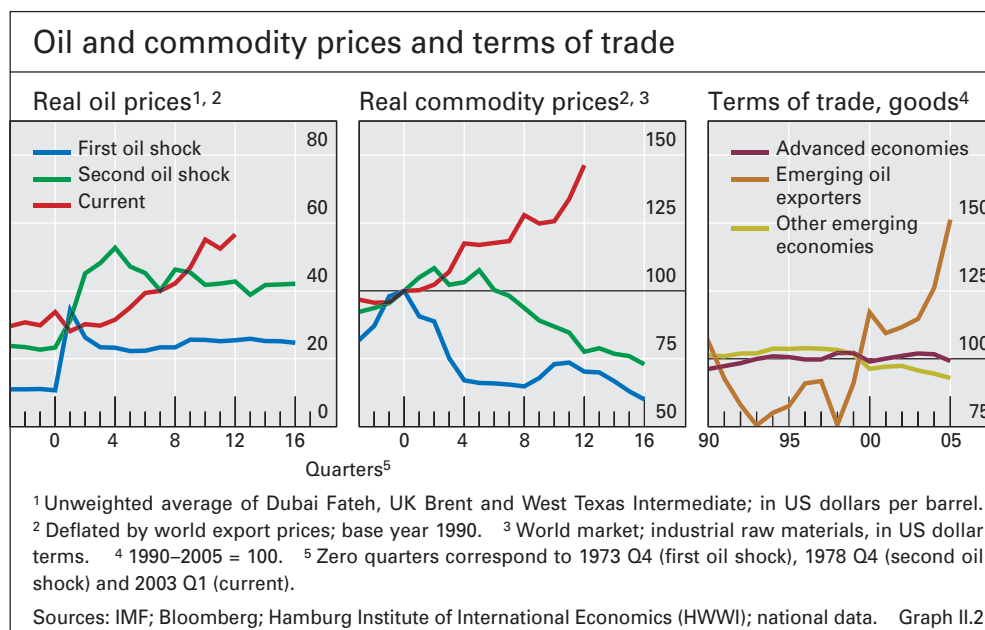
World GDP growth in 2005 exceeded 4% for the third consecutive year, making this the strongest upswing since the early 1970s. While output in the Americas and Europe grew slightly less than in 2004, growth in Asia strengthened further. China's economic expansion continued unabated and the long-awaited revival of Japan added to the region's dynamism, not least because of the substantial complementarities of trade structures between Japan and emerging Asia. Overall, emerging Asia accounted for more than half of last year's increase in global output (Graph II.1).

Third consecutive year of strong growth

Rapid demand growth (especially in emerging Asia) supported a further rise in commodity prices in 2005, although capacity constraints in oil production and refining accentuated price pressures. Spot prices for crude oil hit \$70 a barrel in late August 2005, an increase of about 60% from the beginning of the year. The steady increase in real oil prices over the past two years contrasts sharply with the supply-driven oil price shocks in the 1970s, when part of the

Commodity prices continued to rise ...





initial spike was reversed relatively quickly. The price of base metals and other commodities also rose in tandem with oil prices (Graph II.2).

... but global economic growth remained strong ...

The global economy proved remarkably resilient to the further sharp rise in energy prices. The net oil imports of OECD countries amounted to about 1½% of their GDP. This is ½ percentage point more than in 2004, but only about half of that in the 1970s. While the economic expansion in oil-importing countries remained intact, substantial terms-of-trade gains boosted growth in oil- and commodity-exporting emerging economies in Latin America, the Middle East and Africa.

... supported by subdued inflation ...

Stubbornly subdued inflation cushioned the impact of high energy prices on aggregate demand in oil-importing countries. Consumer price inflation rose only moderately from the levels observed in 2004. Second-round effects were largely absent, as wage moderation continued and corporate pricing power was limited. Longer-term inflation expectations remained firmly anchored. Against this backdrop, the central banks of the United States and, subsequently, the euro area and Japan pursued strategies of a gradual removal of monetary accommodation (see Chapter IV).

... and easy financing conditions

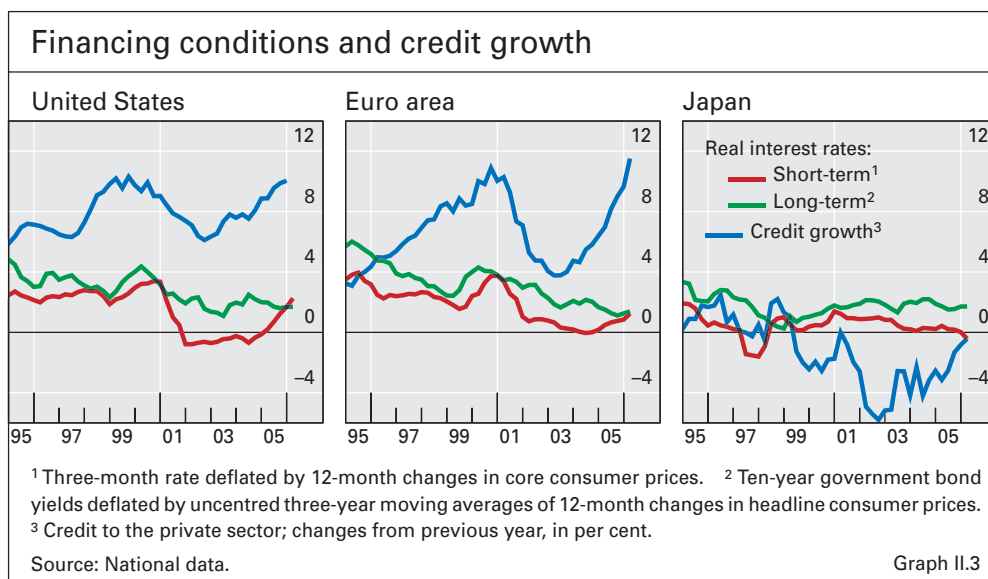
Persistently easy financing conditions worldwide provided another counterweight to the effect of rising energy prices on economic growth. Real short- and long-term interest rates in the major currency areas stayed well below long-term averages. Associated with this development, low risk premia supported asset values across the board: house prices boomed in many countries (see Chapter VII), and equity prices increased to multi-year highs virtually everywhere (see Chapter VI). Unusually tight credit spreads went hand in hand with an acceleration of credit growth, to rates comparable to those observed in the late 1990s.

The expansion continued in the United States and China ...

#### *Signs of a more balanced economic expansion*

The United States and China remained the main engines of global growth in early 2005. At the same time, buoyant US consumer spending and a





continuation of very strong investment in China helped the euro area and the emerging Asian economies to overcome a weakening related to inventory adjustment in manufacturing. Indeed, exports picked up in Europe in the first half of 2005 and later in the rest of Asia, including in the previously lagging high-tech sectors.

The global expansion broadened as the year progressed. While the US economy retained considerable momentum and China continued to grow apace, strengthening domestic demand supported a recovery in continental Europe. Against the backdrop of buoyant profit growth, firming business sentiment and, more recently, rising capacity utilisation, the euro area recorded the strongest increase in business spending since 2000. Yet private consumption failed to recover. Growth differentials among the large euro area economies remained considerable, ranging from rapid economic expansion in Spain to below average growth in France and Germany, and stagnation in Italy.

Rising domestic demand bolstered confidence that the recovery in Japan was firmly established. Vigorous business spending and the turnaround in credit growth suggested that the process of balance sheet adjustment in the corporate and financial sectors had finally run its course (Graph II.3). Private consumption rebounded on the back of improving labour market conditions. Domestic demand firmed in many emerging Asian economies (see Chapter III).

The economic expansion also became more balanced across components of aggregate demand. Corporate investment finally picked up in many advanced economies. In 2005, its contribution to domestic demand growth was comparable to earlier upswings in the United States and Japan but somewhat lower than in the second half of the 1990s in the euro area. Spending by private households – including residential investment – accounted for about 67% of total GDP growth in OECD countries, compared to more than 80% in the first half of the current decade. The recent decline is attributable to decelerating residential investment and a softening of private consumption following

... spreading to the euro area ...

... and firming in Japan

More balanced growth across components of demand



moderating housing market activity in Australia and the United Kingdom as well as hurricane-related disruptions in the United States.

### *Outlook and risks*

Consensus forecast for continued strong growth in 2006 ...

The consensus expectation for 2006 is for global growth to again exceed 4% and for moderate inflation to continue. Indeed, the economic environment appears favourable in many respects. Business sentiment has picked up globally, which bodes well for a further strengthening of corporate investment. Labour markets have firmed in the United States and Japan, and there are signs of improvement in the euro area. In Asia, a strong autonomous growth momentum seems to be gathering. Economic growth is also expected to accelerate in Latin America and remain strong in central and eastern Europe.

... is subject to event risk ...

However, there are also downside risks. Leaving aside potentially catastrophic events such as an avian flu pandemic or a geopolitical crisis, several questions can be raised as to the sustainability of current macroeconomic trends over the medium term.

... and questions about the sustainability of current growth patterns

The configuration of key macroeconomic variables is highly unusual (Table II.2). First, oil prices have risen to new record highs and are, in real terms, about twice their long-term average. At some point, inflation pressures might grow, especially since output gaps are narrowing or even closing in many economies. Second, real long-term interest rates remain very low, notwithstanding the increase since the beginning of 2006. Neither the reasons behind historically low real interest rates nor the macroeconomic implications of a sharp increase after a long period of low rates are well understood. Third, while US corporations are net savers, measured household saving in the United States turned negative last year. Finally, external current account deficits have widened to unprecedented levels. The combined current account position of countries with an external deficit amounts to more than 2½% of world GDP, with much of this outcome accounted for by the United States.

2005: an unusual year						
Annual averages or totals						
	2005	Peak		Trough		Average 1980–2004
		Value	Date	Value	Date	
Global GDP growth	4.8	5.3	2004	1.2	1982	3.4
Real oil prices <sup>1</sup>	49.1	49.1	2005	14.0	1998	26.3
G3 real long-term interest rate <sup>2</sup>	1.6	5.3	1990	1.6	2005	3.5
US personal saving rate <sup>3</sup>	–0.4	11.2	1982	–0.4	2005	6.1
US corporate financial balance <sup>4</sup>	1.3	1.9	2003	–2.7	1980	–0.4
Current account balances <sup>5</sup>	–2.8	–1.1	1995	–2.8	2005	–1.6
<sup>1</sup> Unweighted average of Dubai Fateh, UK Brent and West Texas Intermediate; in US dollars per barrel. Deflated by world export prices; base year 1990. <sup>2</sup> Ten-year government bond yields deflated by uncentred three-year moving averages of 12-month changes in headline consumer prices. Weighted average based on 2000 GDP and PPP exchange rates. <sup>3</sup> As a percentage of personal disposable income. <sup>4</sup> Saving minus investment, as a percentage of GDP. <sup>5</sup> Sum of economies with a current account deficit, as a percentage of world GDP.						
Sources: IMF; Bloomberg; national data.						Table II.2

## Inflation and wage setting behaviour in the global economy

### Global inflation trends

Global inflation remained low and stable in the period under review despite continued strong economic growth and rising energy prices (Graph II.4). Headline consumer price inflation in the United States rose to 4¾% last autumn as petrol prices peaked after the hurricanes, but fell back towards the end of the year. Headline CPI inflation in other advanced industrial countries also trended higher during the past year or so, but was still low by historical standards. Consumer price inflation moderated in Latin America and remained relatively stable in central and eastern Europe. Inflation trends in emerging Asia diverged: while inflation in China declined, despite continuing rapid economic growth, several other countries recorded rising inflation rates (see Chapter III).

Core inflation rates stayed largely unchanged in the United States and Europe, resulting in a particularly wide gap between headline and core inflation in the third quarter of 2005. In Japan, inflation excluding fresh food crept up to ½% around the turn of the year. Core inflation in emerging market economies was broadly stable.

That headline inflation failed to follow the upward movement of energy prices contrasts sharply with the wage-price spirals that characterised the 1970s. However, it is consistent with the more recent trend of declining inflation persistence. From 1970 to 1989 in the G7 countries, more than 80% of the price increases in the previous six months persisted into the following month. This ratio dropped to less than 50% in the United States after the 1990s, and fell likewise in Canada, Japan and the United Kingdom. The evidence is more mixed in the euro area. The degree of inflation persistence is also reported to have declined in many emerging economies.

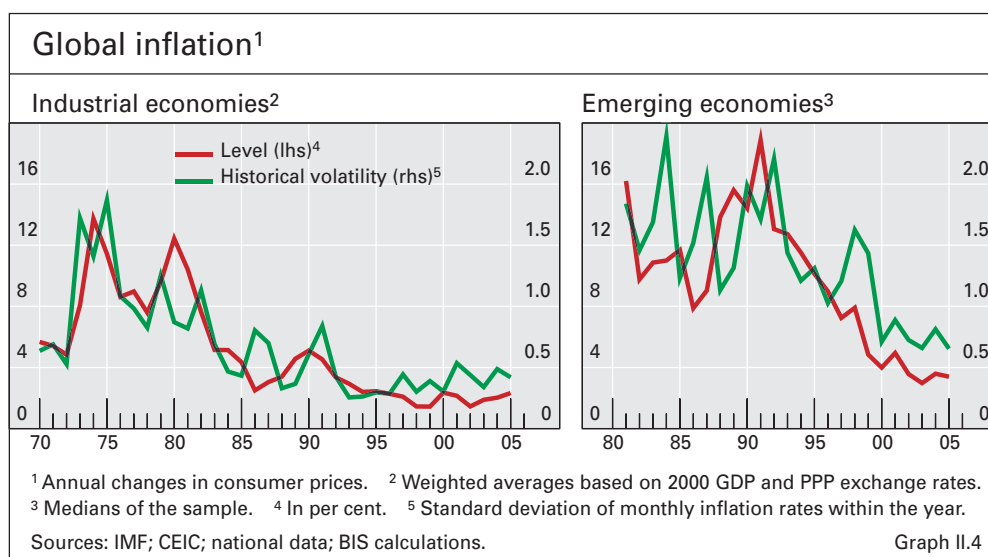
Another global trend that has remained intact is the lower international dispersion of inflation rates worldwide. By 2005, inflation rates in advanced economies had converged to a range of about 0 to 3%, compared to a range

Continuation of low and stable inflation

Broadly unchanged core inflation

Lower inflation persistence ...

... and low dispersion of inflation as global phenomena



Contribution of a common factor to inflation in advanced economies <sup>1</sup>										
	Level of inflation rate					Volatility of inflation rate				
	Average 1970–89	Average 1990– 2005	Difference <sup>2</sup>			Average 1970–89	Average 1990– 2005	Difference <sup>2</sup>		
			Total	Explained by				Total	Explained by	
				Common factor <sup>3</sup>	Country- specific <sup>3</sup>				Common factor <sup>3</sup>	Country- specific <sup>3</sup>
United States	6.1	2.8	–3.3	–3.7	0.4	0.7	0.1	–0.6	–0.4	–0.2
Japan	5.6	0.6	–5.0	–5.3	0.3	2.2	0.2	–2.0	–0.3	–1.7
Germany	3.8	2.2	–1.6	–2.6	1.0	0.3	0.3	–0.0	–0.3	0.3
France	7.8	1.9	–5.9	–5.6	–0.3	0.9	0.1	–0.8	–0.6	–0.2
United Kingdom	9.5	2.6	–6.9	–6.9	0.0	2.4	0.3	–2.1	–0.5	–1.6
Italy	11.2	3.5	–7.7	–8.0	0.3	2.3	0.2	–2.1	–0.6	–1.5
Canada	6.7	2.2	–4.5	–4.5	–0.0	0.7	0.3	–0.4	–0.5	0.1
OECD	8.3	2.7	–5.6	–5.2	–0.4	1.7	0.4	–1.3	–0.4	–0.9

<sup>1</sup> Inflation rates of 22 OECD countries are decomposed to a common factor (ie co-movements across countries) and country-specific factors by a dynamic factor model.   <sup>2</sup> Difference between 1970–89 and 1990–2005.   <sup>3</sup> Contribution to difference.

Sources: OECD; BIS calculations.

Table II.3

Table II.3

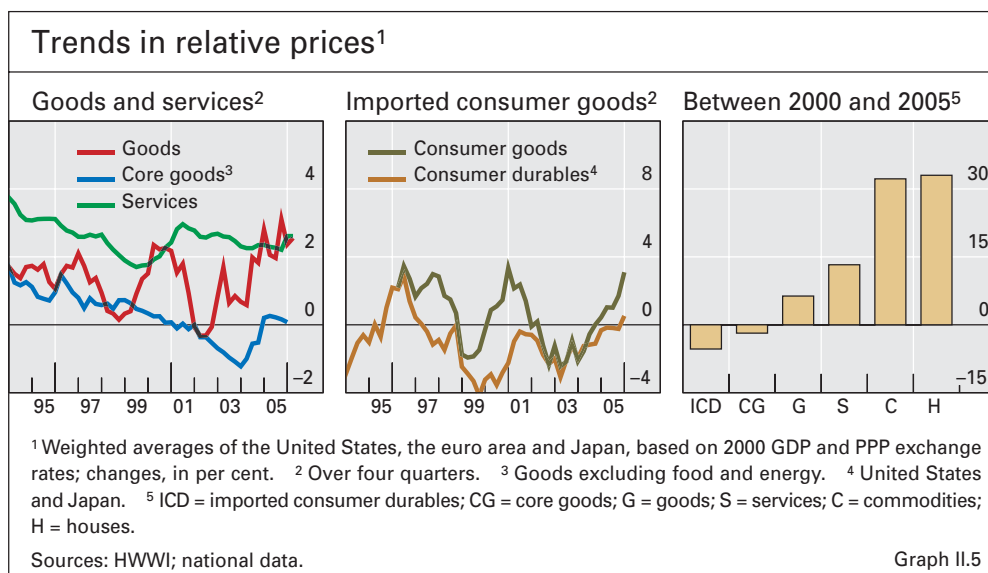
of about 20 percentage points in 1980. Coefficients of variation of inflation rates declined from 1.2 in the mid-1980s to less than 0.5 in 2005. Among emerging markets, successful macroeconomic stabilisation efforts have also reduced the dispersion of inflation rates since the mid-1990s.

Forces behind  
common inflation  
trends

The forces behind these long-term trends in the inflation process are not entirely clear. The lion's share of the decline in the level and variability of inflation rates can be explained by a common factor (Table II.3). However, this measure arguably captures quite distinct economic causes. One element has been changes in the conduct of monetary policy. From this angle, common global inflation trends are the result of a simultaneous shift in domestic economic policies in many countries. Another, truly global, factor is the growing international integration of the markets for goods and factors of production, together with a shift in supply-demand conditions at the global level. In this regard, the economic opening of China, India and the former Soviet bloc, but also the growing economic strength of Asia and Latin America, have played a key role. The apparently greater significance of global measures of economic slack as drivers of domestic inflation is an indication of the increasingly global character of the inflation process (see Chapter IV).

Shifts in relative  
prices are  
consistent with  
globalisation  
affecting inflation ...

Large movements in relative prices at the global level, over the past five years or so, lend support to the view that changes in the real economy have affected global inflation dynamics. On the one hand, commodity prices have risen by more than 30% (Graph II.5). This increase has coincided with booming demand for commodities, raw materials and energy from emerging economies: non-OECD countries accounted for about two thirds of the 20% growth in global oil demand from 1995 to 2005. On the other hand, the supply of manufactured goods has soared through exports from these newly integrated emerging economies. For instance, export volumes of developing Asian economies increased by about 15% per year in 2000–05. During this period,



the prices of imported consumer durables fell by 5% in the major industrial countries while the prices of many non-tradable goods continued to rise.

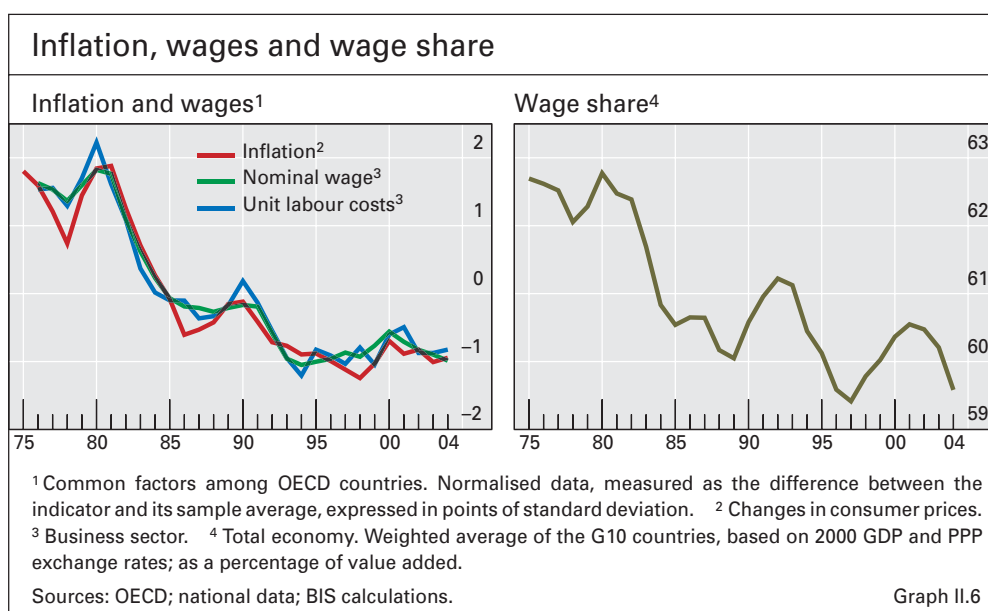
These shifts in relative prices contrast starkly with the patterns observed during the oil price shock in the late 1970s. From 1978 to 1981, the prices of goods, services and commodities in the G3 increased more or less uniformly in the order of 25–35%.

... and contrast sharply with past experiences

#### *Wage setting behaviour and globalisation*

The secular decline in inflation has gone hand in hand with great restraint in nominal wage growth. Increases in unit labour costs have moderated in tandem with nominal wages, and wage shares in the total economy have fallen by 5% over the past three decades or so (Graph II.6).

Secular restraint in nominal wage growth ...



... resulting from  
several factors

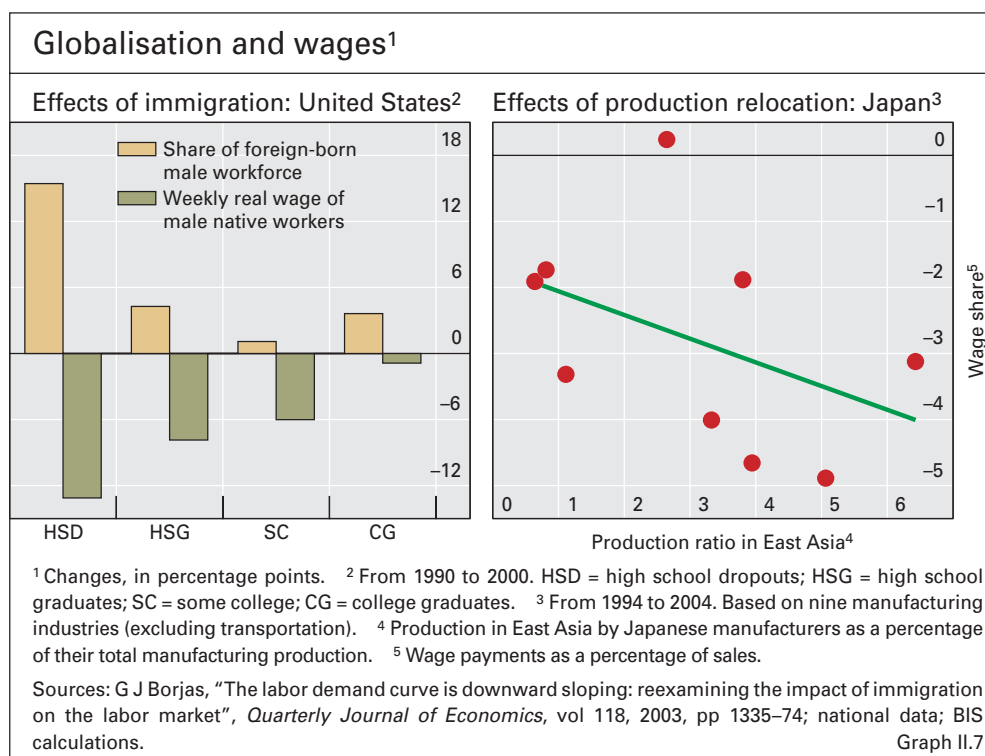
Undoubtedly, several factors have played a role in this process. Many observers have argued that the greater credibility of monetary policy, achieved through a more active response to inflationary shocks, contained wage increases by providing a firmer anchor for inflation expectations (see Chapter IV). Moreover, higher labour productivity growth, thanks to capital deepening and technological progress, has also helped to limit increases in unit labour costs. Finally, coupled with lower union density and more decentralised collective bargaining, the deregulation of domestic labour markets over the past decade or so has tended to reduce the bargaining power of some groups of workers.

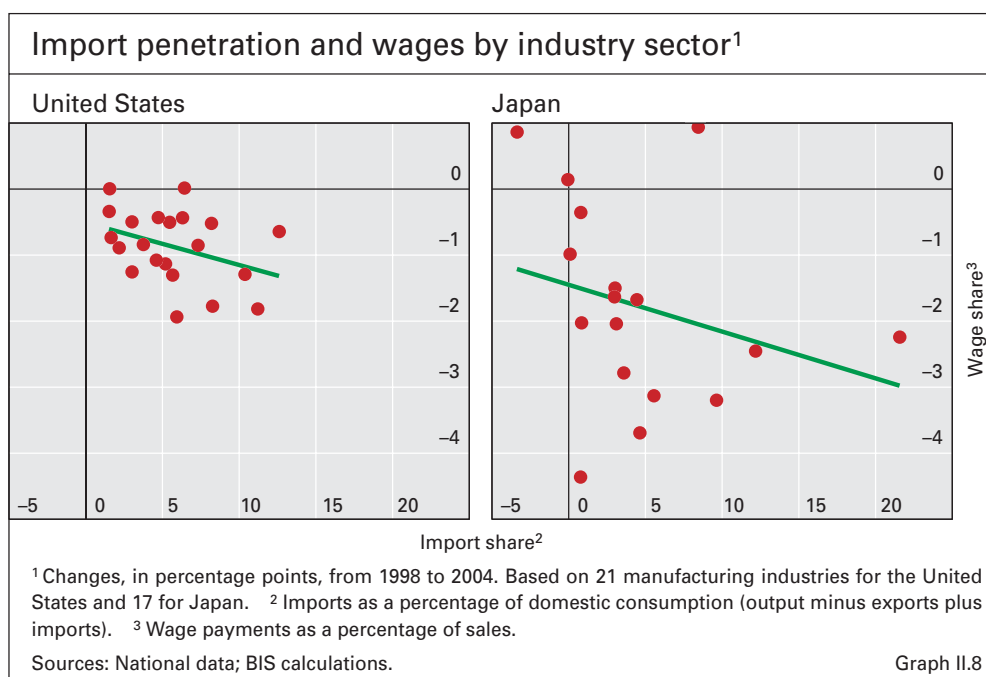
Globalisation has  
affected wage  
setting ...

At the same time, the influence of the globalisation process should not be underestimated. The integration of emerging market economies into the global production process has, by some estimates, effectively doubled the supply of active workers engaged in the global economy. This, together with other aspects of globalisation, has arguably influenced labour market policies and wage setting behaviour in advanced industrial countries. At least three channels seem to have played a role in this process.

... through greater  
labour mobility ...

First, increased international labour mobility has helped to ease supply constraints in domestic labour markets. This seems to have mitigated upward pressures on wages, especially for low-skilled workers (Graph II.7). The awareness that a growing number of jobs are exposed to competition from immigrants could exert a significant influence on wages in countries where labour can easily move across borders. For instance, in the United States the influx of immigrants, which increased the supply of working males by 11% between 1980 and 2000, is estimated to have slowed wage growth by 3 percentage points. In western Europe, the average annual ratio of immigrants to population has essentially doubled since the fall of the Iron Curtain in 1989.





The effect of cross-border labour mobility on wages within Europe may have increased further after the EU enlargement in 2004. For instance, in the United Kingdom significant declines in workers' overtime payments were observed in 2005 in those industries in which non-UK nationals accounted for a large proportion of the workforce.

Second, the relocation of production – actual or threatened – has curtailed the bargaining power of workers and trade unions in many industrial countries. The rapid growth of trade in material inputs, such as parts and components, is an indication of the growing vertical integration of production processes at the global level. The growth rate of world trade in parts and components averaged 9% during the period 1990–2000, compared with 6½% for world trade growth as a whole. In the United States, the share of imported material inputs rose from 12% of total imports in 1992 to 17% in 2000. While the effect to date has mostly been felt in the manufacturing sector, higher-skilled and higher-wage jobs in the services sectors are becoming more and more contestable. The impact of relocating production facilities is visible in Japan, where industries that have actively pursued strategies of relocating production have tended to reduce wage shares more aggressively (Graph II.7, right-hand panel). In Germany, large firms have been able to negotiate real wage cuts in exchange for giving up plans to relocate production.

... the relocation of production ...

Finally, the opening of markets for goods and, increasingly, services to international competition has intensified competitive pressures on producers in advanced industrial countries. The greater contestability in goods markets has forced dominant domestic firms to step up their efforts to cut costs. The reduction of wage bills has been a key element in strategies aimed at curtailing the cost advantage enjoyed by producers in newly globalising countries such as China and India. Indeed, wage shares have on average fallen more in industries that have faced higher import penetration, such as apparel (Graph II.8).

... and heightened competition

## Outlook

Consensus  
foresees continued  
low inflation

The consensus expectation is that inflation will remain low and stable in 2006, although the outlook has become more uncertain recently. Several indicators point to growing inflation risks from rising resource utilisation. Domestic output gaps are narrowing or even closing in many countries and capacity utilisation in manufacturing in the G3 is above long-term averages. Yet it is hard to gauge how much slack is actually left in the major advanced economies. For instance, the rate of unemployment that can be sustained without causing inflationary pressure may have declined as a result of changes in labour market participation or structural reforms. Perhaps even more importantly, globalisation might have lessened the responsiveness of wages to domestic output gaps, thus reducing the likelihood of inflationary pressures.

Low goods price  
inflation might  
persist ...

Against this background, one key question is whether low inflation for traded goods will persist despite continued increases in raw material and energy prices. The acceleration in producer prices in the major advanced economies in the course of 2005 is a clear indication that pipeline pressures have intensified. Hence, much depends on whether (or when) firms regain pricing power at the consumer level and whether increases in wage costs will remain contained. Here, various indicators send different signals.

... as the relocation  
of production seems  
to continue ...

Foreign direct investment in emerging market economies has remained strong, which may be a sign that the process of production relocation has not run its course. Import penetration has kept rising, which indicates continued downward pressures on domestic prices and wages. Nominal wage increases in the major industrial economies have so far remained well below historical norms and this, together with expected solid gains in labour productivity, should help to hold the growth of unit labour costs in check.

... but rising import  
prices raise  
questions

At the same time, the prices of imported consumer durables and core consumer goods prices seem to have stopped declining. Little is understood about wage and price formation and labour markets in the newly globalising emerging economies. Anecdotal evidence, such as double digit increases in labour costs in China for certain manufacturing workers in coastal areas, points to diminishing economic slack. Simultaneously, rising resource utilisation and persistently strong upward pressure on commodity prices may indicate that the output gap is narrowing even at the global level.

## Private sector saving and investment

### Trends

Oil-exporting  
countries and  
emerging Asian  
economies lifted  
global saving ...

Global saving grew in 2005 to 22% of GDP. This is about 1½ percentage points higher than at the cyclical trough in 2002 and comparable to the average for the 1990s (Table II.4). Higher saving in the emerging economies continued to drive the recent increase. Oil-exporting emerging economies accounted for a growing share of global saving in 2005; their saving rates rose by 4 percentage points. Saving patterns in emerging Asia diverged. China's national saving rate grew further and is now at about 51%. Continued



Global saving and investment trends					
As a percentage of GDP					
	Average 1990–99	Average 2000–03	2004	2005	<i>Memo:</i> 1991– 2005 <sup>1</sup>
World saving	22.1	21.2	21.4	22.0	–1.0
Advanced economies <sup>2</sup>	21.7	20.1	19.4	19.4	–3.2
United States	16.3	15.5	13.4	13.3	–2.9
Euro area	21.2	20.9	21.2	20.9	–1.0
Japan	31.4	26.7	26.4	26.8	–7.6
Emerging economies <sup>3</sup>	23.7	25.4	28.6	30.3	6.0
Developing Asia	31.2	32.0	36.0	38.2	9.7
China	38.7	37.1	46.8	51.3	13.5
Latin America	18.3	18.5	21.3	21.8	2.5
Central and eastern Europe	21.1	18.8	18.5	18.8	–8.0
World investment	22.7	21.4	21.7	22.2	–1.6
Advanced economies <sup>2</sup>	22.0	20.7	20.5	20.9	–2.5
United States	18.7	19.2	19.6	20.0	1.5
Euro area	19.8	20.7	20.5	20.9	0.7
Japan	29.0	24.0	22.7	23.2	–9.7
Emerging economies <sup>3</sup>	25.5	24.3	26.4	26.4	1.2
Developing Asia	32.0	29.7	33.4	34.3	4.0
China	37.0	35.0	43.3	44.1	9.4
Latin America	21.0	20.1	20.6	20.7	1.1
Central and eastern Europe	23.8	23.1	24.3	24.0	–3.6

<sup>1</sup> Cumulative change, in percentage points. <sup>2</sup> Including Asian newly industrialised economies (NIEs).  
<sup>3</sup> Emerging economies other than Asian NIEs.

Sources: IMF; national data.

Table II.4

strong profit growth of Chinese corporations suggests that the increase in 2005 might primarily reflect higher corporate saving. This would imply that household saving rates were largely unchanged at the very high level of about one quarter of GDP. In contrast, saving rates in the rest of emerging Asia declined. In central and eastern Europe and Latin America, they were broadly stable.

National saving rates in the advanced industrial economies were unchanged, leaving rates well below the average for the past decade. But differences across countries were considerable. On the one hand, in Germany precautionary motives may have contributed to a further rise in the household saving rate. On the other hand, household saving rates fell markedly in the United States and Spain, where housing wealth rose sharply in 2005. At the same time, the corporate sector in the United States and other advanced economies remained a net saver. To the extent that higher corporate saving has increased the value of claims on the corporate sector in the past few years, lower household saving might be viewed as a response to rising corporate saving. Notwithstanding such effects, in the United States both the household saving rate, which turned negative by most measures in 2005, and the national saving rate appear unsustainably low.

... while saving rates in advanced economies remained unchanged



Investment in China rose further

Investment rates picked up somewhat in 2005 in developed countries and were stable overall in emerging market economies. Again, patterns in emerging Asia diverged. In China, the national investment rate rose by another percentage point. Investment rates in other emerging Asian economies remained broadly unchanged, leaving gross fixed capital formation at much lower levels than before the Asian crisis.

Shift towards corporate investment in advanced economies

Investment activity in the advanced economies shifted from residential towards corporate fixed capital formation. Residential investment growth in OECD countries moderated to 3½%, compared to 6½% in 2004. Corporate capital spending remained firm in the United States and picked up in a number of other economies, including Japan and the Nordic countries, commodity exporters such as Australia and Canada, and parts of the euro area, including Belgium and Germany. By contrast, corporate investment remained relatively weak in the United Kingdom and declined in Italy.

#### *Corporate profits and investment*

Further rise in corporate profits

Corporate profits increased further in 2005 and appear to have reached historical highs as a percentage of global GDP. The forces behind the boom in corporate profits in recent years seem to be of a global nature, although sector-specific developments have also played their part. Operating margins have risen across non-financial sectors during the past few years (Table II.5). This increase lifted operating margins in many industries above the levels of the second half of the 1990s. Especially in commodity-related sectors, margins are now much higher. While pricing power in many sectors remained limited, a substantial and broad-based decline in labour costs supported higher operating margins. The fact that profits have risen even more during the current upswing is to an

Profit indicators for selected global industry sectors <sup>1</sup>						
As a percentage of revenues						
	Operating surplus <sup>2</sup>			After-tax profit		
	2004–05	Change <sup>3</sup>		2004–05	Change <sup>3</sup>	
		2001–02	1995–99		2001–02	1995–99
Airlines	3	3	–3	2	3	–1
Automobiles	4	0	0	2	1	0
Chemicals	9	3	1	6	3	1
Computer hardware	5	2	0	4	4	0
Industrial machinery	8	2	2	5	3	2
Mining	22	4	9	17	6	9
Oil and gas producers	14	3	5	9	3	4
Retail	5	1	1	3	1	1
Software	26	2	0	18	5	3
Telecommunications	16	3	–2	9	13	–1
Utilities	14	3	1	7	3	1

<sup>1</sup> Revenue-weighted average of firms included in the World Equity Market Index. <sup>2</sup> Revenues minus total operating expenses. <sup>3</sup> Average 2004–05 minus average 2001–02 and 1995–99, respectively.  
Sources: Datastream; BIS calculations.

Table II.5

important degree attributable to much lower interest expenses, another global development.

Record profits, high cash levels and low interest rates have not prompted record corporate investment. Corporate fixed capital formation recovered in 2005 and, in real terms, grew in advanced economies broadly in line with previous cycles. But the relatively weak investment in the early phase of the current upswing seems to have led to a cumulative shortfall in capital formation. Indeed, corporate investment as a share of GDP remained low in the G3 economies by past standards (Graph II.9). The fact that, in most of the sectors shown in Table II.5, fixed assets accounted for a significantly smaller share of all corporate assets in 2004–05 than in the second half of the 1990s confirms the notion of relative investment weakness.

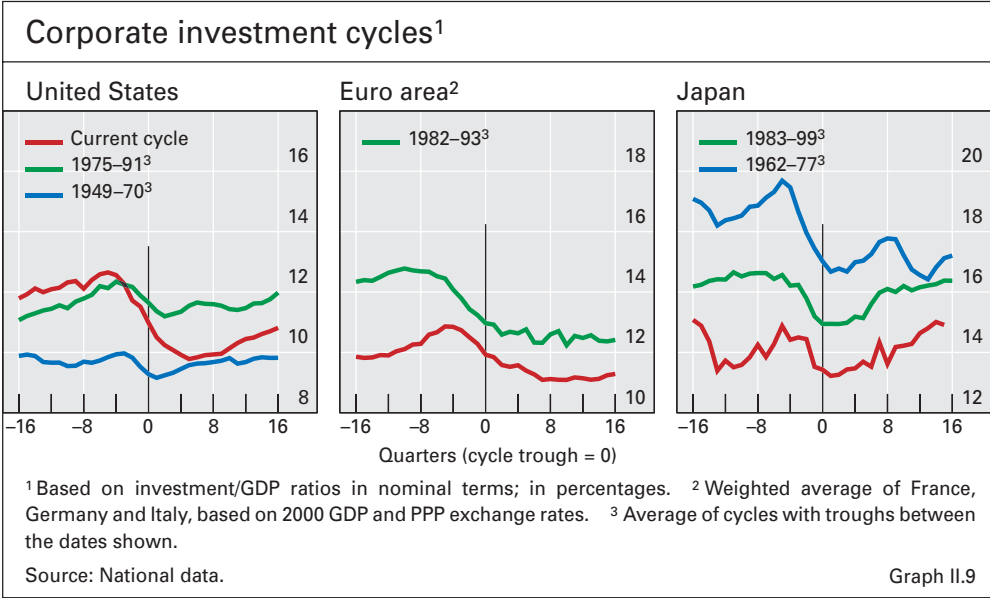
That nominal investment/GDP ratios are still low in most advanced economies remains a puzzle. Part of the explanation could be the fall in the relative price of business fixed investment. For instance, in Japan and the United States the relative price of capital goods has declined by between 25 and 40% since 1980. This would lead to lower nominal investment rates to the extent that the relative price effect is not offset by capital deepening.

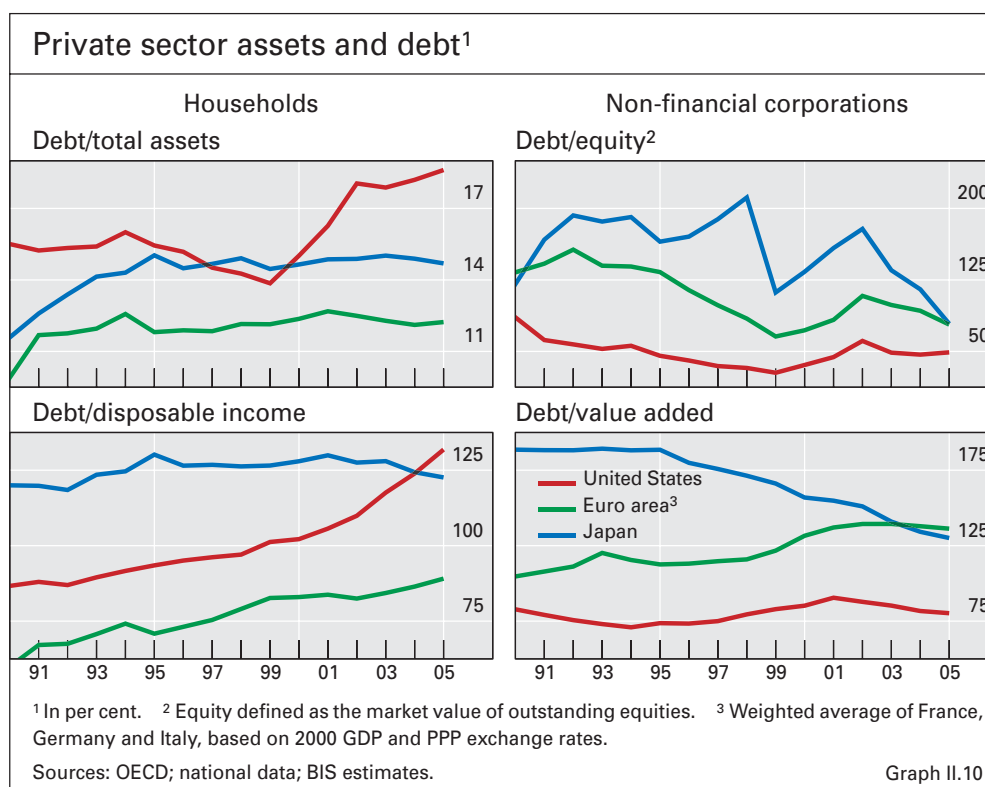
Changes in the structure of economic activity could be another factor behind lower measured investment. Intangible assets, such as brand values and business processes, apparently play a larger role in production now than in the previous decade. However, such investments might not be well captured statistically. In addition, the globalisation of production processes could have lowered investment rates in advanced economies. Indeed, foreign direct investment has been strong, especially in China, but it is not clear whether this is a substitute for investment in the home country. In the case of US multinational firms, vertical international integration seems to involve a combination of higher domestic and foreign investment instead of a simple relocation of domestic production.

Investment levels remained below historical norms

Lower capital goods prices are one possible factor in low investment levels ...

... and changes in the production process are another





Hurdle rates of investment may be relatively high in some sectors ...

High hurdle rates of investment relative to expected returns may have deterred corporate management from expanding capacity in some sectors. One element behind this could be shareholder demands for high returns. Another possible factor is doubts about the sustainability of the boom in specific markets that are keeping expected returns on investment low. Indeed, investment in the oil industry seems to have been relatively weak globally, despite the sharp increase in profits in this sector in the past few years.

... and the memory of past overinvestment may still play a role

Related to this, it is not clear how quickly the legacy of past overinvestment is fading. On the one hand, investment in some IT sectors has rebounded in the past two years. More generally, the balance sheet deleveraging that occurred as a reaction to difficult financing conditions associated with the 2001 equity market collapse and the subsequent tightening of corporate governance seems to have run its course. Debt/equity ratios have fallen in the major advanced economies (Graph II.10). On the other hand, the global boom in leveraged buyouts in 2005 indicates a greater interest in buying existing fixed assets than in creating new ones.

### *Residential investment and housing markets*

Residential investment was strong ...

Notwithstanding somewhat slower growth in 2005, residential investment remained strong; its share of GDP was about 1½ percentage points higher than the long-term average of 5% in Australia and the United States. In Spain, residential investment as a share of GDP was about 9%, almost 3 percentage points higher than the average of the previous 10 years. Germany and Japan, in contrast, are notable exceptions to the picture of above average residential investment rates in advanced economies.

Construction sector in selected economies <sup>1</sup>							
In per cent							
	Strong activity period <sup>2</sup>					Change from peak to trough <sup>5</sup>	
	Date	Average growth rate <sup>3</sup>	Contribution to growth <sup>4</sup>	Peak share in nominal GDP	Peak share in employment	Real output	Employment
Germany	1988–94	3.1	9	6.3	8.5	–18	–20
Japan	1985–90	7.1	15	9.9	9.6	–21	–2
Spain	1994–2004	4.9	11	9.7	13.2	–20	–19
United States	1983–86	8.3	9	4.7	5.0	–13	–8
	1992–2000	2.6	3	4.4	5.2		

<sup>1</sup> National accounts definition (GDP by industry). <sup>2</sup> Continuous period of average annual growth of real value added in the construction sector of close to 3% or more. <sup>3</sup> Average annual change. <sup>4</sup> Contribution to growth of real GDP, as a percentage of GDP growth. <sup>5</sup> Change between the peak and the subsequent trough in construction activity; average for up to three major downturns since 1970.

Sources: OECD; national data.

Table II.6

Residential construction remained the main factor behind the most recent upswing in the US construction sector, which continued into early 2006. The Spanish construction sector is currently in its 13th consecutive year of expansion. This growth has been driven (as well as financed) to a considerable extent by external sources, mainly retiring baby boomers from northern Europe buying second homes on the Mediterranean coast.

... and so was construction

Over the past two decades, the construction sector (including residential and commercial construction) in the major industrial economies went through several cycles. Periods of strong activity tended to be fairly long, with upswings in the sample of countries shown in Table II.6 lasting from four to 10 years or more. During these periods, the construction sector easily contributed 10–15% to the overall growth of GDP, accounted for up to 10% of the total output of the economy at the peak of the cycle, and employed up to 13% of the total workforce. In the United States, for instance, the construction sector expanded on average by 8½% per year during the 1983–86 boom, contributing 9% to the growth of GDP during that period. The 1990s construction boom was less pronounced, although in terms of employment the sector's role increased somewhat. Construction booms also have positive effects on related industries such as real estate and leasing services. During 1983–86, for example, the share of these services grew by 0.7% of GDP in the United States.

Characteristics of earlier construction cycles

Just as the upswings in the construction industry tended to be long, so the downswings were also often protracted and severe. In Germany, Japan, Spain and the United States, real output in the construction sector contracted by 13–21% during the major downturns of the past three decades, and sectoral employment declined by up to 20%.

Downturns in construction tended to be protracted ...

The most recent downturns in Germany and Japan were particularly severe. In Germany, sectoral output and employment both contracted by 30% between 1994 and 2004. Only in the course of 2005 were there tentative signs of a revival in building activity. Likewise, the construction industry in Japan

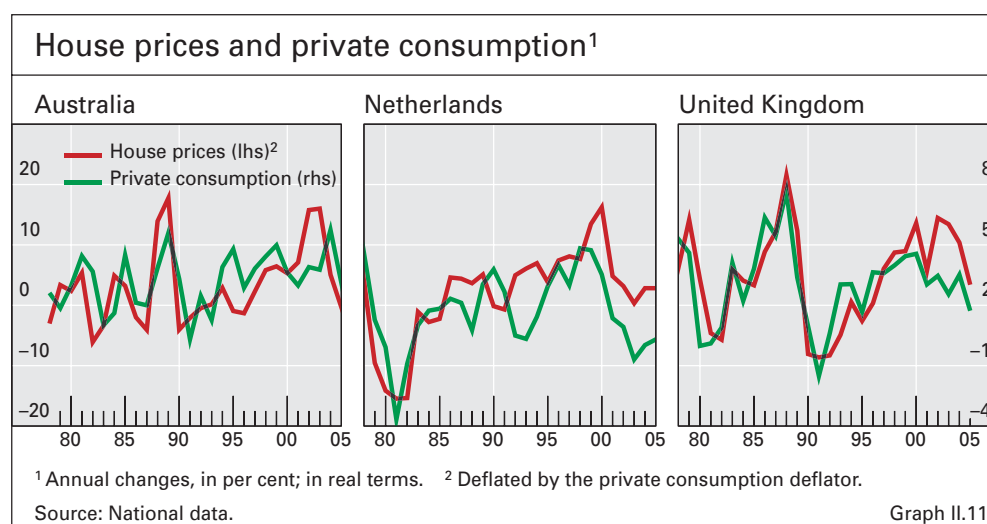
... in particular in Germany and Japan

has yet to recover after the bursting of the property bubble in 1990. Real output in the construction sector also declined by almost 30% between 1990 and 2003. Employment did increase slightly, however, as many construction workers were engaged in public sector projects that formed part of expansionary fiscal policies during the 1990s. Even so, the effects of the downturn on macroeconomic aggregates such as private consumption were clearly felt, as construction workers' wages were cut significantly.

A slowdown in housing market activity and lower house price inflation would also imply less support for consumer expenditure through other channels. First, housing wealth grows more slowly (or even declines). Second, and related to this, the capacity to liquefy housing equity through borrowing against housing collateral diminishes. Australia, the Netherlands and the United Kingdom have experienced episodes of slowing house price inflation. In all three cases, this coincided with a substantial weakening of real consumption growth (Graph II.11).

However, at least in Australia and the United Kingdom, the impact of slowing house price increases on consumption has been weaker than many had expected. Indeed, in both countries changes in real house prices in the first half of the current decade accounted for less of the fluctuation in real consumption than during the previous 25 years. One explanation might be that households, to some degree, anticipated a correction in sharply rising house prices. Another could be that, in the more recent environment of solid growth and low unemployment, households in Australia and the United Kingdom revised spending plans down to a lesser degree than, for instance, Dutch households during the economic downturn in 2001–03. Finally, while house prices levelled off in Australia and the United Kingdom, they did not fall significantly in real terms.

The possible effect of slowing housing market activity on aggregate demand remains subject to considerable uncertainty. The current housing boom has been unusual in terms of its duration, size and the international co-movement of prices. House prices have risen sharply not only in many advanced, but also in many emerging economies, including China and Korea.



Moreover, the current boom has coincided with a secular change in financing possibilities in many countries. On the supply side, a wider array of loan contracts has been offered to house owners. Consequently, borrowing against housing collateral has become cheaper and more readily available, which has allowed new categories of households to enter the housing market. In particular, sub-prime lending has increased significantly in countries where it is allowed. However, low interest rates have thus far kept the debt service burden in check, despite rising debt levels (Graph II.10).

## Fiscal policy

Although the public finance outturns in 2005 were generally better than expected a year ago, fiscal deficits in many advanced economies remained high. Reflecting favourable cyclical developments, headline deficits were reduced by about 1% of GDP in the United States and Japan and by about ½ percentage point in the euro area (Table II.7). Structural budget deficits, which remove cyclical effects from headline deficit figures, also declined, but in many countries remained at levels that indicate the need for further fundamental fiscal adjustment.

The improvement in the US headline fiscal position came as a result of strong revenue growth, with corporate income tax receipts increasing particularly sharply, and relatively tight controls on non-discretionary spending. The deficit is expected to remain more or less unchanged in 2006, reflecting less buoyant revenue growth as well as the costs of post-hurricane rebuilding and ongoing military operations overseas.

In the euro area, modest real growth helped improve revenue ratios slightly, while expenditure ratios stayed broadly stable. Yet deficits remained

Improvement in  
fiscal balances in  
2005 ...

... significant in the  
United States ...

... and moderate in  
the euro area

Recent fiscal performance and medium-term fiscal projections <sup>1</sup>											
	Financial balance			Structural balance <sup>2</sup>			Gross public debt		Change in fiscal position over medium term <sup>3</sup>		
	2004	2005	2006	2004	2005	2006	2005	2006	Year	Financial balance	Gross public debt
United States	-4.7	-3.8	-3.6	-4.4	-3.7	-3.7	64	64	2009	1.3	0
Euro area	-2.8	-2.4	-2.3	-2.3	-1.6	-1.6	78	78	2008	1.1	3
Germany	-3.7	-3.3	-3.1	-2.7	-2.2	-2.1	70	71	2009	1.8	1
France	-3.7	-2.9	-2.9	-2.9	-2.0	-2.1	77	76	2009	2.0	3
Italy	-3.5	-4.3	-4.2	-3.4	-3.7	-3.6	121	122	2009	2.8	7
Spain	-0.2	1.1	1.1	0.3	1.3	1.3	50	48	2008	-0.4	7
Japan	-6.3	-5.2	-5.2	-5.6	-4.9	-5.3	172	175	2011	1.6	0
United Kingdom	-3.3	-3.2	-3.4	-3.6	-3.1	-3.1	47	50	2011	1.6	-3
Canada	0.7	1.7	2.2	0.6	1.7	2.1	69	63	2011	-1.1	26
Australia	1.3	1.5	0.9	1.2	1.5	1.0	14	13	2010	0.2	9 <sup>4</sup>
<sup>1</sup> General government, as a percentage of GDP. <sup>2</sup> Cyclically adjusted financial balance, as a percentage of potential GDP. <sup>3</sup> Change, in percentage points, between the 2005 outcome and the year shown; national definitions. Positive numbers indicate a reduced deficit/increased surplus and reduced gross debt, respectively. <sup>4</sup> Net debt. Sources: European Commission; IMF; OECD; national data.											

Table II.7

above the 3% reference value in four euro area countries (including Germany and Italy), while in France they were close to that threshold. Budget plans for 2006 imply basically no fiscal tightening in the euro area, in an environment in which economic activity is projected to accelerate towards potential.

Lower deficits but still high debt levels in Japan

In Japan, the headline deficit declined faster than expected, from over 8% of GDP in 2002–03 to slightly above 5% in 2005. The improvement reflected stronger than expected corporate and income tax revenues and some expenditure savings in the supplementary budget. In cyclically adjusted terms, the deficit dropped below 5% of GDP. However, a decade of high deficits has left Japan with gross public debt of over 170% of GDP, by far the highest among the major industrial economies. Net debt is substantially lower but, at around 85% of GDP, is still far higher than in most other advanced economies.

Prospects for fiscal consolidation remain uncertain

Beyond 2006, in many cases it remains uncertain whether there will be major progress towards fiscal consolidation. In the United States, the authorities have announced their intention to bring the federal deficit down to about 1½% of GDP by 2009, although specific policy changes to achieve this objective have yet to be confirmed. In the euro area, fiscal tightening is intended at only a measured pace. A key issue is how strictly the revised Stability and Growth Pact will be enforced. While views on this differ, most policymakers argue that the new rules have weakened the “corrective arm” of the pact (ie the excessive deficit procedure) and will provide for somewhat greater flexibility in the use of fiscal policy. Germany plans to reduce its deficit to below 3% of GDP in 2007, largely through a 3 percentage point increase in the VAT rate. In Japan, the authorities have decided to bring forward the target date for achieving primary balance by one year to fiscal year 2011. Again, however, specific policies to achieve this target have yet to be elaborated.

### *Challenges to fiscal sustainability*

The persistence of large fiscal deficits ...

The basic sustainability condition – that in the long run the stock of government debt should not grow faster than nominal GDP – has not been satisfied in the United States and the euro area since 2001, and in Japan since the late 1980s. In fact, in the most recent period of rapid expansion in the euro area, structural budget deficits increased (Graph II.12). In the United States, structural budget deficits declined during the latest period of strong growth (2002–05), but much less than in the 1990s expansion.

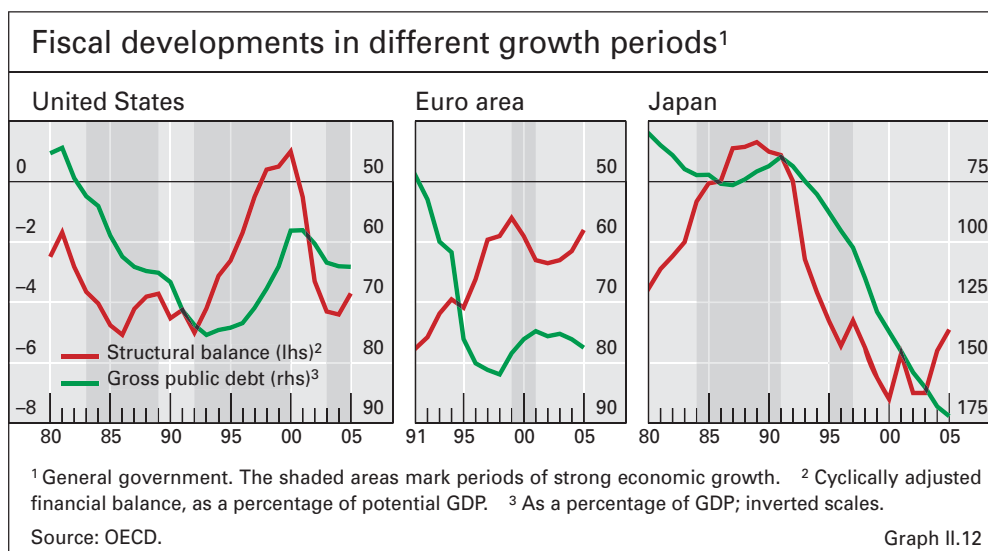
... has aggravated concerns about sustainability

The persistence of large budget deficits even in an environment of strong global growth and low interest rates has raised concerns about the long-term sustainability of public finances in the major industrial countries. These concerns are aggravated by looming budgetary pressures due to expenditures required to sustain an ageing population, and the associated prospect of lower potential growth.

Sustainability becomes more pressing as spending on pensions increases ...

Population ageing will increasingly affect fiscal sustainability over the coming decades. Public spending on old-age pensions is forecast to rise in the countries shown in Table II.7, by almost 3% of GDP on average by 2050. However, the projected increase in pension spending varies considerably across countries;





relative to 2000, the ratio of old-age pensions to GDP would decrease in Italy and the United Kingdom, but would go up by 8 percentage points in Spain.

Public spending on health and long-term care looks set to increase massively. OECD projections suggest that, in the absence of policy action, public spending on these items in the major industrial countries shown in Table II.7 could surge from an average 7% of GDP in 2005 to 13% in 2050. Moreover, in contrast to pensions, the predicted rise in health and long-term care spending is fairly uniform across countries. Even in a scenario that embodies the assumed effects of policies to curb the growth of these expenditures, average spending on health and long-term care would still go up by 3½ percentage points, to reach 10½% of GDP on average by 2050.

These projections all assume relatively favourable macroeconomic conditions. Slower than expected growth of national income would quicken the pace of deterioration in underlying fiscal positions. The euro area and Japan would also have to expect a significant fall in the average potential GDP growth rate, if the effect of population ageing is not offset by later retirement and accelerated productivity growth. This in turn underscores the need for structural reforms. The United States may be in a more favourable position in this respect. It is expected to be less affected by the slowdown in population growth and has exhibited consistently stronger productivity growth over the past decade.

The seriousness of the public debt problem has to some degree been masked by the low level of long-term interest rates. Government net interest payments declined by 0.6 percentage points of GDP between 2000 and 2005 in the United States, and by 0.8 percentage points in the euro area. In Japan, debt servicing costs fell by 0.2 percentage points of GDP over this period, despite a massive increase in public debt. A sharper than expected rise in long-term interest rates would thus complicate the choices that fiscal policymakers must make to set public finances on a sustainable path. In this regard, the United States is in a less favourable position than other countries because of the low national saving rate.

... and health care costs rise

Slower growth poses additional risks ...

... as do higher interest rates



## Current account developments

### *External imbalances widen further*

Further sharp increase in the US current account deficit

Global current account imbalances continued to widen in 2005. The external payment deficit of the United States reached \$800 billion in 2005, or 6½% of GDP, an increase of almost \$140 billion within one year (Table II.8). While the euro area recorded broadly neutral external payments, the current account positions of individual member countries widened sharply: Germany's surplus rose to more than \$110 billion (4% of GDP) at the same time as Spain's deficit jumped to almost \$85 billion (7½% of GDP). The Japanese surplus remained large, at about \$170 billion or 3½% of GDP. Several smaller European economies, such as Norway and Switzerland, also ran large surpluses.

Rising energy bills accentuated deficits in advanced economies

Higher energy prices were again a key factor explaining widening external imbalances in 2005. The oil trade balance of advanced oil-importing countries deteriorated in the order of 1½% of their GDP. In the case of the United States, net energy imports increased by \$70 billion last year, almost the same amount as the total increase in merchandise exports; energy now accounts for one third of the US trade deficit.

Changing composition of surpluses

Higher energy prices also led to a major shift in the composition of external surpluses. The collective surplus of oil-exporting countries grew to about \$420 billion in 2005, compared to less than \$90 billion in 2002 before oil

Global current account balances						
In billions of US dollars						
	Average 1991–2001	2002	2003	2004	2005	Memo: 2005 <sup>1</sup>
United States	–178	–475	–520	–668	–805	–6.4
Euro area <sup>2</sup>	13	39	32	74	–16	–0.2
Germany	–21	41	46	102	115	4.1
Spain	–12	–23	–32	–55	–83	–7.4
Japan	105	112	137	171	168	3.7
Other advanced industrial economies	–3	34	55	48	44	0.8
China	14	35	46	69	161	7.2
Other emerging Asia	15	92	120	115	82	2.6
Latin America	–49	–16	7	18	30	1.2
Central and eastern Europe	–13	–24	–37	–59	–65	–5.4
Oil-exporting economies	5	87	143	239	417	9.6
Norway	9	24	29	35	49	16.7
Russia	12	29	35	59	84	11.0
Saudi Arabia	–6	12	28	52	91	29.5
Oil-importing economies	–101	–239	–210	–304	–515	–1.3
Advanced	–67	–328	–338	–431	–683	–2.2
Emerging	–34	89	128	127	168	1.8

<sup>1</sup> As a percentage of GDP. <sup>2</sup> Sum of the balance of individual euro area economies.  
Sources: IMF; national data.

Table II.8

prices had started to rise. High oil prices had an even stronger impact on oil-importing emerging economies, which typically have a higher oil intensity of output. For instance, China's oil trade balance deteriorated by 4% of GDP between 2002 and 2005. Even so, the aggregate current account surplus of oil-importing emerging economies continued to expand, reaching \$170 billion in 2005, compared with about \$90 billion in 2002. China's external payments surplus jumped to \$160 billion (7% of GDP) on the back of unabated export growth and a marked slowdown in import growth. Latin America as a whole also recorded a growing surplus as a number of countries benefited from both rising commodity prices and a higher volume of exports (see Chapter III).

### *Global rebalancing and oil revenue recycling*

The traditional forces that might favour external adjustment provided little support to, or even worked against, global rebalancing in the period under review. The US dollar appreciated by 4% in real effective terms in the course of 2005 while the yen depreciated (see Chapter V). Emerging Asian currencies appreciated moderately, but insufficiently to trigger a substantial change in trade flows. Appreciating real effective exchange rates contributed to persistently high external deficits in Australia (6% of GDP) and New Zealand (9% of GDP). The growth differential between the United States and other major advanced economies, though narrowing in the course of the year, remained significant and supportive of the dollar. Finally, low long-term real interest rates continued to underpin strong household demand growth (including residential investment) in the United States and elsewhere.

Traditional adjustment forces were muted ...

In addition, external adjustment to the current oil price shock might take longer than in the late 1970s. At that time, the large current account surpluses of oil exporters were reversed within a few years. Fearful of rising inflation and inflation expectations, monetary authorities tightened policy sharply. This led to a recession in oil-importing economies, and in turn to a collapse in oil demand. This time, however, contained overall inflation has allowed the monetary response to be much more moderate. Accordingly, global growth and oil demand have remained strong.

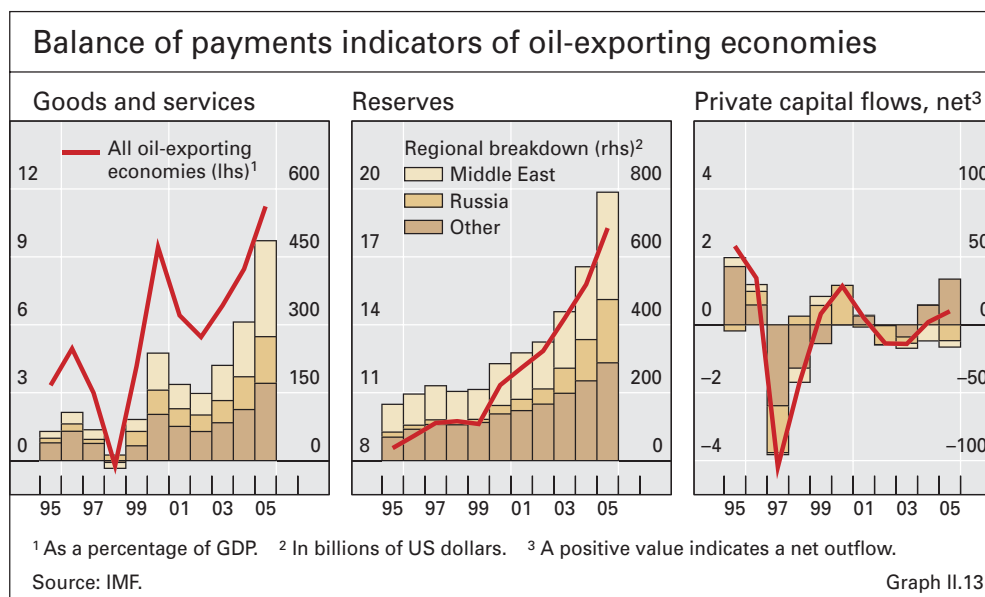
... and high oil prices might further delay external adjustment

Oil-exporting countries apparently spent a smaller proportion of oil revenues on imports in 2005 than in the previous two years, and less than at the time of the previous oil shocks. In 2005, the trade surplus of oil exporters jumped to more than \$450 billion, equivalent to more than half of total oil revenues (Graph II.13). The primarily oil-exporting emerging economies, which accounted for the lion's share of this increase, spent only about half of the rise in oil receipts on additional imports of goods and services. The comparable figure in 2003 and 2004, and on average during the previous oil shocks, had been about three quarters. Identifying and exploiting domestic investment opportunities in oil-exporting countries may take time – in fact, more time than effecting a real transfer of resources primarily through higher consumption expenditures, as was the case in the 1970s.

A lower propensity to spend oil revenues on imports ...

The way in which oil-exporting countries spend their receipts could also have an impact on the effectiveness of external adjustment mechanisms. European countries have probably been main beneficiaries of additional

... increases the importance of investments



demand for imports in oil-exporting countries since 2003. China has also succeeded in increasing its export share, while the United States has suffered a significant loss. However, the limited data available suggest that much of the increased surpluses of oil exporters continues to be invested in US securities, although there has been a significant diversification across asset classes. These now include a larger proportion of corporate and agency bonds as well as equities (see Chapter VI). Notwithstanding greater diversification, the growing size of oil exporters' investments might still have provided support to the dollar and helped to keep US long-term interest rates low.

### III. Issues in emerging market economies

#### Highlights

The expansion which has been under way in emerging market economies since 2002 consolidated further in the period under review. Strong growth in many countries was accompanied by increasing export values and large current account surpluses. This permitted a sizeable reduction in external debt burdens and a further significant build-up of foreign currency reserves. Fiscal positions also improved, and balance sheet positions strengthened. Partly reflecting these factors, consumer and investor confidence remained buoyant. In contrast with previous experience, domestic demand proved remarkably resilient to higher oil prices even in oil-importing countries.

External conditions have been unusually favourable to emerging market economies in the current cycle. These include strong global demand, large terms-of-trade improvements for many countries and much easier external financing. One major question is whether the authorities in emerging markets have adequately exploited these favourable circumstances to secure lasting improvements in fiscal positions. A second question concerns imbalances that might raise inflation risks or lead to unsustainable increases in asset prices. While inflation has, so far, remained well contained in many countries, prospects are uncertain in the light of volatile commodity prices and very low or negative real short-term interest rates. A bout of turbulence in financial markets in May 2006 has added to this uncertainty. A major challenge for the monetary authorities in many countries is how to avoid policy mistakes that might put macroeconomic and financial stability at risk.

#### Macroeconomic overview

Growth was robust in all regions last year (Table III.1). Moreover, in China revised GDP figures reveal that previous growth rates had been significantly underestimated. Growth accelerated in India; Korea successfully emerged from the 2003 credit card debacle; and much of Southeast Asia continued to grow at a strong rate. In Latin America, notwithstanding some slowdown, the expansion remained intact, and industrial output rebounded in Brazil and Mexico in early 2006. Argentina, Chile, Colombia and Peru all continued to see above trend growth. The expansion also remained strong in central and eastern Europe, although Hungary and Turkey had to deal with increased market volatility following the financial turbulence which began in Iceland in the early part of 2006. Growth was robust in much of the Middle East and Africa under the influence of higher commodity prices, especially oil.

Output growth and current account balance							
	Real GDP <sup>1</sup>				Current account balance <sup>2</sup>		
	Average 2002–04	2005	2006		Average 2002–04	2005	2006
			First quarter	Full-year forecast			
Asia	7.6	8.0	8.7	7.7	158	252	220
China	9.7	9.9	10.3	9.6	50	161	137
Hong Kong SAR	4.5	7.3	8.2	5.3	14	22	23
India <sup>3</sup>	6.6	8.3	9.3	7.5	2	–16	–19
Korea	4.9	4.0	6.2	5.2	15	17	7
Other Asia <sup>4</sup>	5.1	5.0	5.6	4.8	76	70	73
Latin America <sup>5</sup>	2.5	4.3	5.5	4.6	9	39	31
Argentina	1.9	9.2	9.7	7.7	7	5	4
Brazil	2.5	2.2	3.4	3.5	3	14	9
Mexico	2.1	3.0	5.5	4.0	–10	–6	–7
Central Europe <sup>6</sup>	3.5	4.0	5.4	4.8	–19	–16	–17
Russia	6.4	6.4	6.3	6.2	41	84	90
Turkey	7.5	7.4	2.6	5.3	–8	–23	–28
Africa <sup>7</sup>	4.6	5.2	...	5.7	–3	15	24
Middle East <sup>7</sup>	5.4	5.9	...	5.7	64	196	241
Total <sup>8</sup>	6.1	6.7	7.6	6.7	242	549	560
<i>Memo: G7</i>	2.1	2.6	2.8	2.8	–376	–614	–710

Note: 2006 data are based on May consensus forecasts, JPMorgan Chase and IMF.

<sup>1</sup> Annual changes, in per cent. Regional figures are weighted averages based on 2000 GDP and PPP exchange rates. <sup>2</sup> In billions of US dollars. Regional figures are the sum of the economies included. <sup>3</sup> Annual data are fiscal years beginning in April. <sup>4</sup> Indonesia, Malaysia, the Philippines, Singapore, Taiwan (China) and Thailand. <sup>5</sup> The economies listed plus Chile, Colombia, Peru and Venezuela. <sup>6</sup> The Czech Republic, Hungary and Poland. <sup>7</sup> Country coverage according to IMF definition. <sup>8</sup> Comprises the economies above. For quarterly GDP growth, excluding Africa and the Middle East.

Sources: IMF; © Consensus Economics; JPMorgan Chase; national data.

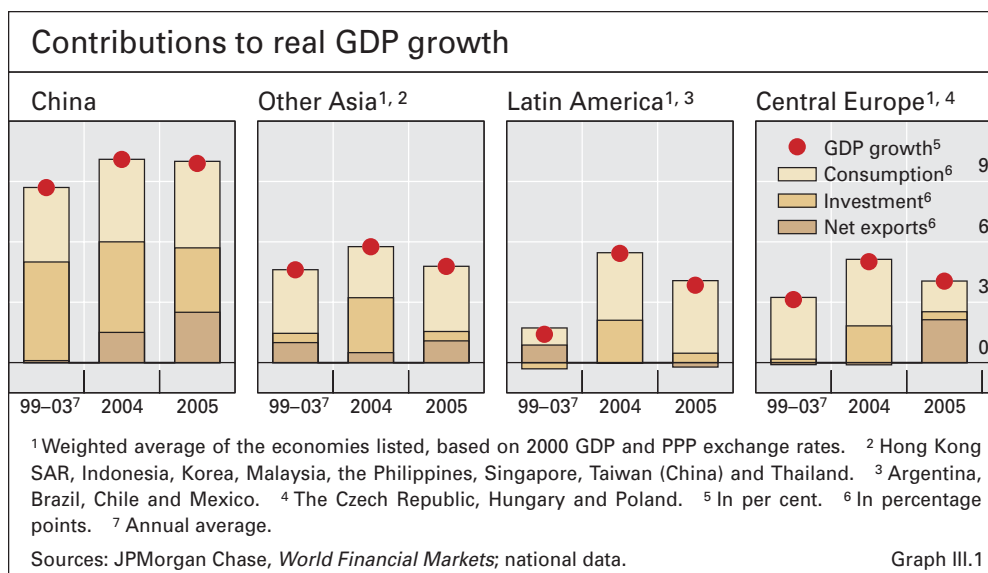
Table III.1

### Pattern of demand

External demand  
remained  
important ...

External demand continued to play an important role in a number of countries (Graph III.1). In general, demand for emerging market exports remained very strong while improved terms of trade played a special role in commodity-exporting countries. Moreover, the export performance of Asian economies was helped in particular by an end to the inventory-led slowdown in the electronics sector which had begun in 2004. Compared to earlier downturns, firms have been relatively quick this time in reducing their excess inventories. In addition, the slowdown in the global demand for high-tech products proved to be only temporary. The combined effects of these developments were reflected in strong exports and large current account surpluses in many countries.

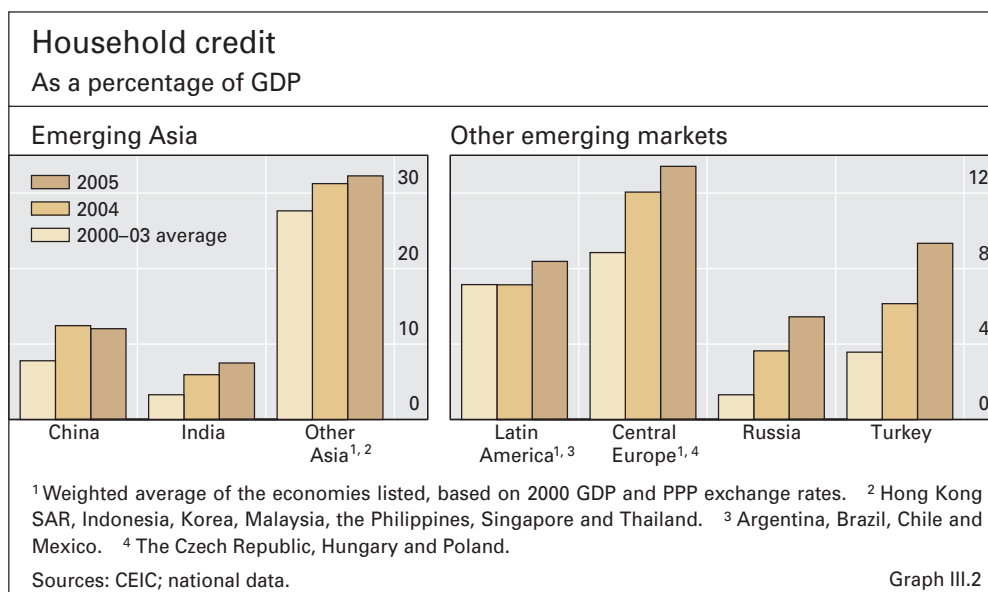
Nevertheless, the contribution of external demand to growth varied across countries. The contribution rose particularly sharply in China last year and remained substantial in Hong Kong SAR, Korea and Singapore. This was also true in several central European economies, notably the Czech Republic and Poland, which saw a significant improvement in their trade balances. By contrast, the contribution of net external demand declined in several oil-importing Asian economies and Latin America.



