

07

De Nederlandsche Bank

*Overview of Financial
Stability in the Netherlands*

September 2007, Issue No. 6

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Edition: 450

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Contents

Introduction 4

1 Developments in the international environment 5

Box 1 - The emergence of sovereign-wealth funds: implications for financial stability 6

Box 2 - The role of credit rating agencies in structured credit markets 10

2 Dutch companies and households 12

3 Dutch financial institutions 16

Box 3 - Securitisation and monetary policy 17

Box 4 - CRT and the stability of financial institutions 18

4 Infrastructure and institutional developments 23

Box 5 - The impact of an operational disruption in TOP 24

5 Conclusion 27

Introduction

Our assessment of financial stability in the Netherlands is less positive than six months ago. Some of the risks that had been prevailing for some time, as described in previous OFS publications, recently materialised. This pertains to the increased vulnerability of the financial system to an abrupt reversal in risk tolerance among market participants and in the favourable financing conditions, which until recently formed the backdrop for a persistent search for yield, together with a sharply increased leverage in the system and signs of slackening discipline in risk management.¹ The problems in the subprime segment of the US mortgage market, first identified last spring, have now generated much wider unrest and a reversal in risk tolerance. This is reflected in various markets, with spillover effects to financial institutions and possibly to the real economy. Given the dynamics associated with such turbulences, and the uncertainty about their duration and strength, we could obviously not present a fully crystallised picture of the ultimate consequences when finalising this OFS.²

Leaving aside recent turbulences, the Dutch financial sector benefited from reasonably benign macroeconomic conditions in the first half of 2007. The robust growth of the global economy continued; the euro area outlook improved, with some cyclical tensions surfacing in the Netherlands. In addition, the US current account deficit has narrowed for the first time in many years. Coupled with gradual dollar depreciation, this appears to have reduced the likelihood of a disorderly correction of global balance-of-payments imbalances. Given the substantial buffers of Dutch financial institutions, this inspires confidence in the stability of the Dutch financial system.

This OFS discusses the main risks to financial stability in the Netherlands, looking successively at developments in the international environment, the real economy, financial institutions, financial infrastructure and in the institutional arena. Drawing on a scenario analysis, the OFS also investigates the impact of various risk factors on our financial system, comparing a baseline scenario to an unfavourable alternative scenario. The OFS also explores the potential impact of assumed specific shocks, such as the emergence of serious disruptions in the markets for credit risk transfer and the fall out of a major player in the payment system. Finally, the OFS reflects on the challenges for supervision and crisis management in an environment of ongoing consolidation in the financial sector.

I Developments in the international environment

According to the most recent projections of the IMF, global economic growth is expected at just over 5% this year.³ Moreover, the growth differentials between the major economic regions have narrowed, while the US current account deficit has declined. Following the persistent search for yield over the past few years, reflecting the historically low bond yields, signs of a serious reversal in sentiment could be observed recently. The increased risk aversion stems from the turbulence in the subprime segment of the US mortgage market and can now also be observed in other markets. The upward trend in interest rates, combined with increased uncertainty about the value of underlying assets in structured credit products and the positions that counterparties hold in them, culminated in August in a more substantial correction in the financial markets and to a liquidity crunch in various (credit) markets as well as the interbank money markets. If the fall in risk tolerance continues, the search-for-yield phenomenon, which dominated market sentiment in recent years, may make way for a strong preference for lower-risk investments.

From search for yield to flight to quality

International economy

The US current account deficit is to narrow this year, reaching an expected 6.0% of GDP (down from 6.4% last year). Since the deficit had been widening for more than a decade, this would represent a significant trend reversal. Given the lower growth differentials worldwide and the gradual but substantial dollar depreciation, the global balance-of-payment imbalances appear to be easing slightly.

Global balance-of-payments imbalances are easing...

Nonetheless, the current size of the US deficit remains a major source of vulnerability for the financial system. The financing of the deficit has gradually shifted from sovereign bonds to riskier forms of investment, making it more sensitive to changes in market sentiment. In addition, since more than 70% of the financing stems from China and the oil-producing countries, the balance-of-payments imbalances have become more sensitive to changes in the management of these countries' official reserves. In this respect, the increasing importance of the so-called sovereign-wealth funds merits attention (see Box 1). Among other things, it would be desirable to enhance the transparency of these entities' investment policies.

... although disorderly correction still possible

Financial markets

The global financial markets were startled early this year by problems in the subprime segment of the US mortgage market. These problems arose against the background of bond yields that had been rising since 2005, despite a decline since mid-July (Chart 1). In this environment of upward interest rates and falling house prices, increasing repayment problems among less creditworthy households have led to a sharp rise in risk premiums in this credit market and to serious losses for market participants, including some hedge funds and banks.

The full impact of the crisis in the subprime market will not emerge for some time until the extent and spread of the losses becomes clearer. But it is obvious that the

Box 1 - The emergence of sovereign-wealth funds: implications for financial stability?¹²

The role of sovereign-wealth funds (SWFs) is in the spotlight now that China – the world’s largest holder of foreign exchange reserves – has announced its intention to reinvest part of its official reserves in high-yielding assets. Almost a quarter of Chinese foreign exchange reserves has been transferred to a fund that aims to invest in riskier markets such as private equity, hedge funds, complex credit products and emerging economies. The increasing importance of SWFs raises the question as to their consequences for the financial system.

SWFs are major market players: the combined assets in the ten largest funds amount to as much as one-and-a-half times the estimated size of global investments in hedge funds. The current front runners are the oil-exporting countries from the Middle East, with a combined invested capital of around USD 1300 billion (see Table), close on twenty times their official currency reserves. Judging by this ratio, notably Asia appears to have plenty of scope for channelling reserves to SWFs.

The emergence of SWFs offers potential investment benefits, but also harbours risks for the financial system, stemming mainly from these funds’ lack of transparency. Financial markets generally have little insight into their investment policies, generating uncertainty as to these funds’ behaviour. Such uncertainty would be exacerbated if the suspicion arose that decisions were not solely based on economic investment considerations but were also politically motivated. The abrupt release of information on SWFs might then cause market inefficiencies or market turbulence. Greater transparency with regard to investment policies is thus desirable.

A second risk is that the emergence of SWFs could result in a massive shift of investments from foreign – particularly American – treasury bonds, putting pressure on bond prices. Such a move to riskier assets, and the consequent further rise in interest rates, could precipitate a reversal in the current credit cycle. It is therefore desirable that changes in the investment policy take place gradually, and if the aforementioned greater transparency is afforded, the volatility in market perception could be contained.

Thirdly, the SWFs’ appetite for investment – whether in new, riskier markets or elsewhere – may structurally push up asset prices and put further pressure on returns. Other investors will then earn structurally lower returns, possibly prompting them to compensate by taking on more risk.

Finally, the SWFs investment policies could result in protectionism, for example in the case of (alleged, large-scale) acquisitions of foreign enterprises. This is especially an issue if the enterprises in question operate in strategic sectors and if any suspicions arise that investment policies are partly driven by political motives.¹³

A relevant question is the extent to which conditions can be imposed on these funds. One avenue could be to adopt the principle of reciprocity, requiring consideration of the options for foreign enterprises to operate in the home country of the SWF in question. The funds could also be encouraged to observe greater openness and give more insight into their investment policies. International institutions such as the IMF and the World Bank could play a more prominent role in promoting better disclosure and compliance with standards and best practices among SWFs.

Sovereign-wealth funds and official reserves

USD billion¹

	SWF	Official Reserves	Ratio (SWF/res)
Asia, total			0,2
Singapore	430	137	3
China	300 ²	1200	0,25
Japan	n.a. ²	900	-
South Korea	20	239	0,08
Malaysia	18	82	0,2
Taiwan	15	268	0,06
Middle-East, total			19
United Arab Emirates	875	25	35
Saudi Arabia	300	27	11
Kuwait	70	13	5
Brunei	30	1	30
Other emerging markets			
Russia	140	296	0,5
Developed countries			
Norway	300	57	5,3
US ³	35	55	0,6
Euro area	none	199	n.a.

Sources: IMF en Morgan Stanley.

