Subscription orders for Quarterly Bulletins and Annual report and requests for specimen copies should be sent to:

Kluwer Academic Publishers
PO Box 17 – 3300 AH Dordrecht – The Netherlands

© 2003 De Nederlandsche Bank nv

Edition: 1.100
Publication and multiplication for educational and non-commercial purposes is allowed, with acknowledgement.

Westeinde 1, 1017 ZN Amsterdam – Postbus 98, 1000 AB Amsterdam, the Netherlands – Telephone (31)20 524 91 11 – Telex 1135 dntbam nl – Telefax (31)20 524 25 00
Internet: http://www.dnb.nl.

This publication contains a translation of the Dutch-language Quarterly Bulletin of De Nederlandsche Bank nv, except where indicated otherwise.
In the event of discrepancies between the original Dutch-language version and this translation, the Dutch text shall prevail.
ISSN: 0922-6184
Contents

Recent developments

Monetary and economic developments
The Netherlands in the euro area 7

Supervision
Latest developments in supervision 13

Payments
Current developments in payment and settlement systems 18

Financial stability 23

Articles

Immigration from an historical and an economic perspective 33

Need for transparent financial reporting and sound corporate governance 43

More synchronous cyclical movements through mergers and acquisitions? 49

An assessment of the Bank’s large-value payment system top under the ‘core principles’ 57

Better price measurement through hedonic price adjustment 63

List of articles published in 1999-2003 71

Publications

Occasional Studies 75

dnb Staff Reports 77
Recent developments
The Netherlands in the euro area

International economic recovery visible but vulnerable

The recovery of the US economy appears at first sight to be making good progress. In the fourth quarter of 2002 gross domestic product (GDP) grew by 2.9% relative to the same quarter of 2001. But caution is in order regarding the sustainability of the economic upturn.

First of all, the growth in GDP is largely (0.7 percentage point) coming from public sector expenditure. Second, a sizeable portion of consumer spending growth is attributable to the tax reductions and sharp interest rate cuts made over the past two years. Since the beginning of 2001 key US interest rates have been reduced 5¼ percentage point to a level of 1¼%. Calculations with the aid of EEUROMON – one of the Bank’s macro-econometric models – indicate that about 0.6 percentage point of US consumption growth in 2002 was induced by monetary easing. In the coming year, these earlier interest rate steps will continue to stimulate consumption as interest rate policy tends to have a delayed impact on the real economy. However, now that the key US interest rate is nearing zero level, the monetary fuel tank is beginning to run dry. A third reason for exercising caution in relation to the recovery in the United States (US) is that the economic indicators have been showing a mixed picture in recent months. One positive development is that orders are beginning to perk up. Rising industrial output, however, will not immediately translate into accelerating business investment as the current capacity utilisation rate of about 75% is still clearly below the long-term average of almost 82%. Another bright spot is that the housing market is holding up, partly thanks to the low interest rates. However, consumer spending growth decelerated in the fourth quarter. Consumer confidence has been dented over the past few months (Chart 1) by the considerable rise in unemployment to

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>iii</td>
<td>iv</td>
<td>i</td>
<td>ii</td>
</tr>
</tbody>
</table>

GDP

<table>
<thead>
<tr>
<th>Component</th>
<th>2000</th>
<th>2001</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage changes relative to previous corresponding period</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

GDP

<table>
<thead>
<tr>
<th>Component</th>
<th>2000</th>
<th>2001</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage changes relative to immediately preceding period</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bbp

| Source: Eurostat. |
6% of the labour force. The number of new applications for unemployment benefits is now above the level usually associated with a recession.

In the euro area, GDP growth edged up slightly in the third quarter of 2002 to 0.9% relative to the corresponding quarter of 2001 (Table 1). Some signals suggest that domestic demand in the euro area has bottomed out. Consumer spending, for instance, showed a modest acceleration in the third quarter. The decline in business investment also came to a halt. Employment growth in the euro area, though slowing, is still positive and is consequently helping to support consumer spending. However, most indicators confirm the picture of continuing weak growth. Consumer confidence is currently at its lowest ebb since the end of 2001. In addition, the Purchasing Managers Index is not yet pointing to an upturn in the order flow. The German Ifo indicator declined during seven consecutive months, followed by a moderate rise in January and February 2003. Italian consumer confidence dropped sharply in December as a result of the crisis at automotive producer Fiat. In November 2002 industrial output revived after a period of stagnation (Chart 2). The production increase largely occurred in the three big euro countries, and mainly took place in the consumer durables segment. Germany is performing at a very modest level. The German economy is showing a certain recovery but is lagging behind the rest of Europe: GDP growth in the third quarter of 2002 was 0.4% relative to the previous year, while domestic demand in Germany was even flatter. The upshot is that at this stage both the US and European economies remain vulnerable to negative developments, such as the consequences of a war with Iraq (see below).

**Monetary development and interest rate policy**

On 6 December 2002 the Governing Council of the European Central Bank (ECB) decided to ease monetary policy in the euro area. The minimum interest rate at which banks could tender for the weekly main refinancing operations was reduced 50 basis points to 2.75%. The analysis underlying monetary policy is based on the two pillars of the ECB policy strategy. Within these pillars, monetary, financial and economic developments are analysed and the interest rate level best suited to maintaining price stability in the euro area in the medium term is determined.

Monetary developments in the euro area are analysed within the first pillar of the monetary policy strategy. During 2002 M3 growth was constantly above the ECB’s reference value of 4.5%. This is principally the consequence of the portfolio realignment that investors carried out in response to the great uncertainties hovering over the financial markets. Since the end of 2001, eurozone investors have been net sellers outside the euro area, which is reflected in a net liquidity inflow. In the past few months this contributed about 2.5 percentage points to M3 growth. The preference for liquid assets is further reinforced by the fact that low interest rates make it relatively attractive to maintain low-interest earning assets. A second important development that emerges from the analysis within the first pillar is the deceleration of bank lending, which has now persisted for over two years. Growth in bank lending to the private sector ran to an annualised 4.6% in December 2002. The slowing pace of lending growth reflects the reluctance among businesses to invest in fixed assets and stocks. The economic and financial indicators falling within the second pillar currently point to a slack economic development surrounded by downward risks (see above). The prospect of sustained economic weakness and the recent appreciation of the euro are expected to dampen inflation in the euro area in 2003 to below 2.0%.

**Netherlands: signs of recovery remain sparse**

In the third quarter of 2002 only two countries in the euro area had a lower GDP growth than Germany, namely Portugal and the Netherlands. The series of quarters in which the Dutch economy showed little or no growth continued in the fourth quarter. GDP increased 0.3% relative to the fourth quarter in 2001. Exports are achieving growth of about only 1%, while business...
investment has been in decline since the second half of 2001 (Table 2). Dutch exports are being hindered by the relative weakness of the German economy where just over one quarter (26%) of Dutch exports find their destination. Added to that, the euro has gained strength in the past year relative to the dollar, so that the deterioration of Dutch corporate competitiveness relative to the rest of the world is no longer being masked by a favourable exchange rate. The growth percentage of private consumer spending has for some time been moving between 1/2% and 1 1/2% (Table 2). In the fourth quarter of 2002 Dutch industry produced over 2 1/2% less than a year ago. This is the sixth consecutive quarter with a lower industrial output. On the other hand, however, the decline in industrial output in the consecutive quarters of 2002 weakened, both in the domestic and foreign markets. The number of declared bankruptcies increased in the fourth quarter of 2002 to the highest level in eight years (Chart 3). The first quarter of 2003 brought few signs of recovery for the Dutch economy. Producer confidence and companies’ assessment of their own order position worsened again relative to the fourth quarter of 2002.

The Dutch inflation rate – measured on the basis of the consumer price index (cpi) – ran to 2.9% in January relative to a year earlier. The harmonised index of consumer prices (hicp) rose in the same period by 2.9%. For the year 2002 as a whole, the Dutch inflation rate averaged 3.3% (cpi basis).\(^1\) Inflation declined steadily in the first half of 2002, followed by a minor further decrease in the second half of the year. The inflation rate differential between the Netherlands and the euro area has thus narrowed from 2.2 percentage points in January 2002 to 0.8 percentage point in January 2003 (hicp basis).\(^2\) Recent developments show that inflationary pressure is receding somewhat. Negotiated wages under collective labour agreements rose in December by 3.1% compared to the same month in the previous year. Collective wage deals have now been negotiated for full-year 2003 for over 50% of all employees, with the agreed wage increase averaging about 3%. This is consequently not making any contribution towards a further decline in the inflation rate, particularly not given the necessary increase in employers’ pension contributions and the expected limited increase in labour productivity of only 1% in 2003 (see the article ‘The Dutch

### Table 2  Economic growth in the Netherlands

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2001</th>
<th>2002</th>
<th>iV</th>
<th>i</th>
<th>ii</th>
<th>iii</th>
<th>iv</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>gdp</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage changes relative to previous corresponding period</td>
<td>3.3</td>
<td>1.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.1</td>
<td>0.1</td>
<td>0.4</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer expenditure</td>
<td>3.6</td>
<td>1.2</td>
<td>1.0</td>
<td>1.0</td>
<td>1.5</td>
<td>0.8</td>
<td>1.0</td>
<td>0.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public sector expenditure</td>
<td>1.9</td>
<td>3.1</td>
<td>3.8</td>
<td>3.3</td>
<td>2.9</td>
<td>4.4</td>
<td>3.9</td>
<td>3.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment</td>
<td>3.5</td>
<td>-0.8</td>
<td>-3.7</td>
<td>-0.8</td>
<td>-2.2</td>
<td>-2.7</td>
<td>-3.9</td>
<td>-6.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exports</td>
<td>10.9</td>
<td>1.7</td>
<td>-1.3</td>
<td>-3.5</td>
<td>-4.4</td>
<td>-1.7</td>
<td>-0.1</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imports</td>
<td>10.6</td>
<td>1.9</td>
<td>-2.2</td>
<td>-3.6</td>
<td>-5.7</td>
<td>-2.2</td>
<td>-1.0</td>
<td>0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gross contributions to gdp growth</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer expenditure</td>
<td>1.8</td>
<td>0.6</td>
<td>0.5</td>
<td>0.5</td>
<td>0.7</td>
<td>0.4</td>
<td>0.5</td>
<td>0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public sector expenditure</td>
<td>0.4</td>
<td>0.7</td>
<td>0.9</td>
<td>0.7</td>
<td>0.6</td>
<td>1.0</td>
<td>0.9</td>
<td>0.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment</td>
<td>0.8</td>
<td>-0.2</td>
<td>-0.8</td>
<td>-0.2</td>
<td>-0.5</td>
<td>-0.6</td>
<td>-0.8</td>
<td>-1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in inventories</td>
<td>-0.3</td>
<td>0.2</td>
<td>-0.7</td>
<td>-0.6</td>
<td>-1.3</td>
<td>-1.0</td>
<td>-0.9</td>
<td>0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net trade</td>
<td>0.8</td>
<td>0.0</td>
<td>0.5</td>
<td>-0.2</td>
<td>0.6</td>
<td>0.2</td>
<td>0.6</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Percentage changes relative to immediately preceding period | -0.1 | 0.0  | 0.3  | 0.2  | 0.1 |

Explanatory note: Adjusted for seasonal effects and working days.
Source: Statistics Netherlands.

Increased private savings in the Netherlands

Personal sector savings have fluctuated strongly over the past few years (Chart 4). In the second half of the nineties, the savings propensity of the Dutch consumer decreased. The drop in the personal savings ratio was primarily due to the exuberant capital gains made on shares and houses which were partly used for consumer spending purposes. The savings ratio contracted sharply, both in international (see Chart 5) and in national historical perspective. This is perhaps attributable to the fact that the increase in house prices in the Netherlands was exceptionally high (about 125%) in the period in question, both in comparison with other countries and in comparison with previous boom periods. Since 2001 personal sector savings have risen considerably again. The following three factors offer an explanation for this. First of all, the depleted share prices – and ensuing capital losses – may have prompted consumers to restructure their personal finances. A second factor is the heightened uncertainty over the macroeconomic situation, resulting from the terrorist attacks in the US on 11 September 2001, the war against Iraq and the rising unemployment in the Netherlands. In the third place, tax measures appear to have influenced savings patterns. The væt hike in January 2001 made consumption more expensive. The simultaneous easing of the tax and premium burden considerably increased the disposable personal income, but without leading to any significant rise in spending. One possible explanation for this is that the væt-related price increases were more ‘visible’ to consumers than the easing of the tax and premium burden. Consequently, the non-expenditure of the net easing of the tax and premium burden served to raise the savings ratio in the first quarter of 2001. This illustrates how government measures can influence consumer saving and spending patterns.

The abandonment of the premium savings scheme, the downscaling of the salary savings scheme and the earlier release of part of existing deposits in these schemes may lead to a reduction in the savings ratio in the first quarter of 2003. An estimated €4 billion or...
so was released at the start of 2003. Consumers will see their bank balance swell as this amount is paid into their current accounts. In addition, the falling net return on savings provides an additional incentive to spend. All in all, therefore, the measures mentioned may in principle give a considerable impulse to consumer spending. Without the early release of existing deposits, an amount of about EUR 2 billion would become available annually. It should be noted, however, that the abolition of the scheme also deprives employees and companies of a tax break. This will have an erosive impact on net incomes and consequently weaken the expected impulse to consumption. If some 20% of the extra amount released in January 2003 is consumed, this will raise private consumption by about 0.2 percentage point. From 2005 the disappearance of the impulses will be the dominating factor, leading to negative macroeconomic effects.

**Bank lending in the Netherlands**

After a brief stabilisation in mid-2002, the growth in bank lending again decreased in the closing months of the year to an annualised 7.2% in December (Chart 6). As in the past two years, the decline stems mainly from the reduction in business loans. Due to the poor investment climate and the aspiration of companies to improve their balance sheet position, total lending to non-financial companies grew only 1.1% (annualised) in the fourth quarter. The third quarter even showed a contraction of 1.5%. The sharp deceleration in the growth in mortgage lending, as a result of the cooling-down of the housing market in 2000 and 2001, came to a halt in 2002. Nevertheless the 11.1% growth in mortgages in the third quarter of 2002 was still one percentage point lower than in the second quarter. This lending segment for banks is currently contending with contrary impulses. On the one hand, low mortgage rates are stimulating private individuals to take out mortgage loans, while banks also probably prefer to commit their funds to relatively safe mortgage loans rather than to riskier (business) loans. On the other hand, the cooling of the housing market appears to be persisting, so that the growth in the mortgage loan market also looks set to peter out. It is illustrative in this context that the house price increase which appeared to stabilise around an annual 6% in mid-2002 subsequently decreased to 4.8% in December. The price level, adjusted for seasonal influences, seems to have stabilised in the closing months of 2002 (Chart 7).

**Economic consequences of war in the Middle East**

The consequences of a war against Iraq are highly uncertain. At the same time it is clear that the potential costs are too sizeable to be ignored. The Gulf War of 1990/91 may appear to provide an obvious benchmark in this respect, but the dissimilarities with the current...
situation are substantial. In the first place the economic starting point is different. The Western economies are currently in a state of nascent recovery; in 1990 the US was facing an economic slowdown while Europe, by contrast, was undergoing vigorous expansion in the wake of German reunification. A second difference is that the Iraqi invasion of Kuwait came as a complete surprise in 1990/91, while a US-led campaign against Saddam Hussein is now widely anticipated. Thirdly, in view of the nature of the intervention, the risk of a protracted conflict is now greater. A fourth difference is that the military costs of the first Gulf War were financed by third-party countries (Germany, Kuwait, Japan, Saudi Arabia) which is less probable this time.4

The most important negative macroeconomic costs of a second Gulf War for Europe and the US stem from the related rise in the oil price. A second Gulf War can have somewhat different effects for the economies of Europe and the US. This is mainly because the US economy depends more strongly on the oil price. Other significant factors are the progress of the conflict and the exchange rate between the dollar and the euro. In the past weeks, the mounting threat of war has brought the dollar under downward pressure. A depreciation of the dollar would make European exports less competitive. The negative impact of a rising oil price on economic growth in the US could be partly compensated by improved US competitiveness thanks to the cheaper dollar. US inflation is relatively sensitive to oil prices, mainly on account of the extensive private car ownership in that country. This effect is further reinforced by the depreciation of the dollar. European inflation is less directly susceptible to the oil price and is also tempered by the dollar depreciation. The uncertainties remain immense, however: depending on the progress of the war against Iraq, an appreciation of the dollar cannot be ruled out either.

1 Effective January 2003 Statistics Netherlands has adjusted the basis for calculating the CPI: the new figures are based on the consumer goods basket for the year 2000. In future, Statistics Netherlands will adjust the basis annually, so that the index figures are always calculated according to the most recent consumer goods basket. See the article ‘Better price measurement through hedonic price adjustment’ elsewhere in this Quarterly Bulletin.

2 This figure is based on provisional Eurostat figures.

3 The assumption that 20% is consumed is in accordance with the results of a Nibud survey held in January 2003 and a survey held in the autumn of 2002 on behalf of the Bank, where employees were asked to give their reasons for taking part in company savings schemes.

4 Nordhaus (2002), The economic consequences of a war with Iraq, NBER working paper 9661.
The Dutch banking system is holding out well under the current adverse cyclical conditions and recent price developments in the financial markets. Despite declining profitability, banks’ solvency improved. The cost-to-income ratio has recently turned downward, but remains on the high side from an international perspective. As regards policy and regulation, there are new developments concerning electronic money institutions and customer due diligence. The procyclicality of asset risk weighting in the new Basel Capital Accord has been reduced. A new multilateral Memorandum of Understanding deals with procedures in times of crisis management in the European Union. Co-operation between the Bank and the Pensions and Insurance Supervisory Authority of the Netherlands has been intensified and a study has been initiated into a new funding model for financial supervision in the Netherlands.

Latest developments in supervision

Results of European and Dutch banks

The profitability of banks in the European Union, in terms of Return on Equity (\(r_{oe}\)), has declined strongly over the past few years under the impact of the cyclical downturn and negative developments in the financial markets. Data on the first half of 2002 made available by the large European banks indicate a further decline of \(r_{oe}\), from 13.8% in 2001 to 12.3% in the first half of 2002. The same general trend is also visible with respect to Dutch banks. Chart 1 pictures the development of \(r_{oe}\) in the Netherlands since 1994.

Bank profits have come down for two reasons. In the first place, provisioning has increased in order to accommodate the rising share of bad loans in the lending portfolio. Secondly, non-interest income declined as a result of adverse developments in the stock markets. Large banks were hardest hit by declining incomes, especially since during the period leading up to the downturn it was the larger banks which had expanded into investment banking and asset management. These activities are related and therefore sensitive to developments in the financial markets. Banks focusing on retail banking suffered less from the stock market depression. Nevertheless, profit levels in the European banking system were still equal to the average level during 1999-1999.

Retained profits offer banks an opportunity to reinforce their financial position, which explains the importance of sufficient profitability for the health of the banking system. Market-based measures indicate that although the likelihood of failure by large banks as perceived by the financial markets has increased, it is still below the level of 1998, during the aftermath of the Asian-Russian crisis.

Even should a tentative recovery emerge in 2003, the quality of the banking community’s asset portfolio may still deteriorate further, with the possibility of further increased provisioning. This is because there is a lag between the moment when risks to the business sector arise and the time they show up on banks’ balance sheets. Yet Dutch banks have already made large provisions over the past few years (Table 1). Assuming the business cycle does not continue downward, it is likely that banks’ earnings will not come under greater pressure as a result of rising provisions.

As is shown by Table 1, the profitability of Dutch banks in terms of after-tax earnings again declined, continuing a trend that had emerged in previous quarters. Declining fee income and other earnings clearly reflect the deteriorated mood of the stock markets. Higher provisioning in light of the cyclical downturn further depressed earnings. Offsetting this, however, are some important positive developments. To begin with, interest earnings went up, owing in part to an increase in lending. Secondly, the differential between long and short interest went up also, and this has a positive impact on net interest income, because banks’ liabilities tend to have shorter maturities than their assets. From the second quarter onward, moreover, banks’ operating expenses decreased as a result of cost-saving measures.

Chart 1 Development of Dutch banks’ profitability (1994-end-2002)

<table>
<thead>
<tr>
<th>Year</th>
<th>Three large banks</th>
<th>All banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>94</td>
<td>13.8%</td>
<td>13.8%</td>
</tr>
<tr>
<td>95</td>
<td>13.5%</td>
<td>13.5%</td>
</tr>
<tr>
<td>96</td>
<td>13.2%</td>
<td>13.2%</td>
</tr>
<tr>
<td>97</td>
<td>13.0%</td>
<td>13.0%</td>
</tr>
<tr>
<td>98</td>
<td>12.8%</td>
<td>12.8%</td>
</tr>
<tr>
<td>99</td>
<td>12.6%</td>
<td>12.6%</td>
</tr>
<tr>
<td>00</td>
<td>12.4%</td>
<td>12.4%</td>
</tr>
<tr>
<td>01</td>
<td>12.2%</td>
<td>12.2%</td>
</tr>
<tr>
<td>02</td>
<td>12.0%</td>
<td>12.0%</td>
</tr>
</tbody>
</table>

Explanatory note: Profitability is defined as net operating results as a share of average own funds (capital, reserves, third-party interests and unappropriated profit).

Source: Figures reported by banks.
Notably, this trend gained momentum as time went on, with banks’ expenses down by more than 7% over the fourth quarter, and by 2.7% over entire 2002.

Despite a decline in profitability, the solvency of banks in the euro area remained strong. For Dutch banks the solvency ratio improved from 11.4% in 2001 to 11.9% in 2002, owing to the fact that the capital base increased by 0.5% in 2002, while the size of risk-weighted assets declined by 3.3%. The solvency of large Dutch banks also improved in 2002, to 11.1%, up from 10.8% in 2001. All in all, thanks to Dutch banks’ dedicated policies, their solvency ratio has been well above the required 8% minimum and appears, moreover, to follow an upward trend. We may therefore conclude that the Dutch banking system, at the end of 2002, had a healthy solvency ratio, thanks in part to a sound starting position and active solvency management – an achievement which is the more striking given the adverse cyclical situation and the development in the stock markets.

Yet vigilance is in order. On the macroprudential level, the chapter on ‘Financial stability’ identifies several downsides risks which may reinforce the incipient downward trend in Dutch banks’ profits through declining economic growth. Therefore the Bank, as ever, keeps a close watch on developments in individual banks, in order to maintain its ability to guarantee the resilience and robustness of the entire sector.

