

4 THE FINANCIAL SECTOR

The financial sector recorded a strong performance and very good profitability in 2006. The banking sector's results can be viewed as above-average by international comparison, despite some decline in profitability compared to the previous year. The insurance industry saw a modest slowdown in annual premium growth. Life insurance premiums recorded renewed growth, sufficient to offset a lower rise in non-life insurance premiums. Insurance companies increased their return on equity to the level of banks. Pension funds registered a rise in the number of planholders and growth in planholder contributions. Investment companies and intermediaries headed by banks widened the supply of investments in both domestic mutual funds and foreign assets and foreign funds. These tendencies lay the groundwork for continued financial stability in the years to come.

These positive trends in the development of the financial sector simultaneously entail some potential risks. Growth in loan defaults in the event of an economic weakening or an unexpectedly large increase in interest rates may become a problem. This would increase the interest costs on debt incurred in previous periods and could thus cause repayment difficulties for some entities. This applies in particular to some groups of households showing signs of heavy credit commitments, possibly as a result of overestimating their income potential.

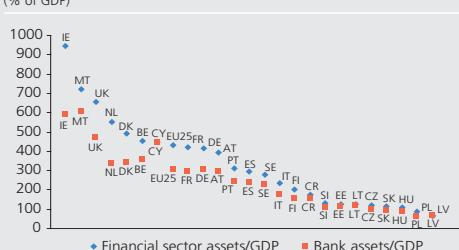
Free access to the financial market, or the recognition of licences granted in one EU member state in other EU countries and the freedom to provide services, has led to a rise in the number of branches and notifications of banks, insurance companies and investment firms on the domestic market. The financial sector's ownership and operational links with other countries are making the sector stronger, but may also mean potential transmission of elements of instability. The present economic growth and stability in the home countries of the parent companies of financial institutions in the Czech Republic are positively affecting the sector's overall financial stability.

4.1 STRUCTURE OF THE FINANCIAL SECTOR

The relative size of the Czech financial sector remains unchanged by international comparison. A comparison with the euro area countries reveals a relatively large banking sector and suggests growth potential in particular market segments. The volume of credit to households and corporations in relation to GDP still lags behind that in the euro area. As regards the structure of the financial sector, regulated banking groups (holdings), which are recording high profitability, exercise substantial influence. The concentration of the banking sector and the market shares of large banks are comparable with the EU average. A characteristic feature of the Czech Republic is the foreign ownership of a major part of the financial sector. Although the positive effects of the Czech financial sector's international links have so far predominated, a negative impact of some of the risks arising from such close links cannot be ruled out in the future.

Financial intermediation in the Czech Republic, as measured by the volume of assets of financial institutions, grew by 7% year on year in 2006. Owing to similar nominal GDP growth, the depth of financial intermediation (as measured by the ratio of financial sector assets to GDP) was virtually unchanged and continued to fluctuate around 130%. This is roughly one-third of the figure for the euro area countries (see Chart IV.1). As for the banking sector itself, which constitutes the core of the Czech financial sector, the Czech Republic's ratio of total assets to GDP of 98% at the end of 2006 makes it one of the leaders among the new member states of the EU. Higher ratios are recorded only by Slovenia and the Baltic States. The roughly three-quarter share of banks in the Czech financial sector is higher than the EU average, but is comparable with Germany and Austria, for instance (see Chart IV.2).

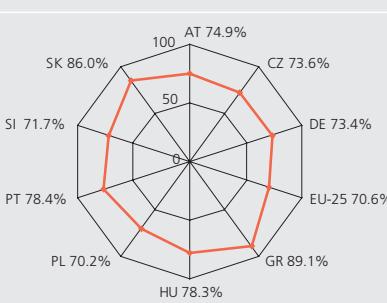
CHART IV.1
Financial sector and bank assets
(% of GDP)



Source: CNB, CZSO, ECB

Note: Data for 2005. High figures for LU not included.

CHART IV.2
Share of the banking sector in financial sector assets
(%)



Source: CNB, CZSO, ECB, central banks

Note: Data for 2005. SK excluding pension funds. Data for CZ, HU, PL, SK, SI unconsolidated.