In all regions, growth was supported by strong household spending. Robust private consumption was supplemented, in many countries, by increased spending on residential construction. Two factors played an important role.

... but household spending was also strong ...

First, household spending and consumer confidence were boosted by rising incomes, falling unemployment and high asset prices. In China, for instance, household spending was underpinned by robust growth in both urban and rural incomes (of 9½% and 6%, respectively, in real per capita terms in 2005). A rebound in agricultural income and improved household balance sheets, respectively, played a similar role in India and Korea. In Hong Kong, the recovery was associated with a rebound in asset prices. In Latin America, similar income and wealth effects were supported by large improvements in the terms of trade (see the next section). In Argentina and Chile, private consumption was driven last year by strong increases in real



wages, which also played a role in several central and eastern European economies. In the Czech Republic, the demand for consumer durables picked up on the back of strong household income. In Turkey, household spending on consumer durables continued to rise against a background of declining inflation and interest rates.

... boosted by bank lending

Second, a rapid expansion in bank lending provided a further boost to household spending. This has been reflected in a sharply rising ratio of outstanding household credit to GDP in many countries over the past few years (Graph III.2). A major factor boosting such credit has been the low borrowing costs associated with continuing easy monetary policies (see the section on monetary policy). Other contributing factors have been a decline in inflation, a progressive deregulation of credit markets, tax rebates to home buyers and far-reaching financial innovations attracting an increasing number of households to mortgage markets.

In Brazil, lending to households surged last year (by 37%) following the introduction of a payroll guarantee scheme that effectively protects banks against default risk. In Saudi Arabia, a rapidly growing young population, and the fact that banks can now recover their debts by attaching wage payments, contributed to a similar rate of credit expansion.

Non-residential investment in Asia was weak ...

In contrast to robust household spending, non-residential investment – particularly capital spending by the corporate sector – remained relatively weak (Table III.2) in most regions. This was especially true in Asia, where non-residential investment as a percentage of GDP either continued to fall or remained far below the levels seen prior to the 1997–98 Asian financial crises. China has

Fixed investment									
As a percentage of GDP									
	Residential investment <sup>1</sup>			Non-residential investment			Total investment		
	1996 <sup>2</sup>	2000	2005 <sup>3</sup>	1996 <sup>2</sup>	2000	2005 <sup>3</sup>	1996 <sup>2</sup>	2000	2005 <sup>3</sup>
Asia									
China	2.9	3.3	5.9	29.9	29.5	39.3	32.8	32.9	45.2
Hong Kong SAR	15.1	11.8	7.6	15.7	14.6	13.2	30.8	26.4	20.8
India <sup>4</sup>	4.5	6.1	6.9	20.2	16.8	17.8	24.7	22.9	26.0
Korea	7.0	4.3	5.9	30.5	26.8	23.2	37.5	31.1	29.1
Other Asia <sup>5, 6</sup>	10.3	6.0	5.1	25.5	17.3	17.4	35.7	23.3	22.6
Latin America									
Argentina	5.0	4.7	4.5	13.1	11.5	17.0	18.1	16.2	21.5
Brazil	9.0	8.7	7.0	10.2	10.6	13.0	19.3	19.3	20.0
Chile	9.3	7.1	7.5	17.1	13.7	14.9	26.4	20.7	22.4
Mexico	3.8	4.7	4.8	14.1	16.7	14.5	17.8	21.4	19.3
Central and eastern Europe <sup>5, 7</sup>	7.2	6.3	4.4	16.4	17.4	15.9	23.6	23.7	20.4
South Africa	1.7	1.4	2.0	14.6	13.7	14.9	16.3	15.1	16.8
<sup>1</sup> Including all construction where a breakdown is not available. <sup>2</sup> For South Africa, 1998. <sup>3</sup> Or latest available. <sup>4</sup> Fiscal years beginning in April. <sup>5</sup> Weighted average of the economies listed, based on 2000 GDP and PPP exchange rates. <sup>6</sup> Malaysia, the Philippines, Singapore and Thailand. <sup>7</sup> The Czech Republic, Hungary, Poland and Turkey. Sources: CEIC; Datastream; Eurostat; national data.									

Table III.2



been a major exception to this trend. In India, strong profits and rising equity prices have also been associated with a revival of investment more generally.

The fact that non-residential investment in several parts of Asia has been weak despite strong profits and improved balance sheets has surprised many observers. Nevertheless, various indicators suggest that some of the previous constraints on corporate spending have eased over the past several years. For example, firms have substantially lowered their leverage ratios since the 1997–98 crises. In Korea, the debt/equity ratio was cut by about two thirds to 111% between 1998 and 2005. Moreover, excess capacity has been substantially reduced or eliminated, and the flow of bank credit to the corporate sector has improved. Korea, Indonesia and Malaysia, for instance, saw substantial increases in non-residential investment last year.

... in spite of strong profits

In Latin America, the picture was more mixed, with investment being particularly volatile in Brazil. After recording an annual rate of over 10% in 2004, real investment growth in Brazil fell to 2% in 2005. In Mexico, the recent weakness in non-residential investment has been associated with a loss in the competitiveness of the export sector. For instance, Mexico's share in US imports declined by about 1½ percentage points between 2001 and 2005. By contrast, non-residential capital spending has rebounded in Argentina over the past two years. In central and eastern Europe, investment ratios have fallen over the past five years, partly reflecting weak non-residential investment.

Mixed investment picture elsewhere

#### *Rising inflation pressures*

Strong growth and rising commodity prices put upward pressure on prices in all regions. Nevertheless, despite these pressures inflation remained well contained in most countries last year (Table III. 3). In China, output growth was particularly strong but was associated with very low measured inflation. In India and Korea, headline inflation softened towards the end of last year, after rising significantly in 2004. In several countries in Asia, inflation movements were affected by the timing of the withdrawal of oil subsidies. As for Latin America, inflation was on a downward path in Brazil and Mexico in much of the second half of 2005. In Chile, underlying inflation remained subdued, although headline inflation did rise towards the end of 2005. In contrast, Argentina and Venezuela continued to experience relatively high rates of inflation. In central Europe, inflation declined in most countries last year, reflecting not only exchange rate appreciation but also increased competition at the retail level. Turkey's inflation fell again last year, continuing a longer-term trend.

Inflation low but pressures rising

#### *Outlook and risks*

Forecasts for 2006 are for continued strong growth or even an acceleration in most emerging market economies. Nevertheless, most countries are expected to remain in current account surplus, and inflation is forecast to remain moderate. Such forecasts are evidently not without some risks.

Strong growth likely in 2006 but there are risks of slower exports ...

First, the continued dependence of a large number of countries on export-driven growth means that they are exposed to volatility in major industrial economies, as well as in China. Countries that have received a substantial degree of external financing might also be subject to changes in investor



... overheated  
property markets ...

... and perhaps  
overextended  
households

sentiment. Second, there are some risks from credit-financed household spending. A too rapid expansion in housing demand might lead to overheating in the property market, particularly in Asia. Property prices have been rising in Asia over the past two years, although in several cases (eg Hong Kong, Singapore and Thailand) they are recovering from a previous downturn. Korea faced a major challenge in the real estate market last year as property prices rose sharply in some cities in the first half of 2005. In response, the authorities introduced a package of stabilisation measures (including higher taxation, restrictions on mortgage lending for speculative purposes, and additional land allocation for construction) to cool the real estate market. South Africa has seen a major upturn in the property market, with residential property prices increasing by 50% in the past two years.

A third source of vulnerability is that banks in many countries, particularly in central Europe, have shifted a large part of their risks to the household sector through lending at variable interest rates or in foreign currency. It is difficult to assess whether households would be able to withstand unexpected shocks that could quickly increase their debt burdens. Furthermore, the experience of Korea in 2003 has demonstrated that the rapid expansion of

Consumer prices <sup>1</sup>							
Annual changes, in per cent							
	Headline				Core <sup>2</sup>		
	2004	2005	2006		2004	2005	2006 April <sup>3</sup>
			April <sup>3</sup>	Full-year forecast <sup>4</sup>			
Asia <sup>5</sup>	4.4	3.4	3.1	3.8	2.1	2.0	1.2
China	3.9	1.9	1.2	2.2	-0.6	0.2	-1.0
India	6.6	4.8	3.6	4.9	7.0	3.9	2.5
Indonesia	6.1	10.5	15.4	13.5	6.0	7.5	9.4
Korea	3.6	2.8	2.0	2.8	2.4	2.3	2.2
Thailand	2.8	4.5	6.0	4.5	0.4	1.6	2.9
Other Asia <sup>5, 6</sup>	2.3	3.4	3.3	3.3	1.6	2.4	2.4
Latin America <sup>5</sup>	6.1	5.7	5.1	5.2	5.8	5.7	5.2
Argentina	6.1	12.3	11.6	12.3	6.4	14.2	11.6
Brazil	7.6	5.7	4.6	4.4	7.9	5.6	5.0
Mexico	5.2	3.3	3.2	3.4	3.8	3.1	3.2
Other Latin America <sup>5, 7</sup>	4.2	3.7	3.7	3.7	3.8	3.0	3.7
Central Europe <sup>5</sup>	4.0	2.3	1.6	1.6	2.9	1.8	1.2
Czech Republic	2.8	1.9	2.8	2.7	2.4	1.8	2.3
Hungary	6.8	3.6	2.7	2.3	5.8	2.1	0.7
Poland	3.6	2.1	0.7	1.0	2.1	1.8	0.9
Russia	10.9	12.7	9.8	9.9	7.9	6.7	6.0
South Africa	1.4	3.4	2.8	4.1	4.7	4.1	2.3
Turkey	8.6	8.2	8.8	7.6	12.3	11.0	11.6

<sup>1</sup> For India, wholesale prices. Average of period; for Latin America, end of period. <sup>2</sup> Headline excluding food and energy or national definition. <sup>3</sup> Or latest available. <sup>4</sup> Consensus forecast published in May. <sup>5</sup> Weighted average of the economies listed, based on 2000 GDP and PPP exchange rates. <sup>6</sup> Hong Kong SAR, Malaysia, the Philippines, Singapore and Taiwan (China). <sup>7</sup> Chile, Colombia and Peru.

Sources: IMF; OECD; CEIC; © Consensus Economics; national data; BIS estimates.

Table III.3

household debt, even when denominated in local currency, can generate significant volatility in consumption and adversely affect future growth.

## Two major external challenges

Two important developments over recent years have been large shifts in the terms of trade of emerging market economies and continued strong demand for emerging market assets. Such developments have major implications, not only for growth, but also for the conduct of fiscal and monetary policies.

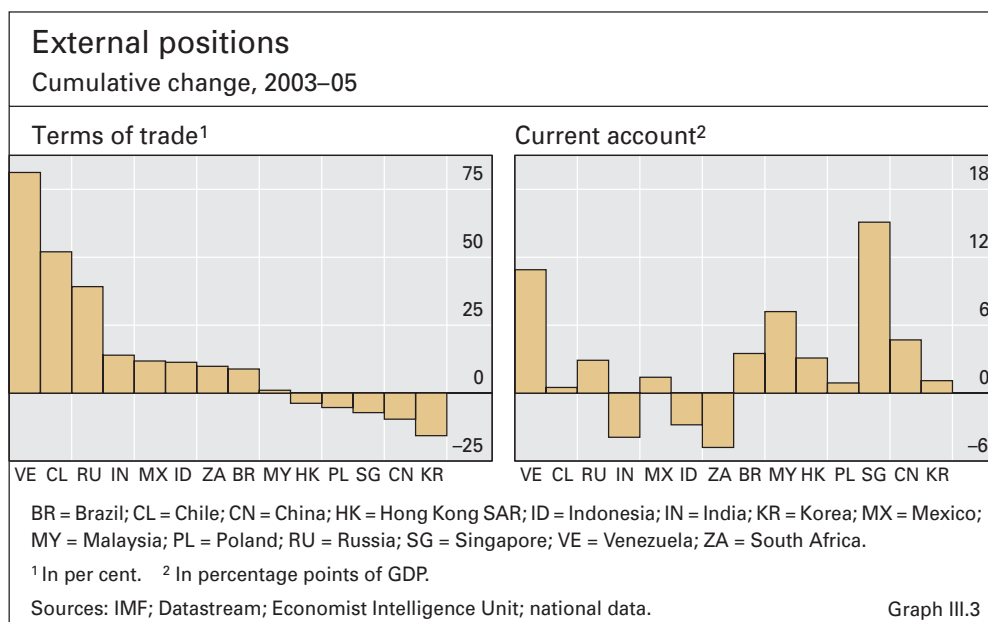
### *Shifts in the terms of trade*

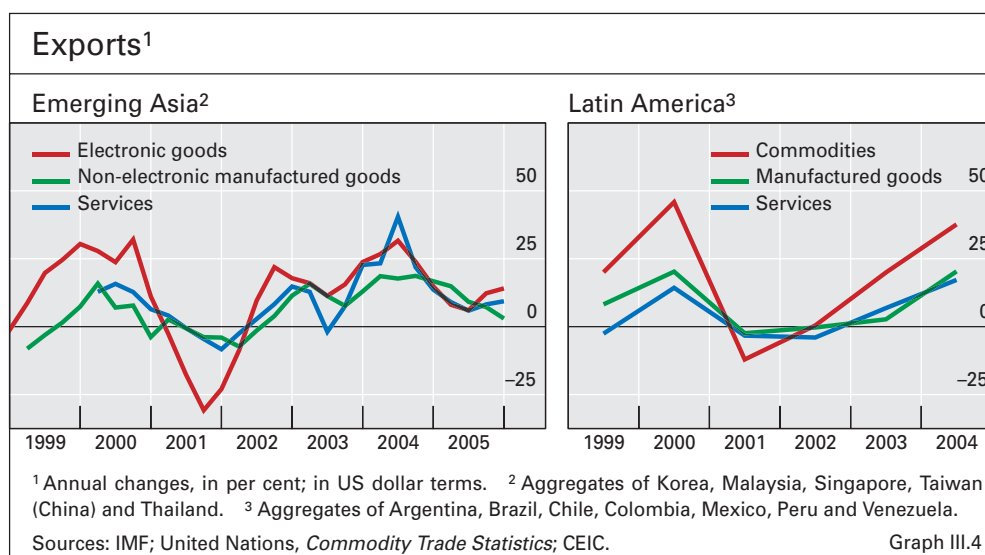
Swings in relative prices since 2002 have been associated with large terms-of-trade movements in emerging market economies. For example, oil prices in dollar terms almost doubled between 2001 and early 2006, after falling sharply in the 1990s. Prices of industrial metals and certain agricultural raw materials also increased rapidly during the same period. At the same time, world manufacturing prices have strengthened only modestly. As a result, commodity-exporting countries have seen some of the largest improvements to their terms of trade in recent years (Graph III.3, left-hand panel). By contrast, countries with a significant concentration of exports in manufactures or services, and large oil import requirements, have suffered substantial terms-of-trade losses.

Sharp terms-of-trade movements ...

The impact of terms-of-trade changes has also varied across commodity-exporting countries. Strong terms-of-trade improvements have been associated with higher current account surpluses in several Latin American countries (Graph III.3, right-hand panel). Brazil, Chile, Colombia, Peru and Venezuela have all benefited from large increases in the prices of their main commodity exports. Gains from higher export prices have also been substantial in other regions, particularly oil-exporting economies like Russia and Saudi Arabia.

... boosted current account surpluses for some ...





... helped also by  
higher export  
volumes ...

At the same time, many countries with improved terms of trade have also benefited from a large increase in export volumes. This has applied not only to commodity exports, but also to a broad spectrum of manufactures and services. For example, while the export prices of Argentina's primary commodities fell by 9% last year, this was more than offset by a 27% rise in export volumes. Nevertheless, in some other commodity-exporting countries, increased imports and other payments far exceeded export growth, resulting in a net deterioration of the current account. This was the case in South Africa, which saw a record current account deficit of over 4% of GDP last year.

... but caused  
limited terms-of-  
trade losses for  
others

There is some evidence to suggest that the adverse impact of terms-of-trade losses on commodity-importing countries has been more limited than expected, notably in Asia, where dependence on oil tends to be rather high. Despite a major deceleration last year, export growth remained strong in most of Asia (Graph III.4), helping to offset terms-of-trade losses. In effect, part of the additional revenues of oil-exporting countries was recycled back to the Asian region through the trade sector. Indeed, the exports of Asia (excluding Japan) to oil-exporting countries rose by 27% during the first half of 2005. The net result was that many Asian economies continued to enjoy large current account surpluses.

Favourable terms  
of trade to last?

One question concerns the sustainability of the recent shift in the terms of trade, against the historical background of the high volatility of commodity prices. On the one hand, it is possible that strong global growth will lead to yet further increases in the demand for commodities. The continued buoyancy of the Chinese economy points in this direction. Last year, China accounted for over 57% of the incremental demand for aluminium, 60% of that for copper and over 30% of that for oil. Such a trend could be reinforced in the future by a major expansion of Indian demand for oil and other commodities. On the other hand, past experience suggests that the prices of non-oil commodities have been more volatile and have a stronger tendency to revert to the mean than does the price of oil. This may be partly due to differences in market structure, given that the cartelised structure of the oil market facilitates control

of supply. In contrast, in other markets (especially those for agricultural commodities), supply conditions are more responsive to price levels. Higher real prices of commodities could still dampen future demand, especially when technological innovation leads to more efficient use of commodity inputs.

### *Strong demand for emerging market assets*

The demand for emerging market assets strengthened during the period under review. Net private capital flows reached about \$254 billion in 2005, distinctly up from 2004 (Table III.4), and well above the levels prevailing in 1998–2002. Sizeable flows appear to have continued in the first quarter of 2006, although there has been some recent volatility.

Net capital flows to central Europe and Latin America increased significantly in 2005, although net private flows to Asia halved. Portfolio investment and other private flows explain most of the changes in private capital flows by region. In Asia, net portfolio investment reversed direction, resulting in outflows in 2005 (at least partly reflecting substantial gross outflows) while other private flows (which include cross-border bank lending) also fell.

Net capital inflows rose significantly

Net foreign direct investment (FDI) is still the most important component of net capital flows and reached \$212 billion in 2005, a moderate increase from 2004. Its regional distribution in 2005 was also similar to that a year earlier: \$72 billion to Asia, \$51 billion to Latin America and \$41 billion to central and eastern Europe, with the remainder distributed evenly between Africa and the Middle East. In some cases, gross inflows were larger than net inflows, reflecting growing FDI outflows from emerging economies. Several multinational firms based in emerging economies now have large positions abroad. For example, in 2004 the FDI stock abroad exceeded \$100 billion for both Singapore (104% of GDP) and Russia (18%), and amounted to \$69 billion for Brazil (11.5%) and \$32–38 billion for China (2.4%), South Africa (18%) and Korea (4.7%).

FDI still most important

Net inflows differ considerably across regions and economies. In central and eastern Europe, where economic integration with the rest of Europe continued to advance, net inflows exceeded 6% of GDP. By contrast, they were much lower in Latin America. Only a small group of countries had relatively large current account deficits and a corresponding need for large capital inflows: Hungary, South Africa and Turkey stood out in this regard. Other countries with current account deficits are India, Mexico and Poland.

Significant regional variation

Under current conditions, it remains unclear how far increased capital flows to emerging market economies reflect easy conditions in developed financial markets (so-called “push” factors), due to developments in policy or market sentiment. Earlier fears that monetary policy tightening in the United States would lead to shifts out of emerging market assets proved unfounded, at least prior to May 2006, when equity prices in many countries fell sharply. Indeed, sovereign bond spreads continued to fall even as US policy rates were steadily increased during 2004 and 2005 (Graph III.5, panel A). Sovereign spreads for several Latin American borrowers have narrowed. Central and eastern Europe has also registered sustained improvements. The sovereign spreads of crisis-hit Asian countries, which rose to an average of 830 basis

Emerging market debt more in demand ...

# Net private capital flows to emerging market economies

In billions of US dollars

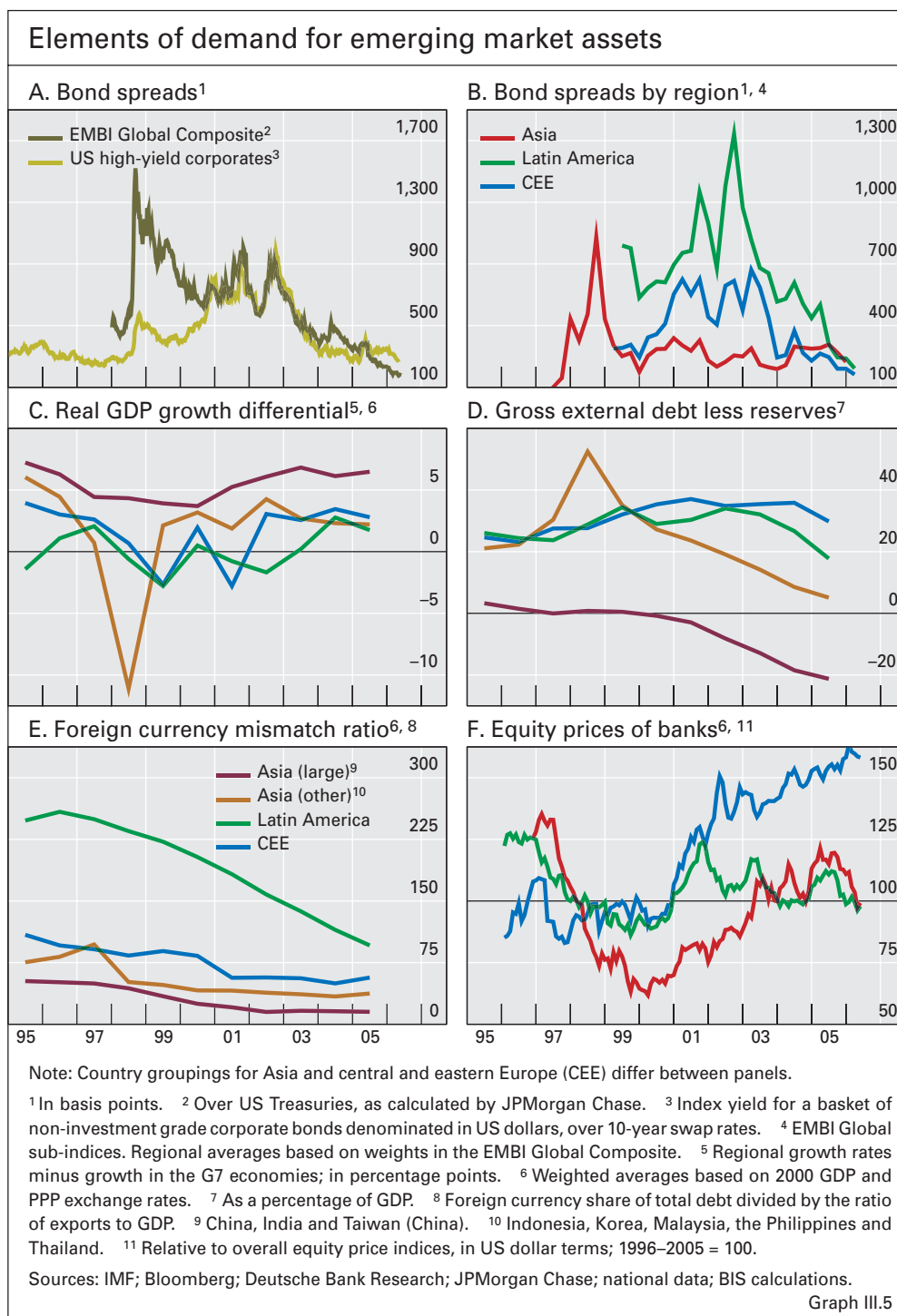
	Annual average 1990–97 <sup>1</sup>	Annual average 1998–2002	2003	2004	2005
<b>Emerging market economies<sup>2</sup></b>					
Total flows	130	79	160	231	254
Direct investment	74	167	158	184	212
Portfolio investment	50	–3	–4	35	39
Other private flows	6	–85	7	12	3
<i>Memo: Current account balance</i>	–78	70	229	311	511
<i>Change in reserves<sup>3</sup></i>	–73	–116	–352	–515	–580
<i>Official flows</i>	21	8	–62	–82	–139
<i>Other<sup>4</sup></i>	2	–41	23	56	–46
<b>Asia</b>					
Total flows	55	–1	64	120	54
Direct investment	36	58	68	60	72
Portfolio investment	15	–5	4	4	–31
Other private flows	4	–54	–9	56	13
<i>Memo: Current account balance</i>	–10	104	166	184	241
<i>Change in reserves<sup>3</sup></i>	–37	–87	–227	–340	–282
<i>Official flows</i>	6	1	–18	2	5
<i>Other<sup>4</sup></i>	–13	–17	14	34	–18
<b>Latin America</b>					
Total flows	48	37	16	6	25
Direct investment	23	62	35	48	51
Portfolio investment	31	1	–8	–14	28
Other private flows	–6	–26	–11	–28	–54
<i>Memo: Current account balance</i>	–37	–53	7	18	30
<i>Change in reserves<sup>3</sup></i>	–19	3	–36	–24	–32
<i>Official flows</i>	3	12	6	–7	–25
<i>Other<sup>4</sup></i>	5	1	7	8	2
<b>Central and eastern Europe</b>					
Total flows	9	34	52	71	108
Direct investment	7	23	17	34	41
Portfolio investment	4	2	6	27	29
Other private flows	–2	9	30	10	38
<i>Memo: Current account balance</i>	–6	–24	–37	–59	–63
<i>Change in reserves<sup>3</sup></i>	–6	–11	–12	–14	–41
<i>Official flows</i>	0	0	–5	–7	–9
<i>Other<sup>4</sup></i>	4	1	3	9	4
<i>Memo: Fuel exporters</i>					
<i>Private capital flows, net</i>	0	–9	13	5	5
<i>Current account balance</i>	9	60	109	189	347

<sup>1</sup> 1994–97 for the fuel exporters. <sup>2</sup> Also includes Africa, the Commonwealth of Independent States and the Middle East.

<sup>3</sup> A minus sign indicates an increase. <sup>4</sup> Includes errors and omissions.

Source: IMF, *World Economic Outlook*.

Table III.4



points in the wake of the crisis, have now fallen, but are still above those of mid-1997 (Graph III.5, panel B). Nevertheless, it remains to be seen what the effects of concerted monetary tightening in the major industrial countries might be.

Still with regard to “push” factors, a number of explanations could be offered for declining sovereign spreads. One is the growing diversification of portfolios to include emerging market securities. Another is that conditions in developed bond markets remain highly liquid. This held down yields on

... reflecting ample international liquidity ...

long-term US bonds during 2005, encouraging a search for yield. While this effect has diminished in 2006 with the rise in US long-term rates, it is noteworthy that the spread on US high-yield bonds stabilised towards the end of the period under review while that for emerging market bonds continued to fall (Graph III.5, panel A). Such a development cannot then be attributed solely to global financial conditions but must also reflect investors' assessment that the underlying risks in holding emerging market debt have changed for the better (for additional perspective, see Chapter VI).

... better  
fundamentals ...

Turning to the "pull" factors driving capital inflows, economic fundamentals have improved in four key ways in this decade. The first is that economic reforms and deeper integration with the world economy have lifted growth rates in most countries relative to those in the major developed market economies (Graph III.5, panel C). The effects of EU accession by countries in central and eastern Europe, an increased trade orientation in Latin America and the growing integration of China and India into the global economy have stimulated growth in the countries concerned and have also boosted demand for goods produced by other emerging market economies.

... lower external  
indebtedness ...

The second improvement is that current account surpluses have enabled several countries to reduce their net external indebtedness. Foreign reserves have increased and external debt has been repaid, with a particular focus on official or restructured debt. In some cases, external debt has been reduced by drawing on foreign reserves. For example, Russia cleared its debt to the IMF and paid \$15 billion to the Paris Club of official creditor countries last year. In December 2005, Brazil paid off \$15.5 billion owed to the IMF and Paris Club debt of \$2.6 billion; in April 2006, it paid off its Brady bond debt (albeit partly funded by new external debt). Argentina has also repaid its outstanding debt to the international financial institutions (Graph III.5, panel D). In April 2006, Nigeria became the first African country to eliminate its Paris Club debt, totalling \$30 billion; \$12.4 billion was repaid and the remaining debt was forgiven. An important domestic counterpart of growing current account surpluses and external debt repayment has been significant increases in national saving rates. One notable example is that the saving rate in Latin America as a whole rose to 22% of GDP in 2005, compared with around 17% of GDP in the early 2000s.

... stronger balance  
sheets ...

A third improvement is that currency mismatches have been reduced (Graph III.5, panel E). The currency of denomination of international bank lending has progressively shifted towards the use of local currencies. Governments and other borrowers in capital markets have reduced their reliance on foreign currency debt as they have issued more domestic paper. According to BIS statistics, the total amount outstanding of domestic bonds and notes issued by borrowers in Latin America rose from \$228 billion in 2000 to \$379 billion in 2005; external debt securities fell by \$17 billion over the same period. The proportion of exchange rate-indexed debt in domestic debt markets has declined in a number of important cases. For example, in Brazil the share of such indexed debt in total public debt fell from 37% in 2002 to 2.3% by the first quarter of 2006. Domestic debt markets have also deepened, with international trading of domestic debt instruments rising sharply. Significantly,



there also appears to have been a gradual extension of the maturity structure of domestic government debt in some countries. The greater depth of local currency debt markets offers global investors new means of considerably improving returns. Because domestic bond yields in emerging markets appear to respond more to domestic factors, and have comparatively low correlations with yields in developed markets or in other emerging markets, such paper also offers diversification opportunities.

A fourth change is that the financial positions both of the non-financial corporate sector and of banks have strengthened in recent years. Corporate leverage ratios have fallen, and there has been a significant and broad-based improvement in banking systems. Banks' returns on assets have grown, and a number of indicators suggest that the quality of banks' balance sheets has risen. Another simple indicator is that the ratio of bank stock price indices to overall stock indices – which fell sharply during the crises of the late 1990s – has recovered (Graph III.5, panel F).

... and improved  
banking systems

In short, current account surpluses and reduced net external indebtedness, combined with substantial improvements in growth, national balance sheet positions and banking systems, have supported a strong revival of foreign demand for emerging market assets. At the same time, it must be recognised that new conditions pose certain risks. While domestic bond market development can impose discipline on fiscal authorities by signalling market concerns about inappropriate policies, it could in some cases increase the temptation to resort to inflationary financing. Moreover, the changing exposures of domestic investors could influence financial stability. On the one hand, the increase in local institutional investors is beneficial for market development and the diversification of risks. On the other hand, there is evidence that holdings of domestic government bonds in some countries are concentrated in the portfolios of banks, exposing them to significant interest rate risk.

But risks remain

## Fiscal policy

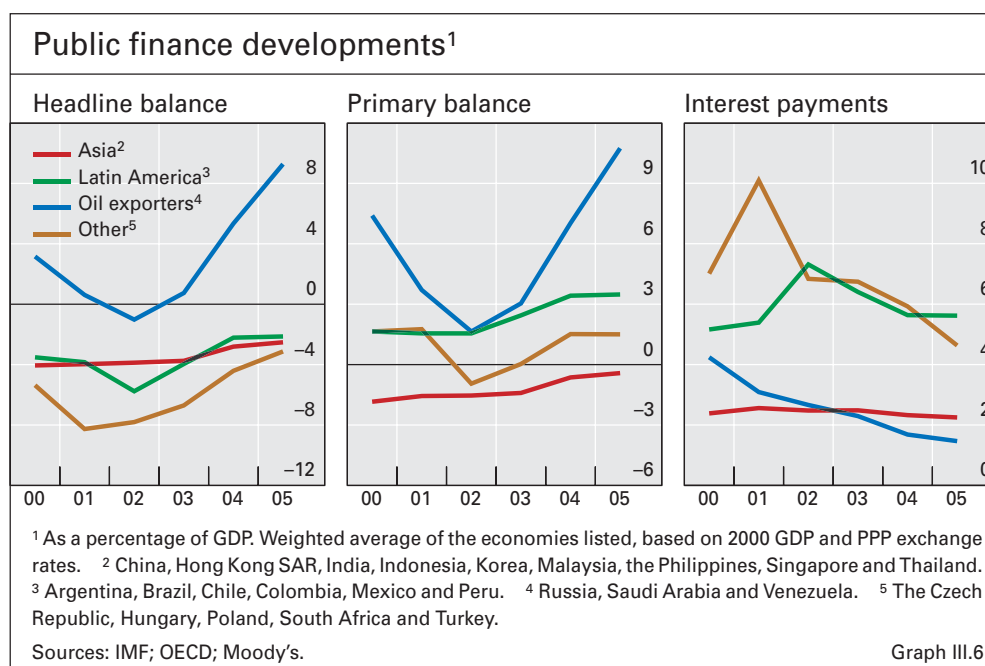
The improvements in the terms of trade and the easy availability of financing for emerging market economies, as well as the robust economic performance of the global economy, raise the question of whether these countries have taken adequate advantage of these favourable conditions to improve their fiscal positions, and in particular to reduce their public debt. Debt reduction should be a priority in emerging market economies since most of them appear to be "debt intolerant". That is, levels of debt that are readily maintained by developed countries appear to leave emerging markets still exposed to possible financial stress.

### *How much fiscal adjustment?*

Fiscal positions have moved towards surplus in recent years; the improvement in the median headline balance in the sample (Graph III.6) was 2.3 percentage points of GDP between 2002 and 2005. Changes among oil exporters have been particularly large, while those in Asia have been more limited than in other regions in the past two years. In the sample of countries in the graph,

Headline balances  
have risen ...





budget surpluses have generally been maintained by countries with already low debt ratios (eg Chile, Korea and Thailand), and particularly by oil exporters (eg Russia, Saudi Arabia and Venezuela). Nevertheless, most emerging market economies still have significant fiscal deficits, with the median being 1.6% in 2005.

The median interest payment in emerging market economies has fallen, in some regions considerably. Interest rate declines have been particularly dramatic in Argentina and Turkey. In general, countries have taken advantage of easier financing conditions by issuing new debt on better terms. In some cases, this has facilitated the prepayment or buyback of existing higher-cost public debt. In others, countries have been able to prefinance their debt requirements at the lower rates that have prevailed in recent quarters. It is estimated that emerging market borrowers had met nearly half of their 2006 financing needs by the end of January 2006.

The trend in primary balances (which exclude interest payments) is perhaps a better guide for assessing the durability of recent fiscal developments (Graph III.6, centre panel). The primary surplus has increased sharply among oil exporters, but has also risen in other regions. To illustrate, in Russia and Saudi Arabia the primary balance over 2004–05 averaged around 8% and 16% of GDP respectively. Primary balances were also large (ranging from around 2 to 7% of GDP) in Argentina, Brazil, Chile and Turkey. In contrast, a primary deficit can still be observed in India, although this too has been falling over time.

#### *Issues in revenue and expenditure adjustment*

Some of the recent improvement in primary balances reflects temporary or cyclical factors, raising concerns that a significant reversal in fiscal positions might occur once unusually favourable global economic and financial conditions end. While reliable and comparable estimates of structural balances

... interest  
payments have  
declined ...

... and primary  
balances are up

in emerging market economies are not widely available, a sense of the durability of fiscal adjustment in some heavily indebted emerging market economies can be obtained by reviewing the extent to which measures are being adopted to permanently reduce expenditures and raise revenues. Ideally, such measures would be designed to minimise distortions that could reduce economic welfare and growth potential.

Many emerging economies find it very difficult to reduce expenditures. One problem is fixed claims on budgetary resources, including interest payments on debt, high government wage or pension bills or generous social security benefits. These are challenges confronting Brazil and Turkey, among others. In countries like China and India, and also in oil-exporting countries, increases in revenue associated with rapid economic growth or oil price windfalls have created pressures to increase wage bills or social spending. Apart from hampering expenditure reduction, this limits the scope for needed spending to improve the quality of the civil service or to support priority sectors such as health, education and infrastructure. As can be seen in Graph III.7, there has been some tendency for expenditures to rise recently in the emerging market economies.

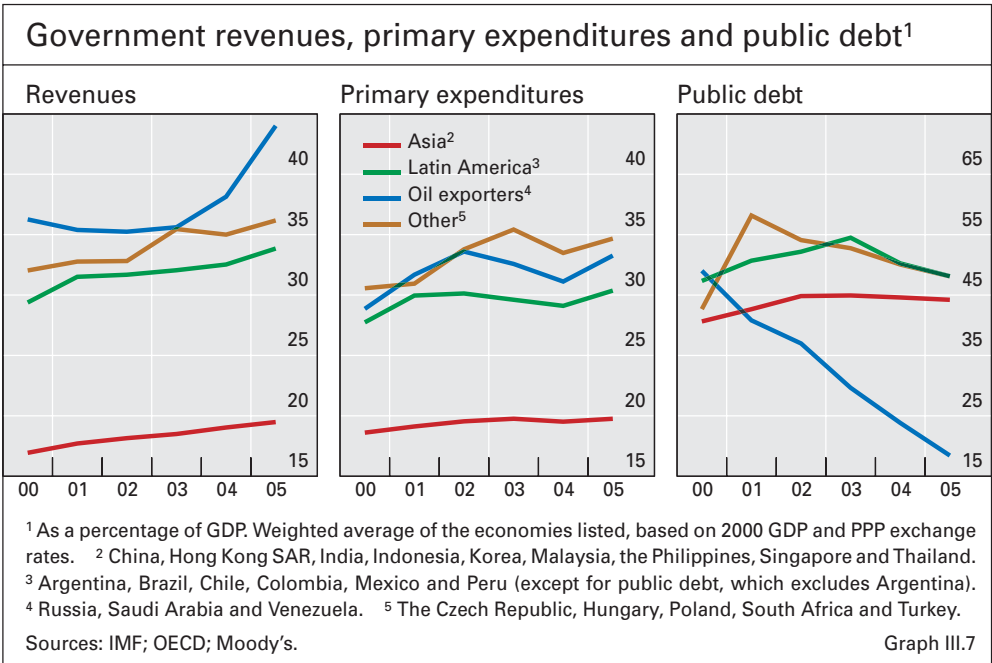
The fiscal impact of increases in spending has recently been partly alleviated by the higher revenue/GDP ratios that are apparent in all regions, particularly, of course, among oil exporters (Graph III.7, left-hand panel). The median revenue ratio has risen about 2 percentage points this decade, to 27.1% of GDP in 2005 (compared to a median ratio of 38% in a set of developed countries). These revenue gains have in many cases not been matched by increases in primary expenditures.

One concern is that, despite recent increases, government revenue ratios are still comparatively low in a number of emerging economies. For example, revenues are about 18–20% of GDP in India and the Philippines, significantly

Expenditure reduction is hard

Rising revenue ratios have helped ...

... but in some cases ratios are still low ...



below the average of 29% in the United States, where taxes are low compared to other developed countries.

... and structural reforms are needed

Another concern is that increases might be reversed in the event of a cyclical downturn, unless structural reforms are implemented that could bring about permanent improvements in the fiscal position. In this regard, progress has been mixed. In the Philippines, for example, a recent extension of the coverage of value added tax is expected to boost revenues significantly. Nonetheless, securing fiscal improvements will probably require limiting any subsequent growth in expenditures. In India, a Fiscal Responsibility and Budget Management Law enacted in 2003 has set the goal of balancing the current (excluding investment) budget by 2008. There has been some progress in broadening the services tax base. In Turkey, there is a recognised need to expand the tax base to include the large informal sector and to widen the coverage of personal and corporate income taxes. These measures, however, will also take time. In some countries, relatively large revenue/GDP ratios have been achieved. However, this has often involved the use of highly distortionary taxes, such as those on financial transactions. A recent study of the use of such taxes in Brazil reveals that shifting to a less distortionary system could enhance economic growth without reducing revenues.

#### *Issues raised by commodity price increases*

Since 2003, sharp increases in commodity prices have posed two major fiscal challenges. First, a number of oil-importing countries, particularly in Asia, have had to decide what to do about subsidies designed to reduce the cost of energy. Rising oil prices have increased the cost of such subsidies and have exacerbated the distortions that arise from shielding consumers (and sometimes firms) from price changes. In some cases, subsidy costs have largely been shifted to public oil companies which are not allowed to raise retail prices. Such artificially low prices have led to shortages, tempted local oil companies to sell abroad and encouraged smuggling. Countries have responded by lifting these subsidies. For example, Thailand ended fuel subsidies in 2005, while India and Indonesia reduced them significantly, causing a jump in fuel prices. As discussed below, the rising costs of fiscal subsidies and efforts to reduce them have complicated the conduct of monetary policy by sharply increasing headline inflation.

Revenue windfalls must be saved

Second, producers should respond with prudence to the fiscal impact of commodity price windfalls that cannot be sustained. Because high prices are likely to be temporary, efforts have to be made to limit expenditure increases in response since these are more likely to be of a permanent nature. This would also mitigate undesirable procyclicality in government spending. Moreover, in the case of oil and other non-renewable commodities, the non-commodity primary deficit should be set so that part of the earnings from commodities can be invested in financial assets. The return on these assets can then fund spending once the commodity has been exhausted. Stabilisation funds taking in the revenue from commodity price windfalls operate in a number of countries, including Chile and Russia. In 2005, Mexico also enacted legislation that would use oil price windfalls to fund investment spending by state-owned enterprises,

particularly the oil company, Pemex, and to enlarge substantially an oil stabilisation fund. However, efforts to establish or operate such funds have posed challenges in a number of countries. For example, in Venezuela a macroeconomic stabilisation fund was significantly depleted after a major oil production strike in 2002. While oil revenue windfalls have partly been used to accumulate reserves and pay down debt, the fund has not been recently replenished. Instead, significant amounts of resources are being allocated to finance current spending.

The fiscal issues raised by such windfalls are illustrated by the recent experience of Russia, which has dramatically improved its net financial asset position. Russia's gross public debt has fallen sharply, from 96% of GDP in 1999 to a projected 14% in 2005. In part, this reflected prepayment of debt, notably to the IMF and the Paris Club last year. In addition, an oil stabilisation fund, established in 2004, had accumulated \$43 billion by the end of 2005. Primary surpluses have also risen, from 2.7% of GDP in 2002 to close to 8.7% in 2005. While large primary surpluses have alleviated pressures on aggregate demand arising from the windfall, fiscal policy has recently eased considerably. Proposals for spending a higher proportion of the oil windfall, including through public sector wage and pension increases, and more infrastructure spending, raise concerns about exacerbating inflationary pressures. High oil prices could also weaken the drive for microeconomic reforms, including improvements to tax administration.

Russia has lowered its debt

#### *Debt reduction and sustainability*

Emerging market economies have generally experienced declines in public debt ratios in recent years (Graph III.7, right-hand panel). Debt reductions have been particularly significant in Indonesia, Russia, Turkey and Brazil, and also in Argentina following the 2005 debt exchange. In contrast, public debt ratios have remained flat or stable in Asia.

Nevertheless, public debt/GDP ratios in emerging market economies still have a median value of around 46%, which is high enough to raise concerns about debt sustainability. Debt ratios are significantly above that median in India, Argentina, the Philippines, Brazil and Turkey, but below in a number of Asian economies (eg Korea and Thailand), oil exporters and Chile. Reported debt ratios are comparatively low in China but fiscal consolidation remains a priority. Moreover, there are potentially large contingent liabilities in the financial system and agreed social and development goals will prove costly.

Public debt ratios are down but still high ...

The cases of Turkey and Brazil illustrate some of the challenges posed by high public debt ratios. In both these countries, economic growth and policy developments have contributed to large primary surpluses (7% and nearly 5% of GDP respectively in 2005), while lower interest rates and exchange rate appreciation have contributed to significant reductions in debt service payments and debt ratios in this decade. The debt ratio in Turkey fell from a recent peak of 107% to 73% of GDP in 2005, while in Brazil it fell from 65% to 52%. In both countries, projections indicate that further debt ratio reductions could occur if the recent fiscal stance is maintained, assuming there are no sharp slowdowns in growth or increases in interest rates. But under different assumptions, say

... posing special challenges

if economic growth and interest rates were set at their historical averages, then the debt dynamics would become less favourable. The public debt positions of both Turkey and Brazil are sensitive to shocks to interest rates because the proportion of short-maturity or interest rate-linked debt remains significant. In both countries, economic resilience could thus be enhanced by maintaining policies that have already contributed to debt reduction and strengthened credibility.

Fiscal deficits in India are lower

In India, achieving long-run debt sustainability also poses challenges, although the risks are attenuated by the fact that the government does not borrow in foreign currency and that banks hold a large proportion of the public debt without trading it. While there have been significant reductions in the headline general fiscal deficit in recent years, a projected rate of 7.7% of GDP in 2005/06 (from 10% of GDP in 2002/03) remains too high.

## Monetary and exchange rate policy

In the context of robust global demand, the two main shocks affecting emerging market economies in this period – a further broadly based rise in commodity prices and an increased demand for emerging market assets – were supportive of growth. However, both of these developments shift the balance of risks towards higher inflation, posing challenges for monetary policy. Higher commodity prices tend to boost inflation directly, for both commodity exporters and importers, and exporters also receive a large boost to income. Increased foreign demand for emerging market assets also tends to stimulate aggregate demand and could be inflationary by loosening financial constraints. The margin of spare capacity has narrowed; in some cases, labour markets have tightened. Although inflation has generally remained low, sharp rises have been recorded in some countries and inflation risks have become increasingly apparent.

Risks of higher inflation

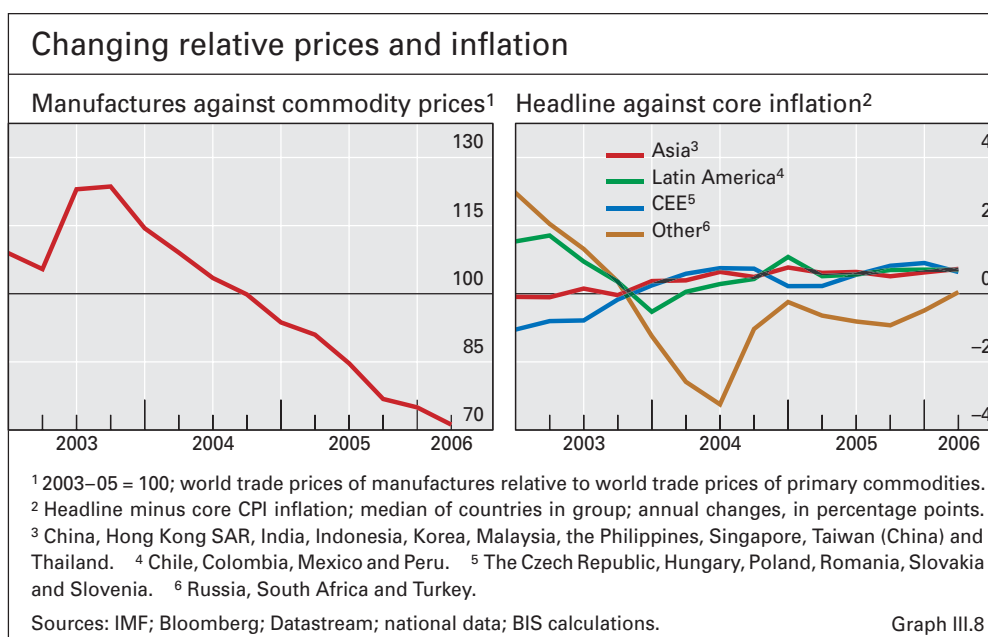
### *Implications of relative price shocks*

Relative price shocks complicate policy

The first issue complicating the conduct of monetary policy is the assessment of relative price shocks. Commodity prices have risen at the same time that international prices of manufactures have strengthened only modestly (Graph III.8, left-hand panel). If the commodity shock was expected to reverse, it would not generally be seen as a major threat to underlying inflation. But longer-lasting relative price changes are more of a problem, as is well illustrated by recent experience. The rise in commodity prices has created a gap between core and headline inflation that has persisted over an extended period (Graph III.8, right-hand panel). This raises the question of whether monetary authorities should assign greater weight to movements in core or headline inflation in assessing inflation risks and formulating policy.

High commodity prices but stable expectations

Two contrasting points need to be considered. First, higher commodity prices are proving to be remarkably durable (apparently reflecting a continued strengthening in demand), have already raised headline inflation and could at some point affect inflation expectations. Second, in spite of this, there are still no clear signs of higher inflation expectations and associated wage pressures



in a significant number of emerging market economies. There appear to be structural changes in pricing behaviour in emerging market economies similar to those observed in developed economies (see Chapter II). In effect, the prices of goods and services (including wages) seem to have become less prone to disturbances from specific price shocks, or even swings in capacity utilisation.

These considerations have conflicting implications for policy. On the one hand, persistent commodity price increases would seem to argue for leaning against expectations by focusing on headline inflation. On the other hand, if behaviour has changed significantly, this argues for a more restrained policy response based on the presumption that headline inflation will in fact fall back to core levels.

Assessing whether core inflation will rise to headline or headline will fall to core is complicated. A judgment must be made about the permanent nature of the commodity price shock, as well as of the changes in the pricing process that seem to have anchored core prices to date. Concerning this second issue, China is key, as its inflation is very low even though growth is high enough to put pressure on global commodity prices. One explanation could be substantial productivity growth in the manufacturing sector. This could well be a longer-lasting phenomenon that will have persistent effects on wages and prices both in China and elsewhere.

However, China has in the past experienced bouts of inflation after long periods of rapid growth. Moreover, it may be that inflation in China is actually rising already but this is masked because the measured price index takes insufficient account of inflation in services. Finally, inflation pressures already appear to be significant in a number of emerging market economies.

Against this background of uncertainty, relative price shocks over the past few years have elicited different policy responses, with a broad tendency towards tightening. Some commodity producers have focused on headline rather than core inflation. Policy interest rates in Brazil, Chile and Mexico were

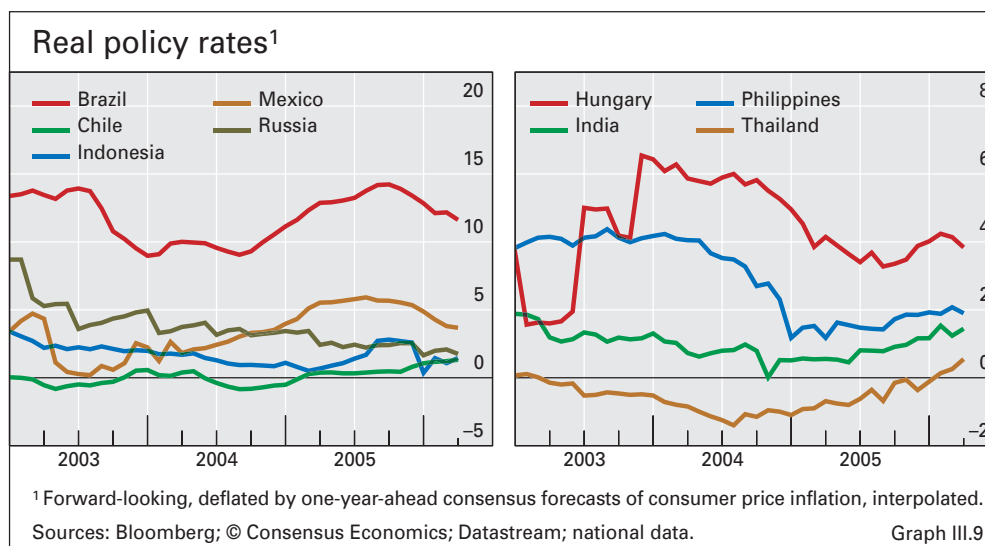
Whether headline inflation will rise or fall ...

... depends on drivers of the pricing process

Inflation still a risk

Early responders have benefited





increased comparatively early in the process, preventing erosion in (ex ante) real interest rates as inflation forecasts edged up (Graph III.9). In contrast, the real interest rate in Russia has drifted downwards.

In some Asian countries, monetary policy initially focused on core rather than headline inflation, because policymakers assumed that commodity price shocks were temporary with little risk of spillover into expectations. However, policy rates were subsequently raised sharply as the shocks began to look longer-lasting. In a number of oil-importing countries (eg India, Indonesia, Malaysia and Thailand), subsidies for energy consumers initially weakened the effects of higher oil prices on the domestic price. However, with commodity price shocks lasting longer than anticipated, drastic cuts in energy subsidies were forced in a number of countries by mounting costs (up to 3½% of GDP in 2005 in Indonesia's case). Interest rates were also increased in response to the risk that inflation expectations might otherwise be affected.

In Indonesia, interest rates were rising ahead of the jump in inflation associated with the more recent cuts in energy subsidies, but the sharp rise in measured inflation fed into expectations regardless. A bout of instability occurred in the currency and domestic bond markets as higher policy rates triggered withdrawals from mutual funds holding government bonds. Conditions then stabilised, and the rupiah has since recovered. In Thailand, where the real rate was negative but inflation had been low, the authorities increased interest rates rapidly as the spillover to expectations became evident and inflation rose. In the Philippines, where the real interest rate was higher, the monetary authorities took longer to raise policy rates in spite of rising inflation in 2004 due to the influence of supply side factors; inflation stabilised with increases in the policy rates in 2005 but rose again in 2006.

#### *Responding to exchange rate appreciation pressures*

The exchange rate often comes under strong upward pressure in countries where demand is growing strongly, the current account is in surplus (thanks to terms-of-trade gains) and capital inflows are buoyant. This creates a

Lifting subsidies  
raised prices ...

... but reactions  
differed

Appreciation  
pressures pose  
dilemma

dilemma for the monetary authorities, who have the option of either allowing the exchange rate to appreciate, or of trying to prevent appreciation by easing monetary policy or through intervening in the foreign exchange market. Allowing the exchange rate to appreciate could mitigate inflation risks, attenuate the price and income effects of higher commodity prices for exporters, and reduce pressures on capacity for countries experiencing strong demand. It could also alleviate the tendency for financial conditions to loosen in countries experiencing large capital inflows. However, very large or rapid exchange rate appreciation can raise concerns about the adverse effects on competitiveness.

Preventing appreciation by easing monetary policy or by intervening in the foreign exchange market can pose other challenges. For inflation targeting regimes, an easier monetary policy would only be appropriate if exchange rate appreciation were expected to lower inflation below target. But this is less likely to be true if the appreciation is an equilibrating response to expansionary capital inflows and positive terms-of-trade shocks. Monetary easing under such conditions could exacerbate inflation risks.

Easing is sometimes appropriate

If the exchange rate pressure is judged temporary (eg because certain capital inflows are expected to reverse or the terms of trade subsequently to revert to lower levels), sterilised forex intervention might be preferable to easier monetary policy as a way of preventing an appreciation. Problems build up, however, the longer intervention is sustained because it then becomes harder to sterilise, again resulting in an unwanted easing of domestic financial conditions and a thrust to higher inflation. Moreover, even when fully sterilised, large-scale intervention could distort domestic financial markets given the size of the debt issuance required for full sterilisation.

Forex intervention can prevent misalignment

### *Policy responses and regimes*

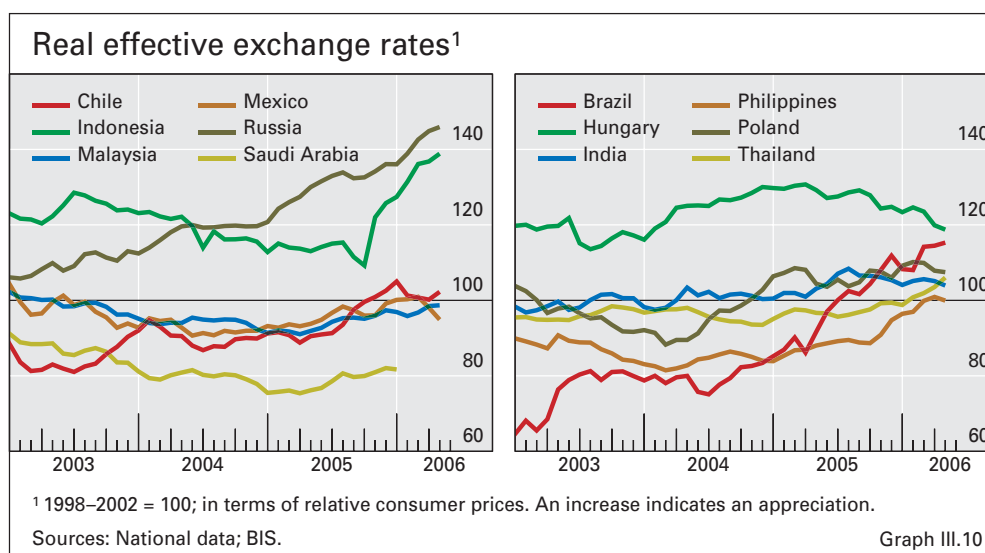
The resolution of the policy dilemma cited above has varied considerably across countries and to some extent has depended on how each country's monetary policy regime has influenced responses to nominal exchange rate movements. Some countries, typically those with inflation targeting regimes, have opted for greater exchange rate flexibility. For example, among commodity exporters where appreciation pressures would be anticipated due to terms-of-trade gains, Brazil and Chile experienced significant nominal exchange rate appreciation between the beginning of 2005 and early 2006. This has been reflected in significant real effective exchange rate appreciation (Graph III.10). In contrast, other countries have opted for greater stability in nominal exchange rates, including Argentina and Russia, which maintain what might be described as hybrid monetary regimes, and Saudi Arabia and Venezuela, which have pegged exchange rates. However, except for Saudi Arabia, real exchange rates have still appreciated in these countries because of higher inflation. In Russia, the authorities have acknowledged the need to allow further nominal exchange rate appreciation in order to counter growing liquidity and to dampen excess demand.

Some countries have allowed appreciation

The authorities in China, and in much of the rest of Asia, have intervened on a massive scale for several years to moderate appreciation. Continued

Large-scale intervention in Asia





heavy intervention took China's reserves to \$875 billion by the end of April 2006. Oil exporters have added substantially to the stock of foreign financial assets held as official reserves (Table III.5). Elsewhere, the rate of accumulation of international reserves appears to have slowed from the heady pace recorded in 2003 and 2004. The extent of sterilisation has varied, but one way of gauging its potential impact on local financial markets is to measure reserves against outstanding public debt securities. Where this ratio is large, as in Asia, the possible distorting effects on domestic financial intermediation deserve close examination.

Efforts to curb  
excess liquidity

A number of countries have begun to use other instruments to help resolve the policy dilemma cited above. In the Baltic and southeastern European states, the authorities have resorted to direct instruments, such as increased reserve requirements and tighter prudential limits. In order to meet the

Foreign exchange reserves							
	Outstanding position <sup>1</sup>				In relation to public debt securities <sup>2</sup>		
	2000	2004	2005	Apr 2006 <sup>3</sup>	2000	2004	2005
Total emerging markets	973	2,094	2,487	2,679	39	59	64
Oil exporters <sup>4</sup>	110	282	386	443	26	61	78
China	166	610	819	875	–7	104	152
Other Asia <sup>5</sup>	529	962	1,003	1,060	103	100	93
Latin America <sup>6</sup>	88	111	121	124	12	13	10
Other emerging markets <sup>7</sup>	80	129	159	177	28	15	19

<sup>1</sup> At end of period; in billions of US dollars. <sup>2</sup> In per cent. Calculated as the ratio of foreign exchange reserves net of currency in circulation to outstanding government international and domestic debt securities. For Algeria, Egypt, Nigeria, Oman, Qatar and Venezuela, includes only international securities; for India, only domestic securities. <sup>3</sup> Or latest available. <sup>4</sup> Algeria, Egypt, Mexico, Nigeria, Oman, Qatar, Russia and Venezuela. <sup>5</sup> India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan (China) and Thailand. <sup>6</sup> Argentina, Brazil, Chile, Colombia and Peru. <sup>7</sup> The Czech Republic, Hungary, Poland, South Africa and Turkey.  
Sources: IMF; BIS.

Table III.5

Maastricht criteria and adhere to ERM II protocols, these countries are attempting to control inflation and maintain exchange rate stability. However, the use of direct instruments in these countries raises questions about possible inefficiencies and costs to the financial system.

While the foregoing has focused on responses to appreciation pressures, some countries experienced episodes of significant pressures for depreciation in 2005 or the first quarter of 2006. For example, the Indonesian rupiah depreciated by 11% against the US dollar in August 2005 due to uncertainty about the fiscal burden of energy subsidies in the light of higher oil prices; the rupiah subsequently recovered. The Hungarian forint depreciated between February and early April 2006, also due to concerns about the fiscal and current account positions.

Depreciation pressures

### *Consequences of policy responses*

One question of interest is whether differences in monetary policy regimes, and in the attention paid to the exchange rate, can be shown to matter in terms of inflationary outcomes.

As summarised in Table III.6, the answer is mixed. Inflation targeting regimes, in which the exchange rate has been allowed to float relatively freely, have typically delivered a moderate rate of inflation. Within this group, Korea shows few signs of consumer price inflation, while previously high inflation rates in Brazil and Turkey have successfully been lowered towards target. Inflation has fallen to within the target range for the first time since it was introduced in Mexico, and is in the target range in Chile. Both countries allowed the exchange rate to adjust and increased policy rates early. Similar outcomes have been observed in Colombia and Peru, which are also inflation targeting commodity producers.

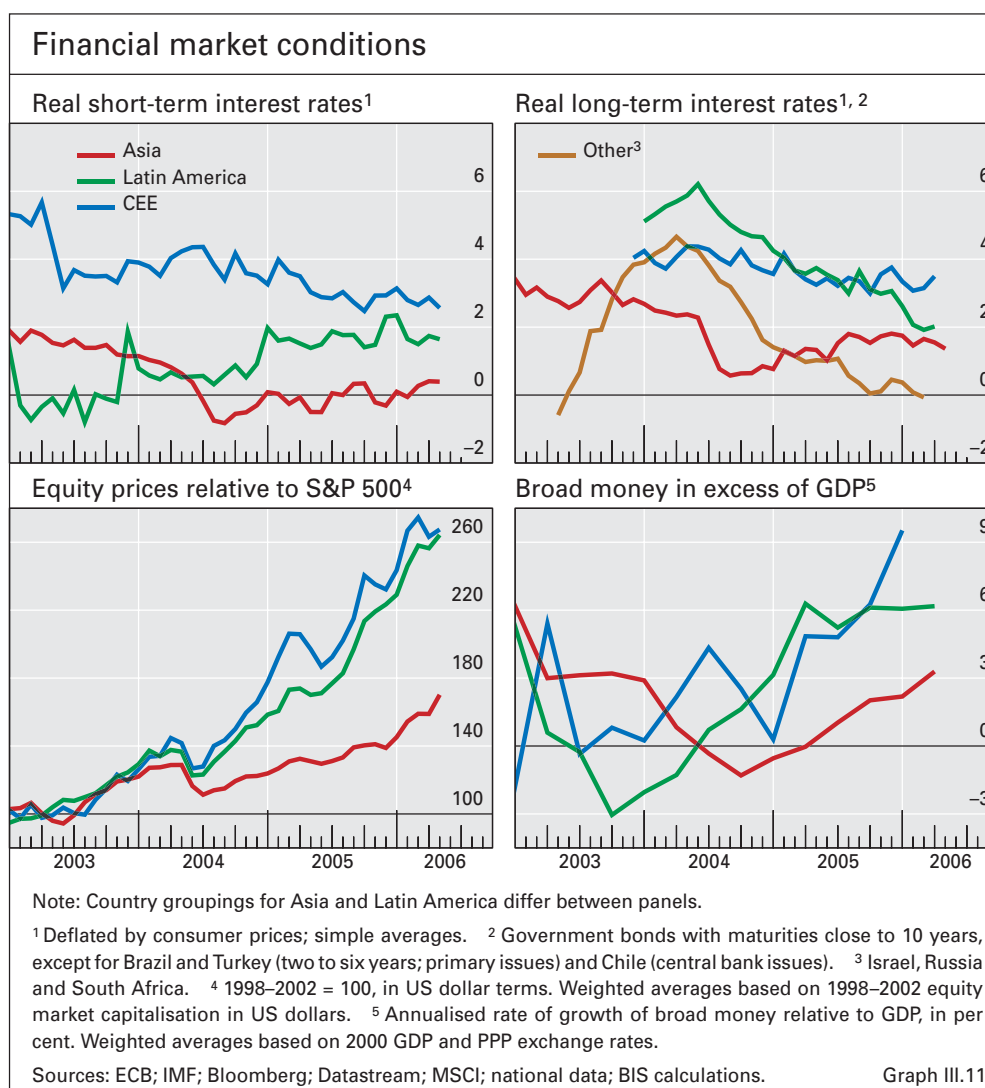
Inflation was moderate with inflation targeting ...

Policy indicators under different policy regimes			
Median of country data for 2004–05, except where indicated			
	Countries with:		
	Inflation targets <sup>1</sup>	Hybrid regimes <sup>2</sup>	Exchange rate targets <sup>3</sup>
Headline consumer price index <sup>4</sup>	3.9	7.0	2.9
Inflation relative to target/partner <sup>5</sup>	0.2	.	1.0
Real interest rate <sup>6</sup>	2.4	0.7	1.1
Nominal effective exchange rate <sup>4</sup>	3.8	0.2	–2.3
Foreign exchange reserves <sup>4</sup>	12.5	16.4	18.5
Private sector credit <sup>4</sup>	15.2	24.8	29.4

<sup>1</sup> Brazil, Chile, Colombia, the Czech Republic, Hungary, Korea, Mexico, Peru, the Philippines, Poland, South Africa, Thailand and Turkey. <sup>2</sup> Argentina, India, Indonesia, Romania, Russia, Singapore and Taiwan (China). <sup>3</sup> China, Estonia, Hong Kong SAR, Latvia, Lithuania, Malaysia, Saudi Arabia, Slovakia, Slovenia and Venezuela. <sup>4</sup> Annual changes, in per cent. <sup>5</sup> Divergence from the centre of inflation target ranges or from main partner's implicit target (1.8 for the euro area, 2.0 for the United States), in percentage points. <sup>6</sup> Central bank rate or short-term money market rate, deflated by one-year-ahead CPI inflation consensus forecasts, interpolated.

Sources: IMF; Bloomberg; © Consensus Economics; Datastream; national data; BIS calculations.

Table III.6



... even lower with  
pegged regimes ...

However, median inflation for countries with fixed exchange rate regimes was even lower than for inflation targeting regimes. Both China and Saudi Arabia present interesting puzzles because consumer price inflation in both economies has remained very low in spite of rapid growth and signs of ample liquidity. Nevertheless, pegging does not always guarantee low inflation; a case in point is Venezuela, which maintains a fixed exchange rate and has experienced double digit inflation.

... and highest with  
hybrid regimes

Inflation was highest in countries with hybrid regimes which have not fully adopted inflation targeting or have no explicit nominal anchor. Some of these countries appear to attach a high weight to exchange rate stability, judging by the small change in the median nominal exchange rate. Compared to inflation targeters, countries with hybrid regimes have also experienced greater liquidity.

Among the countries in the hybrid group, inflation was in double digits in Argentina and Russia, where the nominal exchange rate was relatively stable. Their experience suggests that there are indeed risks associated with resisting appreciation in response to external shocks. In these countries, producer price inflation measures also show significant inflation rates in the

pipeline. Administrative price agreements or controls mask a potentially more serious inflation problem.

In spite of the steps towards tightening taken lately in some countries, recent external shocks and policy responses have been associated with generally easy financial conditions in emerging market economies. This can be seen in continued low real interest rates notwithstanding robust economic activity and significant increases in broad money (Graph III.11). But equity prices, which had risen sharply, fell steeply in May 2006 in several countries.

Financial conditions  
have been easy

The main conclusion is that inflation risks in the emerging markets, while hard to read at present, have increased. Recent experience has also underlined how monetary policy can have implications for the financial system. Prolonged large-scale intervention or monetary easing to hold the exchange rate down can affect the structure of balance sheets in the private sector (especially banks), lower real interest rates, raise credit growth and encourage debt accumulation. The effects of the resulting imbalances, whether on inflation or growth, will take time to unfold fully but will become more significant the longer monetary stimulus is allowed to continue.

Inflation risks have  
increased

## IV. Monetary policy in the advanced industrial economies

### Highlights

Monetary policy in the main industrial countries remained generally accommodative during the period under review, even as economies strengthened and prospects brightened. Nonetheless, with evidence emerging that the risks to price stability had edged up, central banks took steps to reduce the degree of policy stimulus. The Federal Reserve continued to raise its policy rate at a measured pace throughout the period, to a level considered broadly consistent with long-term sustainable growth and price stability. The ECB began lifting its policy rate at the end of 2005 from its previous historically low level. A key concern for these central banks was whether the pace of tightening was appropriate in the light of high energy prices, rising resource utilisation and buoyant housing markets. The Bank of Japan, given accumulating evidence of a cessation of deflation, announced in March 2006 the end of its long-standing policy of quantitative easing. Looking forward, it envisaged a return to the use of more conventional policy instruments. However, monetary policy remained supportive of the nascent economic revival as the policy rate target was kept at zero and the real rate turned negative.

For the smaller advanced industrial economies, the policy challenges were more varied, given the more complex mix of domestic and external forces at work. The Bank of Canada, Central Bank of Norway, Sveriges Riksbank and Swiss National Bank reduced the degree of accommodation by raising policy rates from fairly low levels. Other countries, being at a more advanced stage in the business cycle, saw only minor policy adjustments. The Reserve Bank of Australia and the Reserve Bank of New Zealand raised, and the Bank of England lowered, their respective policy rates by a modest amount.

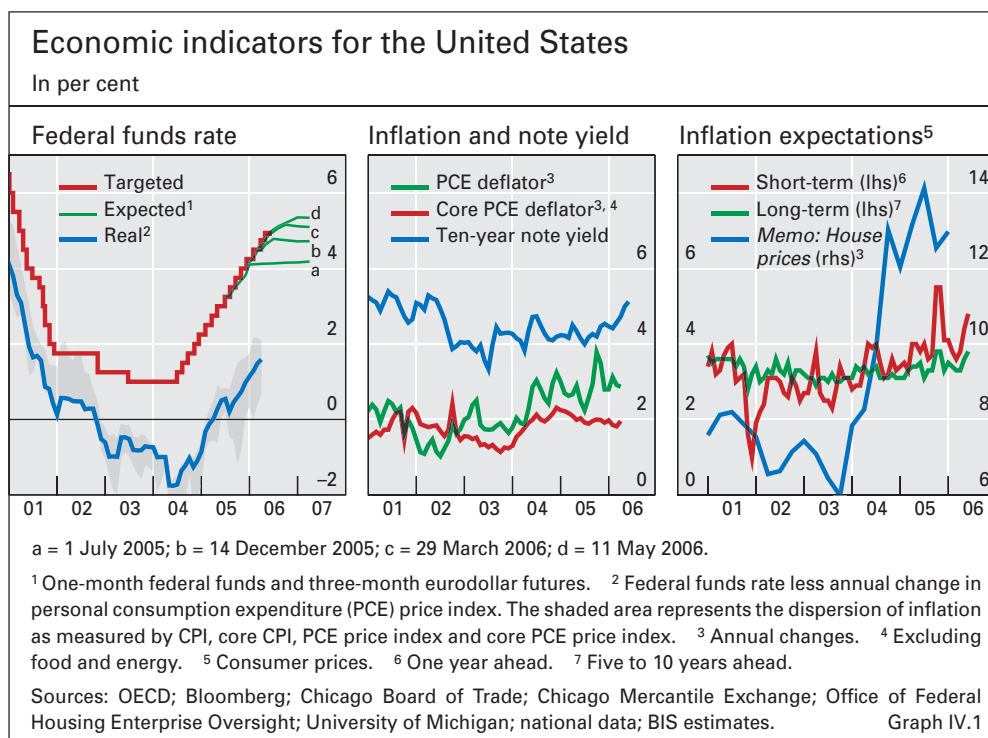
Even as upside risks arising from inflation pressures grew, many central banks took comfort from a continuing low level of underlying inflation and well anchored inflation expectations. They attributed this in part to increased global competition and its moderating influence on wages and prices. The final section of this chapter considers some of the challenges for monetary policy arising from greater global economic and financial integration (“globalisation”).

### Review of developments

#### *United States*

During the period under review, the Federal Reserve continued to reduce the degree of policy accommodation. The federal funds rate target was raised by 25 basis points at each meeting of its policy committee, to 5% in May 2006 (Graph IV.1). The latest move was the 16th consecutive increase in this tightening cycle, which had begun in June 2004 with the rate at 1%. The hallmark of this cycle

The Federal Reserve raised rates ...



was that each rate move was effectively preannounced. By late 2005, however, committee members indicated less certainty about the policy outlook.

The quiescence of underlying inflation was another remarkable characteristic of this tightening phase. Headline PCE inflation continued to move up, reaching 4% year over year, as the effects of higher energy and commodity prices continued to work their way through. Nonetheless, core inflation remained low and stable near 2%. Towards the end of the period, however, evidence of strong underlying growth, a modest rise in long-term inflation expectations and higher resource utilisation – especially in labour markets – heightened the committee’s vigilance with respect to inflation risks.

The Federal Reserve’s communication strategy has played a major role in guiding markets during this tightening phase. As the policy committee began to see a possible end to the tightening, it adjusted its forward-looking statements about the likely trajectory of policy rates and the possibility of a pause. Notably, in December 2005 the well publicised use of the adjective “measured”, employed since mid-2004 to describe the likely pace of further rate increases, was dropped. The committee expressed the view that, after the removal of a significant degree of accommodation, future policy settings would need to become more sensitive to the arrival of economic data. Moreover, subsequent cumulative policy moves were unlikely to be large. Markets absorbed this linguistic adjustment with only modest reactions.

Despite its favourable assessments of how the current policy tightening cycle had been orchestrated, the committee debated the possibility both of falling behind and of getting ahead of the curve. By late 2005, when the committee stopped characterising policy as accommodative, some members began to argue that policy rates might already have reached a level consistent

... as inflation remained quiescent ...

... and growth was strong

With the end of the tightening cycle in sight ...

... risks of a policy rate overshoot needed to be balanced with ...

with output growing at potential, once the lags generally associated with the monetary policy transmission mechanism had been taken fully into account. Yet subsequent policy rate moves indicated that a majority of the committee continued to have concerns about inflation risks.