A commonly used measure of a bank’s efficiency is the cost-to-income ratio. In the case of banks, this is translated into total operating expenses (excluding changes in the value of claims and financial fixed assets, and hence excluding provisions) as a share of total income. The lower the ratio, the higher a bank’s efficiency. An important consideration in interpreting the ratio is, however, that the banking sector should be sufficiently competitive. For in a non-competitive market, banks are able to translate inefficiencies into higher consumer prices (in the form of higher interest margins and commissions), and the higher income thus generated will keep the cost-to-income ratio artificially low. In the Netherlands, however, this does not appear to be the case. Chart 2 presents an international comparison of large banks’ cost-to-income ratio developments over several years.\(^2\)

As is shown by Chart 2, the cost-to-income ratio of large Dutch banks has declined considerably since early 2002. It would seem that their intensified cost-saving strategy has been successful. This is the more remarkable because in times of declining income, a falling ratio requires additional cost-saving. Meanwhile, the average ratio on an international level also declined, so that the relative position of the large Dutch banks did not improve. Compared internationally, large banks in the Netherlands are still among the less efficient in terms of their cost-to-income ratio, which in mid-2002 stood at 71%.

Of the EU countries, the United Kingdom (\(\text{\text{UK}}\)) has the lowest cost-to-income ratio. A closer comparative analysis of the Dutch and \(\text{\text{UK}}\) banking systems may

---

**Table 1 Profit/loss of Dutch banks\(^1\)**

Changes on the corresponding period last year, per cent

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>i</th>
<th>ii</th>
<th>iii</th>
<th>iv</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total income</strong></td>
<td></td>
<td></td>
<td></td>
<td>17.5</td>
<td>-0.2</td>
<td>-1.8</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Interest</strong></td>
<td></td>
<td></td>
<td></td>
<td>6.3</td>
<td>6.6</td>
<td>7.0</td>
<td>15.9</td>
</tr>
<tr>
<td><strong>Commission</strong></td>
<td></td>
<td></td>
<td></td>
<td>28.9</td>
<td>-9.9</td>
<td>-8.2</td>
<td>-2.7</td>
</tr>
<tr>
<td><strong>Other income</strong></td>
<td></td>
<td></td>
<td></td>
<td>38.9</td>
<td>-4.1</td>
<td>-21.6</td>
<td>-17.3</td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td>16.7</td>
<td>7.4</td>
<td>1.8</td>
<td>7.1</td>
</tr>
<tr>
<td><strong>Operating expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td>19.8</td>
<td>2.5</td>
<td>-2.7</td>
<td>3.6</td>
</tr>
<tr>
<td><strong>Total provisioning(^2)</strong></td>
<td></td>
<td></td>
<td></td>
<td>-18.4</td>
<td>92.2</td>
<td>41.5</td>
<td>50.1</td>
</tr>
<tr>
<td><strong>Operating result after taxation</strong></td>
<td></td>
<td></td>
<td></td>
<td>21.5</td>
<td>-19.3</td>
<td>-14.5</td>
<td>-8.8</td>
</tr>
</tbody>
</table>

\(^1\) Based on supervisory reports, adjusted for population changes.

\(^2\) Defined as the sum of changes in liability value, changes in financial fixed asset value and net additions to and withdrawals from the Fund for General Banking Risks (\(\text{far}\)).
therefore offer clues leading to an explanation of the development of large Dutch banks’ performance in an international context. Considered were the largest five universal banks in the UK and the Netherlands, respectively. Both groups serve over 70% of the market for small and medium-sized businesses and for households.

Relating to the year 2001, the analysis leads to the conclusion that the sluggish performance of Dutch banks (i.e. their domestic operations) in comparison to that of UK banks results mostly from lower income and to a lesser extent from higher costs. The net interest margin realised by Dutch banks, for instance, is well below that of similar banks in the UK, the difference being not in the amount of interest received, but in the interest rates paid by the banks on clients’ deposits and savings, which are considerably higher in the Netherlands than in Britain. A second cause of the difference in net income relates to the tariffs charged for banking products and services. Most banking products for households are free in both countries, but the difference in fees charged to business clients is considerable. The average (small to medium-sized) business in the UK pays some 50% more for banking services than its counterpart in the Netherlands.

The difference in costs between the large Dutch and British banks considered is mainly caused by the wage cost per employee, which is significantly higher in the Netherlands.

Policy and legislation

Electronic money institutions

As of 1 July 2002, the Act on the Supervision of the Credit System 1992 (aSCS) recognises a second type of credit institution besides banks: the electronic money institution (emi). The amendment to the aSCS was made in implementation of the European Directive on Electronic Money. The aSCS defines electronic money as ‘a monetary value stored on an electronic device’. This definition includes not only prepaid (smart) cards, but also payment methods allowing users to access their electronic deposits via mobile telephones or the Internet. An institution qualifies as an emi if the electronic money it issues may be used for payments to others than itself. Bringing the full banking supervision regime to bear on these institutions would be an excessive measure. The specific regulatory provisions aim to protect holders of electronic deposits adequately and at the same time to offer emis sufficient flexibility to keep abreast of new developments.

Not all institutions qualifying as emis under the aSCS are required to obtain emi authorisation from the Bank. A company issuing its staff with rechargeable electronic cards to enable them to pay for their lunch in the company cafeteria, for instance, does not qualify as an emi. The situation is different if the cafeteria is not owned by the company issuing the card. In accordance with the Directive, the risks posed by a circumscribed group of small, locally operating emis are regarded, by the Minister, as limited. If the stored value of the electronic money issued is bound to a maximum of EUR 150 per electronic device, the issuer qualifies for exemption from the authorisation requirement, provided the issuer also satisfies one of the following conditions: (i) total financial liabilities in electronic money never exceed EUR 6 million; (2) the electronic money is accepted only by institutions to which the issuer is connected by group links; or (3) the electronic money is exclusively accepted by a limited number of readily distinguishable companies or institutions. The latter condition applies, for instance, if these companies share the same building, estate or other physically limited location, such as a shopping mall. An emi which is exempted from supervision by the Bank must still meet a number of requirements. One such requirement obliges the emi to publish a report on its activities stating the total value of financial liabilities related to the issue of electronic money.

Authorised emis are at liberty to establish themselves and to provide services in other EU member states.
mutual recognition extends only to the issuance of electronic money, however. All this must comply with the Identification (Services) Act, the Disclosure of Unusual Transactions (Services) Act and the Act on Sanctions 1977.

**Customer due diligence**

In mid-2002, the Bank distributed a report entitled Customer Due Diligence for Banks to credit institutions under its supervision. The report was published by the Basel Committee and the Offshore Group of Banking Supervisors. The latter group was founded in 1980 as a co-operative body uniting banking supervisors in so-called offshore financial centres. Customer due diligence (cdd) is concerned with acquiring information on the type of client one does business with. The report regards cdd as a quintessential element of risk management. Until quite recently, the threats posed by doing business with a client one is insufficiently informed about used to be associated almost exclusively with the risk of unwittingly facilitating money laundering activities. The report also observes other client-related types of risk, such as reputation, operational, legal and concentration risk as, for instance, in connection with the financing of terrorist acts.

Cdd aims to ensure that banks will, in future, come to manage and control the risks referred to by the Basel Committee’s report. The report lists minimum standards which cdd efforts by banks should satisfy. To date, the Bank has chosen not to take its own regulatory measures in this area, in order to limit the regulatory burden and to promote a level playing field. It does, however, attach great importance to the compliance by banks with the minimum standards. In the meantime, banks have charted specific areas in which they fall short of the standards set by the report. As a next step, they should frame additional policy, including client acceptance rules. Consultations on the subject are currently being held by the Bank and the Netherlands Bankers’ Association.

**Capital Accord and procyclicality**

A major feature of the regulations set out by the new Capital Accord is a new, more sensitive risk-weighting regime with respect to capital requirements. A possible drawback of greater risk-sensitivity is that it may lead to increased procyclicality: the danger that capital requirements reinforce the business cycle. In worse-than-expected economic circumstances, risks increase so that lending, especially corporate lending, becomes more expensive for banks in terms of its claim on capital. More expensive loans may reinforce the downward cyclical movement. The Basel Committee has taken measures to mitigate the risk of procyclical effects resulting from regulation. Across the board, weights have been made less risk-sensitive, resulting in lower procyclicality than was inherent in the original proposals. Furthermore, banks will be allowed to treat some types of loans to small and medium-sized businesses as retail loans, which carry lower weightings than corporate loans. And finally, banks will be required to ascertain how well their portfolios are able to weather a recession, defined as a six-month period of zero growth. A bank should have a capital buffer of sufficient size to absorb such a cyclical low without tightening its lending policy. These measures aim to reduce procyclicality without detracting from the Capital Accord’s intention, which is to promote the soundness of individual banks and, by consequence, financial stability.

**Memoranda of Understanding**

The Bank has Memoranda of Understanding (mou) with all eu countries. These mou hold agreements on co-operation and information exchange between supervisors in a bank’s home country and in the country where subsidiaries or branches are active. In addition, the Bank has decided that, as a consolidated supervisor, it wishes to establish agreements with supervisors in countries where Dutch banks have substantial branches or subsidiaries. Negotiations have so far resulted in mou with the Netherlands Antilles, Switzerland and the us. The Bank also intends to conclude agreements with supervisors of the eu accession countries, in anticipation of their accession, which will bring them under eu regulations. A first mou has been concluded with Hungary; other accession countries will follow in the foreseeable future. The Bank is making every effort to aid and advise these countries in the area of supervision in preparation for their accession to the Union.

In addition, banking supervisors and central banks in the eu, associated in the European Central Bank’s Banking Supervision Committee, have concluded a multilateral mou on crisis management. This mou provides several procedures in case of cross-border effects caused either by a crisis involving a single bank or banking division of a financial conglomerate or by a systemic crisis in financial markets or infrastructures. It is the consequence of the ecfi Report on Financial Crisis Management adopted in 2000 by the ecfi council.

The mou on crisis management states that if a bank is in danger of defaulting, in most cases it will fall to the authorities of the bank’s home country to make the
required decisions, including the initiation of procedures. The mou further stipulates that all authorities involved, whether supervisors or central banks, will inform each other at the shortest possible notice of any emergency and of any measures taken. It has also been agreed that any authority which possesses information which might point to a banking crisis will notify the relevant authorities in the bank’s home country. They may then make the necessary decisions and inform the responsible authorities in other EU countries. Should a crisis develop that involves several countries, as after 11 September 2001, then multilateral information exchange and co-operation are the most appropriate mode of response.

The mou is not a blueprint for crisis management. The best way to co-operate in any crisis will depend on the parameters of the momentary situation. The mou leaves the necessary room for manoeuvre, as with respect to the entities involved in managing the crisis, which may in practice include finance ministries, non-banking supervisors or non-EU authorities. All in all, the crucial benefit of the mou is that it clearly states a number of important principles and procedures, while it allows EU national authorities the necessary room to handle any financial crisis as effectively as possible.

The design of supervision

The year 2002 saw an important change in the design of financial supervision in the Netherlands. The new model is organized not according to financial sectors but along functional lines. The Bank has remained responsible for systemic stability. Prudential supervision is exercised by the Bank and the Netherlands Pensions and Insurance Supervisory Authority (pvk), while the Financial Markets Authority is responsible for conduct-of-business supervision.

Co-operation between the Bank and the pvk has intensified at a high rate. In late 2002 a proposal for full integration of the Bank and the pvk, partly based on experience gathered from this enhanced co-operation, was submitted to the Ministers of Finance and of Social Affairs and Employment. Both ministers endorsed the intended merger and in turn submitted the proposal to Parliament. Also, they requested the Bank and the pvk, pending deliberations with Parliament, to continue elaborating the merger plans, in consultation with the market parties involved.

The new, functional model also has its implications for the financing of supervision. As a result of financial market developments, the responsibilities and fields of authority vested in the supervisors have multiplied. By consequence, the total cost of supervision has risen sharply over the past five years. Until recently, the funding of supervision used to be arranged by individual sector. But now that supervision itself has switched over to an organisation along functional lines, the funding model also is in need of review. The Ministry of Finance, the supervisors and the banks are currently charting the various cost items and possible fee-charging bases. As a next step, a new funding and fee-charging model will be elaborated and introduced as of 1 January 2004. In this context, the parties involved are investigating ways to improve the transparency of consultation and decision making procedures with respect to regulatory measures and cost on-charging.

1 The 'distance to default'.
2 This category includes banks whose tier-I capital exceeds €1.5 billion.
Current developments in payment and settlement systems

In 2002 electronic payments continued their steeply upward trend, with pin-based debit card and electronic purse usage increasing and fewer notes and coins changing hands. The year saw the 1 billion point-of-sale transactions mark breached for the first time. For initiating remote payments, the use of electronic banking and direct debits increased further. The Nederlandsche Bank’s TOP system for settling payments between financial institutions likewise recorded higher turnover, although securities transactions in TOP declined.

Available data suggests that the Netherlands today has fewer banknotes in circulation than it did before the launch of the euro. That said, banknote flows between countries in the euro area are making for less exact banknote circulation numbers per individual euro-area country.

January 2003 saw the first meeting of the Social Forum on the Payments System, the Maatschappelijk Overleg Betalingsverkeer (MOB), which brings together organisations providing and requiring payment services under the chairmanship of the Bank. MOB covers such issues as efficiency, accessibility and security of payments and provides a framework for finding real solutions to bottlenecks.

In conjunction with the Bank, Euronext’s securities clearing firm Clearnet made fresh progress in integrating operating processes: clearing members are now able to concentrate their cash settlement of derivatives trades under a single window in the Euronext area – the Bank’s TOP system in the case of Dutch clearing members – and thus organise their payment flows more efficiently.

Electronic payments keep rising in 2002

Private consumption may have merely inched ahead and retail sales remained static in 2002, but households and non-financial companies continued to sharply increase their electronic payments (Table 1). Consumers used their pin-based debit cards at points-of-sale more often, taking the number of pin payments across the 1 billion threshold, and realising 12% growth in the number of transactions. Electronic purse or prepaid card payments almost trebled even to 85 million, with growth strongest in parking meter payments, where electronic purse use increased by over 600% to 25 million transactions – half of which deriving from the three

Table 1 Electronic retail payments

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2001</th>
<th>2002</th>
<th>1999</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volume in millions</td>
<td>Value in € billion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>POS payments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debit card</td>
<td>700</td>
<td>954</td>
<td>1,069</td>
<td>32.2</td>
<td>43.4</td>
<td>50.6</td>
</tr>
<tr>
<td>Electronic purse</td>
<td>22</td>
<td>31</td>
<td>85</td>
<td>0.07</td>
<td>0.09</td>
<td>0.22</td>
</tr>
<tr>
<td>Credit card</td>
<td>44</td>
<td>48</td>
<td>46</td>
<td>4.4</td>
<td>5.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Total electronic POS</td>
<td>766</td>
<td>1,033</td>
<td>1,200</td>
<td>36.7</td>
<td>48.8</td>
<td>56.1</td>
</tr>
<tr>
<td><strong>Remote payments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct debits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>714</td>
<td>791</td>
<td>896</td>
<td>62</td>
<td>72</td>
<td>76</td>
</tr>
<tr>
<td>Companies</td>
<td>71</td>
<td>82</td>
<td>94</td>
<td>79</td>
<td>103</td>
<td>110</td>
</tr>
<tr>
<td>Electronic credit transfers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>124</td>
<td>158</td>
<td>167</td>
<td>43</td>
<td>65</td>
<td>72</td>
</tr>
<tr>
<td>Companies</td>
<td>590</td>
<td>684</td>
<td>705</td>
<td>1,154</td>
<td>2,164</td>
<td>2,326</td>
</tr>
<tr>
<td><strong>pin Use of forms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>340</td>
<td>322</td>
<td>314</td>
<td>122</td>
<td>127</td>
<td>133</td>
</tr>
<tr>
<td>Companies</td>
<td>85</td>
<td>76</td>
<td>74</td>
<td>873</td>
<td>853</td>
<td>874</td>
</tr>
</tbody>
</table>

1 2002: DNB estimate.
cities whose parking meters accept electronic payment only. Parking aside, prepaid card (‘chipknip’) payments are particularly popular in company restaurants and for vending machines (sweets, cigarettes, soft drinks; Chart 1).

Nevertheless, electronic payments through pin debit cards and chipknips continue to be far outnumbered by payments in notes and coins, which are estimated at over 6 billion annual transactions even if their numbers are falling. With smaller amounts tending to be paid in cash and consumers using their pin debit cards for larger sums, the figures are different in terms of value: about half of point-of-sale turnover is now paid electronically. Also, remote payments – i.e., payments by means of credit transfer orders, in-payment transfers and direct debits – are increasingly being made electronically. Over 90% of company payments already take the electronic route, but the percentage is significantly lower for private individuals: although increasingly turning to direct debits and Internet banking, they are still creating a substantial – and less efficient – stream of paper involving in-payment transfers and credit transfer forms, which are free of charge for private individuals.

For large-value funds transfers, i.e., payments between financial institutions settled through the Bank’s to p payments system, both transaction numbers and the value of turnover were up in 2002 (Table 2). This increase reflects a range of diverging developments, but quicker retail payments through Interpay account for the bulk of the to p payments surge: banks previously settled – net – in to p once daily, but settlement takes place numerous times a day since October 2001, partly on a gross basis (for a detailed review, please refer to the Bank’s December 2001 Quarterly Bulletin). Another reason for the rise in to p payments is the ever-expanding number of cross-border client payments through target, the ecb’s payment system linking up national central banks, with this more efficient routing typically being chosen over the use of a correspondent bank elsewhere in the euro area. But the trend in to p-settled payments has not been up across the board: payments arising from securities transactions have fallen in terms of both transaction numbers and turnover. The value of interbank transaction turnover – in the money markets, among others – has also come down.

**Euro-area banknote circulation in the Netherlands: points of note**

Over a year after the launch of euro notes and coins, a first meaningful comparison can now be made of euro-note circulation numbers and value in the Netherlands, and guilder notes in the guilder era. One problem that immediately arises is that banknote circulation can no longer be exactly measured by country. For the Netherlands, the Bank has to use the balance of its own issue and receipts, the so-called net issue. Net issue will differ from actual circulation because tourists and business travellers take euro notes out of the Netherlands or

---

**Table 2  Large-value funds transfers**

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2001</th>
<th>2002</th>
<th>1999</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volume in thousands</td>
<td>Value in eur billion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td>1,870</td>
<td>1,721</td>
<td>1,512</td>
<td>6,139</td>
<td>7,511</td>
<td>7,548</td>
</tr>
<tr>
<td>Foreign</td>
<td>358</td>
<td>508</td>
<td>561</td>
<td>8,089</td>
<td>11,868</td>
<td>11,480</td>
</tr>
<tr>
<td>Securities transactions (otc)</td>
<td>984</td>
<td>1,534</td>
<td>1,517</td>
<td>602</td>
<td>909</td>
<td>682</td>
</tr>
<tr>
<td>Stock exchange settlements</td>
<td>9</td>
<td>12</td>
<td>9</td>
<td>37</td>
<td>55</td>
<td>51</td>
</tr>
<tr>
<td>Interpay settlements</td>
<td>11</td>
<td>248</td>
<td>949</td>
<td>121</td>
<td>345</td>
<td>1,042</td>
</tr>
<tr>
<td>to p total</td>
<td>3,232</td>
<td>4,023</td>
<td>4,548</td>
<td>14,987</td>
<td>20,689</td>
<td>20,803</td>
</tr>
</tbody>
</table>
bring them into the country from other euro-area countries (i.e., migration). So euro-note circulation can only be precisely assessed at euro-area level. Gauging by Dutch net issue alone, nearly 270 million euro banknotes were in circulation by February 2003, which is significantly below the 380 million guilder banknotes that were about in the same period of 2000. However, these banknotes’ joint value added up to around EUR 15 billion in February of this year, compared with EUR 16 billion at end-February 2000, so the gap is much narrower in terms of value.

This total net issue’s relatively high value shows up in the breakdown of denominations, with the three highest euro notes having continued to record rising net issue figures since the euro was launched, and the trend remaining upward. Today, these denominations’ net issue is only slightly below circulation levels touched by NLG 250 and NLG 1,000 notes in 2000, and it is now projected to exceed these levels, probably because people are replenishing their cash savings and possibly also because of migration flows. Previous Bank research suggests that cash savings are typically fully replenished after a period of around two years so it will not be until end-2004 that the impact of migration flows can be established.

Net issue of the lowest three denominations has been moving in the opposite direction, being in virtually constant decline. The EUR 20 note beats the lot: the Bank received more of these notes than it issued every single month of 2002, suggesting that an increasing proportion of EUR 20 notes circulating in the Netherlands was actually issued in other euro-area countries – a conclusion corroborated by an analysis of the EUR 20 notes the Bank received (Chart 2). This finding probably ties in with the denomination’s popularity in neighbouring countries, where ATMs typically dispense EUR 20 notes.

Other possible explanations for the difference in euro-note net issue and the circulation of guilder notes include the substitution of EUR 5 notes with coins, or changed preferences for specific denominations among the public at large – a change that tends to be fed by commercial banks. After all, it is these that decide which denominations the public can have through their ATMs. Proposed additional research with regard to consumer payment behaviour may reveal more about pertinent factors in the future.

**Chart 2** Receipts of EUR 20 notes by country of origin

<table>
<thead>
<tr>
<th>Country</th>
<th>Jan. 02</th>
<th>Mar. 02</th>
<th>May 02</th>
<th>Jul. 02</th>
<th>Sep. 02</th>
<th>Nov. 02</th>
<th>Jan. 03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>100</td>
<td>80</td>
<td>60</td>
<td>40</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Germany</td>
<td>90</td>
<td>70</td>
<td>50</td>
<td>30</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Belgium</td>
<td>90</td>
<td>70</td>
<td>50</td>
<td>30</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>France</td>
<td>90</td>
<td>70</td>
<td>50</td>
<td>30</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Austria</td>
<td>90</td>
<td>70</td>
<td>50</td>
<td>30</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Italy</td>
<td>90</td>
<td>70</td>
<td>50</td>
<td>30</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Social Forum on the Payments System gets underway**

On 22 January 2003 the Social Forum on the Payments System, the Maatschappelijk Overleg Betalingsverkeer (MOB), met for the first time. Instituted by the Minister of Finance to encourage a socially efficient organisation of Dutch retail payments, the Forum provides a regular platform for social groups to discuss bottlenecks and the social consequences of any payment system developments. MOB brings together a broad range of bodies representing payment system suppliers and users, e.g., retailers’ federations, banks, the Consumentenbond (the Dutch consumers’ association) and organisations for the physically challenged. The Bank chairs the Forum and is in charge of the secretariat.

The first meeting reviewed a number of key issues at play in the Dutch payment market: availability and accessibility of banking services, the security of the payment system, the ‘account-switching service’ which banks are about to launch to make it easier for consumers to change banks, and the implementation of the Bank’s recommendations in the report released by the Working Group on Tariff Structures and Infrastructure in Dutch Payment Systems.

In the wake of public complaints about the declining availability of banking services, the Forum is investigating where the real bottlenecks are and what has been done to implement recommendations for improv-
ing availability as proposed in a variety of studies by interest groups, using its findings to arrive at solutions that should help improve availability of banking services.