The Czech Republic's financial system consists of banks, credit unions, insurance companies, pension funds and other financial intermediaries, such as investment companies administering open-ended mutual funds, leasing companies, other lending companies (hire-purchase companies, factoring companies) and non-bank investment firms (see Chart IV.3). Structural changes over the last ten years have led primarily to an expansion in insurance companies, pension schemes and companies providing non-banking financial services and loan intermediation. Although bank assets have increased in absolute terms, their share in the financial sector has decreased owing to rising non-bank competition (see Chart IV.4). The share of bank assets in financial sector assets has long been gradually decreasing. The weights of investment companies and funds have also decreased due to past restructuring (see Chart IV.5).

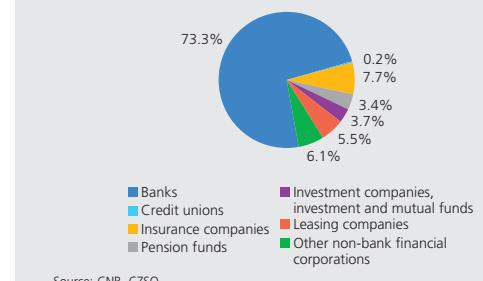
A comparison with the advanced EU economies implies growth potential for almost all segments of the Czech financial market. The Czech Republic is below the level of the euro area countries in lending, insurance and client investment. The ratios vis-à-vis the euro area did not increase year on year in 2006. The volume of loans in relation to GDP is constantly one-third of that in the euro area (see Chart IV.6) and the total financial investment of insurance companies is roughly one-fifth. The assets of pension planholders relative to GDP are still 30% of the relative size in the euro area. In the case of domestic investment and mutual funds the equivalent figure is under 10%. Financial sector assets per capita in the countries of the Central European region, including the Czech Republic, are several times lower in absolute terms than the European average (see Chart IV.7).

As regards the degree of concentration in individual sectors, the five largest banks and insurance companies had market shares of approximately 74% in the relevant markets of household deposits and life insurance premiums. Larger pension funds and investment companies offering domestic mutual funds have a relatively strong position on the relevant markets. According to the available data, the supply of foreign funds also shows higher concentration. Concentration in the leasing market is lower (see Chart IV.8).

The concentration of the Czech banking sector and the shares of the largest banks in total assets are comparable with the European average. In 2006, the concentration of the banking sector in the Czech Republic decreased slightly in year-on-year terms (see Chart IV.9).⁷² In the Czech Republic, the share of the five largest banks in the sector's total assets was 64% in 2006 (compared to the EU average of 60% in 2005). Higher concentration is typical of some countries with smaller banking sectors. The degree of concentration in individual countries may also be affected by strategy changes at bank level and by the continuing process of market consolidation through mergers and acquisitions. The entry of branch offices with single European licences had no major effect on the market, and the entry of companies from the EU temporarily providing services on the host market is specified only by their registration.

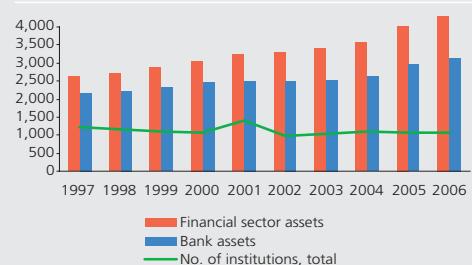
Foreign owners play an important role in the Czech financial sector.⁷³ At the end of 2006, foreign capital controlled 97% of the total assets of the banking sector and 75% of the total assets of the insurance sector. Foreign investors still have only a minority influence in non-bank investment firms and pension funds (40% and

CHART IV.3
Shares in financial sector assets
(as of 31 December 2006; %)



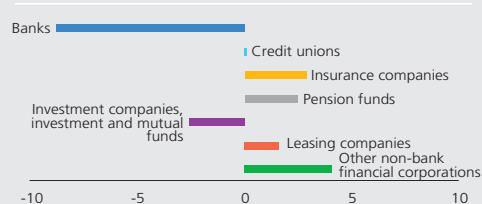
Source: CNB, CZSO

CHART IV.4
Number of institutions and volume of assets in the Czech financial and banking sectors
(CZK billions; number)



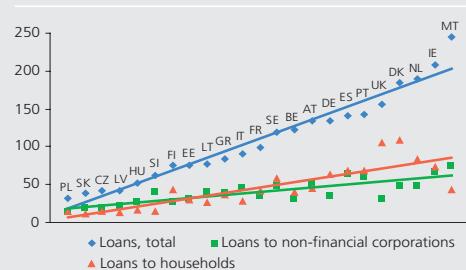
Source: CNB, CZSO

CHART IV.5
Rise/fall in share in financial sector assets, 1997–2006
(percentage points)