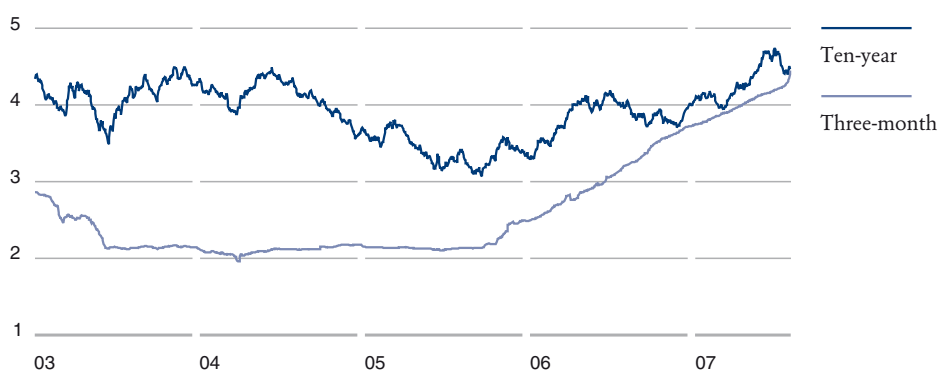
¹ Estimates for 2006.

² China and Japan have announced their intention to create an SWF.

³ The SWF is the Alaska Permanent Reserve Fund.

Chart 1 Euro area interest rates

Percentages (daily data)



Source: Datastream.

Turbulence in American subprime market fans out

crisis is also impacting on related markets, such as those for loans to less creditworthy corporates and for structured (credit) products (Chart 2). Since many subprime mortgages have been included in structured products, some credit rating agencies have lowered their ratings for the latter (see below). Moreover, the effects could become more widespread as the crisis could further reduce risk tolerance among market participants more generally. Risk premiums on corporate bonds have been rising recently, as has the volatility of equity prices (Chart 3). The liquidity squeeze in various (credit) markets and the interbank money market in mid-August can also be linked to spillover effects from the subprime crisis. After a number of market participants, also in Europe, announced that they had been directly or indirectly affected by this crisis, certain financing options (such as the market for asset-backed commercial paper) dried up, making banks warier of issuing credit or taking on riskier exposures. The liquidity crunch in the interbank money markets triggered extensive injections by the Eurosystem, the Fed and other central banks – of similar magnitude to their operations in September 2001.

Rapidly expanded LBO market

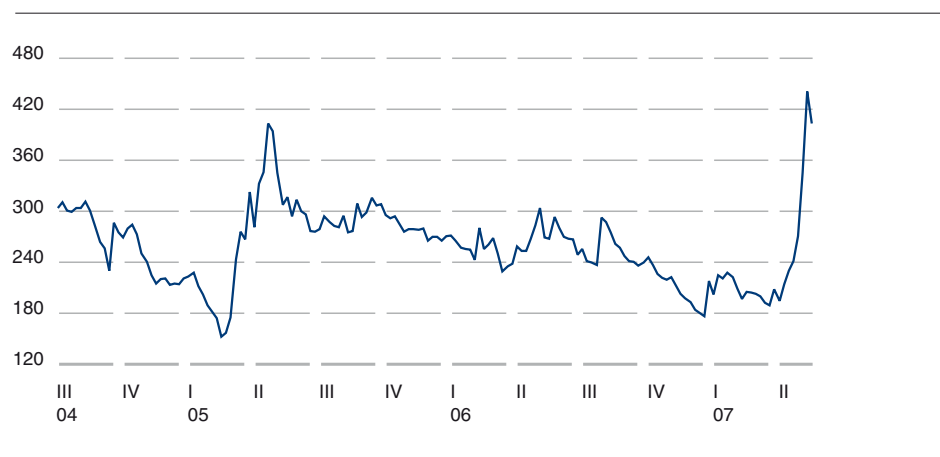
The high risk tolerance among market participants over the past few years has been partly reflected in greater leverage in the financial system, which in the event of market corrections can result in more contagion risk and the evaporation of liquidity. The leveraged loan market has expanded briskly, fuelled by strong growth in leveraged buy-out (LBO) activities. The previous OFS already highlighted the increase in both the debt component and the risk level of such transactions, as shown in, among other things, looser loan covenants and lower risk premiums.⁴ The tide appears to have turned recently, however, as investors are becoming more demanding and have less appetite for risk. Banks acting as lender in such transactions are finding it increasingly difficult to sell these loans on to investors. Banks are therefore left with these loans on their balance sheets, while the willingness to finance LBOs has declined. Some major acquisition transactions and loan placements in the market recently came to a standstill.

Strong growth in CRT market has generated new risks

The greater leverage was coupled with an explosive increase in the trade in credit risk. In the second half of 2006, the size of the Credit Risk Transfer (CRT) market expanded by a third to reach USD 34.5 trillion. New instruments have been developed over the past few years, including credit derivative indices and structured products such as Collateralised Debt Obligations (CDOs). Such instruments are highly complex, while their shock resistance to liquidity has hardly been seriously tested:

Chart 2 Risk premiums CDS market

iTraxx Europe crossover index, weekly data

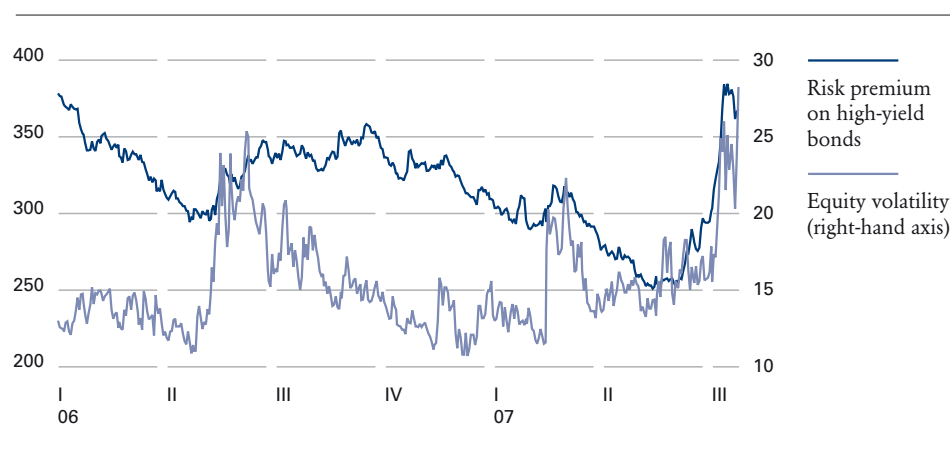


Explanatory note: The iTraxx index is a measure for the costs of buying credit protection, based on a group of less creditworthy European enterprises.

Source: Bloomberg.

Chart 3 Euro area credit spreads and equity volatility

Eurogebied



Source: Datastream.

a problem that is now clearly materializing. One reason why investors have until recently shown interest in structured products is the higher expected returns relative to bonds with a similar rating, based in part on the use of embedded leverage in many structured products.⁵

Investors in complex credit products heavily depend on credit rating agencies for their risk assessment. It should be borne in mind that ratings are generally limited to an assessment of creditworthiness and take little account of vulnerability to deteriorating market and liquidity conditions. Investors should be sufficiently aware of the scope of ratings. It is also vital that ratings are sufficiently reliable and do not generate a false sense of security (see Box 2). Owing to data limitations and model risk, incorrect assumptions can mean the ratings for structured credit products need to be abruptly adjusted in stress situations, possibly resulting in sales (or in some cases forced sales) that reinforce price corrections that have already set in. The use of ratings by financial institutions is hence an important issue in DNB's ongoing supervision.

Risk assessment of CRT products vulnerable

Hedge funds

The recent market unrest underlines the increased importance of hedge funds in the CRT market and the crucial role they can play – partly due to their limited transparency – in translating turbulences in a submarket to a more general market upheaval. The potential implications of hedge funds' activities for financial stability are at the forefront of policymakers' minds. Following consultations with the private sector, DNB recently issued a policy rule setting out key principles for assessing the risk management of alternative investments (hedge funds, private equity, etc.) carried out by institutional investors.⁶ At the G7's request, the Financial Stability Forum (FSF) updated its report on highly leveraged institutions – notably hedge funds – last spring. It reiterates the importance of transparency and the exchange of information between the (market) participants involved in managing hedge funds' related risks. The report makes policy recommendations geared to strengthening the risk management of financial institutions and fostering market discipline and prudent conduct among hedge funds. It does not deal with other financial stability aspects of hedge fund activities, such as market integrity and the risks attached to shareholder activism in case of financial institutions. A number of British hedge fund managers have since announced a best practices review by the sector.

FSF report makes recommendations for hedge funds

Box 2 - The role of credit rating agencies in structured credit markets

Structured (credit) products allow risks to be transferred: assets are pooled, and the ensuing pools are used as collateral for securities issued. Credit rating agencies (CRAs) fulfil a crucial role in the assessment of these instruments' structure and risk profile, and the acceptance of new products by investors. The past few years have seen a material increase in the number and complexity of structured products. So far, the CRAs have reacted directly and flexibly to the soaring demand for ratings of these innovative structures by providing information on these instruments' credit risk and structural characteristics, including legal risks. In addition, they have enhanced the transparency of their rating rules and procedures.