To ensure full participation in society, mb representatives think that it is important that citizens’ accessibility of the payment system is safeguarded, with special provisions being required for the elderly and the physically challenged. The Forum will review and assess progress on recommendations for improving accessibility as suggested by various studies. Key points include accessibility of branch offices and atms, as well as uniform atm control panels.

On the issue of security, mb notes its wide-ranging dimensions, from fraud involving retail payments to the physical safety of shop-workers, and its overlaps with such areas as technology, efficiency and accessibility. And, of course, security is also related to social trends outside the narrow confines of the payment system. The Forum will look into these and various other security matters, and will, when appropriate, also liaise with such organisations as the Nationaal Platform Criminaliteitsbeheersing, the National Crime Prevention Platform.

mb has been advised of the banking industry’s intention to introduce an account-switching service to help make it easier for clients to change banks. The service would guarantee that individual clients’ giro payments would automatically be channelled to their new checking account from a given date, and would provide support in changing over for payment products that can not be rechannelled automatically, i.e., bank cards and electronic banking packages. The banks’ account-switching service was developed after consultations with the Consumentenbond, which continues to champion account number portability as a longer-term solution. The Minister has requested a review of this account-switching service, which mb has offered to conduct one year after its launch – scheduled for the fourth quarter of 2003.

The creation of mb was one of the Bank’s recommendations to the Minister, based on the findings of a report submitted to the Minister by the Working Group on Tariff Structures and Infrastructure in Dutch Payment Systems (popularly known as the ‘Wellink Working Group’) in April 2002. Progress has also been made on other recommendations: the social costs of point-of-sale payment instruments are being investigated, while Dutch banks have responded positively to the Working Group’s recommendation to transfer the contracting of debit card service agreements from Interpay to individual banks. The industry is busily preparing implementation but has run into a number of obstacles, and some delay beyond the original target date of 1 January 2003 has proved inevitable. Interpay’s Supervisory Board should soon welcome an independent expert to serve on the Board alongside representatives of the banks/shareholders.

On the subject of changes to the set-up of banknote distribution, the Bank is currently consulting with the banks. The Bank is also preparing for the option of offering non-banks an opportunity to open settlement accounts, always provided that such a measure would contribute to improved financial infrastructure efficiency. Having agreed to intensify its oversight of payment systems, the Bank will – in accordance with euro system agreements – also make applicable to retail payment systems oversight the so-called core principles for systemically important payment systems, insofar as they are relevant for retail systems. In addition, the Bank is looking into ways to tighten its oversight of payment instruments against the backdrop of last year’s incidence of fraud involving pin card payments, direct debits and so on. The Bank should soon report to the Minister of Finance on the issue.

New step in Euronext clearing and settlement

Cash settlement derivatives clearing now centralised

Euronext, the stock exchange organisation for the Dutch, Belgian and French markets, has been working on the gradual integration of its operational processes in order to reduce the costs for participants trading on these countries’ exchanges and improve settlement of cross-border securities trading.

The Bank is involved, not least in its capacity as settlement bank, in the settlement of securities transactions, with securities trading related payments made through banks’ accounts with the Bank under its top system. Payments involve both over-the-counter transactions – which are settled individually and gross – through the Trade-for-Trade system, and transactions on Euronext’s securities and derivatives exchanges, as submitted through Clearnet, the clearing firm and central counterparty of the Euronext exchanges.

Working closely with the Bank, Clearnet’s process of integration has now brought a new service under which its clearing members will be able to opt for cash settlement of their derivatives and – at least for now – some of their securities clearing in a single location within the Euronext area (Netherlands, France,
Euronext centralised cash settlement of its derivatives markets, as reviewed at greater length in the previous section. The Bank has, in conjunction with afm, tested this next stage and gauged the adequacy of the new approach. For the Netherlands, the new system implies that payment no longer needs to match receipts by all members put together. This is still necessary across the Euronext markets as a whole, but in a domestic context money may be withdrawn or added. At the end of 2002, the Bank and afm formally approved the migration, provided a number of additional legal requirements were met. The new service has been available since February 2003.

Aspects of oversight
Euronext is required to organise its clearing and settlement systems in such a way that risks jeopardising financial stability are prevented. To make sure it does, the Bank and the Authority for the Financial Markets (afm) exercise oversight and assess Euronext’s moves towards integration on a number of criteria, including legal soundness, risk control policies and operational reliability of systems.

Since 1 February 2001, clearing firm Clearnet Sà has acted as the legal central counterparty for all Euronext securities and derivatives transactions in France, Belgium and the Netherlands. Clearnet sees to the prompt clearing of securities transactions between Euronext members. The overseer has assessed this migration, on legal aspects among other criteria, taking on board the need for France to implement the EU Settlement Finality Directive, under which payment of transactions agreed on Euronext Amsterdam would be acknowledged as final. The next step in the integration process was the operational changeover from the existing clearing system to the Clearnet system known as Clearing 21, a platform already being used in France and Belgium. Dutch members switched over on 25 October 2002. Working with afm, the Bank also assessed this integration step, reviewing risk management policies and the new system’s operational reliability, and specifically focusing on technical and functional management while also assessing more closely the continuity measures for the IT environment. Provided a number of additional demands are met, the Bank and afm did approve migration to Clearing 21.

In a subsequent stage of the integration process,
Financial stability

Against the background of a fragile economic recovery and international tensions, the financial markets have been subject to persistent unrest. Following the low of early October 2002, share prices again plummeted. In addition, the dollar continued to depreciate against the euro and other currencies. This article focuses on the risks to financial stability. Major potential sources of instability are the war in Iraq and the vast American current account deficit. An abrupt change in the willingness to finance this deficit could cause problems. This article also looks at the consequences of an unfavourable scenario for the Dutch banking system. Finally, it goes into the debt position of households and developments at life insurance corporations.

Recent developments

International financial markets

The economic recovery in the major economic areas worldwide continues to be fragile. So much is clear from recent figures on American GDP growth, which slowed again after an initially vigorous recovery last year. This is due to, among other things, the disappointing development of consumer spending, long the engine behind recovery. In addition, it would seem that excess capacity in the American economy still has not been fully eliminated, as illustrated by the low degree of capacity utilisation and the postponement of investment. In Europe, too, the situation remains vulnerable (see the article ‘The Netherlands in the euro area’, elsewhere in this Quarterly Bulletin).

Not only has a sustained economic recovery failed to materialise, the financial markets were also increasingly depressed by the looming war in the Middle East. Although the foreign exchange markets were still characterised by relative calm in October and November, December saw a major increase in volatility and a steady depreciation of the US dollar against all other major currencies. In December, the dollar dropped by about 5% against the euro and the yen, continuing its decline in the following weeks (Chart 1). The dollar’s role as safe haven in periods of political tension internationally is thus no longer self-evident. Against the background of the enormous American current account deficit, investors turned to the euro, the Swiss franc and gold. In terms of dollars, the gold price rose 16% (7% in terms of euro) in December-January, which was partly undone again after profit-taking in the first half of February.

Notably in Europe, fixed-interest debt instruments benefitted from the increased preference for safe financial assets. Interest rates on German ten-year government bonds have dropped by around 70 basis points since early November, continuing the steadily declining trend which marked the year 2002. American interest rates fell less sharply as a result of the weak dollar and increasing recourse to the bond market for the financing of the rising public deficit.

Following a strong recovery in October and November brought on notably by higher-than-expected corporate earnings in the United States (US), stock market sentiment again turned negative in the course

Chart 1 US dollar exchange rate

<table>
<thead>
<tr>
<th>Date</th>
<th>EUR</th>
<th>CHF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 02</td>
<td>0.95</td>
<td>0.60</td>
</tr>
<tr>
<td>Nov.</td>
<td>0.97</td>
<td>0.62</td>
</tr>
<tr>
<td>Dec.</td>
<td>0.99</td>
<td>0.64</td>
</tr>
<tr>
<td>Jan. 03</td>
<td>1.01</td>
<td>0.66</td>
</tr>
<tr>
<td>Feb.</td>
<td>1.03</td>
<td>0.68</td>
</tr>
<tr>
<td>Mar.</td>
<td>1.05</td>
<td>0.70</td>
</tr>
<tr>
<td>Apr.</td>
<td>1.07</td>
<td>0.72</td>
</tr>
<tr>
<td>May</td>
<td>1.09</td>
<td>0.74</td>
</tr>
<tr>
<td>Jun.</td>
<td>1.11</td>
<td>0.76</td>
</tr>
</tbody>
</table>

Source: Bloomberg.

Chart 2 Gold price and oil price

<table>
<thead>
<tr>
<th>Date</th>
<th>Gold (USD)</th>
<th>Oil (USD per barrel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 02</td>
<td>310</td>
<td>35</td>
</tr>
<tr>
<td>Nov.</td>
<td>320</td>
<td>33</td>
</tr>
<tr>
<td>Dec.</td>
<td>330</td>
<td>31</td>
</tr>
<tr>
<td>Jan. 03</td>
<td>340</td>
<td>29</td>
</tr>
<tr>
<td>Feb.</td>
<td>350</td>
<td>27</td>
</tr>
<tr>
<td>Mar.</td>
<td>360</td>
<td>25</td>
</tr>
<tr>
<td>Apr.</td>
<td>370</td>
<td>23</td>
</tr>
<tr>
<td>May</td>
<td>380</td>
<td>21</td>
</tr>
<tr>
<td>Jun.</td>
<td>390</td>
<td>19</td>
</tr>
</tbody>
</table>

Source: Bloomberg.
of December. Apart from doubts about the sustainability of the economic recovery in the US, the picture was increasingly determined by the imminent war, the disruption of oil production in Venezuela and the attending oil price rise. The oil price rose from a temporary low of USD 22 per barrel in November last year to USD 32 per barrel at the end of February (Chart 2). The unrest in the share markets was aggravated in February by the accounting scandal at the Dutch Ahold corporation. Meanwhile, share prices dropped by 10-30% between early December and end-February (Chart 3). Market uncertainty was furthermore evidenced by the persistently high volatility (Chart 4). The price falls in January seem to have worsened as a result of concern about the shedding of shares by insurance corporations compelled, by eroding provisions and own funds, to review the risk degree of their portfolio investments. The news of deteriorating financial positions made the insurance sector one of the worst-performing sectors in the European share markets (see also the section on life assurers later in this article). The fact that the European stock exchanges were forced to absorb greater losses than those in the US may be partly ascribed to the weak dollar. European quoted companies have become more dependent on dollar income, as evidenced since the 1990s by the correlation between the euro/dollar rate and the difference between European and American share prices. This is also due to the fact that financial sector stocks, which have recently underperformed, generally have a heavier weighting in European share

**Chart 3  Share prices**

<table>
<thead>
<tr>
<th>Date</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 02</td>
<td>950</td>
</tr>
<tr>
<td>Nov.</td>
<td>975</td>
</tr>
<tr>
<td>Dec.</td>
<td>925</td>
</tr>
<tr>
<td>Jan. 03</td>
<td>885</td>
</tr>
<tr>
<td>Feb.</td>
<td>850</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 03</td>
<td>875</td>
</tr>
<tr>
<td>Feb.</td>
<td>825</td>
</tr>
<tr>
<td>Mar.</td>
<td>800</td>
</tr>
<tr>
<td>Apr.</td>
<td>775</td>
</tr>
<tr>
<td>May</td>
<td>750</td>
</tr>
</tbody>
</table>

Source: Bloomberg.

indices than in American indices. In dollar terms, however, European shares did not perform much worse than American shares.

Over the past few months, the negative correlation between share prices and risk premiums on corporate bonds has disappeared (see Chart 5, which is based on American figures). While the price drop last year was still attended by a sharp rise in risk premiums, these remained fairly stable over the past few months in spite of the further decline in share prices. This may be due to the fact that many enterprises in the US and Europe, often induced by market conditions, have begun to restructure their balance sheets. Notably businesses with low creditworthiness, no longer able to access the bond market, have used retained profits and the proceeds from the sales of assets to repay their debts, thus reducing the share of borrowed funds in their financing structures. This is favourable for debt holders.

The most important emerging economies in Latin America and East Asia have been subject to diverging developments for some time now. The situation in Latin America continues to give rise to concern, although some bright spots may be discerned. Prospects for Brazil in particular, the largest economy in the region, have improved. Now that the newly elected government has removed doubts about its commitment to service its foreign debt obligations, risk premiums on Brazilian bonds have gone down and the exchange rate has appreciated. After four years, the recession in Argentina seems to be coming to an end as industrial output growth accelerated at the
In January, this country signed a new agreement with the IMF, which offers temporary relief from the debt burden. Yet the prospects of a sustained recovery are uncertain because Argentina will not regain access to the international capital market for the time being, while the necessary macroeconomic adjustments are thwarted by political and institutional obstacles.

The negative climate of the world economy has not extended to East Asia (Japan excepted) for some time now. Notably the economies of China and South Korea have grown rapidly over the past few years, thanks especially to domestic spending. The South Korean authorities have even introduced credit controls in order to prevent overheating of the economy and reduce the financial risks run notably by households and banks. So far the prospects are favourable, but they may be hampered by various external factors. Apart from the uncertainties making themselves felt worldwide (see below), the threat posed by North Korea is an important factor for this region.

Downward risks
The baseline scenario for the coming period is a gradual recovery of the main economies, with growth picking up slightly in 2003 and recovering further in 2004. But this recovery is subject to various downward risks. The geopolitical tensions, for instance, constitute a major source of uncertainty (see ‘The Netherlands in the euro area’, elsewhere in this Quarterly Bulletin, for an analysis of the possible economic consequences of war in the Middle East). Another important risk factor is the American current account deficit, which continued to expand over the past year, to a record high. Doubts about the sustainability of this deficit have recently grown because not just the private sector, but the American government too, with its increasing budget deficit, is now making a major contribution to the national savings deficit. Over the past few years, the composition of the capital inflow to finance this deficit has undergone a remarkable change. In the past year, the bulk of the capital inflow consisted of bond purchases, whereas in 2000 it was still largely made up of direct investment and shares.

Whether adjustment of the American current account deficit poses a problem depends materially on the underlying factors and the speed of adjustment. Gradual reduction of the deficit would be welcome. Haphazard adjustment, on the other hand, could be attended by a confidence crisis among domestic and foreign investors. This could further affect the share markets and the dollar, leading to an accelerated capital outflow, reduced investment, deteriorating economic growth prospects, further adjustments on the stock markets, continuing depreciation of the dollar, etc.

The question whether the second, unfavourable scenario will materialise seems to depend on American households. By maintaining high consumption growth, which was partly debt-financed, over the past years, they contributed to the rising American savings deficit. While the business sector has gradually phased out its debt burden over the past two years, American households (and government too) have become more indebted, partly due to low interest rates and the marked rise in house prices. More details on this subject can be found in the section ‘Financial position of households’.

Influence of downward risks on the Dutch banking system
In the article ‘Latest developments in supervision’, it is concluded that the Dutch banking system has weathered the deterioration of economic activity and the stock exchange slump fairly well. In spite of declining profitability, bank solvency has improved and, at 11.9% at end-2002, is well above the minimum requirement of 8%. That goes for the large banks, too, whose operating results have been adversely affected by a fall
in earnings consequent on share market developments. If the basic scenario of a gradual recovery (see the previous section) persists, the banks’ profitability will not decline further in the longer term. The recent improvement of the cost-income ratio of the large banks is also conducive to better results.

However, macro-prudentially, several downward risks have been identified which might make the basic scenario, surrounded as it is by much uncertainty, ultimately too good to be hoped for. Economic developments in Europe and the US could well fall short of expectations. As indicated in the previous section, there is uncertainty as a result of the geopolitical tensions and the risks of a rapid adjustment of the American current account deficit. In addition, Europe’s competitive position is undermined by the appreciation of the euro. In the Netherlands, the fall in share prices could have a relatively marked effect because institutional investors have invested heavily in shares. That goes especially for the pension funds, which are now compelled to raise their premiums substantially, to the detriment of the business sector.

These developments could further erode consumer confidence, aggravating the duration and intensity of the slowdown of economic activity. This could lead, via disappointing earnings in the corporate sector, to more defaults and a deterioration of the asset quality of banks’ lending portfolios. As banks may consequently be compelled to step up their net provisions, return on equity could fall vis-à-vis the baseline scenario.

On the other hand, the risks to the banking system of developments in Latin America, and Brazil in particular, seem to have declined compared with six months ago (see the preceding section). Exposures to various Latin American countries, expressed as a percentage of actual own funds, decreased in 2002 (Chart 6). Even so, Dutch banks’ exposures to notably Brazil remain considerable.

Overall, it may be observed that the expected recovery of the economy according to the baseline scenario is surrounded by uncertainty. A further downturn of the economy may exacerbate the ongoing decline of bank profitability in the Netherlands. The banking system’s solvency is, however, more than adequate, which warrants the conclusion that the Dutch banks have sufficient buffers to absorb any losses consequent on major shocks. In addition, Dutch banks, and especially the large banks, diversify their activities both geographically and across sectors, which makes them less vulnerable to geographical and sectoral shocks. There are therefore no reasons to doubt the soundness of the banking system.

Financial position of households

The financial position of households is a major factor in the current economic downturn. After all, in times of growing income insecurity and declining consumer confidence, households tend to cut down on their spending. Wealth effects and favourable borrowing conditions may then offer some counterweight, but can also lead to greater financial vulnerability. The emphasis here is on the US, given the importance of American consumers for international economic recovery and the Netherlands.

Wealth effects and financial vulnerability in the US

Over the past year, economic recovery was largely driven by American consumers, thanks to low interest rates and house price rises, which stimulated borrowing in the form of second mortgages and remortgaging (Chart 7). Figures provided by Freddie Mac, one of the largest mortgagees in the US, show that about half the mortgage equity withdrawn was used for consumer spending. The capital gains made in the house market thus compensated for the stock exchange losses. In other countries too spending was positively affected by the mortgage and house market, notably the UK, where house prices went up 30% over the past year.
The stimulus emanating from low interest rates and capital gains has a downside, however. The extra borrowing capacity consequent on low interest rates will eventually be exhausted, while the acceleration of house price rises cannot go on indefinitely either. The consumption impulse will consequently ebb away after a while. If satiation effects also arise, the subsequent decline in spending may be considerable. In this context, the first tentative signs of decelerating consumption growth are visible, especially because consumer confidence is down, while the house market has begun to cool off. There is a risk in that the wealth effect of the house market may be depleted before other demand components, notably investment, have sufficiently recovered.

The rapid credit expansion may also have consequences for the financial vulnerability of households; take, for instance, the debt position of American households which has expanded from 68% of GDP in 1995 to around 80% (Table 1). Admittedly, the value of home ownership has increased materially, but it is sensitive to downward adjustments. A potential risk is a possible interest rate rise, with both short- and long-term rates at historically low levels. Higher interest rates could depress house prices and, insofar as lending rates are fixed for short periods, increase the debt servicing burden for households. Compared with, for instance, the Netherlands, a relatively high percentage of the outstanding debts of American households is made up of consumer credit, including credit card loans. Contrary to the Netherlands, credit cards are widely used by low-income households in the US, who are usually more vulnerable financially.

The risks inherent in the increased debt position of American households are highlighted by the recent rise in the number of petitions for bankruptcy by private individuals. From the perspective of financial stability, the question arises who retains these exposures to American households. In contrast to the past, such exposures are not concentrated at a limited number of financial institutions, but are spread over large numbers of investors via securitisation. The American market for Mortgage Backed Securities (MBS), for instance, has expanded to around USD 4,000 billion. In other words, an estimated 70% of mortgages outstanding in the US is securitised. From the perspective of financial stability, such risk diversification is obviously a welcome development.

**Dutch households**

Household spending has always been sensitive to wealth effects in the Anglo-Saxon countries, but increasingly also in the Netherlands. Expressed as a percentage of GDP, gross household wealth has increased nearly fivefold over the past three decades. This increase is accounted for largely by the rise in value of pension equity and home ownership (Chart 8). Since 2000, total household wealth has declined slightly. The stock exchange slump has seriously reduced the value of share holdings, and hence of the assets of pension funds. In addition, the house market is gradually cooling, with negative effects on expenditure. Bank calculations show that the spending impulse emanating from mortgage equity withdrawals in 1999 and 2000 made the volume of GDP expand by about one percentage point annually. The fact that fewer mortgages were renegotiated in 2001 accounted for a negative contribution to growth of around half a percentage point (see the June

| Chart 7 Remortgaging and private consumption in the us |

<table>
<thead>
<tr>
<th>Instances of remortgaging, 1995 = 100, right-hand scale</th>
<th>Real private consumption, percentage change per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>300</td>
<td>600</td>
</tr>
<tr>
<td>600</td>
<td>900</td>
</tr>
<tr>
<td>1200</td>
<td>1500</td>
</tr>
<tr>
<td>1800</td>
<td></td>
</tr>
</tbody>
</table>


**Table 1 Total gross debt position of households**

<table>
<thead>
<tr>
<th>Percentages of GDP</th>
<th>1995</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>68</td>
<td>79</td>
</tr>
<tr>
<td>Netherlands</td>
<td>47</td>
<td>96</td>
</tr>
<tr>
<td>Euro area</td>
<td>42</td>
<td>50</td>
</tr>
<tr>
<td>Japan</td>
<td>65</td>
<td>66</td>
</tr>
</tbody>
</table>

Sources: Bb, ECB, Statistics Netherlands.
This sharp fall illustrates the temporary nature of the stimulus from the house market.

Over the past few years, not just gross wealth, but the total indebtedness of Dutch households increased rapidly (Table 1). As a percentage of GDP, it is much higher than in most other countries, notably as a result of the level of mortgaged debt (nearly 80% at end-2002). This vast debt raises questions as to the financial vulnerability of Dutch home owners. We know from the past and from other countries that a sharp fall in house prices, whether or not in combination with an interest rate rise and spreading unemployment, can saddle households with problems. Yet the risks seem limited for most Dutch home owners. First of all, as a result of the marked rise in house prices, the market value of most houses far exceeds the amount mortgaged. In the event of a price adjustment, net financial positions will therefore not easily become negative. In addition, most mortgage rates in the Netherlands are typically fixed for longer periods, making home owners relatively insensitive to interest rate rises. This is a major difference vis-à-vis, for instance, the UK, where mortgages are often granted at variable interest rates. Bank calculations confirm that even under fairly extreme scenarios, such as a combination of rampant unemployment, a three percentage point interest rate rise, and four years of annual price falls of 10% on the house market, most Dutch home owners will not land in difficulties.1

Despite this favourable aggregate picture, a slumping house market could have serious adverse effects for specific groups. Notably first-time home owners usually have relatively high mortgages and small financial buffers; if house prices fall, their net financial position may easily become negative. Should they be forced to sell in the event of unemployment or divorce, problems will arise. When house prices drop, home owners can no longer use their home as a buffer for absorbing financial setbacks. Over the past few years, the higher collateral value could be relied on, and it could be cashed through remortgaging or a second mortgage. A survey commissioned by the Bank last year shows that in the years 1996-2001 over €1.2 billion worth of mortgage equity was withdrawn to repay other debts. For home owners with an income below that of the typical employee, this was the case in one-third of remortgaging exercises. These figures illustrate how easily home owners were able to create more financial leeway. When such buffers cease to exist, households become more vulnerable financially.