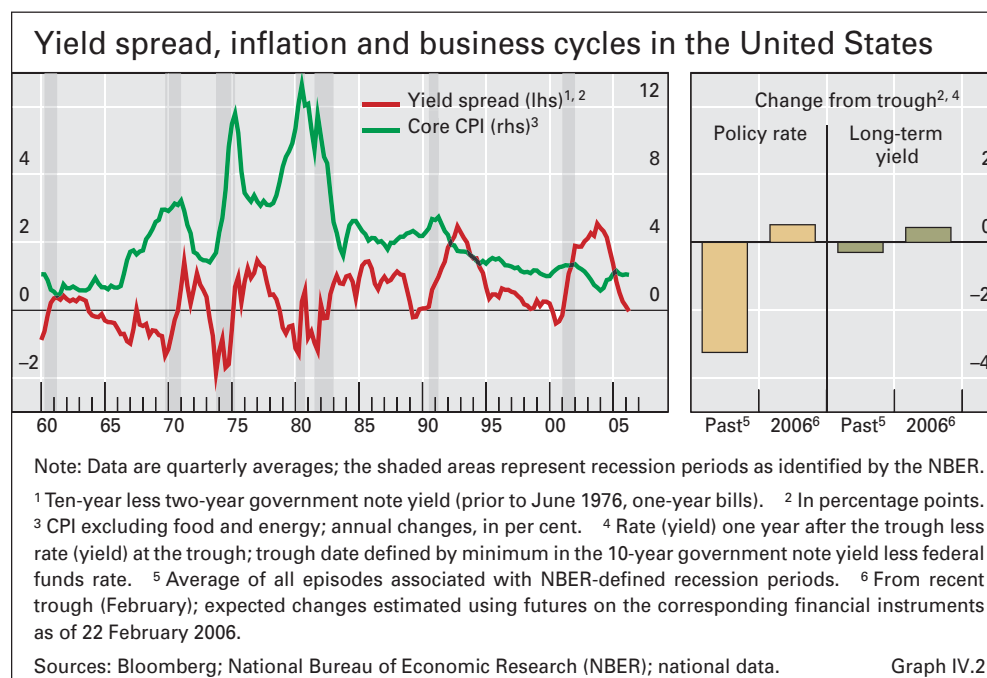
High house prices and household debt burdens were identified as major sources of risk to future growth prospects, even as evidence emerged that the US housing market was cooling off. An important question for the Federal Reserve was whether such developments required a more restrictive monetary policy response than in the past, given that houses might have become significantly overvalued. Reviewing the issue, the policy committee agreed that, in principle, house price developments should be taken into account if they threatened the core goals of price stability and sustainable economic growth. Nevertheless, it also concluded that responding to possible mispricings at this juncture was not likely to contribute, on balance, to achieving its primary policy objectives. Uncertainties associated with judging the appropriate value and likely direction of such asset prices were deemed generally too large for the Federal Reserve to be able to act with confidence.

The flattening of the yield curve also became a policy concern, as yield spreads fell to levels last seen in the 2001 recession. In the past, such a configuration of the term structure had provided a fairly reliable signal of imminent recession (Graph IV.2, left-hand panel). This time, however, the dynamics driving the spread seemed to be different in at least two important ways. First, the Federal Reserve appeared to have kept a lid on inflation pressures and hence had dampened expectations of a policy rate overshoot (Graph IV.2, right-hand panel). Second, nominal long-term interest rates had stayed remarkably stable in comparison with past periods of tightening, although they did rise noticeably towards the end of the period under review. This implied that the degree of policy tightening associated with the inversion had been

... risks to price stability

Challenges were posed by house prices, debt ...

... and the flattening of the yield curve





less than normal. Taken together, these developments called into question the continued reliability of this indicator (see Chapter IV of the *75th Annual Report*). As for the policy implications of the flattening yield curve, they would depend on the factors thought to be behind the changing dynamics. Unfortunately, these were still difficult to assess with confidence (see Chapter VI).

### Euro area

Despite two increases in the policy rate, monetary policy in the euro area remained very accommodative during the period under review. The first 25 basis point rise in December 2005 came after 2½ years of the policy rate being maintained at the historically low level of 2%. Largely in response to evidence of growing risks to price stability, the ECB again raised rates by 25 basis points in March 2006, leaving the policy rate at 2.5% at the end of the period (Graph IV.3). The ECB’s decisions reflected assessments based on its two-pillar monetary policy framework, one pillar focused on price stability in the short term, and the other on the longer-term price trends based on its monetary analysis.

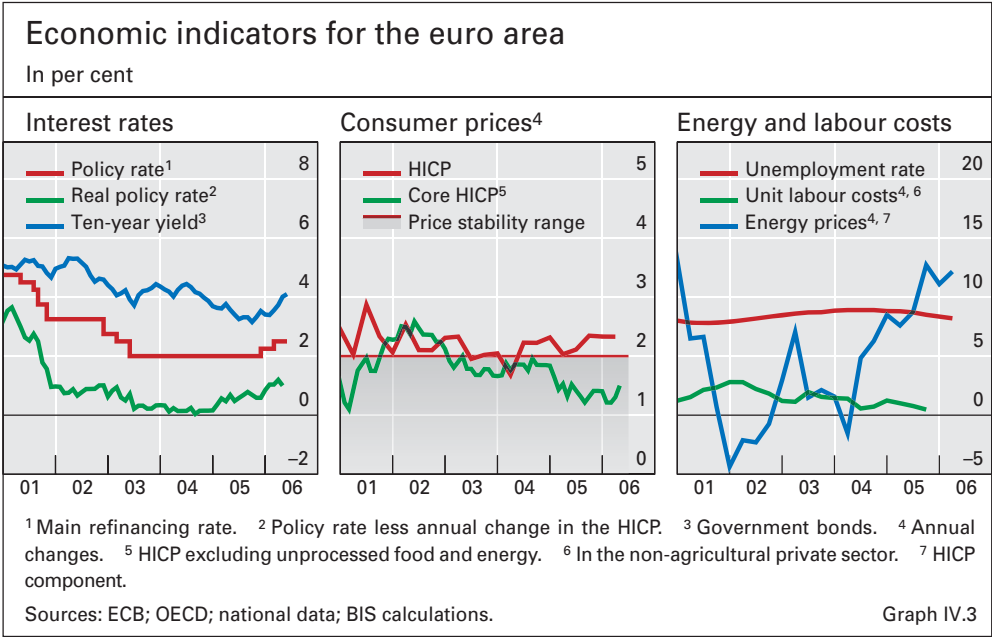
As regards the former, economic growth in the euro area was judged to have gained traction throughout the period, despite some quarter-to-quarter volatility. This, along with a rise in headline HICP inflation above 2%, the upper end of the ECB’s preferred range, suggested that the extent of policy accommodation had become increasingly inconsistent with the preservation of price stability. The ECB also expressed concerns that high, and possibly rising, oil prices might still pass through to consumer prices. This, in turn, raised the possibility that such relative price developments might feed through to wage settlements, leading to second-round effects. Part of this concern reflected the ECB’s emphasis on headline inflation, as core HICP inflation was low and declining and inflation expectations appeared to be well anchored.

The ECB’s concerns were reinforced when considering monetary developments. M3 continued to grow at a rate far above the reference rate

The ECB began to increase rates ...

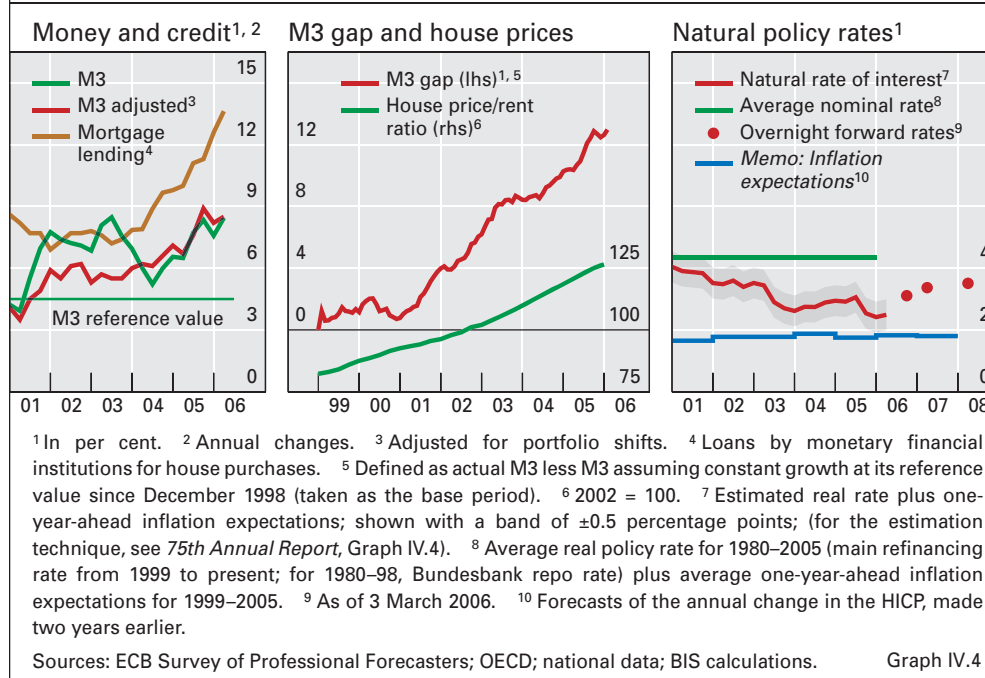
... reflecting short-run concerns about high headline inflation ...

... as well as longer-run concerns about money ...





## Monetary analysis and monetary policy in the euro area



considered consistent with medium- and long-term price stability (Graph IV.4). Earlier in this decade, M3 had also grown rapidly, but a large part of this had been attributed to technical factors. In particular, euro area residents had been adjusting their portfolios away from equities to money, revealing their preference for safe, more liquid assets. But even as these technical adjustments subsided, M3 continued to grow very robustly. Indeed, the growth rate of M3 adjusted for portfolio shifts reached new highs in the past year, at roughly twice the reference growth rate.

Complementing the worrying signals from M3, credit growth to the private sector remained strong, especially mortgage lending to households. Continuing low interest rates were thought to have contributed to the momentum in the housing market, resulting in some exceptional rates of price appreciation (see Chapter VII). Indeed, France, Ireland, Italy and Spain continued to record double digit annual rates of appreciation. The ECB's own calculations showed that house price overvaluation in the euro area had not been greater in the previous 20 years. In view of the interplay of asset prices, credit growth and monetary stability, as highlighted in the ECB's policy framework, these developments were seen as pointing to longer-term risks to price stability and economic activity.

The ECB also saw external developments as a potential source of concern. In particular, the unwinding of global imbalances was perceived as a low-probability but potentially large downside risk to euro area economic activity. The potential knock-on effects for price stability, therefore, needed to be assessed along with the upside risks to inflation from the monetary analysis.

The ECB relied heavily on its communication strategy to clarify its decision-making process, particularly as expectations firmed of an imminent turning point in the policy cycle. However, the ECB was circumspect about

... credit and asset prices ...

... and global imbalances

Concerns about communication

offering explicit forward-looking statements on the direction of policy rates. At several press conferences, officials emphasised that the Governing Council did not take decisions *ex ante* on future policy rate moves, and was therefore not in a position to preannounce a sequence of rate hikes. This was in sharp contrast to recent efforts by the Federal Reserve and the Bank of Japan to offer more guidance, albeit qualitatively, about the likely direction of policy rates at subsequent policy meetings. The ECB was concerned that such statements might be misconstrued as committing it to a specific course. In addition, with fewer “excesses” evident in euro area financial markets than in the United States or Japan, such explicit guidance arguably implied fewer potential benefits. Even so, given the ECB’s leitmotif of upside risks to price stability, markets expected further rate hikes this year and next.

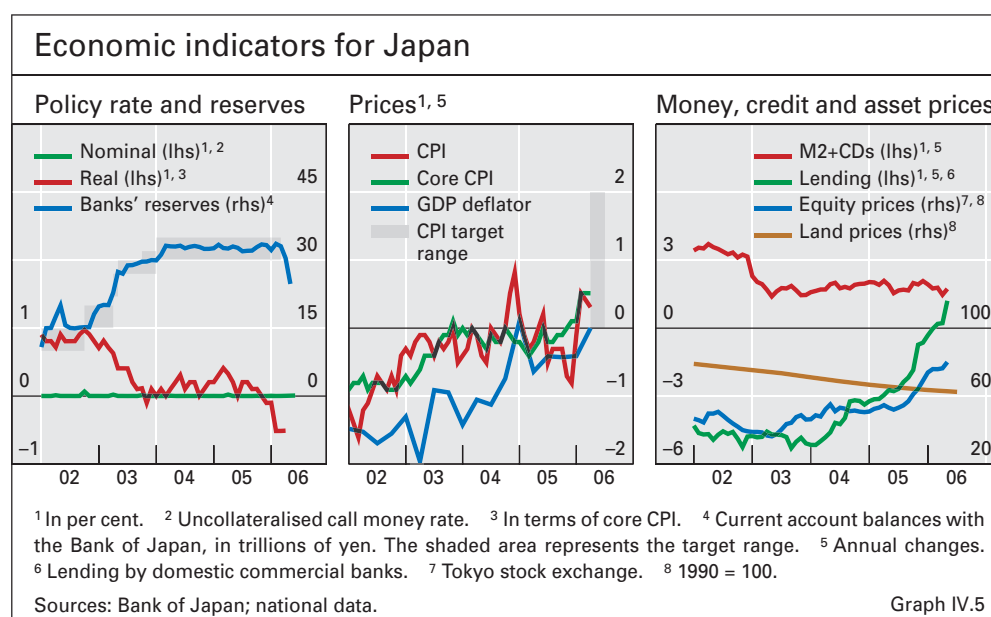
### Japan

The Bank of Japan maintained a very easy policy stance as it waited for firmer evidence that deflationary forces were waning. During most of the period, the Bank continued its quantitative easing policy, which it had adopted under exceptional circumstances in 2001. Accordingly, it set an operational target for banks’ outstanding current account balances held at the Bank of Japan. This target, which remained unchanged in 2005 and early 2006 at ¥30–35 trillion, was significantly in excess of what was needed to ensure that the overnight rate stayed at virtually zero (Graph IV.5). At its inception, the quantitative easing framework had been intended primarily to avoid the possibility of a deflationary spiral in the context of fragility in the financial sector. By this criterion, the Bank of Japan concluded earlier this year that the policy had been a success.

In March 2006, the central bank ended its quantitative easing policy and returned to a more normal operational framework of targeting the (uncollateralised) overnight rate. At the time of the policy shift, the Bank of Japan emphasised its intention to keep its new target at 0% for a period of

The Bank of Japan maintained an easy stance as deflation pressures waned ...

... ending its quantitative easing framework but keeping policy rates at historical lows



time, even though the stage was being set for a withdrawal of excess reserves from the banking system. Indeed, the decline in excess reserves held at the Bank of Japan since then has been rapid. Even so, with deflation subsiding and inflation eventually rising during the period, the resulting real policy rate fell to lows not seen for many years. The Bank of Japan recognised that this would provide additional monetary policy stimulus to support the gathering momentum in economic activity.

Improving monetary  
policy transmission  
channel

Underlying the decision to shift policy was increased optimism about improvements in the monetary policy transmission channel. Admittedly, some doubts had lingered; the Bank of Japan's target range for current account balances translated into only modest improvements in M2 and private sector credit growth. But the accumulating evidence of a return to economic and financial normality helped to tip the balance towards adopting the more conventional monetary policy framework.

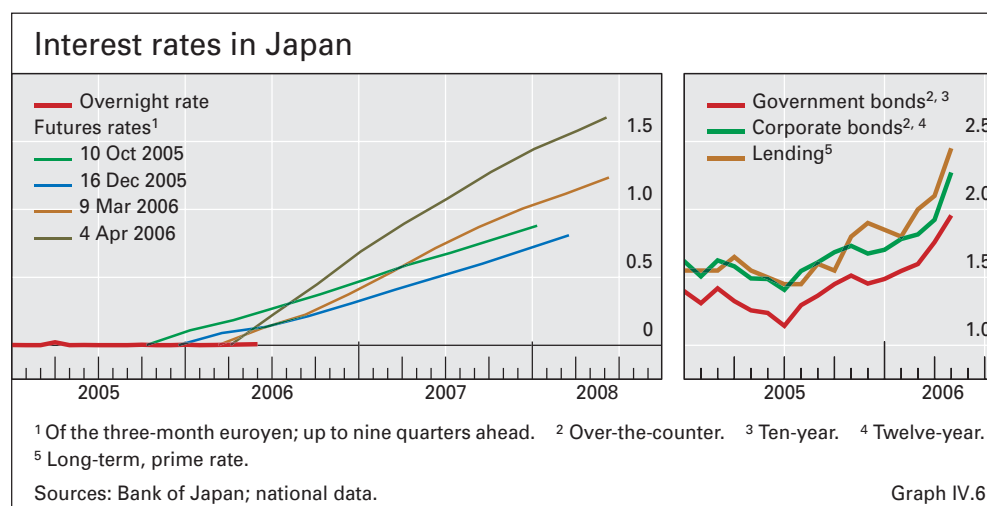
More conventional  
policy framework  
emphasises ...

The Bank of Japan also announced two other key elements of its new policy framework. First, the Bank clarified its views on price stability, defining it qualitatively as a situation where households and businesses can make economic decisions without concern about fluctuations in the general price level. Operationally, the Policy Board interpreted this to be an approximate inflation range of 0–2%. Greater clarity about its inflation objectives was expected to help orient price and wage behaviour in support of its policy goals. Naturally, given Japan's deflation experience, questions were raised about the lower bound of the range. The Bank of Japan stated that it would review the range regularly, recognising the possibility that, in the future, a wider safety margin against the risk of declining prices might be necessary.

... a preferred  
inflation range ...

... and a two-  
perspective  
approach

Second, the Bank of Japan outlined its "two-perspective" approach to the conduct of monetary policy. The first perspective emphasised an evaluation of the stance of policy in the light of expected developments in economic activity and inflation over a one- to two-year horizon. The second perspective was meant to address longer-term risks that might require more flexibility in the conduct of policy. Experience had illustrated that short-run inflation control alone was not sufficient to preclude wide swings in asset prices and significant



changes in the financial environment that could threaten sustainable growth and price stability over longer horizons.

While the Bank of Japan announced that the new framework was not likely to lead to any abrupt changes in short-term interest rates, markets reacted by bidding up long rates (Graph IV.6); moreover, increases were seen in both public and private sector debt markets. The movements in part reflected official statements that policy rates would eventually experience a “gradual adjustment”, after a period of remaining effectively zero, as well as a re-evaluation by the market of the economy’s improving prospects.

Markets expect an increase in policy rates ahead

### *Inflation targeting countries*

During the period under review, many central banks in advanced industrial countries with explicit numerical objectives for inflation raised policy rates. In some cases, this seemed to reflect the fact that headline inflation moved higher, owing in large part to energy prices. However, underlying inflation generally remained low (Graph IV.7), and in some countries was well below inflation objectives.

Many central banks raised rates

These central banks saw themselves facing a set of common policy risks. First, uncertainties about the path and impact of energy prices raised upside risks to price stability, especially if second-round effects began to take hold. Second, central banks grew concerned about the downside risks associated with possible fallout from an unexpected slowdown in two key drivers of global economic activity – China and the United States. The potential adverse implications of large and growing global external imbalances formed a backdrop to these downside concerns (see Chapter V). Third, already high house valuations continued to rise to levels that looked increasingly unsustainable, raising the likelihood of a boom-bust scenario materialising. While the slower pace of appreciation in Australia and the United Kingdom was welcome, the persistent upward trend in the household debt/income ratio remained worrisome, especially with the prospect of further policy tightening in some countries.

Key risks included high energy prices ...

... global imbalances ...

... and elevated house prices

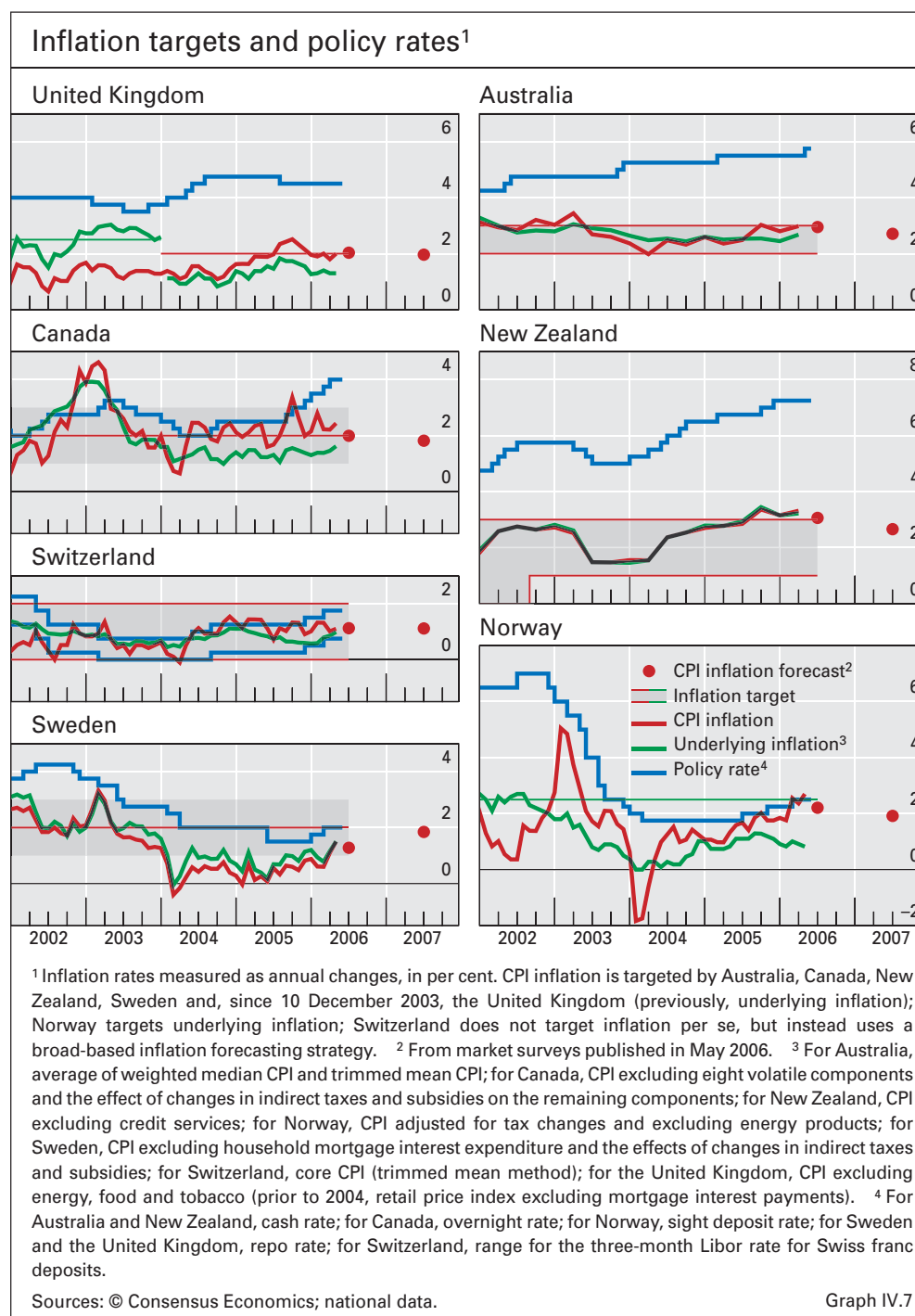
There were, of course, differences amongst these economies. Increases in rates were comparatively larger amongst those central banks whose policy rates had been near historical lows at the beginning of the period under review. The Bank of Canada, for instance, raised its overnight rate by the largest amount, taking it from 2.5% in September 2005 to 4% in April 2006 in six consecutive increases. With the economy operating near full capacity, and inflation running in the upper half of its target range, it was thought necessary to begin normalising policy rates, despite the significant appreciation of the Canadian dollar against the US dollar and low underlying inflation.

Canada raised rates in a series of steps

The Central Bank of Norway and Sveriges Riksbank also raised rates, but by more modest amounts. The former increased its sight deposit rate three times, by 25 basis points each time, reaching 2.5% by March 2006. This reflected an upturn in the Norwegian economy that was deemed to require a somewhat less expansionary policy stance. Even though underlying inflation remained well below its target, headline inflation edged up. In addition, the Norwegian central bank began publishing in November 2005 an official path for future policy rates. This followed the example set by the Reserve Bank of

Norway, Sweden and Switzerland lifted rates modestly from low levels

New Zealand in 1998 of providing the public with quantitative forward-looking information about the likely direction of policy. While the Central Bank of Norway expected the new practice to enhance monetary policy predictability and effectiveness in anchoring inflation expectations, it also noted some concerns. In particular, if such projections were misinterpreted as implicit commitments, this would complicate the conduct of policy. The Swedish central bank boosted its rate to 2% in two 25 basis point moves, as robust growth in household consumption, corporate investment and external demand became evident. At the same time, underlying and headline inflation remained just



under the lower end of the inflation target range during most of the period. Cost pressures also appeared to remain moderate.

The Swiss National Bank, with the lowest initial policy setting amongst these countries, raised the range for its policy rate by 50 basis points to 0.75–1.75%. The economic recovery in Switzerland was seen to be firming, driven by robust global demand, an improved employment situation, stronger corporate investment and solid private consumption. However, inflation remained low and stable.

Central banks in countries at a more advanced stage of the business cycle, and where policy had already been tightened significantly, made only minor adjustments to policy rates. The Bank of England was the only central bank to reduce its policy rate, with a 25 basis point cut in August to 4.5%, where it has since remained. The rate reduction was triggered by concerns about below trend GDP growth and a weakening in labour market conditions that had the potential to push inflation below the target level.

Similar to trends observed in a number of the other inflation targeting countries, the Reserve Bank of Australia raised its policy rate, by 25 basis points to 5.75% in May. Growth was expected to slow slightly while the level of capacity utilisation remained high. Underlying inflation remained moderate, in large part due to disinflationary impulses coming from stronger economic ties with China, even as headline inflation stayed near the upper end of its inflation range for much of the period. In New Zealand, economic growth slowed from a high rate as business activity softened and the housing market also showed signs of cooling. Inflation nonetheless moved above target, as price increases and cost pressures remained persistent. The Reserve Bank of New Zealand raised its official cash rate by 25 basis points in both October and December to reach 7.25%, the highest policy rate amongst these advanced industrial countries.

The experience of the Antipodean economies underscored a policy dilemma common to commodity-rich countries facing a combination of surging asset prices and high commodity prices. On the one hand, higher policy rates could help to alleviate domestic sources of overheating. Yet this response would tend to attract global capital flows, not least through carry trades (see Chapter V), appreciate the currency and, possibly, aggravate current account problems. This raised the prospect of potentially destabilising financial inflows. Recent experience in New Zealand illustrates just how disruptive it can be when these inflows reverse. On the other hand, keeping policy rates lower could feed already ebullient asset prices, thereby increasing the likelihood of domestic boom-bust behaviour.

Other global forces also weighed on policy decisions in a number of countries. One concern was that unexpectedly persistent downward pressure on inflation from global competition in consumer goods and services, despite high energy and commodity prices, might cause some tendency to undershoot inflation objectives (Graph IV.8). These positive supply side developments largely reflected a notable shift in import patterns, with China and some newly industrialised countries in central and eastern Europe supplying a rapidly increasing volume of low-cost imports of manufactured goods.

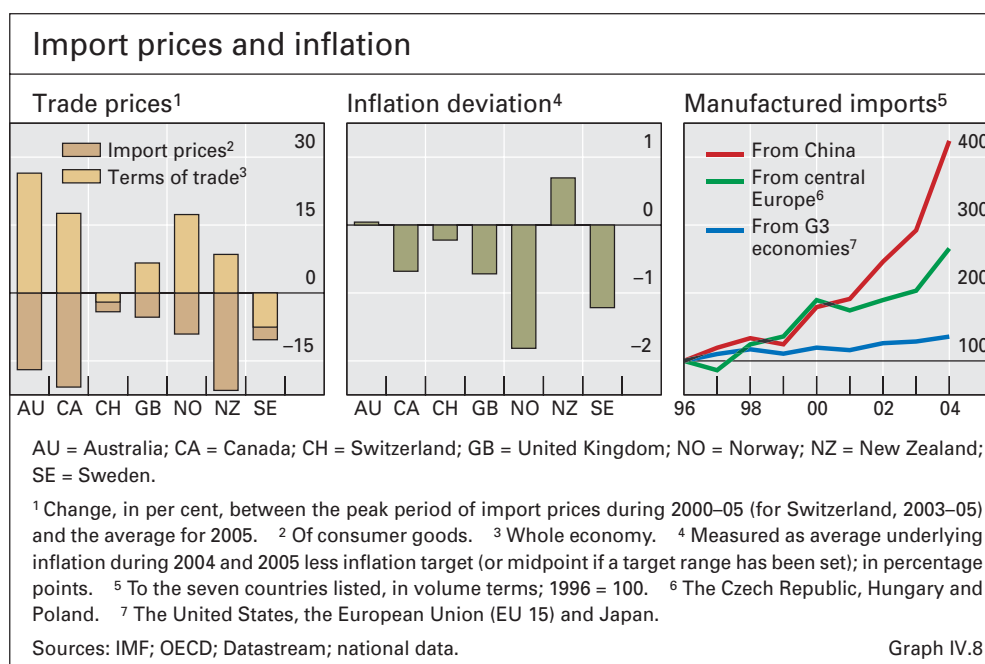
Such global forces have allowed policy rates to remain lower than otherwise, but have arguably aggravated domestic concerns about rising

UK, Australian and New Zealand rates were kept relatively high

Global financial flows implied policy trade-offs ...

... as did disinflationary pressures from abroad





asset prices and levels of indebtedness, suggesting a further need to raise policy rates. At the same time, tightening could increase the likelihood of undershooting the inflation objective. Indeed, with inflation running at the low end of their inflation targets, the Central Bank of Norway and Sveriges Riksbank have already been facing such a policy dilemma for some time.

## Globalisation and monetary policy

Globalisation complicates the conduct of monetary policy

As central banks became more attentive to emerging domestic signs of upside risks to price stability during the period under review, they looked to global developments as a possible source of countervailing pressure to keep inflation low and stable. Indeed, since the second half of the 1990s at least, central banks have become increasingly alert to the potential implications for domestic macroeconomic developments, and inflation in particular, of the process of greater real and financial integration in the world economy (“globalisation”). It was earlier in the 1990s that the integration of China, India and the former Soviet bloc into the global economy began in earnest, adding significantly to the underlying momentum of globalisation. Could this process be helping to moderate inflationary forces and to keep inflation under tighter control? And what new challenges could it still pose for monetary policymaking?

This section explores these issues in more detail. It examines, in turn, how globalisation may have strengthened central banks’ incentives and ability to deliver price stability, how it may have been altering the information content of traditional guideposts for monetary policy settings, and how it may have influenced the monetary policy transmission mechanism and central banks’ room for manoeuvre. The section concludes by considering potential challenges and risks ahead, together with possible policy responses.

### Globalisation, central bank incentives and price stability

A remarkable feature of the global disinflation record over the last couple of decades has been its breadth (Graph IV.9). There is no doubt that central banks' determination to fight inflation, following the lessons learnt during the Great Inflation era, has been the main factor behind this trend (see the *75th Annual Report*). Yet the striking similarity across countries, despite wide differences in monetary policy frameworks, exchange rate regimes and the configuration of other economic forces impinging on these economies, suggests that other common forces may also have played an important role. Globalisation is a natural candidate.

There are various ways in which globalisation could have helped central banks to reduce inflation and keep it low. Some of them are direct. For example, increased global competition in goods, services and factor input markets and greater cross-border investment (Graph IV.10) have surely affected the process of wage and price formation and, consequently, inflation dynamics in the industrialised countries (see Chapter II). Others are more indirect and involve rather subtle, yet arguably more lasting, effects which operate largely by enhancing central bank incentives to achieve and maintain price stability. At least five such channels can be singled out.

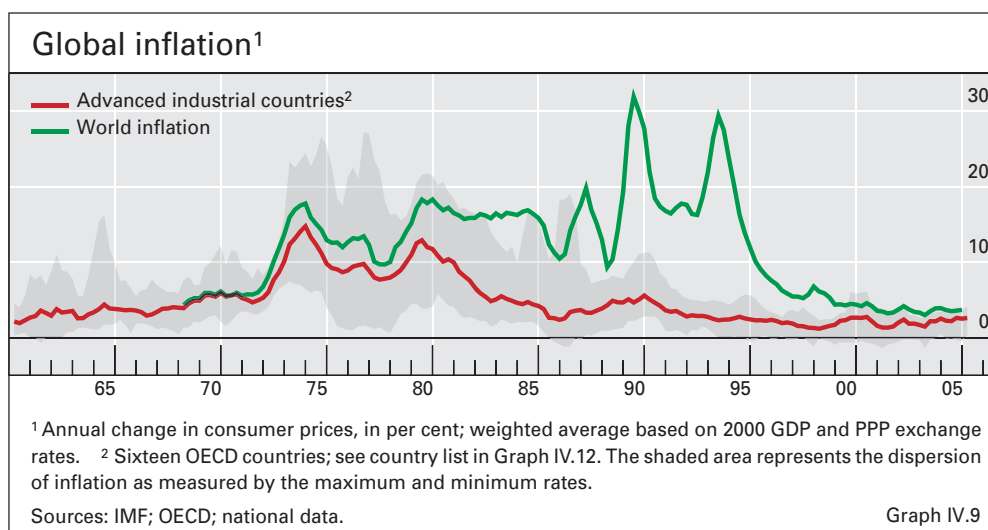
First, globalisation may have significantly lowered the costs of disinflation and hence helped to speed it up. Globalisation has involved a series of favourable supply side developments in low-cost production centres around the globe that yielded a contemporaneous reduction in price pressures and an expansion of output. By accommodating these effects while resisting unfavourable ones, central banks could thus opportunistically cut the output and employment costs of the fight against inflation.

Second, while better monetary policy management has surely supported greater output stability across many economies (Graph IV.11), globalisation may also have played its part. Globalisation has expanded the range of options through which businesses and investors can diversify country-specific risks. In addition, global supply chains have helped to reduce the bite of country-

Globalisation has influenced the inflation process in various ways:

by lowering costs associated with disinflation ...

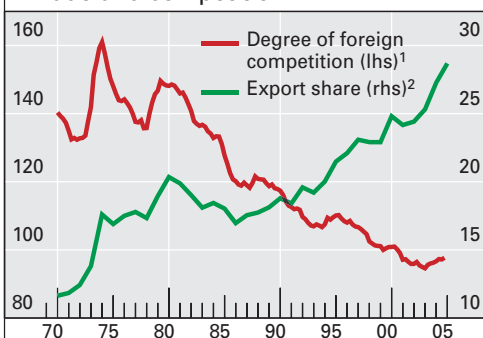
... moderating domestic business cycles ...



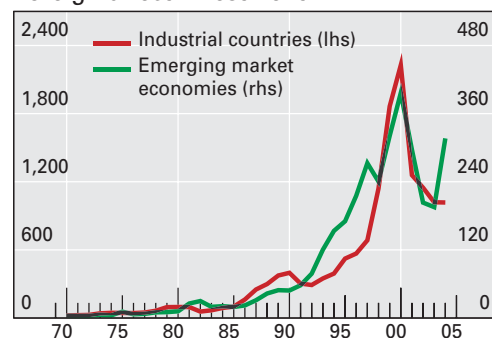


## Key indicators of globalisation

### Trade and competition



### Foreign direct investment<sup>3</sup>



<sup>1</sup> Export price/GDP deflator for 16 OECD countries; weighted average based on 2000 GDP and PPP exchange rates; 2000 Q1 = 100. <sup>2</sup> World exports as a percentage of world GDP. <sup>3</sup> Sum of gross foreign direct investment inflows and outflows, in billions of US dollars.

Sources: IMF; OECD; United Nations; national data.

Graph IV.10

specific capacity constraints. To the extent that globalisation has smoothed the business cycle, it has also naturally supported the central banks' focus on maintaining price stability.

Third, globalisation may have imposed greater discipline on policymakers. Economic and financial integration has naturally tended to increase the costs of slower progress towards good macroeconomic performance in general and price stability in particular. Good performance has meant more global resources flowing in and supporting growth; poor performance has meant resources flowing out, at times in a rapid and destabilising way. Indeed, past economic and financial crises exemplify the ability of global markets to levy particularly harsh penalties on countries judged to have unsound policies.

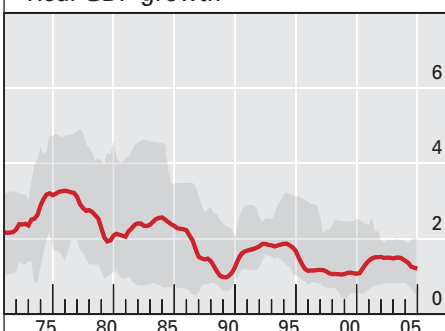
Fourth, globalisation may have made central banks more willing to tolerate very low inflation rates. This is because globalisation has also lowered the

... rewarding  
good policy  
frameworks ...

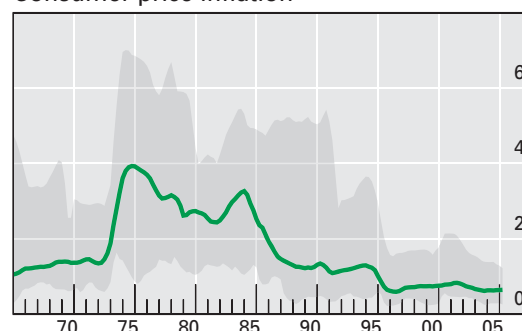
... reducing  
downward nominal  
rigidities ...

## Volatility of growth and inflation in advanced industrial countries<sup>1</sup>

### Real GDP growth



### Consumer price inflation



<sup>1</sup> Sixteen OECD countries; standard deviation of national data using a 20-quarter moving window. Weighted averages based on 2000 GDP and PPP exchange rates; the shaded areas represent the dispersion as measured by the respective maximum and minimum volatilities.

Source: National data.

Graph IV.11

costs associated with deflation. Intensifying global competition has contributed to making factor input and final goods markets more efficient. It has also strengthened incentives for institutional reforms that promote market flexibility, especially those making wages and prices more flexible downwards. Hence, it has made modest deflation less worrisome, in large part because profits can be maintained in such circumstances. Indeed, the Bank of Japan has recently emphasised the degree of market flexibility as a critical criterion for determining the range of inflation outturns consistent with price stability.

Finally, globalisation may have contributed to bolstering central bank credibility. By increasing the speed of disinflation and helping to offset other inflationary forces through the above mechanisms, globalisation may have boosted public confidence in the inflation-fighting credentials of central banks. This, in turn, may have enhanced central bank control of the inflation process, by helping to align the expectations of consumers, workers and investors with those of the central bank in a self-reinforcing way. Arguably, this virtuous circle has played a part in anchoring inflation expectations more firmly.

... and boosting  
central bank  
credibility

Of course, this and the other mechanisms could also work in the opposite direction if resistance to globalisation were to strengthen in a material way. While this is still a possibility, the trend towards greater global integration has thus far remained in place.

#### *Globalisation and traditional monetary policy guideposts*

It stands to reason that the pervasive influence of globalisation on domestic economies might have had a significant impact on the traditional guideposts of monetary policy. Central banks rely on these indicators to assess inflationary pressures and to set the stance of monetary policy. They include, in particular, measures of domestic economic slack, such as output and unemployment rate gaps, and the natural rate of interest.

Globalisation has  
also altered  
traditional policy  
guideposts

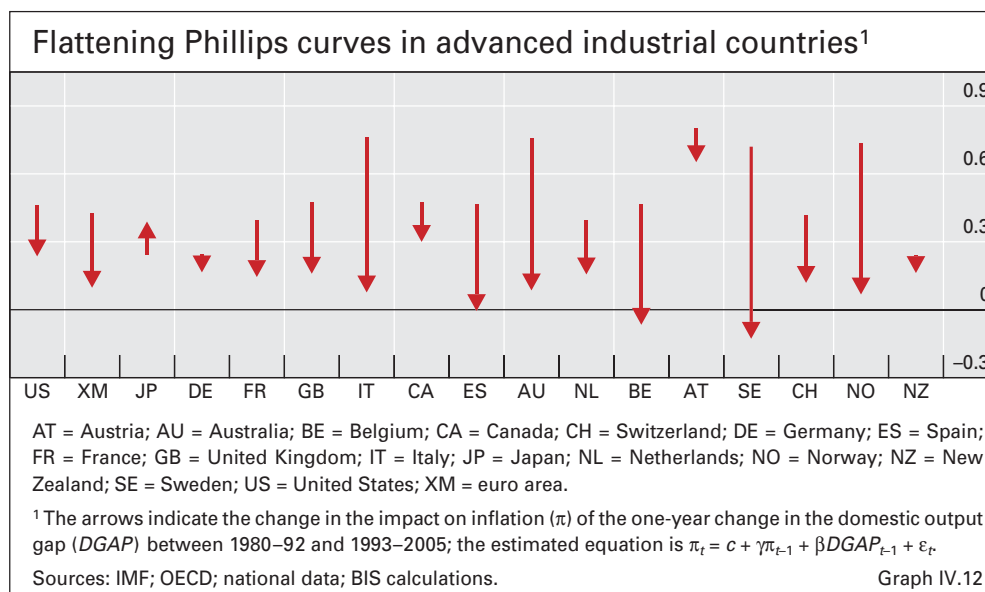
As regards measures of economic slack, it appears that inflation has become less sensitive to traditional measures of domestic resource utilisation. In other words, empirical Phillips curves – considered by many to be the workhorse of monetary policymaking – seem to have become flatter in most economies (Graph IV.12). Explanations for this have centred on fundamental changes in the basic monetary policy framework. Much greater emphasis is now placed on price stability and well anchored inflation expectations.

Domestic slack  
has become less  
reliable

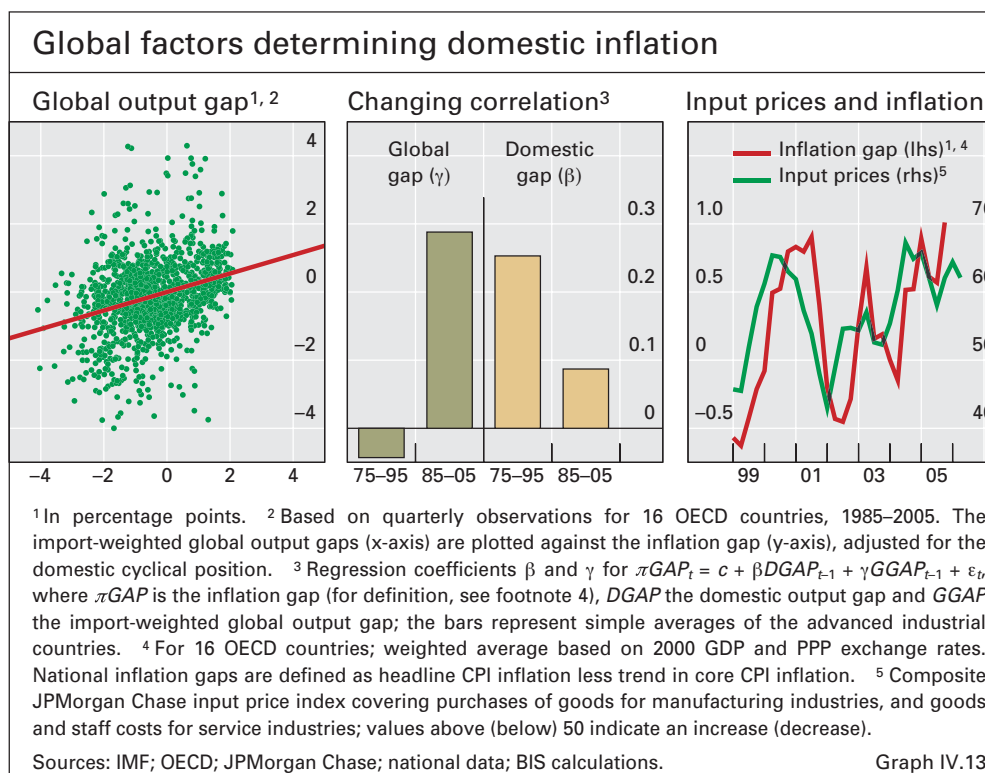
A complementary view is that, in a globalised world, global measures of economic slack could have gained significance in determining inflation, at the expense of purely domestic measures. This is not to say that the impact of domestic slack on inflation no longer matters, but rather that it can only be properly assessed from a more global perspective. While the transformation is far from complete, a global perspective would certainly help to account for the moderate wage and price pressures seen of late in a number of industrial countries. Simultaneously, the influence of globalisation could also help to explain the high price of certain factor inputs that are traded extensively in international markets, such as oil and other commodities (see Chapter III).

Further, there is some statistical evidence supporting the view that, over time, global measures of slack have become more important as drivers of

Global slack has  
become more  
important



domestic inflation. Notably, the correlation between domestic goods and services inflation and measures of global output gaps has been positive and growing for advanced industrial countries, even as the sensitivity of domestic inflation to domestic output gaps has declined (Graph IV.13). The influence of global factors has also been evident further upstream in the production process, in the strong bivariate correlation between global input prices and inflation (same graph). The empirical record confirms that these two sets of correlations have become apparent over the past decade, at the same time as global



economic integration has deepened. While it may be too soon to say precisely how globalisation is changing all such relationships, the fact that it does have implications for the dynamics of domestic inflation seems increasingly clear. And, looking forward, this influence might be expected to grow further as long as globalisation trends persist.

The consequences of globalisation for the non-accelerating inflation rate of unemployment (NAIRU) in advanced industrial countries are more ambiguous. On the one hand, stiffer import competition has tended to provide incentives for reallocating labour to sectors with a comparative advantage. This process would tend to raise the NAIRU given higher labour market churning associated with job creation and destruction. On the other hand, labour market contestability and migration have probably acted as countervailing forces because labour has become more quiescent and less demanding in the face of increased competition (see Chapter II). On balance, the recent empirical evidence suggests that contestability and migration, at least so far, may be the dominant forces in advanced industrial countries, thereby contributing to lowering the NAIRU (Graph IV.14). At the same time, the net impact on individual countries is likely to have varied depending on differences in the way domestic labour markets have adjusted to the globalisation process.

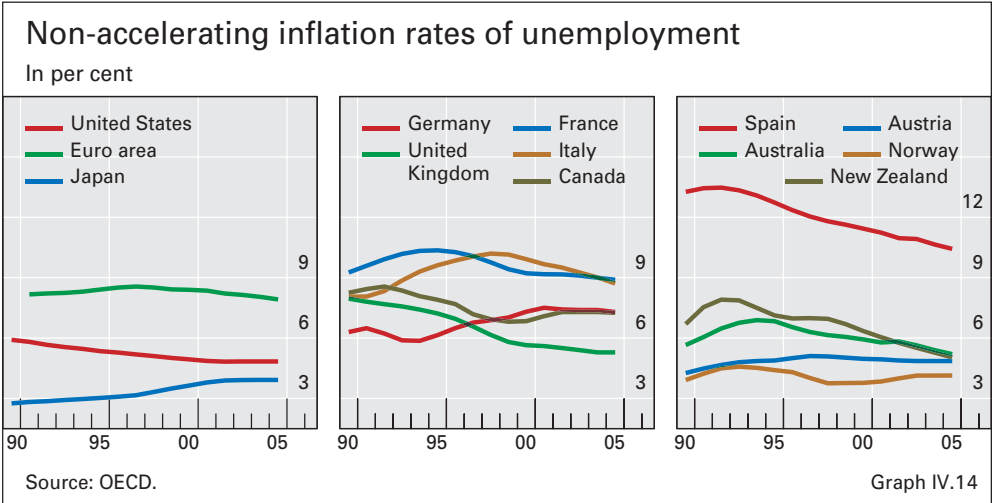
Globalisation could also be expected to raise the long-run natural rate of interest. The long-run natural rate can be defined as the level of the policy rate consistent with sustainable output growth at potential and hence long-term price stability in the steady state, ie eschewing cyclical effects. This concept has gained prominence in the current policy context, as central banks have been gradually reducing the strong monetary stimulus associated with historically low rates. The reason for expecting a higher long-run natural rate is that greater economic and financial integration should promote more efficient use of labour and capital, thereby boosting long-run productivity growth and therefore economic growth potential. The major expansion of the global labour force also points in the same direction, as it should contribute to lifting the marginal return on capital.

At the same time, the usefulness of estimates of the long-run natural rate of interest, as a guide to short-run policy, is complicated by two considerations:

NAIRU estimates have been affected ...

... as has the natural rate of interest

Various factors tend to raise the natural rate ...



... but falling risk premia tend to lower conventional estimates

one empirical and the other conceptual. The principal empirical problem is that financial globalisation might also be expected to have a downward effect on risk premia. If globalisation has resulted, on balance, in a better allocation of risk, premia for market interest rates would tend to fall, especially for longer-term instruments. The variation in the premia would, in turn, complicate inferences about the natural rate for those central banks that use longer-term interest rates to estimate the natural rate, as is the convention. Moreover, other factors driving risk premia might also be at work, which could further complicate assessments. In such cases, the implications for the longer-run natural rate would depend on whether the recent declines were thought to be temporary or permanent, and whether they were thought to affect policy rates and longer-term interest rates differentially (see Chapter VI).

Tensions between cyclically adjusted and long-run natural rates

Second, while in qualitative terms the long-run natural rate (abstracting from risk premia considerations) could be expected to rise, the impact on the cyclically adjusted natural rate is less clear. For instance, if the growth of supply, on balance, outstrips demand in the short run, the cyclically adjusted natural rate would be expected to decline. This implies a tension between the initial impact and the eventual direction in which policy rates might be expected to gravitate over the medium run.

#### *Globalisation, the transmission mechanism and the policy room for manoeuvre*

Financial globalisation may have ...

As regards the transmission mechanism from policy rates to aggregate demand and the room for manoeuvre in setting policy rates, it is the financial dimension of globalisation that is arguably more relevant. While the effects of financial globalisation are of older vintage, they have also been very much in evidence in recent years.

... weakened the link between policy rates and domestic asset prices ...

Financial globalisation has undoubtedly increased the role of global factors in influencing domestic asset prices, thereby weakening the link between policy rates and rates of return on various asset classes and hence expenditures. Admittedly, the impact of policy rates through expectations of future policy on inflation may have been strengthened, at least to the extent that globalisation may have helped central banks to gain credibility. However, in an integrated global financial market, risk premia are bound to reflect common influences more strongly, especially on assets having longer maturities. Changes in global investors' appetite for risk and asset class preferences were very prominent in the period under review. Moreover, they affected both government and corporate securities and even real estate (see Chapters VI and VII).

... and constrained central banks' room for manoeuvre

Financial globalisation might also have constrained somewhat the independent room for manoeuvre of national monetary policies. To be sure, under flexible exchange rates, central banks ultimately retain the freedom to determine national inflation rates. But the greater sensitivity of capital flows to perceived yield differentials makes it harder to calibrate domestic interest rates and can exacerbate policy trade-offs, particularly between internal and external balances. The recent experience of countries where interest rates have been comparatively high by international standards, and hence have been the target of carry trades, is a case in point (see Chapter V). All else equal, exchange rate considerations increase the implicit costs of keeping rates away from those

that prevail in global capital markets. At a more strategic level, financial globalisation has not only put capital flow issues at the forefront of policy deliberations but has also had implications for the sustainability of various types of exchange rate regimes.

### Challenges, risks and possible policy responses

The above analysis indicates that, while globalisation has helped central banks to lower inflation and keep it low, it has also raised new challenges that merit attention. More muted inflation outturns than might have been expected at this stage in the business cycle, and persistent interest rate “conundrums”, are just some of the recent symptoms of what might be a substantially new policy environment shaped by global forces. A key issue for policymakers is whether the old rules of the game have been altered so much as to compromise their ability to achieve the goals of policy. The more immediate challenges arise from the heightened influence of global factors on domestic inflation determination and the risks of potential deflationary episodes.

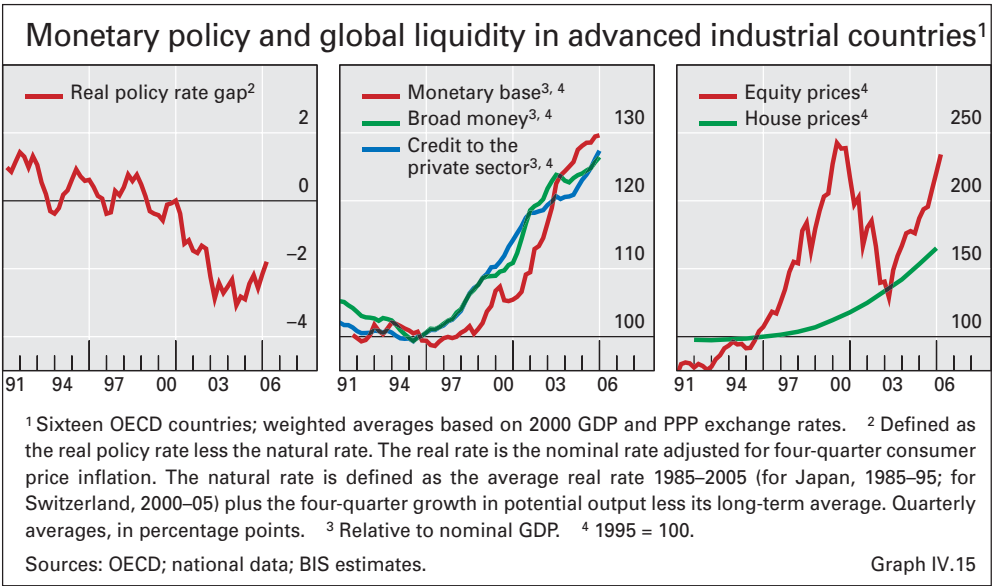
A first challenge relates to the need to incorporate global factors in the assessment of *near-term* inflationary pressures. Focusing solely on measures of domestic slack can lead policy astray, depending on how far such measures are representative of more global conditions. Near-term inflation pressures would be underestimated if global conditions were tighter than domestic ones, and overestimated if global slack truly offset domestic tightness. At the current policy juncture, for instance, such considerations could help to explain why rising rates of domestic capacity utilisation have nonetheless coincided with surprisingly quiescent inflation in individual advanced industrial countries. However, if spare global capacity were to disappear, these countries might suddenly find themselves facing significant inflationary pressures.

A second challenge relates more closely to the need to incorporate global factors in the assessment of more *medium-term* prospects and hence of the cumulative effect of policies over time (Graph IV.15). When judged against

Key challenges include ...

... calibrating policy responses with altered guideposts ...

... the medium-run implications for financial imbalances ...

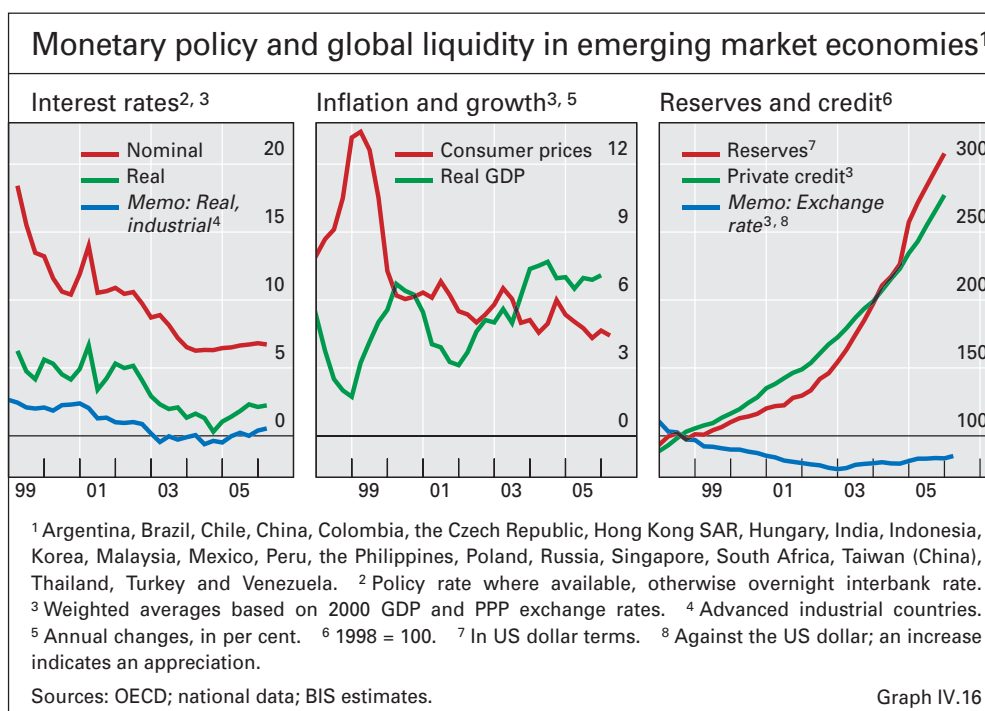


traditional estimates of long-run natural rates, policy rates have been unusually low for an unusually long time. And this has occurred precisely at a time when one might expect such natural rates to have increased, owing to the favourable impact of globalisation on long-run growth potential. The question is whether such protracted deviations might not have undesirable implications for the longer term, by contributing to the build-up of imbalances that could have disruptive consequences at some point. In particular, unusually low policy rates across much of the globe have gone hand in hand with an unusually strong expansion in monetary and credit aggregates as well as a protracted boom in asset prices, especially in residential real estate markets.

The monetary policies of both the G10 and the emerging market economies have contributed to this. Given financial globalisation, accommodative monetary policies in advanced industrial countries have led to downward pressure on their currencies and, consequently, upward pressure on currencies elsewhere. In an attempt to resist this, emerging market economies have frequently kept interest rates low, even in cases where domestic factors might otherwise justify higher rates. Moreover, efforts to prevent foreign exchange rate appreciation have simultaneously led to a rapid increase in foreign reserves (see Chapter V) and in monetary and credit aggregates (Graph IV.16). As discussed in Chapter III, the risk is that inflationary pressures might re-emerge with a vengeance and/or that the unwinding of the financial imbalances could undermine economic activity and contribute to unwelcome disinflation.

All this points to a third challenge relating to the nature of deflation risks. In a low-inflation environment, globalisation has arguably put a premium on understanding the forces behind any deflationary pressures that might emerge from time to time. Downward price pressures arising from favourable global supply developments would raise the likelihood of a falling general price level

... and understanding the nature of possible deflation pressures





("deflation"). However, as emphasised in the *73rd Annual Report*, supply side-driven deflations are more likely to be accompanied by continuing output growth, real wage gains, buoyant asset prices, and strong household and corporate balance sheets, all else equal. The costs of such deflationary episodes would obviously be far smaller than those associated with demand-driven deflations. Against this background, there is a risk that central banks could find themselves unintentionally leaning excessively against the threat of such "good", or at least "benign", deflations. Such leaning could therefore contribute to the emergence of the cumulative boom-bust disequilibria noted above. Paradoxically, it could even sow the seeds of "bad" deflations, which might be eventually associated with a disorderly unwinding of financial imbalances.

How could central banks mitigate the policy challenges raised by the increased relevance of global factors in domestic outcomes? Possible responses relate to monitoring, analysis and multilateral actions.

Central banks could ...

Central banks could put greater emphasis on monitoring external developments, as part of their regular assessment of the policy environment, with the aim of identifying potential sources of global problems earlier in the pipeline. To facilitate this, they might put greater weight on sectoral data by market segment than is currently done. This would reflect the growing importance of global linkages amongst product lines and, a fortiori, global inflationary pressures that could arise from more globalised input markets. In addition, stronger emphasis on improving the speed of reporting and accuracy of real-time data would bring many potential benefits, especially with respect to tracking global slack.

... improve external monitoring ...

... enhance data availability and timeliness ...

The greater emphasis on the global perspective also calls for the strengthening of analytical efforts to understand the behaviour of the increasingly globally integrated economy. A key desideratum is to further deepen existing international models of the business cycle and inflation. One way to achieve this would be to extend analytical frameworks to capture more accurately the spillovers across national borders, the limitations of current exchange rate regimes in ensuring the independence of domestic inflation outturns over relatively long periods, and the dynamics of contestability in labour, capital, goods and services markets. More ambitiously, it would be worth exploring more "top-down" approaches, in which the dynamics of the global economy are not derived purely from the "bottom-up" aggregation of individual countries' behaviour. Another key desideratum is a better integration and more systematic interpretation of the real and financial determinants of global business fluctuations. Such efforts would help to illuminate the global dimensions of the monetary policy transmission mechanism and the associated monetary policy challenges.

... and bolster analytical efforts to understand the many facets of globalisation

Finally, the increasing impact of globalisation on domestic inflation naturally implies that additional benefits might be gained from paying greater attention to joint policy forums and multilateral responses. To the extent that global factors are playing a more important role, country-specific policy reactions might prove insufficient to produce desirable outcomes. This puts a premium on forming a multilateral consensus on diagnoses, potential solutions and, if possible, implementation strategies.

Globalisation implies that multilateral policy approaches may bring benefits



## V. Foreign exchange markets

### Highlights

The broad appreciation of the US dollar, the stability of the euro and the overall downward trend of the yen were the salient developments in foreign exchange markets over most of 2005. Until December, the dollar appreciated markedly against the euro, the yen and a number of other floating currencies, in particular the pound sterling and the Australian and New Zealand dollars. Its trend vis-à-vis emerging market currencies was less uniform. Asian currencies remained fairly stable or depreciated, while some Latin American currencies strengthened. Starting in December 2005, the upward trend of the US dollar reversed.

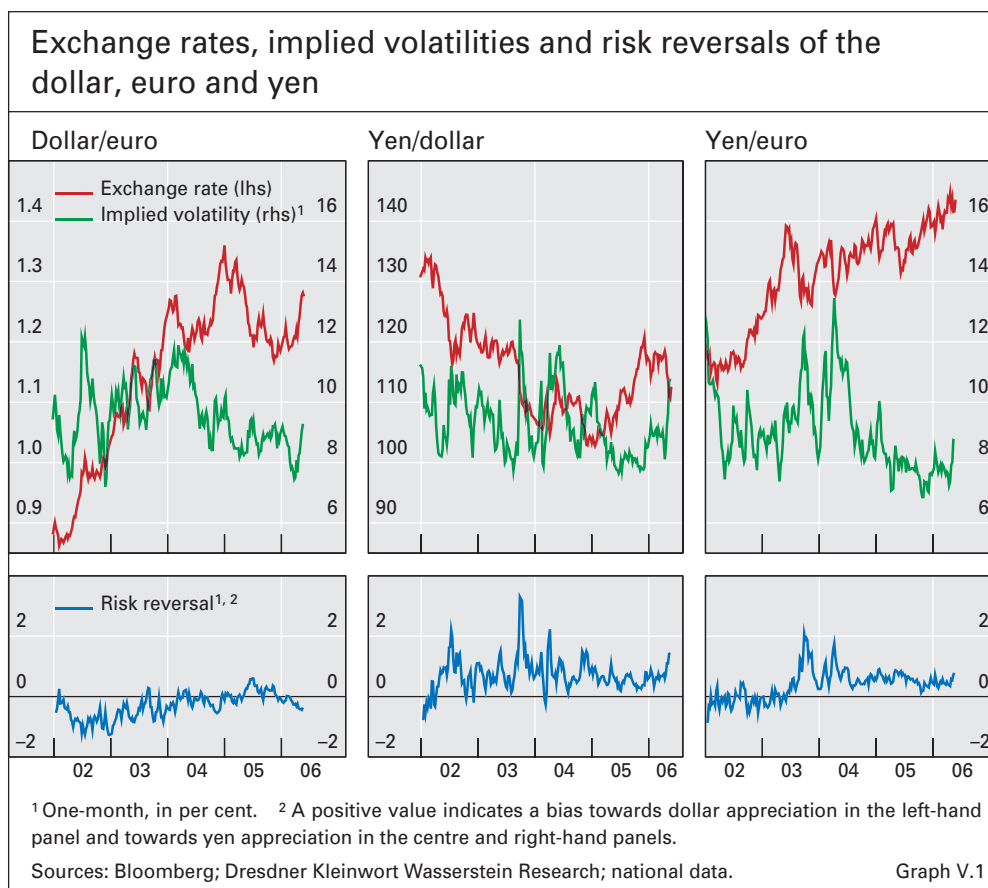
As in previous years, three main factors underpinned exchange rate developments during the period under review. First, against the background of a further normalisation of policy rates in the major economies, but still ample global liquidity, interest rate differentials continued to be a major determinant of exchange rate movements. The search for yield often took the form of carry trades. Second, the current account deficit and net international liabilities of the United States rose further but attracted less attention than during the period 2002–04. In spite of the growing debt burden, net income remained positive for most of 2005, reducing pressure for an immediate correction. The chapter explores trends and determinants of net income in the United States and other industrial countries and discusses possible implications for the sustainability of external imbalances. Third, continuing reserve accumulation in China limited the dollar's depreciation against the renminbi. By contrast, reserves grew more slowly in other emerging market countries in Asia. The change in China's exchange rate policy introduced in July 2005 received much attention, but by mid-May 2006 it had had only a modest impact on foreign exchange markets.

Foreign exchange markets were characterised by strong activity and generally low volatility. However, some smaller markets experienced sharp increases in volatility, particularly in 2006.

### Developments in foreign exchange markets

Broad appreciation of the dollar between February and end-November 2005 ...

The period under review can be divided into two distinct phases. During the first, from February to end-November 2005, the dollar generally appreciated. It gained 5% in nominal effective terms and some 10% and 15% against the euro and the yen respectively (Graph V.1). It also appreciated against other floating currencies, in particular the Australian and New Zealand dollars and most European currencies outside the euro area, notably sterling (Graph V.2). In contrast, the Canadian dollar appreciated by 5% against the US dollar, breaking



the pattern of broad synchronicity with the Australian and New Zealand dollars observed in the past.

Up to December 2005, the euro remained roughly stable in nominal effective terms. It tended to appreciate against the yen, while its performance vis-à-vis other European currencies was mixed. It gained with respect to the Swedish krona, showed no clear trend vis-à-vis the Swiss franc and lost some ground against sterling and the Norwegian krone. The yen trended broadly downwards. It depreciated significantly against the dollar and the euro, as well as most emerging market currencies in Asia.

The behaviour of the currencies of emerging economies was less uniform. While several of them – in particular the Thai baht, the New Taiwan dollar and the Indonesian rupiah – depreciated substantially against the US dollar (Graph V.3), many Latin American currencies strengthened. Trends in the South African rand and currencies of eastern European countries were less clear-cut.

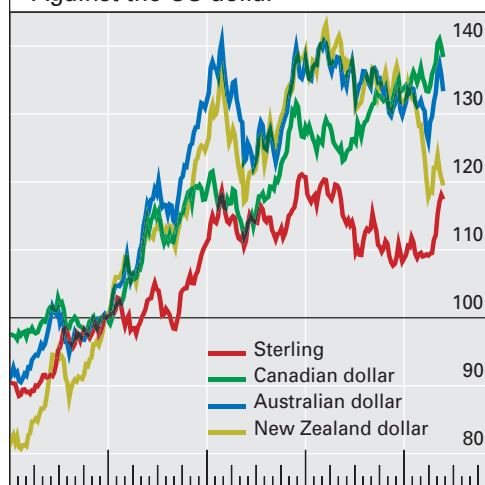
In the second phase, between December 2005 and mid-May 2006, the dollar lost some ground against a number of currencies. It depreciated by around 9% against the yen, and by 10% against the euro and sterling. The yen ended its broad downward trend. As suggested by risk reversals, this was accompanied by a shift in investors' bias against future dollar strength (Graph V.1). The euro tended to strengthen against a number of currencies and in nominal effective terms. The Canadian dollar continued its broad-based rally.

... partially reversed starting in December 2005

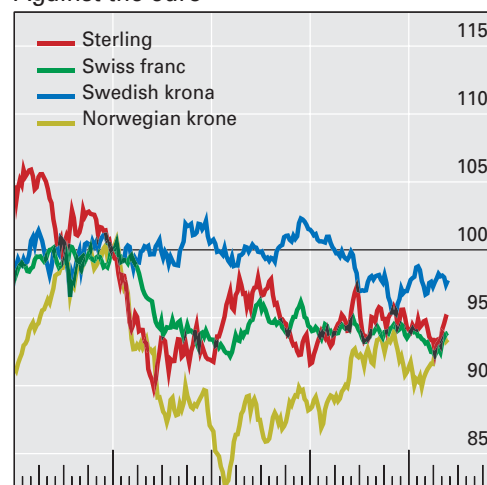
## Exchange rates of other industrial countries

Weekly averages, end-2002 = 100

Against the US dollar



Against the euro



Note: An increase indicates an appreciation.

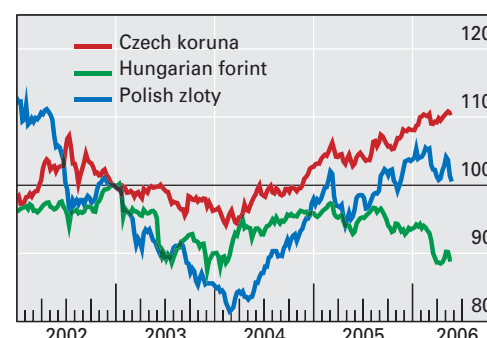
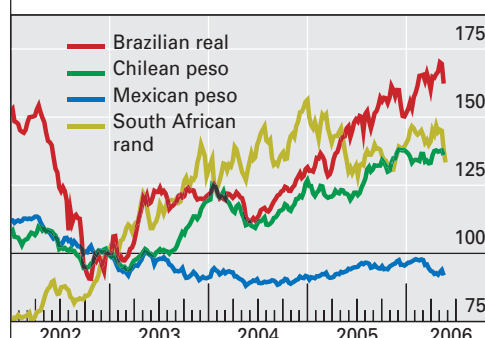
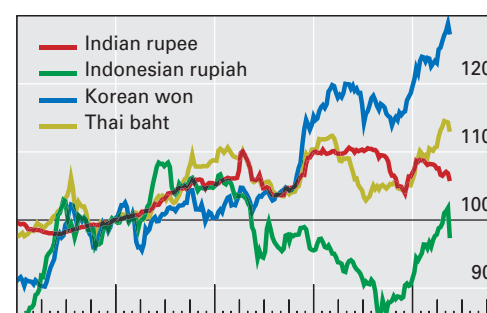
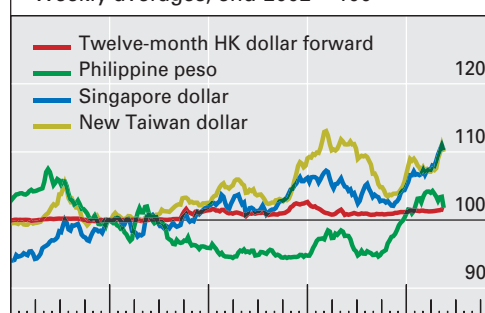
Source: National data.

Graph V.2

During this second phase, the currencies of some industrial countries fell visibly. The Australian and New Zealand dollars continued their earlier decline until April 2006. Also noteworthy was the Swiss franc's decoupling from the

## Exchange rates in emerging markets<sup>1</sup>

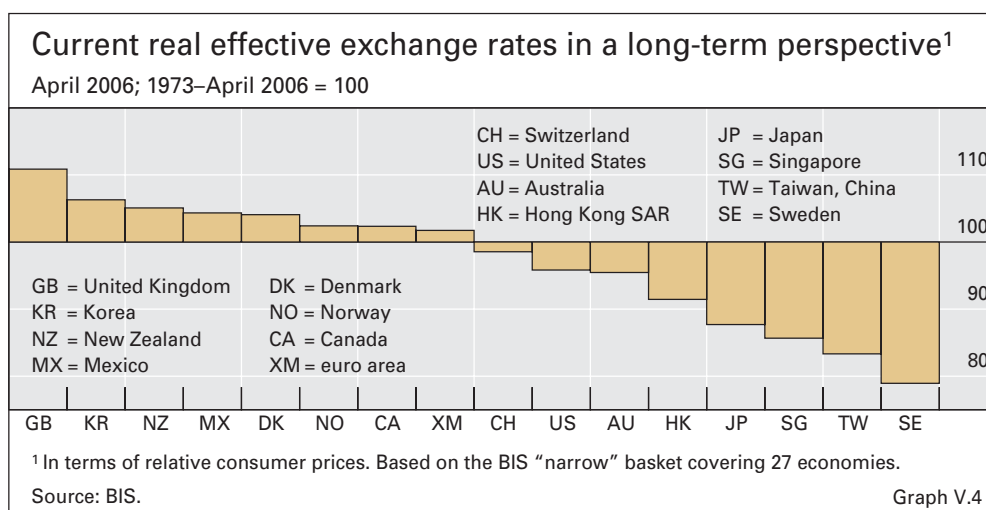
Weekly averages, end-2002 = 100



<sup>1</sup> Against the US dollar (in the bottom right-hand panel, against the euro); an increase indicates an appreciation. For the bottom left-hand panel, compressed scale.

Sources: ECB; Bloomberg; Datastream.

Graph V.3



euro. In contrast, emerging market currencies in Asia generally – and the won, rupiah, baht, Philippine peso and Singapore dollar in particular – tended to strengthen appreciably against the dollar and to a lesser extent against the yen.

In evaluating the current levels of the main exchange rates from a longer-term perspective, it is worth noting that in real effective terms the dollar and the euro remain close to their long-term averages, while sterling is still about 10% above (Graph V.4). In contrast, the Swedish krona, the yen and a number of emerging market currencies in Asia are more than 10% below their historical averages.

#### *Foreign exchange market conditions*

Volatility and activity were somewhat similar across these two main phases of exchange rate movement. From January to November 2005, against a background of ample global liquidity, foreign exchange markets were fairly calm and turnover was high. The implied volatility of the main exchange rates was lower than in previous years and tended to decline (Graph V.1). Starting in December, there was an increase in volatility in some markets, most notably the yen/dollar and the yen/euro markets, indicating a rise in uncertainty. As discussed below, this higher uncertainty about the yen was triggered by speculation over the ending of Japan's policy of quantitative easing and its potential implications for financial markets, in particular for the funding of carry trades. In some smaller markets, the increase in uncertainty led to sharp depreciations, with some spillover to other currencies.

Calm but active markets

The high level of activity continued to reflect a large volume of funds from investors searching for yield across a broad range of currencies. This search also contributed to upward pressure on prices in commodity markets, which have been influenced by burgeoning inflows of investable funds on the back of strong global demand. Annualised increases in broad commodity price indices since the beginning of 2002 have been almost 10%, and the price rises for some commodities, such as gold, even greater. Gold prices increased at an annualised rate of around 14% between mid-2001 and September 2005. By mid-May 2006, gold prices had risen to 25-year highs of \$726 per troy ounce, a 60% rate of growth since September.

### Trends in official reserves

Reserve  
accumulation  
continues

Central banks continued to accumulate sizeable amounts of official foreign exchange reserves (Table V.1). Unlike previous years, when several Asian central banks had contributed to the large build-up in reserves, 80% of the increase in Asia in 2005 was concentrated in China. Chinese reserves expanded by another \$200 billion, with holdings by end-2005 exceeding \$800 billion, or 20% of world reserves. Oil exporters also accumulated reserves at a fast pace. The largest increase was seen in Russia. In contrast, the pace of reserve accumulation slowed in most other economies, particularly India, Korea, Malaysia and Taiwan (China).