Although structured products can have a stabilising effect in favourable conditions, they may, in the event of an abrupt reversal in confidence and liquidity conditions, be downgraded much faster than instruments such as corporate bonds.¹⁴ It should be kept in mind that the rating agencies had to downgrade their ratings of new securities collateralised by subprime mortgages, when mortgage arrears proved more widespread than initially estimated. This indicates that the assumptions underlying the ratings may have been incorrect. Moreover, the possibilities for financial institutions to transfer risk may be rapidly drying up; in extreme situations this could lead to systemic risk.

CRAs acknowledge the limitations of their ratings and emphasise that the usefulness of a credit rating depends in part on the motives underlying an investor's purchase of a structured product. As a rating is usually based on the estimated average credit risk profile over the instrument's life as a whole, its accuracy is the greatest for a product held over the entire period. However, if these products are marked to market and traded within a short horizon, the credit ratings become less meaningful, notably because shorter-term market and liquidity risks can have a profound impact. Assessing these risks is tricky, because data availability on structured product markets is as yet limited.

Concrete challenges facing those assessing risk are i) market risks concealed in risk concentrations, causing expected losses to be underestimated, ii) risk correlation between pools of structured products during financial market distress and/or an economic downturn, and iii) model risk and the fact that ratings are mostly based on historical data.

The rapid innovation and growing complexity of these instruments also raise the question whether investors fully realise which risks may be relevant and to what limitations ratings are subject. Investors would do well to be prudent and to take the trouble to understand the methods used by CRAs and the risks inherent to these instruments. CRAs obviously have a responsibility as well: they must be transparent about their methods. This could also prevent potential conflicts of interest between the issuing institutions – which apply and pay for the ratings – and the investors.

Financial stability scenarios

Scenario analysis is an essential tool for quantifying the combined impact of different risk factors. Moreover, it is the basis for stress tests, which gauge the consequences of risks for Dutch financial institutions (see Chapter 3). The challenge is to develop macro-scenarios which can be used as a starting point for more extreme tail events and second round effects.⁷ Besides the baseline scenario, this OFS sets

out a single, less favourable, alternative scenario. Chapters 3 and 4 also present two specific stress simulations: a serious disruption in the CRT market and the fall out of a major player in the payment system.

In the baseline scenario, both short-term and long-term interest rates in Europe climb gradually, with a more or less flat yield curve being assumed for the entire period.⁸ In contrast, the base path in the US assumes a fall in monetary policy rates, whereas the long-term interest rate remains virtually stable. This scenario assumes a soft landing of the US economy: the dollar depreciates slightly and the current account deficit gradually narrows. GDP growth in the US is assumed to outpace the euro area throughout the whole period. In this baseline scenario, growth in the Netherlands is higher than in the euro area as a whole.

Baseline scenario: soft landing in the US

The alternative scenario⁹ (Table 1) has much in common with the global correction scenario in the OFS of March 2007, the main difference being that, alongside sharply rising bond yields in the US, this scenario now assumes a fall (rather than a rise) in European bond yields. The point of departure is a sudden loss of confidence among investors with regard to the financing of the US current account deficit. This is immediately reflected in a worldwide decline in equity prices by 25% and the drying-up of capital flows to the US, resulting in a gradual depreciation of the trade-weighted dollar exchange rate by 18%.¹⁰ This depreciation takes place within six months, after which the exchange rate remains stable. At the same time there is a flight to quality to the euro area which acts as a safe haven. The trade-weighted euro exchange rate consequently appreciates by almost 13%,¹¹ gradually pushing up US bond yields by 230 basis points. The more generous liquidity conditions in the euro area are reflected in a gradual decline in bond yields, inverting the yield curve. After three quarters, European and US bond yields begin to steadily converge. Higher bond yields in the US lead to a total fall in house prices of 20%.

Alternative scenario: global correction...

... hits the Netherlands hard

The alternative scenario results in a sharp downturn in global economic growth, severely hitting the Netherlands as an open economy: after three years, GDP volume is more than five per cent lower than in the baseline scenario, revealing the stronger impact on the Netherlands than on the euro area as a whole. After some time, the economic slowdown manifests itself in falling housing prices in the euro area and the Netherlands. The US suffers telling blows too: although exports initially pick up on the back of the dollar depreciation, the negative wealth effects predominate. Although the current account deficit improves by two percentage points of GDP in this simulation, it falls short of what is needed to reach a balanced position. Chapter 3 looks at the consequences of the alternative scenario for Dutch banks and pension funds.

Table 1 Macro effects of alternative scenario

Cumulative effects after 1 and 3 years for the Netherlands, percentage difference on baseline path, unless indicated otherwise.

	Year 1	Year 3
GDP volume	-2.5	-5.3
Inflation	-2.0	-6.4
Bond yields ¹	-1.1	-0.1
Exchange rate ²	12.8	12.8
Share prices	-25.0	-32.1
House prices	4.9	-7.0

¹ A negative sign means depreciation of the euro.

² Absolute difference on baseline path.

Source: DNB calculations on the basis of MORMON and NIESR.

2 Dutch companies and households

Economic recovery The economic recovery in the euro area is clearly making itself felt in the Netherlands.¹⁵ The favourable cyclical conditions are reflected in historically high consumer and producer confidence. In spite of the growing cyclical tensions, wages and inflation have risen only slightly so far.

Companies

Although the profits of Dutch companies were slow to recover from the latest downturn, several indicators are already pointing at flattening profit growth. Take, for example, the rise in the labour income ratio last year. Profitability remains at a high level though, translating into ample liquidity for companies. Furthermore, business failures are on the decrease (Chart 4) in all sectors except the catering industry.

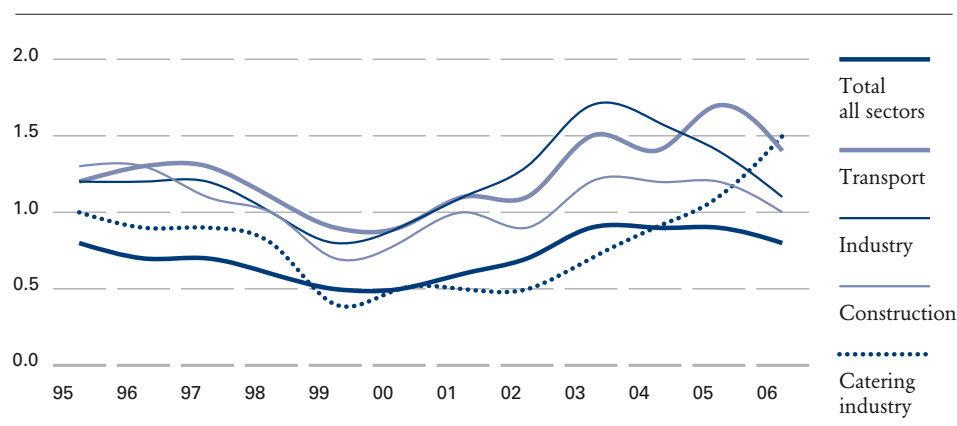
Driven by the favourable prospects, the growth of bank lending to companies accelerated last year to the highest level in years. However, over the past few quarters, it has weakened somewhat (Chart 5), while there has been a shift towards longer maturities, prompted in part by the interest rate hike. Last year, bond financing was up again, with Dutch companies issuing nearly 60% more bond debt in 2006 than the year before; for the first time since 2001, net issues were positive again. Demand for equity financing remains low, with last year's emissions accounting for less than EUR 1 billion, compared to over EUR 11 billion in 2001.