Life assurers

Owing to disappointing investment results, it is becoming more difficult for some European life assurance corporations to meet their nominal obligations to policyholders. This goes especially for non-linked products, accounting for around 70% of liabilities, for which the assurer has guaranteed a minimum return. This is in contrast with unit-linked products, where the investment risk is for account of the policyholder. The deteriorated position of life assurers also shows up in their share prices, which have recently fallen much more considerably than the overall stock exchange index (see Chart 9, for the total insurance sector).

The current problems date back partly to the early 1990s, when life assurers sold policies with high guaranteed returns. They did so because market rates were high at the time, and an inverted yield curve generated strong competition from money market funds (Chart 10). When market rates began to fall markedly in the course of the 1990s, the difference between return on the investment portfolio and that on the return guaranteed in the policies declined. The low interest rate level thus became a problem for life assurance corporations. They sought to maintain return on their portfolios by investing more in shares. As a result,
this sector has been hard hit in recent years by the unfavourable stock market. But the situation varies from country to country. Notably British life assureds have invested heavily in shares: in 2001, over 40% of their assets related to non-linked products. By comparison: only 20% of the total investments of Dutch life assurance corporations are shares, so that the situation here gives less cause for concern. The Dutch life assurance market differs from the European market in more respects. The share of unit-linked products is, for instance, relatively large here, and has increased further in recent years, which means that assureds run less investment risk. Furthermore, Dutch assureds invest much on behalf of pension funds. About one-third of the total annual premiums consists of such mandates. Finally, a major share of Dutch life assurance policies is linked to the mortgage market, in the form of savings- and investment-based mortgages, which are often unit-linked. As a result, Dutch life assureds would seem to have sufficient solvency margins at the current positions on the share markets (closing price 7 March).

The unfavourable situation at the life assureds is attributable not just to disappointing investment results, but to several characteristics of the policies themselves as well. The nominal obligation in non-linked products is not limited to a minimum return. The policies usually contain profit-sharing clauses which give policyholders the right to share in the extra return made by the assureds on investments over and above the guaranteed amount. This limits the assureds’ capability to build up buffers in good times which can be used to absorb disappointing results in bad years.

Some contracts furthermore allow policyholders a choice of several options, for instance, the right to convert the value built up by the expiry date into a guaranteed annuity. The conditions for this annuity are fixed at the time of the sale of the policy. Policyholders opt for annuities notably when the guaranteed annuity compares relatively favourably to market rates; this can, however, work out unfavourably for the assured. Moreover, average life expectancy has gone up over the years, which means that annuities need to be paid for longer. Another option is the right to surrender policies early, with or without penalty. For policyholders, this is advantageous, especially when market rates are on the rise. For assureds, however, this is usually inconvenient as part of the fixed-interest rate portfolio needs to be liquidated at an unfavourable time (high market rates meaning low bond prices). It may be noted that penalty clauses or cost absorption are prohibitively high in most countries.

The situation now confronting European life assureds is not a new phenomenon. The early 1980s saw a similar development in the US, when assureds sold policies with high guaranteed returns, and market rates subsequently fell materially. Then too assureds sought to raise return on the portfolio by investing in more risk-bearing debt instruments, notably bonds with a lower creditworthiness and shares. When serious losses were incurred during the recession of the early 1990s, many life assureds ran into difficulties and eventually several dozen institutions went bankrupt. More recently, Japanese life assureds have landed in problems because of their prolonged investment losses.
This has made it increasingly difficult for them to meet liabilities undertaken in the past. Several Japanese institutions have meanwhile filed for bankruptcy.

The declining margin between return on portfolio investments and guaranteed return has exacerbated the need to hedge these guarantees, because if interest rates were to fall below the levels guaranteed, assurers’ solvency could be jeopardised. In a number of countries, this is already the case; here a change in the rules entailing that both assets and liabilities be valued at market value has acted as catalyst. British life assurers, for instance, have been hedging the risk on guaranteed annuities since 1997 through the purchase of long-term call options on long-term interest rate products. In the autumn of 1997, Danish assurers and pension funds too embarked on large-scale hedging of guaranteed return on investments by buying call options. Because the interest rate market in Danish kroner is relatively small, the options transactions were effected mainly in the euro market, leading to a temporary increase in the interest rate volatility implied in options prices. The transactions also seem to have contributed to a further decline in long-term interest rates. It must be noted, though, that not all interest rate risk needs to be hedged by means of options. A part is already covered by products on assurers’ balance sheet with a contrary structure. At Dutch assurers, the trend of the past few years has been to pay more attention to the right valuation of options in insurance policies.

Although the situation in Europe differs considerably from country to country, it cannot be ruled out that the increased attention to balance sheet alignment of assets and liabilities will in the future prompt more life assurers to hedge guarantees to policy-holders in the capital market. This would lead to an extra demand for long-term interest rate products. Given the volume of assurers’ liabilities of an estimated €1,500 billion (solely on account of non-linked products), this could exercise a major downward pressure at the long-term end of the yield curve.

How will all this affect financial stability? Developments in the US and Japan show that problems at life assurers may lead to bankruptcies within the sector. The risks are borne first of all by shareholders and lenders. The question is to what extent these problems may spread to other parts of the financial system, the banking system in particular. This is relevant for Japan, where insurers and banks are closely interconnected. In some European countries, too, close links exist between insurers and banks, notably within financial conglomerates. In October 2002, the Swiss bank Credit Suisse was, for instance, compelled to give its insurser Winterthur a capital injection of over €1 billion. Finally, it may be noted that the accounting standards now prescribed in many countries are generally underlain by conservative valuation bases. The valuation of assets is usually based on the lowest value of historical cost and the market value, while future policy liabilities are discounted on the basis of a relatively low actuarial rate of interest. If valuation were on the basis of market value, which is increasingly the case, the solvency of many European life insurance corporations would turn out more favourable.
Immigration has come to figure prominently on the political agenda of the Netherlands as well as of several other EU countries. How to deal with flows of illegal immigrants and asylum-seekers was, for instance, one of the issues discussed at the EU Summit in Sevilla (in June 2002). But not everyone in Europe is against immigration. Mindful of the ageing of the population, the European Commission, for one, is in favour of a European immigration policy entailing the admission of labour migrants from outside the EU and partnerships with their countries of origin. These recent developments call for a look at the historical and economic context of immigration. This article looks at the history of immigration in the Netherlands, the vast migration flows from the Old to the New World before the first world war (with 55 million Europeans emigrating in the period 1850-1913) and the current migration flows. It then goes into the economic significance and risks of immigration. Finally, it discusses the possible contribution which immigration could make to solving the problems posed by an ageing population, problems which will arise in nearly all EU countries over the next 50 years. Labour migration cannot be excluded as part of the solution to this problem.
Migration in the Netherlands (since 1500)

People have always been on the move. They already did so in prehistoric times and continued to do so into the early Middle Ages; we know of various migrant groups in the period 1100-1500. These migrants were, for instance, merchants from various quarters, such as the Lombards from the North of Italy, Balts, Dravidians from the East and gypsies. But mass migrations first began to take place after 1500, mushrooming during the Golden Age in particular. The number of foreigners relative to the total population in the Netherlands in the seventeenth and eighteenth centuries shows that immigration at that time was far more pervasive than after the second world war. Chart 1 shows the proportion of immigrants to the population of the Netherlands in the period 1531-2000. Immigration peaked in 1620, partly as a result of the attraction of the booming economy. A rough estimate puts the percentage of foreigners in the Netherlands in that year at twice that recorded in 2002. It is worth noting that immigration and relative wealth go hand in hand. When stagnation set in and wealth declined in the eighteenth and even more so the nineteenth century, immigration declined too. The lowest level was recorded in 1870, when registered foreigners made up around 1% of the population in the Netherlands.

Overall, three categories of migrants may be distinguished. The first consists largely of refugees. At the end of the sixteenth century, large numbers of people fled from the southern Low Countries (notably Flemings from the area between Lille and Ghent) to the Republic of the Seven Provinces when Philip II recaptured their land. It is estimated that around 1600 some 7% of the Republic’s population was originally from the southern Low Countries. In those days, incidentally, the inhabitants of the northern and southern Low Countries differed considerably. Their dialects were very different, and many southerners spoke French only. Their migration had a positive effect on the Republic’s economy. The cloth industry in Leyden boomed thanks to the advent of large numbers of textile workers. The immigrants also included entrepreneurs. When the Dutch East India Company was set up in 1602, over a third of the start-up capital came from immigrants from the south. The second wave of refugees came nearly a century later, protestant Huguenots from France whose rights were no longer acknowledged by the Catholic King. They constituted nearly 3% of the Republic’s population. They, too, were warmly welcomed, and contributed materially to economic and cultural life. Apart from these Protestants, a relatively large number of Jews sought refuge in the Republic (making up about 1.5% of the population). Following a period of relative calm in the nineteenth century, the twentieth century saw two major inflows: from Indonesia (273,000 in the period 1945-1975) and from Suriname (237,000 in the period 1973-1990).

The second category of migrants are seasonal labourers. Between 1600 and the late 1800s, tens of thousands of labourers migrated annually from Germany and Belgium to the coastal provinces of the Netherlands in order to work in the agricultural sector or in infrastructural projects such as the construction of dikes and canals. The bleacheries in Haarlem, the brickworks in Groningen and the wood industry on the large rivers depended wholly or partly on seasonal labour. Seasonal labour declined after 1870, when industrialisation spread and many seasonal labourers found permanent jobs at home (for instance in the German Ruhr).

The third category consists of migrant labourers. At the time of the Republic, they formed a major share of the labour supply. Large numbers of foreign soldiers and sailors came to the Netherlands to serve as ‘mercenaries’ in army and navy because conscription had not yet been introduced here. Soldiering was unpopular among the local population because of low pay and appalling labour conditions. The Dutch East India Company, too, recruited foreigners to man its ships bound for the East. Migrant labour began to dwindle in
the nineteenth century. The twentieth century saw two waves of labour migrants: the German housemaids just after the first world war and the migrant workers of the 1970s (55,000 from Turkey and Morocco).

**Migration from the Old World to the New (1850-1913)**

The largest intercontinental migrations in history were recorded in the years 1850-1913, from the Old World to the New. In this period, around 55 million Europeans left for destinations such as Australia, Canada, the United States (us), Argentina, Brazil and Cuba. Most headed for the us (60%); after 1880, Argentina and Brazil, and after 1900 Canada, became popular destinations. A small contingent of British migrants went to Australia, New Zealand and South Africa. Table 1 shows the origins of these immigrants. It appears that in the second half of the 1800s, some 50 out of every 1000 inhabitants in Great Britain, Ireland and Norway migrated. Italy, Portugal and Spain recorded similar numbers at the end of the nineteenth and the beginning of the twentieth century. Today, a ratio of 10:1000 is unusually high. The figures in Table 1 do not take into account return migration. At first the expense of returning was prohibitive, but when the cost of international travel fell sharply in the late 1800s, large numbers of migrants were able to return to their country of origin. In the period 1890-1914, around 30% of American immigrants returned home. Percentages differ substantially among the various nationalities, however: about 50% of Italian and Spanish emigrants returned home, as compared with around 5% of Scandinavian, Irish and Russian migrants. Table 2 shows the immigration ratios for the main immigration countries in the New World. These are generally higher than the emigration ratios for the countries of origin. This is because many New World countries had smaller populations than countries in the Old World. In the period 1850-1913, nearly all immigration countries had ratios of well over 50:1000, Brazil excepted. Moreover, nearly all New World countries saw their immigration ratios soar in the years 1901-1910.

The composition of the flow of migrants to the New World turned out to be economically favourable. Most migrants were young adults, with 76% of those emigrating to the us in the period 1868-1910 aged between 15 and 40. This compared with only 42% of the natives. In other words, relatively many emigrants were potentially able to take part in the labour process. Furthermore, male emigrants were in the majority (this does not hold for Irish emigrants). In the us, for instance, 64% of immigrants in the period 1851-1910 were male, as were

Table 1  European emigration ratios per decade

<table>
<thead>
<tr>
<th>Country</th>
<th>1851-1860</th>
<th>1861-1870</th>
<th>1871-1880</th>
<th>1881-1890</th>
<th>1891-1900</th>
<th>1901-1910</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria-Hungary</td>
<td>-</td>
<td>-</td>
<td>2.9</td>
<td>10.6</td>
<td>16.1</td>
<td>47.6</td>
</tr>
<tr>
<td>Belgium</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8.6</td>
<td>3.5</td>
<td>6.1</td>
</tr>
<tr>
<td>Great Britain</td>
<td>58.0</td>
<td>51.8</td>
<td>50.4</td>
<td>70.2</td>
<td>43.8</td>
<td>65.3</td>
</tr>
<tr>
<td>Denmark</td>
<td>-</td>
<td>-</td>
<td>20.6</td>
<td>39.4</td>
<td>22.3</td>
<td>28.2</td>
</tr>
<tr>
<td>France</td>
<td>1.1</td>
<td>1.2</td>
<td>1.5</td>
<td>3.1</td>
<td>1.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Germany</td>
<td>-</td>
<td>-</td>
<td>14.7</td>
<td>28.7</td>
<td>10.1</td>
<td>4.5</td>
</tr>
<tr>
<td>Ireland</td>
<td>-</td>
<td>-</td>
<td>66.1</td>
<td>141.7</td>
<td>88.5</td>
<td>69.8</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5.0</td>
<td>5.9</td>
<td>4.6</td>
<td>12.3</td>
<td>5.0</td>
<td>5.1</td>
</tr>
<tr>
<td>Norway</td>
<td>24.2</td>
<td>57.6</td>
<td>47.3</td>
<td>95.2</td>
<td>44.9</td>
<td>83.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>4.6</td>
<td>30.5</td>
<td>23.5</td>
<td>70.1</td>
<td>41.2</td>
<td>42.0</td>
</tr>
<tr>
<td>Switzerland</td>
<td>-</td>
<td>-</td>
<td>13.0</td>
<td>32.0</td>
<td>14.1</td>
<td>13.9</td>
</tr>
<tr>
<td>Finland</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>13.2</td>
<td>23.2</td>
<td>54.5</td>
</tr>
<tr>
<td>Italy</td>
<td>-</td>
<td>10.5</td>
<td>-</td>
<td>33.6</td>
<td>50.2</td>
<td>107.7</td>
</tr>
<tr>
<td>Portugal</td>
<td>-</td>
<td>19.0</td>
<td>28.9</td>
<td>38.0</td>
<td>50.8</td>
<td>56.9</td>
</tr>
<tr>
<td>Spain</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>36.2</td>
<td>43.8</td>
<td>56.6</td>
</tr>
</tbody>
</table>

Explanatory note: These figures include intra-European emigration and exclude return migration. Emigration within Europe was fairly considerable in some countries. The bulk of emigrating Belgians, for instance, went to France or the Netherlands. Over half the Italians emigrating after 1880 had European destinations, France and Germany in particular. There was also substantial migration between New World countries, notably between Canada and the us. Source: Hatton & Williamson (1998).
over three quarters of Spanish and Italian immigrants. In addition, many immigrants were unmarried, and unaccompanied. The number of emigrating families with children was relatively small. Finally, migrants to the New World were generally low-skilled, but in terms of human capital the difference between immigrants and natives was relatively insignificant. This meant that on average they were equally productive.

Current migration flows

Although today’s flows of migrants do not compare with those before the first world war, migration continues to play a major role. Chart 2 presents the development of total net migration (difference between emigration and immigration) of the eu, the US and Japan for the period 1960-2000. It is worth noting that net migration in Europe has fluctuated more than that in the US or Japan. It increased materially in the 1980s in particular, peaking in 1992-1993, a development largely attributable to the fall of the Iron Curtain, and various ethnic conflicts (in, for example, the former Yugoslavia, Somalia, Sri Lanka). Since 1998, Europe’s net migration has been on the increase again; according to the Oecd, this upward trend will be sustained by the future enlargement of the Eu. In the US, net migration has gone up gradually since the mid-1970s, and appears to have stabilised since the mid-1990s. In Japan, net migration has always been insignificant and stable.

The development of net migration in the Netherlands corresponds with that of the Eu as a whole. Chart 3

Chart 2 Net migration in major Oecd areas
Thousands of persons

<table>
<thead>
<tr>
<th>Country</th>
<th>1851-1860</th>
<th>1861-1870</th>
<th>1871-1880</th>
<th>1881-1890</th>
<th>1891-1900</th>
<th>1901-1910</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>99.2</td>
<td>83.2</td>
<td>54.8</td>
<td>78.4</td>
<td>48.8</td>
<td>167.6</td>
</tr>
<tr>
<td>US</td>
<td>92.8</td>
<td>64.9</td>
<td>54.6</td>
<td>85.8</td>
<td>53.0</td>
<td>102.0</td>
</tr>
<tr>
<td>Cuba</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>118.4</td>
</tr>
<tr>
<td>Argentina</td>
<td>38.5</td>
<td>99.1</td>
<td>117.0</td>
<td>221.7</td>
<td>163.9</td>
<td>291.8</td>
</tr>
<tr>
<td>Brazil</td>
<td>20.4</td>
<td>41.1</td>
<td>72.3</td>
<td>33.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Table 2 Immigration ratios in the New World per decade
Per thousand inhabitants

<table>
<thead>
<tr>
<th>Country</th>
<th>1851-1860</th>
<th>1861-1870</th>
<th>1871-1880</th>
<th>1881-1890</th>
<th>1891-1900</th>
<th>1901-1910</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>99.2</td>
<td>83.2</td>
<td>54.8</td>
<td>78.4</td>
<td>48.8</td>
<td>167.6</td>
</tr>
<tr>
<td>US</td>
<td>92.8</td>
<td>64.9</td>
<td>54.6</td>
<td>85.8</td>
<td>53.0</td>
<td>102.0</td>
</tr>
<tr>
<td>Cuba</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>118.4</td>
</tr>
<tr>
<td>Argentina</td>
<td>38.5</td>
<td>99.1</td>
<td>117.0</td>
<td>221.7</td>
<td>163.9</td>
<td>291.8</td>
</tr>
<tr>
<td>Brazil</td>
<td>20.4</td>
<td>41.1</td>
<td>72.3</td>
<td>33.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Chart 3 Net migration in the Netherlands, by country of origin
Thousands of persons

Explanatory note: The Eu comprises all Eu countries for the entire period.
1 Eu: up to and including 1999.
Source: Oecd.
shows net migration in the Netherlands in the period 1980-1999, broken down by several countries of origin.\textsuperscript{3} Overall, that development matches the European average, except in the period 1995-1998, when net migration in the Netherlands increased slightly, while the European average declined. Remarkably, the number of immigrants from the \( \text{EU} \) countries has been fairly stable since the 1990s, while that from Turkey, Morocco and Surinam is on the decline. Immigration from other non-\( \text{EU} \) countries has been rising steadily since the mid-1980s, reflecting the increased number of asylum-seekers. In 1998, 21\% of the total number of immigrants in the Netherlands was accounted for by asylum-seekers, while 46\% consisted of family members, 19\% labour migrants and 14\% students.

The increase in net migration in many \( \text{OECD} \) countries is accounted for by family members. This is notably the case in traditional immigration countries such as the \( \text{US} \), France and Canada. In France, for instance, 75\% of the immigration in 1999 was accounted for by family reunion. Since 1997, the numbers of asylum-seekers in many \( \text{OECD} \) countries has gone up materially owing to various regional conflicts. In absolute terms, the largest numbers of asylum-seekers in 2000 were received by the United Kingdom, Germany and the \( \text{US} \). In terms of the inflow of asylum-seekers relative to the total number of immigrants, the Netherlands, Ireland, Norway and Hungary record the highest rates, of over 6\%. This percentage is 0.2\% for the \( \text{US} \). Finally, the ratio of immigrants to the total population is especially high in Australia (23.6\%), Canada (17.4\%) and the \( \text{US} \) (10.3\%).\textsuperscript{4} For the \( \text{EU} \) countries, the corresponding figure never exceeds 10\% (Netherlands 4.1\%, Germany 8.9\%, France 6.5\%, Italy 2.2\%) while the figure for Japan is 1.2\%. The proportion of temporary labour immigration, notably in the ICT sector, also went up at the end of the 1990s. In the Netherlands, for instance, the number of temporary labour migrants from outside the \( \text{EU} \) in the period 1997-2000 more than doubled (from 11,000 to 28,000). Usually these migrants come for a period of less than three months. In several countries, immigration of unskilled labourers has gone up. This is notably the case in southern Europe and the \( \text{US} \), in sectors such as construction and agriculture. In addition, high-skilled employees from multinational corporations are evincing greater temporary mobility. All in all, the current trends of family reunion and temporary labour migration may be expected to persist in the future.

The economic significance of immigration

Migrants contribute to the economy in several ways. To begin with, migrants directly account for an expansion of the labour supply. Migrants to the New World in the period 1850-1913, for instance, contributed materially to economic growth there. Whether a migration-induced increase in the labour supply generally leads to an increase in per capita GDP depends on factors such as the participation rate of migrants relative to that of the natives. If it is higher, the effect may be positive (see below). Secondly, migrants may help to redress any disequilibria in the labour market. There are indications that immigrants to the \( \text{US} \) tend to settle in areas where unemployment is low and wages are high. Immigrants to the \( \text{EU} \) are on average more mobile than the natives, a phenomenon sometimes called ‘greasing the wheels of the labour market’. This mechanism could well prove more important for the \( \text{EU} \) than for the \( \text{US} \), because labour mobility in Europe is traditionally low. In the third place, immigration could contribute to potential expertise in the \( \text{EU} \), as evidenced by highly educated migrants employed in the ICT sector or engaging in academic research. Over the past ten years, the \( \text{US} \) have attracted large numbers of such migrants, as illustrated by the fact that 17\% of the ICT population in the \( \text{US} \) is made up of immigrants. Migration has probably added to the innovative capacity of the American economy. Fourthly, migration can contribute to wage moderation. This mechanism plays a role in a well-functioning labour market where migrants are prepared to work for relatively low wages. In times of economic growth (and labour market shortages), migration can restrain the upward pressure on wages. There are, for instance, indications that this mechanism was at play in the \( \text{US} \) during the past ten years. For example, in the years 1990-2000, nearly 10 million people emigrated to the \( \text{US} \). That is roughly one third of the total population increase in that period. A considerable number of these migrants come from Latin America, and are employed in labour-intensive sectors such as cleaning, construction or the catering business. However, not all groups in the \( \text{US} \) have benefited from immigration. Notably low-skilled Americans consequently face greater competition in the labour market and are forced to accept lower wages. Finally, immigration could contribute to sound public finances. As a group, immigrants usually have a relatively favourable age composition. Employed immigrants are often net payers into pension schemes. In conclusion, immigration contributes to the economy via various channels, as evidenced by the \( \text{US} \)
economy. This does not necessarily mean that Europe also stands to benefit from immigration, because there are major differences between Europe and the US. Both the migrants themselves are different, and the institutions with which they have to deal. The next section goes into these differences.