Annual changes in official foreign exchange reserves							
In billions of US dollars							
	2000	2001	2002	2003	2004	2005	Memo: Amounts outstanding (Dec 2005)
	At current exchange rates						
Total	158.8	110.5	356.0	620.0	720.3	421.7	4,170.8
Industrial countries	59.6	3.1	112.3	218.5	195.5	-22.3	1,292.2
United States	-0.9	-2.3	4.8	5.9	3.0	-4.9	37.8
Euro area	-9.4	-10.7	7.9	-27.8	-7.3	-13.4	167.3
Japan	69.5	40.5	63.7	201.3	171.5	4.5	828.8
Emerging Asia	52.5	76.0	173.9	263.9	363.4	249.9	1,821.6
China	10.9	46.6	74.2	116.8	206.6	209.0	818.9
Hong Kong SAR	11.3	3.6	0.7	6.7	5.0	0.7	124.3
India	5.3	8.0	21.7	30.6	27.5	5.9	131.0
Indonesia	2.0	-1.2	3.7	4.0	-0.0	-1.9	32.8
Korea	22.2	6.6	18.3	33.7	43.7	11.8	210.0
Malaysia	-1.0	1.0	3.7	10.2	21.9	4.3	69.7
Philippines	-0.2	0.4	-0.2	0.3	-0.5	2.8	15.8
Singapore	3.4	-4.8	6.5	13.6	16.5	3.8	115.3
Taiwan, China	0.5	15.5	39.4	45.0	35.1	11.6	253.3
Thailand	-1.9	0.4	5.7	2.9	7.5	2.0	50.5
Net oil exporters <sup>1</sup>	31.9	16.4	18.5	51.2	68.5	83.1	351.8
Mexico	4.2	9.2	5.5	7.8	5.0	10.2	73.0
Russia	15.8	8.3	11.5	29.1	47.6	55.1	175.9
Venezuela	0.9	-3.8	-0.8	7.5	2.3	5.6	23.5
Middle East <sup>2</sup>	11.0	2.7	2.2	6.8	13.5	12.2	79.5
Latin America <sup>3</sup>	2.1	-0.3	4.2	30.6	21.1	25.4	217.2
Argentina	-1.7	-9.9	-4.1	2.7	4.9	4.7	22.7
Brazil	-2.3	3.2	1.7	11.7	3.6	0.8	53.5
Chile	0.5	-0.6	0.8	0.4	0.3	1.2	16.7
CEE <sup>4</sup>	18.8	12.6	36.6	51.1	69.0	70.2	335.1
	At constant end-2004 exchange rates						
Total allocated	230.3	54.5	216.0	341.0	355.7	249.8	2,890.0
Dollar reserves	100.9	40.1	84.5	263.7	271.3	132.6	1,869.8

<sup>1</sup> Economies with net oil exports exceeding 0.5 million barrels per day. <sup>2</sup> Excluding Iran and Iraq. For Saudi Arabia, excluding investment in foreign securities. <sup>3</sup> Countries shown plus Colombia, Mexico, Peru and Venezuela. <sup>4</sup> Central and eastern Europe: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovakia and Slovenia.

Sources: IMF; national data.

Table V.1

Exchange rate movements: determinants

Once again, three main factors appeared to underpin exchange rate movements during the period under review. First, domestic growth prospects and interest rate differentials seemed to influence the main currencies, as well as a number of emerging market ones. Second, the widening external imbalance of the United States at times weighed on the dollar, although its influence was felt much less than in previous years. Finally, exchange rate policies and intervention practices in emerging market countries, particularly in Asia, while differing somewhat from the past, continued to shape the behaviour of their currencies.

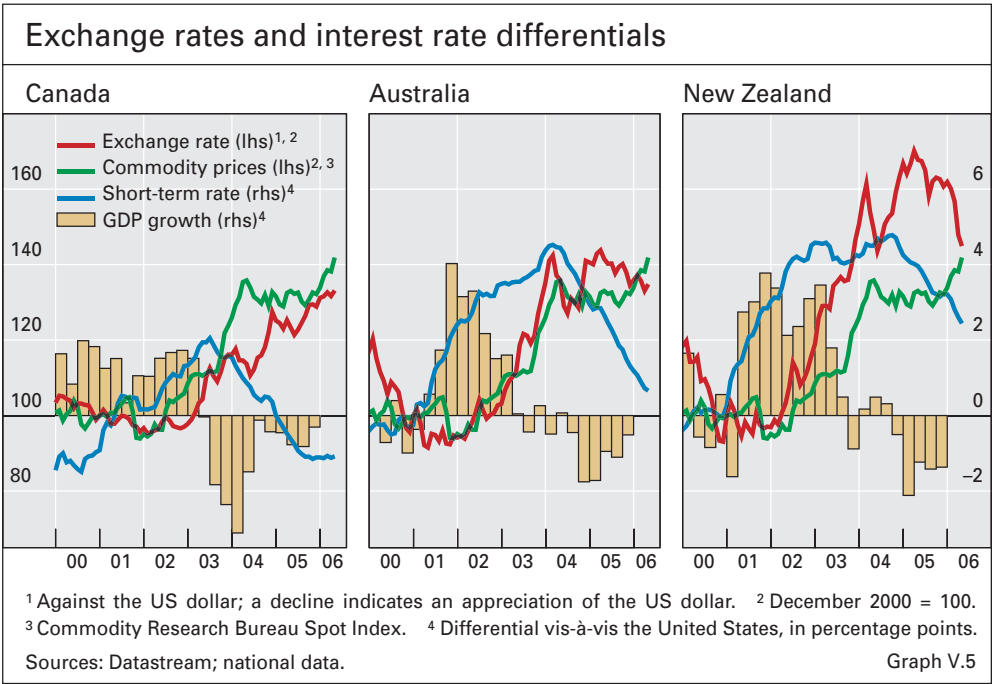
Three main factors behind exchange rate movements

Growth and interest rate differentials

Growth and interest rate differentials – both actual and expected – seem to have been the main drivers of exchange rate movements over the past year. Although there is no evidence of a robust statistical link between current or expected interest rate differentials and exchange rate movements over long time spans, there is evidence of a positive correlation for certain currency pairs during the two phases in the period under review.

In particular, the strengthening of the dollar against the euro and the yen during most of 2005 reflected the positive impact of the further tightening by the Federal Reserve on interest rate differentials. Similarly, after several years of strong appreciation, a number of currencies – in particular sterling, the Australian and New Zealand dollars and the Swedish krona – weakened against the dollar when interest rate differentials moved in favour of the United States. In contrast, with its interest rate differential remaining relatively stable, the Canadian dollar appreciated against the US dollar.

Interest rate differentials favoured the dollar

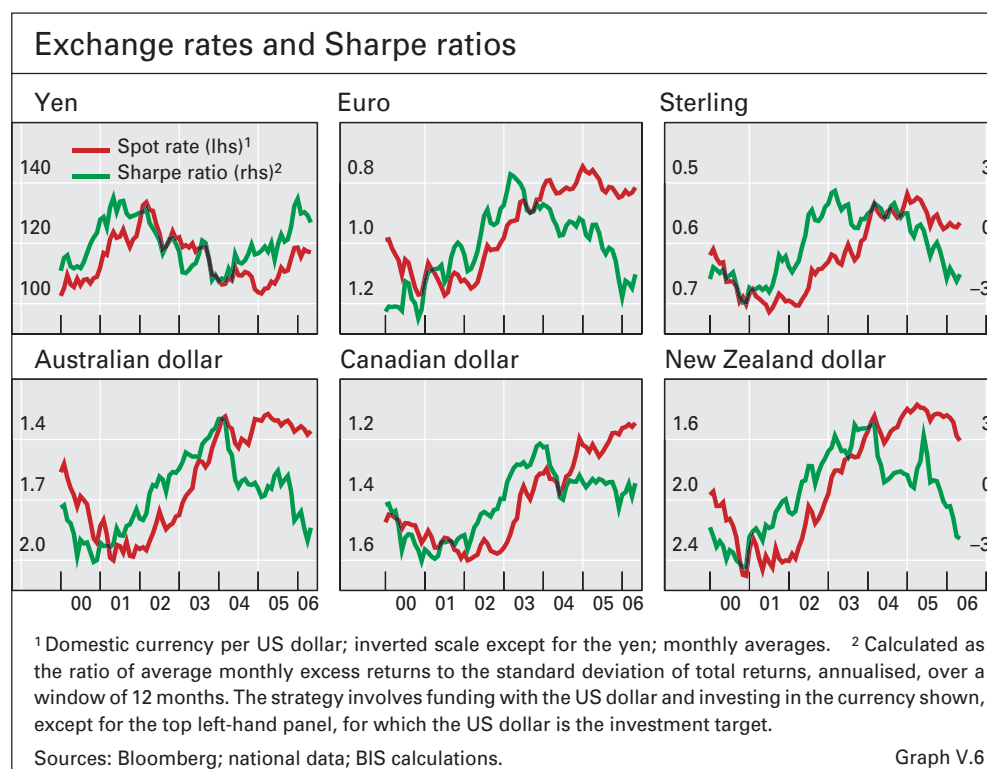


Changes in interest rate differentials might have had an even stronger dampening effect on the Australian and New Zealand dollars, and the Canadian dollar might not have strengthened, had these currencies not benefited from high commodity prices (Graph V.5). Commodity price rises also put upward pressure on currencies of other commodity-exporting countries such as Chile and South Africa.

Starting in December 2005, the partial reversal of the dollar's earlier appreciating trend against the euro and the yen coincided with a change in perceptions about the monetary policy cycles in the main economies. In particular, market participants started to expect rising policy rates in the euro area and Japan.

The prospect of rising Japanese rates and the possibility of a related appreciation of the yen attracted particular attention, especially in the context of carry trades. These trades involve borrowing in a low-yielding currency and investing in a high-yielding one, and are predicated on an expectation that the high-yielding currency will not depreciate enough to offset the interest rate advantage. As in previous years, carry trades were used by different types of international investors in their search for yield and provided an important mechanism through which interest rates and exchange rates were linked. Market commentary pointed to the yen and the Swiss franc as two major funding currencies in 2005, while the dollar switched from being a funding currency to a target currency as the tightening cycle of the Federal Reserve progressed. During this period, as US interest rates moved up steadily, borrowing in yen and investing in dollar-denominated assets appeared to be increasingly attractive. This is clearly the message provided by Sharpe ratios,

In December, the prospect of rising Japanese rates attracted attention





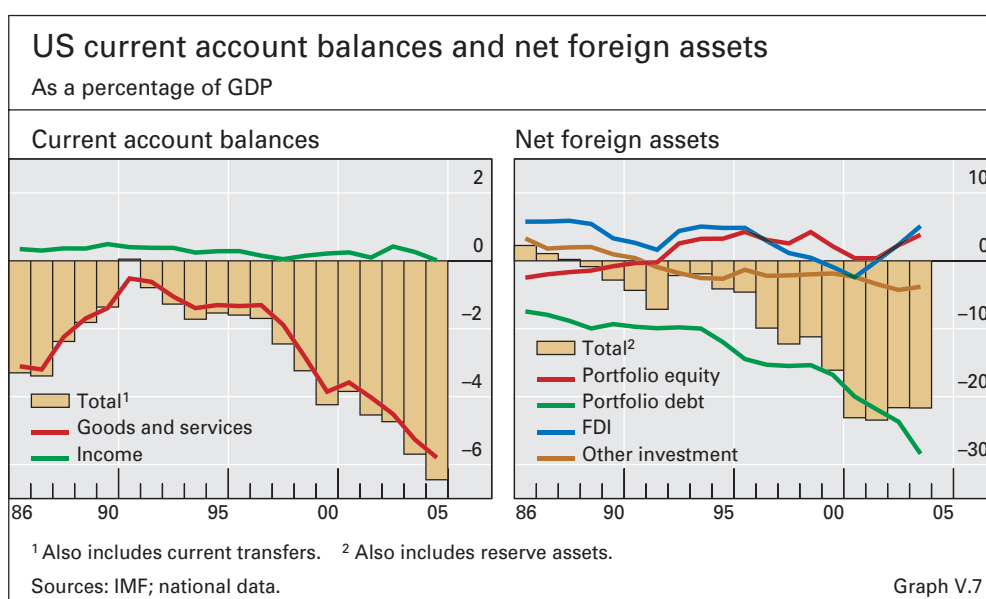
which adjust excess returns by their volatility (Graph V.6). Market sources also suggested that short yen positions started to be unwound towards the end of the year.

The effect of the reversal of carry trade positions on exchange rate volatility is hard to predict and depends, inter alia, on the speed with which these positions are closed. In some cases, the gradual unwinding of carry trades caused visible changes in exchange rates without a sizeable impact on short-term volatility. The slow decline of the Australian dollar that started in March 2005, when carry trades targeting that currency became less attractive, is a case in point. In other instances, carry trades were unwound suddenly, causing sharp exchange rate movements and spillovers – albeit short-lived – across markets. Around early December 2005, an appreciation of the yen against the US dollar triggered a rapid closing of long positions in the Brazilian real and the New Zealand dollar and a drop in their value. The price of gold was also affected. An even more striking example of a disorderly correction following the unwinding of carry trades was the sharp fall of the Icelandic króna in February 2006, following one rating agency's change in the outlook for Iceland's sovereign rating. The unwinding of positions involving the króna caused a 10% depreciation of the currency within two days. While such an event would not normally influence other foreign exchange markets, it spilled over within hours to the high-yielding currencies of Australia, Brazil, Hungary, New Zealand and South Africa, all affected by carry trades.

Unwinding of carry trades at times caused volatility spikes

#### *The US external imbalance*

The US external imbalance widened further in 2005. The current account deficit for the first time reached 6.4% of GDP and the net foreign asset position is likely to have exceeded –25% (Graph V.7). In addition, net income on the US net foreign asset position, which had been consistently positive since the mid-1980s, was negative in the second and fourth quarters of 2005.





Market participants continued to react to data releases showing unexpectedly large increases in the US current account deficit, and at times also to very sizeable revisions of these data. However, the US external position overall attracted less attention than in previous years. This was also reflected in the fact that, during most of 2005, there was no reduction in the willingness of the private sector to finance the current account deficit. This was suggested by a shift in the composition of financial flows into the United States towards private flows. In particular, the shares of portfolio debt and foreign direct investment (FDI) rose significantly. In contrast, the share of financial inflows attributable to official reserves fell visibly.

The US external imbalance came back into focus in 2006

In early 2006, however, the US external imbalance came back into market participants' focus. This took place as new data showed the US trade deficit reaching record highs and discussions about China's exchange rate policy moved into the spotlight. It also appeared that external imbalances began to matter for other currencies: the selling pressure that hit the Icelandic króna at the end of February and in early March mostly spilled over to currencies of other countries with large current account deficits.

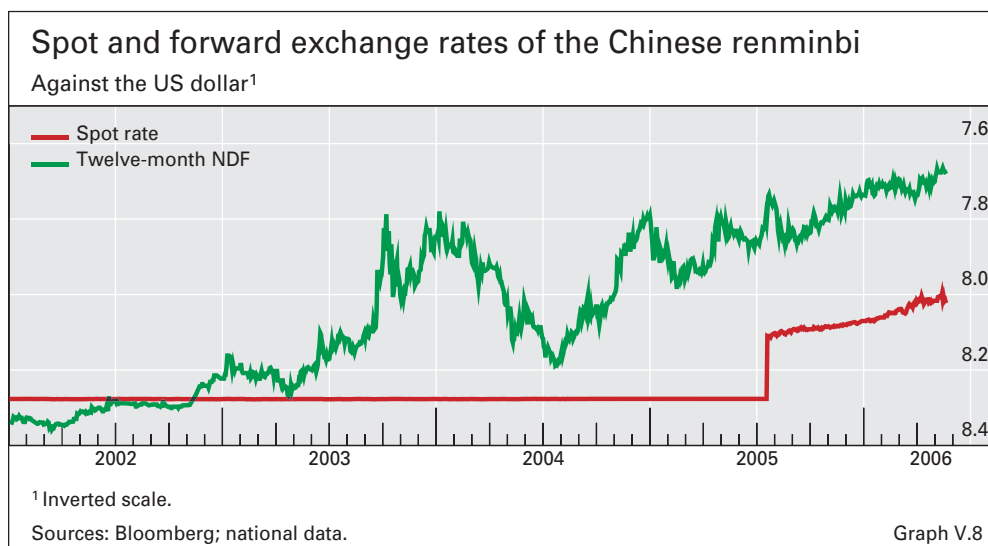
#### *Exchange rate policies in Asia*

Intervention in Asia still a factor

Reserve accumulation by a number of central banks, particularly in Asia, continued to influence exchange rates. However, compared to previous years, the more marked appreciation of a number of Asian currencies against the US dollar indicates that heightened upward pressure from foreign exchange markets was not fully offset by reserve accumulation, which generally occurred at a slower pace than hitherto (Table V.1).

The People's Bank of China in July 2005 announced some potentially important changes in its exchange rate regime. The three main elements were: an immediate 2% revaluation of the renminbi against the dollar; a continuation of the managed float regime, whereby the exchange rate is allowed to fluctuate within a  $\pm 0.3\%$  band around a daily announced central parity; and the introduction of a reference basket of currencies, although details of weights, parities and band width were not released. No changes in existing capital controls were initially announced.

Since the beginning of 2006, the Chinese monetary authorities have announced a number of measures to develop the infrastructure of the domestic foreign exchange market. The primary objective has been to help avoid disorderly fluctuations of the renminbi once it is allowed to float more freely. These changes are being implemented gradually. First, 13 Chinese and foreign banks have been authorised as market-makers in the renminbi spot market. Second, market-making and over-the-counter (OTC) trading systems have been officially introduced. These two measures allow market-makers and other qualified participants in the onshore renminbi spot market to trade directly with each other rather than only through a centralised matching system, although that system will continue to operate in parallel. The new OTC system will still operate within the China Foreign Exchange Trade System under the auspices of the central bank. Such expanded trading could lead to greater exchange rate flexibility. Third, the renminbi's central parity is now set as a weighted average



of the collected quotes of the market-makers before the trading of the same business day, rather than based on the closing price of the previous trading day. Through the removal of any possible crawling peg-type mechanism, the renminbi/dollar spot rate may now move significantly from one trading day to the next. Finally, the authorities have allowed domestic financial institutions, including banks, insurance companies and fund management firms, to invest in overseas securities under the Qualified Domestic Institutional Investor scheme.

The effect of the initial changes in July differed across currencies. It was very limited on the main currencies. The only visible reaction was the 2% appreciation of the yen against the dollar in the first few hours after the announcement. In contrast, the changes had wider implications within the Asian region. The most immediate consequence was the move by the Malaysian authorities from a US dollar peg to a managed float for the ringgit. In addition, most Asian emerging market currencies appreciated by 2% against the US dollar.

Pressure on the renminbi eased in the months following the regime change, and the renminbi/dollar exchange rate remained very stable for several months. Only in early 2006 were there signs that the monetary authorities in China were allowing the renminbi to appreciate following renewed upward pressure (Graph V.8). Between the beginning of 2006 and mid-May, the currency gained about 1% against the dollar.

## Net income and the sustainability of the US external position

Despite the steady deterioration in the US current account and international investment position since the early 1990s, the US net income balance has been consistently in surplus and relatively stable as a share of GDP, although deficits have been reported in two of the past four quarters (Graph V.7). The fact that the United States has continued to run a net income surplus, while accumulating foreign liabilities faster than foreign assets, has been highlighted as an indication that the country's external position is more sustainable than

it might at first appear. What follows explores this question in more detail, bringing to bear the experiences of a range of industrialised countries to cast further light on the US situation.

### *Trends and determinants of net income*

The net income balance can be broken down into a composition effect and a return effect

In an accounting sense, the US net income balance can be broken down into a composition effect and a return effect. The composition effect mainly arises because a relatively large share of foreign assets is made up of higher-risk, high-yielding FDI, while a relatively large share of foreign liabilities is made up of lower-risk, low-yielding portfolio debt (Table V.2). The return effect arises because there has been a large and persistent yield differential between US direct investment abroad and FDI in the United States.

The United States is long equity and short debt ...

The pattern of being long net equity assets and short net debt assets, which underlies the composition effect, has been a feature of the US external position for some time, although there have been important differences in the trends of these stock variables (Graph V.7). The stock of net FDI assets has averaged around 5% of GDP for the past three decades, albeit with significant swings around this average, mostly relating to changes in FDI in the United States. Offsetting this has been a sharp increase in the rate at which net portfolio debt liabilities have accumulated since the mid-1990s. As will be discussed below, the evolution of these trends is likely to be important looking forward.

... but this does not guarantee a net income surplus

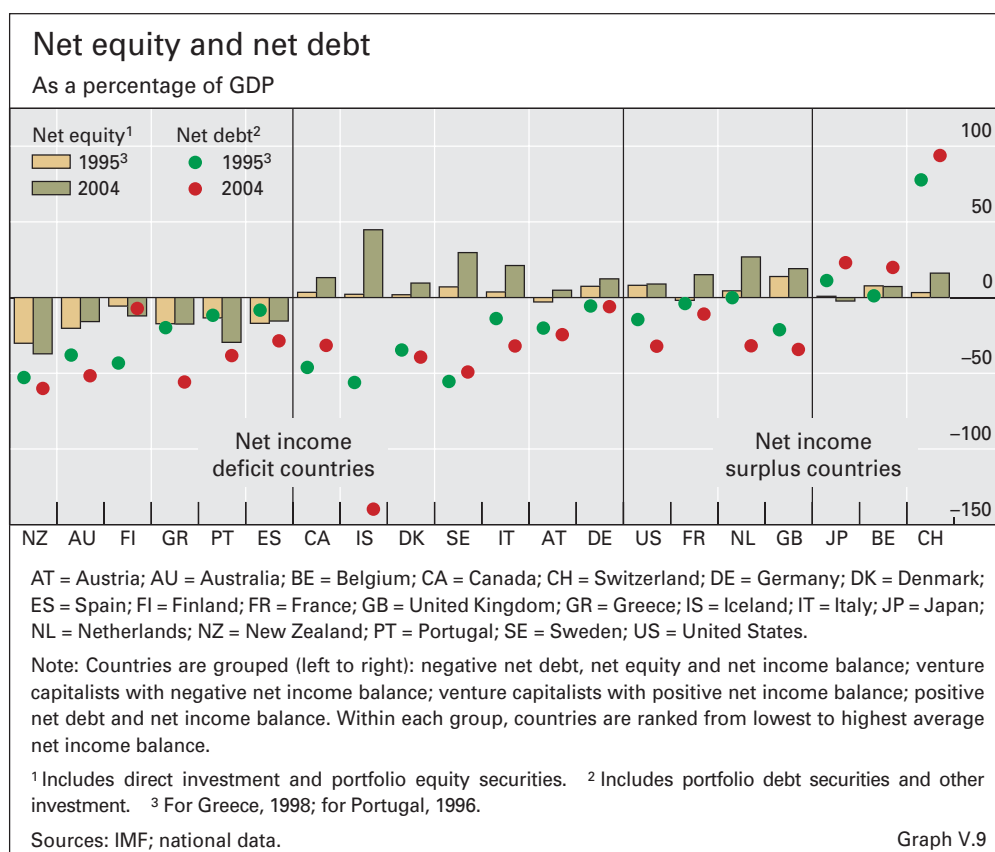
The cross-country experience suggests that this “venture capitalist” profile of being long net equity and short net debt is associated with consistent net income surpluses in several countries, in particular France, the Netherlands, the United Kingdom and the United States (Graph V.9). Interestingly, the United Kingdom and the United States are the only two countries to have consistently run a net income surplus in combination with a current account deficit over this period. However, this profile is neither sufficient, nor necessary, for running a net income surplus. Hence, the composition effect alone is unlikely to be able to explain the stability of the US net income surplus.

US external assets and liabilities, 2004					
In per cent					
		Direct investment	Portfolio equity	Portfolio debt	Other investment <sup>1</sup>
Assets <sup>2</sup>	Share of total	33.3	25.6	9.3	31.0
	Income yield	8.6	2.6	4.0	2.2
	Ratio to GDP	28.0	21.5	7.8	26.1
Liabilities	Share of total	21.5	16.5	34.0	28.0
	Income yield	4.3	2.0	4.3	1.7
	Ratio to GDP	22.9	17.6	36.2	29.9
Net assets <sup>2</sup>	Share of total	22.6	16.9	-125.5	-16.9
	Income yield	4.3	0.6	-0.3	0.5
	Ratio to GDP	5.1	3.9	-28.4	-3.8

<sup>1</sup> Includes loans, currency and deposits, trade credit and other accounts receivable and payable. <sup>2</sup> Also includes reserve assets; therefore, shares of the total do not sum to 100.

Sources: IMF; BIS calculations.

Table V.2



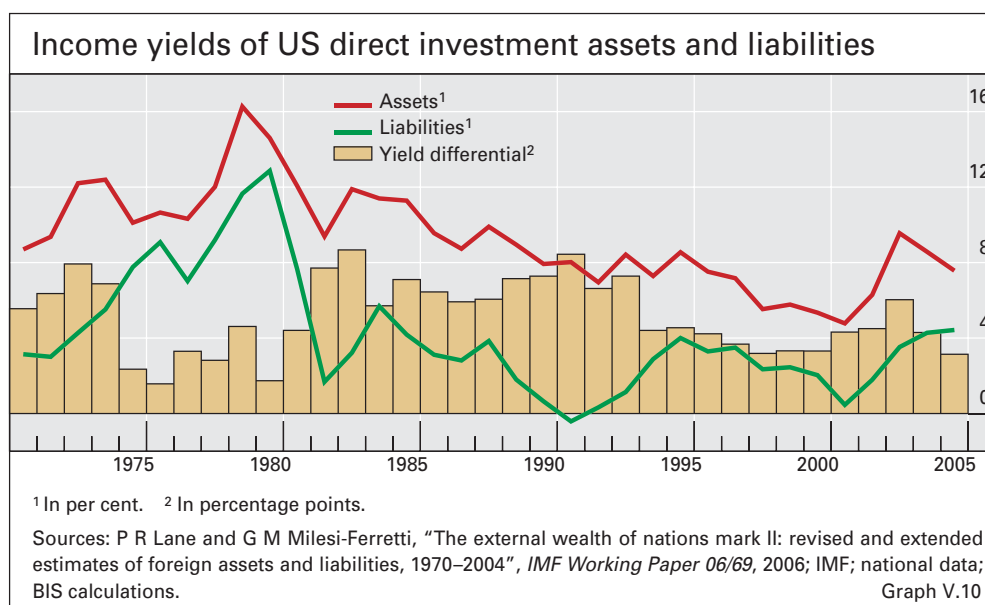
It is not sufficient because a number of venture capitalist countries, for example Canada and Italy, have consistently run net income deficits. It is not necessary because there are a number of countries, such as Japan and Switzerland, which have consistently run net income surpluses with long net debt positions.

It has been argued that the United States gains a return advantage in terms of a low income yield on some of its liabilities because they provide liquidity and insurance services that are valuable to the purchaser. This argument is particularly applicable to portfolio debt and other investment. However, the yield differentials between assets and liabilities for these asset classes are typically quite small (Table V.2).

For the United States, the return effect largely captures the differential between income yields on US direct investment abroad and yields on FDI in the United States. The income yield on US-owned direct investment abroad has been on average around 5 percentage points higher than the income yield on foreign-owned direct investment in the United States since the 1970s (Graph V.10).

The importance of having a yield advantage in FDI is also apparent for a number of other countries with net income surpluses. France, the Netherlands, Switzerland and the United Kingdom also had a positive difference between the income yields on their FDI assets and liabilities on average between 2000 and 2004 (Table V.3). For France, Switzerland and the United Kingdom, these differentials have been consistently positive since the early 1990s, averaging 1, 2 and 4 percentage points respectively. Interestingly, net income receipts on

The return effect is driven by low income yields on FDI in the United States



FDI made the largest positive contribution to the net income balance in all these countries over the past five years.

Four main explanations for this differential:

Four main explanations have been put forward as to why US residents' direct investment abroad generates a higher income yield than FDI in the United States: US direct investment abroad is riskier than FDI in the United States; US FDI assets are bundled with relatively more knowledge-based assets that, while unmeasured, still generate income, eg intellectual property and branding ("dark matter"); the average age of FDI in the United States is relatively low; and companies have tax incentives to minimise the income reported by US affiliates.

riskier US direct investment abroad ...

There is little evidence that the United States earns a risk premium on its FDI assets because they are located in places that are riskier than the United States. One reason is that most FDI flows occur between the United States and other countries with similarly high credit ratings: over 50% of US direct investment abroad is in Europe, with a further 15% going to Australia, Canada and Japan. In the reverse direction, over 70% of FDI in the United States comes from Europe. Moreover, the United States does not appear to earn a higher yield on assets located in countries with a lower sovereign debt rating. In addition, the income yield on US direct investment abroad does not appear to be more volatile, and therefore more risky, than the income yield on FDI in the United States.

... "dark matter" ...

The dark matter explanation has received a lot of attention recently and also addresses the question of why the yield on US direct investment abroad should be high. However, the international evidence suggests that the more relevant question is why foreigners earn such a low yield in the United States (Table V.3). The yield on US direct investment abroad is indeed on the high side compared with yields earned by other countries. This is reinforced by taking into account that some countries measure FDI stocks at book rather than market value, which typically leads to an overestimation of yields. All the same, what stands out more clearly in the international comparison is that the

Foreign direct investment, 2000–04					
In per cent					
	Assets		Liabilities		Difference
	Share of total	Income yield	Share of total	Income yield	Income yield
United States	33.1	6.8	24.7	2.3	4.5
Netherlands <sup>1</sup>	26.5	6.4	21.6	4.3	2.1
Switzerland <sup>1</sup>	19.0	10.0	12.5	8.0	2.0
United Kingdom <sup>1</sup>	18.8	9.0	10.2	7.1	1.9
France	34.1	1.5	22.1	0.5	1.0
Sweden	43.8	5.4	27.1	5.8	–0.3
Portugal <sup>2</sup>	13.5	3.5	16.3	4.1	–0.6
Spain <sup>1</sup>	29.6	3.6	23.4	4.2	–0.6
Germany <sup>1</sup>	18.3	2.1	16.8	3.0	–1.0
Denmark	26.5	5.4	23.9	6.5	–1.1
Italy	15.9	2.1	11.0	3.6	–1.5
Greece	10.2	1.2	10.0	2.6	–1.5
Austria <sup>1</sup>	12.4	7.1	11.3	9.1	–2.0
Iceland <sup>1</sup>	20.4	13.1	6.3	15.3	–2.2
Australia	38.7	5.4	27.6	7.5	–2.2
Japan	9.5	5.0	3.9	7.5	–2.4
Finland <sup>1</sup>	27.8	8.4	11.9	11.5	–3.0
Canada <sup>1</sup>	44.4	3.9	31.0	7.5	–3.6
New Zealand	21.3	2.4	34.1	8.8	–6.4
Ireland <sup>3</sup>	5.9	8.8	15.6	19.3	–10.5

<sup>1</sup> FDI assets and liabilities are reported at book value rather than market value. Based on national data for France, Sweden and the United States, the ratio of market to book value lies in the range of 1¼ to 1¾, suggesting that the income yields for assets and liabilities for these countries could be overstated by a factor in this range. <sup>2</sup> Stocks valued at current cost. <sup>3</sup> 2002–04.

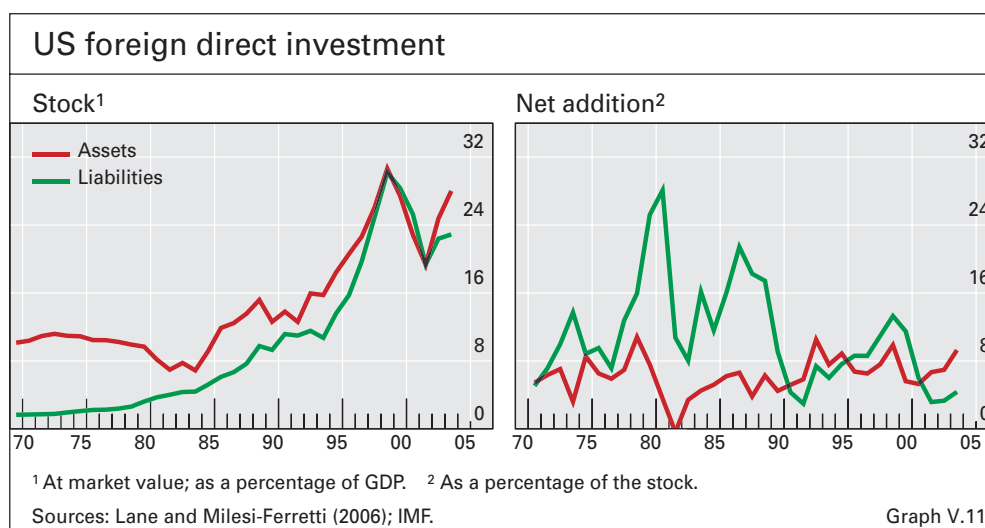
Sources: IMF; national data; BIS calculations.

Table V.3

main anomaly is the comparatively low income yield on FDI in the United States, even when these measurement issues are factored in. This point is confirmed by micro evidence, which shows that returns for foreigners investing in the United States are also low compared with returns to local investment by US firms.

There are several pieces of evidence which support the view that the income generated by new investments increases over time, and that FDI in the United States is relatively young compared with US direct investment abroad. Evidence from firm-level data suggests that the earnings of foreign-controlled firms rise to levels closer to those of US domestic firms over time, reflecting a broader positive relationship between earnings and the age of investment found in micro-level studies. In addition, it has been well documented that, at least until the 1980s, the stock of US direct investment abroad was older than the corresponding stock of FDI in the United States (Graph V.11). This can partly be explained by US investment in Europe following the Second World War. The rapid increase in net additions to the stock of FDI in the United States over the 1980s suggests that the average age of this stock could have fallen. Consistent with this, the yield differential does appear to have widened over this period.

... the relative maturity of FDI assets and liabilities ...



Since the 1980s, the stocks of assets and liabilities have been growing at roughly comparable rates, which suggests that the average maturity of FDI in the United States should be converging to that of the stock of US direct investment abroad. This would imply that the yield gap should be closing gradually. While the yield differential has fallen to close to its historical average, there is no indication of an ongoing decline, which suggests that relative age can only be part of any explanation of the yield differential. Moreover, there does not seem to be a robust relationship between income yields and the maturity of the FDI stocks using cross-country data.

... and tax arbitrage

Corporate tax rates could provide foreign-owned firms in the United States with incentives to shift profits out of the United States and therefore report low income flows from FDI in the United States. The profits of a foreign-owned US affiliate could be shifted to the foreign parent, for example, by paying elevated prices for imports from the parent firm, or charging the parent firm low prices for its exports. The use of transfer pricing between affiliated companies in this way would lower the reported income flows to the owners of FDI in the United States, and increase the value of intra-firm trade in goods and services. Therefore, there would be no net effect on the current account.

In a number of respects, this fourth hypothesis does appear to be part of the explanation. While there is little direct evidence that transfer pricing is used to minimise taxes, anecdotal evidence suggests that this does occur. Moreover, there are incentives for foreign-owned firms in the United States to shift profits to their foreign parent, and these appear to have grown over time. While the average corporate tax rate across industrialised countries has been falling steadily since the late 1980s, the US corporate tax rate has been roughly constant and is now one of the highest. On a bilateral basis, differences in corporate tax rates can be very large and are widely recognised as one of the factors underlying the rapid increase in FDI inflows to countries such as Ireland. Finally, there is evidence that reported reinvested earnings, which are an important component of income for US direct investment abroad but not for FDI in the United States, are influenced by tax considerations.



In summary, although yields on US direct investment abroad are high, the US advantage on FDI is primarily related to the fact that foreigners appear to earn low yields on their direct investment in the United States. The two most promising explanations for these low yields are that FDI in the United States is relatively young and that foreign parents have tax incentives to minimise income reported in the United States. However, there are insufficient data to quantify the relative importance of these two factors.

#### *The sustainability of the US external balance*

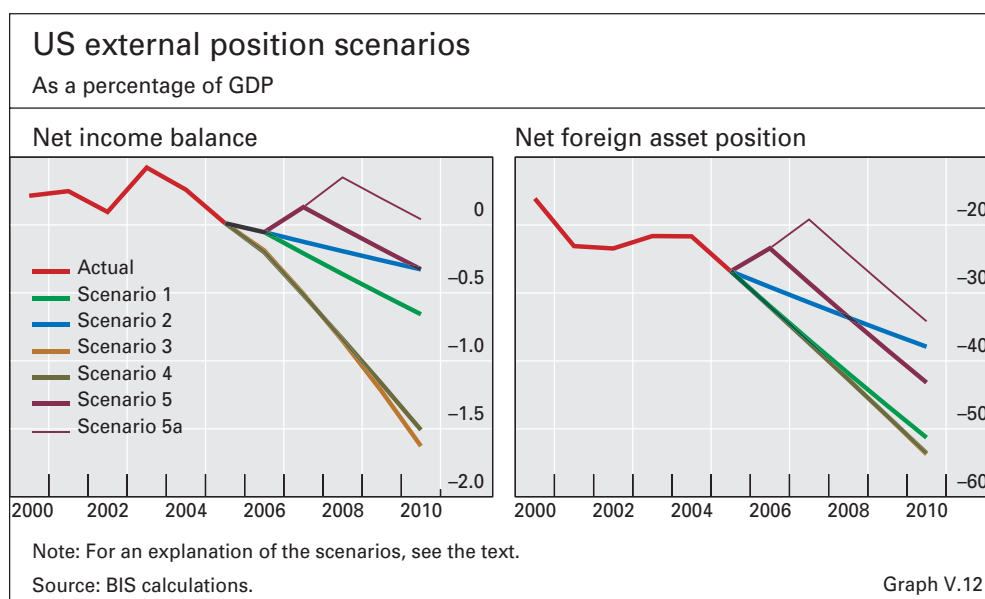
How likely is it that the negative impact of a large trade deficit on the US external position will be offset by a net income surplus and positive valuation effects going forward? Two negative quarterly net income balances in 2005 suggest that the US external position may be close to the point where the income received from assets is no longer sufficient to offset income payments made. More generally, the answer to this question depends on the evolution of the stocks of foreign assets and liabilities, the evolution of income yields, and the extent to which exchange rate and asset price movements generate

The net income balance is not likely to remain in surplus

US external position						
As a percentage of GDP (yields in per cent)						
	2005 <sup>1</sup>	Scenario in 2010				
		1	2	3	4	5
Assumptions						
Trade balance	-5.8	-5.8	-3.0	-5.8	-5.8	-5.8
Income yield on:						
FDI assets	7.6	7.6	7.6	7.6	6.1	7.6
FDI liabilities	4.4	4.4	4.4	4.4	5.9	4.4
Portfolio equity assets	2.6	2.6	2.6	2.6	2.6	2.6
Portfolio equity liabilities	2.0	2.0	2.0	2.0	2.0	2.0
Debt assets <sup>2</sup>	2.7	2.7	2.7	4.7	2.7	2.7
Debt liabilities <sup>2</sup>	3.1	3.1	3.1	5.1	3.1	3.1
Outcomes						
Income balance	0.0	-0.7	-0.3	-1.6	-1.5	-0.3
Net foreign asset position	-26.8	-51.3	-37.9	-53.7	-53.6	-43.2
Assets	85.0	85.0	85.0	85.0	85.0	93.5
Liabilities	111.8	136.3	122.9	138.7	138.6	136.7
FDI	4.0	-1.2	1.6	-1.8	-1.7	1.5
Portfolio equity	3.0	-1.1	1.1	-1.5	-1.5	1.0
Debt <sup>2</sup>	-35.4	-50.6	-42.3	-52.1	-52.0	-47.5
<p>Note: The assumption that stocks of assets and liabilities grow in line with nominal GDP ensures that the ratio of these stocks to GDP is constant, ceteris paribus. However, this assumption does not ensure that the net asset position is equal to the last period's net asset position plus the current account balance and any valuation effects, which is an accounting identity. To ensure that this identity holds, the difference between the net foreign asset positions generated by the baseline assumption and the accounting relationship in each period is added to the baseline net foreign asset position. In particular, the difference is allocated to the four classes of liabilities in proportion to their share in total liabilities in 2004. A different allocation would lead to a different evolution of the net income balance.</p> <p><sup>1</sup> Actual data for trade balance, income balance and income yields on FDI assets and liabilities. Other income yields are at 2004 values. <sup>2</sup> Includes portfolio debt and other investment.</p> <p>Source: BIS calculations.</p>						

Table V.4





valuation effects. The sensitivity of the net asset position and the net income balance to each of these factors will be discussed in turn, using five scenarios.

As a benchmark for the analysis, it is assumed in scenario 1 that the trade balance, current transfers and compensation of employees remain constant as a share of GDP at their 2005 values, and that income yields do not change (Table V.4). US nominal GDP is assumed to grow by 5.5% per year, which is close to average growth over the past 10 years. The stocks of foreign assets and liabilities are assumed to grow in line with nominal GDP. In addition, adjustments are made to ensure that changes in the net asset position are consistent with the value of the current account balance in each period. Under scenario 1, the aggregate net foreign liability position increases from less than 25% of GDP in 2004 to over 50% by 2010 (Graph V.12). The net income balance shifts into deficit from 2006 onwards and is -0.7% of GDP by 2010.

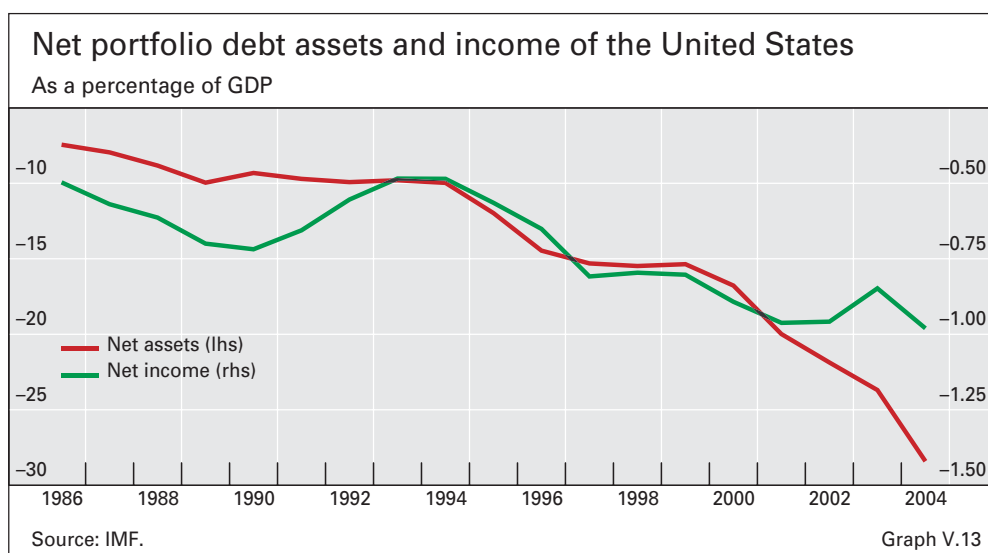
Scenario 2 tests the sensitivity of the US external position to an improvement in the trade deficit, which dominates the current account deficit. It assumes that the trade deficit falls from 5.8% to 3% of GDP in 2006 and remains at this lower level. This change has a first-order effect: compared to the first scenario, the net foreign liability position deteriorates less rapidly, and is still less than 40% of GDP by 2010. There is also an improvement in the net income balance, which reaches -0.3% of GDP by 2010.

The third scenario considers the sensitivity of the external position to changes in income yields arising from changes in interest rates. During periods of lower than average official interest rates, income payments tend to grow less rapidly than the stock of portfolio debt liabilities (Graph V.13). During a tightening cycle, such as that starting in mid-2004 in the United States, income yields on these asset classes are likely to increase. In addition, looking forward, the downward pressure on income yields from strong demand by Asian central banks for safe liquid assets could be expected to fade.

Under this scenario, compared to scenario 1, the income yields for both debt assets and liabilities are allowed to increase by 0.4 percentage points per

The path of the  
trade deficit matters

The evolution of  
income yields  
matters



year until 2010. This is based on the historical correlation between US interest rates and yields on portfolio debt liabilities, and the increases seen in the federal funds rate to date. The results suggest that a rise in the yield on debt has a significant negative effect on the net income balance, leading to a deficit of 1.6% of GDP by 2010 compared with a deficit of 0.7% under scenario 1, and to a further deterioration in the net foreign asset position.

Scenario 4 illustrates the effect of a change in the path of income yields on FDI. The analysis above suggests that there are two factors which could be important for FDI yields going forward. The first is that the stock of FDI in the United States is maturing and this may be associated with an increase in the income yield on these liabilities. The second is that corporate tax rates in the United States have become increasingly high relative to those in the rest of the industrialised world. This suggests that the incentives to shift profits out of the United States are, if anything, growing, and this could have an offsetting negative effect on the yields of FDI in the United States. Given that the analysis above does not provide an unambiguous indication of the likely path of FDI yields, it is assumed in an adverse scenario that yields on FDI steadily converge to around 6%, which is the midpoint between yields on assets and liabilities in 2005 and close to the average yield on US FDI assets between 2000 and 2004. This generates deteriorations in the net income balance and the net foreign asset position that are similar to those yielded by the assumptions underlying scenario 3.

The fifth scenario considers the sensitivity of the US external position to valuation effects. Unlike the external liabilities of many other countries, US external liabilities are almost entirely denominated in domestic currency, whereas two thirds of US assets abroad are denominated in foreign currency. Around one quarter of these foreign currency assets are denominated in euros, a quarter in other European currencies such as sterling and the Swiss franc, and another quarter in Canadian dollars, Caribbean currencies and the yen. This currency mismatch between assets and liabilities, combined with the degree of leverage in the external position, means that exchange rate

Valuation effects may also be important

movements can be an important source of valuation effects. Historically, valuation effects have been positive for the United States, with the result that the net foreign asset position has deteriorated by less than the current account balance alone would suggest.

Under scenario 5, it is assumed that, because of a valuation effect, foreign assets as a percentage of GDP increase by 10% in 2006. In the absence of precise estimates, there are at least two possible proxies that provide some idea of the possible magnitude of exchange rate movements that could result in a valuation effect of this size. First, the fact that two thirds of assets are denominated in foreign currencies suggests that a uniform 15% depreciation of the US dollar against these currencies would be consistent with the assumed valuation effect, *ceteris paribus*. Second, historical correlations suggest that a 10% increase in assets would be associated with a depreciation of the US nominal effective exchange rate of around 25%.

Scenario 5 demonstrates that a positive valuation effect has a significant one-off positive impact on the US external position compared with scenario 1. Although it is deteriorating at a more rapid pace, by 2010 the net income balance is roughly in line with where it would be under scenario 2, which assumes that the trade deficit improves to 3% of GDP. However, by 2010, the net asset position under scenario 5 deteriorates significantly further than under scenario 2. Scenario 5a demonstrates the impact of consecutive 10% valuation effects in both 2006 and 2007. The consequences of this assumption are significant enough to ensure that the net income balance remains in surplus until 2010, and that the ratio of net foreign assets to GDP only deteriorates by 10 percentage points between 2006 and 2010.

In summary, the most important change required for an improvement in the US external position would be an improvement in the trade balance, which would result in a slower deterioration in the net asset position. Positive valuation effects associated with a dollar depreciation could also be important, but would have a one-off impact. As such, unless they are repeated, they would simply postpone rather than permanently offset the deterioration in the external position. Changes in income yields also have a significant effect on the income balance and the net foreign asset position. However, given the historical relationship between interest rates and income yields on debt, these effects are likely to lead to a further deterioration rather than an improvement in the external position.

## VI. Financial markets

### Highlights

Conditions in the major financial markets remained calm and accommodative for much of 2005 and early 2006, reflecting the surprisingly strong performance of the world economy and still abundant liquidity. The tightening of monetary policy in the advanced industrial countries resulted only gradually in higher long-term yields. During most of the period under review, higher interest rates had little discernible impact on the prices of other assets, although in mid-May 2006 a reassessment of risks led to increased volatility and sharp falls in equity and emerging markets.

Equity prices and credit spreads, in Japan and Europe especially, benefited from upward revisions to the growth outlook in 2005 and early 2006. Robust economic activity in the face of flattening yield curves led many market participants to conclude that the information content of the slope of the yield curve might have diminished, and that factors other than the long-term growth outlook might be weighing on long-term yields.

Another source of support for equity markets was changes in firms' capital structure. Last year saw an impressive pickup in dividend payouts, share buybacks and mergers and acquisitions. Credit spreads remained stable despite signs that the releveraging of the corporate sector had begun. Investors' high appetite for risk helped to keep spreads down. This was especially evident in emerging markets, where the tightening of spreads in 2005 and early 2006 appeared to proceed more rapidly than the improvement, admittedly sizeable, in fundamentals.

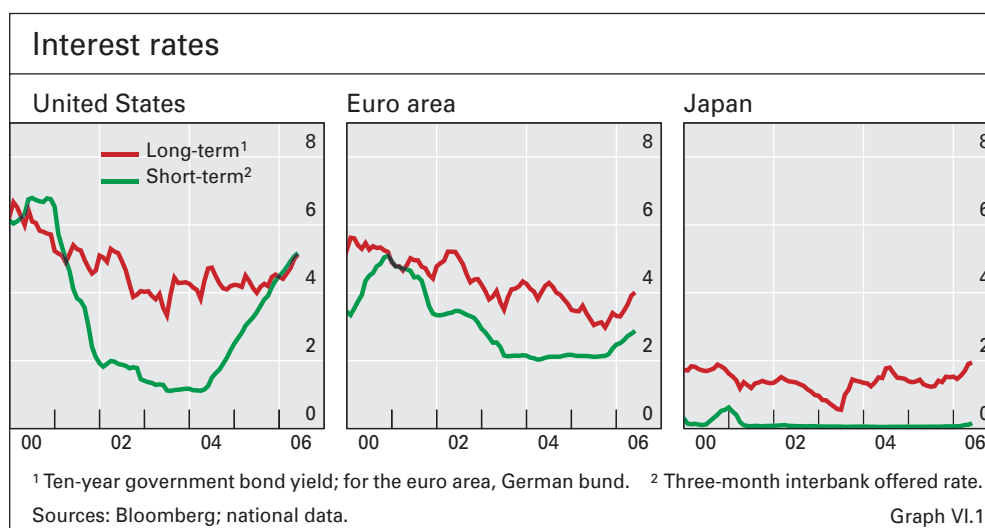
### Long-term yields remained low

Government bond yields in developed countries continued to trade at remarkably low levels during 2005. This was so despite the ongoing US rate hikes by the Federal Reserve, signs of an imminent tightening of monetary policy in the euro area and increased speculation about the end of quantitative easing in Japan (see Chapter IV).

Long-term yields in the G3 finally rose steadily from mid-January 2006 (Graph VI.1). At the time, concerns dissipated about possible weakness in the growth outlook and expectations were revised upwards regarding the pace and amplitude of prospective monetary tightening. Indeed, 2006 growth forecasts were scaled up for the euro area in the first quarter of the year, and quite sharply so for Japan (Graph VI.2). Increasingly hawkish rhetoric from the G3 central banks lent further momentum to the sell-off in bonds. From 18 January to 19 May, 10-year US Treasury and German bund rates rose by around 80 basis points, and Japanese government bond yields by around 50.

Long-term bond yields continued to trade at low levels ...

... before an early 2006 sell-off



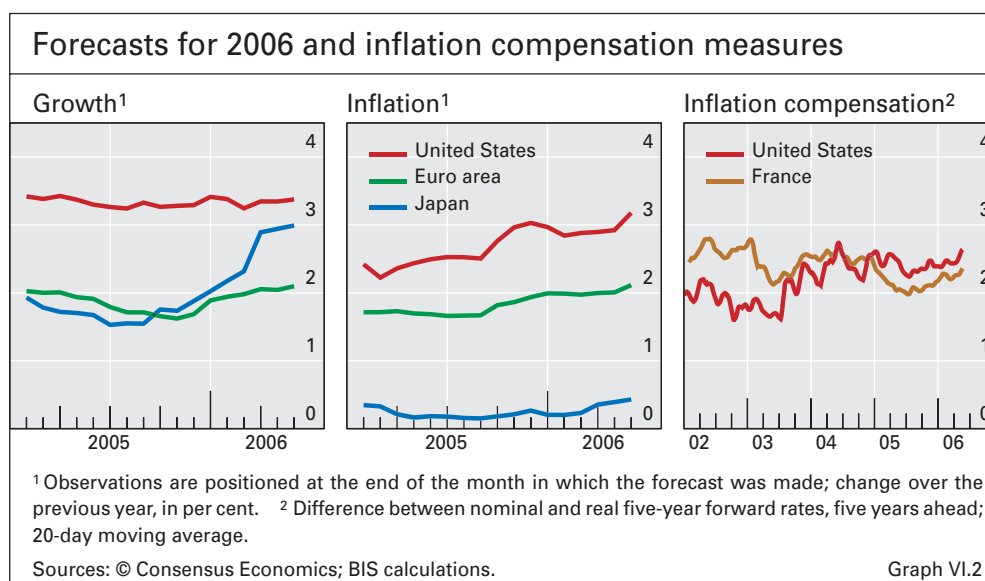
### Flattening yield curves in the United States and the euro area

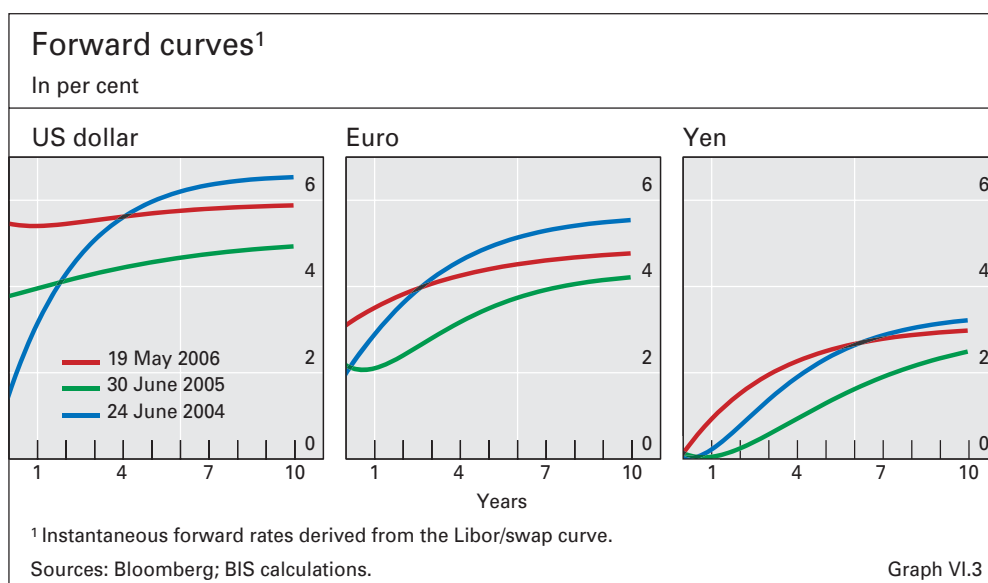
Yield curve flattening not taken as signalling a slowdown

Rising policy rates and low long-term bond yields resulted in a marked flattening of the US yield curve during much of the period under review. In the past, an inversion of the yield curve had proved to be a relatively robust indicator of an imminent recession or sharp slowdown (see Chapter IV). This time, however, most market participants interpreted the negative slope of the US term structure not as a sign of a macroeconomic slowdown but as the result of independent factors weighing on long-term yields (see below). From around 30 basis points at end-June 2005, the spread between two-year and 10-year rates declined to close to zero by early January 2006.

Hurricane Katrina's impact was temporary

Factors related to the growth outlook that did lower US yields were only temporary. These included, notably, Hurricane Katrina in late August. At that time, two-year rates declined by nearly 40 basis points over the course of three days, and longer-term rates by around half as much, as market participants





revised sharply downwards their assessment of the likelihood of rate increases by the Federal Reserve. However, as the hurricane had a much smaller impact on growth and the resulting policy stance than initially foreseen, within a month rates on both the long and short end were back where they had been before the storm.

A flattening of the term structure was observed in other markets as well, but was by no means universal. For instance, the yield curve flattened in the euro area in 2005, though continuing low policy rates prevented it from inverting (Graph VI.3). In Japan, by contrast, the curvature of the term structure increased, as policy rates remained close to zero but medium-term rates rose in line with accumulating evidence that deflationary pressures were ebbing and speculation that a tightening cycle would be well under way in a few years' time.

#### *Subdued inflation expectations*

Long-term yields remained low in 2005 in part due to long-term inflation expectations. These were contained despite the generally good economic growth and continuing increase in energy prices during the period under review. To be sure, in the wake of Hurricane Katrina and sharp rises in the prices of refined petroleum products in autumn 2005, analysts' short-term forecasts of inflation moved noticeably higher, particularly in the United States (Graph VI.2). However, measures of inflation compensation derived from nominal and real forward bond yields remained subdued at longer maturities, in part reflecting the continued high credibility of monetary policy (see Chapter IV).

Even when nominal yields rose markedly in early 2006, shifts in inflation expectations were not the dominant factor. Comparing the yields on nominal and inflation-indexed Treasury securities, nearly two thirds of the increase in US 10-year nominal yields between mid-January and mid-May can be accounted for by higher real rates, rather than higher inflation compensation.

Inflation expectations stayed low despite rising energy prices

Real rates rose more than compensation for inflation in early 2006

In the case of the euro area, nearly nine tenths of the rise in 10-year nominal yields in early 2006 was due to increased real rates.

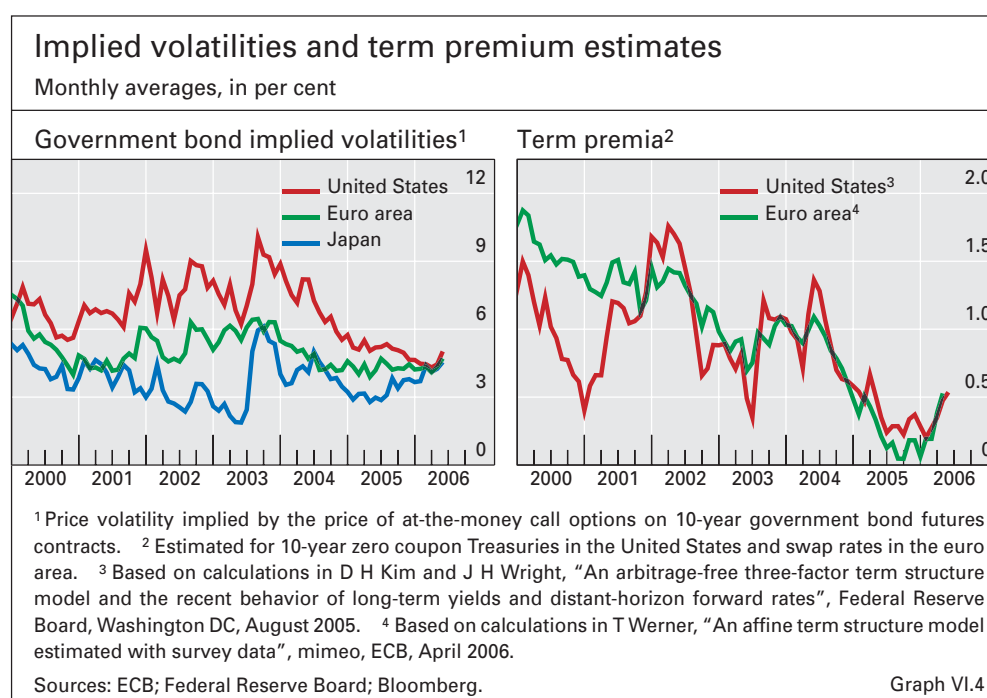
The rather limited effect of changing inflation expectations on long-term yields is also confirmed by other pieces of evidence. In particular, on a high-frequency basis, unexpected price index readings tended to have less of an impact on long-term yields than other data “surprises”. For instance, the largest single daily increase in US 10-year yields (14 basis points) followed an unexpectedly upbeat report on manufacturing released by the Institute for Supply Management in combination with signs of improving consumer confidence on 1 July 2005. Similarly, some of the largest downward daily moves in yields tended to be associated with negative growth surprises.

#### *Low volatilities and term premia*

Lower term premia  
may explain  
flattening curves

Low long-term yields and flattening curves may also have reflected lower risk premia for holding long-term instruments. Yield curves at a given point in time incorporate risk premia – often referred to as term premia – that drive a wedge between forward rates across maturities and the path of short rates expected by market participants. A decline in these premia might capture either reduced perceptions of risk about the longer-term course of short rates or an increased appetite on the part of investors to bear that risk, or both.

There is indeed some *prima facie* evidence consistent with a role for decreasing term premia over the past few years. Not least, implied volatilities on long-term rates have generally been declining since mid-2003, and by early 2006 were at very low levels for the United States and the euro area, in line with observed movements in historical volatility over the period (Graph VI.4). An exception was Japan, where both realised and implied volatilities increased modestly starting in 2005, along with expectations of higher economic growth





and the associated end of quantitative easing. Even there, however, both still remained well below the levels reached during the sharp bond market sell-off of 2003.

Modern models of the term structure of interest rates offer techniques to distinguish the component in bond yields due to term premia from that due to expectations about future short-term interest rates. Updated estimates from a recent study published by the Federal Reserve Board suggest that term premia on 10-year US dollar bonds declined by around 100 basis points between the time the Federal Reserve began to raise rates in mid-2004 and the end of 2005 (Graph VI.4). This was followed by only a modest correction in early 2006. A similar study at the ECB estimates a decline in term premia for 10-year euro rates of a roughly similar magnitude. Both studies find term premia decreases to be more pronounced for longer maturities, and thus consistent with curve flattening observed over the period. Admittedly, estimates of term premia have their limitations, including great uncertainty about their accuracy, and high sensitivity of the estimates to sample size and time period. Even so, most other studies also suggest that some decline in term premia has taken place over the last few years.

Term premia might have declined due to greater perceived stability in macroeconomic fundamentals, such as inflation and growth, and thus lower perceived risks in holding long-dated securities. The decline in historical volatility for longer-term interest rates, mentioned above, is consistent with a moderation in risks. Greater transparency and credibility of monetary policy, particularly to the extent this reflects permanent changes in operating procedures, may well have been an important part of the story.

Lower term premia may reflect improved fundamentals or structural factors

Structural demand factors might also have played a role. These include purchases of long-term bonds by pension funds and insurance companies, as well as the build-up of reserves by central banks in East Asia and several oil-exporting countries. The degree to which demand factors such as these might be contributing to low long-term rates has important implications for the conduct of monetary policy (see Chapter IV).

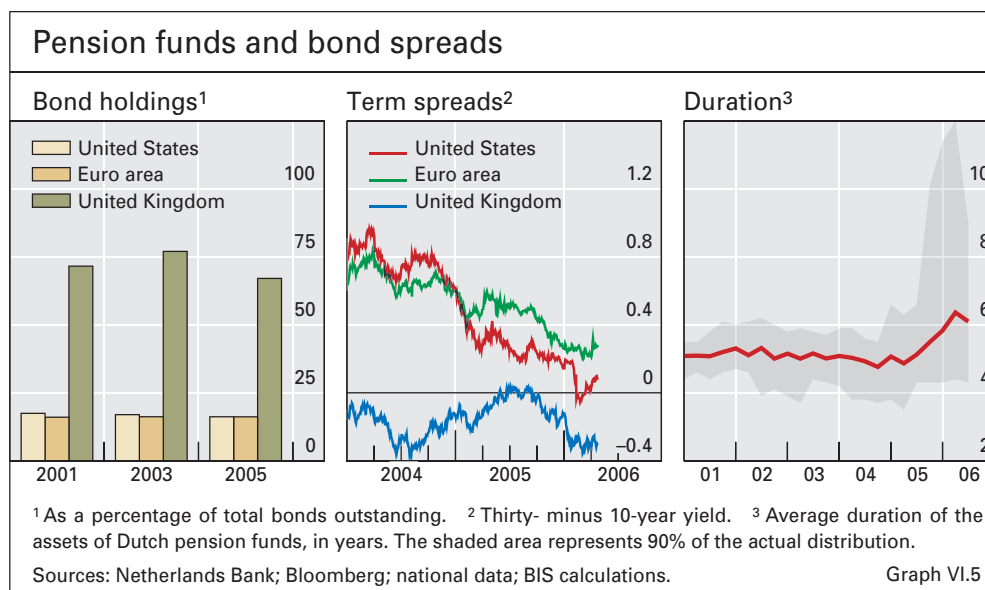
#### *Institutional demand factors: pension funds and insurance companies*

Advances in risk management and changes in the accounting and regulatory frameworks in many countries have encouraged pension funds and insurance companies to reduce the duration mismatch between their assets and liabilities (see Chapter VII) over the past few years.

Asset-liability management ...

Although the size of the bond holdings of pension funds and insurance companies relative to the total amount of bonds outstanding has remained strikingly stable (Graph VI.5, left-hand panel), the decline in the spread between 30-year bonds and 10-year bonds in many advanced economies suggests that the composition of these portfolios may have shifted towards longer-dated assets (Graph VI.5, centre panel). This shift appears to have been particularly large in the United Kingdom, where term spreads have been negative for some time. This is consistent with reports that strict minimum funding requirements and the implementation of the accounting standard FRS 17 have resulted in large purchases of very long-term bonds by UK pension funds as yields have declined, triggering further declines in yields.

... has weighed on long-term sterling yields ...



... but has had less evident effect elsewhere

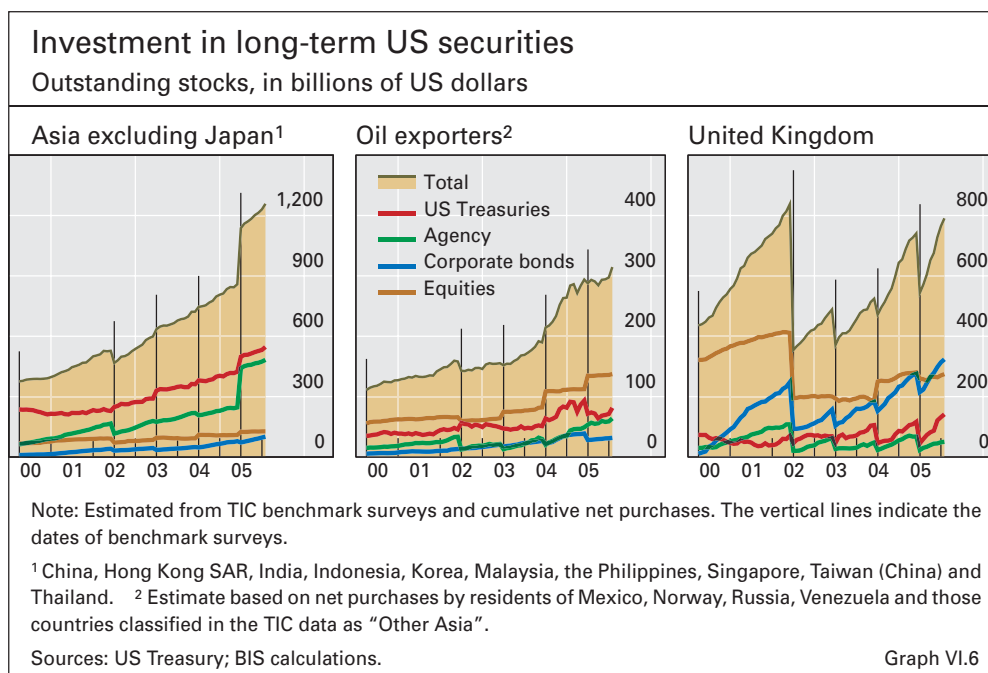
Nevertheless, it is not clear how far the UK experience can be generalised to other countries, given remaining differences in the regulatory and accounting frameworks as well as in the funding levels of pension funds. In the Netherlands, for instance, the average pension fund increased the duration of its assets from five to six and a half years after reforms were enacted in autumn 2004 (Graph VI.5, right-hand panel), although there was substantial variation across funds. Some funds almost doubled the duration of their assets, while others left it almost unchanged. This may be related to the fact that funding levels of the Dutch pension sector tend to be well above the mandatory floor, which gives funds considerable flexibility in managing their interest rate risk.

There were also signs during the period under review that the trend towards a more market-oriented framework might have been losing some momentum. A postponement of full implementation of the Dutch pension reform to 2007 may have contributed to a modest decline of half a year in the average duration of pension fund assets in that country. In the United States, a reform of minimum funding requirements was passed by Congress in late 2005. However, the reform was considerably less strict than the initial proposal, and may have contributed to a rebound of the spread between 30- and 10-year Treasuries in early 2006, as traders who had speculated on additional buying pressure from pension funds reportedly unwound their positions in long-term bonds. Also limiting the incentives for pension funds to purchase long-term bonds in early 2006 were increases in equity prices and bond yields, which at least temporarily improved the funding position of many pension funds.

#### *Foreign demand factors: Asian reserves and petrodollars*

Demand for US securities fuelled by Asian surpluses ...

Strong foreign demand for US securities is another reason frequently cited for declining term premia in the United States. Foreign governments and central banks – particularly from Asia – have continued to channel funds into US



Treasuries and other US quasi-government securities, largely as a result of intervention in the foreign exchange markets. Indeed, there is ample anecdotal evidence that financial markets respond to news that might signal changes in official preferences for US dollar securities. For example, 10-year dollar yields rose by nearly 10 basis points within a few hours of the announcement of the renminbi revaluation on 21 July 2005, as speculators anticipated significantly lower demand for US securities.

Even though the accumulation of reserves by Japan slowed considerably in 2005, China and other major emerging economies in Asia-Pacific continued to experience strong reserve growth well into 2006 (see Chapter V). Much of this was invested in US securities. As shown in the left-hand panel of Graph VI.6, preliminary data based on the US TIC survey indicate that holdings of US long-term securities by residents (both official and private) of Asian countries (excluding Japan) grew strongly in 2005. The combined holdings of these investors increased to an estimated \$1.25 trillion by early 2006, from just over \$800 billion at end-2004.

The reinvestment of export revenues by oil-exporting countries has also been cited as a source of demand for US securities. Estimated net oil revenues for the major oil exporters (OPEC members plus Mexico, Norway and Russia) reached \$676 billion in 2005, and are forecast at almost \$750 billion for 2006. A portion of these revenues has been directly invested in US securities. Estimates based on the TIC data indicate that oil exporters channelled roughly 20%, or \$200 billion, of their cumulative oil revenues between June 2002 and June 2005 (\$1.2 trillion) into short- and long-term US securities. While the accumulation of US long-term securities grew strongly until 2004, it rose by only \$33 billion in 2005, or 8% of cumulative oil revenues during the year.

The estimates of investment in US dollar securities by Asian investors and oil-exporting countries discussed above, however, almost certainly underestimate

... and the recycling of oil revenues

Investment is routed through the United Kingdom

their total exposure. These investors often purchase securities via third parties in London or other financial centres outside the United States. To be sure, the TIC benchmark surveys attempt to reallocate these third-party purchases to the residence of the ultimate purchaser. This usually results in large drops in the estimated holdings of US long-term securities by residents of the United Kingdom and, at times, jumps in the estimated holdings of Asian investors (Graph VI.6). However, these investors' exposure to US securities may be even larger than that estimated in the benchmark surveys to the extent that they place funds in hedge funds or other investment vehicles which invest in US securities.

Equity markets shrugged off rate increases

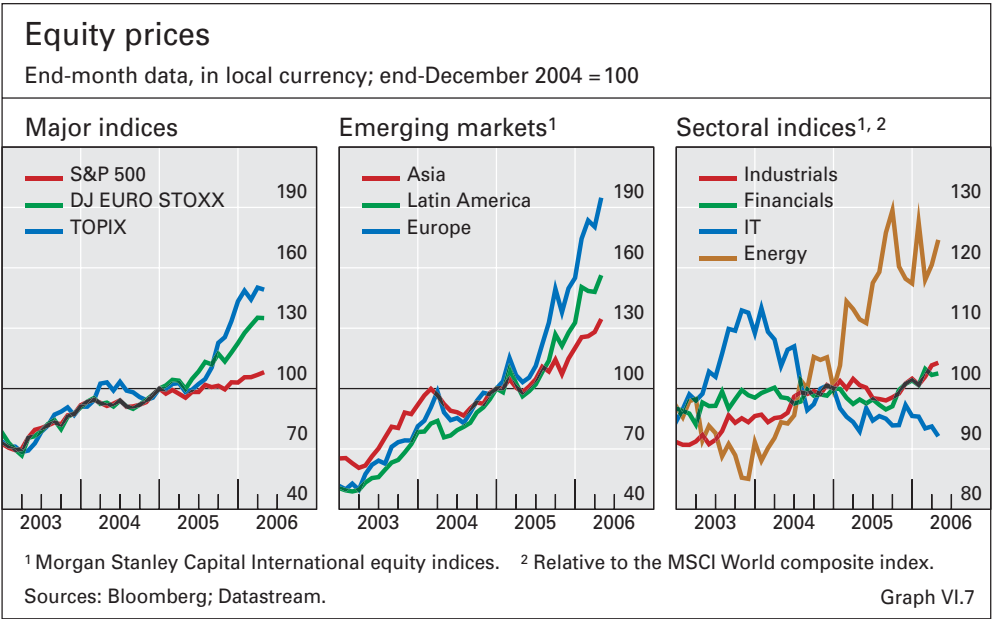
Rising equity prices ...

The rally in global equity markets which had begun in early 2003 continued apace during most of the period under review. After a modest performance in 2004, markets around the world posted double digit gains in 2005. Many markets rose still further in the early part of 2006 before falling back in mid-May. The largest increases were recorded in emerging markets. Eastern European markets rose by 55% in local currency terms in 2005 and a further 15% over the first five months of 2006, notwithstanding a sharp fall in mid-May (Graph VI.7). In major markets, too, prices soared. Japanese equity markets jumped by 44% in 2005 before price increases moderated in the early part of 2006. The US market underperformed most others, rising by only 4% between early 2005 and mid-May 2006.

Macroeconomic outlook underpinned equity gains

... reflecting robust economic growth

The rise in equity prices was underpinned by the unexpectedly robust performance of the world economy (see Chapter II). In Japan and the euro area, the improved economic outlook prompted investors to revise upwards



their earnings expectations. Additional impetus was provided in Japan by hopes of structural reform and the widespread view that the banks' non-performing loan problems had largely been resolved. In emerging markets, too, earnings forecasts were revised upwards. In many emerging markets, investor confidence was bolstered by high commodity prices. Indeed, the highest equity price gains were recorded by oil exporters such as Russia, where prices have more than doubled over the past year.

Rising emerging market equity prices coincided with massive inflows of foreign capital (see Chapter III). However, there was no clear relationship between the size of foreign portfolio investment and stock market performance during the period, across either regions or countries. The cross-sectional correlation between portfolio investment flows and monthly local currency returns was close to zero, irrespective of whether inflows are measured in absolute terms or as a proportion of the host country's market capitalisation. A possible reason for this weak relationship is that ample demand for emerging market equities met high supply. Consistent with this explanation, corporations in emerging Asia announced international equity issues totalling \$57 billion in 2005, up from \$34 billion in the previous year.

Low correlation of capital flows and returns

In the United States, macroeconomic conditions were less supportive of equity prices than elsewhere. Solid economic growth had been widely anticipated and so was already incorporated into valuations. The tightening of monetary policy probably contributed to the underperformance of US equities, although its impact was mitigated by the fact that the tightening had been largely anticipated and that higher policy rates only gradually fed through to higher long-term yields. Unusually severe hurricanes on the US Gulf coast unsettled markets in September 2005, but prices rebounded when it became clear that the impact on US economic growth was only transitory.

### *Releveraging and mergers accelerated*

Changes in firms' capital structure were another source of support for equity markets. Whereas between 2001 and 2004 firms had directed their cash flows towards strengthening their balance sheets, more recently they shifted their focus to returning cash to shareholders through dividend payouts, share buybacks and acquisitions. In 2004-05, dividends paid by S&P 500 companies increased at their fastest rate in more than a decade. Share buybacks increased faster still; S&P 500 companies spent almost \$350 billion purchasing their own shares in 2005 (Graph VI.8). As a result of buybacks and acquisitions, the total amount of equity retired by US firms reached a record high of \$300 billion in 2005.

Dividends and share buybacks increased ...