Aggressive M&A financing

In spite of accelerating credit growth, the solvency of the business sector has barely been affected, while total debt as a percentage of GDP also remains below the peak recorded in 2001 (Chart 6). Nevertheless, some companies are sensitive to a reversal of the credit cycle, especially those with a heavy M&A-induced debt burden. The growing involvement of private equity funds – accounting for over half the total transaction value in the Netherlands last year – is one of the factors contributing to

Chart 4 Ratio of business failures, by sector¹

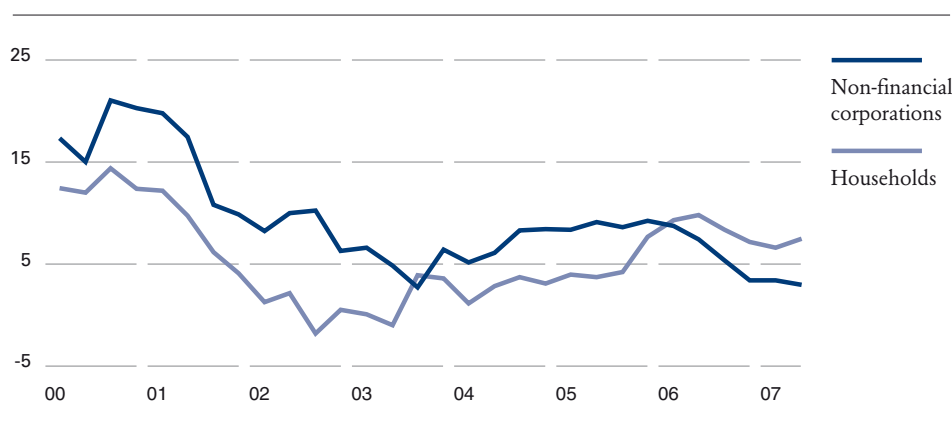
Per cent of total number of companies per sector



¹ Non-financial corporations whose size is known.
Source: Statistics Netherlands.

Chart 5 Growth of bank lending

Percentage change from corresponding quarter previous year



Source: DNB.

aggressive M&A financing. A recent study shows that where a debt/profit ratio of three used to be considered aggressive financing, that now goes for a ratio of five.¹⁶

In recent years, M&A activities have been driven to a considerable extent by the ample supply of liquidity. Under such circumstances, acquisition premiums and the share prices of the companies involved may well be pushed to excessive levels, culminating in an asset bubble. In a climate of high risk tolerance, investors and lenders may remain willing to finance such transactions for a long time, in line with the search for yield phenomenon of the past years. However, the recently waning risk tolerance (see Chapter 1) could precipitate a reversal in access to (re)financing, enhancing the vulnerability of the companies concerned.

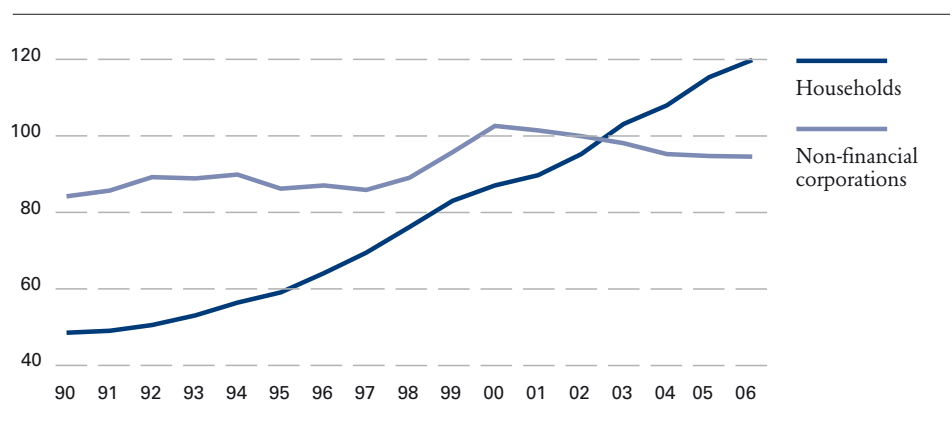
Households

So far, households are also benefiting from the favourable cyclical conditions. Their net asset position has improved substantially in the past few years, mainly as a result of the continuing rise in equity and house prices (Table 2). But these capital gains are eclipsing the increase in indebtedness, which is also at an historical high (Chart 6). The latter is accounted for mainly by mortgage debt. At the same time, the mortgage market has reached calmer waters – as evidenced by decreasing credit growth in recent quarters – due to the interest rate rise.

Historical highs for assets and debt

Chart 6 Debt ratio non-financial corporations and households

Total debt as percentage of GDP



Source: Statistics Netherlands.

Table 2 Household assets¹

Percentages of disposable household income

	1998	2002	2005	2006
Liquid financial assets	194	170	203	219
Equity holdings	79	51	66	76
Savings	61	64	80	85
Other	53	55	57	58
Home ownership	267	377	423	453
Other possessions	72	63	67	67
Total gross assets	537	610	692	740
Debts	140	174	223	245
Net assets	393	436	469	495

¹ Excluding pension assets.

Source: Netherlands Bureau for Economic Policy Analysis.

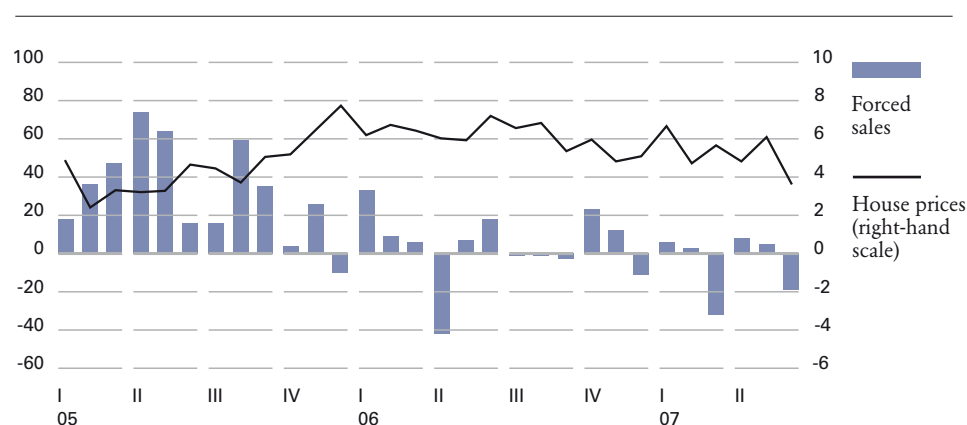
*Code of Conduct for
Mortgage Lenders important*

The chances of problems on the Dutch mortgage market similar to those on the American mortgage market are considered slight, because the Netherlands does not have a comparable subprime segment. Payment problems are as yet limited: the number of defaults on mortgages (guaranteed under a national scheme) did increase by one third last year, but, at EUR 28 million, the ensuing loss remains very modest. Moreover, the number of forced house sales has not gone up in recent months (Chart 7).

Should conditions deteriorate in that interest rates rise further or recession sets in, an increasing number of home owners could obviously run up into payment problems. Notably households with a relatively large debt and a high interest burden – as set against their income and assets – and a short term interest rate fixation would be vulnerable. The risks are concentrated among younger households, which include many first-time home buyers (Chart 8).¹⁷ Mortgage lenders should take special care when granting mortgages to this specific risk group. To this end, a Code of Conduct for Mortgage Lenders was drawn up, prescribing a number of constraints for those

Chart 7 House prices and forced sales

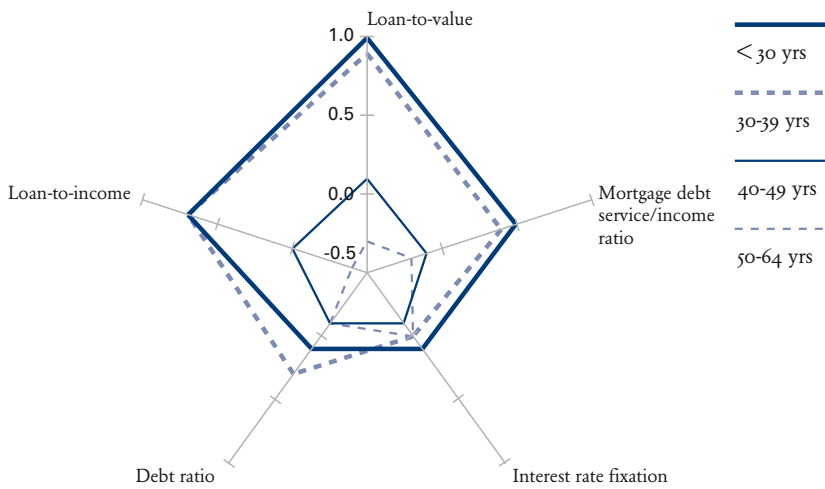
Percentage change from corresponding month previous year



Source: Land Register.

Chart 8 Risk profile households by age category

Number of standard deviations from the population mean



Source: DNB Household Survey 2006.

offering mortgage products. Compliance with the Code, which was tightened early this year, should be closely monitored. Inadequate compliance will not only add to the risks, but detract from the level playing field for mortgage lenders, as those who do not adhere to the Code have an unfair competitive edge on those who do.