The risks of immigration

Immigration is also attended by risks, which must not be underestimated. The greatest risk inherent in labour migration in Europe seems inactivity. It is worth noting that at this point in time, unemployment in most European countries is more rampant among immigrants than among the natives. Table 3 shows the unemployment rates for immigrants and natives for several OECD countries, broken down by gender. In many EU countries, unemployment among immigrant men is one-and-a-half to three times as high as among male natives. The Netherlands scores the worst in the EU, with three-and-a-half times as many immigrant men out of work. On the whole, the figures for immigrant women in the EU match those for the men, albeit that the differences in unemployment between immigrant and native females are generally slightly smaller. In this respect, the European labour market deviates markedly from that in Anglo-Saxon countries such as the US, Canada and Australia. The number of immigrants into the EU over the past ten years more or less equals that for the US (nearly 10 million). Yet the unemployment rates for immigrants and natives in these Anglo-Saxon countries differ much less than those in the European countries. In the US and Australia, for instance, unemployment among male immigrants virtually equals that among the male natives. In Canada, unemployment among male immigrants is even lower than that among the natives.

There is no single reason for these differences in unemployment rates. Probably a number of factors are at play, such as the education level of migrants, their knowledge of the language of the host country, motivation, the duration of their stay, the existence of migrant networks and discrimination. In terms of education, the situations in the US and Europe differ materially. Several EU countries have a relatively much higher share of low- or unskilled migrants than the US. Apart from these factors, which relate mainly to the migrants’ background, there is the inflexibility of the labour market in many European countries and the fairly generous social security system. According to several OECD labour market indicators, which take into account dismissal procedures and possibilities of temporary work, the EU continues to compare unfavourably to the US. Social security indicators also show up differences. A German or French head of the household who becomes redundant receives 70% of the last earned income. In the US, this is less than 60%.

Table 3: Unemployment rates in a number of OECD countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Natives</td>
<td>Immigrants</td>
</tr>
<tr>
<td>Austria</td>
<td>4.3</td>
<td>8.3</td>
</tr>
<tr>
<td>Belgium</td>
<td>5.3</td>
<td>16.6</td>
</tr>
<tr>
<td>Denmark</td>
<td>4.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Germany</td>
<td>7.3</td>
<td>14.9</td>
</tr>
<tr>
<td>France</td>
<td>8.7</td>
<td>19.7</td>
</tr>
<tr>
<td>Italy</td>
<td>8.6</td>
<td>5.3</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.2</td>
<td>7.7</td>
</tr>
<tr>
<td>Spain</td>
<td>10.3</td>
<td>13.2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>6.3</td>
<td>10.9</td>
</tr>
<tr>
<td>Australia</td>
<td>6.6</td>
<td>6.4</td>
</tr>
<tr>
<td>Canada</td>
<td>10.3</td>
<td>9.9</td>
</tr>
<tr>
<td>US</td>
<td>4.4</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Source: OECD.
unemployed persons in the US can claim unemployment benefits for a relatively short period of time, viz. 6 months. This period varies from 6 to 32 months in Germany, while in France it can run to 60 months.

Another risk attending labour migration relates to the measure of migrant integration. The flawed integration of migrants who arrived in the Netherlands in the 1970s has lately been given much attention. But future labour migrants need not necessarily be doomed to inadequate integration. The migrations over the centuries show that in time most migrant groups assimilate. With a view to rapid integration in the labour market, it should become possible to make some sort of selection before allowing future labour migrants into Europe. The experience of Australia, an immigration country par excellence, shows that selected labour migrants can be just as successful in the labour market as the natives.

A further risk is the possible adverse consequence of migration for the countries of origin, the brain drain. In this context, however, several remarks are in order. To begin with, an economic immigration policy need not necessarily admit highly educated immigrants only. Certain sectors in the EU countries will most probably have to deal with shortages of low-skilled workers as well. These are labour-intensive service-providing sectors where the application of labour-saving technology is subject to limitations, such as care, the retail trade or the catering industry. Secondly, some immigrants may wish to return home. History shows that return migration is an important phenomenon, albeit that the intensity may differ per migration wave. As returning migrants take part of the knowledge and skills acquired in the new country with them, their country of origin stands to benefit. A case in point is the return of ICT workers to their home country India, who helped to create a booming ICT sector there. Thirdly, a future immigration policy will probably make explicit allowance for the interests of the countries of origin. The European Commission favours a European immigration policy which centres on partnerships with the countries of origin. This policy recognises the relationship between migrants and their home country. They must be able to move freely between their new country and their country of origin, for instance, so as to be able to do temporary work in their home country.

Overall, the greatest risk of labour migration in Europe seems inactivity. Here a variety of factors is at play which need to be reckoned with by policymakers. Successful immigration is conditional upon an accessible education system, a well-functioning labour market, a sufficiently stimulating social security system and measures to counter discrimination.

**Ageing in the EU**

Over the next 50 years, Europe will see large-scale ageing of its population. But for measures, one consequence is the serious decline of the labour force. Can immigration help to maintain the labour supply? To answer this question, we need to look at demographic developments in the EU countries.

Chart 4 shows the ratio of persons aged 65 and over to persons in the age category 15-64 in the EU countries in the period 2000-2050. Although the ageing process will be practically the same in many countries, it will differ materially in intensity and timing. Ireland fares best with a ratio of no more than 17%. With ratios of around 25%, Italy, Spain, Greece and Belgium fare worst. Timing differences will also arise, with the ratios in Germany, Greece, Italy and the Netherlands already beginning to go up after 2005. In most countries, a new – structurally higher – level will be reached around 2040. Here Italy and Spain are worst off, with ratios of around 60% by 2050.

Ageing is not a temporary phenomenon. Ageing ratios will continue to be high after 2050, as a result of insufficient population dynamics. The relative numbers of young people joining the labour force and old people leaving it are insufficient to compensate for the simple fact that people age all the time. Three factors determine

---

**Chart 4 Ratio of persons aged 65 and over to persons aged 15-64 in the EU, 2000-2050**

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2025</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Eurostat.
Of these three, the decline in fertility is the main cause of the current ageing. On average, Dutch women born around 1900 still had 2.9 children. After the second world war, a decline set in: the generation women born in 1960 have an average of only 1.8 children, less than the replacement value, which is 2.1. Ageing in the Netherlands and other EU countries has consequently become a structural problem. But there is also a temporary ageing peak caused by the post-war baby boom. After the war, the number of births soared, only to fall markedly in the 1970s, a development recorded in all EU countries. The baby boom can therefore be seen as a peak in the middle of the age distribution which will move towards the end over the coming decades.

Consequences of ageing for wealth, and policy options

As the ageing of the population will impact the labour supply in the EU in both size and composition, it will have consequences for future wealth (measured as per capita GDP). Tables 4 and 5 show the consequences for the potential labour force (aged 15-64) and for the total population of the EU and several EU countries. The potential labour force in the EU will decline by nearly 17% over the next 50 years, whereas the total population will shrink by a mere 3%. At a constant participation rate, the labour supply will contract considerably. This decline will have a dampening effect on per capita GDP growth in the next 50 years. It must be noted, though, that such long-term forecasts are subject to considerable uncertainty. Nevertheless, average annual per capita GDP growth in the EU over the next 50 years may be expected to be at least half a percentage point below the average 2% growth recorded over the past 30 years. However, this average masks differences from country to country. Some countries’ wealth will be affected more seriously than the European average. In Italy, the problem is especially pressing because the labour force will contract by nearly 33% over the coming 50 years. But for appropriate measures, the ageing of the population will put a brake on per capita growth of wealth.

This raises the question what policy options are available to counter the negative effects of the declining labour supply. First of all, productivity growth might be boosted. Although government cannot exert a direct influence here, it can create the right conditions by, for instance, investing more heavily in education, stimulating the exchange of knowledge between the business sector and academia, boosting competition, improving the physical infrastructure or striving for productivity growth outside the market sector. Second, government could endeavour to raise the participation rate, for example, by encouraging people to lengthen their active life or by stimulating inactive persons (the unemployed or those incapacitated for work) to (re-)enter the labour market. The participation rates of notably the older age group (55-64) and women are relatively low. The participation rate of people in that age group in the EU is currently below 40% (with rates of 52% for the 54-59 age group and 23% for those aged 60-64). The comparable figure for the US is nearly 60%. In this context, it seems highly advisable to stimulate older employees to lengthen their working life. Impediments keeping women from entering the labour market (such as a lack of good and affordable child care) should be removed. This is especially relevant for southern Europe, where women’s participation rates are traditionally low.

<table>
<thead>
<tr>
<th>Country</th>
<th>Potential labour force 2000</th>
<th>Potential labour force 2050</th>
<th>Change, percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>252.1</td>
<td>209.7</td>
<td>-16.8</td>
</tr>
<tr>
<td>Netherlands</td>
<td>10.8</td>
<td>10.6</td>
<td>-2.0</td>
</tr>
<tr>
<td>Germany</td>
<td>55.8</td>
<td>44.1</td>
<td>-20.9</td>
</tr>
<tr>
<td>France</td>
<td>38.9</td>
<td>35.9</td>
<td>-7.7</td>
</tr>
<tr>
<td>Italy</td>
<td>38.9</td>
<td>26.1</td>
<td>-32.9</td>
</tr>
</tbody>
</table>

Source: Eurostat.
These two policy options have been acknowledged by European policymakers, and objectives have been formulated. With a view to higher productivity, it has been agreed that expenditure on R & D must be raised to 3% of European GDP in 2010. At the EU Summit in Lisbon (March 2000), it was decided that the participation rate must go up to 70% by 2010. In the US, it is over 74%.

Once the participation rate in the EU is 70% and everyone works full-time, GDP can rise by an average of around a half percentage point annually over a period of 50 years. However, the EU participation rate is low (64.1%) and is slow to rise (0.7 percentage point increase in 2000-2001). Expenditure on R & D is also low (1.94% of GDP), barely increasing in 2000-2001 (0.1 percentage point). So far, however, the results in terms of productivity and the participation rate are disappointing. This means that there are good reasons to consider the third option, viz. labour migration, as a contribution to ‘solving’ the ageing problem.

If labour migration is recognised as a policy option, it is important to know where the potential supply of migrants over the next few decades can be found. In the discussion on labour migration, it is sometimes suggested that the EU accession countries in Central and Eastern Europe could provide potential labour. But this is improbable as these countries will be confronted with a serious ageing problem themselves after 2010. In addition, the propensity for Central and Eastern Europeans to emigrate to the EU will probably decline as these countries become more prosperous and real wage differentials vis-à-vis the EU diminish. History shows that real wage differentials between countries are often a major determinant of emigration. The annual net inflow into the EU from the accession countries will consequently be limited. For the time being, net total immigration per annum is put at 100,000-340,000 migrants (about 0.1% of the current potential labour force). Potential labour migrants should therefore be sought mainly outside Europe, especially in Asia and Africa, where ageing will not become a significant problem for the next 50 years.

Literature


---

1 The immigrants from Suriname are in a sense an exception because their decision to emigrate is motivated largely not just by political considerations (increased legal insecurity owing to the 1980 coup), but also by economic considerations.
2 Return migration continues to play a major role in the current migration flows. Estimations are that around one-third of immigrants in the US will return home within one or two decades.
3 Return migration takes place in the Netherlands too, albeit in differing degrees per group: 30.8% of Turkish immigrants in 1970 return home, and 16.3% of Moroccans. The percentage for Spanish immigrants is even nearly 79%.
4 In the US, Canada and Australia, an immigrant is defined as someone born elsewhere. In many European countries, an immigrant is defined as a person not having the nationality of the host country. This makes it difficult to make international comparisons of countries’ total numbers of immigrants.
5 This goes notably for countries such as France, Germany, the Netherlands, Belgium and Luxembourg.
6 The participation rate of employees aged 60-64 in many EU countries (including the Netherlands) is rising much more slowly than that for employees aged 54-59.
The Enron debacle and other controversial accounting scandals have shown up weak spots on a number of fronts in the regulation and control of the corporate sector. Corporate governance and the transparency of earnings figures were found wanting, while it emerged that damaging conflicts of interests could exist within large companies, investment banks and auditing firms. Moreover, some companies misuse valuation principles and consolidation guidelines, and a number of cases apparently even involved outright fraud. All these practices have seriously damaged investor confidence. Policymakers’ efforts are targeted at improvements. The United States (US), for example, has adopted anti-fraud legislation, the Sarbanes-Oxley Act, and various national governments in Europe have likewise developed initiatives. In addition, work is proceeding at global level to improve high standards for financial reporting. The Bank has also taken measures and is actively contributing to initiatives to augment international standards. But companies and financial institutions are also accepting responsibility by enhancing transparency and taking steps to prevent conflicts of interests. Some lessons for the future can be drawn from the events.

Shortly before publication of this article, it became known that serious irregularities had come to light at Ahold, notably at an American subsidiary and some other foreign holdings. This forced a downward adjustment of reported earnings, causing the concern’s share price to plummet. Stock exchange supervisors in the Netherlands and the US, and the Public Prosecutions Department, launched immediate investigations. Further details have yet to emerge. The affair shows that Dutch companies are not immune to accounting scandals and highlights the importance of sound corporate governance, financial transparency and audits.
Introduction

In early December 2001, the American energy company Enron filed for a suspension of payments and the largest-ever collapse up to that time in the US became a fact. The failure was initially provoked by the downward adjustment of earnings figures, which, as would quickly emerge, was related to incomplete and even misleading financial reporting over previous years. Notably the latter was widely covered in the media, making counterparties very wary of continuing to do business with Enron and eventually leading to the energy giant’s downfall. In terms of size, the failure of Enron was shortly afterwards exceeded by the bankruptcy of Worldcom, while accounting scandals also came to light at other American companies such as Tyco, Global Crossing and Xerox. European and Dutch companies were also subjected to closer scrutiny, with reports of incorrect reporting by some companies. The accounting scandals have seriously damaged shareholder and investor confidence in financial reporting, and this is reflected on the stock exchange. The scandals have exposed a tangle of weaknesses in the regulations and compliance, many of which are interrelated and mutually reinforcing. In most cases though, we are not dealing with a new phenomenon. Creative accounting, personal enrichment by management, incomplete disclosure to shareholders and attempts by the relevant authorities to counter such practices have been around for much longer. However, the recent series of scandals has attracted plenty of media attention, fuelling public uncertainty in respect of corporate financial data as well as stepping up the momentum for policy measures. Swift changes were made to legislation, and existing standards are now being improved and harmonised. The Bank sees a link between these issues and its own tasks. Adequate standards in the area of sound corporate governance and financial reporting are fundamental to a good supervisory regime. This article discusses the main weaknesses and the chosen solutions, as well as the lessons that can be drawn from them.

Which weaknesses came to light?

Broadly speaking, the weak spots fall into four categories: (1) corporate governance, (2) auditing process and the functioning of audit committees, (3) financial reporting, and (4) the degree of transparency in the financial system. A general conclusion is that shortcomings exist in the rules and regulations as well as in the application and observance of standards. There are also incentive structures, which provoke misrepresentation.

First and foremost, it became clear that corporate governance was deficient in many companies. Corporate governance can be described as the system of conventions for those directly involved in the company – notably executives, supervisory board members and financiers – comprising a number of rules for good governance and proper supervision and rules for the division of duties, responsibilities and mandates, resulting in a balanced influence of those who have an interest in the company.1 Directors and supervisory board members are accountable to the company and the public for the performance of their tasks. The conclusion was that these rules were not being adequately complied with and were insufficiently adapted to changing corporate structures. The problem of surveyability and controllability was a factor. Through integration and mergers, companies have grown into sizeable and complex conglomerates, possibly resulting in obscure structures of responsibility in the management of large companies, which may give rise to conflicts of interest between, say, the board of directors and the audit department within the company, but also between the company and external parties. Conflicts of interest can also arise at investment banks, where market analysts may be influenced by merchant bankers, and rating agencies, where possible links between the company and the rating agency could distort the independent determination of a rating.

Although irregularities occurred in many areas, most of the attention focused on the functioning of auditors, which is inherent in their social function. In many cases, auditors did not prove to be independent from the company they were auditing, since auditors from the same firm were performing auditing and consultancy services for the same company. These conflicts of interest increase the risk that auditors may turn a blind eye to inaccurate and misleading reporting. Compliance with existing standards in this area in different countries is inadequate, while there is often no higher authority responsible for supervising compliance. Reliance on the auditing profession’s self-regulation did not always prove sufficient.

In addition, important shortcomings emerged in the current external accounting rules. Some of the rules are outdated and facilitate misleading reporting. Activities could be kept off the company’s balance sheet by, say, setting up Special Purpose Vehicles (SPVs) or issuing guarantees, without immediately clarifying whether...
they had to be consolidated. The financial results that were presented did not give a faithful representation of the company's results. Reported earnings were artificially too high and this was rewarded with artificially high equity prices and bonuses. Certain items, such as employee stock options were not included in the earnings figures. Another problem is the valuation of balance sheet items. Enron was able to inflate its earnings in recent years by transferring fixed assets, which were booked at a very low historic cost price, to its trading book or selling them to an SPV, with realisation effected at market value in both cases.

These problems occurred notably in American companies, which draw up their financial books on the basis of detailed accounting rules, the US Generally Accepted Accounting Principles (US GAAP). The examples also brought a generic problem to light. The strongly rules-oriented accounting standards such as US GAAP are rather rigid, making it possible to leave new developments and new financial instruments virtually out of consideration. The rules thus appeared to be sensitive to circumvention with the help of financial innovations.

Finally, disclosure standards exhibit deficiencies, which obscure financial market transparency, effectively obstructing market discipline. Some corporate activities remain invisible in the financial reports, implying that shareholders fail to obtain a complete picture of the company. And there are often no rules setting requirements on the timeliness of the information to be disclosed. Moreover, market discipline does not appear to be optimal since certain market analysts and rating agencies are not always independent. Transparency is a condition for effective market discipline. Providing relevant information to market parties enables a better assessment of a company's activities, balance sheet and risk profile. These factors determine the cost of capital to a company; by making improvements in them visible, the cost of capital can be reduced. Effective market discipline implies that this mechanism is used to stimulate sound conduct of business and financial performance at companies.

**Solutions**

Efforts by both market participants and policymakers are geared to improvements. Prompted by the accounting scandals, the anti-fraud act, de Sarbanes-Oxley Act, was rapidly enacted in the US and adopted on 25 July 2002. One of the Act's objectives is to guarantee the accuracy of companies’ financial reporting. The Act thus seeks to restore the confidence of investors and other shareholders in financial reporting and the capital markets. The Act applies to all 14,000 companies listed on stock exchanges in the US, regardless of whether they have their registered offices in the US or elsewhere. This means that a few hundred European and a few dozen Dutch companies come under the scope of the Act. The Act contains a range of concrete measures in the field of corporate governance, the auditing process and transparency. It underlines the company management's responsibility for reliable reporting (with tough financial and penal sanctions), restricts internal financing by management and offers safeguards for reinforcing auditors' independence, such as making a sharper distinction between audit tasks and consultancy by auditors. According to the Act, auditors should concentrate on their auditing tasks and may provide only very limited advisory services to the same company. Another proposed measure is the mandatory rotation of the auditor. As regards corporate responsibility, the Act seeks to ensure accurate reporting by obliging management to personally certify the appropriateness of the presented figures. In this light, companies are also obliged to set up independent audit committees. As to the composition of these committees, the Act provides that no executives may be members. This is generally the case in the Netherlands: within the Dutch dual structure, with a non-executive Supervisory Board, the audit committee is the domain of Supervisory Board members. The Sarbanes-Oxley Act also provides for the establishment of an independent supervisory body for the auditing profession, the Public Company Accounting Oversight Board, that shall register and conduct inspections of public auditing firms in order to guarantee their objectivity.

In the area of transparency, the Act requires swifter publication of annual and quarterly figures. It also sets out disclosure requirements for companies, notably in respect of off-balance activities and insider trading. Although the accounting scandals mainly occurred in the US, they have had a significant impact on regulation in Europe. Following the revision to legislation in the US, the European Commission will shortly present an action plan on corporate governance and the modernisation of European corporate law. The aim is for a national code for each EU country, based on the recommendations contained in the action plan. Key points are: stricter disclosure requirements for company management on their corporate governance policies; a larger role for independent, non-executive, directors in
the remuneration and appointment of executives; and the stipulation that the audit committees of listed companies should in majority consist of independent members of the Supervisory Board. Compared to the Sarbanes-Oxley Act, the plan relies more on self-regulation, supplemented by a few hard rules.

On a global level, work is also proceeding on the improvement of standards for financial reporting, which should also enhance transparency. Financial reporting, particularly the annual accounts and interim reports, plays an essential role in an adequate system of corporate governance. Since the annual accounts form the basis of many decisions, by credit providers, shareholders, executives and others, standards are in place for drawing up the annual accounts so as to comply with the general requirement that the annual accounts give a reliable picture of assets and earnings. To ensure compliance with these standards, reports should be certified by independent auditors. Authorities in the US are now exploring the extent to which the detailed rules-based reporting standards may be shifted towards a principles-based approach. Moreover, specific accounting issues are being looked at, such as the treatment of SPVs, off-balance sheet activities and employee stock options.

These specific topics also come up in the revision of the International Financial Reporting Standards (IFRS), on which the IASB has been working for some time. As of 2005, listed companies in the EU will be obliged to apply the IFRS when preparing their consolidated annual accounts. In Netherlands, this also applies to all non-listed financial institutions. This obligation will create a uniform regime for financial reporting within Europe, smoothing out current differences in accounting rules that now distort a level playing field. In addition, attempts to harmonise the international (European) and the American accounting rules (IFRS and US GAAP) are generating a considerable impetus. On 29 October 2002, the relevant American and European authorities signed a Memorandum of Understanding aimed at levelling out various important differences between the accounting rules in Europe and the US by as early as 2005. This will increase the comparability of international figures, boosting transparency and market discipline. For the international banking sector, the revision of the Capital Accord will also contribute to this process. The third pillar of that accord governs specific disclosure requirements aimed at advancing the effect of market discipline.