European and Japanese companies raised their dividends even more rapidly than US firms. The high rates of dividend growth may have helped to underpin investors' confidence by signalling that management expected high rates of earnings growth to be maintained. European and Japanese firms also engaged in share buybacks, although not on the same scale as their US counterparts.

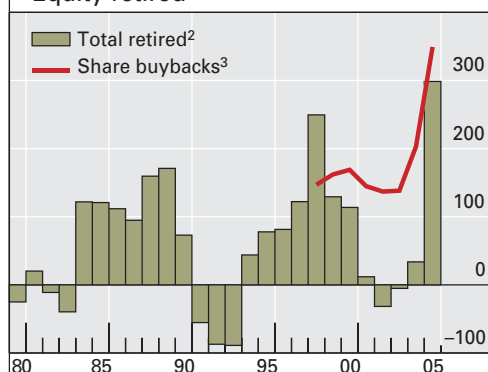
In addition to their signalling effect, higher dividends and share buybacks supported equity prices by releveraging companies' balance sheets. To the

... as firms releveraged

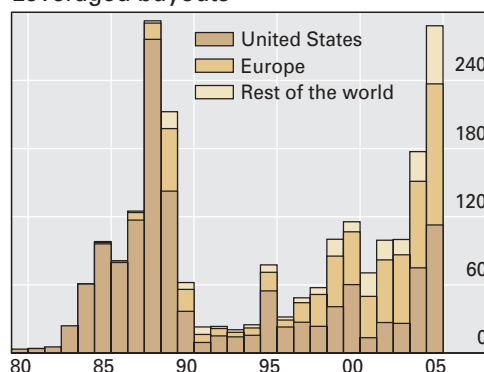
## Shareholder-friendly actions

In billions of constant US dollars<sup>1</sup>

### Equity retired



### Leveraged buyouts<sup>4</sup>



<sup>1</sup> Nominal amounts, converted to constant 2005 dollars using the US GDP deflator. <sup>2</sup> US corporations, net of new equity issued. <sup>3</sup> Gross buybacks by S&P 500 companies. <sup>4</sup> Announced value of all deals, including net debt; based on the date of the announcement and the residency of the target firm.

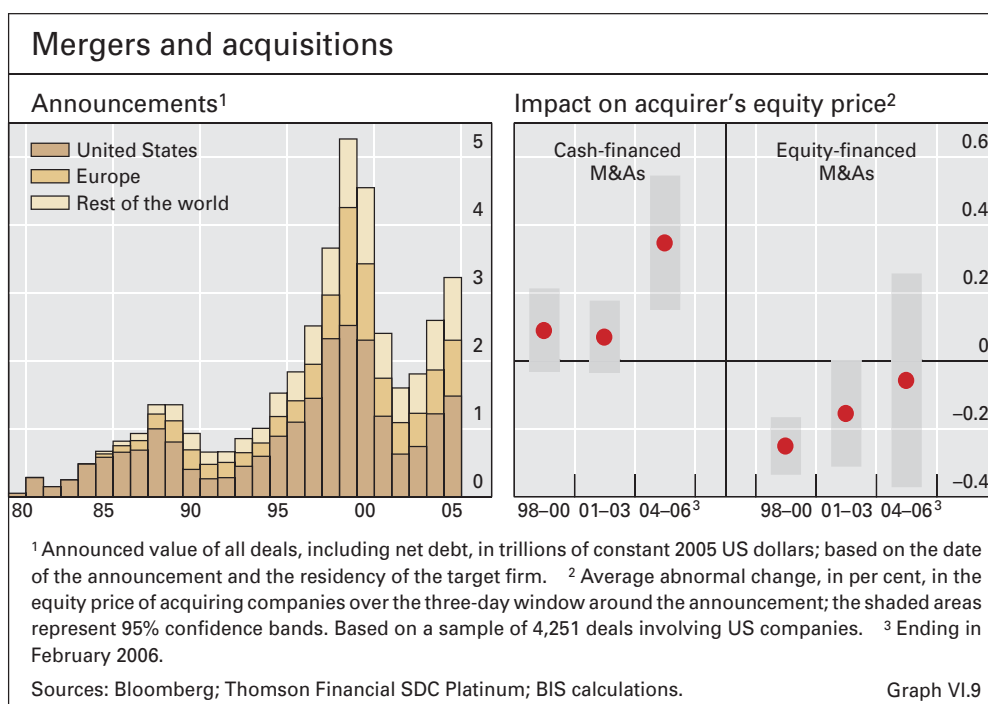
Sources: Standard & Poor's; Thomson Financial SDC Platinum; national data; BIS calculations. Graph VI.8

extent that dividends and share repurchases increase a firm's debt/equity ratio, they boost returns on equity. Prior to 2004, the majority of shares repurchased by companies were reissued to employees exercising stock options. Therefore, they had no impact on firms' capital structure. Increasingly, however, firms have used buybacks to reduce their share count and return cash to shareholders. Similarly, the payment of special dividends has become a popular way for private equity investors to recoup their investment. In the past, private equity investors had typically sold their stake in a company through an initial public offering (IPO) of shares. Investor demand for IPOs, however, was relatively weak in 2005: returns on the first day of trading were about 10%, compared to over 20% on average since 1990. Accordingly, private equity investors turned to debt markets to fund large dividend payments out of the retained earnings of their ventures (see Chapter VII).

Releveraging was further boosted by a surge in leveraged buyouts (LBOs). Debt-financed takeover bids by private equity investors soared in 2005 to levels not seen since the LBO wave in the late 1980s (Graph VI.8). In contrast to the 1980s, the recent increase in buyout activity was not limited to the United States; more than half of all deals involved non-US targets, mainly in Europe but also in Asia. Especially notable was the surge in LBOs in Germany and Japan, where obstacles to changes in corporate control, such as cross-shareholdings among firms, have gradually been removed. For example, whereas in 1992 about 50% of all shares listed in Japan were held by related companies, by 2004 that percentage had halved.

The pickup in LBO activity was part of a larger increase in mergers and acquisitions (M&As). Acquisitions totalling \$3.2 trillion were announced in 2005, up almost 30% from 2004 and the highest level since 2000 (Graph VI.9). LBOs accounted for about 9% of all deals, much higher than in 2000, albeit far below the peak of 22% in 1988. The increase in M&As was broadly spread around the

LBOs rose to their highest level since the 1980s



globe. Slightly less than half of all deals involved US targets, and another quarter were European targets. Companies based in emerging markets were more active than ever before, buying firms in major and other emerging markets.

Equity investors responded more positively to the latest wave of deal-making than they had to previous ones. In 2005, both the target's and the acquirer's share prices tended to increase following the announcement of a takeover. This contrasts with historical experience, namely that any gains in shareholder value resulting from mergers were captured mainly by the shareholders of the target company.

The relatively positive reaction of investors partly reflected the smaller share of deals financed in whole or in part with equity. In the United States, about 30% of recent deals were paid for with shares, compared to about 70% during the previous M&A boom in 1998–2000. In Europe and Asia, the proportion of deals paid for with shares was even lower. The right-hand panel of Graph VI.9 plots the average “abnormal” return for the stock price of acquiring companies on the day an acquisition is announced, ie the return after controlling for the stock's sensitivity to market-wide price movements. Mergers financed with cash consistently perform better than mergers financed with equity: the abnormal return is higher in any given period. This seems to be because the tendency to overpay for the target is lessened when mergers are financed with cash.

More strikingly, for both cash- and equity-financed deals, abnormal returns for the equity price of acquiring firms were higher in 2004–06 than in previous years; investors were more receptive than they had been in the past to all types of acquisitions. In 1998–2000 abnormal returns on cash deals were about zero and on equity deals were significantly negative. By contrast, in

Surge in M&As  
boosted equity  
prices ...

... even those of  
acquiring  
companies



2004–06 abnormal returns on cash deals were significantly positive and on equity deals were about zero.

### *Conflicting signals about valuations*

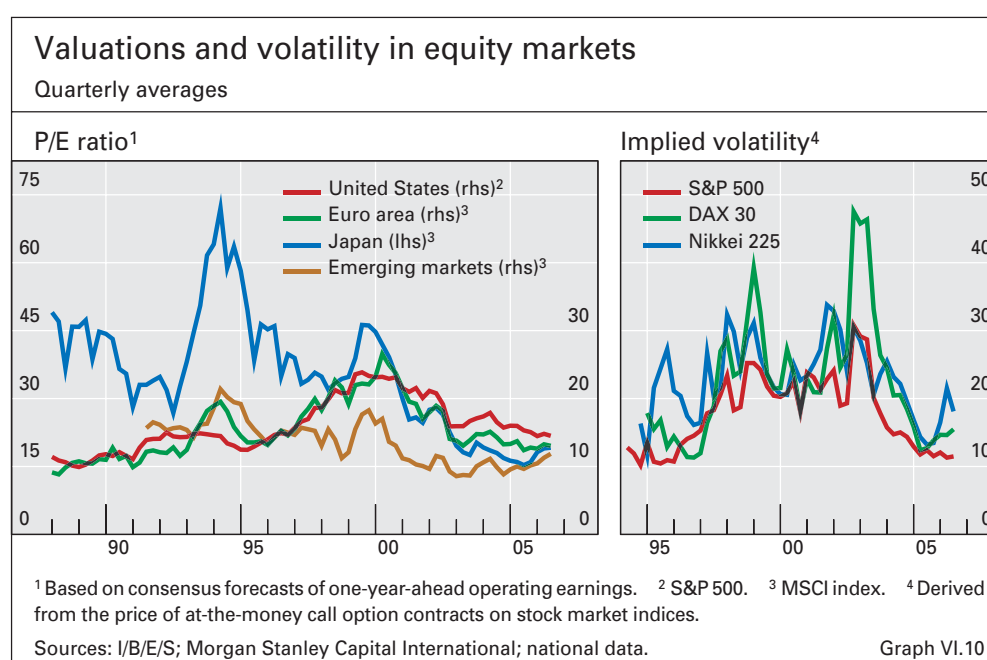
By some measures, valuations were not unusually high

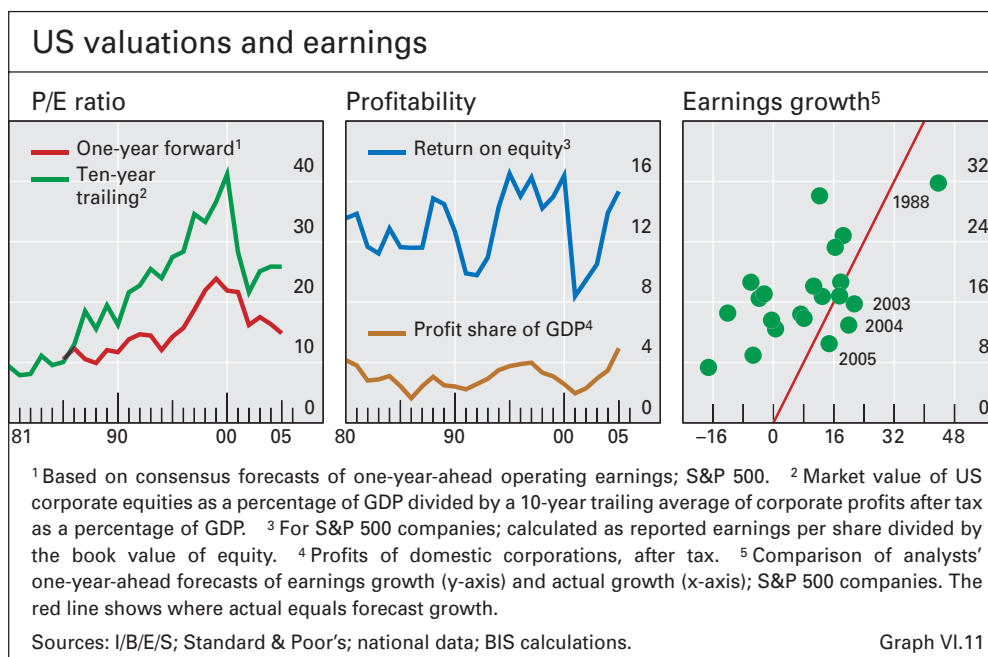
One possible explanation for investors' more positive view of acquisitions is that market valuations seemed low by some, albeit not all, measures. In markets around the world, recent price increases have been outpaced by upward revisions to earnings forecasts. The S&P 500 was trading at 15 times short-term earnings forecasts in 2005, slightly below its 1988–2004 average of 16 (Graph VI.10). Euro area markets were trading at 13, compared to their historical average of 16. In emerging equity markets, too, price/earnings (P/E) multiples were well below their earlier levels. Therefore, the risk of overpaying for acquisitions might have been perceived to be lower than in the past.

Implied volatility stayed low ...

In most markets, investors seemed comfortable with valuations and the outlook for returns. Implied volatility in equity index options remained very low. For example, for the S&P 500 it fluctuated around 12% for much of 2005 and the early part of 2006, close to the previous lows reached in 1995 (Graph VI.10). The most noticeable increase during the period occurred in mid-May 2006, when stock markets around the world fell sharply.

Of course, there were exceptions. In Japan, P/E ratios increased sharply in the second half of 2005, from 15 to 19, as prices soared. In addition, volatility as implied by options on the Nikkei index more than doubled between June and December 2005, from around 10% to 25%, suggesting that uncertainty about the future direction of equity prices rose in tandem with valuations. In Middle Eastern markets, local investors flush with oil revenues drove valuations to spectacular highs. Even after prices had plummeted by about 40% over the first five months of 2006, P/E ratios in Saudi Arabia and Dubai still exceeded 20.





These exceptions aside, it is unclear whether investors' apparent confidence in the outlook for market returns reflected a heightened willingness to bear risks or perceptions of continued low risks; both factors influence measures of implied volatility. For much of the past year, estimates of risk appetite in equity markets, derived by comparing the distribution of expected returns implied by option prices with the distribution of historical returns, were relatively high. However, if investors' appetite for equity risk was high, then it is puzzling why valuations appeared to remain relatively low.

... perhaps because of heightened risk appetite

One possible answer to this puzzle is that valuations were in fact higher than indicated by multiples based on short-term earnings forecasts. In 2005, returns on equity and profits as a share of GDP were close to their historical highs, at least in the United States (Graph VI.11). If profitability were to revert to some longer-term trend, then equities would look expensive. Taking a 10-year trailing average of earnings to smooth out cyclical variation, P/E multiples for US equities in late 2005 were well above their long-term average: about 26, compared to 19 over the 1962–2005 period.

There are signs that analysts were more sceptical than in the past about the sustainability of short-term gains in profitability. The right-hand panel of Graph VI.11 plots analysts' one-year-ahead forecasts of the growth of operating earnings against the actual growth of earnings for the S&P 500 over the past 20 years. In only four years out of the past 20 did actual earnings growth exceed forecast growth – and three of those years were the period 2003–05. In other words, analysts who have historically been overly optimistic about the strength of corporate earnings have, since 2003, been overly pessimistic. If this pessimism were shared by investors, it would be consistent with expectations that profitability will eventually revert to its longer-term trend.

Analysts seemed pessimistic about the strength of earnings

Looking forward, some scepticism about the strength of earnings would appear to be justified. The downside risks to the outlook for corporate earnings

seem larger in 2006 than in previous years. For example, higher interest rates and tight labour markets could dampen profit growth, in the United States and Europe especially (see Chapter II). That being said, earnings growth again exceeded expectations in the first quarter of 2006.

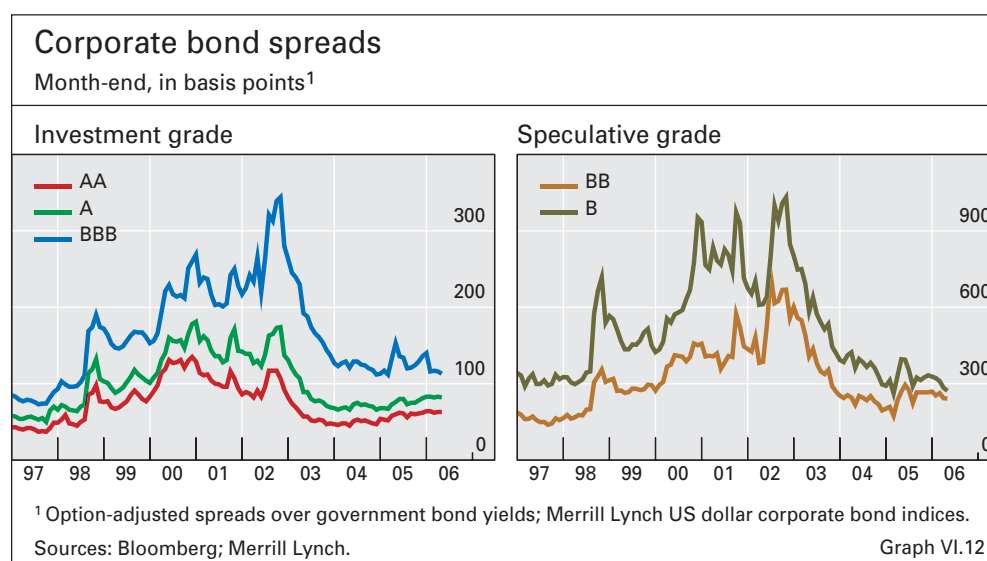
## Credit markets proved resilient

Despite the accelerated pace of leveraged buyouts and other shareholder-friendly actions, corporate bond and credit default swap spreads in 2005 and early 2006 stayed close to their cyclical lows (Graph VI.12). The long rally in credit markets came to an end in the second quarter of 2005, when a series of negative corporate announcements, including the downgrade of General Motors and Ford to below investment grade, triggered a modest sell-off. While corporate spreads never fully recovered from the sell-off, they did not move sharply wider either. Spreads on investment grade corporate debt inched higher in late 2005 and early 2006 to levels comparable to those reached during the sell-off. Yet, at 83 basis points in mid-May 2006, spreads on A-rated corporate bonds denominated in US dollars were still within 20 basis points of their cyclical low. Meanwhile, spreads on speculative grade corporate bonds were more than 100 basis points below their May 2005 high and only 40 basis points above their March 2005 low.

Some companies did face markedly higher financing costs. The troubles of US automobile firms worsened in 2005, as they struggled both to contain legacy costs arising from pension and health insurance schemes and to adapt their business strategy to increasing competition. Following a brief rally in mid-2005, Ford and General Motors saw their spreads widen in late 2005 to levels well above those at the peak of the earlier sell-off. So, too, did US auto suppliers such as Delphi and Dana, both of which eventually declared bankruptcy. Almost 5% of rated auto firms defaulted in 2005, a higher share than in any other sector.

Investment grade  
spreads inched  
higher

Troubles of auto  
companies



In addition, creditors repriced the debt of companies targeted in leveraged buyouts or otherwise under pressure to re-leverage. For example, credit default swaps on US forest products firm Georgia-Pacific jumped by about 250 basis points in mid-November 2005 following a bid to buy out existing shareholders. Investors seemed especially sensitive to the possibility of re-leveraging by investment grade issuers, given that such issuers are by definition in a better position than speculative grade ones to service additional debt.

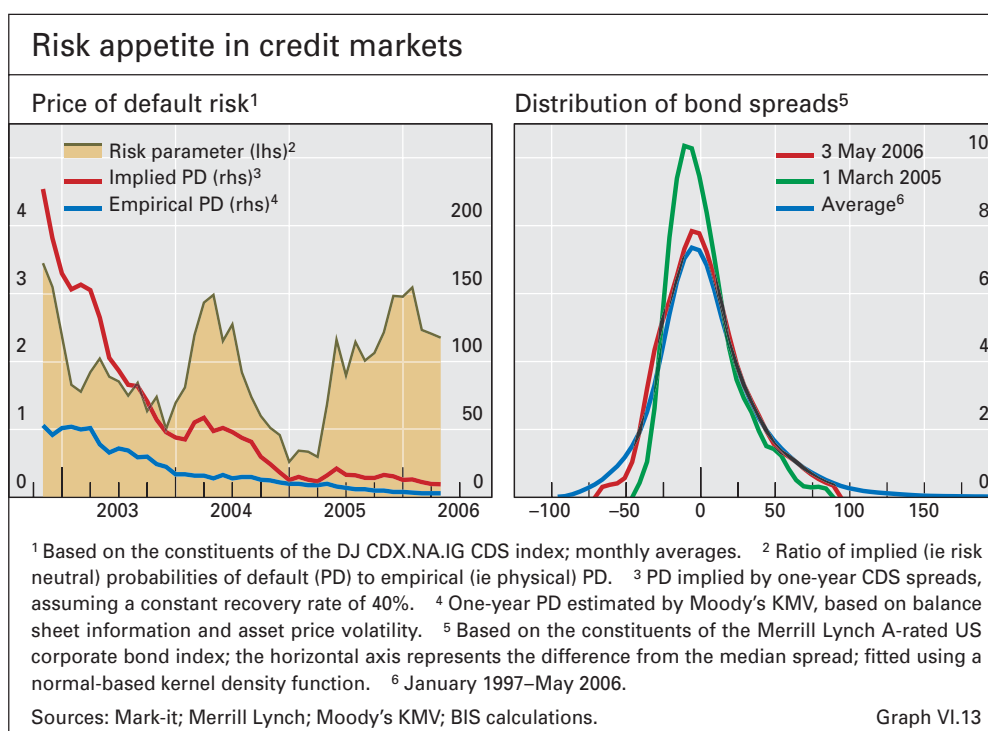
#### *Divergent appetites for different risks*

It was this greater sensitivity to credit event risk that lay behind the modest widening of investment grade credit spreads. Investors seemed worried about the impact of dividend increases, share buybacks, mergers and leveraged buyouts on individual companies. Yet, at the same time, they seemed unfazed about the impact of such activities on the creditworthiness of the corporate sector as a whole.

Investors' appetite for credit event risk declined ...

Investors' appetite for credit risk apparently never quite recovered from the turmoil in corporate bond and credit default swap (CDS) markets in the second quarter of 2005. An estimate of risk appetite in credit markets is plotted in the left-hand panel of Graph VI.13. This estimate corresponds to the ratio of default probabilities derived from credit spreads to those derived from underlying balance sheet information, for a sample of investment grade companies. It suggests that the compensation demanded by investors for bearing credit risk rose noticeably in April and May 2005 – albeit from an exceptionally low level – and remained relatively high thereafter.

Measures of discrimination in corporate bond markets show a similar reversal. The right-hand panel of Graph VI.13 illustrates the distribution of



A-rated corporate bond spreads. Spreads were clustered together very closely in March 2005, before the sell-off. They have since become more dispersed, and in April 2006 the distribution of spreads was close to its long-term average.

... even as their  
appetite for  
systematic risk was  
unchanged

Strictly speaking, the indicators plotted in Graph VI.13 combine two different types of risk premia: compensation for bearing systematic risk and compensation for bearing credit event risk. The former is driven largely by changes in macroeconomic conditions. The latter, also known as jump-to-default risk, reflects aversion to uncertainty about the timing and severity of default losses on individual credit exposures. In equity markets, investors tend not to demand compensation for bearing such idiosyncratic risks because, in a well diversified portfolio, the variability of some assets will be offset by that of others. In credit markets, by contrast, premia for seemingly firm-specific risks appear to account for a significant proportion of credit spreads. This may be because events at one firm have a contagion effect by signalling an increase in default risk at other firms. Alternatively, it may be because corporate bond portfolios are inherently difficult to diversify.

While it is difficult to decompose the estimated risk premium, anecdotal evidence suggests that the increase in 2005 and early 2006 was more likely to have been driven by a weaker appetite for credit event risk than by a change in investors' appetite for systematic risk. First, equity market indicators, such as implied volatilities, do not suggest a decline in investors' appetite for systematic risk (see above). In principle, appetite for such risk should be similar across asset classes, given its dependency on economy-wide developments.

Investment grade  
and high-yield  
spreads moved in  
opposite directions

Second, spread movements across different rating categories are suggestive of a divergence in investors' appetite for different types of risk. As the credit quality of a bond declines, its return behaves increasingly like an equity return. Therefore, systematic risk tends to explain a larger proportion of returns on high-yield bonds than on high-grade bonds. Consistent with a weak appetite for credit event risk and a high appetite for systematic risk, speculative grade corporate bonds have outperformed investment grade bonds over the past year. In the first quarter of 2006, high-yield spreads tightened by about 40 basis points even as investment grade spreads remained unchanged (Graph VI.12). Moreover, investment grade firms have come under increasing pressure from creditors to include change of control covenants in their bond issues, to limit losses to existing bondholders in the event of a leveraged buyout. At the same time, private equity funds have raised substantial amounts on favourable terms to finance such buyouts (see Chapter VII).

#### *Corporate balance sheets remained strong*

The divergence in investors' appetite for different types of risk reflects, at least in part, the strength of corporate balance sheets at the current juncture. The accelerated pace of shareholder-friendly actions slowed the improvement in corporate credit quality in 2005, but it did not reverse it.

Corporate leverage  
ratios were low in  
the United States  
and Japan ...

In the United States, the ratio of net debt to cash flows declined in 2005 to its lowest level since the mid-1990s (Graph VI.14). This was despite a sharp pickup in borrowing by non-financial corporations, partly driven by investment and working capital needs, but also to finance acquisitions. In aggregate,

however, this additional debt was more than offset by the exceptionally rapid growth of earnings. Furthermore, US companies continued to add to their cash reserves, although at a slower pace than in previous years.

Euro area firms were slower than US firms to rebuild their balance sheets; in 2005 leverage ratios were still close to their cyclical highs. Nevertheless, the ratio of net debt to cash flows declined in 2005 for the second consecutive year. As in the United States, profit growth underpinned the decline. German firms in particular were able to raise their profit margins despite the modest pace of economic growth. By contrast, Italian firms struggled to maintain their profit margins.

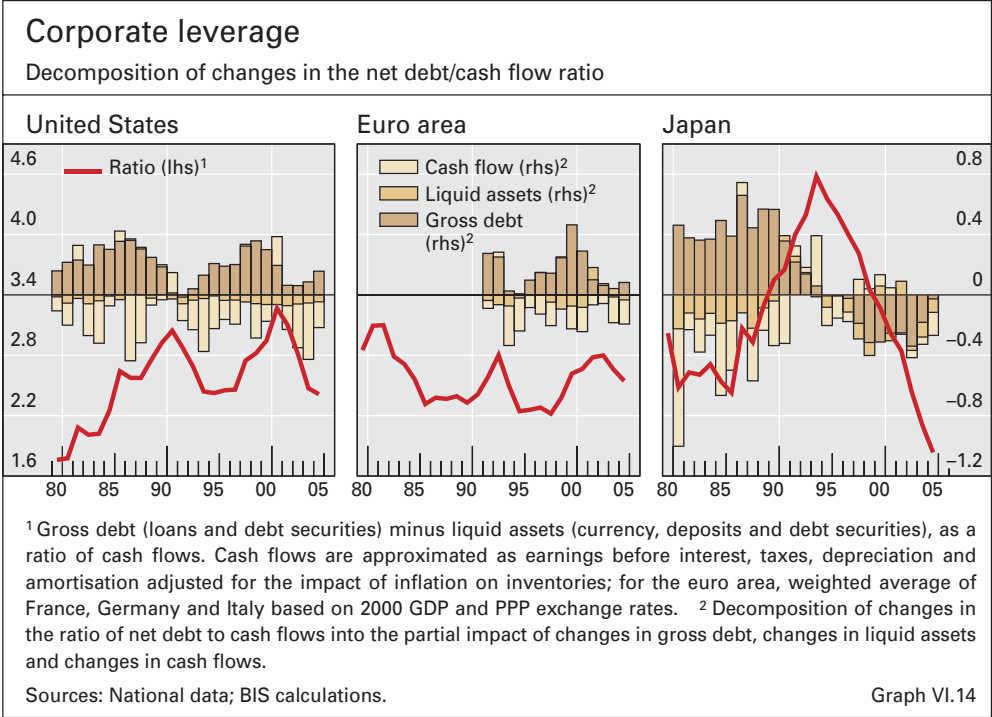
In Japan, leverage ratios declined to their lowest levels in over two decades. In contrast to previous years, when debt reduction had been the main driver of declines in the net debt/cash flow ratio, an acceleration in the growth rate of earnings was responsible for most of the decline in 2005. This acceleration was driven by domestically oriented firms, whose profits were boosted by the recovery in domestic demand. Debt repayments again exceeded new borrowing, but by the smallest margin since the mid-1990s. More and more firms elected to increase capital spending or build up their cash reserves instead of further paying down their debt.

Looking forward, indications of pressure on corporate credit quality are emerging. As mentioned earlier, corporate borrowing is accelerating. Furthermore, downgrades of non-financial corporations edged upwards as a percentage of all rating actions in 2005, not only in the United States but also in Europe and Japan (Graph VI.15).

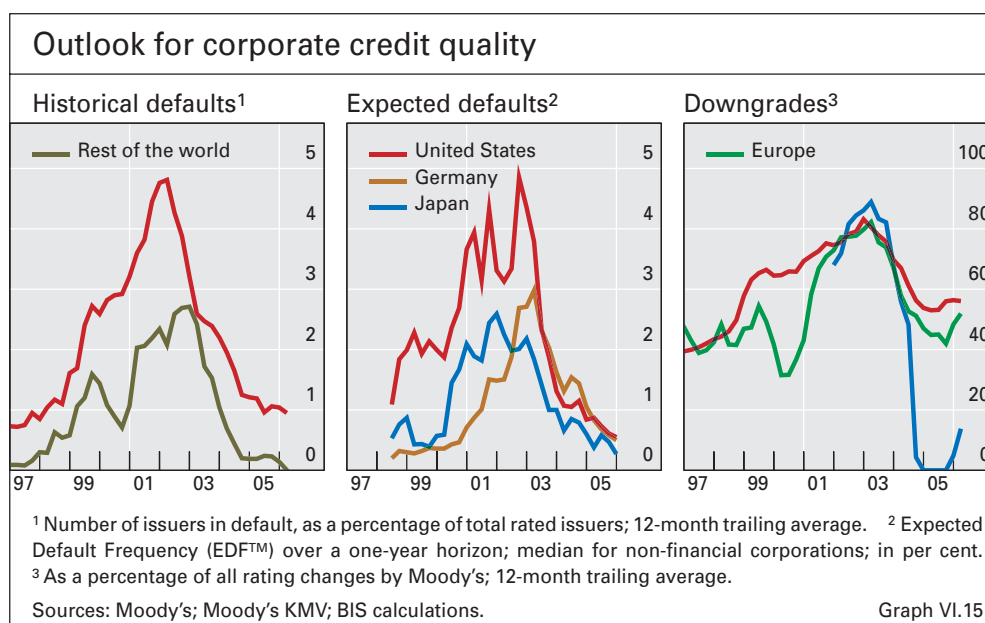
Nevertheless, owing to the strength of balance sheets for the corporate sector as a whole, most market participants expect the turn in the credit cycle

... and less so in the euro area

Downgrades edged higher







to be gradual. Indeed, for the past year default rates have defied most analysts' expectations of an increase and instead edged downwards. Fewer rated issuers defaulted in the year to March 2006 than at any time since mid-1997 (Graph VI.15). Moreover, forward-looking estimates of default rates, calculated by Moody's KMV based on balance sheet information and equity price volatility, remained near their cyclical lows in early 2006.

#### *Vulnerability of credit markets to a repricing*

Credit conditions could be undermined by global imbalances ...

If the credit cycle were to turn more quickly than presently expected, it could lead to a rapid deterioration in corporate financing conditions. This would be especially so in the event that the adjustment of existing macroeconomic imbalances, such as the US current account deficit, resulted in weaker economic growth (see Chapter II).

... an accelerated pace of releveraging ...

Even if growth remains robust, credit quality and therefore credit conditions could be undermined by an accelerated pace of releveraging. M&A activity continued to increase in the early months of 2006. LBOs became ever larger and more leveraged. And it remained unclear what firms intended to do with the substantial amount of cash they have accumulated in recent years: invest it in profitable projects or return it to shareholders.

... or developments in structured finance markets

Developments in the market for structured products represent a further vulnerability for credit conditions. Mortgage- and asset-backed securities markets are among the largest, fastest-growing segments of global securities markets. Moreover, recent years have seen a tremendous increase in the range of new products and securitisation techniques. However, the performance of many of these new products has yet to be tested during an economic downturn. In the event that investors incur losses on these products in excess of what they anticipate, it could trigger a repricing of risk across all markets.

One source of unanticipated losses could be modelling errors. The pricing of structured products depends on quantitative models to a far greater extent



than does the pricing of corporate bonds. These models often incorporate assumptions to simplify calculations. While these assumptions might have seemingly benign consequences for estimates of expected losses when market conditions are favourable, they could have costly consequences should conditions deteriorate.

Unanticipated losses could also arise from shortcomings in risk management. While expected losses are similar for like-rated corporate bonds and structured products, uncertainty about the size and severity of losses is greater for structured products. For example, the concentration of exposures can have a significant impact on the distribution of structured products' possible outcomes. Credit ratings do not capture the full distribution, and so over-reliance on rating agency assessments could lead holders of structured credit products to underestimate the risks to which they are exposed. The credit ratings of structured finance securities tend to change less frequently than those of corporate securities, but when they are downgraded they fall further. According to Moody's, the magnitude of downgrades averaged almost four notches for structured finance securities over the 1984–2004 period, compared to less than two for corporate securities.

To illustrate the vulnerabilities posed by structured products, consider the US mortgage-backed securities (MBS) market. It is the largest bond market in the world, with outstandings of close to \$6 trillion at the end of 2005, equivalent to almost 50% of US GDP. Growth in recent years has been driven by the securitisation of mortgage loans to borrowers not classified as prime; about 40% of MBS issuance in 2005 was backed by such loans, up from 10% in the late 1990s. Pricing of mortgage pools is often based on the average credit score (ie rating) of the underlying credits. Due to the non-linear relationship between default rates and credit scores, the default probability associated with the average credit score tends to underpredict the average default probability calculated from the full distribution of scores. Losses from such underprediction are not likely to be large in buoyant housing markets, but may increase sharply in weaker markets. As a result, MBS investors may find themselves exposed to losses in excess of what they had expected.

Changing structure  
of US MBS  
markets ...

Furthermore, whereas historically the prepayment risk embedded in US MBSs was influenced mainly by changes in interest rates, the prepayment risk embedded in mortgage loans to rapidly growing borrower classes has become increasingly sensitive to changes in the credit score of the borrower and changes in house prices. For example, as house prices rise, the loan-to-value ratio falls and so a borrower might choose to refinance in order to benefit from lower mortgage costs. This further complicates the assessment and management of the risks to which MBS holders are exposed.

... complicates risk  
management

## Emerging market spreads at historical lows

Asset prices across emerging markets made impressive gains in 2005 and into 2006, even as monetary conditions tightened in several major developed countries. The rally which started in mid-year pushed spreads on sovereign bonds to historical lows, beyond the levels reached in 1997, prior to the Asian

financial crisis. This reduction in spreads was concentrated on bonds with the highest yields, continuing the trend evident for the past few years.

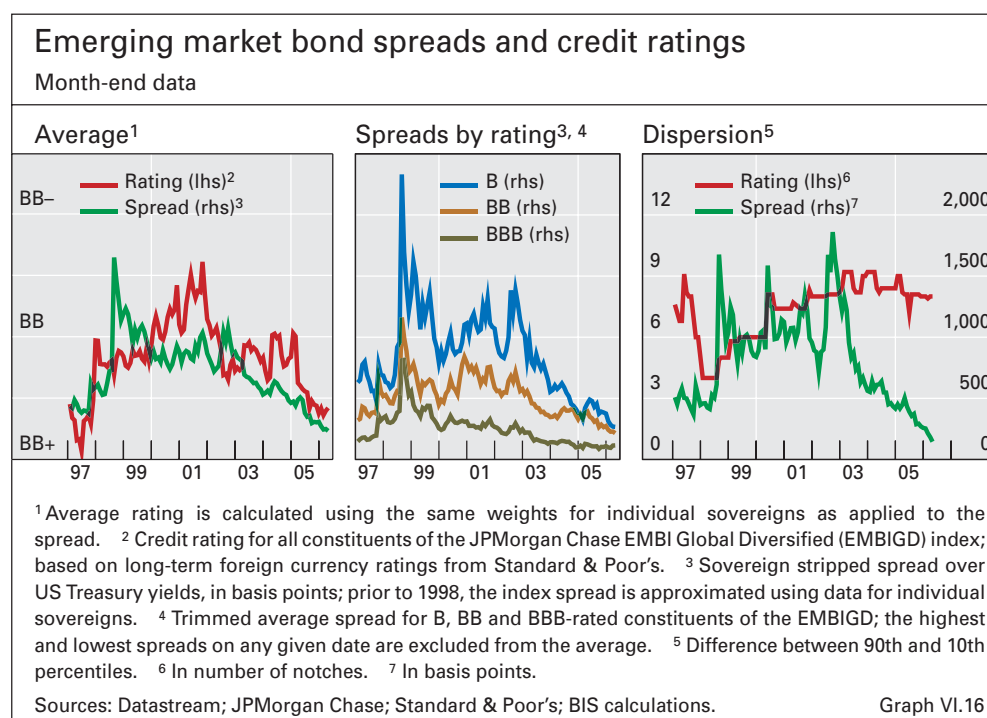
Low spreads reflect the improvement in fundamentals ...

Investors' enthusiasm for emerging market assets stemmed in part from perceptions about the strength of fundamentals. Improvements in recent years in external positions, financial systems and fiscal and monetary policies have made many emerging markets more resilient to shocks, thereby reducing the risks associated with emerging market investments (see Chapter III). Indeed, in 2005, sovereign rating upgrades by Moody's outnumbered downgrades by a ratio of about 3:1.

... and investor risk appetite

At the same time, spreads on emerging market bonds appear to be somewhat lower than fundamentals, if measured by sovereign credit ratings, would suggest. The JPMorgan Chase EMBI Global Diversified index of sovereign spreads fell below 200 basis points in March and April 2006, about 100 basis points below the previous record low reached in mid-1997, before widening somewhat in May. Yet sovereign credit quality, as measured by credit ratings, was not as high as it had been in 1997, notwithstanding the significant improvement since 2001. Even within individual rating classes, spreads in early 2006 tightened beyond their previous lows in 1997 (Graph VI.16, left-hand and centre panels).

The dispersion of spreads relative to ratings also suggests that demand for emerging market assets might be leading investors to discriminate less among borrowers than in the recent past. In early 2006, while sovereign spreads clustered together more closely than ever before, sovereign ratings remained widely dispersed, implying that there were significant differences in the creditworthiness of the borrowers in the index not captured in the distribution of spreads (Graph VI.16, right-hand panel).



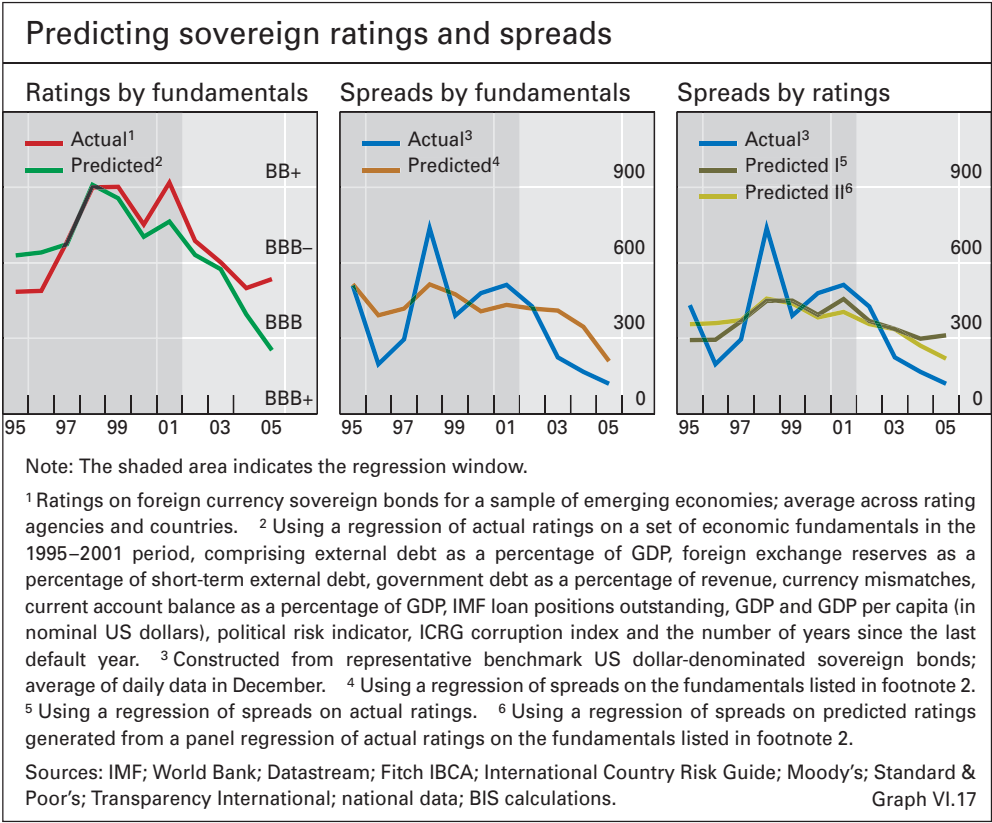
An alternative view of the discrepancies in the mean and variation of ratings relative to spreads is that they simply reflect changes in the criteria used by the agencies to assign ratings. Since the Asian financial crisis, rating agencies are widely reported to have placed more emphasis on liquidity risk and the strength of financial systems, which may have led them to become effectively stricter in their assignment of ratings. If so, the divergence between ratings and spreads does not necessarily mean that the market’s assessment of fundamentals in emerging markets is more optimistic compared with the past.

Methodological changes by rating agencies ...

There is some statistical evidence to suggest that rating criteria may indeed have tightened. Graph VI.17 shows the (average) actual ratings and (average) predicted ratings based on a panel regression of sovereign ratings on a set of economic variables for a relatively large sample of emerging market economies. The model predicts average ratings of foreign currency sovereign debt quite well during the 1995–2001 period. However, predicted ratings in the out-of-sample window, 2002–05, tend to be higher than actual average ratings during this period. For the entire sample of countries, the model suggests that, by 2005, the average rating on foreign currency sovereign debt would have approached BBB, about one notch higher than the actual average level, closer to BBB–. At the same time, different model specifications yield less clear results. For example, if those countries that maintained an investment grade rating throughout the 1995–2005 period are excluded from the regression, the difference in actual and predicted ratings is no longer evident.

... may mask the improvement in fundamentals

Even taking such a tightening of rating criteria at face value, the change would not be sufficient to account for the whole of the spread compression. The



centre panel of Graph VI.17 links spreads to fundamentals directly, bypassing ratings. Predicted spreads in the 2002–05 period are higher – by about 90 basis points at the end of 2005 – than average actual spreads across the sample of countries. Yet, as shown in the right-hand panel, changes in criteria used by rating agencies account for, at most, around half of this.

On balance, comparisons of emerging market spreads across time and with credit ratings suggest that both an improvement in fundamentals – perhaps beyond what is reflected in sovereign ratings – and an increase in investors’ appetite for risk have helped to drive spreads to their current low levels. To the extent that, by early 2006, spreads had tightened beyond levels indicated by economic fundamentals, this suggests that emerging markets were becoming more vulnerable to a repricing.

## VII. The financial sector

### Highlights

There was little change in the general picture of the financial sector in industrial economies during the period under review. Positive performance in most lines of business continued. Profitability was helped by growth in the demand for credit and for other services related to capital market activities, by the abundant supply of liquidity and by the very favourable credit environment. In those cases where risks materialised, institutions were able to withstand them. Capital cushions appear sufficient to absorb the impact of possible adverse developments in the immediate future.

The potential sources of vulnerability remain inextricably linked to future macroeconomic developments and the pace of adjustment of financial imbalances. Signs suggesting a slowdown in certain types of activity and increasing risks in others did emerge. Institutions remain exposed to common risks associated with a likely return of interest rates to more normal levels and a potential turn in the credit cycle. Bank exposures to real estate risk have intensified and the possibility of a decline in credit growth could put pressure on bank profits.

Overall, the coming years are likely to be more challenging for the financial sector than the recent past. This puts a premium on proper risk management and on preparations to deal with expected and unexpected sources of strain. Risk management from the perspective of the financial system as a whole depends critically on the quality of information available to market participants regarding the financial condition of peers and counterparties. A smooth interface between financial reporting standards, financial risk management practices in individual firms and the prudential framework can be a source of strength for the financial system. The last section of this chapter explores these issues in some detail.

### The performance of the financial sector

The generally positive performance of financial firms continued during the year under review. With few exceptions, profitability remained high and sectors facing adverse circumstances were able to confront them without undue strain. The continuing intensification of competitive pressures, however, led to a further compression of margins, compensated for by rapid growth in business volumes. This growth could be vulnerable to shifts in the macroeconomic environment.

## Commercial banks

Strong profits  
despite narrowing  
interest margins

Banks in most regions posted strong performance, extending the trend of the past several years. Net interest margins narrowed further, reflecting competitive pressures and flattening yield curves, notably in the United States. The growth of interest revenue was thus driven by rapid loan extension compensating for narrower margins. The return on assets changed little, largely as a result of falling operating costs and minimal provisioning expenses, while the contribution of non-interest income remained stable (Table VII.1).

US banks reported record earnings in 2005, with return on assets and return on equity only slightly below their historical peak in 2003. Major European banks also witnessed strong returns, although intertemporal comparisons are complicated by the fact that most accounts were reported for the first time under International Financial Reporting Standards (IFRS). While there was an impact on reported figures, including net interest margins, impaired loans and capital, the transition does not appear to have imparted undue volatility to financial statements.

Growth in retail  
business ...

The retail business remained central to banks' good financial performance. In many countries, mortgages dominated loan growth. In France and Spain, the rapid pace of mortgage lending boosted revenue against the backdrop of buoyant housing markets. In addition, asset management and the sale of pension and insurance products contributed to non-interest income. The continued expansion of the retail business showed few signs of abating, and may well advance further in countries where personal indebtedness remains relatively low, such as Italy.

... and credit  
demand

Credit growth proceeded at various speeds in different countries, conveying a mixed overall picture (Graph VII.1). Countries with weak credit

### Profitability of major banks<sup>1</sup>

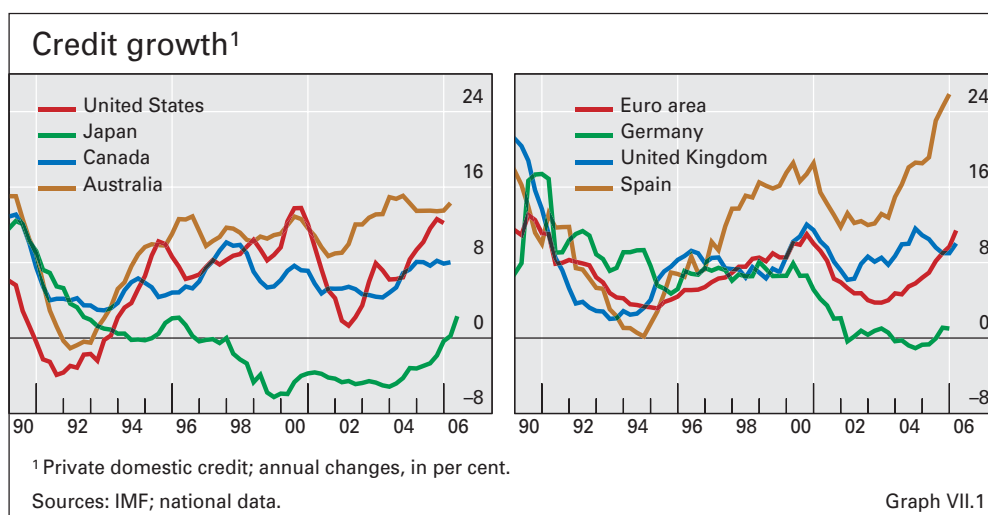
As a percentage of total average assets

	Pre-tax profits			Provisioning expenses			Net interest margin			Operating costs		
	2003	2004	2005	2003	2004	2005	2003	2004	2005	2003	2004	2005
United States (12)	2.20	1.81	2.06	0.37	0.24	0.23	2.99	2.86	2.65	3.77	3.75	3.32
Canada (5)	1.08	1.23	1.01	0.25	0.06	0.10	2.16	1.99	1.79	3.26	2.93	3.00
Japan <sup>2</sup> (15)	0.11	0.26	0.84	0.81	0.47	0.22	1.08	0.98	1.07	2.14	1.59	1.42
Australia (4)	1.63	1.48	1.76	0.23	0.18	0.16	2.33	2.09	2.06	2.39	2.18	2.08
United Kingdom <sup>3</sup> (9)	1.24	1.16	0.99	0.43	0.30	0.29	2.12	1.78	1.44	2.62	2.25	1.80
Switzerland <sup>3, 4</sup> (5)	0.42	0.67	0.67	0.03	-0.01	-0.01	0.99	0.87	0.65	2.78	2.46	2.39
Sweden <sup>3</sup> (4)	0.87	1.04	0.91	0.11	0.03	0.00	1.61	1.43	1.02	1.63	1.40	1.05
Austria <sup>3</sup> (3)	0.61	0.78	0.85	0.37	0.34	0.31	1.86	1.83	1.64	2.58	2.41	2.09
Germany <sup>3, 4</sup> (9)	0.04	0.17	0.41	0.28	0.23	0.08	0.81	0.73	0.66	1.58	1.48	1.25
France <sup>3, 4</sup> (7)	0.68	0.80	0.70	0.19	0.11	0.07	1.17	1.03	0.85	2.07	1.80	1.36
Italy <sup>3</sup> (6)	0.80	0.87	1.07	0.51	0.42	0.21	2.12	1.92	1.63	2.99	2.65	1.99
Netherlands <sup>3, 4</sup> (4)	0.69	0.51	0.60	0.21	0.08	0.06	1.69	1.30	1.11	2.12	1.56	1.35
Spain <sup>3, 4</sup> (5)	1.61	1.37	1.46	0.49	0.35	0.30	3.02	2.29	2.07	3.17	2.49	2.17

<sup>1</sup> The figures in parentheses indicate the number of banks included. <sup>2</sup> For 2005, annualised ratios based on bank reports for the first half-year. <sup>3</sup> 2005 figures are based on IFRS. <sup>4</sup> Preliminary data for 2005.

Source: Fitch Ratings.

Table VII.1



growth saw some improvement, while others, including Australia, Canada and the United Kingdom, experienced a modest slowing. The euro area's robust credit growth rate of 11% conceals substantial differences among countries. Whereas lending in Germany remained almost flat, the acceleration of lending was great enough to strain deposit funding in Spain, where banks benefited from solid growth both at home and in Latin America. Lending to businesses gained momentum on both sides of the Atlantic. Lending standards vis-à-vis firms eased, while those vis-à-vis households were reported to be broadly unchanged. In the United States, the rate of growth of corporate lending reached the pace of mortgage lending, while consumer lending slowed.

On the cost side, banks continued to reap the benefits from past restructuring and rationalisation, while the favourable credit environment helped further reduce the ratio of non-performing loans, especially on commercial loans and mortgages. Correspondingly, loan loss provisions drifted towards historically low levels in a number of countries as banks were not affected by any major credit events. Indeed, no US bank failures have been recorded since 2004, the longest period without a failure in more than 70 years. Diversification across locations and business lines helped banks overcome various challenges, including natural disasters, litigation and the flattening yield curve. US credit losses were largely confined to consumer loans, especially credit cards. Changes in bankruptcy laws can only partly account for the surge in personal bankruptcy filings in late 2005, given that consumer finances appear generally stretched. The credit cycle appears to have turned already in the United Kingdom. Higher interest rates and utility bills, coupled with the cooling housing market, strained highly indebted UK consumers. The number of personal bankruptcies rose, and with it the arrears and provisions banks recorded for personal loans, including credit cards. But UK banks' profitability, cost efficiency and diversification are expected to allow them to cope with any likely deterioration.

The easing of credit-related costs was a source of strength in Japan. Having posted the best performance in recent memory, Japanese banks left more than a decade of weakness behind them. Falling loan loss charges helped place net income firmly in positive territory. The improved condition of

Low credit costs

Stronger balance sheets in Japan



corporates further eased the problem of non-performing loans (NPLs). The ratio of NPLs to total assets for major banks continued to decline. Retained earnings also improved the quality of their capital base, with the share of public funds in Tier 1 capital receding to below 20%. The return to profitability was enhanced by unrealised gains on equity holdings, which are expected to outweigh potential losses in bond portfolios in the event of rising interest rates (see Chapter IV). Most importantly, the broad economic recovery carries the prospect of a resumption of profitable lending, as loan growth turned positive for the first time since 1994.

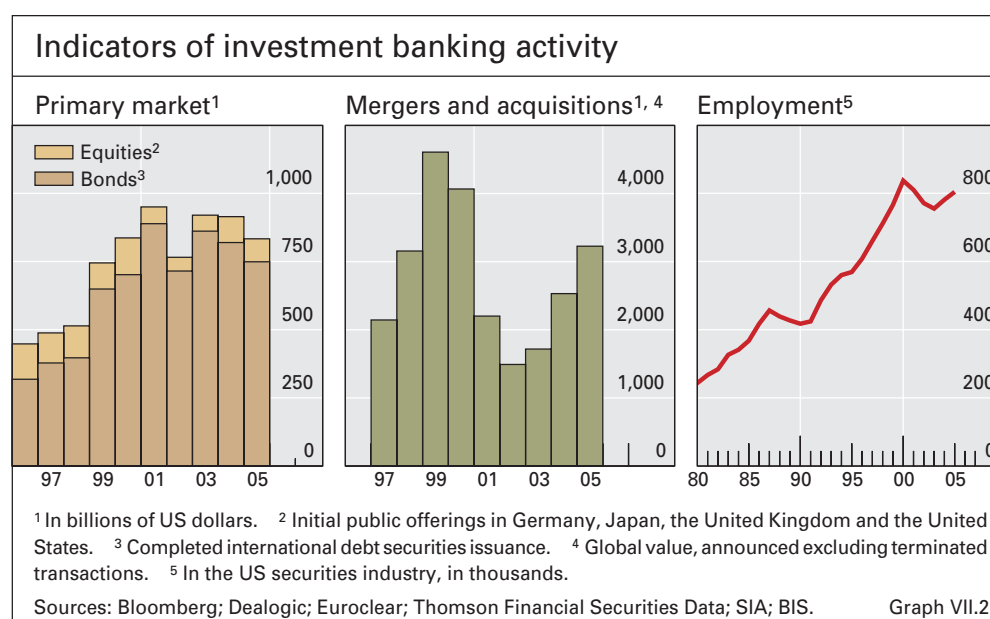
Consolidation in Europe

The pursuit of growth through retail banking activities and the promise of cost efficiencies associated with greater size have maintained interest in consolidation within the banking sector. The previous wave of domestic consolidation among larger banks in the United States left room for small and medium-sized deals focused on achieving better geographical diversification. The changes in the European competitive landscape were more diverse. The integration of smaller domestic retail banks into cooperative networks proceeded further in France and Germany. The number of larger cross-border transactions, however, was a novelty. Italian banks were key participants in many cases, either as targets or acquirers, but a number of deals involved banks on the periphery of the euro area.

#### Investment banking

M&A activity boosted profits

Investment banks enjoyed a year of exceptional performance. Return on equity was in the range of 15–30%, reflecting unusually high profits across a range of business lines. In addition to traditional investment banking revenues, many houses succeeded in generating sizeable trading profits. An important driver of the former was the boom in mergers and acquisitions (Graph VII.2; see Chapter VI). M&A activity contributed to both the advisory business and the bond underwriting business needed to finance the deals. Analysts expect



activity to remain strong in view of the level of corporate profits and the pipeline of potential deals, where size and tolerance for leverage appear to be rising.

The fees earned in underwriting and M&A advisory services were concentrated among the top-tier investment banks. The same houses also financed larger positions through repo borrowing than had been the case in previous years. Buoyant trading in commodities and energy-related securities, as well as business linked to the activities of private equity funds, provided important new sources of revenue. Investment banks also benefited from other business lines, including underwriting credit products and offering broking services to hedge funds. The industry is in the process of expansion and is actively recruiting staff, reversing much of the downsizing that took place early in the decade.

Expansion

### Hedge funds

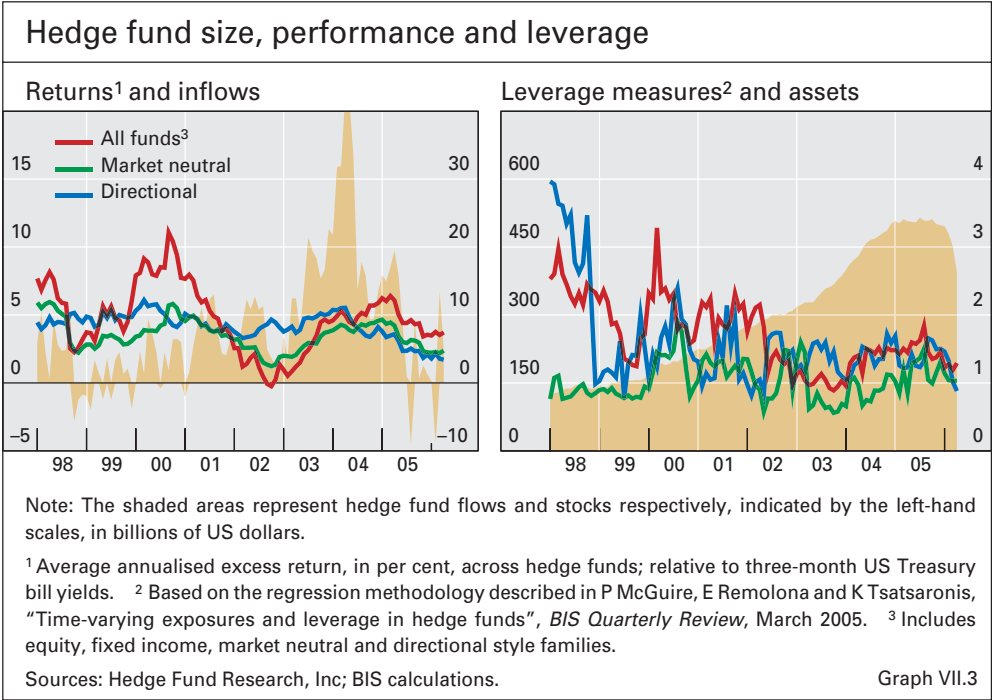
Following a period of rapid growth during the first half of this decade, the hedge fund sector during the past year experienced the downside of success. There was a decline in financial performance and a slowdown in new investments, while the interest of institutional investors elicited further changes in operating frameworks.

Performance slipped across the range of hedge fund investment styles during 2005. This arguably reflected an increasingly crowded field, with many managers seeking to exploit a limited set of profitable investment opportunities (Graph VII.3). A further sign of this crowding was the narrowing of the performance range across a variety of investment strategies.

Hedge fund performance slipped ...

Mirroring this lacklustre performance, investor interest, as measured by the rate of inflows into the sector, also cooled. For the first time since the LTCM episode, the sector witnessed net outflows for several months during

... inflows slowed ...



2005. In addition, fewer new funds were created to replace normal rates of attrition.

... and funds' profile became more conventional

Despite the slowdown in performance, signs that hedge funds have become an acceptable investment option for mainstream institutional investors multiplied. Ties between the sector and more established firms engaged in asset management or private banking services continued to deepen, with many such firms including hedge fund investments in the portfolio of products offered to clients. In many cases this involved the outright purchase of existing funds-of-funds operations by those players. The secular narrowing of the range of volatility recorded in individual fund returns over recent years is another consequence of the influx of institutional money in the sector, as it has implied more exacting requirements for risk management, reporting and consistency in investment strategy.

### *Private equity*

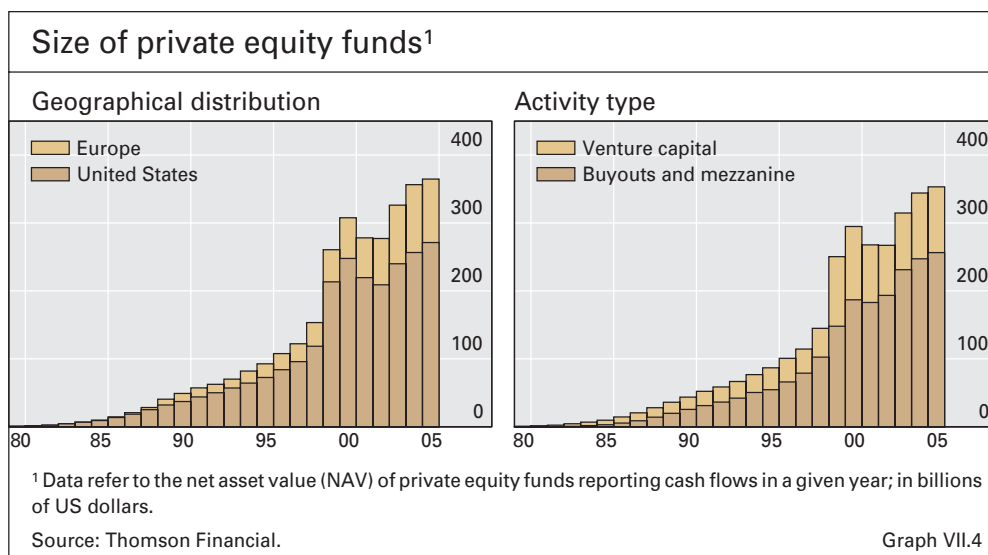
The past few years have witnessed major growth in the activity of private equity funds. This increase has manifested itself both in their fund-raising activities and in their involvement in corporate control transactions. A number of factors can account for this intensified interest in private equity investments, including investor disappointment with public equity markets after the collapse of the technology bubble, the low-yield environment and extremely favourable liquidity conditions. At the same time, this boom in activity has raised some concerns about its potential financial stability implications, given the important role of leverage in private equity investment strategies.

Private equity fund structures ...

Private equity funds are investor pools that specialise in providing equity financing to high-risk and information-intensive companies. There are two main types of funds. The first provides financing to companies that have no access to publicly traded equity markets, such as new entrepreneurial ventures with high growth potential but no established track record, or medium-sized firms requiring financing to overcome financial distress, alter their capital structure or acquire another company. The second type specialises in buyouts of public companies which are subsequently delisted. Typically, buyouts are partly financed with debt, substantially raising balance sheet leverage at the acquired company. Financial benefits come in the form of dividends over the medium term and from the receipts of the eventual sale of the company, either in the private market or through an initial public offering.

... reward risk-taking

Private equity funds are organised in the form of limited partnerships, and partners' incentive structures resemble those of other aggressive investment vehicles such as hedge funds. The transactions in which the funds participate put a premium on financial acumen, managerial skills and entrepreneurship, since the partners are actively involved in the management of the companies in which the fund invests. Partners are rewarded by generous fee structures and performance-related pay, as well as by the expectation of sharing with outside investors a high targeted internal rate of return on invested assets. The funds raise financing from high net worth individuals and a variety of institutional investors, such as pension funds and endowments, as well as from other financial or non-financial firms.

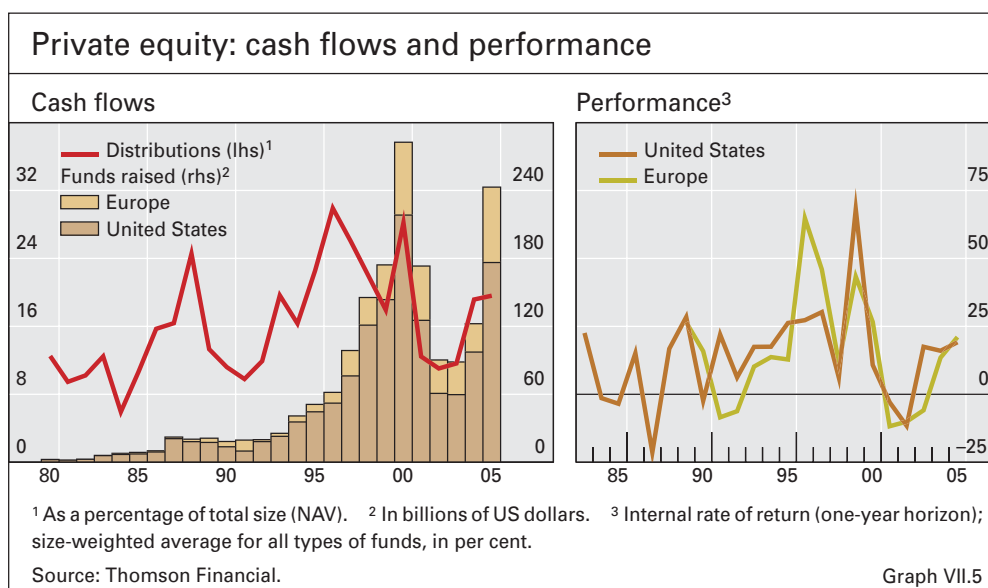


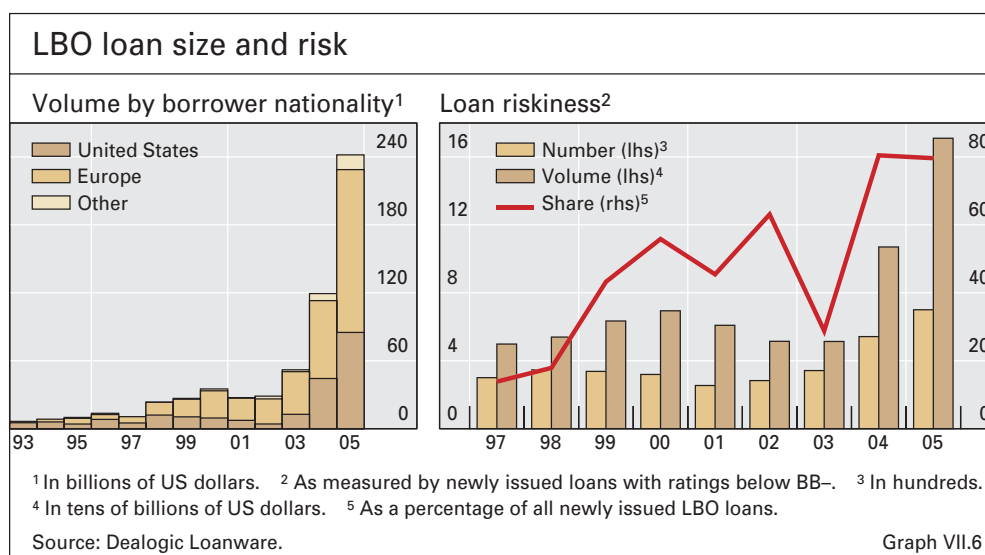
There has been a very significant increase in the size of the private equity sector since the late 1990s. A period of rapid growth in the assets under management for all categories of funds during the technology investment boom was followed by a mild and temporary slowdown before growth resumed in the last two years (Graph VII.4). Even though the majority of funds operate in the United States, European funds have grown more strongly recently. Buyout funds have historically represented the majority of private equity sector assets. A slight decline in their overall share around the peak of the internet investment bubble has reversed itself on the heels of the recent resurgence of corporate M&A transactions (see Chapter VI).

Recent boom in activity ...

Over the past two years funds raised globally have surged, reaching \$240 billion in 2005, a figure surpassed only in 2000, the peak year of the technology sector boom (Graph VII.5). Cash payouts to investors have also followed a similar pattern, albeit displaying more pronounced volatility. There

... fund-raising ...





is anecdotal evidence, however, that individual funds may currently favour a more accelerated schedule of distributions to investors and partners over a backloading of payouts in line with the revenues from the eventual disposal of their investments. The high average rates of return on private equity funds explain the interest of outside investors, despite the associated volatility and relative illiquidity (Graph VII.5, right-hand panel).

... and LBO-related financing

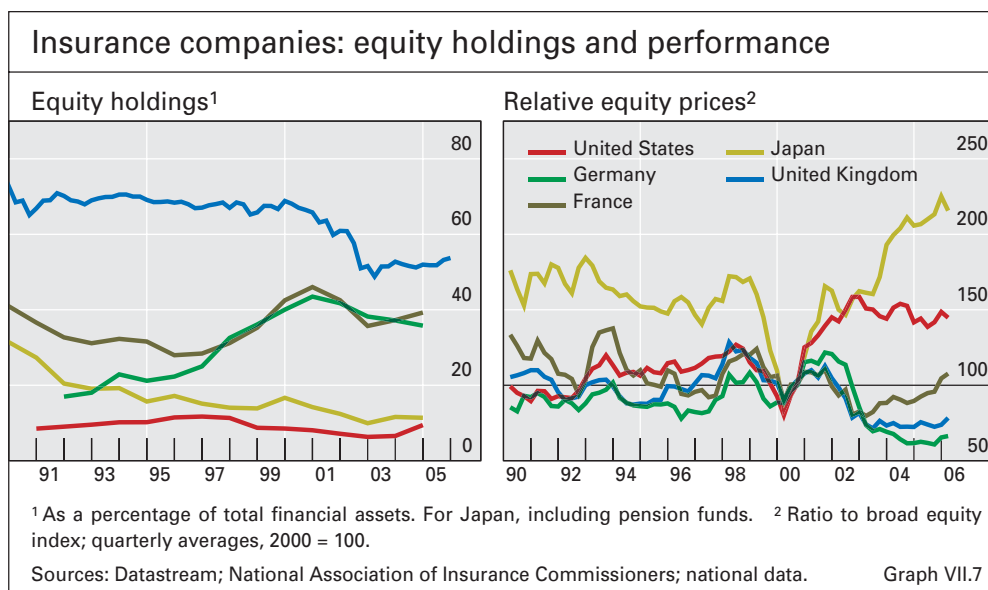
Cycles in the activity of private equity funds are related to the availability and cost of financing as well as the general trends in corporate balance sheets. Leveraged buyouts (LBOs) are encouraged by low interest rates, and usually target companies with underperforming shares due to a conservative capital structure. The previous periods of heightened LBO activity coincided with market innovations, such as the boom of junk bonds in the late 1980s and the internet venture capital boom of the late 1990s. Low financing costs and more relaxed attitudes towards risk and leverage also seem to be important drivers in the current cycle. The recent surge in the volume of LBO-related international syndicated loans has been impressive, with facilities exceeding \$240 billion in 2005, in their majority arranged on behalf of European borrowers (Graph VII.6). Just as significant has been the decline in the credit quality of these facilities. About 80% of all loans associated with LBOs are characterised as high-yield facilities, more than six times the corresponding share in the overall syndicated loan market.

### *Insurance companies*

Favourable financial market conditions boosted the performance of life insurance companies in 2005. By contrast, the year 2005 was the costliest ever for the non-life and reinsurance sectors, mainly owing to large claims related to natural catastrophes.

Life insurers built on strength

The financial strength of life insurers continued to improve. Positive stock market performance led to better investment results and improved capital buffers (Graph VII.7). Japanese life insurers increased their solvency margins, as premium income rose, the number of policy cancellations declined and the



rising stock market generated unrealised capital gains. With-profits unit-linked insurance products gained popularity in the United Kingdom and France on the back of improved expectations of stock market returns. However, low long-term interest rates still burdened some European life insurers with the legacy of high guaranteed rates, so that solvency pressures did not disappear entirely.

Strong competition, improved capitalisation and the pursuit of operating efficiency encouraged consolidation in the life sector. In Europe, over the past two years, this trend mainly took the form of small-scale mergers and acquisitions. By contrast, major US financial and non-financial groups spun off their life insurance arms or sold them to other insurers.

A potential risk faced by life insurers stems from the slow pace at which projected increases in longevity risk are being incorporated into balance sheet valuations. In addition, risk transfer mechanisms for this type of risk have yet to mature. Demand for longevity bonds remains limited, as does the capacity of the reinsurance sector to underwrite this risk.

The non-life insurance sector faced record claims in 2005, expected to be about double the amount in 2004. Three Caribbean hurricanes accounted for the majority of global insured losses. As a result, US property and casualty insurers suffered their largest catastrophe losses, relative to the size of the industry, since the 1906 San Francisco earthquake. Despite the ensuing decline in underwriting profits, the US non-life sector proved resilient, helped by growth in investment income and risk transfer to the reinsurance sector.

Strong investment income and sufficient diversification helped most reinsurers to cope with the elevated catastrophe claims of last year. However, a number of Bermuda-based specialist reinsurers suffered a deterioration of their capital and rating downgrades. An upward trend in insured losses, owing to the increased severity of storms, higher population density and a boom in coastal area property values, presents a continuing challenge to the sector.

The European insurance sector faces a number of challenges associated with changes in the institutional framework. Progress in the Solvency II project

Non-life sector confronted record claims ...

... successfully

Regulatory challenges in Europe

continued with active discussion between officials and the sector in the period under review. The project is likely to increase the industry's focus on risk management. In terms of implementation, the new regulatory framework regarding solvency requirements for European insurance companies will interact with the proposed changes in financial reporting standards. The adoption of IASB standards in Europe started in 2005, and its impact remains unclear. The current stage of implementation can lead to earnings volatility, as the extension of the fair value attribution principle to further categories of insurance company assets might not be matched by existing valuation principles applied to liabilities. In anticipation of the possible full implementation of fair value accounting for liabilities as well, insurance companies have focused on matching assets and liabilities by investing more in long-term bonds and reducing their exposure to equities (see Chapter VI).

### *Pension funds*

Underfunding of pension funds

A series of developments affecting corporate pension funds have attracted the attention of analysts and regulators in recent years. Funding levels have deteriorated as a result of the low-yield investment environment that prevailed in the early years of this decade. Low returns on asset portfolios were reinforced by the inflating effect of low discount rates on the value of liabilities. The impact of this constellation of factors was compounded by the fact that many sponsors had taken advantage of the very favourable investment environment during the second half of the 1990s to reduce contribution levels on the basis of optimistic extrapolations of exceedingly high levels of return.

Changes in the regulatory framework ...

A number of important changes in the institutional framework that governs occupational pension schemes are expected to have a lasting influence on their profile and investment behaviour. In a number of jurisdictions, new regulations are being implemented that reduce the permissible level of pension plan underfunding before the sponsor is required to increase contributions. In addition, new accounting standards move towards greater use of current market valuations for assets and liabilities related to post-employment benefits. This restricts sponsors' discretion to use projected returns for assets and to smooth over time the discount rates for liabilities.

... may affect asset allocation ...

The immediate effect of these changes has been an increased awareness among companies and their external stakeholders of the magnitude of the issues related to unfunded pension liabilities. The new standards emphasise the importance of sound risk management as regards these liabilities, and should improve the transparency of links between pension plan performance and company earnings. They appear to have also affected investment decisions by the plans. Increased portfolio allocations to longer-term fixed income securities are seen as an attempt to immunise the volatility of pension liabilities resulting from changes in the level of interest rates (see Chapter VI).

... and fund structure

These structural changes are likely to accelerate the shift away from defined benefit towards defined contribution plans, which has been under way in many countries for some time. Questions posed relate to the implications of these changes for the demand for various asset classes and for market dynamics. A more general issue is whether these changes will have a broader



effect on financing patterns in the economy and the types of investment favoured by the markets.

## Vulnerabilities

Looking forward, the main sources of vulnerability relate to the speed with which the current environment of abundant liquidity may change. This could have implications for the sustainability of the balance sheet positions of households and firms, were a reversal in liquidity conditions to bring about abrupt changes in asset prices, with attendant effects on the soundness of financial institutions.