3 Dutch financial institutions

Over the past six months, the financial sector benefited from economic growth against a background of gradually increasing interest rates. The main downward risk is a further decline in risk tolerance among market participants, which might lead to a disorderly correction of the prevailing imbalances within the global financial system. As yet, it is impossible to fully assess the extent to which the Dutch financial sector could suffer from a broader pass-through of the American subprime crises as described in Chapter 1. Developments are being closely monitored by DNB.

The direct exposures of Dutch banks, insurers and pension funds to the American subprime mortgage market seem relatively limited, although the rating of a smaller Dutch bank was downgraded by Moody's following its announcement of write-downs on investments in the American subprime market. But the recent market turbulence has also made clear that contagion can take place indirectly, in a manner hard to quantify. Banks can, for instance, run counterparty risks as a result of credit lines granted to (mortgage) banks, hedge funds and other entities which may have large direct exposures. Banks can also run liquidity risks when certain financing possibilities dry up.¹⁸ Moreover, the turbulence in the American subprime market is feeding through to other financial markets and hence to the investment results and commission income of Dutch financial institutions. In addition, institutions may run reputation risk when offering, say, (investment funds in) structured credit products, with the result that risks which were thought to have been transferred to other investors could backfire.

Banks

Interest rate margins depressed

The margins in traditional lending operations have been depressed for some time by strong competition and a flat yield curve (Chart 9). In spite of disappointing interest income, the operating results of the consolidated Dutch banking sector remained on course in the first two quarters of this year. Moreover, capital ratios remain high.

In the past few quarters, the flat yield curve prompted several banks to expand their long-term financing by issuing bonds. Moreover, for a while now, some banks have been seeking to compensate their contracting interest rate margins by expanding their credit volumes. In specific segments, such as the financing of leveraged buy-outs (LBOs), this development was attended by an easing of acceptance criteria (see Chapter 1). This has made them more vulnerable to a reversal in sentiments in the credit markets, such as that currently unfolding.

In ten years' time, the level of credit securitisation has gone from almost nil to nearly EUR 190 billion in early 2007.¹⁹ This corresponds with the accelerating growth of the CRT market observed in Chapter 1. Securitisation may also stimulate extra credit growth (see Boxes 3 and 4). So, the increased tradability of bank loans has implications for monetary policy. For one thing, it alters the role of banks in the transmission process, as changes in policy rates now feed through faster to other interest rates.

Chart 9 Euro area yield curve

Per cent (ten-year bond yield minus three-month interest rate, daily figures)



Source: Datastream.

Insurers and pension funds

Thanks in part to higher return on equities, the financial position of the insurance sector saw a positive development in 2006. Non-life insurers and re-insurers bene-

Favourable development for insurers

Box 3 - Securitisation and monetary policy²⁵

The increased tradability of loans and credit risks is relevant for monetary policy. The main implications relate to the transmission of changes in monetary policy rates into market rates and to the size and measurement of credit growth.

A change in monetary policy rates takes time to feed through to commercial banks' lending rates. Securitisation may enhance the transmission because this financial innovation strengthens banks' balance sheets. This allows for lower marginal costs of lending, and hence, in a competitive environment, for lower interest rate margins. Banks will consequently be more inclined to pass fluctuations in market rates on in their lending rates. In the US, there are clear indications that the more banks engage in credit securitisation, the stronger the pass-through of central bank interest rate changes. In the euro area, this effect has been limited so far because of the relatively modest volume of securitisation. A recent ECB study shows, however, that the link between market rates and bank lending rates is stronger in EU Member States where banks are relatively more engaged in credit securitisation.²⁶

Securitisation may also stimulate the volume of lending. Banks release capital by selling securitised loans, thus reducing the restricted nature of minimum capital requirements imposed by supervisors. The transfer of credit risks alleviates a potentially important financial limitation on banks, creating room for new lending. An indication for this development is the strong expansion, in recent years, of bank lending in Member States where securitisation is relatively important.

Finally, securitisation depresses the credit growth reported by banks. In true-sale securitisations, loans are removed from banks' balance sheets. The expansion of euro area bank lending is consequently estimated to be 1 percentage point higher than reported by the banks. In the Netherlands, which is in the vanguard of credit securitisation in the euro area, the discrepancy is even greater at around 2 percentage points. As banks tend to engage increasingly in credit securitisation, there is a growing need for adjustment of these statistics.

Box 4 - CRT and the stability of financial institutions²⁷

In the past ten years, securitisation by Dutch financial institutions expanded from zero to close on EUR 190 billion. This mainly took the form of true sale transactions but also involved synthetic securitisations via asset backed securities (ABS). For the most part, mortgage loans are securitised. The credit risk on corporate bonds is generally transferred via credit derivatives (credit default swaps, CDS). At end-2006, the three major Dutch banks had bought just over EUR 700 billion in credit protection and had sold around the same amount. This magnitude is equivalent to almost a quarter of the Dutch banking sector's consolidated balance sheet.

Although non-regulated entities such as hedge funds are major players in the credit derivatives trade (with a share of around 30% according to the British Bankers' Association), the Dutch banks which trade credit risk mainly do business with other banks, usually large foreign merchant banks. Insurers and pension funds play a role as investors in securitised assets, seeing credit risk as an alternative investment category. At present, these investments are still modest, but there is a noticeable upward trend. A case in point is the credit tranche sold by ABN AMRO to PGGM earlier this year.

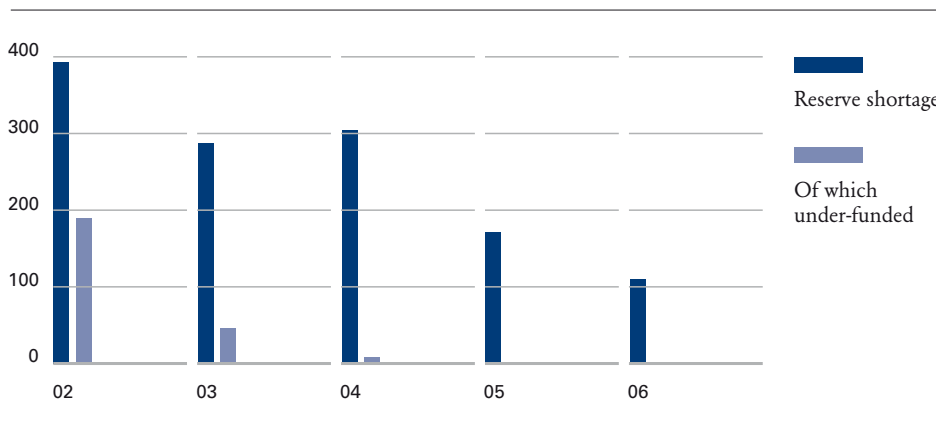
Credit risk transfer gives financial institutions more flexibility in their business operations but also entail risks. Banks have become more dependent on the credit markets for their income and their balance sheet and liquidity management. In the event of a reversal in market conditions and growing risk aversion among investors, banks could be left with risks which they had assumed were transferable. This risk has recently materialised with the drying-up of certain segments of the credit risk market. Moreover, lenders may be inclined to issue riskier and less liquid loans, since it is assumed that the underlying risks can be sold on. This occurred in the American market for risky (subprime) mortgage loans, which soared because they were marketable. Finally, the marketability of credit may undermine the risk management of outstanding loans, since lenders feel they are less vulnerable to credit risk. Various studies confirm that credit risk transfer may involve higher risks for banks.²⁸ In order to control the stability risks attached to credit risk transfer, DNB is fostering adequate risk management of financial institutions.

fitted from selective risk acceptance and lower-than-expected claims. However, the rise in the premium volume of life insurers in 2006 has reversed this year, due in part to the declining popularity of investment insurance products. As in 2006, not all health care insurance premiums are cost-effective this year, so that the sector as a whole will continue to incur a loss.

The pension funds' capital adequacy has continued to improve since the previous OFS, and is, on average, sufficient to cover their real liabilities. At end-2006, no pension fund faced under-funding, and the number of pension funds with a reserve shortage had declined further (Chart 10). About half the improvement recorded since 2005 is accounted for by a rise in bond yields, illustrating that pension fund balance sheets remain highly sensitive to interest rates. The marked recovery of many pension funds may offer them opportunities to (further) reduce their interest rate risk. Over the past few years, they have done so to some extent by extending the duration of their fixed-income portfolios by, on average, one year. Interestingly, this was done notably by medium-sized pension funds. The range of suitable financial instruments may not suffice for the largest pension funds, while smaller funds may lack the expertise for – as well as the access to – the interest rate derivatives often used for this purpose.