The Bank had already taken specific measures, well before the above accounting scandals came to light. As of 1 April 2001, the Regulation on Organisation and Control was introduced at banks. This Regulation provides banks with a broad, general framework for their internal organisation and control of operational risk, aimed at promoting controlled and sound conduct of business. The Principles for Internal Control, now being finalised by the Dutch Pensions and Insurance Supervisory Authority (PVK), are also relevant in this context. Moreover, in the course of 2001, the Bank initiated examinations of the corporate governance structures at larger banks, focusing on the respective roles of the Executive Board and Supervisory Board. The Bank’s examination includes the quality of disclosure to the Supervisory Board and the decision-making process within this Board. And, in general, consultations between the Bank and banks’ external auditors have intensified in reaction to the recent affairs. Some years ago, the Bank had already called for the oversight of auditors, seeing as auditing firms have gradually taken on a more commercial function of considerable public importance, and consequently a high non-performance risk. These arguments have recently gained momentum. Current proposals in this area envisage a stronger role for the Netherlands Authority for the Financial Markets (AFM). The AFM is also to be given responsibility for the oversight of financial reporting by listed companies, decided on at European level, and in which the Bank and the PVK are involved as far as the prudential aspects of financial reporting are concerned. This applies where, say, the objective of the disclosures is the capital adequacy of supervised institutions, as is the case in the new Capital Accord.

Corporate governance, financial reporting and prudential regulations are closely interrelated. The Bank attaches great importance to the development and establishment of high international standards in all these areas and is doing its best to bring about their realisation. One channel for the Bank’s efforts is its membership of the Basel Committee for Banking Supervision, including its presidency of the Accounting Task Force and the Transparency Group, which resort under the Basel Committee. The Bank is thus playing an active part in the revision of the Capital Accord. On behalf of the Basel Committee, the Bank is also a member of the Standards Advisory Council of the International Accounting Standards Board (IASB). The Bank’s basic principle is to keep as closely as possible to international rules. Indeed, partly in view of the international nature of the banking sector, a level playing field is of the utmost importance. In its efforts to develop and improve standards, the Bank benefits from
regular consultations in various international fora, such as the Banking Supervision Committee of the ESCB and the Financial Stability Forum. Notably in the latter Forum, these issues are often the focus of high-level round-table discussions. In this way, the regulators, supervisors and standard-setters involved can profit from each other’s insights and experiences. Also worthy of mention are the Principles, recently issued by the International Organization of Securities Commissions (IOSCO), which relate to disclosures by listed companies, the independence of auditors, and oversight of the auditing sector.

Finally, market forces are another major factor. Companies apparently take their own measures too, such as voluntarily increasing disclosure, and preventing conflicts of interest – as demonstrated by moves by various merchant banks to split their research departments from their commercial activities. Banks are also making an effort to improve their risk management.

Lessons for the future

Are the chosen solutions sufficient? The damage to public confidence in the financial markets and in the reliability of financial reporting called for a resolute response from the relevant authorities. In addition, both past and ongoing efforts on a wide front to improve and harmonise rules are to be applauded. However, there is a risk of overreacting. Self-regulation by market parties and personal responsibility are still important, a crucial factor being the integrity of those concerned. This is illustrated by cases of outright fraud at some companies, where extra regulations are of little help.

In so far as the standards show shortcomings, such as accounting rules that fail to take account of certain corporate activities, they must be rapidly corrected. To a significant extent, standards also appeared to be outdated; outdated because of the development of complex financial products and the formation of large and complex conglomerates. Consequently, the general rule applies that standards in the area of accounting and corporate governance should be flexible, allowing for responses to changing corporate practices and financial markets. In this context, the accounting scandals have exposed the disadvantages of the rules-based accounting standards such as the US GAAP. While it is easier to enforce compliance with detailed rules, these rules have proved to be increasingly vulnerable to circumvention by the use of financial innovations. This also applies to other forms of regulation, such as banking supervision.

On the other hand, principles-based standards can lead to differences in interpretation and render compliance more difficult. The central question in choosing between the types of standards is the extent to which financial reporting, in an increasingly complex environment, gives a truthful and honest insight into a company’s financial structure. Finding the right balance between details and flexibility is crucial.

The rapidly changing world also calls for a high level of transparency, which is essential for the functioning of financial markets. However, transparency is not simply derived from the quantity of information disclosed: the quality of that information is vital. Clear disclosure requirements, as are now being drafted in the context of the Capital Accord, are desirable. In this light, the valuation and profit/loss determination of financial assets and liabilities on a current-value basis offers potential benefits. Marking to market makes risks (more) visible and also enhances the transparency and comparability of the financial accounts, but has the disadvantage of revealing more of the volatility of corporate earnings. If this volatility is not adequately explained or understood, it will have a negative impact on confidence. Moreover, reliable valuation methods are not yet sufficiently available.

In view of the ongoing internationalisation of the economy, and the increasingly cross-border nature of the activities of many companies and financial institutions, international agreement is required on standards and their practical implementation. This does not necessarily mean striving for identical standards at international level, but rather that countries should agree among themselves on consistent objectives and principles in broad outline, giving the same incentives to diverse market parties. Recent efforts in these areas are promising.

Finally, it should be borne in mind that no matter how thoroughly standards are drawn up, they can never completely guard against future problems. Vigilance and adequate supervision, notably of parties such as banks, which play a pivotal role in the economic system, remain essential.

1 'Aanbevelingen inzake Corporate Governance in Nederland', (Recommendations on Corporate Governance in the Netherlands), Report by the Corporate Governance Committee, 1997, p.10.
More synchronous cyclical movements through mergers and acquisitions?

*A feature of the world economy in the past few years has been the remarkable synchronicity of economic trends across a wide range of countries. A significant structural reason for this has been the explosive growth of international financial flows as a result of deregulation and the increasing integration of financial markets. A second reason for greater economic dependence on other countries has been the very strong growth of foreign direct investment which has occurred across the world, especially as a result of the wave of mergers and acquisitions during the second half of the 1990s. Direct investment brings significant benefits such as lower costs, economies of scale and technology transfer, but can also be a source of vulnerability to developments abroad, partly because financial problems of foreign parent companies can have adverse consequences for subsidiaries (and vice versa) in the form of less capital expenditure, lower wages or redundancies. This phenomenon is known as international rent sharing within multinational companies.*
**Introduction**

A feature of the world economy in the past 2½ years has been the remarkably simultaneous economic downturn in the principal blocs. The differences in economic growth between industrialised countries have not been so small in 20 years. This is also shown in the trend over time of the average correlation of the growth rates of seven principal industrial countries (Chart 1). In the 1980s, the correlation was around 0.2 but fell to almost nil in the first half of the 1990s. Since then, however, the correlation has climbed sharply to the historically very high figure of 0.5.

Two factors determine the extent to which the various economic cycles move in parallel. The first is the nature of the shocks affecting national economies. If there are many or major common shocks, economic fluctuations will be closely correlated. In contrast, national economic trends will diverge if the shocks are mainly country-specific by nature. The second factor is the extent to which economies are interlinked. As countries maintain economic relations with each other, a shock in one country can be transmitted to other countries.

To a large extent, the recent simultaneous slowdowns in growth reflect the effects of two common shocks: the rise in oil prices and the worldwide bursting of the ICT stock-market bubble. Currently, the threat of war in Iraq is a significant factor. Many economists and policy makers feel that this is not the full story, however. The increased interdependence of economies could be making a significant contribution to the greater synchronicity of cyclical movements.

**Increased economic interdependence**

The interdependence of economies goes through three channels: international trade in goods and services, international financial capital flows and foreign direct investment. While imports and exports have seen fairly stable growth since 1980, there has been turbulence in the other two channels, particularly since 1995. International trade in financial instruments, such as shares and bonds, has grown explosively. Foreign investors increased their holdings of American securities three-fold between January 1998 and March 2000 to the equivalent of 42% of American GDP. The correlation between the principal stock markets has increased strongly in the past 20 years and so the financial markets have grown in significance as a factor for the international transmission of shocks.

Foreign direct investment (FDI) has also grown strongly, in particular since 1990. According to UN statistics, total foreign investment was 17.3% of global GDP in 2000. In 1990, it was only 8.3%. Currently, about 11% of global production is accounted for by companies owned by foreign investors. It is likely that the observed stronger correlation of cyclical movements is partly a result of the increased presence of foreign investors in almost every industrial country. This article, therefore, first lists a number of facts on the trend of direct foreign investment over the past 20 years. Evidence is then presented for the argument that more intensive direct investment relationships between two countries is associated with a higher degree of synchronicity in their economic cycles.

**Direct investment**

Direct investments are financial transactions aimed at acquiring a lasting interest in a company in another country. A lasting interest means that the direct investor has a long-term relationship with and significant influence on the policy of the foreign company. Direct investment commonly takes place when a company in one country obtains all or much of the share capital of a company in another country, often via a merger or acquisition. An acquisition of foreign shares is reported as direct investment in balance of payments statistics if the interest acquired in the foreign company is more than 10%. If it is less than 10%, it is a normal...
investment in shares. Foreign shares acquired via the stock exchange are generally classified as an investment. In practice, direct investment is usually the acquisition of more than half of the outstanding shares, so that the investor gains full control of the company. Minority interests make up only 13% of total American direct investment abroad. Direct investment covers not only mergers, acquisitions and new investments, but also loans and other capital transfers within multinational companies and reinvested earnings.

**Why do companies invest abroad?**
Companies make direct investments in other countries for a variety of reasons. Traditional explanations emphasise the availability of cheap labour and raw materials and gaining new markets. The economic climate is also important. Factors which play a role in it are political and economic stability, the tax regime, the quality of the physical infrastructure, flexibility in the labour market, the quality of the labour force and the various types of regulation. Direct investment is sometimes to avoid trade barriers such as tariff walls, quotas and other restrictions (jumping the tariff): many Japanese companies have subsidiaries in the United Kingdom (UK) as a base for exporting to other EU countries.

More recent explanations of direct investment point to the company-specific strengths of multinational businesses, such as advanced products and production processes, brands, marketing talent and a large and efficient distribution network. Such intangible assets are usually not divisible and are often built up through major investment in research and development. With direct investment, these assets remain within the company and benefits from economies of scale can be obtained.

There is empirical evidence that the presence of foreign companies has a beneficial effect on the economy of the capital-importing country. The efficiency of domestically-owned companies improves as more foreign companies operate in an economy as a result of direct investment. This type of spill-over effect is reflected in the transfer of new technologies, new marketing methods and management techniques and the benefits of increased competition. The magnitude of these effects is largely dependent on the ability of the economy to absorb foreign technology. If there is a large difference in technological level between the direct investor and host country, domestic companies will have difficulty in adopting the new technology and so the positive spill-over effect on the economy will be limited.

**Huge growth in direct investment**
Direct investment has increased very strongly in the OECD area since the mid-1980s, with a remarkable acceleration since 1995. The background to this development is the on-going liberalisation of international capital flows, the further dismantling of trade barriers and progress in information and communication technology. The favourable economic climate in the second half of the 1990s also promoted the growth of direct investment. Chart 2 shows the movements in the book value of total foreign direct investment (FDI) for France, Germany, the Netherlands and the United States (US) in the period 1980-2001. The statistics distinguish between inward capital flows (investments by foreign companies in the host country) that represents a ‘liability’ of the country, and outward capital flows (investments abroad by residents of the country) that is an ‘asset’. The value is expressed as a percentage of GDP to give an impression of the relative significance to the reporting economy. To put the development of direct investment in perspective, the chart also shows the trend in imports and exports.

For France and Germany, total outstanding FDI was about 23% of their GDP in 2000, roughly a five-fold increase over 20 years. The relative importance of direct investment is markedly higher in countries with a traditionally strong FDI position, such as the Netherlands, Switzerland and the UK, although the growth has been somewhat less spectacular. The value of the Netherlands’ direct investment portfolio at the end of 2000 was about 80% of GDP, three times higher than in 1986. Investment by American businesses in the rest of the world was over 13% of GDP in 2000. This figure is relatively low because the American economy is so large in comparison with other economies, but in dollar terms the investment position of the US is by far the largest in the world.

It is notable that inward and outward investments show a similar trend in almost every country. The increase in direct investment, therefore, mainly reflects a process of diversification, with countries investing in each other, and much less a process in which capital flows in only one direction, from capital-rich to capital-poor countries. Japan is the principal exception to this picture of increasing global integration. In fact, Japanese companies withdrew from other countries during the 1990s and there are very few foreign companies in Japan. Direct investment also has a relatively small role in Italy. Finally, direct investment grew much faster than foreign trade in almost every country. This means that the links between economies via foreign investment will have
Chart 2  Openness of the US, Germany, France and the Netherlands

Percentage of the GDP

<table>
<thead>
<tr>
<th>Stock of direct investment</th>
<th>Foreign trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>42</td>
</tr>
<tr>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

| Germany                   | 42           |
| 30                        | 35           |
| 25                        | 28           |
| 20                        | 21           |
| 15                        | 14           |
| 10                        | 7            |
| 5                         | 0            |

| France                    | 42           |
| 30                        | 35           |
| 25                        | 28           |
| 20                        | 21           |
| 15                        | 14           |
| 10                        | 7            |
| 5                         | 0            |

| Netherlands               | 72           |
| 102                       | 60           |
| 85                        | 48           |
| 68                        | 36           |
| 51                        | 24           |
| 34                        | 12           |
| 17                        | 0            |

Source: Jansen and Stokman (2002).
grown in significance over time compared with the traditional channel of international trade.

Who is investing where?

Table 1 shows the main countries Canada, Germany, the Netherlands and the US had invested in and from which countries their inward foreign investment came from as at the end of 2000. Once again, the reciprocity is clear. The strongest direct investment links are those between the US and Canada. Two-thirds of capital imported by Canada comes from the US while in the other direction, half of Canadian investment projects are in the US. Intensive investment relationships can also be found within the European Union. For Germany, 33% of the inward direct investment stocks comes from Belgium-Luxembourg and 20% from the Netherlands. The Netherlands also invests relatively large amounts in EU countries and, in the other direction, EU countries are large investors in the Netherlands. It is notable that the Netherlands’ main investment partner is the US, although the trade relationship between the Netherlands and the US is less intensive. From the American perspective, the Netherlands is more important than countries such as France and Germany. As the largest economy, the US is a significant source and destination of direct investment capital. The three largest investors in the US are the UK, Japan and the Netherlands. The three most important destinations of American FDI flows are the UK, Canada and the Netherlands.

The presence of foreign investors means that part of domestic production and employment is generated by companies over which foreigners have decisive influence. Data on the precise share of foreign subsidiaries are incomplete and scarce for most countries, except for American multinationals (Table 2). American statistics show that American subsidiaries are responsible for a significant proportion of the production in certain countries. In 1999, American companies generated 17% of Ireland’s GDP. For Canada and the UK, the figure was 10% and 7% respectively. In the Netherlands, American companies account for 4½% of GDP. In the US itself, the influence of foreign companies is still relatively small (2½% of GDP). A rough estimate of how much all foreign subsidiaries together produce can be made by combining the American figures with data on the US share of total foreign direct investment. In many countries, 15% (or more) of GDP can be attributed to foreign companies (Table 2). As foreign direct investors generally

Table 1 Bilateral direct investment positions in 2000
Per cent

<table>
<thead>
<tr>
<th>Inward direct investments from the perspective of:</th>
<th>Canada</th>
<th>Germany</th>
<th>Netherlands</th>
<th>US</th>
<th>Outward direct investments from the perspective of:</th>
<th>Canada</th>
<th>Germany</th>
<th>Netherlands</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>0.5</td>
<td>0.0</td>
<td>0.2</td>
<td>1.7</td>
<td></td>
<td>1.3</td>
<td>0.6</td>
<td>0.8</td>
<td>2.7</td>
</tr>
<tr>
<td>Belgium-Luxembourg</td>
<td>1.2</td>
<td>33.1</td>
<td>18.7</td>
<td>5.6</td>
<td></td>
<td>1.0</td>
<td>7.7</td>
<td>12.1</td>
<td>3.5</td>
</tr>
<tr>
<td>Canada</td>
<td>0.3</td>
<td>0.2</td>
<td>2.4</td>
<td>13.8</td>
<td></td>
<td>0.3</td>
<td>1.1</td>
<td>1.8</td>
<td>10.0</td>
</tr>
<tr>
<td>Germany</td>
<td>9.9</td>
<td>7.2</td>
<td>5.2</td>
<td>10.6</td>
<td></td>
<td>1.3</td>
<td>5.0</td>
<td>6.1</td>
<td>3.0</td>
</tr>
<tr>
<td>France</td>
<td>0.3</td>
<td>1.2</td>
<td>0.4</td>
<td>0.5</td>
<td></td>
<td>0.9</td>
<td>3.4</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td>Italy</td>
<td>2.6</td>
<td>1.8</td>
<td>3.5</td>
<td>13.5</td>
<td></td>
<td>1.6</td>
<td>1.7</td>
<td>0.4</td>
<td>4.6</td>
</tr>
<tr>
<td>Japan</td>
<td>4.7</td>
<td>19.7</td>
<td>12.1</td>
<td>15.7</td>
<td></td>
<td>2.3</td>
<td>3.0</td>
<td>9.1</td>
<td>18.7</td>
</tr>
<tr>
<td>Netherlands</td>
<td>7.3</td>
<td>7.1</td>
<td>15.7</td>
<td>21.6</td>
<td></td>
<td>10.4</td>
<td>28.0</td>
<td>10.7</td>
<td>25.7</td>
</tr>
<tr>
<td>UK</td>
<td>63.2</td>
<td>17.5</td>
<td>31.9</td>
<td>32.1</td>
<td></td>
<td>48.3</td>
<td>28.0</td>
<td>10.7</td>
<td>25.7</td>
</tr>
<tr>
<td>Sweden</td>
<td>0.8</td>
<td>1.7</td>
<td>2.5</td>
<td>1.8</td>
<td></td>
<td>0.3</td>
<td>1.4</td>
<td>0.8</td>
<td>1.8</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2.0</td>
<td>4.9</td>
<td>4.8</td>
<td>5.7</td>
<td></td>
<td>1.5</td>
<td>3.1</td>
<td>4.9</td>
<td>4.3</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total (percentages of GDP)</td>
<td>28.4</td>
<td>23.8</td>
<td>64.6</td>
<td>12.4</td>
<td></td>
<td>32.0</td>
<td>24.9</td>
<td>79.8</td>
<td>13.2</td>
</tr>
</tbody>
</table>

have relatively high labour productivity, their share in employment is somewhat lower.

Direct investment as a transmission channel

It is likely that the rapid expansion of direct investment has made national economies more susceptible to developments in the rest of the world. There is now much more foreign capital in most countries’ economies, while they themselves have invested much more abroad (Chart 1). Both inward and outward direct investment can channel foreign shocks to the domestic economy.

As the inward investment position concerns capital imports, the receiving country runs the risk that investors may wish to withdraw, for whatever reason. More generally, financial problems at the parent company can have adverse effects on wages, employment and the investment level at subsidiaries anywhere in the world. This is a consequence of international rent sharing within multinational companies. Recent studies have shown that wages and employment at subsidiaries depend not only on local economic conditions, but also on profits at the group level. All employees of an international company share to a certain extent in a higher profit for the company as a whole. But the same also applies to losses. Via the indirect route of sharing profits and losses at multinationals, problems in, say, Argentina can cause the closure of a business in Denmark or lower bonuses in the Netherlands.

Larger shares of direct investment abroad also makes a country more vulnerable to foreign shocks as they can adversely affect the financial health of the parent company. The lower value of the foreign participating interests can translate into a lower share price for the parent company and lead to problems attracting external funds from both the capital markets and banks. This can put investment under pressure. Furthermore, lower share prices can reduce consumption because of adverse effects on capital and confidence.

There are indications that the closer correlation of cyclical movements is linked with the strongly increased significance of direct investment. Chart 3 shows whether countries with relatively intensive direct investment relationships with each other also have economic cycles which run relatively synchronously. It uses the fdi positions of Canada, Germany, the Netherlands and the us broken down for 11 partner countries in the period 1982-2001. The intensity of the direct investment relationships between two countries is measured as the average bilateral investment position (inward and outward) as a percentage of gdp. The relationship between their economic cycles is measured by

<table>
<thead>
<tr>
<th></th>
<th>Share in gdp of American companies</th>
<th>Estimated share in gdp of all foreign companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>4.9</td>
<td>4.7</td>
</tr>
<tr>
<td>Belgium-Luxembourg</td>
<td>5.6</td>
<td>5.1</td>
</tr>
<tr>
<td>Canada</td>
<td>9.5</td>
<td>10.0</td>
</tr>
<tr>
<td>France</td>
<td>2.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Germany</td>
<td>3.0</td>
<td>2.9</td>
</tr>
<tr>
<td>Ireland</td>
<td>12.4</td>
<td>16.8</td>
</tr>
<tr>
<td>Italy</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Japan</td>
<td>0.5</td>
<td>0.7</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5.8</td>
<td>4.5</td>
</tr>
<tr>
<td>Sweden</td>
<td>1.2</td>
<td>2.6</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2.9</td>
<td>3.3</td>
</tr>
<tr>
<td>UK</td>
<td>6.2</td>
<td>7.0</td>
</tr>
<tr>
<td>US</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Jansen and Stokman (2002).
the correlation coefficient of GDP growth on a quarterly basis. Chart 3 shows that there is a positive relationship between closer interconnection through direct investment holdings and more synchronised cyclical movements. This can be seen even more clearly in the later period, 1995-2001. The strong growth in direct investment, therefore, means that economies are clearly more vulnerable to economic developments elsewhere in the world.

International rent sharing appears to be one of the channels by which direct investment influences an economy. There is evidence for a number of countries that an improvement in profitability abroad has a positive effect, with a time lag, on the domestic labour market. In Belgium and Germany the benefit is mainly in employment, while in France wages increase. For the Netherlands, higher profits abroad lead to both more jobs and higher wages. In the other direction, lower profits abroad can have adverse consequences for investment, employment and wages in these countries. These foreign influences cannot be established for the US, probably because the role of foreign capital in the American economy is still relatively modest (Table 2).

Policy lessons

The strong growth of direct investment and associated globalisation of production have two interesting policy implications. Firstly, in future, economic cycles will have a greater tendency to move synchronously. As a result of the worldwide, structural increase in direct investment, economies are more susceptible to foreign shocks. This does not, however, mean that macro-economic fluctuations will always show a higher correlation. The recent past shows that major asymmetric shocks, such as German reunification, can offset the underlying positive influence of more intensive economic relationships (Chart 1). Secondly, the models used by policy makers and international organisations, such as the OECD and the IMF, to make forecasts and analyses should pay greater attention to the globalisation of production. In existing macro-econometric models, international trade and financial prices play the main role in transmitting international shocks. Little account is currently taken of the spill-overs associated with direct investment.