### *Potential sources of pressure on bank profitability*

Persistent high levels of overall bank profitability in recent years against a backdrop of a favourable economic environment raise the question of their long-term sustainability. The issue is particularly important in the light of possible increases in interest rates or less favourable capital market conditions. Developments affecting interest margins and credit risk are likely to generate more uncertainty about future bank performance in the years ahead. Net interest margins in many countries have trended downwards since the 1990s, reflecting in part the intensification of competitive pressures. Meanwhile, fee revenue associated with increased retail banking activity has contributed to an upward trend in non-interest income. Together with these secular movements, the components of banks' profits have fluctuated depending on cyclical changes in income, credit and the interest rate environment.

Trend decline in interest margins

The historical relationships between components of bank profitability and overall macroeconomic indicators can provide some guidance as to the potential risks to bank profits associated with future economic developments (Table VII.2). Typically, interest margin income responds positively to higher

Higher interest rates help margins ...

Sensitivity of income to cyclical conditions <sup>1, 2</sup>							
	Net interest margin			Non-interest income <sup>3</sup>	Loan loss provisioning <sup>3</sup>		
	Yield spread <sup>4</sup>	One-month rate	GDP growth	Stock market turnover to GDP	One-month rate <sup>5</sup>	GDP growth <sup>5</sup>	Equity return
United States (12)	19.4**	11.7*	-5.4	0.3**	3.9**	-2.6	-0.9**
Canada (5)	15.8**	7.0**	-5.7**	1.1**	5.3**	-3.5**	-0.6**
United Kingdom (9)	8.6**	10.0**	4.3	-0.1**	6.0**	-7.1**	-0.3**
Germany (9)	22.2**	23.3**	-4.0*	0.1	0.8	-1.7*	-0.2**
France (8)	26.7**	27.6**	-4.5	0.8**	4.3**	-0.5	0.2**
<p>Note: The coefficients denote the change in basis points for a 1 percentage point change in the corresponding variable; * and ** indicate statistical significance at the 10% and 5% level respectively.</p> <p><sup>1</sup> The figures in parentheses indicate the number of major banks included. <sup>2</sup> Fixed-effects panel regression on a constant, bank-specific loan-to-asset ratio and the macroeconomic variables. Sample period: 1990/91 to 2004/05, annual. Macroeconomic variables are annual averages. <sup>3</sup> Normalised by total assets. <sup>4</sup> Benchmark 10-year yield minus one-month yield. <sup>5</sup> Lagged by one year.</p> <p>Sources: Fitch Ratings; national data; BIS calculations.</p>							

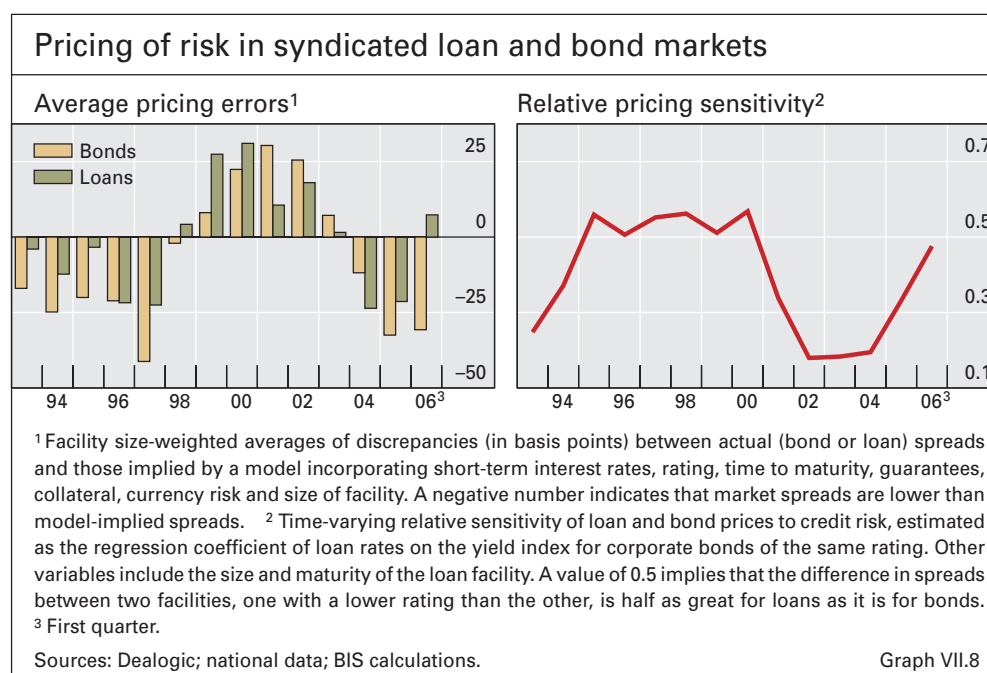
Table VII.2

interest rates and a steeper yield curve, as bank lending rates adjust faster than those applied on their liabilities (Table VII.2, left-hand panel). North American and UK banks' margins seem to be less sensitive to yield curve gyrations than those of their continental European counterparts. A likely explanation could be the stronger competition for traditional bank products in North America and the prevalence of floating rate lending in the United Kingdom. Higher interest rates and a slowdown in economic activity are associated with higher credit costs, typically with some lag (Table VII.2, right-hand panel).

... but also increase provisions

These past patterns could serve as the basis for outlining the potential impact on bank profits from likely macroeconomic developments in the coming years. Higher interest rates will probably bolster net interest margins, especially in continental European countries, while a flattening of the yield curve will have an offsetting influence. At the same time, though, rising interest rates may also lead to higher loan loss provisioning expenses, offsetting some of the possible gains on interest revenue. Provisioning expenses typically rise in an economic slowdown, a prospect that could entail difficulties across business lines.

Moreover, following a period of generous loan pricing, the spreads built into banks' loan books may not fully compensate for higher provisioning expenses once credit quality deteriorates. Recent developments in the syndicated loan market suggest that the pricing of loans is now becoming more risk-sensitive, reverting towards values closer to the average over the credit cycle (Graph VII.8). However, as the stock of loans arranged over the 2002–04 period enter the phase in their life cycle when higher default incidence is typically observed, their particularly low spreads may weigh on bank earnings. These considerations suggest caution in projecting current performance to the near future.



### Exposure to property markets

Property-related activity represents a rapidly growing component of banks' business and profits at the current juncture. The rate of growth of property-related lending has outpaced that of corporate or consumer lending in many countries. This raises the risk of potential problems arising either from an overextension in the commercial property market or from a cooling in the residential property segment. Indeed, the latter has been showing signs of slowdown after many years of exceptional growth.

In most countries, the commercial real estate sector has recovered from weak fundamentals. In particular, vacancy rates have declined and property prices have bounced back compared to 2004 (Table VII.3). At the same time, commercial real estate exposures have grown rapidly relative to capital and assets in many countries. In the United States, for instance, commercial real estate lending has increased by 80% during the past five years, and now represents 13.5% of commercial banks' total assets, matching the level at the peak of the previous cycle in 1988. Similarly, in the United Kingdom, nearly 40% of banks' lending to non-financial firms goes to real estate companies, up from about 20% five years ago. Even Japanese banks witnessed an extraordinary 44% jump in new loans to real estate companies in the third quarter of 2005 to ¥2.7 trillion, a growth rate reminiscent of the boom in the latter half of the 1980s.

Commercial real estate exposures are higher ...

Commercial property prices <sup>1</sup>							
	Nominal change <sup>2</sup>			Level <sup>6</sup>	Memo: Office vacancy rates <sup>7</sup>		
	1996–2004	2004	2005	2005	2003	2004	2005
United States	2.5	4.0	12.0	38.6	16.7	16.0	14.5
Japan	–9.0	–9.6	–7.0	29.0	8.5	7.2	3.9
Germany	–1.2	–4.1	–5.0	38.6	9.8	11.4	11.6
United Kingdom	3.0	7.6	13.4	37.8	11.3	9.8	7.3
France	2.6	1.5	5.8	63.0	6.0	6.6	6.5
Canada	3.8	2.3	9.3	78.5	15.6	14.4	12.1
Spain	1.8 <sup>3</sup>	5.1	8.0	98.6	7.7	8.4	6.1
Netherlands	2.9	–1.7	0.1	78.4	9.7	12.0	13.6
Australia	3.7	1.0	10.9	54.4	10.3	11.5	7.2
Switzerland	0.7	0.4	2.1	61.5	10.8	9.0	11.5
Sweden	2.6	–1.7	5.6	45.0	18.3	17.6	16.8
Norway	0.8 <sup>4</sup>	1.7	6.3	96.8	11.0	11.0	9.0
Denmark	1.3 <sup>4</sup>	–1.5	5.8	97.5	9.0	10.3	7.9
Finland	1.1 <sup>5</sup>	–2.2	0.1	90.4	7.0	9.5	9.0
Ireland	12.1	1.3	16.7	93.9	17.5	16.7	15.2

<sup>1</sup> For Australia, prime property in major cities; for Japan, land prices. <sup>2</sup> Annual changes, in per cent.  
<sup>3</sup> 2000–04. <sup>4</sup> 1999–2004. <sup>5</sup> 1997–2004. <sup>6</sup> Peak period of real commercial property prices = 100.  
<sup>7</sup> Immediately vacant office floor space (including sublettings) in all completed buildings within a market, as a percentage of the total stock. For Switzerland and the United States, nationwide; for Australia, France, Germany, the Netherlands and Spain, average of major cities; for other countries, capital city.

Sources: CB Richard Ellis; Investment Property Databank Ltd; Japan Real Estate Institute; Jones Lang LaSalle *Asia Pacific Property Digest*; National Council of Real Estate Investment Fiduciaries; Wüest & Partner; national data.

Table VII.3

... and more concentrated

In the United States, commercial real estate lending is highly concentrated in certain groups of banks. Increases have been most remarkable among small and medium-sized banks, for which commercial real estate lending now accounts for approximately 30% of total assets. By contrast, the exposure of large banks is rather modest, with an average ratio of 8.6%.

The high exposure to the commercial real estate market could represent a potential threat to financial stability, in particular given the high degree of concentration of exposures. The low interest rate environment over recent years has reduced borrowers' loan payments and boosted cash flows, contributing to record low default rates on commercial real estate loans. Were interest rates to rise, loan quality might well deteriorate. Indeed, regulators in the United States and Japan have already expressed concerns about some banks' lending standards for commercial property loans.

Despite some similarities with the early 1990s, however, the current situation is unlikely to lead to similar strains. First, the commercial property cycle was at a peak in the previous episode but is currently rising from a cyclical bottom, suggesting a low risk of widespread defaults among borrowers in the event of a price decline. Second, the continuing growth of publicly traded real estate securities markets allows part of the associated credit risk to be spread more widely across investors, and has arguably had a tempering influence on commercial real estate cycles.

A possible softening in housing markets ...

On the residential side, the demand for housing finance has been cooling in some countries but remains robust in others, mirroring mixed developments

Residential property prices and mortgage debt					
	Residential property prices <sup>1</sup>				Change in residential mortgage debt 2005 <sup>2</sup>
	Annual change		Change from peak 2005	Date of peak	
	1996–2004	2005			
United States	7.1	13.0	0.0	2005 Q4	4.6
Japan	–3.9	–4.7	–40.0	1991 H1	–0.0
Germany	–0.9	–2.1	–9.7	1995	0.4
United Kingdom	12.3	2.2	–0.5	2005 Q3	4.7
France	9.2	9.0	0.0	2005 H2	3.1
Italy	6.4	7.2	0.0	2005 H2	2.0
Canada	5.5	10.5	0.0	2005 Q4	1.7
Spain	11.1	12.9	0.0	2005 Q4	9.4
Netherlands	9.0	6.4	–0.6	2005 Q3	6.0
Australia	10.1	2.3	0.0	2005 Q4	3.9
Switzerland	1.6	1.5	–10.0	1989 Q4	2.8
Sweden	8.6	10.5	0.0	2005 Q4	4.0
Norway	7.9	7.5	–0.7	2005 Q2	1.6
Denmark	6.7	21.3	0.0	2005 Q4	7.2
Finland	7.2	9.0	0.0	2005 Q4	3.4
Ireland	14.0	9.4	0.0	2005 Q4	9.6
<sup>1</sup> End of period; nominal changes, in per cent; for Japan, land prices. <sup>2</sup> In percentage points of GDP.					
Sources: OECD; various real estate associations; national data; BIS estimates. <span style="float:right">Table VII.4</span>					

in house prices (Table VII.4). In the United Kingdom and Australia, house prices increased slightly during 2005, while Germany and Japan, which have not recovered from the previous cycle, experienced further price declines (see Chapter II). By contrast, in most other European countries, housing markets remained buoyant. The same was also true for the US market for most of the year, even though since the end of 2005 there have been indications of an impending weakening, as signalled by a slowdown in mortgage applications and in sales of existing homes.

The characteristics of housing finance have recently changed in a number of countries. Relaxation of lending standards due to competition and greater reliance on securitisation has contributed to a significant increase in lending to more risky households. US subprime mortgage originations in 2005 rose to seven times their 2000 volume. Mortgages to borrowers with a poor credit history have also expanded significantly in the United Kingdom. Moreover, mortgage products with flexible repayment options have increased several times over. About one third of total US mortgage originations in 2005 had interest-only options, compared to 1.5% in 2001.

The pace of developments in house prices and interest rates is likely to determine the impact of the expected adjustment in those countries where residential real estate valuations appear more stretched. Lenders seem sufficiently buffered against the direct impact of increased delinquency rates, which could result were the expiration of grace periods in earlier mortgages with flexible repayment contracts to coincide with higher interest rates. However, the indirect effect on banks from a potential economic slowdown, as a result of a contraction in consumer spending and construction activity, is likely to be more sizeable even if it remains more difficult to gauge (see Chapter II). This risk is more pronounced for economies where mortgage debt is at higher levels.

... will have an indirect impact on banks

## Financial reporting and financial risk management

A number of developments in the period under review focused attention on the influence that financial reporting standards exert on decision-making by firms and investors. Market observers debated the likely impact on earnings volatility and equity valuations of EU listed companies in the first year of implementation of international accounting standards. Similar debates surrounded the introduction of a number of new standards in the United States. Finally, as noted earlier, the implementation of new rules for pension plan accounting in a number of jurisdictions was thought likely to have a significant impact on the asset allocation decisions and risk-taking choices of employer-sponsored pension schemes.

New accounting rules ...

Broadly speaking, these developments implied a shift towards greater reliance on market-based and away from historical cost valuations for balance sheet and income accounting. Discussions between accounting standard setters and users focused on the possible impact on how businesses manage their risks. From the perspective of financial stability, the debate related to the economy-wide implications for the availability and use of risk capital as well as for the dynamics of asset prices.

... triggered debate

Financial  
reporting ...

These issues revolve around the two main economic functions of financial reporting, namely to provide information about the performance of employed resources and to facilitate their governance. Management of resources depends on proper and reliable measurement of inputs and ultimate results. Outside stakeholders, such as investors and regulators, rely on accurate and representative financial reports by the firm in forming an independent assessment of its current condition and future prospects as well as of how its performance compares to that of its peers and competitors. Moreover, formal intervention rules for the transfer of control over resources are typically based on accounting information. A case in point relates to the respective control rights of equity and debt holders in the event of default. Similarly, regulatory intervention rules are also conditioned on accounting valuations of assets and liabilities of the firm and on associated measures of risk.

... interacts with  
behaviour ...

There is a two-way relationship between accounting rules and behaviour. Accounting returns act as a focal point for outside stakeholders, including regulators, wishing to gauge the performance of a firm. As such, they inevitably condition the decisions of management. Conversely, the nexus of incentives that influences management behaviour also affects their attitude towards risk. The collective impact of changes and behaviour can in turn influence market prices and valuations. This is particularly true for those items in financial reports that include more forward-looking elements and assessments of risk.

... and risk  
measurement ...

The measurement of value is not an unambiguous scientific exercise, as it often entails judgment regarding future developments and the assessment of risk/reward trade-offs associated with a specific item. However, the capacity of financial reports' measures of value to reflect the available information has been enhanced as a result of complementary developments over the past three decades: the expansion of markets for risk transfer instruments and advances in risk measurement technology.

... through market  
prices ...

Markets for risk transfer have developed in both depth and breadth, expanding enormously the range of instruments available to facilitate the tailoring of financial risk to the specific needs and circumstances of individual market participants. Derivatives markets have blossomed, with the latest additions being those for the transfer of credit risk. Securitisation structures have increasingly been used to repackage and reallocate financial risk (see Chapter VI). Importantly, from the perspective of financial reporting, these innovations have generated readily observable market prices for an ever finer grid of risk classes. This has markedly improved the pricing of items that had hitherto been difficult to value.

Helpful as they might be in providing forward-looking valuations, market prices have a major shortcoming, namely their relative opacity as to the drivers of value. Observed prices contain risk premia that are directly related to market participants' views about the risk to future cash flows and their attitude towards risk-taking. Disentangling the relative influence of these two drivers of premia at a given point in time is a highly judgmental exercise, not least because they both vary over time (see Chapter VI). Risk assessments are subject to revisions in the light of new information. Investors' effective risk attitudes can be affected by market conditions, the availability and cost of external funding and recent



performance. Hence, market price variability can reflect, at least in part, temporary shifts in risk appetite as opposed to fundamental shifts in expected cash flows. More importantly, changes in market prices may feed back to the effective risk attitude of investors and lead to a more persistent impact on valuations.

Complementing the deepening of markets for risk transfer, advances in risk measurement technology have also contributed to the accuracy of valuations for complex and illiquid balance sheet items (“marking to model”). Innovations in the pricing of derivative securities have transferred successfully to other contexts, such as the valuation of credit risk and of embedded options in financial contracts. New modelling techniques provide valuable tools for firm-wide risk measurement and management. Increasingly, investment and hedging decisions are supported by asset and liability analysis based on forward-looking models of value and risk, calibrated on observed prices but often extrapolated to cover a broader range of instruments. Regardless of their sophistication, the validity of models depends critically on the validity of the assumptions on which they rest. Moreover, model-implied valuations are not immune to the influence of the same time-varying factors as market prices, since they are based on historical relationships between observed prices and are typically calibrated to reflect recent movements in those prices. Despite these shortcomings, however, risk models offer the promise of achieving a better understanding of the drivers of risk, as they lend themselves more readily to the identification and analysis of risk premia.

... and risk models

Different valuation principles rely variously on historical cost, market prices, models and internal assessments of value. By adopting different perspectives, they strike a different balance between desirable aspects of financial reports, namely accuracy, verifiability, reliability and comparability. For example, historical cost accounting produces highly predictable assessments of value over time that are tightly linked to easily identifiable past events. By contrast, valuation principles that depend on forward-looking assessments of value may be more responsive to current developments at the expense of potentially greater variation in values over time. The contrast is clearest in the case of financial securities for which daily fluctuations in market prices can at times lead to significant unrealised gains or losses if the portfolio is reported on the basis of historical acquisition costs. Moreover, while some principles allow the valuation of specific asset or liability items to depend on firm-specific inputs (eg own assessment of future benefits, discount rates based on portfolio characteristics, synergies with other assets), others such as fair value and historical cost seek to generate values that would be identical, regardless of the specific context. The greater relevance of values generated under the former principle from the viewpoint of internal decision-making comes at the cost of relatively greater dependence on internal models built around potentially opaque assumptions. The debate regarding the accounting for demand deposit liabilities of banks is a case in point.

Valuation principles have implications for ...

Accounting standards strive to provide a reporting framework which is neutral with respect to economic decisions. However, as noted above, the choice of valuation principle has important implications for behaviour at the



micro as well as at the macro level, especially as it relates to the treatment of risk information.

... governance of  
resources ...

The treatment of risk information in reporting standards has a significant influence on the governance of economic resources. The degree to which forward-looking assessments of value and risk are embedded in valuations influences the effectiveness of transfer of control rules included in the law or bilateral contracts. An obvious example is the paradoxical situation that can arise if the market value of an entity's liabilities is used to determine bankruptcy. In this case the deterioration in creditworthiness will generally increase the value of the firm since it will lead to a reduction in the value of its liabilities. Another example is given by the different implications of loan provisioning based on demonstrated signs of distress in individual loans, or on assessments of expected loss for a loan portfolio. While the former approach depends on backward-looking manifestations of risk, the latter involves forward-looking assessments of risk informed by the analysis of past experience. The nature of the adopted approach will influence reported income and capital for the bank over the business cycle and also condition the assessment of prudential authorities as to its soundness.

... and financial  
stability

The importance of these influences is further magnified when examined from a systemic perspective, where the endogenous character of risk is more evident. Behaviour that is rational from the point of view of an individual firm, which perceives market prices as invariant to its actions, can lead to inefficient aggregate outcomes when the compounded effect of individual actions feeds back to market conditions. One such example is the recent compression of rates at the longer end of the UK gilt yield curve as a result of the increased demand from pension funds attempting to hedge the risk of low discount rates on the mark to market values of their liabilities (see above and Chapter VI). Likewise, the procyclical variation of loan provisions based on point-in-time credit risk assessments can result in lending behaviour that amplifies business cycle volatility and increases financial system vulnerability.

Valuations are not  
unique ...

In sum, an analysis of the interaction between financial reporting, on the one hand, and risk measurement and management, on the other, highlights three main messages. The first is that valuations are not unique. Value is often dependent on the perspective from which it is measured. The value contribution of the same item may differ depending on the context. Moreover, even when performed from the same perspective, valuations are subject to variations due to time-varying risk premia driven by shifting investor risk attitudes that may be only indirectly related to changes in expectations about cash flows. These issues are magnified in the case of complex instruments for which there are no deep and liquid markets. This is precisely when accounting is most relevant.

... and are  
influenced by risk  
management ...

The second message is the key role played by assessments of risk. The link between risk measurement and valuations is explicit when models are used in deriving values; it is implicit when relying directly on market prices. Moreover, risk measurement and management practices have an indirect influence on reported values as they influence behaviour and asset prices. To the extent that accounting standards affect behaviour towards risk, they also influence valuations.

The final message is that a valuation approach that is best suited for one purpose might present complications for another. Given the multiplicity of external uses of financial reports, this issue can lead to tensions, including among policymakers with different objectives. These are discussed below.

... and different perspectives

#### *Financial reporting and prudential policy*

The discussion above suggests a number of issues pertaining to financial reporting standards which are relevant from a prudential policy perspective. These relate both to the information content of reports and to the prudential governance of financial firms.

A first point to make is that the information content of reported accounts could be enhanced by the inclusion of more systematic information about risk and uncertainty. Existing standards, regardless of the degree to which they incorporate forward-looking information, are predominantly focused on giving point estimates of current value and income. This could be supplemented by two additional types of information. The first could refer to estimates of the range of potential future variation of value and income (“risk information”). Examples of such statistical summary measures include value-at-risk as well as the outcomes of stress tests and other sensitivity analyses. The second type could refer to measures of the uncertainty embedded in the assumptions of the valuation methodology (“measurement error information”). Clearly the importance of this latter type of information is directly related to the extent to which assumptions and models are used in the assessment of the point estimates. Thus enhanced, financial reports would give users the opportunity to form a more rounded view of the condition and prospects of the firm and avoid a false sense of precision. They would also facilitate comparisons across firms, for example by investors seeking to optimise their portfolios or by regulators in the context of financial stability.

Enriched risk information in reports ...

A second implication for policy is the importance of seeking consistency between the treatment of accounting valuations and sound risk management principles. An example of the tensions that can arise in this context is the different treatment of demand deposits for financial reporting and for the cash and risk management of banks. Accounting standards treat deposit liabilities on the basis of their contractual maturity. By contrast, from a bank treasury perspective, in terms of liquidity management and the associated hedging strategy, they are treated as having a longer effective maturity, which is more in line with the historical behavioural patterns of depositors.

... greater consistency with business decision-making ...

A third and more general implication is that there is room for reconciling the policy objectives of prudential authorities and financial reporting standard setters based on a clearer understanding of their different perspectives. Under this approach, reporting standards would focus on providing an unbiased picture of the current financial condition of the firm and the associated risk profile, while regulatory and supervisory instruments would focus on encouraging prudent behaviour based on that picture. In practice, such a decoupling would include redesigning capital and liquidity cushion requirements on the basis of accounting returns free of intentional conservatism, applying “prudential filters” to accounting figures that incorporate risk information,

... and decoupling of accounting and prudential objectives ...

and defining new triggers for regulatory intervention in the case of manifest strain.

... are areas where  
despite progress ...

Progress has been made in all three directions in recent years. Quantitative financial risk disclosures, such as value-at-risk measures for securities portfolios, have already been included in regulatory reporting requirements of financial firms for which this type of risk has been more important. Accounting standard setters, too, have been paying more attention to risk disclosures that are consistent with, but arguably less ambitious than, those of prudential authorities. The prescriptions of IFRS 7 are a case in point. In addition, the classification of items being valued on a fair value basis into categories indicating different degrees of estimate reliability, coupled with rough estimates of the measurement sensitivity to underlying assumptions, is an example of progress in providing measurement error information. And the close cooperation between accounting standard setters and prudential authorities in the development of standards on provisioning, the fair value option and the measurement of insurance liabilities are but the latest examples of the value added by a greater focus on risk management.

... challenges  
remain

Regardless of the substantial progress made to date, the way forward needs to be based on a longer-term strategy which recognises the need to cooperate at all intermediate stages. Given the complexity of the issues and the multiplicity of stakeholders in this process, a decoupling of objectives and recalibration of policy instruments can only be a long-term goal. Over the medium term, progress can only be deliberately incremental, and appropriate safeguards should always be in place to avoid inadvertently compromising the fundamental objective of financial stability. The continuing dialogue between accounting standard setters and prudential authorities augurs well for further progress in this direction.

## VIII. Conclusion: coping with risks, today and tomorrow

Everyone would hope that, by this time next year, we will be as satisfied with the performance of the global economy as we are today. The consensus forecast and those of the IMF and OECD point in this direction, reflecting the expectation that recent more balanced growth among the industrial countries will continue and that domestic demand will play an even larger role in emerging market economies. Further good news is that global inflation is forecast to remain generally subdued. Financial markets seem to have shared this optimism. Indeed, low levels of volatility, at least until very recently, even seemed to imply an unusual degree of certainty about such an outcome. The markets, moreover, seem to have viewed recent moves to tighten monetary policy in many of the advanced industrial countries as appropriate, and likely to be growth-sustaining, rather than the opposite.

### What risks do we currently run?

Hopefully, the markets are right in their relatively optimistic assessment. Yet tightening credit conditions after such a long period of ease still allows for two kinds of error. First, it could be that monetary policy should have been tightened more, and earlier. One reason for believing this might be that underlying inflationary pressures are already well embedded. Another possibility is that relatively easy policies have continued to allow the build-up of a host of financial “imbalances” that are becoming increasingly dangerous as time passes. Both of these considerations would seem to call for more resolute monetary tightening. The second possible error is closely related: these imbalances might already have grown so large that monetary tightening could cause them to unwind, with negative effects on global growth and employment. This would argue for a more measured monetary response. Given significant uncertainty, and even overt disagreement among analysts as to the likelihood of either outcome, the only thing that is clear is that the coming year will not be an easy one for policymakers.

What grounds are there for believing that inflationary pressures might be greater than is currently thought? One obvious observation is that both the United States and Japan are judged by their own authorities to be close to full capacity, a traditional cause for concern. The United States, moreover, faces the risk of further substantial dollar depreciation, which could exacerbate such pressures. In addition, the global economy continues to grow exceptionally strongly, perhaps generating a dynamic that will prove hard to control. House

prices almost everywhere have been rising rapidly, and the prices of energy and other commodities have hit record levels. Wages in parts of China and some other emerging market economies have also been trending upwards, and Asia as a whole seems to be facing increasing inflationary risks.

Again, there are considerable uncertainties. To be more pessimistic, if the global disinflationary effects of lower-priced goods from emerging economies have been underestimated, then the consequences of the waning of this influence could also be unexpected. In addition, there is a great deal of uncertainty as to whether the world has hit a “tipping point” in its capacity to supply more oil and commodities, with the implication that prices might stay higher for longer than has historically been the case. To be more optimistic, there are still many lower-cost jurisdictions in the emerging market economies, not least central and western China, and production will eventually move there as well. And advancing technology could well compensate for the increased difficulty of finding new reserves of commodities. Yet both of these adjustment processes will take time. Given current levels of global demand, the risk would be continuing inflationary pressures in the interim. Moreover, to the extent that the credibility of central bankers has been enhanced by the earlier, fortuitous circumstances, this credibility could also be tested. It would, of course, need to be vigorously defended.

What grounds are there for believing that “imbalances” pose a threat to the optimistic view looking forward? It is not hard to identify a large number of significant and sustained deviations from historical norms in important macroeconomic variables. However, concerns about disruptive reversions to more “normal” values have to be qualified to the extent that such deviations can be explained and justified as being of a lasting nature. Unfortunately, recourse to such “fundamentals” does not seem adequate to explain either the extent or the duration of the unusual circumstances currently being observed. This leaves room for a complementary explanation: these phenomena might be linked to there having been such abundant global liquidity over such a long period.

Perhaps the most important example of “fundamentals” failing to adequately explain financial market developments is the long-term bond market in the United States. As policy rates rose, the long rate fell, a development once famously described as a conundrum. More recently, the maintenance of spreads on emerging market sovereign debt at very low levels, even as long rates have moved up, might be explained in terms of generally better domestic performance. Yet the sharp narrowing of the dispersion of yields between better and much worse performers remains a puzzle. Surging equity and house prices, almost globally, seem hard to reconcile with wide differences in domestic growth prospects. The explosion in merger and acquisition activity, particularly in Europe, also seems difficult to rationalise: what evidence is there of a sudden improvement in the prospects for adding value through restructuring, particularly since there still appears to be relatively little appetite for new investment?

And, finally, the strength of the dollar until very recently, in the face of a record US external deficit and unprecedented household debt accumulation, remains hard to explain. On close examination, fashionable arguments

based on the presumed existence of “dark matter”, an informal “marriage of convenience” between debtors and creditors, and the “inherent attractiveness” of highly productive US assets all fail to convince that current global imbalances are sustainable. To explain the dollar’s resilience, recourse must again be had to short-term interest rate differentials, in particular the continuing low rates outside the United States. Once more, monetary conditions contribute to solving a puzzle.

Given the complexity of the situation and the limits of our knowledge, it is extremely difficult to predict how all this might unfold. On the one hand, it is easy to argue, indeed it is the consensus view, that an orderly rebalancing is still the most likely outcome. By way of example, consider today’s global current account imbalances. In principle, were the dollar to fall and increase foreign demand for US-made goods, US interest rates could rise to temper domestic demand just enough to avoid either rising unemployment or rising inflation. If, in turn, domestic demand elsewhere were growing just fast enough to replace that previously emanating from the United States, then global growth and inflation would not be affected either. On the other hand, it is also easy to identify forces that might make various processes of rebalancing less smooth. Some of these could imply the end will be a “bang” of market turbulence, others a “whimper” of slow growth for an extended period. Should the expected smooth adjustment not materialise, the alternative might well be a combination of the two.

Those concerned about a “bang” of market turbulence need both a trigger and grounds for believing that price movements in various markets might get out of hand. Unfortunately, there is no shortage of candidates for either. As to the trigger, global monetary tightening might well be the catalyst. While the process of tightening has begun, and without incident, concerted monetary tightening is still as much a prospect as a reality. Another trigger might be further protectionist legislation, particularly pertaining to China or Middle East oil exporters. This could easily interfere with the smooth financing of the US current account deficit since these countries are currently the biggest purchasers of US dollar liabilities. And yet another possibility might be the sudden failure, or recourse to legal protection, of a large firm with major financial interests. These possibilities noted, it must also be recognised that the triggers for most of the financial crises observed over the last few decades were almost wholly unexpected.

There are, moreover, several market-specific reasons for concern about a degree of disorder should a process of price adjustment towards more normal levels begin. In the main industrial countries, there are many new participants in financial markets and many new financial products, of increasing complexity and opacity. Market liquidity in this environment has yet to be put to the test. The fact that carry trade speculation seems to have intensified in recent years also implies the potential for crowded trades that could, in the limit, lead to an interactive deterioration of market risk, credit risk and liquidity risk. We have in fact seen such interactions before. Similar problems could also occur in emerging market economies, and indeed might already have begun, given the sheer magnitude of capital inflows over the last year or so.

Turning to the major currency markets, there are also grounds for concern that exchange rate movements could be large and potentially disorderly. The first point to make is that the underlying trade adjustment could prove quite protracted. Even reducing the US current account deficit to 3% of GDP might require millions of workers to move from the non-tradable to the tradable sectors. This will not be accomplished overnight. Moreover, with US imports more than one and a half times exports, and with the United States still growing much faster than many other economies, a substantial increase in US competitiveness will be needed to improve the current account. The fact that exporters to the United States were able to cut costs in the face of past dollar depreciation, thus preserving margins and reducing pass-through, could, if repeated, be a further impediment to US current account adjustment. And, of course, the longer adjustment is delayed, the greater the external debt build-up and the larger the prospective debt servicing requirement. Indeed, while the US net investment income account has recorded inflows until quite recently, simple arithmetic implies substantial further deterioration in the future.

Both private and public sector purchasers of US dollar liabilities might, at some point, lose patience in such a situation. The foreign private sector holds the bulk of dollar-denominated US liabilities, and even moderate covering could have big effects on currency values. As for public sector holdings, while these are much more likely to display stable behaviour, prospective strains can still be identified. Even modest declines in the dollar could lead to heavy capital losses for large reserve holders, and this might become a matter of some political sensitivity. Moreover, reserves are now flowing more to energy-exporting countries for which pure risk-return considerations might weigh more heavily in investment decisions. The likelihood that perceived changes in official behaviour might reinforce changes on the private side also seems consequential.

The upshot of all these considerations is that markets “priced to perfection” retain a significant potential for reversion to more normal levels. Moreover, given the interrelationships among all these markets, both domestic and international, there is a reasonable likelihood that if one market were to come under significant stress, it would spill over to others. Consider, for example, a sharp fall in the value of the dollar. One possibility, in this environment, is that the risk premium for holding US dollar-denominated assets might rise. One likely manifestation of this would be higher long-term interest rates, which would, in turn, have an impact on other markets, including that for housing. Another example has to do with the still relatively low cost of purchasing protection against market volatility. Were such costs to rise significantly, as some markets came under stress, virtually all markets would be affected.

While many would doubtless dispute the likelihood of a sudden market “bang”, the possibility also remains of a real side “whimper”. That is, the various imbalances referred to above might well work themselves off gradually, but in a way that weighed heavily on global spending over a long period. Not least is the potential for record low household saving ratios to rebound in many countries, particularly in the United States. This could be a spontaneous precautionary response to higher debt levels, or to fears among baby boomers



that earlier pension commitments, both private and public, were less likely to be fully honoured. Alternatively, it could be a reaction to rising interest rates, market stress and uncertainties about future asset values. The fact that house prices have risen to such high levels in so many countries, and that this “wealth” effect does seem to have encouraged more spending, increases the likelihood of such an outcome. The reality is that, for a country as a whole, the wealth associated with house price increases is in very large part illusory. Being a relative price shift, its benefits to gainers are largely offset by the costs to losers. When the losers finally begin to adjust in response, it will generate significant economic headwinds.

Other kinds of imbalances have the potential for similar mischief. In China, the principal concern must be that misallocated capital will eventually manifest itself in falling profits, and that this will feed back on the banking system, the fiscal authorities and the prospects for growth more generally. After a long period of credit-fuelled expansion, this would be the classic denouement. Indeed, this was very much the path followed earlier by Japan. Moreover, such an outturn might have even more severe effects on the industrial countries than is currently thought. In such circumstances, China’s already formidable and fast-growing manufacturing potential would surely be directed still more towards export markets. Were this to occur, just at the time that other countries were retrenching, the resulting interactions – economic, political and social – would present a great challenge for both the public and private sectors.

We are, of course, currently not in a situation in which we have to confront such problems, and the likelihood of their occurring remains low. The consensus forecast is still the best bet. Yet the potential economic costs, should such risks materialise, would seem great enough to warrant some reflections on how policymakers might best respond. Such reflections do not constitute a forecast, but rather an exercise in prudence. There is nothing inconsistent in expecting the best but planning for the worst, particularly if the costs of the unexpected might well be high.

## How might current risks be reduced?

Today we face not only the normal uncertainties associated with responding to incipient inflationary pressures, but also concern about various financial imbalances, both internal and external. These imbalances are the by-product of a decade or more of robust increases in global supply, lagging domestic demand in large economies other than the United States, and an over-reliance on easy monetary policies to reduce output gaps. Understanding how we got to where we are is crucial in choosing policies to reduce current risks.

Increased supply has largely arisen from the re-entry into the global framework of previously closed economies, supported by improved communications and technology everywhere. To this must be added ongoing increases in productivity growth, in the United States in particular. Continuing deregulation of markets, for both goods and factor inputs in the industrial countries, constitutes another explanation for the positive supply shocks seen over the last decade or so.

As for lagging demand, we have observed in Asia the high saving rates typical of people faced with the massive uncertainties of structural change, but also the effects of the time needed to adapt spending habits to rapidly rising income levels. The latter problem also confronts governments in countries exporting oil and other commodities. In the industrial countries, two structural deficiencies can also be identified. The first has been the long-standing failure of Germany and Japan to recover fully from the stresses imposed by reunification and the bubble period respectively. In neither case was the nettle of structural change quickly or fully grasped. The second deficiency has been the protracted failure of fiscal policy almost everywhere to resolve the problems associated with the excesses of the 1970s and early 1980s. The industrial countries, bar Japan, were subsequently left with little room for fiscal manoeuvre in downturns, and now even Japan finds itself in the same situation. For many countries, particularly in Europe, this problem would long since have been overcome had they tightened fiscal policy much more aggressively in those years when the economy was growing robustly.

Against this background, monetary policy was left to address not only the secular trend of deficient demand, but also periodic crises associated with disturbances in the financial system. To date, policymakers have managed the task remarkably well. Growth has been held up and inflation has been held down. Yet, over time, unwelcome side effects have also become increasingly apparent. Whenever shocks have threatened growth, lower interest rates have encouraged spending, as intended, but this has increasingly been associated with a progressive build-up of debt, first corporate but now also household. The growing liberalisation of financial systems has reinforced this transmission mechanism, with the countries most sophisticated in financial matters being allowed to run large current account deficits as well. In effect, the successful countercyclical use of monetary policy in each instance has made subsequent tightening more risky, and subsequent easing less likely to work.

What can still be done to reduce the risks we face in the continuing global upswing? The first and obvious point is that global monetary policies need help if disruptive changes in interest rates and exchange rates are to be avoided. In particular, they need help from those specific policies that have been so deficient in the past, namely fiscal policy and structural reforms.

Fiscal policy should be generally tightened in both the industrial countries and the emerging markets. This will also help restore the room for manoeuvre looking forward. The need for fiscal restraint is particularly great in the United States, as well as those other countries facing both high government and current account deficits. A credible, medium-term package of fiscal restraint in deficit countries would also reassure foreign creditors that their longer-term interests are being protected. Indirectly, it would also be a welcome source of support for an orderly adjustment of the US dollar.

Given the size of global trade imbalances, structural changes aimed at facilitating the transfer of resources between the tradable and non-tradable sectors would seem highly desirable. This would also help reduce the need for large movements in nominal exchange rates that could prove disruptive. Revitalising the traded goods sector in the United States will be challenging

since, for some products, the industrial base has been much reduced. Nevertheless, the renowned flexibility of the US economy gives grounds for optimism. In addition, current tax subsidies could be reduced to restrain activity in housing, an archetypal non-traded good, and some form of consumption tax could help raise the household saving rate, which lies at the heart of the US current account deficit. Elsewhere, steps need to be taken to encourage the consumption and production of non-tradables. In many countries, most strikingly China but also Germany and Japan, there remains too great a reliance on export-led growth. Government regulations and other incentives that work in this direction need to be rethought, particularly since rapidly ageing populations in all three countries put a premium on increasing productivity in the domestic services sector.

The appropriate path for global monetary policy in the current circumstances should also be towards tightening. Whether one is more concerned with rising inflationary pressures in the short term, or with the threat from imbalances to sustained growth over time, both sets of indicators point in the same direction. That said, different countries are facing different degrees of pressure from these two sources. For example, in continental Europe levels of excess capacity are still higher, and financial imbalances less in evidence, than in the United States and a number of inflation targeting industrial countries, where the more advanced degree of tightening consequently appears appropriate. This conclusion is further reinforced by their respective external positions. Countries with external deficits need less domestic spending, and higher interest rates are one way to achieve this.

This general recommendation having been made, choosing the contours of that tightening path will not be easy. Not the least of the problems to be faced is exactly which inflation measure to use in gauging underlying inflation trends, and here opinions vary widely. At the heart of the problem in the industrial countries has been a major and sustained shift in relative prices, with house and energy prices rising sharply and prices of manufactured goods being much more subdued. Should policymakers assume that currently higher headline inflation will, over time, recede to core levels, or the opposite? Emerging market countries face similar problems, made worse by the relative importance of another volatile component, food. In such a world, perhaps the only conclusion to draw is that policymakers should put even more emphasis on longer-term inflation trends rather than focusing narrowly on achieving shorter-term quantitative targets.

Another complication is that the guideposts used by central banks to set interest rates are also being shifted. As globalisation proceeds, indicators of global slack are likely to become increasingly useful complements to more traditional domestic measures of inflationary pressures. At the same time, reflecting growing concerns about the effect of financial imbalances on both growth and inflation, more attention needs to be paid to such financial measures. There has been, in addition, a growing recognition that economic processes might well have non-linear characteristics; sticky inflation expectations could become unstuck, seemingly benign imbalances could suddenly result in a sell-off in financial markets, and so on. Finally, in a more globalised world,

what other policymakers are doing takes on greater importance. Were there to be a simultaneous and significant tightening in all the major financial centres, it might produce a disinflationary result substantially greater than the sum of its parts. Thus, while monetary restraint seems desirable almost everywhere, it will have to be done in a careful and measured way.

How monetary policy is conducted in most countries will also be influenced to some degree by the external imbalances problem, and how it eventually affects exchange rates. One concern that has been raised repeatedly is that this process might turn disorderly, particularly in the main currency markets where the bulk of trading is carried out. The probability of such an outcome would be reduced if the burden of upward currency adjustment were to be broadly shared in line with the size of current account surpluses. In particular, this implies that Asian currencies must appreciate further. Fortunately, there are some signs that Asian central banks recognise this, not least the fact that many of them have scaled back their interventions in the foreign exchange markets. China, however, remains an important exception in that it accumulated a further \$200 billion plus of reserves in the course of 2005. In China, as elsewhere in Asia, greater currency flexibility might also allow more scope for monetary tightening. This would be welcome given general concerns about domestic overheating, as well as worries about investment misallocations in the case of China.

Observing the policies in place, or even credibly promised, it would clearly be a mistake to say that the risks associated with external adjustment have been effectively eliminated. Many of the main protagonists are still focused almost exclusively on domestic priorities, some economic and some political, the upshot being that external imbalances are still expected to widen further. What is needed in the light of all this is a cooperative solution through which, for the common good, the main countries would each make domestic compromises in return for similar compromises made by others. Most of the policies required are not hard to identify and have already been alluded to above.

The real problem is that of implementation. As a prerequisite, all of the major players need first to recognise that the ultimate costs of inaction are likely to be much greater than the costs of a cooperative solution. A sharply lower dollar could raise inflation in the United States and threaten the balance sheets and growth prospects of European and Asian creditors. And it could aggravate already undesirable protectionist tendencies worldwide. Recognition of these possibilities should foster a more cooperative spirit which, with a little luck, might suffice to guide us around the pitfalls which still lie ahead.

## What to do if risks materialise?

It is impossible to predict where and when the risks implicit in current imbalances might materialise. Nevertheless, as described above, two kinds of scenario seem reasonable. The first would be a short, sharp shock affecting international financial markets. The second would be an extended period of slow global growth as imbalances gradually unwind. In reality, elements of both scenarios could emerge together.

Consider first a discrete event which, if it occurred, would disrupt financial markets. What might be done in advance to prepare for such an eventuality? One important step would be to ensure the integrity of domestic lines of communication among core financial firms, their supervisors, the central bank and the operators of systemically critical parts of the financial infrastructure. Another would be to ensure similar openness at the international level. Current discussions on “home-host” issues between regulators in different countries are moving this dialogue forward, as are various memoranda of understanding on who will do what, and when. International “war games” to simulate stressful incidents requiring a public sector response have already been carried out in a number of European forums and have yielded useful lessons. At the global level, the Financial Stability Forum, which brings together central bankers, regulators and treasury officials from many large economies as well as representatives of the international financial institutions and specialised committees, has already made a material contribution to crisis prevention. Presumably, it could play a useful role in crisis management and resolution as well.

However, many improvements are still possible and desirable. National legislation which impedes international sharing of time-critical information remains an important obstacle to crisis management. And perhaps even more important, there is no agreement about international burden-sharing in the event of trouble. Whether it be deposit insurance, emergency liquidity facilities or the restructuring of an internationally active bank, the ultimate costs could be substantial. Without prior agreement about the allocation of such costs, effective crisis management could easily be hampered by national authorities acting in response to what they see as their own national interests.

In principle, the readiness of financial institutions to deal with such problems could also be assessed in advance. Stress testing is now almost universal in financial firms, which is highly desirable. Yet stress tests are based on simplifying assumptions that necessarily fail to match the complexity of real world events. Firms should recognise such limitations as they try to ensure their preparedness for prospective difficulties and the adequacy of their capital. Perhaps most importantly, financial firms should consider the implications for market dynamics of other institutions reacting in the same way to given shocks, perhaps even reflecting regulatory advice, and should prepare themselves accordingly. Regulators, too, might reflect on this possibility. At the least, there should be more sharing of the results of such tests among counterparties and regulators.

Making such preparations in advance of trouble would complement the wide variety of other measures which have been taken over the years to improve the underlying health of financial institutions, markets, and payment and settlement systems. A more recent suggestion that merits greater attention is the possibility of setting up “off the shelf banks” in advance of difficulties. The idea is to establish a legal entity that would be able to assume, at very short notice, the vital functions of a failed financial institution and thus mitigate the knock-on effects of closure. This would be another way to limit regulatory forbearance, which has often been a problem in the past.

What might policy do in the thick of a crisis? The traditional response would be to inject liquidity to targeted institutions. However, this raises some questions in a rapidly changing world. One is the issue of who should be supported in a more market-driven financial system: domestic banks only, or also foreign banks, regulated financial institutions, special purpose vehicles issuing asset-backed securities, or others still? Another is the question of appropriate collateral, in particular the legality of accepting cross-border paper and the possibility that the value of collateral might be seriously reduced in a crisis. A third issue is whether a set of conditions should be agreed in advance to determine whether liquidity support would be provided. Whereas not very long ago it used to be standard to speak of the need for “constructive ambiguity” to avoid moral hazard, there is now increasing talk in central banking circles of “constructive clarity”. This really comes down to encouraging banks themselves to take all reasonable steps to ensure their soundness, if they wish to be able to turn to the authorities for support in extremis.

In a more market-driven world, it is in fact more likely that generalised infusions of liquidity and lower interest rates would be the chosen policy response to any serious financial incident. Indeed, we have observed this reaction a number of times in the recent past. One complication could be divergent movements across countries which could entail undesired exchange rate movements. Better communication among central banks as to how they might react to shocks would seem part of the solution in this case. Another set of problems can arise when interest rates are kept low for an extended period, well beyond the time required to restore more normal functioning to markets. These latter issues are better addressed in the context of the second set of potential problems, related to a potentially long period of slow global growth, possibly but not necessarily accompanied by distress in the financial system.

What would be the appropriate policy response were headwinds to threaten future growth prospects? An analysis of the historical record indicates that four factors can interact to produce truly bad outcomes. First, real interest rates can remain too high to reflate the economy, all the more so when nominal rates hit the zero lower bound and prices are falling. Second, real wages can rise and profits fall. This outcome is again made more likely if nominal wages are sticky downwards and prices are falling. Third, high levels of indebtedness can impose onerous debt service burdens which cut into spending. Fourth, weakness in the real economy can feed back on the financial system, leading in turn to credit restrictions and still further downward impetus to spending. The question then becomes how policy might be used to help short-circuit each of these channels, recognising that each recommended policy is likely to have a downside as well as an upside.

In a potential future downturn, it would seem perfectly natural to reduce interest rates to stimulate aggregate demand. However, given the high debt levels built up in response to earlier easing, this approach might not work smoothly. In Japan, unprecedented monetary and fiscal easing did not suffice to turn the economy around in the 1990s. In the United States, despite similarly unprecedented easing after 2001, the subsequent upturn was among the weakest in the postwar period, particularly in fixed investment and employment.



It must also be recognised that very low nominal interest rates can also have substantial negative side effects, not least on aggregate supply. After a period of excessive spending, low borrowing costs can allow “zombie companies” to roll over debts and survive, as they did in Japan, to the detriment of the more healthy. They also provide strong encouragement to merger and acquisition activity, even though the historical record shows this is more likely to destroy value than create it. Low rates also constitute a transfer from creditors to debtors, which reduces saving and capital formation over time and eventually becomes a threat to higher living standards. The negative side effects of low interest rates on financial markets also need to be taken into account. The search for yield can lead to serious distortions, and the potential for future instability, as investors both purchase inherently riskier assets and use increased leverage to do so. Moreover, finding an “exit strategy” from such policies is not easy. We are currently experiencing such difficulties, and they will be even worse the next time around if debt levels rise further.

Such considerations imply that, if a sustained period of weak global growth were to occur, a policy of monetary and fiscal easing should be complemented by other, more structural measures. Given that sustained corporate profitability is a necessary condition for a revival of investment spending, measures to restrain wages and increase productivity have their attractions. Again, however, there are downsides. First, as with easier monetary policy, they might not work. In Japan, wage growth was very restrained for years, but investment stubbornly failed to recover until quite recently. Second, paying lower wages to fewer workers initially implies a smaller wage bill, and therefore less household income and spending. In Japan, household spending was cushioned from these effects by a large decline in the household saving rate. This might be less likely in a future downturn in countries where the saving rate is already very low, as it currently is in the United States.

Dealing directly with the overhang of debt can also make a contribution to avoiding longer-term problems. Indeed, the trend towards securitisation of debt, together with new instruments for credit risk transfer, could already be increasing the incidence of corporate bankruptcies as opposed to “orderly workouts” orchestrated by friendly banks. An early determination that a debtor is effectively insolvent, and an early resolution, are suggestions that have a great deal to recommend them. In this fashion, much uncertainty can be removed from the system. Moreover, putting processes in place to ensure maximisation of the value of the remaining assets has obvious appeal. If, in so doing, production capacity could also be removed from industries where profits have been pushed down to very low levels, this too would help redress supply side imbalances built up earlier.

As with the other policy responses just discussed, explicit debt reduction also has its downsides. The first and most obvious is moral hazard, though bankruptcy laws can be designed to help reduce this. The second problem is that an early and explicit recognition that debts cannot be serviced could feed back on the health of the banking system. In current circumstances in the industrial countries, with debt having been so widely securitised, this



would seem to be less of a problem. However, property loans and loans to households could still be an eventual source of disruption. Moreover, for the banking systems in emerging market countries, widespread debt relief or recourse to bankruptcy procedures could still threaten the solvency of individual institutions and perhaps the viability of the system as whole.

This challenge accepted, it also presents an opportunity. To the extent that losses are borne by the banking system, and explicitly recognised as losses, the by-products of earlier excesses are consolidated and can be more easily addressed. In particular, the banking system can be recapitalised and steps can be taken to ensure that banks will operate profitably in the future. Such a restored system could then play its full part in financing renewed expansion. The experience of the Nordic countries, faced with such problems at the end of the 1980s, shows what might be done given the requisite political will.

### Can we avoid similar risks in the future?

No one today would question the substantial economic benefits associated with reducing inflation from the high levels it reached in the 1970s. Yet, with the passage of time, it is all too easy to forget how difficult that task looked in prospect. Policymakers in the 1960s and 1970s were generally of the view that the unemployment costs of reducing inflation would be both large and long-lasting, substantially outweighing the benefits. They were wrong. New analytical insights highlighted the role of inflation expectations, and how credible policies could ratchet those expectations down, and keep them down, at a much lower cost than initially expected. The generally excellent economic performance of the industrial countries over the last 20 to 30 years confirms the wisdom of those who decided to put that insight to the test.

However, it would also fly in the face of historical fact to contend that a climate of low inflation is sufficient to avoid all macroeconomic problems. In recent decades, we have witnessed all sorts of disruptive incidents related in part to the removal of constraints in previously repressed financial systems. Consider the Mexican financial crisis of 1994, the Asian crisis of 1997, the Russian debt default and the events surrounding the failure of LTCM in 1998, and the stock market crash of 2001. None of these events was preceded to any significant degree by overt inflation. Looking further back in history, neither in the United States during the 1920s nor in Japan during the 1980s were strong inflationary pressures apparent. Evidently, low inflation, while highly desirable, has not always been sufficient to ensure good economic performance.

In a similar vein, recent evidence also confirms that not all incidents of falling prices lead to serious macroeconomic problems. The source of the price decline matters. Increases in productivity and global competition over the last few years have reduced pricing power, but profit shares have actually risen nonetheless. This evidence also concurs with longer historical studies which reveal many periods where deflation and rapid growth coexisted easily. Indeed, such studies show that the appalling experience of the Great Depression in the United States was effectively unique.

Taken together, these considerations imply that the current conventional approach to the pursuit of price stability might need refinement. The risk is that, given a forecast which shows inflation to be well under control, over the one- to two-year forecast horizon normally used by central banks, policy rates might be maintained at very low levels relative to expected rates of return on investment. Positive supply shocks increase this risk by both keeping inflation down and raising the spirits of economic agents. This in turn would be expected to prompt entrepreneurs to increase their recourse to credit in order to purchase financial assets and invest in physical capital and commodities. Similarly, low policy rates and hence borrowing costs could induce consumers to bring purchases forward in time, including the acquisition of houses and consumer durables. To a significant degree, of course, the effects of such processes on spending and job creation could be deemed highly welcome. But beyond a certain point danger lurks, as rising asset prices both encourage more speculation and provide the collateral for the related borrowing. All of the historical episodes of “boom and bust” noted above share these dynamic characteristics in very significant measure.

To reflect such possibilities, the Keynesian analytical framework, which remains the workhorse in the stable of most central bankers, needs modification. A much richer set of indicators is now needed to guide the setting of interest rates, in particular indicators of financial imbalances, both internal and external. Over longer time periods, such imbalances can pose an even greater and more dangerous threat to price stability, on the downside, than shorter-term and more conventional inflationary “pressures” such as output gaps. Recognising this fact implies that we should lengthen the horizon over which we assess the success of monetary policy in stabilising prices, in order to see its full effects. Raising interest rates in some circumstances might temporarily push inflation below desired levels, but this might still be preferable to a boom-bust scenario in which the eventual undershooting of the inflation target is both larger and more lasting. Alternatively, there could be scope for reducing this trade-off dilemma by using other instruments, of a more regulatory nature, to help reduce the build-up of credit-financed imbalances in the first place. Such suggestions would, however, require a significant change in both the regulatory culture and the nature of the relationship between central banks and other public agencies.

# Contents

Organisation, governance and activities .....	155
Organisation and governance of the Bank .....	155
<i>The Bank, its management and shareholders</i> .....	155
<i>Organisation of the BIS as of 31 March 2006</i> .....	157
Promotion of international financial and monetary cooperation:	
direct contributions of the BIS during 2005/06 .....	157
<i>Regular consultations on monetary and financial matters</i> .....	157
<i>Other areas of central bank cooperation promoted by the BIS</i> .....	159
<i>Representative Offices</i> .....	163
<i>Financial Stability Institute</i> .....	165
Promotion of financial stability through the permanent committees .....	166
<i>Basel Committee on Banking Supervision</i> .....	166
<i>Committee on the Global Financial System</i> .....	168
<i>Committee on Payment and Settlement Systems</i> .....	169
<i>Markets Committee</i> .....	170
<i>Central Bank Counterfeit Deterrence Group</i> .....	170
BIS contributions to broader international financial cooperation .....	171
<i>Group of Ten</i> .....	171
<i>Financial Stability Forum</i> .....	171
<i>International Association of Insurance Supervisors</i> .....	173
<i>International Association of Deposit Insurers</i> .....	174
Financial services of the Bank .....	175
<i>Banking services</i> .....	175
<i>Operations of the Banking Department in 2005/06</i> .....	175
<i>Graph: Customer placements, by product</i> .....	176
<i>Functions as agent and trustee</i> .....	177
Institutional and administrative matters .....	177
<i>Changes to the BIS governance structure</i> .....	177
<i>The Bank's administration</i> .....	178
Net profit and its distribution .....	180
<i>Net profit</i> .....	180
<i>Review of dividend policy</i> .....	181
<i>Proposed distribution of the net profit for the year</i> .....	181
<i>Report of the auditors</i> .....	182
Board of Directors and senior officials .....	184
Changes among the Board of Directors and senior officials .....	185
BIS member central banks .....	187
Financial statements .....	189
Balance sheet .....	190
Profit and loss account .....	191
Statement of cash flows .....	192
Statement of proposed profit allocation .....	193
Movements in the Bank's statutory reserves .....	193
Movements in the Bank's equity .....	194
Notes to the financial statements .....	195
Report of the auditors .....	225
Five-year graphical summary .....	226



## Organisation, governance and activities

This chapter provides an overview of the internal organisation and governance of the Bank for International Settlements (BIS). It also reviews the activities of the Bank, and of the international groups it hosts, over the past year. These activities focus on the promotion of cooperation among central banks and other financial authorities, and on the provision of financial services to central bank customers.

### Organisation and governance of the Bank

#### *The Bank, its management and shareholders*

The BIS is an international organisation that fosters international monetary and financial cooperation and serves as a bank for central banks. Its head office is in Basel, Switzerland, and it has two representative offices, one in the Hong Kong Special Administrative Region of the People's Republic of China and one in Mexico City. The Bank currently employs 554 staff from 49 countries.

The BIS fulfils its mandate by acting as:

- a forum to promote discussion and facilitate decision-making among central banks and to support dialogue with other authorities with responsibility for financial stability;
- a centre for economic and monetary research;
- a prime counterparty for central banks in their financial transactions; and
- an agent or trustee in connection with international financial operations.

The Bank also hosts the secretariats of a number of committees and organisations that seek to promote financial stability:

- The Basel Committee on Banking Supervision, the Committee on the Global Financial System, the Committee on Payment and Settlement Systems and the Markets Committee have been established by the Governors of the G10 central banks over the past 40 years. They enjoy a significant degree of autonomy in setting their agendas and structuring their activities.
- The Financial Stability Forum, the International Association of Insurance Supervisors and the International Association of Deposit Insurers are independent organisations that do not directly report to the BIS or its member central banks.

Details of the role and recent activities of these committees and organisations are provided below.

The Bank has three main departments: the Monetary and Economic Department, the Banking Department and the General Secretariat. These are supplemented by the Legal Service, the Compliance, Internal Audit and Risk

Control units, and the Financial Stability Institute, which fosters the dissemination of standards and best practices to financial system supervisors worldwide.

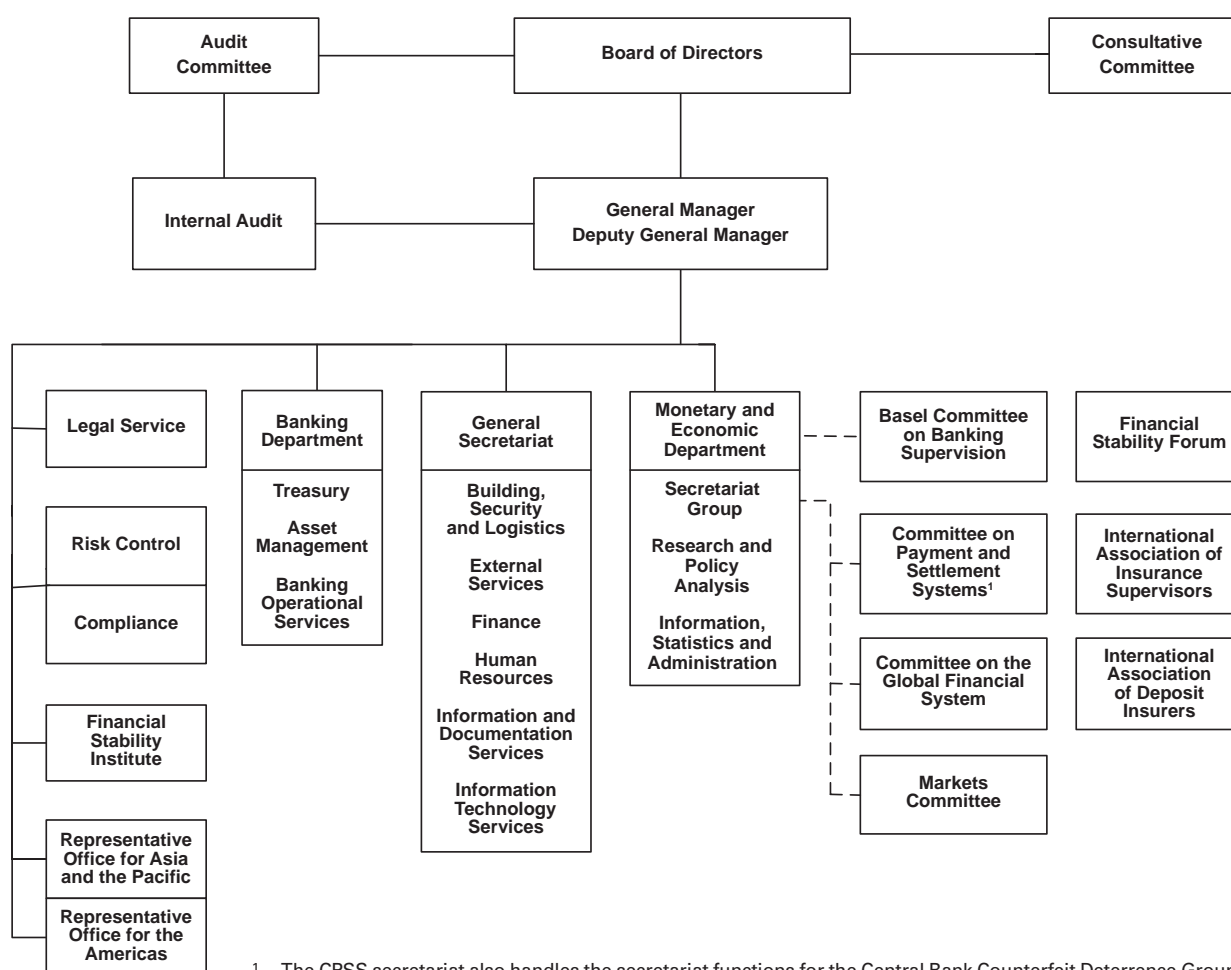
There are three main bodies for governing and administering the Bank:

- the General Meeting of member central banks. Fifty-five central banks or monetary authorities currently have rights of voting and representation at General Meetings. The Annual General Meeting is held within four months of the end of the Bank's financial year, 31 March. In 2005, 110 central banks took part, including 84 at Governor level. Delegates from 21 international institutions also attended;
- the Board of Directors, currently comprising 17 members. Its main tasks include determining the strategic and policy direction of the Bank and supervising the Bank's Management. The Board is assisted by the Audit Committee and the Consultative Committee, composed of selected Directors; and
- the Executive Committee, chaired by the General Manager and comprising the Deputy General Manager, the Heads of Department and other officers of similar rank appointed by the Board. The Executive Committee advises the General Manager on all important matters affecting the Bank as a whole.

An Extraordinary General Meeting held in conjunction with the Bank's 2005 Annual General Meeting decided to revise the BIS Statutes to streamline the governance of the Bank. This followed a review undertaken by the Bank the previous year to enhance the transparency of its operations and structure. As a result, the position of President of the BIS was abolished, effective 27 June 2005. The positions of Chairman of the Board and President had been vested in one person since 1948. The review also recognised terms of reference for the Executive Committee as an advisory committee to the General Manager, and Charters for the Board of Directors and several operational committees were drawn up.

Member central banks, Directors and senior officials, and recent changes in the composition of the Board and Management are listed at the end of this chapter.

## Organisation of the BIS as of 31 March 2006



## Promotion of international financial and monetary cooperation: direct contributions of the BIS during 2005/06

In early 2006, the BIS announced initiatives to deepen relationships with its strategic partners in Asia following an intensive consultation process with BIS member central banks in the region. The initiatives comprise a three-year research programme on monetary and financial issues in Asia and the Pacific, an expansion of the work of the Financial Stability Institute in the region, and an extension of banking services from the BIS Representative Office in Hong Kong SAR.

### *Regular consultations on monetary and financial matters*

Every two months, the Governors and other senior officials of the BIS member central banks convene for a series of meetings to discuss current economic and financial developments and the outlook for the world economy and financial markets. They also exchange views and experiences on issues of special



and topical interest to central banks. These bimonthly meetings are one of the most important ways in which the Bank promotes cooperation within the central banking community. In addition, the Bank organises various other meetings, on a regular or an ad hoc basis, for senior central bank officials. In a number of these meetings, other financial authorities, the private financial sector and the academic community are invited to contribute to the dialogue.

The Global Economy Meeting, which brings together the Governors of key industrial and emerging market economies, monitors economic and financial developments and assesses the risks and opportunities in the world economy and financial markets. The meetings of Governors of the G10 countries and those of Governors of key emerging market economies often explore conjunctural themes that are of special relevance to the respective groups of economies. The G10 Governors also discuss issues pertaining to the work of the permanent central bank committees hosted by the Bank.

Because not all central banks are directly involved in the work of the committees and other organisations hosted by the Bank, a periodic Review Meeting for Governors briefs them on the activities of these specialised groupings. On occasion, the Review Meeting also explores a topic of direct importance to this group of central banks. In 2005/06 Governors discussed:

- recent developments in the oil market;
- foreign exchange market issues;
- Basel II and issues of home and host country supervision;
- the revised Core Principles for Effective Banking Supervision;
- housing finance; and
- the relationship between the central bank and the government.

Finally, issues of a more structural nature and of general interest to all BIS member central banks were discussed in the All Governors Meetings:

- central banks and financial stability: objectives, instruments and accountability;
- the effects of globalisation on wage and price formation. What has changed and does it matter?;
- credit markets, complex financial products and risk management;
- issues and prospects of ERM II and accession to the euro area; and
- the measurement of inflation for monetary policy.

In analysing issues related to financial stability, Governors attach importance to dialogue with heads of supervisory agencies, other financial authorities and senior executives from the private financial sector. The Bank regularly organises informal discussions among public and private sector representatives that focus on their shared interests in promoting and maintaining a sound and well functioning financial system.

Other meetings organised for senior central bankers on a less frequent basis include:

- the biannual central bank economists meeting, which in October 2005 examined the evolution of the inflation process;
- the meetings of the working parties on domestic monetary policy, which are not only held in Basel but are also hosted by a number of central banks in Asia, central and eastern Europe, and Latin America; and

- the meeting of Deputy Governors of emerging market economies, for which this year's theme was progress in the banking system in emerging economies.

### *Other areas of central bank cooperation promoted by the BIS*

#### *Research activities*

In addition to providing background material for meetings of senior central bankers and secretariat services to committees, the BIS contributes to international monetary and financial cooperation by carrying out its own research and analysis on issues of interest to central banks and, increasingly, financial supervisory authorities. This work finds its way into the Bank's regular publications, such as the *Annual Report*, the *Quarterly Review* and the *BIS Papers* and *Working Papers* series, as well as external professional publications. Most of the Bank's research is published on its website ([www.bis.org](http://www.bis.org)).

In line with the Bank's mission, the long-term focus of the research is on monetary and financial stability issues. Themes receiving special attention during the period under review included:

- changes in the inflation process, in particular the linkages between inflation and globalisation as well as the role of the exchange rate;
- the measurement and pricing of credit risk, notably as reflected in new financial instruments such as credit derivatives;
- the measurement of risk appetite and its impact on the pricing of financial assets;
- trends in international banking;
- coordination between monetary and prudential policies; and
- the nexus between risk management, accounting and prudential regulation.

As part of its research activities, the BIS also organises conferences and workshops, typically bringing together senior policymakers, academics and market participants. In June 2005, in the broader context of the Bank's celebrations marking its 75th anniversary, the Fourth BIS Annual Conference addressed the past and future of central bank cooperation. In November a high-level workshop was devoted to an analysis of the relationship between accounting, risk management and prudential regulation.

#### *Cooperation in the statistical area*

A major development in the statistical area was the decision by the BIS in January 2006 to provide the Secretariat of the Irving Fisher Committee on Central Bank Statistics (IFC). This is a global forum of users and compilers of statistics at central banks, which has operated informally since 1997 under the auspices of the International Statistical Institute (ISI). The Committee is currently chaired by Jan Smets, Director at the National Bank of Belgium and alternate BIS Board member. In April 2005 the Committee organised a number of meetings at the 55th ISI Session in Sydney. It also co-sponsored a workshop

with the Bank of Canada in June 2005 on “Data requirements for analysing the stability and vulnerability of mature financial systems”. In April 2006 it organised a workshop on “CPI measurement: central bank views and concerns”, which was attended by most of the central banks represented at the BIS Global Economy Meeting. Preparations are under way for the Third IFC Conference, to be held at the BIS at the end of August 2006 on the topic of “Measuring the financial position of the household sector”. Information on the IFC, including on the governance of the Committee and the papers from its various meetings, is available at [www.ifcommittee.org](http://www.ifcommittee.org).

BIS support for the IFC reflects the fact that statistical data and related methodological issues are becoming increasingly important to central banks, from the perspective of both monetary and financial stability. Hosting the IFC Secretariat is also a natural extension of other services that the BIS provides to the central bank statistical community, including the BIS Data Bank and the collection of various international financial statistics.

Four central banks officially became new participants in the BIS Data Bank last year: those of Argentina, Brazil, China and India. This brings the total number of contributors to 39, almost all of which are BIS shareholding central banks. Moreover, those BIS shareholding central banks that do not participate in the Data Bank were invited to begin reporting a limited number of key economic indicators to the BIS as a contribution to the background statistical material prepared for the BIS bimonthly meetings.

In October 2005, 35 central banks participated in the biennial Meeting of Experts on (BIS) International Financial Statistics, which reviewed a number of analytical and technical issues related to these statistics. Last year, the reporting framework was extended for the consolidated banking statistics (to provide more information on ultimate risk exposures, including off-balance sheet data) as well as for the OTC derivatives statistics (to include data on credit default swaps). Data from Korea were included in the BIS locational banking statistics, and information from Croatia and Pakistan was added to the domestic securities statistics. At the end of 2005, the BIS also decided to release preliminary data for its international banking statistics a number of weeks before their official publication in the *BIS Quarterly Review*. In addition, preparations started for the next Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity, to be carried out in 2007, in which the central banks of more than 50 countries are expected to participate.

The BIS worked very closely last year with the IMF, OECD and World Bank, in the context of the Inter-Agency Task Force on Finance Statistics, to establish a new Joint External Debt Hub. This web-based facility ([www.jedh.org](http://www.jedh.org)), launched in March 2006, brings together improved data from creditor and market sources on external debt components with external debt data available from national statistical agencies.

The Joint External Debt Hub makes full use of the technical standards, content-oriented guidelines and implementation tools developed by the Statistical Data and Metadata Exchange (SDMX) initiative. On behalf of the central banks participating in its statistical activities, the BIS contributes

to SDMX together with the ECB, Eurostat, the IMF, the OECD, the United Nations and the World Bank. By end-March 2006, all major building blocks of SDMX had been released at [www.sdmx.org](http://www.sdmx.org). These include a number of technical specifications, which have been approved by the International Organization for Standardization (ISO). Preliminary discussions with XBRL International, provider of a similar standards framework for accounting information, have confirmed the potential for making the frameworks for exchanging statistical and accounting data interoperable, and further work in this direction is expected. The BIS will chair the SDMX Sponsors Committee in 2006–07.

### *Central bank governance*

The Bank has been conducting activities in the area of central bank governance for more than a decade. Throughout this period, it has been guided by the objective of meeting the growing needs of central banks for timely and accurate information and well focused analysis. In May 2005, these activities were formalised with the approval by the Governors of BIS shareholder central banks of a charter establishing the Central Bank Governance Forum. The purpose of the Forum is to foster the good governance of central banks as public policy institutions. The Governance Forum consists of the Central Bank Governance Group and the Central Bank Governance Network. Secretariat support is provided by the BIS.

The Governance Group comprises Governors from a broadly based and representative group of central banks. Its members discuss topical issues of central bank governance. They also invite Governors from other central banks to participate in their discussions whenever the topic at hand is of particular relevance to those central banks. During the past year, the Group considered a range of issues, including freedom of information legislation and central banks, the role of the Governor as chairperson of major boards and committees of the central bank, and the relationship between the central bank and government. In keeping with the advice of the Governance Group, the BIS accords priority to addressing governance questions that are critical for the effective operation of independent and accountable monetary authorities.

The Governance Network spans more than 45 major central banks and monetary authorities around the world. Members contribute actively to efforts by sharing information on central banks' approaches to institutional and organisational matters. This collegial approach enables the collection of information on mandates, powers, operations and accountability arrangements that can be used by central banks to strengthen their institutions.

### *Group of Computer Experts of the G10 central banks*

In last year's two meetings of the Group of Computer Experts and the two convened for its Working Party on Security Issues, discussions focused primarily on IT governance, business continuity planning, protection of internal systems from external threats, and mobile computing or remote access. Group members benefited from sharing with their peer organisations the experience gained with various models for internal IT governance, achieving

an appropriate balance between innovation and standardisation, and the underlying reasons for the failure of many IT governance models.

Business continuity planning received additional priority, given the need for increased preparations for a possible avian flu pandemic, which would primarily affect human resource availability (including dependencies on external services) rather than IT systems.

Security threats, while still significant, resulted in marginally fewer disruptions than in previous years, probably due to the increase in available industry tools and measures for detecting and eradicating these threats, particularly viruses. Solutions against spam e-mail are now also more widely deployed, reducing the effects of this nuisance threat. Mobile computing and its associated risks continue to be an area requiring constant attention, driven by both business expectations and market developments.

Other topics covered at the Group's meetings included service sourcing models, the benefits of internal IT audits, and compliance with nominal industry IT standards (such as ITIL).

#### *Internal Audit*

Since 1986, G10 central bank auditors have met regularly to share experience and knowledge in their area of expertise, and to address new issues and challenges. The main topics for discussion usually derive from international internal auditing standards and the continuous need to improve controls over the risks faced by central banks. Twice a year, the BIS's Internal Audit unit organises and hosts the meetings of the G10 Working Party on IT Audit Methodologies.

In June 2005, the BIS participated in the 19th Annual Plenary Conference of G10 Heads of Internal Audit, hosted by the Bank of Japan and covering in particular: the role of internal audit in the ethics and ethical awareness of an organisation; the implications of the Sarbanes-Oxley Act; auditing corporate governance; the role of internal audit in IT governance; and auditing business continuity management (for the last topic, the BIS coordinated the work of a G10 task force).

Following several meetings of internal audit heads from Asia-Pacific central banks and monetary authorities, BIS Internal Audit has established a contact and information sharing network with these institutions.

#### *Cooperation with regional central bank groupings*

The Group of Coordinators of Technical Cooperation and Training, set up in the early 1990s to coordinate central bank technical assistance to former planned economies, held its annual meeting in St Petersburg in June 2005, with the Central Bank of the Russian Federation as host. The meeting confirmed that the nature of technical cooperation amongst central banks is changing in a number of ways. Instead of traditional forms of technical assistance, training activities are becoming more important, as are various forms of bilateral and multilateral cooperation. In addition, many of the erstwhile recipients of technical assistance in eastern Europe are now engaged in technical cooperation with CIS states and the Balkans. Technical

cooperation is also being strengthened with central banks in other regions, in particular Asia.