Chart 10 Recovery pension funds

Number of pension funds with recovery plans



Bron: DNB.

To facilitate the position of the Dutch pension sector on the European market, the Government has decided to introduce a General Pension Institution (Dutch abbreviation: API). An API is subject to other requirements than a pension fund, for instance with regard to the executive structure, opportunities for ringfencing and the demarcation of operations vis-à-vis insurers.²⁰ The API is introduced in anticipation of the expected cross-border consolidation of this traditionally nationally-oriented sector. A major stimulus is the European Pensions Directive, facilitating the creation of pan-European pension funds. The API model may be a useful instrument in facing the expected international competition in the pension sector. Care must be taken, however, to ensure that the strengths of the Dutch pension system are not watered down by supervisory arbitrage and less solid schemes. Furthermore, the differences between pension models should be made sufficiently transparent for stakeholders.

Pension funds recover further

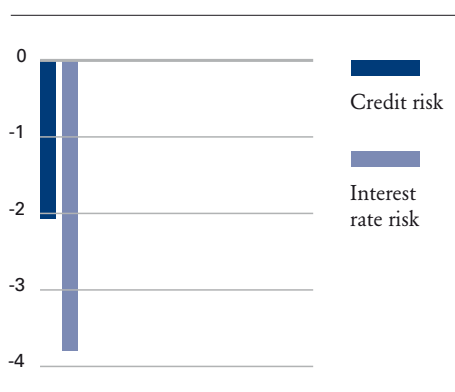
Resilience under scenarios

Chapter 1 of this OFS describes a baseline scenario and an alternative, unfavourable scenario. This section discusses the consequences of the unfavourable scenario for banks and pension funds.²¹

Impact on banks and pension funds

Chart 11 Impact of alternative scenario on bank results

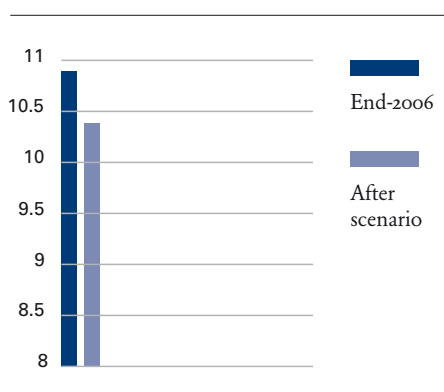
EUR billion, deviation from baseline scenario after three years, cumulative



Source: DNB.

Chart 12 Capital adequacy ratio Dutch banks

Per cent



Source: DNB.

Banks

The contracting GDP growth in the unfavourable scenario causes credit quality to deteriorate. DNB model calculations put the cumulative losses for the Dutch banking system at over EUR 2 billion. A further loss of nearly EUR 4 billion would be incurred on interest rate risk (see Chart 11). These losses are the result of (i) the reduced credit volume ensuing from the cyclical downturn and (ii) the declining credit margin resulting from falling long-term rates and constant short-term rates. The losses, totalling nearly EUR 6 billion – over one-third of combined annual profits –, would lower the capital adequacy ratio from 10.9% to 10.4%. According to the model outcomes, the Dutch banking system would continue to amply meet the minimum capital adequacy requirements even under such a shock (see Chart 12).

Pension funds

Chart 13 shows the link between the pension funds' funding ratio and bond yields. It presents the outcomes of both the baseline and the alternative scenario, and shows the funding ratio after one year and after three years. The alternative scenario is unfavourable for pension funds. Its outcomes illustrate the sensitivity of the funding ratio to market sentiments, and especially to changes in bond yields. The combined effect of lower European bond yields (-1.1 percentage points after one year) and lower share prices (-25% after one year) is reflected initially in a sharp fall in the funding ratio. Although there is no subsequent recovery of the equity markets, the funding ratio improves (up to 133%) by a gradual rise in bond yields to more or less the initial level.

In conclusion

Looking at these outcomes, it must be kept in mind that second-round effects were not taken into account. In real life, financial institutions will, for instance, react to the simulated developments, creating an interaction with the financial markets and the real economy that is hard to model. The effects observed may hence be reinforced, depending on the degree to which the financial institutions can deal with the changing circumstances.²³

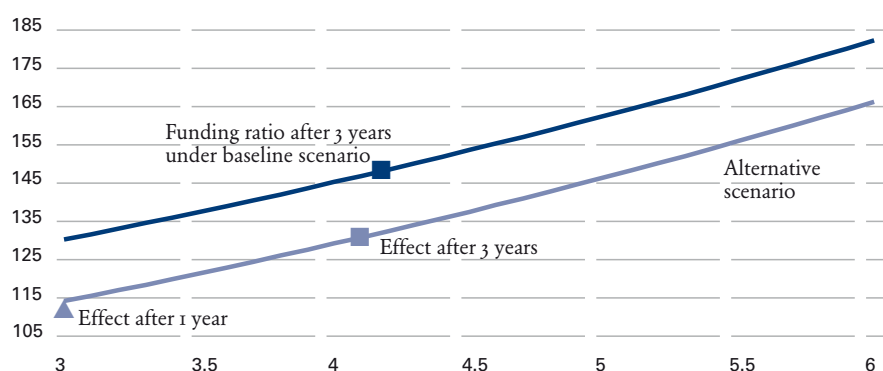
The alternative scenario also serves as a background to a more specific stress test simulating a serious disruption in the CRR market. The scenario was presented to a number of large Dutch financial institutions earlier this year and contains elements of the recent turbulence in the credit markets. It is assumed that liquidity in the credit markets dries up, that credit risk premia go up, and some protection against credit risk falls away owing to, among other things, acute payment problems at the largest counterparty in the market for credit default swaps (CDS). The next OFS will discuss the outcomes of this stress scenario. The recent market turbulence, which has exposed a diversity of possible channels of contagion, again underscores the importance of scenario analyses and stress tests, but also indicates how difficult it is to quantify all sorts of indirect and second-round effects.

Consolidation/restructuring in the financial sector

The financial sector is characterised by accelerating consolidation. Notably, mergers and acquisitions are becoming increasingly cross-border in nature, as illustrated for the European banking system in Table 3. A striking example is the possible takeover and/or break-up of ABN Amro, a transaction which size and complexity are unprecedented in the financial sector. Consolidation is driven by various forces, such as shareholder influence, new supervisory requirements and regulations, competition and market liberalisation.

Chart 13 Influence scenarios on pension funds' funding ratios

Baseline scenario and alternative scenario (effects after 3 years)



Explanatory note: The line for the alternative scenario shows the influence of the negative equity shock under this scenario for various market rates.

Source: DNB.

There are major advantages to consolidation. The efficiency of financial intermediation can be enhanced by cost saving and economies of scale resulting from, for instance, better use of an integrated infrastructure. In addition, consolidation may contribute to more stable institutions, as a result of lower costs and diversification benefits.

At the same time, this process is not without concerns. Consolidation generates increasingly important junctions of large banks taking part in various payment and settlement systems. This is especially the case for large and complex financial institutions (LCFIS) forming ever more important links in the financial system, so that new, and system-relevant cross-border and cross-sector channels of contagion may emerge.

As a result, financial institutions operating in an environment of consolidation and shareholder activism are becoming more vulnerable to strategy risk. When the expansions of financial institutions – be it geographically or in terms of product market combinations – prove insufficiently profitable in the short term, these institutions may come under pressure to rethink their strategy. An example is the hive-off of insurance operations by some bank insurers.²⁴ When financial institutions embark

Table 3 Cross-border bank takeovers in Europe (1996-2006)

	Year	Target	Acquirer	Value (EUR million)
1	2005	HVB Group (Ger)	UniCredit (Ita)	15,371
2	2004	Abbey (UK)	Banco Santander (Sp)	13,853
3	2000	CCF (Fra)	HSBC (UK)	11,229
4	2006	BNL (Ita)	BNP Paribas (Fra)	9,000
5	2000	Bank Austria (Aus)	HVB Group (Ger)	7,169
6	2005	Banca Antonveneta (Ita)	ABN Amro (Neth)	5,865
7	2000	Unidanmark (Den)	Nordic Baltic Holding (Swe)	4,779
8	1997	Merita Oyl (Fin)	Nordbanken (Swe)	4,135
9	1997	BBL (Bel)	ING (Neth)	4,090
10	2006	Sampo Bank Group (Fin)	Danske Bank (Den)	4,050

Source: PwC.

on (fundamentally) new activities, which inevitably raise their overhead costs, there is a risk that their key financial ratios may deteriorate temporarily to which rating agencies, financial markets and shareholders could react (business risk). The advantages of diversification may sometimes be overestimated, as decreased risks often come with decreased average return. Moreover, in practice, the institution's senior management and its shareholders may disagree on the strategy's sustainability. As protection constructions were dismantled, shareholders have been given more clout to enforce strategy changes. Having a clear and – for market participants – credible strategy is therefore a *sine qua non* for financial institutions.