Chart 3 Relationship between growth correlation and direct investment for 44 country pairs

<table>
<thead>
<tr>
<th>1982-2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-2001</td>
</tr>
</tbody>
</table>

Explanatory note: The relationships examined were between Canada, Germany, the Netherlands and the US and eight other countries (Australia, Belgium, France, Italy, Japan, Sweden, Switzerland and the UK). The relationship shown is statistically significant. The t-values of the estimated coefficients are 2.8 and 4.5 when the underlying data relate to the periods 1982-2001 and 1995-2001, respectively.

Source: Jansen and Stokman (2002).

References

Blomström, M., S. Globerman and A. Kokko (2000), The determinants of host country spillovers from foreign direct investment, CEPR discussion paper 2350.


Ewe-Ghee, L. (2001), Determinants of, and the relation between, foreign direct investment and growth, IMF working paper WP/01/175.


1 Dutch trade with the US (exports plus imports) is about 4% of the total.
Huge sums are involved in payments between financial institutions. In the Netherlands, such payments are processed by the proprietary payment system of the Bank, called TOP. TOP is an integrated part of TARGET, the network of payment systems which interlinks the central banks of the EU countries and the European Central Bank (ECB). Every week, TOP processes payments worth EUR 400 billion, an amount just short of the Netherlands’ gross domestic product for 2001. The payments made by a bank on a busy day can easily amount to twice its paid-up capital. For this reason, systems processing interbank payments must satisfy the very strictest requirements of safety, efficiency and reliability. In early 2001, such requirements were adopted on an international level in the so-termed ‘core principles’ for systemically important payment systems. Each of the central banks involved has undertaken to ensure that its own systemically important payment system satisfies these core principles. In addition, it was agreed at the ESCB level that each of the central banks was to assess its own payment system. Although TOP was designed to comply with the highest standards, this agreement induced the Bank to launch another broad examination of the system. That examination is the subject of this article.

The outcome of the examination was that TOP satisfies all applicable standards.
The Bank’s duties in the context of payments

It has been the duty of the Nederlandsche Bank to promote the safe and efficient design of payment and securities clearing and settlement systems, in order to reduce to acceptable levels the risks posed to financial stability, whether in a domestic or an international context. It is partly for this reason that the Bank has offered its own interbank large-value payment services, and that it exercises ‘oversight’ of payment and securities systems.1 In performing this task, the Bank acts in conformity with international agreements on the standards which clearing and settlement systems must satisfy.

The history of the core principles

In 1974, the unexpected failure of the German Bankhaus Herstatt and the large-scale problems it caused gave a major impact to policies aiming to reduce the risks inherent in payment systems. Since then, the effects which the design of payment and securities systems may have on financial stability have been acknowledged internationally. As a first consequence, this led to the establishment of standards which certain payment systems should meet (the so-called Lamfalussy Standards). Subsequently, however, it became even more apparent that while the ongoing intertwinement of payment and securities infrastructures led to greater efficiency and improved operation of the financial markets, it also increased the speed and momentum with which financial problems could spread throughout the financial system. The central banks of the G10-countries, meeting in the Committee on Payment and Settlement Systems (CPSS), have taken the lead in formulating a system of best practices and standards which payment and securities systems should comply with. In 2001, the efforts of the CPSS led to the publication of the Core Principles for Systemically Important Payment Systems. The core principles consist of ten standards for the improvement of the safety and efficiency of systemically important payment systems (SIPS). In addition to serving as guidelines in developing new SIPS, these principles are also intended to be used as assessment standards in order to establish whether existing systems meet the requirements. The core principles, which are binding on the central banks of the G10-countries, are listed in Box 1.

The report distinguishes four responsibilities of central banks with respect to SIPS, and these are listed in Box 2. Central banks must ensure, among other things, that systemically important payment systems managed by themselves satisfy the requirements of the core principles. Therefore, the Bank has investigated whether TOP satisfies the core principles. This investigation was recently completed. The procedure followed and the outcome of the investigation are described below.

Box 1 Core principles for systemically important payment systems

i The system should have a well-founded legal basis under all relevant jurisdictions.

ii The system’s rules and procedures should enable participants to have a clear understanding of the system’s impact on each of the financial risks they incur through participation in it.

iii The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.

iv The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.

v A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.

vi Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.

vii The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.

viii The system should provide a means of making payments which is practical for its users and efficient for the economy.

ix The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.

x The system’s governance arrangements should be effective, accountable and transparent.
Assessment approach

The assessment of the TOP system took place under the oversight responsibility of the Bank. Also including the assessment of external systems, oversight is exercised independently, in organisational terms, from the operational management of TOP. The self-assessment drew on the expertise of other departments of the Bank, and on previous reports, in particular by the Internal Audit department. Because the core principles are generalised standards which cannot be used directly as assessment criteria, they were first translated into verifiable norms, with the help of work accomplished by the IMF and the World Bank in assessing payment systems within the context of their Financial Sector Assessment Programs.

Core principle i The legal basis

Core principle i reads ‘The system should have a well-founded legal basis under all relevant jurisdictions.’ This standard imposes the requirement that the legal framework under which the system is operated should guarantee the enforceability of the system’s rules and procedures. The legal basis should contribute to the legal robustness of the system. The framework includes applicable law with regard to contracts, insolvency, lending and the creation and enforcement of security interests. In assessing TOP’s compliance with core principle i, the Bank focussed on the finality of payments within the system and the enforceability of security interests.

Payments processed by TOP must be final, in the sense of irreversible. In the Netherlands this requirement is of special significance because under Dutch law, a bankruptcy or similar insolvency procedure is retroactive to the beginning of the day on which the bankruptcy is declared – the ‘zero-hour rule’. Under this rule, the receiver of a bankrupt TOP participant would be able to reverse payments made during the day bankruptcy was declared. However, reversing payments in an SIPS is highly undesirable, because most of such payments are immediately used by beneficiaries to settle debts with their own creditors. Reversing a payment could thus trigger a chain reaction of payment problems, with all the consequences this might have for the financial markets. Therefore, the zero-hour clause is overruled by the Bankruptcy Act with respect to payments by certain parties in a number of individually designated systems, including the Bank’s TOP payment system.

The TOP account system distinguishes ‘participants’ and ‘other account holders’. Most participants in TOP are institutions under official supervision. The category of other account holders is restricted to foreign (non-EU) central banks, supra-national institutions and a few other institutions. The difference in legal status between both categories is in that the finality provisions of the Bankruptcy Act apply only to participants, not to the other account holders. With respect to the latter category, the Bank acts as correspondent bank.

The other focussing point in assessing compliance with core principle i was the enforceability of security interests. The Bank extends both intraday and overnight credit to its participants, against a sufficiency of collateral. In order to avoid risks to the Bank, the Bank must have the power to sell the collateral pledged by a participant should the participant fail to meet its obligations. The assessment revealed that collateral given by participants is secured in an adequate manner and that credit institutions have pledged sufficient collateral for the Bank to appropriate and sell in an emergency.

The assessment of TOP’s compliance with core principle i leads to the conclusion that the Bank’s payment system satisfies this standard.

Core principle ii Understanding the financial risks

Core principle ii reads: ‘The system’s rules and procedures should enable participants to have a clear under-
standing of the system’s impact on each of the financial risks they incur through participation in it.’ This principle imposes requirements on the information which manager of the system, i.e. the Bank, provides to the participants in top, to the effect that the latter should be aware of and understand the financial risks inherent in participating in the payment system. This core principle is narrowly related to core principle iii, which imposes requirements on the substance of the risk management measures surrounding the system.

It was established that the documentation regarding top adequately presents the (residual) risks of participating in the system. Participants are enabled to a sufficient degree to acquaint themselves of and manage the consequences of their participation in top. The Bank’s payment system therefore satisfies core principle ii.

Core principle iii Management of financial risks

Core principle iii reads: ‘The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.’ Whereas core principle ii requires that the system’s manager should enable participants to understand the financial risks of participation, core principle iii makes requirements of the way in which credit and liquidity risk are managed.

Credit risks may occur in a payment system if payments are not settled immediately and finally. This is the case in (multilateral) net payment systems in which the net result of all payments between every pair of participants is settled on a periodic (e.g. daily) basis (see core principle v). In a ‘real-time gross settlement’ (rtgs) system, there are no credit risks between participants, because payments are settled irreversibly and item for item. Top is such an rtgs system, so that credit risks between participants are precluded.

Since participants cannot obtain credit from the Nederlandsche Bank unless they provide sufficient collateral, the Bank does not incur any credit risk vis-à-vis the participants. The corollary of this is that participants must have a claim on the Bank before they are able to make payments. Therefore, participants do incur a credit risk vis-à-vis the Bank. This special type of credit risks incurred by participants in the settlement system of a ‘settlement bank’ is called ‘settlement bank risk’. This type of risk is inherent in any payment system and cannot be eliminated entirely. In the case of top, however, this risk is virtually non-existent, because normally speaking a central bank cannot fail (see also core principle vi).

The conclusion is that within top, there are no credit risks except for the residual risk inherent in the claims of participants on the Bank as their settlement bank. However, the creditworthiness of a central bank such as the Nederlandsche Bank is, in principle, unlimited.

One of the most important risk management measures regarding top is its rtgs character. As already mentioned, this means that final settlement of payments takes place on an item-by-item basis, which prevents any credit risks between participants from arising within the system. Meant to reduce credit risk, the rtgs methodology has the opposite effect as regards liquidity risk. For a payment to be processed by an rtgs system, the ordering participant has to have a sufficient balance on its account, technically known as ‘headroom’. If this is not the case while the flow of other participants’ payments and receipts within the system is low (or dries up), then a situation may occur within the rtgs system which is known as gridlock. In a gridlock, a large share of the liquidity within the system collects in the accounts of a single or a few participants which are unable (or unwilling) to pay, while other participants are prevented from making their own payments for lack of receipts.

In order to avoid such a gridlock, the Bank (and the other Eurosystem central banks) offer the possibility to use interest-free intraday credit. The credit is extended on the basis of collateral, eliminating any credit risk to the Bank. Payments not executed because of balance inadequacy are queued by top. Participants and system managers have the ability to change the priority of queued payment orders, thus preventing a single payment order which is larger than the current ‘headroom’ to block (many) smaller payments from being processed.

Given the de facto absence of credit risk and the possibilities offered to mitigate liquidity risk, top also satisfies core principle iii.

Core principle iv Prompt final settlement

Core principle iv reads: ‘The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.’ This standard demands that the time elapsing between the moment when a participant submits a payment
order and the moment the payment is finalised should be as short as possible.

If a participant’s balance is adequate, the final settlement of a payment order to \texttt{TOP} is executed immediately. Being an \texttt{RTGS} system, \texttt{TOP} therefore satisfies core principle \textit{iv}.

Core principle \textit{v} Settlement by multilateral netting systems

Core principle \textit{v} reads: ‘A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.’ During the discussion of core principle \textit{iii} above, it has already been observed that in a netting system, sizeable claims may arise between parties. If at the end of the day a net paying party is unable to meet its obligations, there is insufficient money available to pay the receiving parties in full. Because this situation is highly undesirable, core principle \textit{v} requires that the system is equipped with a liquidity buffer of at least the same size as the largest position owed by any net paying participant. This ensures that the system is always able to complete the settlement, even if the largest net payor fails to meet its obligations.

This core principle has no relevance for \texttt{TOP}, because the Bank’s payment system is not a netting system. Within \texttt{TOP}, there is no credit risk between participants.

Core principle \textit{vi} Settlement assets

Core principle \textit{vi} reads: ‘Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.’ As was already discussed under core principle \textit{iii}, settlement bank risk cannot be ruled out completely in any payment system. Participating in such a system implies accepting some credit risk on the settlement bank. Core principle \textit{vi} therefore requires that claims on the settlement bank should involve only a minimum of credit and liquidity risk and that central bank money should be the settlement asset of preference.

\texttt{TOP} satisfies core principle \textit{vi} because settlements take place in the books of the central bank, in claims on the Bank.

Core principle \textit{vii} Security and operational reliability

Core principle \textit{vii} reads: ‘The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.’ This principle focuses on three aspects, the security measures surrounding the payment system, the reliability of the system and the presence of emergency plans, procedures and facilities. The importance of this last aspect was poignantly illustrated in 2001 by the events following the September 11 attacks.

The security requirements imply, among other things, that the confidentiality of information should be guaranteed and that the origin of payment orders should be established. The assessment of \texttt{TOP} against core principle \textit{vii} established that the payment system satisfies all internationally accepted security standards.

The operational reliability of a payment system depends primarily on its capacity and its availability. It was established that the capacity of \texttt{TOP} is more than adequate. In addition, the Bank regularly measures the degree to which \texttt{TOP}’s capacity is utilised so that the need for increased capacity may be determined in time. The Bank’s payment system has a long history of high availability, illustrated by its average uptime record over the past two calendar years: 99.84%. Added to this are sufficient guarantees ensuring that problems if they occur will not affect the availability of \texttt{TOP} in any significant degree.

In order to cope with emergencies, the Bank has emergency plans and procedures in place, which are being tested on a regular basis. In addition, the Bank has emergency recovery facilities at its disposal. Both inside the main building and at an external location a considerable distance away, the Bank has back-up hardware and software available. These emergency recovery systems are being fed transaction data in real time, ensuring that loss of data in case of a calamity is impossible. The Bank performs emergency recovery tests on a regular basis.

\texttt{TOP} satisfies core principle \textit{vii}. The payment system has adequate security measures in place, is reliable and has adequate, regularly tested emergency procedures and facilities available.
Core principle viii  Efficiency

Core principle viii reads: ‘The system should provide a means of making payments which is practical for its users and efficient for the economy.’ This core principle requires that in developing and using a payment system the right balance is struck between the system’s safety and efficiency, the latter both at the system manager’s level and in a more generalised societal context.

During the assessment of TOP against core principle viii, it was established that the system’s processing costs are determined, monitored and analysed in an adequate manner. The payment system belongs to both the lower-cost and the more cost-effective system within target. In addition, annual customer satisfaction surveys have shown TOP to be judged a useful and user-friendly system by its participants. TOP has contributed importantly to the safe and fast allocation of assets in the euro area. The Bank’s payment system satisfies core principle viii.

Core principle ix  Access criteria

Core principle ix reads: ‘The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.’ In other words, participation criteria should contribute to the safety and efficiency of the payment system without needlessly interfering with competition. This requires an adequate trade-off between both objectives. Moreover, the applied criteria must be publicly disclosed.

It was established that TOP satisfies core principle ix because, in principle, every professional party which makes large-value payments can be given access to the TOP payment system, provided their continuity is assured. One such assurance is the requirement that participants should be subject to adequate supervision or belong to the public sector. These access rules are objective and also, because the system is open to all relevant parties, open and fair.

Core principle x  Governance

Core principle x reads: ‘The system’s governance arrangements should be effective, accountable and transparent.’ This core principle requires that the objectives of the system be clear and respect the interests of all parties concerned, while its managers are enabled to realise the objectives. In addition, the systems manager is required to take adequate control measures.

The objectives of TOP are clear: offering large-value payment services is a natural part of the Nederlandsche Bank’s statutory duties and of its duties as a participant in the ECB. The Bank has undertaken to offer an efficient and safe payment system for large-value interbank payments. Since financial stability cannot be served by TOP unless participants actually use it to effect their large-value payments, the Bank closely involves participants in the ongoing development of TOP. Apart from consultation rounds held by the Bank, the periodic client satisfaction surveys held regularly by the Bank deserve to be mentioned. The Bank possesses an adequate governance and internal control structure. For several years now, the Bank also has included a chapter on Corporate Governance in its annual report. Summing up, TOP may be said to satisfy core principle x.

Conclusion

Standards have been developed in an international context, with the Bank’s active participation, which systematically important payment systems must satisfy: the core principles for systematically important payment systems. The Bank itself offers systematically important payment services by means of its TOP payment system, and TOP must satisfy the core principles. In order to determine that this is the case, the Bank has made an assessment of the system. The result of this assessment is that TOP satisfies all nine core principles which apply to it. Core principle v applies only to netting systems and hence does not regard TOP.

1 The Bank has recently published a brochure on its oversight tasks, which may be ordered by email from info@dnb.nl.
Better price measurement through hedonic price adjustment

Pure price measurement is of vast importance. Indeed, policymakers and consumers alike base their decisions in part on the price information provided by statistics agencies. Yet, inflation measurement is known to carry inaccuracies. In 1996, the Boskin committee concluded that the American consumer price index (CPI) was overestimated by 1.1 percentage point. More recently, the Bundesbank calculated that Germany’s gross domestic product (GDP) volume was underestimated by slightly less than a quarter of a percentage point due to price measurement-related problems.

To correct such measurement inaccuracies, various methods are available. This article highlights one that so far has not been used in the Netherlands, i.e. the hedonic method.
Pure price measurement

Pure price measurement is of vital importance for an economy to function well. This not only holds for the measurement of consumer prices, but also, e.g., for that of producer prices or the domestic production price index. Everybody benefits from pure price measurement. Consumers, because they wish to be able to assess the development of their purchasing power, and entrepreneurs, since they want to be able to compare price movements in their own branch with the rise of the general price level. Price indices, moreover, play a decisive role in inflation expectations, as well as being used in indexation clauses in private contracts and as a basis for pension indexation. Price measures are also crucial to economic policy preparation. Price movements afford insight into the competitive position of Dutch businesses, while a sound price measurement is also indispensable to parties involved in collective bargaining in that it helps determine the scope for wage increases. And, finally, but not in the last place, price movements play a pivotal role in the price stability objective of the European System of Central Banks, which, after all, is defined as a consumer price increase by no more than two per cent in the medium term. Hence, to a central bank, too, it is highly important that inflation be measured on the basis of pure data.

Price series are also used for the construction of volume series, e.g. when the nominal values are deflated using the producer price index. As price series are applied to construct volume figures, pure price measurement is also a requirement for accurate volume series.

The ideal price index

An ideal cpi is a weighted average of the prices of products purchased by consumers. The weight assigned to each product in the price index is determined by consumers’ expenditure on that product. Ideally, the price index is a measure of the cost of living, containing information both on the prices in the economy and on consumers’ purchasing behaviour. This implies among others that the product weights in the index are automatically adjusted to price changes. That is, if the price of a product goes up, consumers normally respond by buying less of it or replacing it by an alternative. By this substitution, the cost of living – and, hence, ideally, the price index – increases less than suggested by the price rise of that particular product. Another consequence is that a price rise does not feed into a higher price index rise if it entirely follows from a quality improvement.

The scenario outlined above is a statistical ideal. For various reasons, though, in practice it is impossible to calculate such an ideal index for all consumers. One obvious reason is that the limited resources of statistics agencies prohibit inclusion of all consumer expenditure. Also, it is impracticable to cover the consumption behaviour of all consumers. After all, to do justice to the wide variety of tastes, strictly speaking a separate index would be required for every individual consumer. Therefore, in practice, a price index is calculated, the cpi, which measures the costs of a consumer basket deemed representative. The deviation from the ideal index unavoidably leads to measuring errors.

In 1996, the Boskin committee mentioned in the introduction to this article argued that the American cpi, apart even from the unavoidable errors referred to above, was distorted upwards by 1.1 percentage point. In 1998, a study for Germany showed a similar distortion of the German cpi, i.e. by some three-quarters of a percentage point, which is large, compared to the distortion of the German gdp level. As yet, no estimation of the distortion of the harmonised index of consumer prices, the hicp, for the euro area is available.

The errors identified in the above studies are partly related to the method used in collecting the price data. It turned out that price data were primarily collected from traditional sales channels, whereas expenditure via newly developed sales channels, such as discount stores, was not covered. This made for measuring errors, since both the price level and the price movements in the new sales channels may differ from those in the traditional ones. Apart from this type of practical errors in the measuring method, which this article will not enter into, the above studies established measuring inaccuracies arising from the aforesaid substitution options, the introduction of new products and changes in the quality of existing products. These are discussed in detail below.

Substitution bias

The cpi is derived from a fixed product mix reflecting the spending pattern of the representative consumer. The drawback of this approach is that it does not factor in the possibility that consumers respond to relative price changes by substituting products. A hefty increase in the price of butter, for example, will cause demand for butter to fall, but demand for butter substitutes, like margarine, to rise. However, in an index of a fixed product mix, butter will continue to be assigned the same (and, therefore, too high) weight, as a result of which the price increase is given an unduly high weight.
in the index. The actual costs of living have risen all right (i.e., the purchasing power has declined), but less so than is measured using the price index with fixed weights. More in general, products that have seen relatively sharp price rises are assigned unduly high weights in the index and products with relatively low price rises, unduly low weights.

**New products**
What with the continuous introduction of new goods and services in the consumer market, the basket constituting the cpi will never be completely up to date, and, consequently, be biased. On the one hand, new products satisfy a demand, raising the standard of living as a result. On the other hand, the effect of the initial phase of its product cycle, late inclusion in the price index generally leads to an overestimation of the price change measured. The desirability of quicker inclusion of new products in the price index was recently recognised and addressed by Statistics Netherlands. As of this year, the consumer basket is adjusted annually, instead of only every five years as used to be the practice. The consequence of the old approach was that the spending pattern of 1995 was used up until the end of 2002. This implied that all sorts of products that penetrated the market in the interim period, such as mobile phones, sms services, (broad band) internet and dvd players, were assigned too little weight in the cpi. A typical example is the weight of communication products, nowadays also covering Internet and mobile telephony services, which practically doubled after the adjustment, to 3.6%. The higher frequency of consumer basket adjustments also reduces the distortion ensuing from substitution. This is because shifting spending patterns are, on average, reflected in the index sooner than they used to be.

While being an improvement, the methodical change does not quite resolve the new products bias. This is because, on the one hand, it is impossible to express the initial rise in the standard of living provided by the new product in the index and, on the other hand, because the spending pattern is still not fully up to date. Statistics Netherlands now proceeds from a spending pattern dating from the year 2000, which means that it takes at least two years for a change to be included in the cpi.

**Quality changes**
Inflation measurement monitors products on a year-to-year basis, comparing their prices over time. Price increases of products not undergoing quality changes are relatively easy to measure by comparing the current price with the price charged the year before. In practice, however, rather than being constant, the quality of a large part of the entire product range tends to change with time. Fashion trends, for example, come and go, old washing machine models are succeeded by new ones, and the quality and user options of modern electronics have multiplied over the years. The fact that it usually does not take long before obsolete product models are discontinued (through clearance sales or discounts) complicates accurate inflation measurement. Indeed, if a product is no longer stocked, there is no price to be monitored (the product cannot be matched anymore with the data recorded a year earlier) and an alternative method for calculating the change in the prices of these goods and services will need to be found. There are various methods of adjusting for quality changes. Some quality changes are relatively easy to adjust for, such as in the case of a change of milk carton, e.g., from a 1 litre to a 1 1/2 litre carton, where the problem is solved by measuring the number of litres of milk, instead of the cartons. Another example are products with new features that used to be available as options only. Consider a car, which is now by default equipped with air-conditioning, whereas this facility used to be available only at extra costs. Most statistics agencies, including Statistics Netherlands, in these cases determine the value of the quality enhancement by comparing the price of the car including air conditioning with the price of that car plus the optional air conditioning a year before. While quite effective in many instances, these methods do not lend themselves for general application, besides entailing the risk of measuring errors. Obvious examples of product categories not ideally suited to these methods are computers and other ict equipment, which normally can no longer be found on the store shelves after one year and many of whose properties are continually upgraded.