The BIS continued to support various regional central bank groups by organising occasional joint events or contributing speakers to their meetings. Last year, that included:

- the South East Asian Central Banks (SEACEN);
- the Centro de Estudios Monetarios Latinoamericanos (CEMLA);
- central banks from eastern Europe and the CIS, through the Joint Vienna Institute;
- the Centre Africain d'Études Supérieures en Gestion (CESAG), which is sponsored by, amongst others, the Central Bank of West African States (BCEAO); and
- the Macroeconomic and Financial Management Institute of Eastern and Southern Africa (MEFMI).

### *Communications*

The Bank's 75th anniversary in 2005 provided additional opportunities for disseminating information about the role of the BIS since 1930 in seeking to promote international financial cooperation:

- An exhibition ("this is the biz"), inaugurated by Chairman of the Board Nout Wellink on the occasion of the 75th Annual General Meeting, opened for two weeks in July 2005 and was visited by some 6,000 members of the general public. Besides a range of documentation and contemporary illustrations, the exhibition included a filmed interview sequence with central bank Governors and used multimedia to tell the story of the BIS and explain its current functions.
- The complete series of BIS *Annual Reports* was published on DVD, in the Bank's four official languages, providing convenient, searchable access to *Annual Report* content since 1930. The DVD is available for further distribution to libraries and researchers.

In January 2006, the BIS launched a revamped website, providing enhanced access to research by central banks and public speeches by leading central bankers. By May 2006, participation in the web-based Central Bank Research Hub, first launched in 2004, had increased to 40 institutions.

### *Representative Offices*

The Representative Office for Asia and the Pacific (Asian Office) and that for the Americas (Americas Office) serve as platforms for BIS activities in their respective regions. The Offices aim to strengthen relations between the BIS and central banks and supervisory authorities in the regions, on the one hand, and to promote cooperation within each region, on the other. To these ends, the Offices organise meetings, foster the exchange of information and data, and contribute to the Bank's financial and economic research on the regions. Last year, this contribution focused on bond market development, regional currency markets and the management of foreign exchange reserves, resulting in a number of publications.



The Offices also help to deliver BIS banking services in the two regions through regular visits to reserve managers of central banks and meetings at both technical and managerial levels.

### *Asia-Pacific*

The regional treasury dealing room in the Asian Office further enhances banking services to regional customers through its daily trading activities, in support of which two back office staff members were transferred from head office. This dealing room is also taking the lead in managing new Australian dollar products as well as the Bank's own investments in Asian currencies.

The BIS contributed as fund administrator to the establishment and partial public listing of funds under the second Asian Bond Fund (ABF2) initiative of the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP). The 11 EMEAP member central banks have invested international reserves in domestic currency bonds issued by sovereign and quasi-sovereign borrowers in eight EMEAP economies. During the period under review, the BIS supported the transition to a public fund for the ABF Pan-Asia Bond Index Fund and the first ever exchange-traded bond funds for Hong Kong SAR, Malaysia, Singapore and Thailand. In addition, the manager of the ABF1 was transferred to the Asian Office, and economists there continued to support these initiatives with research on Asian bond markets.

Two meetings of the Asian Consultative Council (ACC) responded to BIS Management proposals to strengthen the relationship between Asian shareholding central banks and the Bank. These proposals envisage a three-year research programme, entailing a substantial commitment of staff, a widening of banking services and enhanced work by the Financial Stability Institute supported by a full-time FSI staff member in the Asian Office. The ACC's June 2005 meeting in Basel discussed the broad outline of a new Asian strategy, and the meeting the following February in Shanghai endorsed specific proposals. On the latter occasion, the ACC forwarded to the BIS Board a record of its discussion of Asian central banks' role in the BIS, which had begun at an earlier ACC retreat. Immediately following the February meeting, the Asian central bank Governors met with several Governors from outside Asia for their eighth Special Meeting to review the economic outlook and the development of corporate bond markets.

The Asian Office organised or helped to organise several meetings on monetary policy, financial development and financial stability:

- a meeting on securities regulation for banking supervisors in conjunction with the Financial Stability Institute (May 2005);
- the 10th and 11th meetings of the EMEAP Forum on foreign exchange and other financial markets (June and December 2005);
- a meeting on Asian monetary integration with the Hong Kong Institute for Monetary Research (HKIMR) (October 2005);
- a meeting for central bank reserve managers at the Reserve Bank of Australia in Sydney (October 2005);
- a meeting on Asian monetary policy objectives and implementation with the HKIMR (November 2005);



- a meeting on the development of corporate bond markets with the People's Bank of China in Kunming (November 2005); and
- the fourth meeting of central bank experts on monetary policy operating procedures (March 2006).

### *The Americas*

The focus of activity for the Americas Office during its third year of operation was on expanding its contacts with central banks in the region and cooperating more closely with regional central banking and supervisory authorities. The Office also hosted or supported a series of high-level meetings in Mexico City and elsewhere, sometimes jointly with regional central banks and other institutions. Noteworthy regional activities furthering the Bank's goals were:

- a regional consultative meeting on the CPSS report *General guidance for national payment system development*, held in cooperation with the Central Bank of the Dominican Republic and the Consejo Monetario Centroamericano, in the Dominican Republic (August 2005);
- a joint seminar organised by the FSI and the Association of Supervisors of Banks of the Americas (ASBA) for bank supervisors on "Credit risk under Basel II", in Mexico (September 2005);
- a seminar on "Living with mobile international capital flows" at CEMLA, in Mexico (September 2005);
- a meeting of the Working Party on Monetary Policy in Latin America, in Argentina (October 2005);
- a joint seminar organised by the FSI and CEMLA for bank supervisors on the "Supervisory review process under Basel II", in Argentina (November 2005);
- a high-level meeting on "Evolving banking systems: challenges and implications for monetary policy and financial stability", with a particular emphasis on small open economies, in Jamaica (January 2006);
- a joint seminar organised by the FSI and ASBA on "Validation of IRB systems in Basel II", in Peru (February 2006);
- a regional workshop of the CGFS Working Group on financial stability and local currency bond markets, in Mexico (March 2006); and
- the creation of a virtual secure communication space for central bank lawyers in Latin America on the Bank's eBIS platform.

### *Financial Stability Institute*

The mandate of the Financial Stability Institute (FSI) is to assist financial sector authorities in strengthening their financial systems and to promote financial stability globally. The FSI follows a two-pronged approach designed to disseminate standards and sound practices primarily to the banking and insurance supervision sectors.

The first prong of the FSI approach is the long-standing series of high-level meetings, seminars and conferences both in Basel and at venues around the world. In 2005, the FSI organised a total of 51 events on a broad range of financial sector supervision topics. More than 1,700 representatives of central banks and banking and insurance supervisory agencies participated. These

events promote information sharing, the identification of issues and the strengthening of cross-border supervisory contacts. The FSI is also continuing its series of high-level meetings to foster information exchange among heads of supervision in the various regions with regard to Basel II implementation issues and plans. These meetings have also included representatives of commercial banks, thereby helping the supervisory community to stay informed about banks' implementation challenges.

The second prong is FSI Connect, an online information and learning resource for banking supervisors. FSI Connect currently includes more than 100 tutorials covering a wide range of topics for supervisors at all levels of experience and expertise, and new topics are added periodically. In addition, approximately 40 tutorials related to capital and Basel II are being translated into French and Spanish. This will enable FSI Connect to reach a wider audience of banking supervisors globally. More than 120 central banks and supervisory authorities from approximately 105 jurisdictions currently subscribe to FSI Connect, representing nearly 8,000 users.

## Promotion of financial stability through the permanent committees

### *Basel Committee on Banking Supervision*

The Basel Committee on Banking Supervision, chaired by Jaime Caruana, Governor of the Bank of Spain, strives to strengthen banking supervisory frameworks and to promote risk management best practices in the banking industry. With effect from 1 July 2006, Jaime Caruana will be succeeded as Chairman by Nout Wellink, President of the Netherlands Bank.

### *Implementation of the revised capital framework ("Basel II")*

Following public consultation and in close collaboration with the International Organization of Securities Commissions (IOSCO), in July 2005 the Committee released some refinements to the treatment of trading activities under Basel II. Additionally, the Committee issued the results of a study on the impact of the Basel II capital framework on regulatory capital requirements. This study had been carried out by banks in most member countries and a number of non-member countries in the fourth quarter of 2005. As a result of the study, the Committee confirmed the 1.06% "scaling factor" to be applied to banks' internal credit rating assessments under the new Basel framework.

Consistent cross-border implementation of Basel II remains one of the key areas of focus for the Committee. In that regard, the Committee's Accord Implementation Group (AIG) has continued to encourage collaboration and consistency. Members of the AIG regularly share experiences as they work with fellow supervisors to establish practical implementation strategies tailored to internationally active banks' operations. To assist this process, the AIG, in conjunction with non-Committee member countries, finalised in June 2006 a guidance paper on effective home-host information sharing under Basel II. The Committee has also published its views on the validation of low-default portfolios, the use of vendor products and operational risk.

### *Corporate governance for banks*

Corporate governance has continued to attract considerable international attention in the light of a number of high-profile breakdowns in governance processes, which led the OECD to publish revised corporate governance principles in 2004. In February 2006, the Basel Committee issued an updated and significantly revised version of its 1999 document *Enhancing corporate governance for banking organisations*, which recognises the banking industry's unique characteristics.

### *Core Principles for Effective Banking Supervision*

In April 2006, the Committee issued for public comment two revised and updated documents, *Core Principles for Effective Banking Supervision* and the associated *Core Principles Methodology*. The Principles were originally published by the Committee in September 1997, and since that time they have been used by countries and external assessors as a benchmark for the quality of national supervisory systems. The Methodology, first issued in 1999, is designed to improve objectivity and comparability in the assessment of different countries' compliance with the Core Principles. Since 1997, significant changes have occurred in banking regulation, much experience has been gained with implementing the Core Principles in individual countries, and new regulatory issues have emerged. A wide range of users and experts have been involved in drafting the revised versions.

### *Accounting and auditing*

Over the past year, the Committee's efforts have focused on contributing to the development of international accounting and auditing standards. High-level dialogue with standard setters and industry leaders in these areas is helping the Committee to gain well informed perspectives and heighten sensitivity towards supervisory concerns over accounting and auditing issues early in the standards development process.

The Committee has formulated specific guidance addressing prudential concerns for banks electing to adopt the recently issued International Accounting Standards Board (IASB) fair value option for valuing financial instruments. A paper was published providing guidance on sound credit risk assessment and valuation for loans, which considers how common data and processes can be used for credit risk assessment, accounting and capital adequacy purposes. Finally, the Committee has submitted comments addressing revised international auditing standards and has contributed to the development of audit oversight bodies.

### *Increasing the involvement of non-member countries in the Basel Committee process*

Since May 2006, the Committee's agendas, action points and working documents have also been distributed to the chairs of the regional supervisory groups for circulation within the groups at their discretion. The Committee is closely involved in the organisation of the next International Conference of Banking Supervisors, which will take place in Mexico in October 2006. In

addition, it has materially increased the amount of information about its activities on the BIS public website.

### *Committee on the Global Financial System*

The Committee on the Global Financial System (CGFS) meets four times a year, and is mandated to monitor developments in global financial markets and report to the central bank Governors of the G10 countries. The members of the CGFS also undertake coordinated longer-term projects by forming study groups or working groups that address topics of particular interest in the area of financial market developments. The members of the CGFS include senior officials from G10 central banks and the ECB, and representatives of a number of central banks from major economies and financial centres.

#### *Monitoring discussions*

The Committee's monitoring discussions, which focused on macroeconomic and financial market developments during the past year, covered the following issues:

- implications for the global economy arising from a turn in the credit cycle and from rising commodity prices;
- implications of the widespread tightening of monetary policy for banks in emerging market economies;
- the build-up of foreign exchange reserves in many emerging economies and its domestic implications;
- the decline in long-term bond yields, the role of pension funds in that process and its implications;
- the impact of Hurricane Katrina on the global reinsurance industry;
- the compression of emerging market yield spreads and identification of factors that might have played a role;
- the sources and implications of the recent rise in merger and acquisition activity; and
- the reasons for the weakness of corporate investment in a number of economies.

#### *Working groups and other projects*

In January 2006 the Committee published a report on *Housing finance in the global financial market*, from a working group that studied structural factors influencing the supply of and demand for housing finance. The working group's main conclusions were as follows: first, the developments in the housing finance market have led to an improved allocation and pricing of credit that has enhanced financial and macroeconomic stability; second, stress tests conducted by central banks and others indicate that the current level of debt is affordable and that the majority of borrowers would be able to absorb plausible declines in house prices and higher interest rates; finally, the fact that housing loans are increasingly funded in capital markets may result in stronger links between global financial market developments and domestic housing markets than observed in the past.

The CGFS is currently working on the following projects:

- organising a workshop with market participants to discuss the structural changes taking place in credit markets, and to understand the supply and demand factors driving these developments;
- a study group on volatility to understand the factors contributing to the recent low volatility in financial markets, driven by concern that this might encourage financial players to take excessive risk, with potential implications for financial stability;
- a working group on financial stability and local currency bond markets to review how far the issuance of local currency debt improves domestic financial intermediation, and what financial stability implications these developments might have; and
- a working group on institutional investors to analyse the influence of changing regulatory and accounting standards and structural reforms of public pension systems on institutional investors' asset allocation and risk-taking decisions.

### *Committee on Payment and Settlement Systems*

The Committee on Payment and Settlement Systems (CPSS) contributes to strengthening financial market infrastructure by promoting sound and efficient payment and settlement systems. During the period under review, the Committee further enhanced its cooperation with other international institutions and groupings, and involved an increasingly wide group of central banks in its activities. Timothy F Geithner, President and Chief Executive Officer of the Federal Reserve Bank of New York, is Chairman of the Committee.

In May 2005, the Committee published reports on *Central bank oversight of payment and settlement systems* and *New developments in large-value payment systems*. In January 2006, it released a report on *Cross-border collateral arrangements*, and one on *General guidance for national payment system development*. This last report benefited greatly from input received following the release of a consultative version of the report in May 2005.

In February 2006, the Committee announced that it would conduct a survey of how banks and other selected institutions manage the risks they can incur when settling foreign exchange transactions. The survey took place during the second quarter of this year and was based on those carried out in 1996 and 1997, the results of which were reported in *Reducing foreign exchange settlement risk: a progress report*. The latest survey was updated to reflect the significant developments in settlement practices that have since taken place.

In March 2006, the Committee and the World Bank issued a consultative report on *General principles for international remittance services*. The report provides an analysis of the payment system aspects of remittances, on the basis of which it sets out general principles designed to assist countries that wish to improve the market for remittance services. The report contains five general principles covering transparency and consumer protection; payment system infrastructure; the legal and regulatory framework; market structure and competition; and governance and risk management.

The Committee continued to enhance its cooperation with other central banks, particularly those of emerging market economies, in order to extend its work outside the G10. It also provided support and expertise to workshops and seminars on payment system issues organised by the BIS in cooperation with regional central banking organisations.

### *Markets Committee*

The Markets Committee brings together senior G10 central bank officials responsible for market operations. Its bimonthly meetings provide an opportunity for participants to exchange views on recent developments and structural changes in foreign exchange and related financial markets, as well as to consider the short-run implications of particular current events for the functioning of these markets. The Committee invites representatives from major countries to join the discussions on a regular basis; in addition to the central banks and monetary authorities of Australia, Brazil, China, Hong Kong SAR, Korea, Mexico, Singapore and Spain, the Reserve Bank of India participated for the first time in early 2006.

Issues covered in the meetings included:

- the recent movements in the major bilateral exchange rates and the impact of the changing assessments of the outlook for monetary policy in the three largest currency areas;
- the implications of the new exchange rate arrangements in China;
- the influence of the growth of electronic trading platforms on the functioning of forex markets;
- the challenges posed by the low-volatility environment;
- the factors behind the recent rise in the price of commodities, in particular gold;
- the movements in bond yields in the major financial markets, with a focus on the role played by supply and demand factors (including the influence of institutional investors and the impact of changes in pension fund regulatory arrangements), as well as on the more varied performance across the credit spectrum; and
- the impact on financial markets of foreign exchange reserve accumulation.

Members also discussed a number of specific topics over the course of the year, including the preparations for the next Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in April 2007, business continuity challenges for central banks, and various monetary policy implementation issues. With effect from 1 June 2006, Sheryl Kennedy, Deputy Governor of the Bank of Canada, was succeeded by Hiroshi Nakaso, Director General of the Bank of Japan, as Chair of the Markets Committee.

### *Central Bank Counterfeit Deterrence Group*

The Central Bank Counterfeit Deterrence Group (CBCDG) is mandated by the Governors of the G10 central banks to investigate emerging threats to the security of banknotes and to propose solutions for implementation by the



issuing authorities. The CBCDG has developed anti-counterfeiting features to prevent banknote images from being replicated by colour copiers and digital technology (personal computers, printers and scanners). The BIS supports the work of the CBCDG by hosting its Secretariat and acting as its agent in contractual arrangements.

## BIS contributions to broader international financial cooperation

### *Group of Ten*

The Bank contributes actively to the work of the G10 Finance Ministers and central bank Governors, their Deputies and the activities taking place under their auspices. It participates in meetings as an observer institution and provides secretariat support to the G10 together with the IMF and OECD.

In September 2005, a report prepared at the request of the G10 Deputies on the implications of ageing populations and pension system reform for financial markets and economic policies was released. It concluded that changes under way in public and private pension schemes may significantly increase the influence of retirement saving and related capital flows in financial markets. The report recommended that regulatory and supervisory arrangements should aim to influence and support the trend towards more rigorous risk management, greater transparency and better governance at private pension funds, for example by ensuring consistency between funding and prudential requirements and accounting standards. Tax rules should not hinder the build-up of funding buffers by private pension funds, but should avoid the abuse of tax deferrals. In addition, as risks are increasingly shifted to individual households, financial education and advice may need to be strengthened, in order to protect pension beneficiaries. Work was also undertaken on safeguarding critical functions performed by private financial institutions.

### *Financial Stability Forum*

The Financial Stability Forum (FSF), established in 1999, promotes international financial stability through enhanced information exchange and cooperation in financial supervision and surveillance. Its principal remit is to assess conjunctural and structural vulnerabilities affecting the international financial system and to encourage and coordinate action to address them. The FSF comprises senior officials from finance ministries, central banks and financial regulators in key financial centres, as well as representatives of international financial institutions (the BIS, IMF, OECD and World Bank), international supervisory and regulatory standard-setting bodies (Basel Committee, IAIS, IASB and IOSCO) and central bank expert groupings (CGFS and CPSS). The Forum's Secretariat is based at the BIS. More information on the FSF is available at [www.fsforum.org](http://www.fsforum.org).

The FSF meets twice yearly in plenary form, most recently in September 2005 in London and March 2006 in Sydney. The Forum also holds regional



meetings to foster wider exchanges of views on financial vulnerabilities and the work under way nationally and internationally to address them. Recent regional meetings were held in Mexico City in November 2005, focusing on the Latin American economies, and in Sydney in March 2006, focusing on the Asia-Pacific region.

In the past year, in addition to its regular assessment of financial vulnerabilities, the FSF also examined the preparedness of major financial institutions to deal with major changes in the economic and financial environment; the lessons of past episodes of market liquidity erosion; business continuity principles for financial firms and authorities; the potential economic and financial stability implications of an avian flu pandemic; progress in the implementation of international standards and codes; the robustness of international financial standard-setting processes; and concerns about regulatory overload.

The rapid growth of the hedge fund sector in recent years has attracted attention in markets and in the official community. In November 2005, the FSF convened two informal workshops, attended by senior members of the hedge fund community, their counterparties and financial authorities, with the aim of improving understanding between the official and private sectors on issues relating to hedge funds. The workshops discussed trends in the sector, risks in the present market environment, risk management challenges for hedge funds and their counterparties, and operational issues.

The FSF also supported efforts to strengthen international accounting and auditing standards and practices, including by fostering dialogue among stakeholders in this area. In February 2006, the FSF, the International Accounting Standards Board and the International Federation of Accountants organised a roundtable that addressed experiences in the first year of implementation of the International Financial Reporting Standards (IFRS); the convergence process between the IASB and other national accounting standard setters; fair value accounting issues; and risks in the financial reporting process. The roundtable brought together senior representatives from national authorities with responsibility for financial reporting, accounting and auditing professional organisations, standard setters, market participants (including representatives from capital market firms, corporations and investors), international regulatory bodies and international financial institutions.

In March 2005, the FSF set in train a process to promote further improvements in offshore financial centres (OFCs), drawing on initiatives by FSF members at both international and national level and appropriate steps by the FSF itself. As part of this process, the FSF set up a group to review the results of work being carried out by FSF member bodies to ensure that OFCs meet international standards and to address remaining problems in several OFCs, notably in the areas of effective cross-border cooperation, information exchange and adequacy of supervisory resources. The review group held its first formal meeting in February 2006 and subsequently reported to the full FSF on progress in these areas.

At the end of April 2006, Roger W Ferguson Jr stepped down as Chairman of the FSF upon his departure from the Federal Reserve. He was succeeded by Mario Draghi, Governor of the Bank of Italy.

## *International Association of Insurance Supervisors*

The IAIS has been hosted by the BIS since the establishment of its Secretariat in January 1998. Its role is akin to that of the Basel Committee on Banking Supervision, but focused on the insurance sector. The IAIS aims at contributing to global financial stability through improved supervision of the insurance industry, the development of standards for supervision, international cooperation based on exchange of information, and mutual assistance. In collaboration with other international regulatory bodies (within the framework of the Joint Forum of the Basel Committee, IOSCO and the IAIS), the IAIS has also helped develop principles for the supervision of financial conglomerates. Moreover, it actively participates in the Financial Stability Forum. The continuous increase in new members and observers reflects the recognition of the IAIS's role. More information on the IAIS is available at [www.iaisweb.org](http://www.iaisweb.org).

During the past year, the IAIS undertook several key initiatives in the development and harmonisation of insurance standards concomitant with the changing financial landscape, the priority areas being accounting, capital adequacy and solvency, and reinsurance.

In the area of accounting, June 2005 saw the release of the paper *Issues arising as a result of the IASB's insurance contracts project – Phase II: initial IAIS observations*. The paper provides initial observations on identified measurement themes common to both financial and regulatory reporting that the IAIS believes the IASB should address in its consideration of Phase II of its insurance contracts project, notably regarding the valuation of insurance liabilities.

Regarding capital adequacy and solvency, in October 2005 the IAIS approved a policy paper entitled *A new framework for insurance supervision: towards a common structure and common standards for the assessment of insurer solvency* (the Framework paper), describing the rationale and the contents of a framework for insurance supervision. At the same time, the IAIS adopted *Towards a common structure and common standards for the assessment of insurer solvency: cornerstones for the formulation of regulatory financial requirements* (the Cornerstones paper), which sketches the contours of the common structure and standards, highlighting some of the critical cornerstones for the formulation of regulatory financial requirements. In February 2006, another overarching standard-setting paper, *Roadmap for a common structure and common standards for the assessment of insurer solvency*, was released, setting out the work plan for future efforts in establishing the new framework for insurance supervision.

Also in October 2005, the IAIS approved a supervisory *Guidance paper on risk transfer, disclosure and analysis of finite reinsurance*. In December, the IAIS published its second annual *Global reinsurance market report*, based on global reinsurance market statistics for the financial year 2004. The report reviews the overall financial health of the sector during 2004, during which it was able to withstand a number of natural catastrophes, including four major hurricanes in the United States and typhoons in Japan. It also briefly discusses

loss-causing events in 2005 – in particular Hurricane Katrina, the impact of which fell heavily on the reinsurance sector – concluding that while reinsurer earnings will have been substantially reduced there will not be any significant adverse impact on the reinsurance sector's overall capital.

Training remains a high priority for the IAIS. During the past year, the IAIS organised or assisted in 20 seminars, conferences and workshops around the world, in several cases in collaboration with the Financial Stability Institute. At the same time, the Association, along with the World Bank, carried forward the insurance core curriculum project, developing some 25 high-quality modules for in-depth application of the IAIS core principles.

### *International Association of Deposit Insurers*

The International Association of Deposit Insurers (IADI) was established in May 2002 and opened its Head Office at the BIS in October that year. Currently, 61 organisations (of which 44 are members) from around the world are involved in the activities of IADI, including a number of central banks that have an interest in promoting the adoption or operation of effective deposit insurance systems. The Chair of the Executive Council and President of IADI is Jean Pierre Sabourin and the Secretary General is John Raymond LaBrosse.

During its fourth year, IADI continued to provide a forum to facilitate wide international contacts among deposit insurers and other interested parties. For example, its Fourth Annual Conference, held in Taipei in September 2005, was attended by 150 deposit insurers and policymakers from 49 countries; the conference theme was "Challenges for deposit insurers in resolving bank failures".

IADI also organised the first ever International Week of Deposit Insurance, with a special exhibition at which 32 exhibitors provided information on the key characteristics of depositor protection arrangements in countries around the world. Another new initiative was the Deposit Insurance Organization of the Year Award, conferred on a member institution in celebration of an important achievement and/or in recognition of the contribution that the member has made to the furtherance of IADI's objects.

Work is continuing on guidance to improve the effectiveness of deposit insurance systems. The Association has published guidance papers on:

- the establishment and design of deposit insurance systems;
- the development of differential premium systems;
- the promotion of effective interrelationships among financial safety net participants; and
- general guidance on its *Bank resolutions consultation paper*.

Recent regional activities included conferences, seminars and Committee meetings in Almaty, Cartagena, Manila, Abuja, Taipei, Prague and Marrakesh. IADI also collaborated with the Asian Development Bank on an international seminar "Integrating financial supervision and the role of deposit insurers" in February 2006.

The website ([www.iadi.org](http://www.iadi.org)) and a bimonthly newsletter provide information on activities to members and participants.

## Financial services of the Bank

### *Banking services*

The BIS offers a wide range of financial services designed specifically to assist central banks and other official monetary authorities in the management of their foreign reserves. Some 130 such authorities, as well as a number of international institutions, currently make active use of these services.

Safety and liquidity are the key features of the Bank's credit intermediation services, which are supported by a rigorous internal risk management framework. In accordance with best practice, a separate risk control unit reporting directly to the Deputy General Manager – and through him to the General Manager – monitors the Bank's credit exposure, liquidity, and market and operational risks.

In response to the diverse – and constantly evolving – needs of central banks, the BIS offers an extensive array of investment possibilities in terms of currency denomination, liquidity and maturity. In addition to traditional money market placements such as sight/notice accounts and fixed-term deposits, the Bank offers two instruments that can be traded (bought and sold back) directly with it: the Fixed-Rate Investment at the BIS (FIXBIS), available in maturities from one week to one year; and the BIS Medium-Term Instrument (MTI), with maturities from one to 10 years. A series of callable MTI structures, as well as other instruments with embedded optionality, are also part of the standard product range.

The Bank transacts foreign exchange and gold on behalf of its customers. From time to time, it extends short-term credits to central banks, usually on a collateralised basis. The BIS also acts as trustee and collateral agent (see below).

The BIS provides asset management services in sovereign securities or high-grade assets. These may take the form of either a specific portfolio mandate negotiated between the BIS and a central bank or an open-end fund structure – the BIS Investment Pool (BISIP) – allowing customers to invest in a common pool of assets. The two Asian Bond Funds (ABF1 and ABF2) are administered by the BIS under the BISIP umbrella: ABF1 is managed by the BIS and ABF2 by a group of external fund managers.

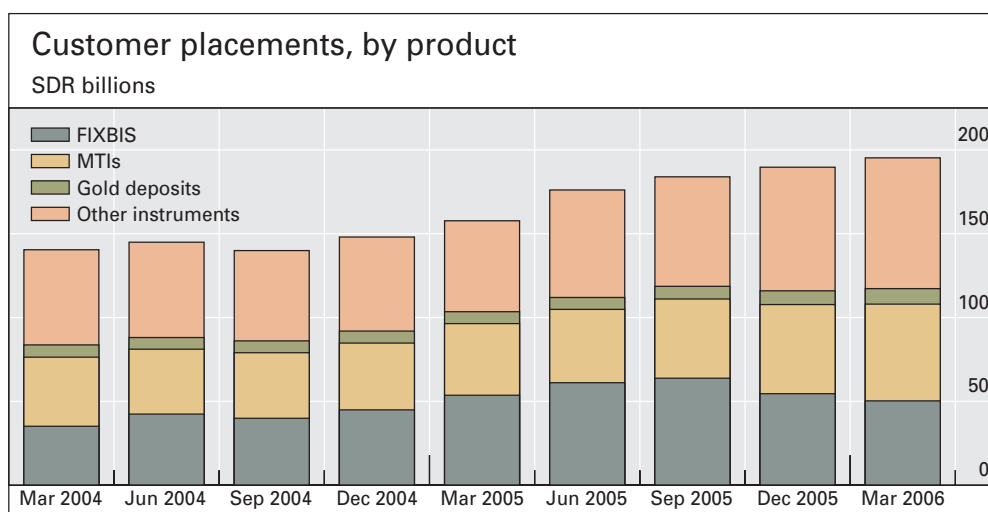
BIS financial services are provided out of two linked trading rooms: one at its Basel head office and one at its Asian Office in Hong Kong SAR.

### *Operations of the Banking Department in 2005/06*

The BIS balance sheet continued to expand in 2005/06 to reach a financial year-end record at 31 March 2006 of SDR 220.1 billion, representing a substantial year-on-year increase of SDR 39.6 billion or 22%. Of this increase, SDR 2.7 billion was attributable to changes in exchange rates, notably the appreciation of the US dollar against the SDR, and SDR 3.7 billion was attributable to a higher market price of gold.

### *Liabilities*

The size of the BIS balance sheet is mainly driven by placements from customers, which constitute the lion's share of total liabilities. On 31 March



2006, customer placements (excluding repurchase agreements) amounted to SDR 195.2 billion, compared with SDR 157.7 billion at the end of the previous financial year.

Some 95% of customer placements are denominated in currencies, with the remainder in gold. Currency deposits rose from SDR 150.6 billion a year earlier to SDR 186.0 billion at end-March 2006, representing around 6% of the world's total foreign currency reserves. The share of currency placements denominated in US dollars was 65%, while euro-denominated funds accounted for 20%. The increase in gold deposits from SDR 7.1 billion to SDR 9.2 billion was mainly due to valuation effects, ie a higher gold price.

The expansion in customer placements was mainly driven by fixed-term deposits and MTIs. Subscriptions to MTIs increased by 35%, making them the single largest BIS instrument held by customers. Growth of more than 40% in fixed-term deposits partly reflected a shift from FIXBIS, a more liquid but lower-yielding instrument.

A geographical breakdown of currency placements with the BIS shows a relative shift from Asian customers to those in other parts of the world, particularly Europe.

### Assets

Most of the BIS assets consist of investments with top-quality commercial banks of international standing as well as government and quasi-government securities, including reverse repurchase agreements. In addition, the Bank owns 165 tonnes of fine gold, having disposed of 15 tonnes during the financial year. The credit exposure is managed in a very conservative manner, with 99.7% of the Bank's credit exposure rated A- or higher as at 31 March 2006 (see note 4E to the financial statements).

The Bank's holdings of currency deposits and securities, including reverse repurchase agreements, totalled SDR 199.2 billion on 31 March 2006, up from SDR 165.4 billion at the end of the previous financial year. These additional funds were mainly invested in Treasury bills, time deposits with banks, and debt securities issued by commercial banks.

The Bank uses various derivative instruments in order to manage its assets and liabilities efficiently (see note 9 to the financial statements).

### *Functions as agent and trustee*

#### *Trustee for international government loans*

The Bank continued to perform its functions as trustee for the funding bonds 1990–2010 of the Dawes and Young Loans during the year (for details, see the *63rd Annual Report* of June 1993). The Deutsche Bundesbank as paying agent notified the Bank that in 2005 the Bundeswertpapierverwaltung (BWV – German Federal Securities Administration) had arranged for payment of approximately €4.9 million for redemption of funding bonds and interest. Redemption values and other details were published by the BWV in the *Bundesanzeiger* (Federal Gazette).

The Bank maintained its reservations regarding the application by the BWV of the exchange guarantee clause for the Young Loan (stated in detail in its *50th Annual Report* of June 1980), which also extend to the funding bonds 1990–2010.

#### *Escrow agent functions*

Within the context of an external debt agreement reached in October 2005 between the Federal Republic of Nigeria and its 15 Paris Club creditor countries, the BIS entered into a Depository and Escrow Agreement with the Central Bank of Nigeria dated 31 October 2005, holding funds and releasing them to each creditor country once the relevant bilateral debt restructuring agreements with Nigeria had been concluded.

#### *Collateral agent functions*

Under a number of agreements, the BIS acts as collateral agent to hold and invest collateral for the benefit of the holders of certain foreign currency denominated bonds issued by countries under external debt restructuring arrangements. During 2005/06, collateral pledge agreements included those for Brazilian bonds (described in detail in the *64th Annual Report* of June 1994), Peruvian bonds (see the *67th Annual Report* of June 1997) and Côte d'Ivoire bonds (see the *68th Annual Report* of June 1998).

## Institutional and administrative matters

### *Changes to the BIS governance structure*

In 2004, the BIS undertook a review of its governance to determine the extent to which it was consistent with current principles of sound corporate governance, taking due account of the specific features of the Bank as an international organisation (see the *75th Annual Report* of June 2005).

The review was conducted by three leading independent corporate governance experts: Professor Klaus J Hopt, Director of the Max Planck



Institute for Foreign Private and Private International Law in Hamburg; Professor Reinier H Kraakman, Harvard Law School; and Professor Jean-Victor Louis, former General Counsel of the National Bank of Belgium and Emeritus Professor at the Université Libre de Bruxelles.

The experts submitted their final report to the BIS Board of Directors in November 2004. The report, available on the BIS website, identified some possibilities for improving the Bank's Statutes and its governance practice. A committee composed of selected Board members was created, to discuss the matters raised in the report and to make proposals for concrete action. The committee recommended a number of amendments to the BIS Statutes to improve the Bank's corporate governance and increase its transparency. The amendments were approved by the Board and adopted at an Extraordinary General Meeting of the Bank on 27 June 2005.

## *The Bank's administration*

### *Budget policy*

The process of formulating the Bank's expenditure budget for the next financial year starts about six months in advance with the setting by the BIS management of a broad business orientation and financial framework. Within this context, business areas specify their plans and the corresponding resource requirements. The process of reconciling detailed business plans, objectives and overall resource availability culminates in the determination of a draft financial budget. This must be approved by the Board before the start of the financial year.

In drawing up the budget, a distinction is made between administrative and capital expenditures. In common with other organisations of a similar nature to the BIS, management and staff expense, including remuneration, pensions and health and accident insurance, amounts to around 70% of administrative costs. The other major expenditure categories, each accounting for around 10% of administrative spending, are IT and telecommunications and building and equipment expenditure. Capital spending mainly relates to building and IT investment expenditure, and can vary significantly from year to year. Most of the Bank's administrative and capital expenditure is incurred in Swiss francs.

Administrative expenses before depreciation during the financial year 2005/06 amounted to 223.6 million Swiss francs, 1.2% below the budget of 226.3 million Swiss francs,<sup>1</sup> while capital expenditure, at 23.8 million Swiss francs, was 3.2 million below budget. The underspending in administrative expenses was primarily attributable to the initial headcount savings from the Bank's activity review (see below), which led to lower expenditure on management and staff costs. As regards capital spending, the largest items of

<sup>1</sup> The Bank's budgetary accounting is cash-based and excludes certain financial accounting adjustments, principally relating to post-employment benefit obligations, which take into account financial market and actuarial developments. These additional factors are included under "Operating expense" disclosed in the profit and loss account (see "Net profit and its distribution").



expenditure related to the enhancement of the Bank's physical security systems and building safety.

Expenditure in 2005/06 was the closest to the budget achieved in the past few years, and reflected further improvement in budgetary management, which was attributable to tighter budgeting and the enhancement of the quarterly monitoring of the objectives in business area plans that was introduced in 2004/05. In addition to these measures, Management undertook a thorough review of the Bank's activities during the year, which identified a number of areas where efficiency gains and headcount savings could be realised.

Administrative and capital expenditure also reflected the priorities set in the 2005/06 budget of strengthening the Bank's risk management, internal audit and compliance functions, and of continuing the efforts to improve security arrangements.

In March 2006, the Board approved an increase in the administrative budget for the financial year 2006/07 of 2.5% to 232.0 million Swiss francs. The capital budget foresees a decrease of 1.1 million Swiss francs to 25.9 million. The budgets for 2006/07 are based on the main objectives of the Bank for the next financial year, which are to:

- expand BIS services to deepen relations with shareholders in the Asia-Pacific region. This initiative includes a three-year policy-oriented research programme on monetary and financial sector issues in Asia and further enhancement of banking services in the Asian time zone;
- implement the recommendations arising from the activity review undertaken during 2005/06. The first phase will lead to a reduction of administrative positions in Basel, thereby providing the room for manoeuvre to pursue the Asian initiative within a restrained budgetary framework; and
- plan for further renewal of meeting facilities at the Tower building in Basel and the renovation of the Sports Club buildings.

#### *Remuneration policy*

The jobs performed by BIS staff members are assessed on the basis of a number of objective criteria, including qualifications, experience and responsibilities, and are classified into distinct job grades. The job grades are associated with a structure of salary ranges. Regular salary surveys are conducted in which the structure of BIS salaries is assessed against that in comparable institutions or market segments. The analysis takes into account differences in the taxation of salaries of the staff of the surveyed institutions. When applying the market data to BIS salaries, the Bank focuses on the upper half of market salaries in order to attract highly qualified staff.

In those years in which no comprehensive salary survey is undertaken, the salary structure is adjusted for the rate of inflation in Switzerland and the average rise in real salaries in the business sector of major industrial countries. In July 2005, the salary structure was increased by 1.2%. Movements of salaries of individual staff members within the ranges of the salary structure are based on merit, subject to a regular evaluation of performance.

Non-Swiss and non-locally hired staff, including senior management, are entitled to an expatriation allowance. This currently amounts to 14% or 18%

of annual salary depending on family status, subject to a ceiling. Expatriate staff are also entitled to receive an education allowance.<sup>2</sup> In addition, BIS staff members have access through the Bank to health insurance and a defined benefit contributory pension plan.

With regard to the remuneration of senior officials, it was decided in early 2005 to conduct regular surveys to benchmark their salaries against conditions in comparator institutions. Between surveys, salaries of senior officials are adjusted for Swiss inflation. As of 1 July 2005, the annual remuneration of senior managers before expatriation allowances is based on the following salary structure:

- General Manager 718,370 Swiss francs
- Deputy General Manager 607,850 Swiss francs
- Heads of Department 552,590 Swiss francs

In addition to the above, the General Manager receives an annual representation allowance and enhanced pension rights.

The Annual General Meeting approves the remuneration of members of the Board of Directors, with adjustments taking place every three years. The most recent adjustment took place on 1 July 2005, bringing the overall fixed annual remuneration paid to the Board of Directors to a total of 895,800 Swiss francs. In addition, Board members receive an attendance fee for each Board meeting in which they participate. Assuming the full Board is represented in all Board meetings, the annual total of these attendance fees amounts to 824,160 Swiss francs.

## Net profit and its distribution

### *Net profit*

The net profit for the 76th financial year amounted to SDR 599.2 million, compared with the equivalent figure for the preceding year of SDR 370.9 million. The factors behind this outcome are discussed below.

### *Total operating income*

Total operating income amounted to SDR 573.4 million in the financial year 2005/06, compared with SDR 458.4 million in 2004/05. There were three principal reasons for this development:

- Inflows from share subscriptions and retained profits increased the component of the Bank's equity denominated in currencies, and consequently generated additional interest income from the Bank's investment securities. Interest income from investment securities also benefited from rising interest yields.
- Net income from the Bank's deposit-taking business rose as a result of the strong inflow of deposits from customers during the financial year. Intermediation margins in 2005/06 were almost unchanged from 2004/05.

<sup>2</sup> Certain staff members who joined the Bank before 1997 receive an expatriation allowance of 25%, but are not entitled to receive education allowances.

- Foreign exchange losses were incurred in both financial years, but at SDR 25.2 million in 2005/06 they were SDR 9.3 million lower than in 2004/05. The exchange loss in 2005/06 resulted principally from the impact of an appreciating gold price on the market value of forward contracts for the sale of gold investment assets.<sup>3</sup>

#### *Operating expense*

Operating expense (see note 28 to the financial statements) amounted to SDR 146.9 million, 1.3% above the preceding year's figure of SDR 145.0 million. Administrative expenses before depreciation amounted to SDR 133.6 million, 3.3% above the previous year's figure of SDR 129.3 million. The depreciation charge decreased from SDR 15.7 million to SDR 13.3 million.

#### *Operating profit and other profit items*

The Bank's operating profit, which reflects the profits of its ongoing business, amounted to SDR 426.5 million, 36.1% higher than the equivalent figure of SDR 313.4 million recorded in 2004/05.

A net gain of SDR 58.2 million was incurred on the sale of investment securities during the year. This resulted from the realignment of the Bank's investment portfolio to its underlying benchmark position and reflected the sale of securities acquired when interest rates were higher.

The realised gain of SDR 114.5 million on sales of gold investment assets during 2005/06 arose from the sale of 15 tonnes from the Bank's total holdings of 180 tonnes at 31 March 2005.

#### *Review of dividend policy*

During the year, the Board reviewed the Bank's dividend policy, taking into consideration the Bank's capital needs and the interests of BIS shareholders in obtaining a fair and sustainable return on their investments in BIS shares. Having examined the outlook for the Bank's profits, the Board concluded that the current approach of increasing the dividend by SDR 10 each year would be broadly consistent with these considerations. This approach would result in an increase in the dividend from SDR 235 per share in 2004/05 to SDR 245 in 2005/06.

The Board also decided to review the dividend policy every two to three years, taking changing circumstances into account where necessary.

#### *Proposed distribution of the net profit for the year*

On the basis of Article 51 of the Statutes, the Board of Directors recommends that the net profit of SDR 599.2 million for the financial year 2005/06 be applied

<sup>3</sup> The exchange loss of SDR 34.5 million in 2004/05 resulted from the impact of the appreciation of the Swiss franc against the SDR during 2004 on the excess of Swiss franc liabilities over assets in that currency that existed before the repurchased shares of the Belgian and French issues were sold back to the respective central banks in autumn 2004.

by the General Meeting in the following manner:

1. SDR 132.4 million in payment of a dividend of SDR 245 per share;
2. SDR 46.7 million to be transferred to the general reserve fund;<sup>4</sup>
3. SDR 6.0 million to be transferred to the special dividend reserve fund; and
4. SDR 414.1 million, representing the remainder of the available net profit, to be transferred to the free reserve fund. This fund can be used by the Board of Directors for any purpose that is in conformity with the Statutes.

If approved, the dividend will be paid on 3 July 2006 according to each shareholder's instructions in any constituent currency of the SDR, or in Swiss francs, to the shareholders whose names were contained in the Bank's share register on 31 March 2006. The proposed dividend of SDR 245 per share for the financial year 2005/06 represents a 4.3% increase over the dividend for 2004/05.

The full dividend will be paid on 510,192 shares. The dividend payable in respect of the 35,933 treasury shares of the American issue that were redistributed on 31 May 2005 will be settled on a pro rata basis from that date. The number of issued and paid-up shares is 547,125. Of these shares, 1,000 were held in treasury at 31 March 2006, namely the suspended shares of the Albanian issue. No dividend will be paid on these treasury shares.

### *Report of the auditors*

The Bank's financial statements have been duly audited by Deloitte AG, who have confirmed that they give a true and fair view of the Bank's financial position at 31 March 2006 and the results of its operations for the year then ended. Their report is to be found immediately following the financial statements.

<sup>4</sup> Since the general reserve fund exceeded four times the Bank's paid-up capital at 31 March 2005, Article 51 of the Bank's Statutes requires that 10% of the profit after payment of the dividend shall be paid into this fund, until its balance equals five times the paid-up capital.



## Board of Directors

Jean-Pierre Roth, Zurich  
Chairman of the Board of Directors

Hans Tietmeyer, Frankfurt am Main  
Vice-Chairman

Ben S Bernanke, Washington  
Pierluigi Ciocca, Rome  
David Dodge, Ottawa  
Mario Draghi, Rome  
Toshihiko Fukui, Tokyo  
Timothy F Geithner, New York  
Lord George, London  
Stefan Ingves, Stockholm  
Mervyn King, London  
Jean-Pierre Landau, Paris  
Christian Noyer, Paris  
Guy Quaden, Brussels  
Alfons Vicomte Verplaetse, Brussels  
Axel A Weber, Frankfurt am Main  
Nout H E M Wellink, Amsterdam

### *Alternates*

Giovanni Carosio or Ignazio Visco, Rome  
Karen H Johnson, Washington  
Peter Praet or Jan Smets, Brussels  
Wolfgang Mörke, Frankfurt am Main  
Marc-Olivier Strauss-Kahn or Michel Cardona, Paris  
Paul Tucker or Paul Fisher, London

### *Committees of the Board of Directors*

Consultative Committee  
Audit Committee

both chaired by Hans Tietmeyer

## Senior officials

Malcolm D Knight	General Manager
Hervé Hannoun	Deputy General Manager
Peter Dittus	Secretary General, Head of Department
William R White	Economic Adviser, Head of Monetary and Economic Department
Günter Pleines	Head of Banking Department
Daniel Lefort	General Counsel
Már Gudmundsson	Deputy Head of Monetary and Economic Department
Jim Etherington	Deputy Secretary General
Louis de Montpellier	Deputy Head of Banking Department
Josef Tošovský	Chairman, Financial Stability Institute

### Changes among the Board of Directors and senior officials

At the Extraordinary General Meeting held on 27 June 2005, it was decided to abolish the position of President of the BIS. Nout Wellink, President of the Netherlands Bank, who had been re-elected as Chairman of the Board of Directors and President of the BIS with effect from 1 March 2005, continued to serve in his capacity as Chairman of the Board before stepping down on 28 February 2006. At its meeting in January 2006, the Board elected Jean-Pierre Roth, Chairman of the Governing Board of the Swiss National Bank, as Chairman of the Board of Directors for a period of three years commencing on 1 March 2006.

On 7 November 2005, the term of office of Vincenzo Desario, Director General of the Bank of Italy, as a member of the Board of Directors came to an end. Following the resignation of Antonio Fazio as Governor of the Bank of Italy on 19 December 2005 and pending the start of the term of office of the new Governor of the Bank of Italy, Mr Desario assumed the role of Acting Governor of the Bank of Italy and became an ex officio Director of the BIS from 20 December 2005 until 15 January 2006. By letter dated 23 December 2005, Mr Desario appointed Pierluigi Ciocca, Deputy Director General of the Bank of Italy, as a member of the Board to fill the seat vacated by Mr Desario, for a period of three years ending on 22 December 2008. On 16 January 2006, Mario Draghi was appointed Governor of the Bank of Italy and became an ex officio Director of the Board of Directors.



At the end of December 2005, Lars Heikensten resigned from his position as Governor of Sveriges Riksbank and vacated his seat on the Board. At its meeting in November 2005, the Board elected Stefan Ingves, the successor to Mr Heikensten at Sveriges Riksbank, as a member of the Board from 1 January 2006 for the unexpired period of Mr Heikensten's term of office, ie until 31 March 2008. At the same meeting, Axel Weber, President of the Deutsche Bundesbank, reappointed Hans Tietmeyer as a member of the Board of Directors for a further period of three years ending on 31 December 2008, and the Board re-elected Hans Tietmeyer as Vice-Chairman of the Board of Directors from 1 January 2006 until the end of his term of office as a member of the Board.

On 1 February 2006, Ben S Bernanke succeeded Alan Greenspan as Chairman of the Board of Governors of the Federal Reserve System and became an ex officio Director of the Board of Directors. With effect from 1 March 2006, Guy Quaden, Governor of the National Bank of Belgium, reappointed Alfons Verplaetse as a member of the Board of Directors for a further period of three years ending on 28 February 2009.

On 31 December 2005, Hervé Hannoun resigned from his position as First Deputy Governor of the Bank of France and vacated his seat on the Board. On 27 April 2006, Christian Noyer, Governor of the Bank of France, appointed Jean-Pierre Landau as a member of the Board of Directors to fill the seat vacated by Hervé Hannoun for the unexpired period of Mr Hannoun's term of office, ie until 27 November 2006.

Axel Weber, President of the Deutsche Bundesbank, appointed Wolfgang Mörke as his second Alternate from July 2005 to succeed Stefan Schönberg. Mario Draghi, Governor of the Bank of Italy, appointed Giovanni Carosio as his first Alternate and Ignazio Visco as his second Alternate from January 2006.

As regards the senior officials of the Bank, upon the retirement of André Icard, Hervé Hannoun was appointed Deputy General Manager of the BIS from 1 January 2006. Daniel Lefort was appointed General Counsel, upon the retirement of Mario Giovanoli, from 1 January 2006.

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It was with deep regret that the Bank learned of the death of Antonino Occhiuto, Honorary Director General of the Bank of Italy, on 27 June 2005. Mr Occhiuto had served on the Board as an appointed Director between 1975 and 1980.

The Board noted with deep regret the death of Wim Duisenberg on 31 July 2005. Mr Duisenberg had served on the Board as a Director from 1982 to 1997. During this time, he had served two terms as President of the Bank and Chairman of the Board of Directors from 1988 to 1990 and from 1994 to 1997.

## BIS member central banks<sup>5</sup>

Bank of Algeria	Bank of Japan
Central Bank of Argentina	Bank of Korea
Reserve Bank of Australia	Bank of Latvia
Austrian National Bank	Bank of Lithuania
National Bank of Belgium	National Bank of the Republic of Macedonia
Central Bank of Bosnia and Herzegovina	Central Bank of Malaysia
Central Bank of Brazil	Bank of Mexico
Bulgarian National Bank	Netherlands Bank
Bank of Canada	Reserve Bank of New Zealand
Central Bank of Chile	Central Bank of Norway
People's Bank of China	Bangko Sentral ng Pilipinas
Croatian National Bank	National Bank of Poland
Czech National Bank	Bank of Portugal
National Bank of Denmark	National Bank of Romania
Bank of Estonia	Central Bank of the Russian Federation
European Central Bank	Saudi Arabian Monetary Agency
Bank of Finland	Monetary Authority of Singapore
Bank of France	National Bank of Slovakia
Deutsche Bundesbank (Germany)	Bank of Slovenia
Bank of Greece	South African Reserve Bank
Hong Kong Monetary Authority	Bank of Spain
Magyar Nemzeti Bank (Hungary)	Sveriges Riksbank (Sweden)
Central Bank of Iceland	Swiss National Bank
Reserve Bank of India	Bank of Thailand
Bank Indonesia	Central Bank of the Republic of Turkey
Central Bank & Financial Services Authority of Ireland	Bank of England
Bank of Israel	Board of Governors of the Federal Reserve System
Bank of Italy	

<sup>5</sup> In accordance with Article 15 of its Statutes, the Bank's capital is held by central banks only. The legal status of the Yugoslav issue of the capital of the BIS is currently under review following the constitutional changes in February 2003 which transformed the Federal Republic of Yugoslavia into the State Union of Serbia and Montenegro, with two separate central banks.



## Financial statements

as at 31 March 2006

The financial statements on pages 190–224 for the financial year ended 31 March 2006 were approved on 8 May 2006. They are presented in a form approved by the Board of Directors pursuant to Article 49 of the Bank's Statutes and are subject to approval by the shareholders at their Annual General Meeting on 26 June 2006.

Jean-Pierre Roth  
Chairman

Malcolm D Knight  
General Manager

# Balance sheet

As at 31 March 2006

<i>SDR millions</i>	Notes	2006	2005
<b>Assets</b>			
Cash and sight accounts with banks	5	33.0	25.8
Gold and gold deposits	6	11,348.0	8,617.0
Treasury bills	7	47,311.9	31,307.4
Securities purchased under resale agreements	7	19,519.2	14,034.3
Time deposits and advances to banks	8	87,898.5	80,316.5
Government and other securities	7	44,436.4	39,779.6
Derivative financial instruments	9	1,956.0	2,188.0
Accounts receivable	10	7,444.7	4,028.6
Land, buildings and equipment	11	188.4	189.2
<b>Total assets</b>		<b>220,136.1</b>	<b>180,486.4</b>
<b>Liabilities</b>			
Currency deposits	12	185,991.5	150,618.8
Gold deposits	13	9,235.6	7,110.8
Securities sold under repurchase agreements	14	1,222.4	1,159.4
Derivative financial instruments	9	2,674.9	3,440.6
Accounts payable	15	9,251.3	7,752.2
Other liabilities	16	169.4	151.3
<b>Total liabilities</b>		<b>208,545.1</b>	<b>170,233.1</b>
<b>Shareholders' equity</b>			
Share capital	17	683.9	683.9
Statutory reserves	18	9,071.7	8,743.2
Profit and loss account		599.2	370.9
Less: shares held in treasury	20	(1.7)	(396.2)
Other equity accounts	21	1,237.9	851.5
<b>Total equity</b>		<b>11,591.0</b>	<b>10,253.3</b>
<b>Total liabilities and equity</b>		<b>220,136.1</b>	<b>180,486.4</b>

## Profit and loss account

For the financial year ended 31 March 2006

<i>SDR millions</i>	Notes	2006	2005
Interest income	23	6,239.1	4,058.8
Interest expense	24	(5,569.1)	(3,384.1)
Net valuation movement	25	(74.1)	(183.1)
<b>Net interest income</b>		<b>595.9</b>	<b>491.6</b>
Net fee and commission income	26	2.7	1.3
Net foreign exchange loss	27	(25.2)	(34.5)
<b>Total operating income</b>		<b>573.4</b>	<b>458.4</b>
Operating expense	28	(146.9)	(145.0)
<b>Operating profit</b>		<b>426.5</b>	<b>313.4</b>
Net gain on sales of investment securities	29	58.2	7.0
Net gain on sales of gold investment assets	30	114.5	50.5
<b>Net profit for the financial year</b>		<b>599.2</b>	<b>370.9</b>
<b>Basic and diluted earnings per share (in SDR per share)</b>	31	<b>1,108.5</b>	<b>762.1</b>

# Statement of cash flows

For the financial year ended 31 March 2006

<i>SDR millions</i>	Notes	2006	2005
<b>Cash flow from / (used in) operating activities</b>			
Operating profit		426.5	313.4
<b>Non-cash flow items included in operating profit</b>			
Depreciation of land, buildings and equipment	11	13.3	15.7
<b>Net change in operating assets and liabilities</b>			
Currency deposits		31,732.0	15,329.4
Currency banking assets		(30,719.4)	(16,371.2)
Gold deposit liabilities		2,124.8	(182.7)
Gold and gold deposit banking assets		(2,118.0)	322.6
Accounts receivable		0.3	1.3
Other liabilities / accounts payable		19.6	17.5
Net derivative financial instruments		(533.7)	234.0
<b>Net cash flow from / (used in) operating activities</b>		<b>945.4</b>	<b>(320.0)</b>
<b>Cash flow from / (used in) investing activities</b>			
Net change in currency investment assets	7B	(1,676.9)	207.2
Securities sold under repurchase agreements		63.0	(65.9)
Net change in gold investment assets	6B	187.9	110.7
Net purchase of land, buildings and equipment	11	(12.6)	(14.9)
<b>Net cash flow from / (used in) investing activities</b>		<b>(1,438.6)</b>	<b>237.1</b>
<b>Cash flow from / (used in) financing activities</b>			
Dividends paid		(114.4)	(104.0)
Redistribution of shares held in treasury	20	468.2	536.7
Shares repurchased in 2001 – payments to former shareholders	16	(1.5)	(10.6)
<b>Net cash flow from / (used in) financing activities</b>		<b>352.3</b>	<b>422.1</b>
<b>Total net cash flow</b>		<b>(140.9)</b>	<b>339.2</b>
Net effect of exchange rate changes on cash and cash equivalents		108.0	(10.1)
Net movement in cash and cash equivalents		(248.9)	349.3
<b>Net increase / (decrease) in cash and cash equivalents</b>		<b>(140.9)</b>	<b>339.2</b>
<b>Cash and cash equivalents, beginning of year</b>		<b>3,005.5</b>	<b>2,666.3</b>
<b>Cash and cash equivalents, end of year</b>		<b>2,864.6</b>	<b>3,005.5</b>



## Statement of proposed profit allocation

For the financial year ended 31 March 2006

<i>SDR millions</i>	Notes	2006
<b>Net profit for the financial year</b>		<b>599.2</b>
Transfer to legal reserve fund	18	–
<b>Proposed dividend:</b>		
SDR 245 per share on 510,192 shares		(125.0)
On 35,933 redistributed treasury shares (pro rata as from the value date of the share subscription)	17	(7.4)
		<b>(132.4)</b>
<b>Proposed transfers to reserves:</b>		<b>466.8</b>
General reserve fund	18	(46.7)
Special dividend reserve fund	18	(6.0)
Free reserve fund	18	(414.1)
<b>Balance after allocation to reserves</b>		<b>–</b>

The proposed profit allocation is in accordance with Article 51 of the Bank's Statutes.

## Movements in the Bank's statutory reserves

For the financial year ended 31 March 2006

<i>SDR millions</i>	Notes	Legal reserve fund	General reserve fund	Special dividend reserve fund	Free reserve fund	2006 Total statutory reserves
<b>Balance at 31 March 2005</b>		<b>68.3</b>	<b>2,815.4</b>	<b>130.0</b>	<b>5,729.5</b>	<b>8,743.2</b>
Allocation of 2004/05 profit	18	–	25.7	6.0	224.8	256.5
Redistribution of shares held in treasury	20	–	72.0	–	–	72.0
<b>Balance at 31 March 2006 per balance sheet before proposed profit allocation</b>		<b>68.3</b>	<b>2,913.1</b>	<b>136.0</b>	<b>5,954.3</b>	<b>9,071.7</b>
Proposed transfers to reserves	18	–	46.7	6.0	414.1	466.8
<b>Balance at 31 March 2006 after proposed profit allocation</b>		<b>68.3</b>	<b>2,959.8</b>	<b>142.0</b>	<b>6,368.4</b>	<b>9,538.5</b>

## Movements in the Bank's equity

For the financial year ended 31 March 2006

<i>SDR millions</i>	Notes	Share capital	Statutory reserves	Profit and loss	Shares held in treasury	Other equity accounts	Total equity
<b>Equity at 31 March 2004</b>		<b>683.9</b>	<b>8,230.8</b>	<b>536.1</b>	<b>(852.6)</b>	<b>1,011.8</b>	<b>9,610.0</b>
<b>Income:</b>							
Net profit for 2004/05		–	–	370.9	–	–	370.9
Net valuation movement on gold investment assets	21B	–	–	–	–	(74.0)	(74.0)
Net valuation movement on investment securities	21A	–	–	–	–	(86.3)	(86.3)
<b>Total recognised income</b>		<b>–</b>	<b>–</b>	<b>370.9</b>	<b>–</b>	<b>(160.3)</b>	<b>210.6</b>
Payment of 2003/04 dividend		–	–	(104.0)	–	–	(104.0)
Allocation of 2003/04 profit		–	432.1	(432.1)	–	–	–
Redistribution of shares held in treasury	20	–	80.3	–	456.4	–	536.7
<b>Equity at 31 March 2005</b>		<b>683.9</b>	<b>8,743.2</b>	<b>370.9</b>	<b>(396.2)</b>	<b>851.5</b>	<b>10,253.3</b>
<b>Income:</b>							
Net profit for 2005/06		–	–	599.2	–	–	599.2
Net valuation movement on gold investment assets	21B	–	–	–	–	582.9	582.9
Net valuation movement on investment securities	21A	–	–	–	–	(196.5)	(196.5)
<b>Total recognised income</b>		<b>–</b>	<b>–</b>	<b>599.2</b>	<b>–</b>	<b>386.4</b>	<b>985.6</b>
Payment of 2004/05 dividend		–	–	(114.4)	–	–	(114.4)
Allocation of 2004/05 profit		–	256.5	(256.5)	–	–	–
Redistribution of shares held in treasury	20	–	72.0	–	396.2	–	468.2
Reclassification of loan to a consortium of central banks	20	–	–	–	(1.7)	–	(1.7)
<b>Equity at 31 March 2006 per balance sheet before proposed profit allocation</b>		<b>683.9</b>	<b>9,071.7</b>	<b>599.2</b>	<b>(1.7)</b>	<b>1,237.9</b>	<b>11,591.0</b>
Proposed dividend		–	–	(132.4)	–	–	(132.4)
Proposed transfers to reserves		–	466.8	(466.8)	–	–	–
<b>Equity at 31 March 2006 after proposed profit allocation</b>		<b>683.9</b>	<b>9,538.5</b>	<b>–</b>	<b>(1.7)</b>	<b>1,237.9</b>	<b>11,458.6</b>

At 31 March 2006 statutory reserves included share premiums of SDR 811.7 million (2005: SDR 811.7 million).

# Notes to the financial statements

## 1. Introduction

The Bank for International Settlements (BIS, “the Bank”) is an international financial institution which was established pursuant to the Hague Agreements of 20 January 1930, the Bank’s Constituent Charter and its Statutes. The headquarters of the Bank are at Centralbahnplatz 2, 4002 Basel, Switzerland. The Bank maintains representative offices in Hong Kong, Special Administrative Region of the People’s Republic of China (for Asia and the Pacific) and in Mexico City, Mexico (for the Americas).

The objectives of the BIS, as laid down in Article 3 of its Statutes, are to promote cooperation among central banks, to provide additional facilities for international financial operations and to act as trustee or agent for international financial settlements. Fifty-five central banks are currently members of the Bank. Rights of representation and voting at General Meetings are exercised in proportion to the number of BIS shares issued in the respective countries. The Board of Directors of the Bank is composed of the Governors of and appointed Directors from the Bank’s founder central banks, being the central banks of Belgium, France, Germany, Italy, the United Kingdom and the United States of America, as well as the Governors of the central banks of Canada, Japan, the Netherlands, Sweden and Switzerland.

These financial statements incorporate the balance sheet and profit and loss account, as required by Article 49 of the Bank’s Statutes.

## 2. Significant accounting policies

The accounting policies set out below have been applied to both of the financial years presented unless otherwise stated.

### A. Scope of the financial statements

These financial statements contain all assets and liabilities that are controlled by the Bank and in respect of which the economic benefits as well as the rights and obligations lie predominantly with the Bank.

Assets and liabilities in the name of but not controlled by the Bank are not included in these financial statements. Information on off-balance sheet assets and liabilities is disclosed in Note 35.

### B. Designation of financial instruments

Upon initial recognition each financial instrument is allocated to one of the following categories, depending on the nature of the financial instrument and the purpose for which it was entered into:

- Loans and receivables
- At fair value through profit and loss
- Available for sale

The designation of the financial instrument determines the accounting that is applied, as described in the accounting policies below.

Where the financial instrument is designated at fair value through profit and loss, the Bank does not subsequently change this designation.

### C. Functional and presentation currency

The functional and presentation currency of the Bank is the Special Drawing Right (SDR) as defined by the International Monetary Fund (IMF).

The SDR is calculated from a basket of major trading currencies according to Rule O–1 as adopted by the Executive Board of the IMF on 30 December 2005 and effective 1 January 2006. As currently calculated, one SDR is equivalent to the sum of USD 0.632, EUR 0.410, JPY 18.4 and GBP 0.0903. Prior to 1 January 2006, the SDR was calculated as equivalent to the sum of USD 0.577, EUR 0.426, JPY 21 and GBP 0.0984. The change in composition of the SDR basket was such that the values of the SDR under the old and new baskets were equivalent at 31 December 2005 and no significant gains or losses resulted from the change in the weights of the currencies. The composition of this currency basket is subject to review every five years by the IMF, the next review being undertaken in December 2010.

All figures in these financial statements are presented in SDR millions unless otherwise stated.

### D. Currency translation

Monetary assets and liabilities are translated into SDR at the exchange rates ruling at the balance sheet date. Other assets and liabilities are recorded in SDR at the exchange rates ruling at the date of the transaction. Profits and losses are translated into SDR at an average rate. Exchange differences arising from the retranslation of monetary assets and liabilities and from the settlement of transactions are included as net foreign exchange gains or losses in the profit and loss account.

### ***E. Very short-term monetary assets and liabilities***

Very short-term monetary assets comprise cash and sight accounts with banks, and call and notice accounts (which are included under the balance sheet heading "Time deposits and advances to banks"). Very short-term liabilities comprise sight and notice deposits (which are included under the balance sheet heading "Currency deposits"). These financial instruments typically have notice periods of three days or less. They are designated as loans and receivables.

They are included in the balance sheet on a settlement date basis at their principal value plus accrued interest. Interest is included in interest income (for assets) or interest expense (for liabilities) on an accruals basis.

### ***F. Gold and gold deposits***

Gold comprises gold bars held in sight accounts. Gold deposit assets comprise fixed-term gold loans to commercial banks. Gold deposit liabilities comprise sight and fixed-term deposits of gold from central banks. They are designated as loans and receivables.

These financial instruments are included in the balance sheet at their weight in gold (translated at the gold market price and USD exchange rate into SDR) plus accrued interest.

Gold deposit assets and liabilities are included on a trade date basis. Purchases and sales of gold are accounted for on a settlement date basis. Forward purchases or sales of gold are treated as derivatives prior to the settlement date.

Interest on gold deposits is included in interest income (for assets) or interest expense (for liabilities) on an accruals basis. The treatment of the realised and unrealised gains or losses on revaluation depends on the designation of the gold deposits as described below:

#### ***1. Gold deposit liabilities and related gold banking assets***

The Bank operates a banking business in gold on behalf of central bank customers in which it takes limited gold price risk. These financial instruments are designated as loans and receivables. Gains or losses on these transactions in gold are included under the profit and loss account heading "Net foreign exchange gain or loss" as net transaction gains or losses.

Gains or losses on the retranslation of the net position in gold in the banking business are included under the profit and loss account heading "Net foreign exchange gain or loss" as net translation gains or losses.

#### ***2. Gold investment assets***

The Bank's own holdings of gold are designated as available for sale assets. Unrealised gains or losses on the Bank's gold investment assets over their cost are taken to the gold revaluation account in equity, which is reported under the balance sheet heading "Other equity accounts".

For gold investment assets held on 31 March 2003 (when the Bank changed its functional and presentation currency from the gold franc to the SDR) the deemed cost is

approximately SDR 151 per ounce, based on the value of USD 208 that was applied from 1979 to 2003 following a decision by the Bank's Board of Directors, translated at the 31 March 2003 exchange rate.

Realised gains or losses on disposal of gold investment assets are included in the profit and loss account as "Net gain on sales of gold investment assets".

### ***G. Currency investment assets***

Currency investment asset comprise securities purchased under resale agreements and government and other securities. They are held for the long term, but not necessarily to maturity. They are designated as available for sale assets.

They are initially included in the balance sheet on a trade date basis at cost. The subsequent accrual of interest and amortisation of premiums paid and discounts received are included in "Interest income".

After trade date, currency investment assets are revalued to fair value, with unrealised gains or losses included in the securities revaluation account, which is reported under the balance sheet heading "Other equity accounts". Realised profits on disposal are included under the profit and loss heading "Net gain on sales of investment securities".

### ***H. Securities sold under repurchase agreements***

Where these liabilities are associated with the management of currency banking assets, they are designated as financial instruments held at fair value through profit and loss. Where these liabilities are associated with currency investment assets they are designated as loans and receivables.

They are initially included in the balance sheet on a trade date basis at cost. The subsequent accrual of interest is included in "Interest expense".

After trade date, those liabilities that are designated as at fair value through profit and loss are revalued to fair value, with unrealised gains or losses included under the profit and loss account heading "Net valuation movement".

### ***I. Derivatives***

Derivatives are used either to manage the Bank's market risk or for trading purposes. They are designated as financial instruments held at fair value through profit and loss.

They are initially included in the balance sheet on a trade date basis at cost. The subsequent accrual of interest and amortisation of premiums paid and discounts received are included in "Interest income".

After trade date, derivatives are revalued to fair value, with all realised and unrealised movements in value included under the profit and loss account heading "Net valuation movement".

Derivatives are included as either assets or liabilities, depending on whether the contract has a positive or a negative fair value for the Bank.

#### ***J. Currency deposit liabilities and related banking assets***

These financial instruments constitute the majority of the Bank's balance sheet and include treasury bills, securities purchased under resale agreements, time deposits and advances to banks, government and other securities and currency deposits.

The accounting treatment for very short-term currency deposit liabilities is detailed in section E above.

The Bank acts as a market-maker in certain of its currency deposit liabilities. As a result of this activity the Bank incurs realised profits and losses on these liabilities.

In accordance with the Bank's risk management policies the market risk inherent in this activity is managed on an overall fair value basis, combining all the relevant assets, liabilities and derivatives in its currency banking portfolios. The realised and unrealised profits or losses on currency deposit liabilities are thus largely offset by realised and unrealised losses or profits on currency banking assets, derivatives or other currency deposit liabilities.

To reduce the accounting inconsistency that would otherwise arise from recognising realised and unrealised gains and losses on different bases, the Bank designates all of the relevant assets and liabilities in its currency banking portfolios as held at fair value through profit and loss.

All the relevant financial instruments are initially included in the balance sheet on a trade date basis at cost. The subsequent accrual of interest and amortisation of premiums paid and discounts received are included in "Interest expense" (for currency deposit liabilities) or in "Interest income" (for related banking assets).

After trade date, the financial instruments are revalued to fair value, with all realised and unrealised movements in value included under the profit and loss account heading "Net valuation movement".

#### ***K. Valuation policy***

The Bank includes most of its financial instruments in its balance sheet at fair value, and includes most changes in fair value in profit and loss. The fair value of a financial instrument is defined as the amount at which the instrument could be exchanged between knowledgeable willing parties in an arm's length current transaction. Key judgments affecting this accounting policy relate to how the Bank determines fair value for financial instruments.

To derive fair value the Bank uses reliable quoted market prices from active markets. Where no active market exists, or where quoted market prices are not otherwise available, the Bank determines fair values based on financial models using a discounted cash flow analysis. A discounted cash flow analysis is dependent on estimates of future cash flows, interest rates, exchange rates and prepayment speeds, and upon credit, liquidity and volatility factors.

Although a significant degree of judgment is, in some cases, required in establishing fair values, the Bank believes the fair values recorded in the balance sheet and the changes in fair values recorded in the profit and loss account are appropriate and reflect the underlying economic situation.

#### ***L. Accounts receivable and accounts payable***

Accounts receivable and accounts payable are principally very short-term amounts relating to the settlement of financial transactions. They are included in the balance sheet at cost.

#### ***M. Land, buildings and equipment***

The cost of the Bank's buildings and equipment is capitalised and depreciated on a straight line basis over the estimated useful lives of the assets concerned, as follows:

Buildings – 50 years

Building installations and machinery – 15 years

Information technology equipment – up to 4 years

Other equipment – 4 to 10 years

The Bank's land is not depreciated. The Bank undertakes an annual review of impairment of land, buildings and equipment. Where the carrying amount of an asset is greater than its estimated recoverable amount, it is written down to that amount.

#### ***N. Provisions***

Provisions are recognised when the Bank has a present legal or constructive obligation as a result of events arising before the balance sheet date and it is probable that economic resources will be required to settle the obligation, provided that a reliable estimate can be made of the amount of the obligation. Best estimates and assumptions are used when determining the amount to be recognised as a provision.

#### ***O. Post-employment benefit obligations***

The Bank operates three post-employment benefit arrangements for staff pensions, directors' pensions and health and accident insurance for current and former staff members. An independent actuarial valuation is performed annually for each arrangement.

##### ***Staff pensions***

The Bank provides a final salary defined benefit pension arrangement for its staff, based on a fund without separate legal personality, out of which benefits are paid. The fund assets are administered by the Bank for the sole benefit of current and former members of staff who participate in the arrangement. The Bank remains ultimately liable for all benefits due under the arrangement.

The liability in respect of the staff pension fund is based on the present value of the defined benefit obligation at the balance sheet date, less the fair value of the fund assets at the balance sheet date, together with adjustments for unrecognised actuarial gains and losses and past service costs. The defined benefit obligation is calculated using the projected unit credit method. The present value of the defined benefit obligation is determined from the estimated future cash outflows. The rate used to discount the cash flows is determined by the Bank based on the market yield of highly rated corporate debt securities in Swiss francs which have terms to maturity approximating the terms of the related liability.

The amount charged to the profit and loss account represents the sum of the current service cost of the benefits accruing for the year under the scheme, and interest at the discount rate on the defined benefit obligation. In addition, actuarial gains and losses arising from experience adjustments (where the actual outcome is different from the actuarial assumptions previously made), changes in actuarial assumptions and amendments to the pension fund regulations are charged to the profit and loss account over the service period of staff concerned in accordance with the “Corridor accounting” methodology described below. The resulting liabilities are included under the heading “Other liabilities” in the balance sheet.

#### *Directors’ pensions*

The Bank provides an unfunded defined benefit arrangement for directors’ pensions. The liability, defined benefit obligation and amount charged to the profit and loss account in respect of the directors’ pension arrangement are calculated on a similar basis to that used for the staff pension fund.

#### *Post-employment health and accident benefits*

The Bank provides an unfunded post-employment health and accident benefit arrangement for its staff. The liability, benefit obligation and amount charged to the profit and loss account in respect of the health and accident benefit arrangement are calculated on a similar basis to that used for the staff pension fund.

#### *Corridor accounting*

Actuarial gains or losses arise from experience adjustments (where the actual outcome is different from the actuarial assumptions previously made), changes in actuarial assumptions and amendments to the pension fund regulations. Where the cumulative unrecognised actuarial gains or losses exceed the higher of the benefit obligation or any assets used to fund the obligation by more than a corridor of 10%, the resulting excess outside the corridor is amortised over the expected remaining service period of the staff concerned.

### **P. Cash flow statement**

The Bank’s cash flow statement is prepared using an indirect method. It is based on the movements in the Bank’s balance sheet, adjusted for changes in financial transactions awaiting settlement.

Cash and cash equivalents consist of cash and sight accounts with banks, and call and notice accounts, which are very short-term financial assets that typically have notice periods of three days or less.

### **3. Use of estimates**

The preparation of the financial statements requires the Bank’s Management to make some estimates in arriving at the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of income and expenses during the financial year. To arrive at these estimates the Management uses available information, exercises judgment and makes assumptions.

Judgment is exercised when selecting accounting policies for the Bank and also when applying the accounting policies. The judgments relating to the designation and valuation of financial instruments are key to understanding these financial statements.

Assumptions include forward-looking estimates, for example related to the valuation of assets and liabilities, the assessment of post-employment benefit obligations and the assessment of provisions and contingent liabilities.

Subsequent actual results could differ materially from those estimates.

### **4. Capital and risk management**

#### **A. The risks that the Bank faces**

The Bank is exposed to the following categories of risk:

*Credit risk.* The risk of a financial loss arising from a counterparty’s failure to service its debt in a timely manner. This is the largest risk that the Bank faces.

*Market risk.* The risk of a decline in the total value of the Bank’s assets and liabilities due to adverse changes in such market variables as interest rates, exchange rates and gold prices.

*Liquidity risk.* The risk of being unable to meet its obligations to pay as they fall due without incurring unacceptable losses.