Chapter 4 discusses the institutional challenges entailed in the changes outlined for supervision, crisis management and corporate governance.

4 Infrastructure and institutional developments

The consolidation trend discussed in the previous Chapter also has consequences for the financial infrastructure, both for the payment infrastructure as well as for the institutional design of the financial system. One topical development is the more active role played by banks in equity clearing. Another issue given increasing attention is the resilience of critical systems. Payment systems are consequently subjected to stress-testing, while institutions' business continuity plans are tested with the aid of specific exercises. As for institutional design, it is worth noting the implications of financial integration for supervision on financial institutions.

Equity clearing at banks

The Markets in Financial Instruments Directive (MiFID), soon to be introduced, offers banks the possibility to act as central counterparty (CCP) for equity clearing.²⁹ A number of banks have already indicated their desire to offer CCP services or are already doing so on a modest scale. This has several advantages. For one, growing competition may boost the efficiency of the financial system, which should be reflected in lower fees for securities trading. In addition, CCP activities could contribute to the diversification of bank income.

Permission for banks to offer CCP services ...

The emergence of CCPs is confronting the authorities with new policy issues such as the alignment of oversight, prudential supervision and market conduct supervision. After all, both infrastructural systems and individual institutions are involved. Prudential aspects also play a role, such as an institution's exposure to a CCP, as well as aspects of conduct, such as transparent price-setting. One financial stability concern is that CCPs may be systemically relevant entities, so that the combination with banking might generate new channels of contagion. These could be operational in nature, for instance, when a bank and a CCP use the same systems; but financial or reputation damage can also be contagious.

... may generate new channels of contagion

Stress testing payments

With the aid of simulations, DNB is investigating the resilience of inter-bank payments (in TOP, the Dutch component of the European payment system, TARGET). The method was developed by the Finnish central bank and is now also used by various other central banks. The simulations are used to quantify the consequences of extreme scenarios. The premise is an operational disruption at a large bank, preventing it from processing more than just a few payments for a specific period of time. The aim is to determine to what extent other banks and possibly the financial system as a whole are impacted by this disturbance. The outcomes indicate under which circumstances banks become unable to effect payments, given their available collateral at DNB.

TOP's resilience simulated

The results show that the Dutch inter-bank system is fairly resistant to shocks (see Box 5). Only a very extreme operational disruption at a large player can impede the settlement of payments by other banks. The study does show, however, that the

Box 5 - The impact of an operational disruption in TOP

This box discusses the first outcomes of a number of simulations recently performed by DNB. The premise is an operational disruption at a large participant in TOP, reducing the value of outgoing payments by 5%, 10%, 25% or 50%. The impact of the shock is measured on the basis of the number of other banks affected and the value of non-settled payments in the system as a whole at the end of the day. The simulations are based on historical data. It is assumed that the shock does not make other banks change their payment behaviour. The available collateral held at the central bank remains constant for each bank.

The fewer the number of outgoing payments, the more banks are affected by the shock. When 50% of outgoing payments are not executed, at least three and at most eleven (small) banks out of a total of 100 institutions participating in TOP feel the impact. If the disruptions last not one, but ten days, at most 31 banks become unable to settle part of their payments.³¹ How many banks are affected depends on the specific (historical) day on which the simulation is based. It must be remembered that payment obligations vary from day to day, and hence the impact of the disruption. The consequences for the system as a whole may be considerable if, as a result of the disruption, more than a quarter of all outgoing payments cannot be executed. If 50% is affected, the value of all non-settled payments in the system totals EUR 0.4-5.4 billion at the end of the day. In the worst case, non-settled payments account for 3% of all payments in the system as a whole.

It must be noted that the simulation outcomes may be strongly influenced by any changes which the banks make to their payment behaviour in reaction to the shock. Other simulations show that if the banks temporarily suspend their payments to the bank facing operational difficulties, the value of the non-settled payments drops.³² Such behavioural reactions boost the payment system's resilience. However, the resilience of the system as a whole may be reduced, for instance, if the banks, unsure of what to do, also suspend their payments to banks without operational problems.

functioning of the largest player(s) is crucial to the system as a whole. The resilience of the banking system can be partly attributed to the large quantity of collateral held by Dutch banks. Incidentally, internationally operating banks may be holding less collateral in the future because they will be able to pool liquidity once they have migrated to the new European system (TARGET 2).

Business continuity

Worldwide, it is increasingly important that technical systems in the core financial infrastructure are meeting adequate standards. It is crucial that these systems can continue to function reasonably well in periods of crisis or operational disturbances. The human factor is now increasingly becoming the weakest link. In an earlier OFS, this was illustrated in the context of a flu pandemic.³⁰

Flu pandemic exercise in UK ...

Last year, a market-wide exercise was held in the UK, involving 70 institutions and 3,500 persons simulating a pandemic during a period of six weeks. The exercise offered participants the opportunity to test their own business continuity plans (BCPs) and, if necessary, update them. A number of sector-wide concerns emerged, such as unforeseen limitations on the possibilities of working at home (owing to

the limited availability of telecom services) and on consumer services (owing to the limited availability of cash dispensers). A major lesson drawn from this exercise is that much can be gained by a well-coordinated strategy.

Such crisis exercises are also held in the Netherlands. In June, DNB took part in the Shift Control exercise, simulating a large-scale disruption of ICT services affecting, among other things, retail payments. The main objective of this exercise - in which various ministries took part - was to achieve joint decision-making; the exercise highlighted the need for proper communication.

... and ICT disruption exercise in the Netherlands

A challenge in the European context is to gain greater insight into the efficacy of cross-border BCP arrangements when rules and procedures differ among countries.

Supervision and crisis management

The increasing integration of the European financial system – see the previous Chapter – implies that banking supervision is becoming increasingly cross-border in nature. This poses new challenges to the authorities involved in regular supervision and crisis management. Specific concerns are the division of tasks between home and host supervisors, preventing an undue supervisory burden for financial institutions, and ensuring that the authorities involved can act effectively and resolutely in a crisis. In this context, the guiding principle underlying banking supervision in the EU, i.e. home country control, is being worked out in more detail. Last year, a working group was set up under the Economic and Financial Committee (EFC) of the European Union to elaborate on the institutional framework for home country control. To enhance the authorities' ability to take action in a crisis, the European System of Central Banks (ESCB) is addressing crisis management. Early this year, EU regulators and central banks set up a task force to develop an easy accessible analytical framework to make rapid assessments of the consequences for the financial system and the real economy in crisis situations. This framework is intended to improve communications between stakeholders in a cross-border crisis situation.

New challenges for supervision and crisis management

Although closer cooperation within Europe is essential to financial integration, it must not be overdone and result in a jumble of rules and arrangements which would be counter-productive in crisis situations. Essential is the ability to deal flexibly with calamities, within the frameworks established in Europe, and to conclude concrete bilateral agreements – if necessary per institution. Last year, for example, DNB drew up a Memorandum of Understanding (MOU) with the Belgian central bank and regulator, concerning the two cross-border conglomerates (ING and Fortis) active and systemically relevant in both countries.

On a national level, crisis management is also on the agenda. This year, for instance, an MOU was concluded by DNB and the Ministry of Finance, containing agreements about the role of the two authorities with regard to financial stability and crisis management. Plans are to hold crisis exercises soon, both at home and with the Belgian authorities, to put the MOUs to the test.

Corporate governance

Last spring, the Frijns Committee issued an advice about the relationship between corporations and their shareholders. The advice includes elaborations of the Tabaksblat Code, as well as several recommendations to the legislator aimed at improving the dialogue between shareholders and executive boards. This follows a

Frijns Committee issues advice

period of greater activism on the part of shareholders – who have been given more influence under the Tabaksblat Code - which in some cases has led to conflicts with executive boards and other stakeholders.

The Committee recommends lowering the threshold for disclosure of interests from 5% to 3% and obliging shareholders with an interest of 3% or more to disclose their intentions. In addition, it proposes that the threshold for the right to put items on the agenda of shareholder meetings be raised from 1% to 3%, while the executive board should, under certain circumstances, be given time to respond. Moreover, there should be statutory provisions enabling the corporation to establish the identity of a shareholder, similar to the regulations already existing in France and the UK. The Committee further recommends examining how empty voting – i.e. the exercise of voting rights by someone who does not bear the economic risk of the interest involved – could be discouraged.