Practically all studies regard the current practice of adjusting for quality changes in the cpi as the main cause of measuring inaccuracies in the cpi. In a study of the German cpi, approximately two-thirds of the distortion (0.5 percentage point) is attributed to deficient quality adjustment. The Boskin Committee report referred to above arrives at the conclusion that, for the
United States (US) more than half (0.6 percentage point) of the bias is caused by inaccurate or incomplete quality adjustments (including the bias resulting from the introduction of new products). Failing well-founded estimations for the harmonised index of consumer prices (HICP) of the euro area as well as the Dutch CPI, it appears unlikely that the quality adjustments of these indices are significantly better than those for Germany and the US.

**Hedonic price measurement**

One of the proposals of the Boskin Committee to decrease the measurement bias of the CPI is to intensify the use of so-called ‘hedonic’ methods. The authors of that report estimate that within several years, one third of the aforesaid bias due to quality changes and new products (0.2 percentage point of annual inflation) may be corrected through a more intensive use of this technique. It should be noted that the correction percentage may increase in the long term and that in the US hedonic techniques were already employed from the outset. The long-term correction that can be attained in other countries will probably be considerably larger as a consequence.

While hedonic price measurement has only lately begun to draw attention, the basic concept was developed as early as in the first half of the previous century, by Waugh (1928) and Court (1939). The first pioneered the use of quality measures to account for vegetable prices, while the latter introduced the current terminology (see box).

The hedonic method postulates that the total value of a given product may be calculated by assigning values to relevant characteristics of that product. For a computer, for example, these characteristics may be processor speed, hard disk capacity and speed, memory capacity, the presence of a DVD burner, etc. On the basis of data on computer prices and scores for the above features, the average value per MegaHertz processor speed and per Megabyte memory can be calculated. This information enables adjusting the price of a new, more advanced computer for its improved components, hence, its quality. That part of the price movement that cannot be attributed to an increase in quality is the hedonically adjusted price.

The breakthrough of hedonics in economics came with the publication of articles by Griliches (1961) and Chow (1967), who researched the price movements of cars and computers, respectively. However, it would take until the mid-eighties before hedonic price measurement very slowly but gradually began to be applied by statistics agencies.

To this date, the hedonic method is still mainly employed in the US, where for the analysis of almost 20% of total expenditure hedonically calculated price indices are used. With only a few countries using this method at a very limited scale, the European continent as yet contrasts sharply with that. In Sweden, the hedonic method is applied to computers (CPI and producer prices), clothing (CPI) and houses (building index). In France, hedonic price measurement is applied to the CPI for books, dishwashers, clothing (in part), and rents, whereas the use of this method for the producer price index is confined to computers and printers. In Germany, hedonic price measurement was introduced in June 2002, and has only been applied so far to the price of personal computers in the CPI. However, the method’s use is scheduled to be extended and cover also the producer, export and import prices of computer hardware in 2004.

These adjustments, while only applied by a few EU member states, also influence the European harmonised price index, the HICP. Germany is known to use the hedonically adjusted national CPI series in constructing the German HICP, which is part of the euro area HICP. Consequently, for some product groups, the inflation measure relevant for European monetary is constructed using a mix of different methods.

The hedonic method is not without its – mainly practical – drawbacks, the main one being that the product properties determining a product’s value must be identified. Although in some cases, selecting a range of properties is relatively easy, such as in the case of television, printers and, or to a lesser extent, computers, there are various products whose special quality aspects are less easy to pinpoint, such as trendy products. With...
regard to selecting the relevant set of product properties, international harmonisation is crucial as this makes figures internationally comparable.

The second problem posed by hedonic price measurement is cost-related. The method requires a great many more data than most of the quality adjustment methods already in use. In order to calculate a hedonic price, it is not sufficient to collect price data. Rather, also time series of the relevant product characteristics are needed. For this reason, but also because it is time-consuming, the hedonic method is relatively expensive in use. This is not to say that the costs are prohibitive. After all, pure price measurement of the CPI being is highly relevant to society, and the hedonic method may contribute significantly to improving price measurement for a number of categories, such as ICT hardware.

While in discussions on hedonic price measurement it is generally argued that quality improvements, if not properly recognised, lead to an overestimation of the price index, the introduction of hedonic methods certainly does not always result in a lower price index. For example, recent research into the price developments of washing machines in the United Kingdom concluded that current price measurement techniques are underestimating price changes, because of an overadjustment for quality changes.

Quality adjustments and national aggregates

Statistics agencies excepted, attention for sound quality adjustment on the whole continues to be confined to the CPI. However, the problem is more widespread, extending to, as said above, volumes. This may be illustrated by the production and use of, and investment in, ICT goods and services. A large share of ICT goods and services is not used for final consumption, but as an intermediary product or investment by companies and the authorities. Consequently, measurement biases found in the CPI also occur in industrial price series and the measured investment volume. It is even likely that the measurement biases are larger than those in the CPI. In recent years, the share of ICT in total gross fixed capital formation in the Netherlands increased to around 10%. By comparison, the weight assigned to computers in the CPI is a mere 0.6%. Since industrial production prices are used in constructing macro-economic aggregates such as investment in fixed capital and GDP, the problems with quality adjustment also affect these variables. The movements of the ICT hardware prices provide a first indication of these problems. The (implicit) price movements of the ICT hardware investment for the Netherlands and the US are reflected in Chart 1.

Strikingly, the price developments in both countries show a widely divergent pattern (Chart 1), with price dynamics in the US being the stronger and the Dutch data showing relatively little variation. In the period 1990-2002, the price index of ICT hardware dropped cumulatively by 44%, while the comparable index in the US fell by 90%. Assuming that these figures reflected price movements correctly, this would imply that at identical prices in 1990, the price level for ICT hardware investment in the Netherlands in 2002 exceeded that in the US by a factor of five. Considering that these products are traded intensively internationally, it is practically impossible that such price differences could exist for a prolonged period. In recent years, these international differences are generally considered to derive from differences in the measurement methods used. This, of course, does not make clear how the measuring inaccuracies are divided among the countries. Given the emphasis placed on quality-related adjustments in the US, though, it is likely that the American data are more accurate than those constructed in European countries.

Two methods are typically used for estimating biases of volume variables, i.e. (1) the expenditure approach, which adds up the national expenditure components, and (2) the production approach, which proceeds from

![Chart 1 Implicit deflator for ICT hardware investment](chart1.png)

Sources: NIPA, Statistics Netherlands.
Explanatory note: The figure for the Netherlands in 2002 is based on the first three quarters.
the production structure. In either case, deflators (usually American) serve as point of departure, assuming these describe the price development of ICT products more accurately than the series constructed by European national statistics agencies.

The first approach, based on national expenditure, is relatively crude, presupposing that expenditure components can be adjusted for inaccuracies in the price movement measured. Given the large share of ICT in fixed capital investment, this expenditure category is probably distorted the most (see Chart 1). Although, this investment as an expenditure component only accounts for one-fifth of total GDP, it is unlikely that the GDP is underestimated proportionally. This is because a considerable percentage of the (biased) ICT investment is not produced internally, but imported, and that, hence, the import figures must be adjusted as well. Since imports are included in the national expenditure identity with a minus sign, a quality adjustment for this import component will neutralise (though not entirely) the effect of the investment adjustment on GDP. Although detailed figures on ICT components in other expenditure categories are missing, the distortion of these components, too, is largely neutralised by a proportional import component. As a consequence, the application of hedonic price measurement to the national accounts is likely to show – probably significant – biases in some expenditure components, but not necessarily in total GDP volume. Recent research by the Bundesbank supports this for Germany. On the basis of the above approach, the underestimation of the German GDP level in the period 1996-1999 is assessed to be close on a quarter of a percentage point.

The second method for calculating the sensitivity of GDP to the distortion of ICT prices is based on the production structure. The ECB recently applied it to measure the effect on GDP in four euro area countries (Germany, France, Italy and Finland; together accounting for three-quarters of euro area GDP) if the existing price series of ICT production were replaced by the American – hedonically adjusted – price index. The outcome of this approach shows that the effect of higher ICT production on GDP is a mere 0.3%, owing to the modest scale of the ICT producing sector in three out of the four countries covered. The overall bias, however, is even smaller, because part of the ICT production is used as an intermediary use in other sectors in the economy. The bias in measured production of the ICT producing industry indicates that also the intermediary use of these products is underestimated. This adjustment of the consumption by enter-

prizes further down the production chain partially neutralises the adjustments for the ICT producing industry on the aggregated level. The said ECB research has demonstrated that, after this adjustment, the GDP level is underestimated in the four countries by 0.06% on average.

Summary and conclusions

All participants in the economic process gain by pure price measurement. Deviations of price indices from the theoretical ideal result in inaccuracies in price measurement. The biggest obstacle to pure CPI measurement is properly adjusting for product quality improvements. These are especially apparent in the ICT sector, where technological advancements follow one another in rapid succession. One quality adjustment method in the CPI and other economic price series, is hedonic price measurement. This method is much favoured in the US, where its application has grown markedly in recent years. Now, one fifth of the macroeconomic statistics are corrected by means of a hedonically adjusted price series. With but a few countries applying it, Europe is lagging far behind the US in this respect. However, the use of this method is on the rise. The problem presented by applying quality-related adjustments for technologically advanced products is not confined to CPI alone. Although the effect on the overall measured production is expected to remain moderate, the individual components underlying growth may change with the introduction of a superior measuring method, and hence, have consequences for the interpretation of these figures.

In the Netherlands, hedonic price adjustment is hardly used at all. Intensive research is being conducted, though, into the application of new quality adjustment methods, including the hedonic method. Given the importance of pure price measurement and the developments in the surrounding countries, this effort should be welcomed.

Literature consulted


List of articles published in 1999-2003

June 1999
- Development of banknote and coin circulation
- The monetary policy strategy of the Eurosystem
- Scenarios for the European economy: an analysis with euromon
- The Dutch economy in 1999-2001: a forecast using morkmon

September 1999
- The Dutch housing and mortgage markets: a risk analysis
- Consumer Affairs
- Government and inflation under EMU: the decomposition of Dutch inflation
- Transparency in the international financial system: a survey
- Fiscal policy and the interest rate movements in the euro area: scenarios based on the multicountry model euromon

December 1999
- Legal and economic framework for the euro exchange rate
- The significance of the European capital market for corporate financing
- The Bank’s involvement in securities settlement systems in the Netherlands
- The Dutch economy in 1999-2001: a forecast based on morkmon

March 2000
- The role of a national central bank in the single European monetary policy
- The importance of financial structure for monetary transmission in Europe
- Risk analysis: the new tool for Supervision
- The transparency of funds transfers in the Netherlands
- The Goldilocks economy of the United States in comparison with Europe: an analysis with euromon
- The Nederlandsche Bank’s analysis of bank lending

June 2000
- Survey among Dutch mortgage-holders on the use of mortgage credit
- Unemployment and labour reserve in the Netherlands
- Introduction of the euro for cash payments
- The Netherlands economy in 2000-2002: a forecast based on morkmon

September 2000
- Is the Dutch economy overheating?
- Electronic banking: current trends and the implications for banks and supervision
- Population ageing and public finance in the longer term
- Output gap and future inflation from an international perspective
- Integrity supervision

December 2000 – Special issue on financial stability
- Guardian of financial stability
- Recent developments
- Asset price inflation on the equity and real estate markets: risks and policy implications
- Globalisation prompts overhaul of international financial architecture
- Currency crises in emerging markets: predictable or not?
- The Dutch economy in 2000-2002: a forecast based on morkmon

March 2001
- Banking industry on schedule with euro introduction
- Economic convergence and monetary policy in accession countries
- Towards a new Basel Capital Accord
- A comparative study of the Federal Reserve System and the ESCB as monetary policy institutions
- A new approach to risk in foreign exchange settlement
- The role of fiscal policy in EMU: A simulation with euromon

June 2001
- Risk of substantial price increases due to euro conversion seems limited
- Supervision of large, complex financial institutions in Europe
- Labour mobility in the euro area
- The Dutch economy in 2001-2003: a forecast using morkmon
List of articles published in 1999-2003

**September 2001**
- A closer look at European economic policy coordination
- Heading for e-day – the cash changeover
- Key features document for financial products: the current position
- Countdown: business girds up for ‘e-day’

**December 2001**
- Crisis talks on and after September 11
- Farewell to the Guilder
- New economy: illusion or reality?
- The Dutch economy in 2001-2003: a forecast using markmon

**March 2002**
- Before and after e-day: the euro launch
- Structure of financial supervision
- What do we understand about exchange rates?
- Smooth euro changeover, higher prices?

**June 2002**
- Spotlight on household wealth management in the Netherlands
- Tariff structures and infrastructure in Dutch retail payment systems
- A suggested European agenda for structural reform
- Regulatory Impact Analysis as new instrument for the Bank
- The Dutch economy in 2002-2004: a forecast using markmon

**September 2002**
- Influence of stock market strongest in housing market’s top segment
- The role of national central banks within the European System of Central Banks: The example of the Nederlandsche Bank
- Getting used to the euro
- Export credit insurance eighty years on

**December 2002**
- Banking supervision: the Act on the Supervision of the Credit System 50 years on
- Just a normal cyclical downturn in the Netherlands
- Different economies, synchronised cycles?
- The Dutch economy in 2002-2004: a forecast using markmon

**March 2003**
- Immigration from an historical and an economic perspective
- Need for transparent financial reporting and sound corporate governance
- More synchronous cyclical movements through mergers and acquisitions?
- An assessment of the Bank’s large-value payment system top under the ‘core principles’
- Better price measurement through hedonic price adjustment
Publications
Occasional Studies have been published since 2003. Occasional Studies aim at disseminating thinking on policy and analytical issues in areas relevant to the Bank. Occasional Studies will appear in Dutch or in English. An overview of Occasional Studies can be found on the Bank’s website, http://www.dnb.nl. During the first quarter of 2003, two Occasional Studies were published which are summarised below.

No. 1 Requirements for successful currency regimes: The Dutch and Thai experiences

Robert-Paul Berben, Jan Marc Berk, Ekniti Nitihanprapas, Kanit Sangsuphan, Pisit Puapan and Piyaporn Sodsriwiboon

This study is part of the Kobe Research Project. It documents the exchange rate policies and the financial liberalisation processes of both the Netherlands and Thailand over the past decades. In view of these experiences and of the academic literature, the study seeks to identify requirements for successful currency regimes, in particular requirements for exchange rate stability. Furthermore, it provides some general lessons with respect to regional monetary co-operation in Asia.

Keywords: Regional co-operation, Asia.
JEL code: F33.

No. 2 The Blurring of Distinctions between Financial Sectors: Fact or Fiction?

Annemarie van der Zwet

This paper measures the ‘blurring of distinctions’ phenomenon in an innovative way, namely by means of a breakdown of the revenues of the 50 largest financial groups worldwide. These data show that the blurring of distinctions between financial intermediaries of different nationalities (i.e. international blurring) is clearly more important than the blurring of distinctions between different types of financial intermediaries (i.e. cross-sector blurring). At the same time, there are many initiatives on a national level to cope with the cross-sector blurring of distinctions, whereas so far relatively little initiatives have been taken to respond to the international blurring of distinctions.

Keywords: Financial supervision, financial integration, cross-sector diversification, international diversification.
JEL codes: G21, G22, G28.
DNB Staff Reports

DNB Staff Reports have been published since 1996. Aim and scope of this publication series is to disseminate a selection of the research done by staff members of the Bank to encourage scholarly discussion. An overview of DNB Staff Reports can be found on the Bank’s website, http://www.dnb.nl. During the first quarter of 2003, eight Staff Reports were published which are summarised below.

No. 94 The Trilemma in History: Tradeoffs among Exchange Rates, Monetary Policies, and Capital Mobility

Maurice Obstfeld, Jay C. Shambaugh and Alan M. Taylor

Recently, the political economy of macroeconomic policy choice has increasingly been guided by the simple prescriptions of the classic trilemma. For example, policymakers often speak of the hollowing out of exchange rate regimes in a world of unstoppable capital mobility; and policy autonomy and a fixed nominal anchor present an unpleasant dichotomy for emerging markets beset by the fear of floating. Yet the trilemma is not an uncontroversial maxim, and its empirical foundations deserve greater attention. Some authors (e.g., Calvo and Reinhart 2001, 2002) have argued that under the modern float there could be limited policy autonomy given the rapid international transmission of interest rate shocks; others (e.g., Bordo and Flandreau 2003) that even under the classical gold standard there actually was considerable policy autonomy given the gold point spread and the use of gold devices and other tricks. Such arguments turn the trilemma on its head. Resolving this debate is ultimately an empirical matter, where the broadest span of data should be scrutinized. Using new techniques to study the coherence of international interest rates at high frequency, in conjunction with an examination of capital mobility policies and a data-based classification of exchange rate regimes, we look at the empirical content of the trilemma based on consistent data over 130+ years. On the whole, the predictions of this influential adage are borne out by history.

No. 95 Financial Globalization and Monetary Policy

Helmut Wagner and Wolfram Berger

Recently, it has often been argued that globalization eases the job of central banks as it helps to tame inflation. This is used to argue that central banks (particularly the ECB, referring to the objectives as laid down in the EU-Treaty) could or should reduce their efforts in the fight against inflation in favour of supporting the general economic policies of the governments. This paper is concerned critically with this argument. It points to the structural changes associated with globalization and to the corresponding increase in uncertainty by which the central banks are affected. As an example of this, the increase in financial volatility is analysed and explained as the result of optimal portfolio allocation, and its implications for monetary policy are discussed.

Keywords: Globalization, inflation, volatility, capital flows, forecast error, asset prices, monetary policy.

JEL codes: F32, F34, G15, E52, E58.

No. 96 Fancy a stay at the ‘Hotel California’? Foreign Direct Investment, Taxation and Exit Costs

Holger Görg

This paper looks at the trade off between investment incentives and exit costs for the location of foreign direct investment (FDI). This issue does not appear to have been tackled in much detail in the literature. The analysis considers the effect of profit taxation (as a measure of investment incentives) and an index of hiring and firing costs (proxying exit costs) on the location of US outward FDI in 33 host countries. The results suggest that US FDI, in particular in manufacturing is negatively affected by the level of profit taxation and exit costs. Hence, if countries want to attract FDI it may not suffice that incentives are provided in order to ease the entry of multinationals. Instead, it also appears to be important that exit costs are at a level attractive to multinationals. In other words, multinationals may not check into an attractive looking Hotel California type host country if it is difficult to leave.

Keywords: Foreign direct investment, exit costs, firing costs, investment incentives, taxation.


DNB / Quarterly Bulletin March 2003
No. 97 Global vs. Local Competition
Patrick Legros and Konrad Stahl

We analyze the impact of increased outside opportunities brought to consumers by improved access to a global market on local market performance under monopoly vs. oligopoly. If consumers choose once where to buy, we show that under all forms of organizing the local market, increased competition from the global market will locally crowd out variety. The effect on prices is much less clear. While increased global competition yields a price reduction under monopoly, prices may increase under oligopoly. We check the robustness of these results in various extensions and draw consequences on competition and industrial policies.

Keywords: Global competition, Monopoly, Oligopoly, Search, Retail Trade.
JEL codes: D83, L12, L13, L81.

No. 98 Long-Term Global Market Correlations
William N. Goetzmann, Lingfeng Li and K. Geert Rouwenhorst

In this paper we examine the correlation structure of the major world equity markets over 150 years. We find that correlations vary considerably through time and are highest during periods of economic and financial integration such as the late 19th and 20th centuries. Our analysis suggests that the diversification benefits to global investing are not constant, and that they are currently low compared to the rest of capital market history. We decompose the diversification benefits into two parts: a component that is due to variation in the average correlation across markets, and a component that is due to the variation in the investment opportunity set. There are periods, like the last two decades, in which the opportunity set expands dramatically, and the benefits to diversification are driven primarily by the existence of marginal markets. For other periods, such as the two decades following World War II, risk reduction is due to low correlations among the major national markets. From this, we infer that periods of globalization have both benefits and drawbacks for international investors. They expand the opportunity set, but diversification relies increasingly on investment in emerging markets.

Keywords: Foreign direct investment, rent sharing, international linkages, spillovers.

No. 99 The Importance of Multinational Companies for Global Economic Linkages
W. Jos Jansen and Ad C.J. Stokman

We investigate to what extent the expansion of FDI and the internationalization of production can be related to the recent phenomenon of more synchronized business cycles. We first focus on the relationship between bilateral FDI positions and cross-country output correlations in the period 1982-2001. We find that countries that have comparatively intensive FDI relations exhibit a greater degree of output comovement, and that this positive association seems to become stronger over time. We then present evidence that international rent sharing might be an important aspect of global economic linkages. German, French, Belgian and Dutch labour markets are significantly affected by profits of foreign-based multinationals, with employment being more sensitive than wages. By contrast, US and UK labour market conditions do not, or hardly, react to changes in foreign profitability.

Keywords: Foreign direct investment, rent sharing, international linkages, spillovers.

No. 100 Globalisation and Market Structure
J. Peter Neary

This paper reviews some puzzling economic aspects of globalisation and argues that they cannot be satisfactorily addressed in perfectly or monopolistically competitive models. Drawing on recent work, a model of oligopoly in general equilibrium is sketched. The model ensures theoretical consistency by assuming that firms are large in their own markets but small in the economy as a whole, and ensures tractability by assuming quadratic preferences defined over a continuum of goods. Applications considered include the effects of trade liberalisation on industrial structure, on cross-border merger waves, and on the distribution of income between skilled and unskilled workers.

Keywords: Cross-border mergers, GOLE (General Oligopolistic Equilibrium), market integration, trade and wages, trade liberalisation.
JEL codes: D50, L13, H12.
No. 101 Is Wealth Increasingly Driving Consumption?

Tamim Bayoumi and Hali Edison

This paper estimates the wealth effect on consumption of both equity and housing wealth, using data across 16 industrial countries differentiated by type of financial system and examining trends in these wealth effects over time. The three main conclusions are found and their policy implications discussed: that the impact of a $1 increase in housing wealth on consumption is higher than the equivalent increase in equity wealth; countries with market-based financial systems have larger effects from changes in equity wealth than those with bank-based financial systems; and that the size of the wealth effects appears to be rising over time, probably reflecting financial deregulation.

Keywords: Wealth effects, household wealth, consumption, stock ownership, housing.

JEL codes: E20, E44.