*Operational risk.* The risk of financial losses, damage to the Bank’s reputation, or both, caused by people, failed or inadequate processes or systems, or external events.

#### **B. How the Bank manages these risks**

##### *Organisation structure*

The Bank is operated to serve the central banking community whilst earning an adequate return to maintain its capital strength.



The Bank manages risk through a framework including an independent risk control function and regular reporting of risk positions to appropriate Management committees. The Bank's risk methodologies and risk policies are documented in a detailed risk manual, which is reviewed on a regular basis. The Bank's credit limits are documented in a counterparty manual. All changes to credit limits require Management approval.

The finance function and legal service augment the risk control function. The role of the finance function is to produce the Bank's financial statements and to control its expenditure through setting and monitoring the annual budget. The legal service provides legal advice and support covering a wide range of issues relating to the Bank's activities.

The purpose of the Bank's compliance function is to provide reasonable assurance that the activities of the Bank and its staff conform with applicable laws and regulations, the BIS Statutes, the Bank's Code of Conduct and other internal rules, policies and relevant standards of sound practice. The compliance function identifies and assesses compliance risks and guides and educates staff on compliance issues. It also performs a monitoring, reporting and, in cooperation with the legal service, an advisory role.

The internal audit function reviews internal control procedures and reports on how they comply with internal standards and industry best practices. The scope of internal audit work includes the review of risk management procedures, internal control systems, information systems and governance processes. Internal audit is directly responsible to the General Manager and the Deputy General Manager.

The Deputy General Manager is responsible for the Bank's risk control and compliance functions.

The head of compliance and head of internal audit also report regularly to the Audit Committee of the Board of Directors.

#### *Asset and liability structure*

Assets and liabilities are organised into two books:

##### *1. A banking book comprising currency and gold deposit liabilities and related banking assets and derivatives.*

In this book the Bank takes limited interest rate, gold price and foreign currency risk.

##### *2. An investment book comprising assets, liabilities and derivatives relating principally to the investment of the Bank's equity.*

The Bank holds most of its equity in financial instruments denominated in the constituent currencies of the SDR, which are managed using a fixed duration benchmark of bonds. The remainder of the Bank's equity is held in gold.

#### **C. Risk methodologies**

The Bank uses a comprehensive range of quantitative methodologies for valuing financial instruments and for

measuring risk to the Bank's net profit and its equity. The Bank reassesses its quantitative methodologies in the light of its changing risk environment and evolving best practice.

Economic capital is a key quantitative risk methodology used by the Bank. Economic capital is a measure designed to estimate the amount of equity needed to absorb the potential losses arising from exposures on any given date, to a statistical level of confidence determined by the Bank's aim to remain of the highest creditworthiness. Many of the Bank's internal limits and reports are expressed in terms of economic capital. The Bank calculates economic capital covering credit risk, market risk and operational risk.

To calculate economic capital for credit risk the Bank uses an internal model for credit portfolio value-at-risk that is based on the Bank's assessment of:

- The probability of default of individual counterparties;
- The correlations of losses associated with individual counterparties; and
- The likely loss that the Bank would incur as a result of the default.

The market risk economic capital measure is derived from the Bank's value-at-risk (VaR) methodology. This is discussed in more detail in section F below.

The Bank's operational risk economic capital measure is based on a model that incorporates the Bank's experience of operational losses and external loss data.

In computing its credit, market and operational risk economic capital measures the Bank uses as key assumptions a one-year time horizon and a 99.995% level of confidence.

#### **D. Capital adequacy**

The Bank maintains a very strong capital position, which is measured using its economic capital model and the framework proposed by the Basel Capital Accord of July 1988 (the Basel Accord). The table below shows the Bank's capital as at 31 March 2006:

As at 31 March		
<i>SDR millions</i>	<b>2006</b>	2005
Share capital	683.9	683.9
Statutory reserves	9,071.7	8,743.2
Less: shares held in treasury	(1.7)	(396.2)
<b>Tier 1 capital</b>	<b>9,753.9</b>	9,030.9
Profit and loss account	599.2	370.9
Other equity accounts	1,237.9	851.5
<b>Total capital</b>	<b>11,591.0</b>	10,253.3

The Basel Accord ratios measure capital adequacy by comparing the Bank's eligible capital with its risk-weighted assets. The risk-weighted assets are derived by applying a series of risk weightings to the Bank's assets and derivatives, based on the Basel Accord. The Bank's capital ratios are high due to the proportion of sovereign debt



(which is zero risk-weighted) within the Bank's assets. The Bank's Tier 1 ratio was 32.4% as at 31 March 2006 (2005: 35.8%).

## E. Credit risk

Credit risk includes:

**Default risk** – the risk that a counterparty will not fulfil its obligations in accordance with the agreed terms of a transaction. Default risk arises on financial assets and derivatives, as well as committed facilities that the Bank provides for central banks and international organisations.

**Settlement risk** – the risk of failure of the settlement or clearing of financial transactions where the exchange of cash, securities or other assets is not simultaneous.

**Transfer risk** – the risk that a counterparty is unable to meet its foreign currency obligations due to restricted access to foreign currency.

The Bank manages its exposure to credit risk by placing limits on the amount of risk accepted in relation to one borrower or a group of borrowers. Such risks are monitored on a regular basis and are subject to at least an annual review and will be adjusted as deemed appropriate. The main criterion for these reviews is the ability of borrowers and potential borrowers to meet interest and capital repayment obligations. Limits on the level of credit risk are approved by the Bank's Management within a framework set by the Board of Directors. Actual exposures are monitored daily against limits.

The Bank also obtains collateral, in addition to reverse repurchase agreements, to mitigate credit risk on derivative financial instruments, and has established bilateral setoff agreements with certain of its counterparties.

### 1. Default risk

The Bank controls its default risk on both a counterparty and a portfolio level. Credit exposures are restricted using a series of credit limits covering individual counterparties and countries of risk. The Bank conducts its own detailed independent credit analysis resulting in the assignment of internal credit grades. Based on this analysis the Bank sets its credit limits.

Default risk on the Bank's holdings of securities is reduced by the highly liquid nature of most of the assets. Securities are sold when the Bank's Management considers that a counterparty has an unacceptable risk of default.

Default risk on over-the-counter (OTC) derivatives is mitigated using collateral management agreements. As at 31 March 2005 the Bank held as collateral on OTC derivatives SDR 93.6 million nominal of G10 sovereign securities. The Bank held no collateral on OTC derivatives at 31 March 2006.

The Bank's credit policies ensure that the vast majority of its assets are invested with G10 sovereigns or with financial institutions rated A or above. Because of the limited number of potential investments, the Bank has significant individual counterparty concentrations within these risk sectors.

The following tables show credit exposure by sector and credit rating:

As at 31 March

Sector of risk Percentages	2006	2005
Sovereign	34.1	32.5
Financial institution	63.1	61.7
Other	2.8	5.8
	<b>100.0</b>	<b>100.0</b>

As at 31 March

BIS internal credit grade (expressed as equivalent long-term rating) Percentages	2006	2005
AAA	26.5	26.3
AA	54.7	57.0
A	18.5	16.1
BBB+ and below (including unrated risks)	0.3	0.6
	<b>100.0</b>	<b>100.0</b>

### 2. Settlement risk

The Bank minimises settlement risk by:

- Using established clearing centres;
- Where possible settling transactions only once both parties have fulfilled their obligations (the delivery versus payment settlement mechanism);
- Where possible requiring net settlement of payments on derivative financial instruments;
- Using cash correspondent banks with the ability to stop payments at short notice;
- In respect of foreign exchange transactions, ensuring where possible that these take place subject to setoff arrangements that would apply should a counterparty fail to deliver the counter-currency to such a transaction; and
- Calculating and limiting the settlement risk on a counterparty basis.

### 3. Transfer risk

The Bank calculates and sets limits for transfer risk on a per country basis.

## F. Market risk

The main components of the Bank's market risk are gold price risk, currency risk and interest rate risk. The Bank incurs market risk primarily through the assets relating to the management of its equity. The Bank measures market risk using the value-at-risk (VaR) methodology, and by computing sensitivities to certain market risk factors. VaR expresses the statistical estimate of the maximum potential loss on the current portfolio assuming a specified time horizon and measured to a specified level of confidence.

Market risk economic capital is measured and managed on an aggregated market risk basis. The Bank's Management limits the Bank's market risk economic capital usage within a framework set by the Board of Directors.

All VaR models, while forward-looking, are based on past events and dependent on the quality of available market data. VaR limits are supplemented with a framework of other limits and reporting, including specific stress tests and detailed monitoring of the largest market risk positions.

### 1. Gold price risk

Gold price risk is the potential impact on the fair value of assets and liabilities from changes in the SDR price of gold. The Bank is exposed to gold price risk principally through its holdings of gold investment assets, which comprise 165 tonnes (2005: 180 tonnes). This is held in custody or placed on deposit with commercial banks. At 31 March 2006 approximately 19% of its equity comprised gold holdings (31 March 2005: 16%). The Bank can also have small exposures to gold price risk through its banking activities with central and commercial banks. Gold price risk is measured within the Bank's aggregate market risk economic capital framework.

### 2. Currency risk

Currency risk is the potential impact on the fair value of assets and liabilities from changes in exchange rates. The Bank is exposed to currency risk principally through the assets relating to the management of its equity. The Bank is also exposed to currency risk through managing its customer deposits and through acting as an intermediary in foreign exchange transactions between central and commercial banks. The Bank reduces its currency exposures by matching the assets relating to the management of its equity to the constituent currencies of the SDR on a regular basis, and by allowing only small currency exposures relating to customer deposits and foreign exchange transaction intermediation.

The following table shows the Bank's currency positions after adjusting for its holdings of gold investment assets:

Net assets as at 31 March

<i>SDR millions</i>	<b>2006</b>	<b>2005</b>
Swiss franc	(140.6)	(137.0)
US dollar	26.7	21.3
Euro	(20.0)	4.3
Japanese yen	21.3	36.7
Pound sterling	17.1	12.7
Swedish krona	56.4	58.1
Australian dollar	34.7	0.7
Other currencies	4.4	3.2

The Swiss franc position above is attributable principally to the Bank's post-employment benefit obligations (see note 22).

### 3. Interest rate risk

Interest rate risk is the potential impact on the fair value of assets and liabilities from changes in interest rates. The Bank is exposed to interest rate risk principally through the interest-bearing assets relating to the management of its equity. These assets are managed using a fixed duration benchmark of bonds. The Bank is also exposed to limited interest rate risk through its activities in accepting and reinvesting customer deposits.

The Bank closely monitors interest rate risk including the sensitivity of fair values to movements in interest rates. Market risk is restricted using economic capital, VaR and stress test-based limits.

The tables below show the impact on the Bank's equity of a 1% upward shift in the relevant yield curve:

#### As at 31 March 2006

<i>SDR millions</i>	Up to 6 months	6 to 12 months	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	Over 5 years
Euro	(3.7)	(4.7)	(5.9)	(9.2)	(22.3)	(19.7)	(70.3)
Japanese yen	0.4	0.1	(5.4)	(5.0)	(7.1)	(6.5)	(14.1)
Pound sterling	–	(5.3)	(3.9)	(4.9)	(6.4)	(9.5)	(12.3)
Swiss franc	(0.5)	(0.9)	(1.3)	–	(0.4)	(0.1)	–
US dollar	(4.7)	(23.9)	(32.3)	(18.4)	(17.8)	(26.2)	(78.3)
Other currencies	(1.8)	7.8	(15.1)	(22.4)	(0.3)	(6.6)	(0.2)
<b>Total</b>	<b>(10.3)</b>	<b>(26.9)</b>	<b>(63.9)</b>	<b>(59.9)</b>	<b>(54.3)</b>	<b>(68.6)</b>	<b>(175.2)</b>

#### As at 31 March 2005

<i>SDR millions</i>	Up to 6 months	6 to 12 months	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	Over 5 years
Euro	(4.6)	(4.5)	(11.6)	(11.1)	(11.2)	(17.8)	(67.8)
Japanese yen	2.0	(1.0)	(2.5)	(2.0)	(2.6)	(3.0)	(8.1)
Pound sterling	(0.8)	1.6	(9.8)	(6.1)	(5.4)	(9.9)	(12.1)
Swiss franc	(0.3)	0.3	0.1	–	–	–	–
US dollar	16.2	21.0	(46.4)	(7.4)	(9.0)	(17.4)	(56.6)
Other currencies	(0.3)	0.1	(0.1)	–	–	–	–
<b>Total</b>	<b>12.2</b>	<b>17.5</b>	<b>(70.3)</b>	<b>(26.6)</b>	<b>(28.2)</b>	<b>(48.1)</b>	<b>(144.6)</b>

## G. Liquidity risk

Net movements in the currency and gold deposits from central banks, international organisations and other public institutions are the key determinants of the size of the Bank's balance sheet. The Bank has undertaken to repurchase at fair value certain of its currency deposit instruments at one or two business days' notice. The Bank is managed to preserve a high degree of liquidity to ensure that it is able to meet the requirements of its customers at all times.

The Bank has developed a liquidity management framework based on a statistical model using prudent assumptions with regard to cash inflows and the liquidity of liabilities. Within this framework, the Board of Directors has

set a limit for the Bank's liquidity ratio which requires liquid assets to be equal to at least 100% of the potential liquidity requirement faced by the Bank. In addition, liquidity stress tests are performed which assume extreme withdrawal scenarios considerably beyond the estimated potential liquidity requirement. These stress tests define additional liquidity requirements which must also be met by holdings of liquid assets. The Bank's liquidity has consistently been materially above its minimum liquidity ratio limit.

The following tables (including derivatives on a net basis) show assets and liabilities at carrying amounts based on the remaining period at the balance sheet date to the contractual maturity date:

### As at 31 March 2006

<i>SDR millions</i>	Up to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 5 years	Over 5 years	Maturity undefined	Total
<b>Assets</b>									
Cash and sight accounts with banks	33.0	–	–	–	–	–	–	–	33.0
Gold and gold deposits	7,312.1	329.4	608.0	268.0	156.0	2,569.8	104.7	–	11,348.0
Treasury bills	14,215.7	22,411.8	7,614.5	1,801.6	1,268.3	–	–	–	47,311.9
Securities purchased under resale agreements	19,474.6	44.6	–	–	–	–	–	–	19,519.2
Time deposits and advances to banks	38,682.6	16,856.1	13,981.8	9,046.6	9,264.1	67.3	–	–	87,898.5
Government and other securities	3,535.1	7,919.3	1,771.7	2,203.0	3,938.7	17,327.6	7,741.0	–	44,436.4
Accounts receivable	7,441.1	–	–	–	–	3.6	–	–	7,444.7
Land, buildings and equipment	–	–	–	–	–	–	–	188.4	188.4
<b>Total</b>	<b>90,694.2</b>	<b>47,561.2</b>	<b>23,976.0</b>	<b>13,319.2</b>	<b>14,627.1</b>	<b>19,968.3</b>	<b>7,845.7</b>	<b>188.4</b>	<b>218,180.1</b>
<b>Liabilities</b>									
Currency deposits									
Deposit instruments repayable at 1–2 days' notice	(12,646.4)	(15,448.5)	(17,430.3)	(15,872.5)	(8,429.0)	(34,217.9)	(3,970.7)	–	(108,015.3)
Other currency deposits	(50,941.0)	(5,048.0)	(6,618.4)	(7,604.0)	(7,601.4)	(163.4)	–	–	(77,976.2)
Gold deposits	(7,420.9)	(198.7)	(568.1)	(160.5)	(39.3)	(743.5)	(104.6)	–	(9,235.6)
Securities sold under repurchase agreements	(1,177.6)	(44.8)	–	–	–	–	–	–	(1,222.4)
Accounts payable	(9,251.3)	–	–	–	–	–	–	–	(9,251.3)
Other liabilities	(27.7)	–	–	–	–	–	–	(141.7)	(169.4)
<b>Total</b>	<b>(81,464.9)</b>	<b>(20,740.0)</b>	<b>(24,616.8)</b>	<b>(23,637.0)</b>	<b>(16,069.7)</b>	<b>(35,124.8)</b>	<b>(4,075.3)</b>	<b>(141.7)</b>	<b>(205,870.2)</b>
Net derivative financial instruments	195.8	129.5	(67.4)	(197.3)	(206.2)	(616.5)	43.2	–	(718.9)
<b>Maturity gap</b>	<b>9,425.1</b>	<b>26,950.7</b>	<b>(708.2)</b>	<b>(10,515.1)</b>	<b>(1,648.8)</b>	<b>(15,773.0)</b>	<b>3,813.6</b>	<b>46.7</b>	<b>11,591.0</b>

As at 31 March 2005

<i>SDR millions</i>	Up to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 5 years	Over 5 years	Maturity undefined	Total
<b>Assets</b>									
Cash and sight accounts with banks	25.8	–	–	–	–	–	–	–	25.8
Gold and gold deposits	5,305.2	188.3	514.2	440.9	531.6	1,564.2	72.6	–	8,617.0
Treasury bills	5,908.1	12,716.2	6,718.6	3,044.3	2,920.2	–	–	–	31,307.4
Securities purchased under resale agreements	14,034.3	–	–	–	–	–	–	–	14,034.3
Time deposits and advances to banks	31,823.2	18,716.8	13,981.0	9,830.4	5,926.9	5.1	33.1	–	80,316.5
Government and other securities	3,454.0	4,086.4	3,014.8	2,795.1	5,110.3	16,167.4	5,151.6	–	39,779.6
Accounts receivable	4,021.5	–	–	–	–	3.5	–	3.6	4,028.6
Land, buildings and equipment	–	–	–	–	–	–	–	189.2	189.2
<b>Total</b>	<b>64,572.1</b>	<b>35,707.7</b>	<b>24,228.6</b>	<b>16,110.7</b>	<b>14,489.0</b>	<b>17,740.2</b>	<b>5,257.3</b>	<b>192.8</b>	<b>178,298.4</b>
<b>Liabilities</b>									
Currency deposits									
Deposit instruments repayable at 1–2 days' notice	(8,204.1)	(14,081.1)	(14,153.1)	(16,175.8)	(10,937.5)	(30,176.3)	(2,678.8)	–	(96,406.7)
Other currency deposits	(33,081.0)	(6,591.3)	(7,088.4)	(3,439.2)	(4,010.9)	(1.3)	–	–	(54,212.1)
Gold deposits	(5,423.1)	(133.7)	(487.5)	(331.2)	(287.7)	(375.0)	(72.6)	–	(7,110.8)
Securities sold under repurchase agreements	(1,159.4)	–	–	–	–	–	–	–	(1,159.4)
Accounts payable	(7,752.2)	–	–	–	–	–	–	–	(7,752.2)
Other liabilities	(17.3)	–	–	–	–	–	–	(134.0)	(151.3)
<b>Total</b>	<b>(55,637.1)</b>	<b>(20,806.1)</b>	<b>(21,729.0)</b>	<b>(19,946.2)</b>	<b>(15,236.1)</b>	<b>(30,552.6)</b>	<b>(2,751.4)</b>	<b>(134.0)</b>	<b>(166,792.5)</b>
Net derivative financial instruments	67.3	172.8	(152.1)	(43.6)	(236.8)	(823.8)	(236.4)	–	(1,252.6)
Maturity gap	9,002.3	15,074.4	2,347.5	(3,879.1)	(983.9)	(13,636.2)	2,269.5	58.8	10,253.3

## H. Operational risk

Operational risk is defined by the Bank as the risk of financial loss, or damage to the Bank's reputation, or both, resulting from one or more of the following:

- Human error or fraud (eg insufficient personnel, lack of requisite knowledge, inadequate training, inadequate supervision, loss of key personnel, inadequate succession planning or lack of integrity or ethical standards);
- Failed or inadequate processes (eg an internal policy or process is inadequate, poorly designed or unsuitable, or is not properly documented, understood, implemented, followed or enforced);
- Failed or inadequate systems (eg hardware, software applications, operating systems or infrastructure necessary to support the activities of the Bank are poorly designed, unsuitable, inadequate, unavailable, fail, or do not operate as intended); and
- External events (ie the occurrence of an event having an adverse impact on the Bank but outside its control).

The Bank manages operational risk through internal controls, including policies, procedures, practices and organisational structures, designed to reduce the likelihood of an operational risk event occurring or that mitigate the adverse consequences of such an event if it does occur. The Bank allocates economic capital for operational risk on the basis of a statistical model that incorporates the Bank's experience of operational losses as well as external loss data.

The Bank is currently working on identifying and assessing operational risks and evaluating the effectiveness of existing controls through a Bank-wide Control Self-Assessment (CSA) programme. The Bank-wide rollout is expected to be completed by end-2006. A feasibility study has been carried out to assess possible ways to integrate CSA results and operational risk quantification. The BIS has further enhanced its control framework in recent years, strengthening its risk control, internal audit and compliance functions, and is currently working on a draft operational risk management framework.

## 5. Cash and sight accounts with banks

Cash and sight accounts with banks consist of cash balances with central and commercial banks that are available to the Bank on demand.

## 6. Gold and gold deposits

### A. Total gold holdings

The composition of the Bank's total gold holdings was as follows:

As at 31 March		
SDR millions	2006	2005
Gold bars held at central banks	7,132.0	5,170.2
Total gold time deposits	4,216.0	3,446.8
<b>Total gold and gold deposit assets</b>	<b>11,348.0</b>	<b>8,617.0</b>
Comprising:		
Gold investment assets	2,259.5	1,646.5
Gold and gold deposit banking assets	9,088.5	6,970.5

### B. Gold investment assets

The Bank's gold investment assets are included in the balance sheet at their weight in gold (translated at the gold market price and USD exchange rate into SDR) plus accrued interest. The excess of this value over the deemed cost value is included in the gold revaluation account (reported under the balance sheet heading "Other equity accounts"), and realised gains or losses on the disposal of gold investment assets are recognised in the profit and loss account.

Note 21B provides further analysis of the gold revaluation account. Note 30 provides further analysis of the net gain on sales of gold investment assets.

The table below analyses the movements in the Bank's gold investment assets:

For the financial year ended 31 March		
SDR millions	2006	2005
Balance at beginning of year	1,646.5	1,780.7
Net change in gold investment assets		
Deposits placed	382.0	400.5
Disposals of gold	(187.2)	(108.6)
Maturities and other net movements	(382.7)	(402.6)
	(187.9)	(110.7)
Net change in transactions awaiting settlement	103.5	–
Gold price movement	697.4	(23.5)
<b>Balance at end of year</b>	<b>2,259.5</b>	<b>1,646.5</b>

At 1 April 2005 the Bank's gold investment assets amounted to 180 tonnes of fine gold. During the financial

year ended 31 March 2006 15 tonnes were disposed of (see note 30). The balance at 31 March 2006 amounted to 165 tonnes of fine gold.

## 7. Currency banking and investment assets

### A. Total holdings

Currency banking and investment assets comprise treasury bills, securities purchased under resale agreements, fixed-term loans, and government and other securities. Banking assets comprise those assets that represent the reinvestment of customer deposits. Investment assets comprise the investments funded by the Bank's own equity. Currency banking assets are designated as fair value through profit and loss. Currency investment assets are designated as available for sale.

*Securities purchased under resale agreements* ("reverse repurchase agreements") are transactions under which the Bank places a fixed-term deposit with a counterparty which provides collateral in the form of securities. The rate on the deposit is fixed at the beginning of the transaction, and there is an irrevocable commitment to return the equivalent securities subject to the repayment of the deposit. During the term of the agreement the fair value of collateral is monitored, and additional collateral is obtained where appropriate to protect against credit exposure.

*Fixed-term loans* are investments made with central banks, international institutions and commercial banks. These include advances to central banks and international institutions as part of committed and uncommitted standby facilities. The balance sheet total "Time deposits and advances to banks" also includes call and notice accounts (see note 8).

*Government and other securities* are investments made with central banks, international institutions and commercial banks and include fixed and floating rate bonds and asset-backed securities.

The table below analyses the Bank's holdings of currency banking and investment assets:

As at 31 March	2006			2005		
	Banking assets	Investment assets	Total	Banking assets	Investment assets	Total
<i>SDR millions</i>						
<b>Treasury bills</b>	<b>47,311.9</b>	<b>–</b>	<b>47,311.9</b>	31,307.4	–	31,307.4
<b>Securities purchased under resale agreements</b>	<b>18,296.8</b>	<b>1,222.4</b>	<b>19,519.2</b>	13,071.5	962.8	14,034.3
<b>Fixed-term loans and advances to banks</b>	<b>85,066.9</b>	<b>–</b>	<b>85,066.9</b>	77,336.8	–	77,336.8
<b>Government and other securities</b>						
Government	3,469.0	6,717.5	10,186.5	7,766.3	5,569.7	13,336.0
Financial institutions	24,617.4	957.5	25,574.9	16,629.7	876.4	17,506.1
Other (including public sector securities)	7,578.4	1,096.6	8,675.0	7,934.2	1,003.3	8,937.5
	<b>35,664.8</b>	<b>8,771.6</b>	<b>44,436.4</b>	32,330.2	7,449.4	39,779.6
<b>Total currency banking and investment assets</b>	<b>186,340.4</b>	<b>9,994.0</b>	<b>196,334.4</b>	154,045.9	8,412.2	162,458.1



## B. Currency investment assets

The Bank's investment assets are designated as available for sale.

Note 21A provides further analysis of the securities revaluation account. Note 29 provides further analysis of the net gain on sales of investment securities.

The table below analyses the movements in the Bank's currency investment assets:

For the financial year ended 31 March

<i>SDR millions</i>	2006	2005
Balance at beginning of year	8,412.2	8,762.6
Net change in currency investment assets		
Additions	21,358.5	14,133.8
Disposals	(3,214.1)	(3,384.2)
Maturities and other net movements	(16,467.5)	(10,956.8)
	1,676.9	(207.2)
Net change in transactions awaiting settlement	43.2	(63.9)
Fair value and other movements	(138.3)	(79.3)
<b>Balance at end of year</b>	<b>9,994.0</b>	<b>8,412.2</b>

## 8. Time deposits and advances to banks

Time deposits and advances to banks comprise fixed-term loans and call and notice accounts.

Fixed-term loans are designated as fair value through profit and loss.

Call and notice accounts are designated as loans and receivables and are included as cash and cash equivalents. These are very short-term financial assets, typically having a notice period of three days or less. These are included in the balance sheet at amortised cost.

As at 31 March

<i>SDR millions</i>	2006	2005
Fixed-term loans and advances to banks	85,066.9	77,336.8
Call and notice accounts	2,831.6	2,979.7
<b>Total time deposits and advances to banks</b>	<b>87,898.5</b>	<b>80,316.5</b>

## 9. Derivative financial instruments

The Bank uses the following types of derivative instruments for economic hedging and trading purposes.

*Interest rate and bond futures* are contractual obligations to receive or pay a net amount based on changes in interest rates or bond prices on a future date at a specified price established in an organised market. Futures contracts are collateralised by cash or marketable securities and changes in the futures contract value are settled daily with the exchange.

*Currency and bond options* are contractual agreements under which the seller grants the purchaser the right, but not the obligation, to either buy (call option) or sell (put option), by or on a set date, a specific amount of a currency, a bond or gold at a predetermined price. In consideration, the seller receives a premium from the purchaser.

*Options on futures* are contractual agreements that confer the right, but not the obligation, to buy or sell a futures contract at a predetermined price during a specified period of time.

*Currency and gold swaps, cross-currency interest rate swaps and interest rate swaps* are commitments to exchange one set of cash flows for another. Swaps result in an economic exchange of currencies, gold or interest rates (for example, fixed rate for floating rate) or a combination of interest rates and currencies (cross-currency interest rate swaps). Except for certain currency and gold swaps and cross-currency interest rate swaps, no exchange of principal takes place.

*Currency and gold forwards* represent commitments to purchase foreign currencies or gold at a future date. This includes undelivered spot transactions.

*Forward rate agreements* are individually negotiated interest rate forward contracts that result in cash settlement at a future date for the difference between a contracted rate of interest and the prevailing market rate.

*Swaptions* are options under which the seller grants the purchaser the right, but not the obligation, to enter into a currency or interest rate swap at a predetermined price by or on a set date.

The table below analyses the fair value of derivative financial instruments:

As at 31 March	2006			2005		
	Notional amounts	Fair values		Notional amounts	Fair values	
		Assets	Liabilities		Assets	Liabilities
<i>SDR millions</i>						
Bond futures	381.3	–	(0.4)	721.1	1.0	(1.2)
Bond options	168.0	–	(1.5)	82.7	0.7	–
Cross-currency interest rate swaps	8,058.3	189.2	(803.8)	10,619.0	246.7	(2,221.7)
Currency and gold forwards	4,212.5	18.8	(29.4)	1,297.6	16.0	(9.0)
Currency options	213.3	–	(0.3)	2,276.2	0.7	(4.4)
Currency and gold swaps	38,674.9	460.5	(142.4)	31,993.1	480.6	(145.3)
Forward rate agreements	37,290.0	11.9	(7.5)	45,074.2	5.3	(3.2)
Interest rate futures	42,923.3	0.1	(0.3)	19,195.0	1.4	(0.2)
Interest rate swaps	250,096.2	1,274.3	(1,668.6)	202,919.6	1,433.8	(1,038.5)
Options on futures	15,228.8	1.2	(0.2)	3,306.0	0.9	(0.5)
Swaptions	1,803.2	–	(20.5)	2,818.0	0.9	(16.6)
<b>Total derivative financial instruments at end of year</b>	<b>399,049.8</b>	<b>1,956.0</b>	<b>(2,674.9)</b>	<b>320,302.5</b>	<b>2,188.0</b>	<b>(3,440.6)</b>
<b>Net derivative financial instruments at end of year</b>			<b>(718.9)</b>			<b>(1,252.6)</b>

## 10. Accounts receivable

As at 31 March

<i>SDR millions</i>	2006	2005
Financial transactions awaiting settlement	7,436.4	4,018.1
Other assets	8.3	10.5
<b>Total accounts receivable</b>	<b>7,444.7</b>	<b>4,028.6</b>

“Financial transactions awaiting settlement” relates to short-term receivables (typically due in three days or less) where transactions have been effected but cash has not yet been transferred. This includes assets that have been sold and liabilities that have been issued.

## 11. Land, buildings and equipment

For the financial year ended 31 March

				2006	2005
	Land	Buildings	IT and other equipment	Total	Total
<i>SDR millions</i>					
Historical cost					
Balance at beginning of year	41.2	185.1	86.2	312.5	314.4
Capital expenditure	–	–	12.6	12.6	14.9
Disposals and retirements	–	–	(0.6)	(0.6)	(16.8)
<b>Balance at end of year</b>	<b>41.2</b>	<b>185.1</b>	<b>98.2</b>	<b>324.5</b>	<b>312.5</b>
Depreciation					
Accumulated depreciation at beginning of year	–	72.5	50.8	123.3	124.4
Depreciation	–	4.0	9.3	13.3	15.7
Disposals and retirements	–	–	(0.5)	(0.5)	(16.8)
<b>Balance at end of year</b>	<b>–</b>	<b>76.5</b>	<b>59.6</b>	<b>136.1</b>	<b>123.3</b>
<b>Net book value at end of year</b>	<b>41.2</b>	<b>108.6</b>	<b>38.6</b>	<b>188.4</b>	<b>189.2</b>

The depreciation charge for the financial year ended 31 March 2006 includes an additional charge of SDR 1.0 million following an impairment review (2005: SDR 2.4 million).

Following a review of capitalised costs in the financial year ended 31 March 2005, SDR 16.8 million was derecognised from capitalised yet fully depreciated IT and other equipment costs.

## 12. Currency deposits

Currency deposits are book entry claims on the Bank and are analysed in the table below:

As at 31 March

SDR millions	2006	2005
<b>Deposit instruments repayable at one to two days' notice</b>		
Medium-Term Instruments (MTIs)	57,688.3	42,694.7
FIXBIS	50,327.0	53,712.0
	<b>108,015.3</b>	<b>96,406.7</b>
<b>Other currency deposits</b>		
FRIBIS	3,247.1	3,192.4
Fixed-term deposits	52,181.5	36,987.3
Sight and notice deposits	22,547.6	14,032.4
	<b>77,976.2</b>	<b>54,212.1</b>
<b>Total currency deposits</b>	<b>185,991.5</b>	<b>150,618.8</b>
Comprising:		
Designated as held at fair value through profit and loss	163,443.9	136,586.4
Designated as loans and receivables	22,547.6	14,032.4

*Medium-Term Instruments (MTIs)* are fixed rate investments at the BIS for quarterly maturities of up to 10 years. The Bank also offers MTIs which are callable at an exercise price of par at the option of the Bank (callable MTIs), with call dates between April 2006 and March 2007 (2005: April 2005 and March 2007). The amount of callable MTIs in the balance sheet as at 31 March 2006 was SDR 6,262.9 million (2005: SDR 3,720.1 million).

*FIXBIS* are fixed rate investments at the BIS for any maturities between one week and one year.

*FRIBIS* are floating rate investments at the BIS with maturities of one year or longer for which the interest rate is reset in line with prevailing market conditions.

*Fixed-term deposits* are fixed rate investments at the BIS, typically with a maturity of less than one year. The Bank also takes fixed-term deposits that are repayable on the maturity date either in the original currency or at a fixed amount in a different currency at the option of the Bank (dual currency deposits). The amount of dual currency deposits included in the balance sheet at 31 March 2006 was SDR 231.1 million (2005: SDR 1,096.4 million). The maturity dates of these deposits are between April and June 2006 (2005: April and September 2005).

*Sight and notice deposits* are very short-term financial liabilities, typically having a notice period of three days or less. They are designated as loans and receivables and are included in the balance sheet at amortised cost.

The Bank has undertaken to repay at fair value certain deposit instruments, in whole or in part, at one to two business days' notice. As a result of this activity the Bank

incurs realised profits or losses, which are included under the profit and loss account heading "Net valuation movement".

In accordance with the Bank's risk management policies the market risk inherent in this activity is managed on an overall fair value basis, combining all the relevant assets, liabilities and derivatives in its currency banking portfolios. The realised and unrealised profits or losses on currency deposit liabilities are thus largely offset by realised and unrealised losses or profits on currency banking assets, derivatives or other currency deposit liabilities.

To reduce the accounting inconsistency that would otherwise arise from recognising realised and unrealised gains and losses on different bases, the Bank designates all of the relevant assets and liabilities in its currency banking portfolios as held at fair value through profit and loss.

Currency deposits (other than sight and notice deposits) are included in the balance sheet at fair value. This value differs from the amount that the Bank is contractually required to pay at maturity to the holder of the deposit. For total currency deposits the amount that the Bank is contractually required to pay at maturity to the holder of the deposit, plus accrued interest to 31 March 2006, is SDR 187,896.6 million (2005: SDR 151,115.9 million).

The Bank uses financial models to estimate the fair value of its currency deposits. These models value the expected cash flows of financial instruments using discount factors that are derived partly from quoted interest rates (eg Libor and swap rates) and partly from assumptions about spreads. The Bank determines these spreads based on recent market transactions. In the financial year ended 31 March 2006, changes to the assumptions about spreads used for valuing currency deposits decreased the Bank's profit by SDR 6.0 million (2005: decreased profit by SDR 7.9 million).

## 13. Gold deposit liabilities

Gold deposits placed with the Bank originate entirely from central banks. They are all designated as loans and receivables.

#### 14. Securities sold under repurchase agreements

Securities sold under repurchase agreements ("repurchase agreements") are transactions under which the Bank receives a fixed-term deposit from a counterparty to which it provides collateral in the form of securities. The rate on the deposit is fixed at the beginning of the transaction, and there is an irrevocable commitment to repay the deposit subject to the return of equivalent securities. They originate entirely from commercial banks.

As at 31 March 2006 and 2005 all of the securities sold under repurchase agreements were associated with the management of currency investment assets. They are therefore all designated as loans and receivables and are included in the balance sheet at amortised cost.

#### 15. Accounts payable

Accounts payable consist of financial transactions awaiting settlement, relating to short-term payables (typically payable within three days or less) where transactions have been effected but cash has not yet been transferred. This includes assets that have been purchased and liabilities that have been repurchased.

#### 16. Other liabilities

As at 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Post-employment benefit obligations (see note 22)		
Directors' pensions	4.1	4.2
Health and accident benefits	135.1	127.3
Payable to former shareholders	2.4	3.9
Other	27.8	15.9
<b>Total other liabilities</b>	<b>169.4</b>	151.3

#### 17. Share capital

The Bank's share capital consists of:

As at 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Authorised capital: 600,000 shares, each of SDR 5,000 par value	3,000.0	3,000.0
Issued capital: 547,125 shares	2,735.6	2,735.6
<b>Paid-up capital (25%)</b>	<b>683.9</b>	683.9

The number of shares eligible for dividend is:

<i>As at 31 March</i>	<b>2006</b>	2005
Issued shares	547,125	547,125
Less: shares held in treasury	(1,000)	(36,933)
<b>Outstanding shares eligible for dividend</b>	<b>546,125</b>	510,192
Of which:		
Eligible for full dividend	510,192	470,073
Eligible for dividend pro rata from the value date of subscription	35,933	40,119
<b>Dividend per share (in SDR)</b>	<b>245</b>	235

The shares eligible for dividend pro rata from the value date of subscription reflect the redistribution of shares held in treasury (see note 19).

## 18. Statutory reserves

The Bank's Statutes provide for application of the Bank's annual net profit by the Annual General Meeting on the proposal of the Board of Directors to three specific reserve funds: the legal reserve fund, the general reserve fund and the special dividend reserve fund; the remainder of the net profit after payment of any dividend is generally allocated to the free reserve fund.

*Legal reserve fund.* This fund is currently fully funded at 10% of the Bank's paid-up capital.

*General reserve fund.* After paying any dividend, 10% of the remainder of the Bank's annual net profit currently must be allocated to the general reserve fund. When the balance of this fund equals five times the Bank's paid-up capital, such annual contribution will decrease to 5% of the remainder of the annual net profit.

*Special dividend reserve fund.* A portion of the remainder of the annual net profit may be allocated to the special dividend reserve fund, which shall be available, in case of need, for paying the whole or any part of a declared dividend. Dividends are normally paid out of the Bank's net profit.

*Free reserve fund.* After the above allocations have been made, any remaining unallocated net profit is generally transferred to the free reserve fund.

Receipts from the subscription of BIS shares are allocated to the legal reserve fund as necessary to keep it fully funded, with the remainder being credited to the general reserve fund.

The free reserve fund, general reserve fund and legal reserve fund are available, in that order, to meet any losses incurred by the Bank. In the event of liquidation of the Bank, the balances of the reserve funds (after the discharge of the liabilities of the Bank and the costs of liquidation) would be divided among the Bank's shareholders.

## 19. Repurchase and subsequent redistribution of shares

The Extraordinary General Meeting on 8 January 2001 amended the Bank's Statutes to restrict the right to hold shares in the BIS exclusively to central banks, thereby effecting a mandatory repurchase from private (ie non-central bank) shareholders of 72,648 shares on which the American, Belgian and French central banks exercise voting rights. At the same time the Bank repurchased 2,304 shares of these three issues from other central banks. The total compensation paid was CHF 23,977.56 per share plus interest thereon.

The Bank held these shares in treasury and redistributed 40,119 of them, corresponding to the shares of the Belgian and French issues held in treasury, during the financial year ended 31 March 2005 to the central banks of those countries. The Bank redistributed the remaining 35,933 shares of the American issue held in treasury by selling them to shareholding central banks on 31 May 2005 (see note 20).

## 20. Shares held in treasury

For the financial year ended 31 March	2006	2005
Balance at beginning of year		
Repurchase of shares in the financial year ended 31 March 2001	34,833	74,952
Others	2,100	2,100
Total at beginning of year	36,933	77,052
Redistribution to shareholding central banks	(35,933)	(40,119)
<b>Balance at end of year</b>	<b>1,000</b>	<b>36,933</b>

In accordance with the Bank's Statutes, the BIS shares repurchased in early 2001 and subsequently held in treasury (see note 19) may be redistributed by the Board of Directors by way of sale to shareholding central banks against payment of an amount equal to that of the compensation paid to the former shareholders (ie CHF 23,977.56 per share). Consistent therewith, during the financial year ended 31 March 2005, the Bank redistributed all treasury shares of the Belgian and French issues by selling them to the central banks of those countries. The proceeds of this sale of 40,119 shares amounted to CHF 962.0 million, equivalent to SDR 536.7 million at the relevant transaction dates.

On 31 May 2005 the Bank redistributed the remaining 35,933 shares of the American issue held in treasury by selling them to shareholding central banks at a price of CHF 23,977.56 per share. The proceeds of this sale amounted to CHF 861.6 million, equivalent to SDR 468.2 million at the transaction date.

These amounts were credited to the Bank's equity accounts as follows:

For the financial year ended 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Shares held in treasury	396.2	456.4
General reserve fund – exchange adjustment	72.0	80.3
<b>Total</b>	<b>468.2</b>	536.7

The figure of SDR 396.2 million (2005: SDR 456.4 million) represents the SDR equivalent of the cost of the compensation in Swiss francs paid to the former shareholders of the shares at the time of the shares repurchase in January 2001 and the final award of the Hague Arbitral Tribunal in September 2003. For more information on the Hague Arbitral Tribunal, see last year's financial statements, note 17. When the sale proceeds of these shares were received, an exchange gain of SDR 72.0 million (2005: SDR 80.3 million) was realised. This resulted from the appreciation of the Swiss franc against the SDR during the period from 2001 to the dates of sale.

The remaining shares held in treasury consist of 1,000 suspended shares of the Albanian issue.

During the financial year ended 31 March 2006 a loan from the Bank to a consortium of central banks that related to the suspended shares of the Albanian issue was reclassified from accounts receivable to shares held in treasury. The amount reclassified was SDR 1.7 million.

## 21. Other equity accounts

Other equity accounts represent the revaluation accounts of the currency and gold investment assets, which are further described in notes 6 and 7.

Other equity accounts comprise:

As at 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Securities revaluation account	(104.3)	92.2
Gold revaluation account	1,342.2	759.3
<b>Total other equity accounts</b>	<b>1,237.9</b>	851.5

### A. Securities revaluation account

This account contains the difference between the fair value and the amortised cost of the Bank's investment securities.

The movements in the securities revaluation account were as follows:

For the financial year ended 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Balance at beginning of year	92.2	178.5
Net valuation movement		
Net gain on sales	(58.2)	(7.0)
Fair value and other movements	(138.3)	(79.3)
	(196.5)	(86.3)
<b>Balance at end of year</b>	<b>(104.3)</b>	92.2



The tables below analyse the balance in the securities revaluation account:

<b>As at 31 March 2006</b>	Fair value of assets	Historical cost	Securities revaluation account	Gross gains	Gross losses
<i>SDR millions</i>					
Securities purchased under resale agreements	1,222.4	1,222.5	(0.1)	–	(0.1)
Government and other securities	8,771.6	8,875.8	(104.2)	48.6	(152.8)
<b>Total</b>	<b>9,994.0</b>	<b>10,098.3</b>	<b>(104.3)</b>	<b>48.6</b>	<b>(152.9)</b>

<b>As at 31 March 2005</b>	Fair value of assets	Historical cost	Securities revaluation account	Gross gains	Gross losses
<i>SDR millions</i>					
Securities purchased under resale agreements	962.8	962.8	–	–	–
Government and other securities	7,449.4	7,357.2	92.2	137.9	(45.7)
<b>Total</b>	<b>8,412.2</b>	<b>8,320.0</b>	<b>92.2</b>	<b>137.9</b>	<b>(45.7)</b>

#### **B. Gold revaluation account**

This account contains the difference between the book value and the deemed cost of the Bank's gold investment assets. For gold investment assets held on 31 March 2003 (when the Bank changed its functional and presentation currency from the gold franc to the SDR) the deemed cost is approximately SDR 151 per ounce, based on the value of USD 208 that was applied from 1979 to 2003 in accordance with a decision by the Bank's Board of Directors, translated at the 31 March 2003 exchange rate.

The movements in the gold revaluation account were as follows:

For the financial year ended 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Balance at beginning of year	759.3	833.3
Net valuation movement		
Net gain on sales	(114.5)	(50.5)
Gold price movement	697.4	(23.5)
	582.9	(74.0)
<b>Balance at end of year</b>	<b>1,342.2</b>	759.3

## 22. Post-employment benefit obligations

The Bank operates three post-employment arrangements:

1. A final salary defined benefit pension arrangement for its staff. The pension arrangement is based on a fund without separate legal personality, out of which benefits are paid. The fund assets are administered by the Bank for the sole benefit of current and former members of staff who participate in the arrangement. The Bank remains ultimately liable for all benefits due under the arrangement.
2. An unfunded defined benefit arrangement for its directors, whose entitlement is based on a minimum service period of four years.
3. An unfunded post-employment health and accident benefit arrangement for its staff. Entitlement to this arrangement is based in principle on the employee remaining in service up to 50 years of age and the completion of a minimum service period of 10 years.

All arrangements are valued annually by independent actuaries.

In addition, the Bank operates a blocked personal deposit account for certain staff members who were previously members of the Bank's savings fund, which closed on 1 April 2003. The terms of these blocked accounts are such that staff members cannot make further deposits and balances are paid out when they leave the Bank. The accounts bear interest at a rate determined by the Bank based on the rate offered by the Swiss National Bank on similar staff accounts. The total balance of blocked accounts at 31 March 2006 was SDR 19.4 million (2005: SDR 21.2 million). They are reported under the balance sheet heading "Currency deposits".

### A. Amounts recognised in the balance sheet

As at 31 March	Staff pensions		Directors' pensions		Post-employment health and accident benefits	
<i>SDR millions</i>	2006	2005	2006	2005	2006	2005
Present value of obligation	(606.4)	(596.4)	(4.5)	(4.3)	(183.8)	(179.8)
Fair value of fund assets	602.2	566.6	–	–	–	–
Funded status	(4.2)	(29.8)	(4.5)	(4.3)	(183.8)	(179.8)
Unrecognised actuarial losses	46.8	77.9	0.3	0.1	57.2	62.4
Unrecognised past service cost	(42.6)	(48.1)	–	–	(8.6)	(9.9)
<b>Liability at end of year</b>	<b>–</b>	<b>–</b>	<b>(4.2)</b>	<b>(4.2)</b>	<b>(135.2)</b>	<b>(127.3)</b>

### B. Present value of benefit obligation

The reconciliation of the opening and closing amounts of the present value of the benefit obligation is as follows:

As at 31 March	Staff pensions		Directors' pensions		Post-employment health and accident benefits	
<i>SDR millions</i>	2006	2005	2006	2005	2006	2005
Present value of obligation at beginning of year	596.4	527.8	4.3	4.6	179.8	129.3
Current service cost	26.3	23.3	0.2	0.2	7.5	7.7
Employee contributions	3.2	3.2	–	–	–	–
Interest cost	18.5	18.9	0.1	0.2	5.7	4.7
Actuarial loss	9.8	24.6	–	0.1	–	43.4
Effect of plan changes	–	–	–	–	–	(9.9)
Benefit payments	(23.3)	(25.3)	(0.3)	(0.3)	(1.8)	(1.7)
Exchange differences	(24.5)	23.9	0.2	(0.5)	(7.4)	6.3
<b>Present value of obligation at end of year</b>	<b>606.4</b>	<b>596.4</b>	<b>4.5</b>	<b>4.3</b>	<b>183.8</b>	<b>179.8</b>

### **C. Fair value of fund assets for staff pensions**

The reconciliation of the opening and closing amounts of the fair value of fund assets for the staff pension arrangement is as follows:

For the financial year ended 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Fair value of fund assets at beginning of year	566.6	525.4
Expected return on fund assets	27.4	27.3
Asset gain / (loss)	36.8	(2.7)
Employer contributions	15.0	15.1
Employee contributions	3.2	3.2
Benefit payments	(23.3)	(25.3)
Exchange differences	(23.5)	23.6
<b>Fair value of fund assets at end of year</b>	<b>602.2</b>	566.6

### **D. Amounts recognised in the profit and loss account**

For the financial year ended 31 March

	Staff pensions		Directors' pensions		Post-employment health and accident benefits	
<i>SDR millions</i>	<b>2006</b>	2005	<b>2006</b>	2005	<b>2006</b>	2005
Current service cost	26.3	23.3	0.2	0.2	7.5	7.7
Interest cost	18.5	18.9	0.1	0.1	5.7	4.7
Less: expected return on fund assets	(27.4)	(27.3)	–	–	–	–
Less: past service cost	(3.4)	0.2	–	–	(1.0)	–
Net actuarial losses recognised in year	1.2	–	–	–	2.8	0.3
<b>Total included in operating expense</b>	<b>15.2</b>	15.1	<b>0.3</b>	0.3	<b>15.0</b>	12.7

### **E. Major categories of fund assets as a percentage of total fund assets**

As at 31 March

<i>Percentages</i>	<b>2006</b>	2005
European equities	16.1	15.7
Other equities	28.5	25.6
European fixed income	26.9	28.2
Other fixed income	24.0	23.5
Other assets	4.5	7.0
<b>Actual return on fund assets</b>	<b>10.65%</b>	4.30%

The staff pension fund does not invest in financial instruments issued by the Bank.

**F. Principal actuarial assumptions used in these financial statements**

As at 31 March

	2006	2005
<b>Applicable to all three post-employment benefit arrangements</b>		
Discount rate – market rate of highly rated Swiss corporate bonds	3.25%	3.25%
<b>Applicable to staff and directors' pension arrangements</b>		
Assumed increase in pensions payable	1.50%	1.50%
<b>Applicable to staff pension arrangement only</b>		
Expected return on fund assets	5.00%	5.00%
Assumed salary increase rate	4.10%	4.10%
<b>Applicable to directors' pension arrangement only</b>		
Assumed directors' pensionable remuneration increase rate	1.50%	1.50%
<b>Applicable to post-employment health and accident benefit arrangement only</b>		
Long-term medical inflation assumption	5.00%	5.00%

The assumed increases in staff salaries, directors' pensionable remuneration and pensions payable incorporate an inflation assumption of 1.5%.

The expected rate of return on fund assets is based on long-term expectations for inflation, interest rates, risk premiums and asset allocations. The estimate takes into consideration historical returns and is determined in conjunction with the fund's independent actuaries.

The assumption for medical inflation has a significant effect on the amounts recognised in the profit and loss account. A 1% change in the assumption for medical inflation compared to that used for the 2005/06 calculation would have the following effects:

SDR millions	6% medical inflation	4% medical inflation
Increase / (decrease) of the total service and interest cost for the financial year ended 31 March 2006	4.3	(3.2)
Increase / (decrease) of the benefit obligation as at 31 March 2006	46.4	(37.8)

**23. Interest income**

For the financial year ended 31 March

SDR millions	2006	2005
<b>Currency investment assets designated as available for sale</b>		
Securities purchased under resale agreements	39.9	14.5
Government and other securities	287.1	255.4
	<b>327.0</b>	<b>269.9</b>
<b>Currency banking assets designated as held at fair value through profit and loss</b>		
Treasury bills	465.3	335.5
Securities purchased under resale agreements	104.8	81.6
Time deposits and advances to banks	3,221.3	1,636.7
Government and other securities	1,058.4	767.5
	<b>4,849.8</b>	<b>2,821.3</b>
<b>Assets designated as loans and receivables</b>		
Call and notice accounts	96.6	56.7
Gold investment assets	20.4	23.4
Gold banking assets	7.0	7.2
	<b>124.0</b>	<b>87.3</b>
<b>Derivative financial instruments designated as held at fair value through profit and loss</b>	<b>936.7</b>	<b>879.5</b>
<b>Other interest</b>	<b>1.6</b>	<b>0.8</b>
<b>Total interest income</b>	<b>6,239.1</b>	<b>4,058.8</b>
Of which:		
Interest received during the financial year	6,392.4	3,981.1

## 24. Interest expense

For the financial year ended 31 March

<i>SDR millions</i>	2006	2005
<b>Liabilities designated as loans and receivables</b>		
Interest on gold deposits	5.4	5.8
Interest on sight and notice deposits	462.1	272.7
Interest on securities sold under repurchase agreements	37.0	13.5
	<b>504.5</b>	<b>292.0</b>
<b>Liabilities designated as held at fair value through profit and loss</b>		
Interest on other currency deposits	5,064.3	3,091.5
Interest on securities sold under repurchase agreements	0.3	0.6
	<b>5,064.6</b>	<b>3,092.1</b>
<b>Total interest expense</b>	<b>5,569.1</b>	<b>3,384.1</b>
Of which:		
Interest paid during the financial year	5,434.9	3,320.7

## 25. Net valuation movement

For the financial year ended 31 March

<i>SDR millions</i>	2006	2005
Unrealised valuation movements on currency banking assets	(332.9)	(247.9)
Realised gains on currency banking assets	4.3	20.9
Unrealised valuation movements on financial liabilities	498.2	1,478.0
Realised gains / (losses) on financial liabilities	63.0	(16.7)
Valuation movements on derivative financial instruments	(306.7)	(1,417.4)
<b>Net valuation movement</b>	<b>(74.1)</b>	<b>(183.1)</b>

## 26. Net fees and commissions income

For the financial year ended 31 March

<i>SDR millions</i>	2006	2005
Fees and commissions income	5.8	4.3
Fees and commissions expense	(3.1)	(3.0)
<b>Net fees and commissions income</b>	<b>2.7</b>	<b>1.3</b>

## 27. Net foreign exchange loss

For the financial year ended 31 March

<i>SDR millions</i>	2006	2005
Net transaction (loss) / gain	(23.4)	11.9
Net translation loss	(1.8)	(46.4)
<b>Net foreign exchange loss</b>	<b>(25.2)</b>	<b>(34.5)</b>

The net loss in the financial year ended 31 March 2006 resulted principally from the impact of an appreciating gold price on the market value of forward contracts for the sale of gold investment assets. This loss was offset by a corresponding increase in the realised gain on the Bank's sales of gold investment assets (see note 30) when these transactions were settled.

The net loss in the financial year ended 31 March 2005 was attributable principally to the impact of the appreciation of the Swiss franc against the SDR on the Bank's short Swiss franc position which existed prior to the subscription by the central banks of Belgium and France for the shares of their national issues which were formerly held in treasury. On the date of subscription, this loss (and the related translation losses in prior years since these shares were repurchased from private shareholders in 2001) was offset in the Bank's equity by a realised exchange gain of SDR 80.3 million (see note 20).

## 28. Operating expense

The following table analyses the Bank's operating expense in Swiss francs (CHF), the currency in which most expenditure is incurred:

For the financial year ended 31 March

<i>CHF millions</i>	<b>2006</b>	2005
<b>Board of Directors</b>		
Directors' fees	1.7	1.6
Pensions to former directors	0.6	0.6
Travel, external Board meetings and other costs	1.1	1.0
	<b>3.4</b>	3.2
<b>Management and staff</b>		
Remuneration	102.3	97.1
Pensions	31.4	30.9
Other personnel-related expense	42.6	38.3
	<b>176.3</b>	166.3
<b>Office and other expense</b>	<b>68.9</b>	64.5
<b>Administrative expense in CHF millions</b>	<b>248.6</b>	234.0
Administrative expense in SDR millions	133.6	129.3
Depreciation in SDR millions	13.3	15.7
<b>Operating expense in SDR millions</b>	<b>146.9</b>	145.0

The average number of full-time equivalent employees during the financial year ended 31 March 2006 was 520 (2005: 526).

## 29. Net gain on sales of investment securities

For the financial year ended 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Disposal proceeds	3,214.1	3,384.2
Amortised cost	(3,155.9)	(3,377.2)
<b>Net gains</b>	<b>58.2</b>	7.0
Comprising:		
Gross realised gains	64.1	32.9
Gross realised losses	(5.9)	(25.9)

## 30. Net gain on sales of gold investment assets

The profits on the sales of gold investment assets for the financial year ended 31 March 2006 were as follows:

For the financial year ended 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Disposal proceeds	187.2	108.6
Deemed cost (see note 21B)	(72.7)	(58.1)
<b>Gross realised gains</b>	<b>114.5</b>	50.5

## 31. Earnings per share

	<b>2006</b>	2005
For the financial year ended 31 March		
Net profit for the financial year (SDR millions)	599.2	370.9
Weighted average number of shares entitled to dividend	540,535	486,673
<b>Basic and diluted earnings per share (SDR per share)</b>	<b>1,108.5</b>	762.1

The dividend proposed for the financial year ended 31 March 2006 is SDR 245 per share (2005: SDR 235).

## 32. Cash and cash equivalents

For the purposes of the cash flow statement, cash and cash equivalents comprise:

As at 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Cash and sight accounts with banks	33.0	25.8
Call and notice accounts	2,831.6	2,979.7
<b>Total cash and cash equivalents</b>	<b>2,864.6</b>	3,005.5

### 33. Taxes

The Bank's special legal status in Switzerland is set out principally in its Headquarters Agreement with the Swiss Federal Council. Under the terms of this document the Bank is exempted from virtually all direct and indirect taxes at both federal and local government level in Switzerland.

Similar agreements exist with the government of the People's Republic of China for the Asian Office in Hong Kong SAR and with the Mexican government for the Office of the Americas.

### 34. Exchange rates

The following table shows the principal rates and prices used to translate balances in foreign currency and gold into SDR:

	Spot rate as at 31 March		Average rate for the financial year ended	
	2006	2005	2006	2005
USD	0.694	0.661	0.687	0.671
EUR	0.840	0.859	0.835	0.845
JPY	0.00589	0.00619	0.00607	0.00625
GBP	1.205	1.248	1.225	1.238
CHF	0.532	0.554	0.539	0.549
Gold	404.4	282.7	327.7	277.9

### 35. Off-balance sheet items

Fiduciary transactions are effected in the Bank's name on behalf of, and at the risk of, the Bank's customers without recourse to the Bank.

They are not included in the Bank's balance sheet and comprise:

As at 31 March

<i>SDR millions</i>	2006	2005
Nominal value of securities held under:		
Safe custody arrangements	10,413.8	10,009.2
Collateral pledge agreements	2,220.5	2,275.2
Portfolio management mandates	5,012.1	3,769.4
<b>Total</b>	<b>17,646.4</b>	16,053.8

The financial instruments held under the above arrangements are deposited with external custodians, either central banks or commercial institutions.

### 36. Commitments

The Bank provides a number of committed standby facilities for its central bank and international institution customers. As at 31 March 2006 the outstanding commitments to extend credit under these committed standby facilities amounted to SDR 7,470.4 million (2005: SDR 5,480.4 million), of which SDR 344.0 million was uncollateralised (2005: SDR 315.0 million).



### 37. Effective interest rates

The effective interest rate is the rate that discounts the expected future cash flows of a financial instrument to the current book value.

The tables below summarise the effective interest rate by major currencies for applicable financial instruments:

#### As at 31 March 2006

<i>Percentages</i>	USD	EUR	GBP	JPY	Other currencies
<b>Assets</b>					
Gold deposits	–	–	–	–	0.61
Treasury bills	4.77	2.39	–	0.02	1.06
Securities purchased under resale agreements	4.78	2.63	4.57	–	–
Time deposits and advances to banks	4.75	2.51	4.59	–	4.25
Government and other securities	4.76	3.41	4.80	0.60	4.99
<b>Liabilities</b>					
Currency deposits	4.23	2.55	4.32	–	4.85
Gold deposits	–	–	–	–	0.28
Securities sold under repurchase agreements	4.63	–	4.27	–	–

#### As at 31 March 2005

<i>Percentages</i>	USD	EUR	GBP	JPY	Other currencies
<b>Assets</b>					
Gold deposits	–	–	–	–	0.82
Treasury bills	2.70	2.13	–	–	–
Securities purchased under resale agreements	2.71	2.12	4.79	–	–
Time deposits and advances to banks	2.77	2.24	4.93	–	4.15
Government and other securities	3.63	3.14	4.96	0.45	3.94
<b>Liabilities</b>					
Currency deposits	3.00	2.29	4.73	–	3.29
Gold deposits	–	–	–	–	0.46
Securities sold under repurchase agreements	2.43	–	–	–	–

### 38. Concentration analysis

#### A. Total liabilities

As at 31 March

<i>SDR millions</i>	2006	2005
Africa	18,260.7	14,024.8
Asia-Pacific	84,594.8	80,642.4
Europe	60,380.7	41,772.5
North and South America	41,394.6	28,910.3
International organisations	3,914.3	4,883.1
<b>Total</b>	<b>208,545.1</b>	<b>170,233.1</b>

The Bank's currency and gold deposits, principally from central banks and international institutions, comprise 93.6% (2005: 92.7%) of its total liabilities. At 31 March 2006 currency and gold deposits originated from 154 depositors (2005: 159). Within these deposits there are significant individual customer concentrations, with five customers each contributing in excess of 5% of the total on a settlement date basis (2005: three customers). Note 4 provides details of how the Bank manages the concentration risk in its funding base.

#### B. Credit commitments

As at 31 March

<i>SDR millions</i>	2006	2005
Asia-Pacific	7,166.4	5,259.1
Europe	304.0	221.3
<b>Total</b>	<b>7,470.4</b>	<b>5,480.4</b>

Note 36 provides further analysis of the Bank's credit commitments.

#### C. Off-balance sheet items

As at 31 March

<i>SDR millions</i>	2006	2005
Africa	975.2	594.6
Asia-Pacific	13,410.4	12,144.1
Europe	560.2	556.8
North and South America	2,700.6	2,758.3
<b>Total</b>	<b>17,646.4</b>	<b>16,053.8</b>

Note 35 provides further analysis of the Bank's off-balance sheet items.

#### D. Total assets

The Bank invests the majority of its funds in the interbank market (with G10 based global financial institutions) and in G10 sovereign debt. A geographical analysis of the Bank's total assets is not provided because the Bank's Management believes that this would not present a fair impression of the economic effect of the Bank's investments.

### 39. Related parties

The Bank considers the following to be its related parties:

- The members of the Board of Directors;
- The senior officials of the Bank;
- Close family members of the above individuals;
- Enterprises which could exert significant influence over a member of the Board of Directors or senior official and enterprises over which one of these individuals could exert significant influence;
- The Bank's post-employment benefit arrangements; and
- Central banks whose governor is a member of the Board of Directors and institutions that are connected with these central banks.

A listing of the members of the Board of Directors and senior officials is shown in the section of the Annual Report entitled "Board of Directors and senior officials". Note 22 provides details of the Bank's post-employment benefit arrangements.

#### A. Related party individuals

The total compensation of senior officials recognised in the profit and loss account amounted to:

For the financial year ended 31 March

<i>CHF millions</i>	2006	2005
Salaries, allowances and medical cover	6.4	6.7
Post-employment benefits	1.8	1.8
<b>Total compensation in CHF millions</b>	<b>8.2</b>	<b>8.5</b>
SDR equivalent	4.4	4.6

Note 28 provides details of the total compensation of the Board of Directors.

The Bank offers personal deposit accounts for all staff members and its Directors. In addition, the Bank operates a blocked personal deposit account for certain staff members who were previously members of the Bank's savings fund. The terms of these blocked accounts are such that staff members cannot make further deposits and balances are paid out when they leave the Bank. The personal deposit accounts and the blocked accounts bear interest at a rate determined by the Bank based on the rate offered by the Swiss National Bank on similar staff accounts. At 31 March 2006, the movements and total balance on personal deposit and blocked accounts relating to members of the Board of Directors and the senior officials of the Bank were as follows:

For the financial year ended 31 March

<i>CHF millions</i>	<b>2006</b>	2005
Balance at beginning of year	18.7	19.8
Deposits taken including interest income (net of withholding tax)	6.6	6.2
Withdrawals	(12.0)	(7.3)
<b>Balance at end of year in CHF millions</b>	<b>13.3</b>	18.7
SDR equivalent	7.1	10.4
Interest expense on deposits in CHF millions	0.5	0.8
SDR equivalent	0.3	0.4

Balances related to individuals who are appointed as members of the Board of Directors or as senior officials of the Bank during the financial year are included in the table above along with other deposits taken. Balances related to individuals who cease to be members of the Board of Directors or senior officials of the Bank during the financial year are included in the table above along with other withdrawals.

#### ***B. Related party central banks and connected institutions***

The BIS provides banking services to central banks, international organisations and other public institutions. In fulfilling this role, the Bank in the normal course of business enters into transactions with related party central banks and connected institutions. These transactions include making advances, and taking currency and gold deposits.

It is the Bank's policy to enter into transactions with related party central banks and connected institutions on similar terms and conditions to transactions with other, non-related party customers.

#### ***Currency deposits from related party central banks and connected institutions***

For the financial year ended 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Balance at beginning of year	39,806.9	34,030.3
Deposits taken	175,323.0	104,844.2
Maturities, repayments and fair value movements	(156,074.1)	(101,906.6)
Net movement on call / notice accounts	(5,775.8)	2,839.0
<b>Balance at end of year</b>	<b>53,280.0</b>	39,806.9
Percentage of total currency deposits at end of year	28.6%	26.4%

#### ***Gold deposits from related party central banks and connected institutions***

For the financial year ended 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Balance at beginning of year	4,808.6	5,049.1
Deposits taken	–	154.3
Net withdrawals and gold price movements	1,458.7	(394.8)
<b>Balance at end of year</b>	<b>6,267.3</b>	4,808.6
Percentage of total gold deposits at end of year	67.9%	67.6%

#### ***Securities purchased under resale transactions with related party central banks and connected institutions***

For the financial year ended 31 March

<i>SDR millions</i>	<b>2006</b>	2005
Balance at beginning of year	4,917.3	4,448.0
Deposits taken	1,095,001.1	1,200,762.4
Maturities and fair value movements	(1,096,719.9)	(1,200,293.1)
<b>Balance at end of year</b>	<b>3,198.5</b>	4,917.3
Percentage of total securities purchased under resale agreements at end of year	16.4%	35.0%

*Other balances with related party central banks and connected institutions*

The Bank maintains sight accounts in currencies with related party central banks and connected institutions, the total balance of which was SDR 10.8 million as at 31 March 2006 (2005: SDR 7.4 million). Gold held in sight accounts with related party central banks and connected institutions totalled SDR 7,132.0 million as at 31 March 2006 (2005: SDR 5,170.3 million).

*Derivative transactions with related party central banks and connected institutions*

The BIS enters into derivative transactions with its related party central banks and connected institutions, including foreign exchange deals and interest rate swaps. The total nominal value of these transactions with related party central banks and connected institutions during the year ended 31 March 2006 was SDR 10,948.1 million (2005: SDR 4,184.5 million).

#### **40. Contingent liabilities**

The Bank is involved in two separate legal proceedings (in addition to the proceedings before the Hague Arbitral Tribunal that were completed in 2003) arising out of the decision of 8 January 2001 to repurchase all BIS shares then held by private shareholders (see note 19).

A group of former private shareholders initiated a legal proceeding in December 2001 before the Commercial Court in Paris. That Court made a preliminary determination (without addressing the substance of the matter) in March

2003 that it had jurisdiction over claims seeking to increase the amount of compensation. The Bank subsequently requested review of this procedural decision by the Paris Court of Appeals, arguing that the Hague Arbitral Tribunal had exclusive jurisdiction over the matter. In a decision rendered on 25 February 2004, the Paris Court of Appeals ruled in favour of the Bank by concluding that the Paris Commercial Court had no jurisdiction over such claims. In April 2004, a small group of former private shareholders petitioned the French Cour de Cassation to quash the ruling of the appeals court on the jurisdiction issue. Written arguments regarding the jurisdiction issue were filed by both the claimants and the Bank in late 2004, and a decision of the court is pending. The Bank considers this action to be without merit. Accordingly, no separate provision has been made for these claims.

A separate proceeding was filed by a group of claimants who purport to have sold BIS shares on the markets during the period between the announcement of the share withdrawal proposal on 11 September 2000 and the 8 January 2001 Extraordinary General Meeting decision effectuating such withdrawal. The claim was brought not against the BIS, but rather against JP Morgan & Cie SA and Barbier Frinault, the Bank's financial advisers for determining the original compensation for the transaction. That notwithstanding, the Bank faces indirect liability through an indemnification clause in the contract with JP Morgan & Cie SA with respect to litigation and costs that might arise in connection with the financial advisory services performed. No provision has been made for this claim.

Aside from the foregoing, no significant litigation or arbitration procedure involving the BIS is currently under way.

# Report of the auditors

Report of the auditors  
to the Board of Directors and to the General Meeting  
of the Bank for International Settlements, Basel

We have audited the accompanying financial statements (pages 190–224) of the Bank for International Settlements. These financial statements incorporate the balance sheet and profit and loss account, as required by the Bank's Statutes, and the notes thereto. The financial statements have been prepared by the Management of the Bank in accordance with the Statutes and with the principles of valuation described under significant accounting policies in the notes. Our responsibility under the Statutes of the Bank is to form an independent opinion on the balance sheet and profit and loss account based on our audit and to report our opinion to you. The prior year financial statements were audited by another auditor whose report dated 9 May 2005 expressed an unqualified opinion on those financial statements.

We conducted our audit in accordance with International Standards on Auditing. Those Standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by Management, as well as evaluating the overall financial statement presentation. We have received all the information and explanations which we have required to obtain assurance that the balance sheet and profit and loss account are free of material misstatement, and believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements, including the notes thereto, have been properly drawn up and give a true and fair view of the financial position of the Bank for International Settlements at 31 March 2006 and the results of its operations for the year then ended in conformity with the accounting principles described in the notes to the financial statements and the Statutes of the Bank.

Deloitte AG

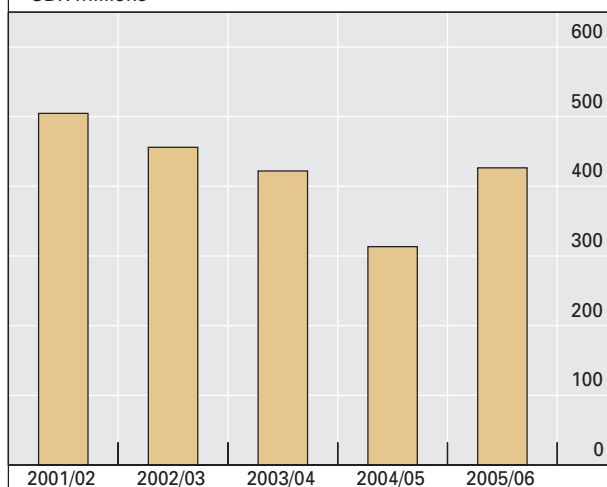
Dr. Philip Göth  
Zurich, 8 May 2006

Pavel Nemecek

## Five-year graphical summary

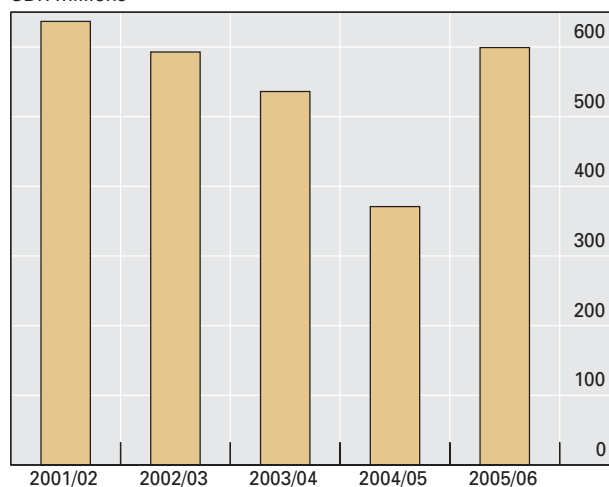
### Operating profit

SDR millions



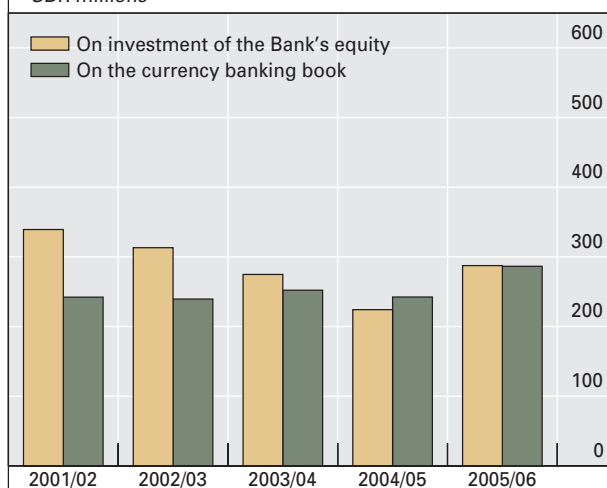
### Net profit

SDR millions



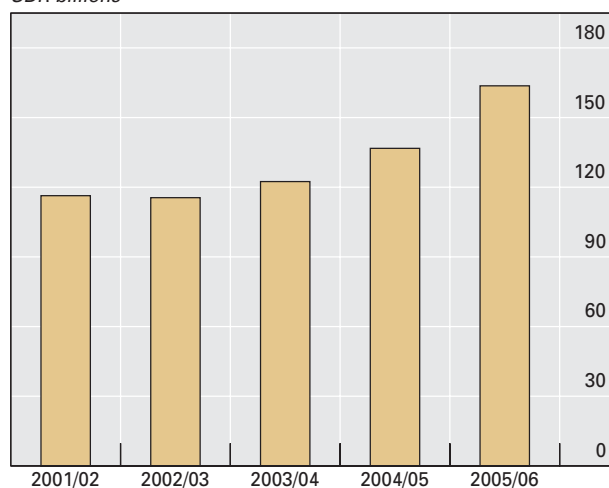
### Net interest earned on currency investments

SDR millions



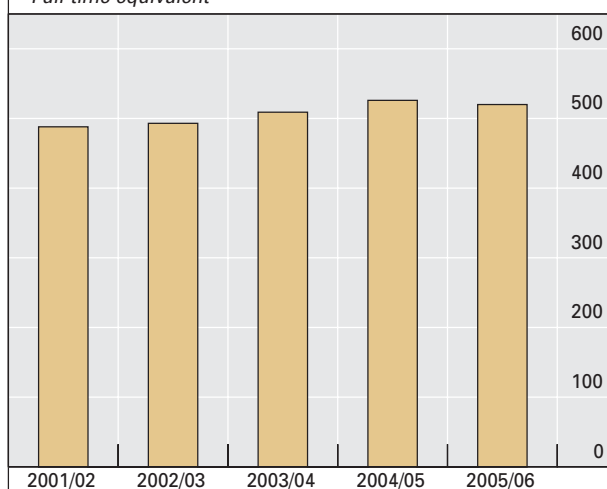
### Average currency deposits (value date accruals basis)

SDR billions



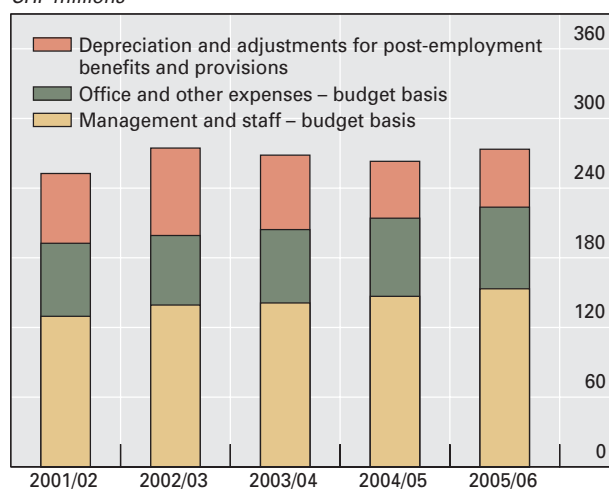
### Average number of employees

Full-time equivalent



### Operating expense

CHF millions



Note: The financial information for 2001/02 is based on best estimates.