The Committee's advice – which has been largely endorsed by the Cabinet – alleviates some of the concern over shareholder activism and the proposed disclosure mechanisms may help to steer the dialogue between shareholders and executive boards. Another relevant question is whether the interests of those other than shareholders and the corporation are sufficiently addressed. Financial institutions, for instance, must meet specific conditions prescribed by law to protect the public interest – i.e. financial stability and, more specifically, the position of deposit holders.

5 Conclusion

The assessment of financial stability in the Netherlands is less favourable than in the previous OFS. Previously identified financial stability risks have intensified and some of them have recently materialised. The crisis in the American subprime market is negatively affecting market participants' risk tolerance, and hence the general finance conditions and a broad spectrum of financial markets. Potential contagion effects are stirred up by the increased leverage in the global financial system ensuing from the search for yield of the past few years. Moreover, the consolidation trend in the financial sector is generating challenges for supervision and crisis management.

On the other hand, the macro-economic prospects remain favourable, although it is as yet impossible to fully appreciate the possible impact of the recent market turbulence on the real economy. In addition, Dutch financial institutions have strong buffers to absorb possible setbacks, as illustrated by the outcomes of stress tests described in Chapter 3 of this OFS. Obviously, it is impossible to fully capture the market dynamism which manifests itself during periods of stress, as well as possible second-round effects on the real economy and the financial sector.

The crisis in the subprime segment of the American mortgage market and the ensuing developments in other parts of the financial system are putting the resilience of some fast-growing markets to the test. The outcome is as yet uncertain, but recent developments confirm how much more interdependent the financial system has become, with the result that unfavourable developments in one segment could set off a general deterioration of market sentiment. A specific concern is the valuation of complex, structured credit products, and the ratings on which some market participants rely so heavily. Some investors seem insufficiently aware that these ratings relate solely to credit risk, whereas they may also run liquidity and market risks, especially in crisis situations. The uncertainty surrounding the value of these illiquid products and the question which parties will ultimately bear the brunt seem a major factor in the recent reversal of market confidence.

The picture over the next few months will be determined in part by the degree to which the declining risk tolerance among investors will persist and continue to spread through the financial system. In this respect, the recent developments could portend a more fundamental correction leading to greater differentiation in price setting between riskier and less risky assets. In itself, such a fundamental correction may be wholesome from the perspective of financial stability, because it will reduce prevailing imbalances and boost risk awareness among market participants, at least temporarily. At the same time, there is a danger that such a correction unfolds in a disorderly manner, causing system-relevant stress, as evidenced by the developments in August.

As of yet, it is too early to assess the full impact of the recent market turbulence on the Dutch financial sector. Although the direct exposures of Dutch financial institutions in respect of the American subprime mortgage market are limited, a number of indirect channels of contagion – that are harder to quantify – have been laid bare. The direct consequences of the subprime crisis seem limited for the Dutch mortgage market for the time being, but the crisis does draw attention to possible risks in the

less solid segment of the mortgage market. In this respect, proper compliance with the Code of Conduct for Mortgage Lenders tightened early this year is essential.

Finally, this oFS has drawn attention to several important institutional developments. The growing integration of the European financial system makes supervision increasingly cross-border in nature. The institutional framework for home country control should therefore be reinforced, both where regular supervision is concerned, and with regard to crisis management situations. Throughout Europe, the authorities concerned should cooperate more closely and come to arrangements where necessary. At the same time, they must beware of overregulation and the creation of complex and bureaucratic processes which – especially in crisis situations – will prove a hindrance instead of enhancing the ability to take action.

Notes

- 1 See the OFS of March 2007.
- 2 This OFS was finalised in mid-August.
- 3 IMF, World Economic Outlook Update, July 2007. The potential effects of recent market turbulences are not factored into this projection.
- 4 See Box 3 in the OFS March 2007 dealing with the banks' involvement in the financing of LBOS, based on a DNB survey among financial institutions.
- 5 Embedded leverage is an accelerator mechanism whereby the leverage self-adjusts to the performances of the underlying assets. This makes both the gains and losses of the investment product highly sensitive to changes in market conditions.
- 6 For the content of this policy rule, please refer to DNB's website (www.dnb.nl).
- 7 Tail event refers to an extreme event that is at the tail end of a probability distribution, i.e. the probability of such an event is very slight, but its impact would be extremely strong.
- 8 The base scenario corresponds to the projections in the article 'The Dutch economy in 2007-2009: a forecast using MORRMON' in DNB's Quarterly Bulletin June 2007.
- 9 This scenario was simulated with NIGEM, the global model from the National Institute of Economic and Social Research. The simulation assumes that monetary policy is exogenous.
- 10 In other words, the dollar depreciates by 20 per cent relative to all currencies and by 30 per cent relative to the euro. Since the commodities markets are denominated in dollars, the eventual effective depreciation works out at somewhat less than 20 per cent.
- 11 That is to say, 10 per cent relative to all other currencies and 30 per cent relative to the dollar.
- 12 See the article 'Are Sovereign-Wealth Funds a threat to financial stability?' in DNB's Quarterly Bulletin September 2007.
- 13 In the past, the US has rejected bids by China to acquire American enterprises in the energy sector and bids by the United Arab Emirates in the port transport sector.
- 14 See also IMF, Global Financial Stability Report, April 2006.
- 15 See the Chapter 'Economic developments' in DNB's Quarterly Bulletin, September 2007. At the finalisation of this OFS, it was still too early to interpret the possible pass-through of market turbulence in July and August to the real economy.
- 16 KPMG, Competing for Growth 2007.
- 17 For a more detailed analysis of the risks per age category, see the article 'Will the mortgage crisis in the US affect financial stability?' in DNB's Quarterly Bulletin, June 2007.
- 18 In August, it became clear that some bank-sponsored special purpose vehicles which structure mortgage loans were finding it harder to finance themselves via the market for asset-backed commercial paper. This led them to have extra recourse to liquidity via outstanding credit lines.
- 19 This amount is accounted for by securitised loans on the balance sheets of Dutch special purpose vehicles (SPVs). The loans are transferred to these SPVs by financial institutions – notably banks – wishing to remove them from their own balance sheets.
- 20 Ringfencing refers to the possibility of isolating the assets of (part of) a financial institution.
- 21 There is currently no method for calculating such effects for insurers.
- 22 For a description of the model, see Van den End, J.W., M. Hoeberichts and M. Tabbac (2006), 'Modelling scenario analysis and macro stress-testing', DNB Working Paper, No. 119.
- 23 For a further discussion of this issue, see the OFS of March 2007 and the article 'Financial stability: Is the Dutch financial sector stress-resistant?', DNB's Quarterly Bulletin, December 2006.
- 24 For instance in 2006 Santander sold Abbey National's life insurance division to Resolution (EUR 5.2 billion) and Credit Suisse Winterthur to AXA (EUR 7.9 billion).
- 25 See also the article on the consequences of the transfer of credit risk in good and bad times, in DNB's next Quarterly Bulletin, September 2007.
- 26 R. Gropp, C.K. Sorensen and J. Lichtenberger (2007) 'The dynamics of bank spreads and financial structure', ECB Working Paper, No. 714.
- 27 See also the article 'Consequences of credit risk transfer in good times and bad' due for publication in DNB's Quarterly Bulletin September 2007.
- 28 See for example Froot and Stein (1998), 'Risk Management, Capital Budgeting, and Capital Structure Policy for Financial Institutions: An Integrated Approach', The Journal of Financial Economics, no. 47, 55-82 and Cebenoyan and Strahan (2004), 'Risk management, capital structure and lending at banks', Journal of Banking and Finance, no. 28, 19-43 and Instefjord (2005), 'Risk and hedging: do credit derivatives increase bank risk?', Journal of Banking and Finance, no. 29, 333-345.
- 29 This European Directive forms part of the Financial Services Action Plan (FSAP) and will enter into force in the Netherlands on 1 November 2007. One objective is to boost competition between suppliers of trading platforms.
- 30 See OFS, September 2006.
- 31 This is a very extreme scenario, which, insofar as is known, has never materialised. Even at the time of the 9/11 attacks in New York, the banks affected the most were able to resume making payments within a reasonable period of time. The potential effects were incidentally mitigated by extra liquidity provided by the Fed.
- 32 See E. Ledrut (2007) 'Simulating retaliation in payment systems: Can banks control their exposure to a failing participant?', DNB Working Paper, No. 133.