Source: CNB, CZSO

CHART IV.6
Comparison of loans
(% of GDP)

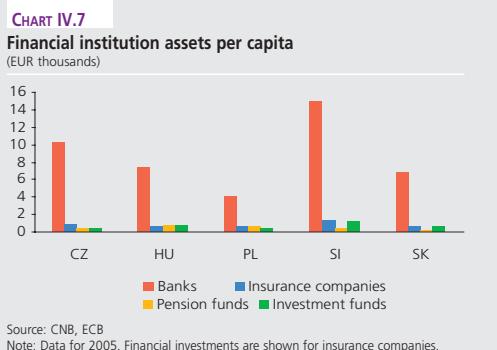


Source: CNB, CZSO

Note: Data for 2005. Data were not available for CY. LU not included. Lines show linear fit.

⁷² At the end of 2006 the Herfindahl index of concentration of the Czech banking sector was 1,038, compared to 1,151 in 2005, while the EU average in 2005 was 1,153. In addition to Herfindahl index values, market shares contain information on concentration.

⁷³ The benefits and risks arising from foreign ownership of financial institutions are analysed in more detail in Davidová, P., Heřmánek, J. and Opravilová, R.: *Různé aspekty zahraničního vlastnictví ve finančním sektoru* (Various Aspects of Foreign Ownership in the Financial Sector). Bankovnictví 9/2006.



36% respectively). Most owners are registered in EU countries. In some cases the ownership structures are complicated and the direct owners of entities active in the Czech Republic are not always the final owners, i.e. the ones that make the decisions. The representation of foreign owners among banks' shareholders is also relatively high in the other new Central European members of the EU (see Table IV.1).

Some foreign institutions prefer to provide financial services in the Czech Republic through branches.⁷⁴ At the end of 2006 foreign bank branches managed 9.3% and branches of foreign insurance companies 10.2% of the total assets of the relevant sector. All bank branches carry on their activities under the single European licence. As for insurance companies, 15 of the total of 16 branches have a European licence. In the case of branches, powers and responsibilities are divided between the host and home regulator and supervisor. Most powers lie with the home authority, but a large proportion of the responsibilities remain with the host authority.

Foreign financial institutions from the European Economic Area (EEA) also operate in the Czech Republic through notifications. The number of notifications rose further in 2006, to 137 for banks, 401 for insurance companies and 293 for non-bank investment firms (see Chart IV.10). Notified institutions are subject neither to the regulations in force in the Czech Republic nor to CNB supervision.

From the point of view of the stability of the financial system as a whole, a major role is played by the links between financial institutions operating in various segments of the financial sector. The position of major banks heading financial groups and their capital participation in subsidiaries allow them to exercise an influence in the insurance and pension scheme industries, in capital market undertakings and in financial leasing and factoring, as well as to influence the real estate market via specialised companies. Domestic large banks controlled 39% of the private pension market and almost 24% of the life insurance market in 2006 (see Chart IV.11). On the capital market, banks act as investment firms and – via subsidiary investment companies – administer domestic mutual funds.

The ownership and operational links between banks and their subsidiaries and other companies in the Czech Republic is concentrated in nine banking financial groups (holdings usually headed by banks) and in one financial conglomerate headed by an insurance company. The assets of these groups after consolidation, i.e. the inclusion of also non-bank members of regulated consolidated groups, made up around 74% of the financial sector's total assets at the end of 2006 (see Chart IV.12). Regulated consolidated groups contained 133 entities and book-consolidated groups 217 entities. After set-off of mutual claims and liabilities within holdings, the capital adequacy ratio per regulated group was 10.9% on average, hence satisfying the required regulatory minimum of 8%. It was usually lower than the capital adequacy ratio on a solo basis for the individual bank and also relative to the sector as a whole. Bank holdings (headed by banks owned or controlled by foreign banks) generated extraordinary profits and high return on assets and equity (see Chart IV.13).

Regulation and supervision on a consolidated basis complements and extends the usual obligation of supervised entities to provide information about prudential business on a solo basis. It ensures that regulated entities separately as well as financial entities – in the case of the Czech Republic usually banks heading a

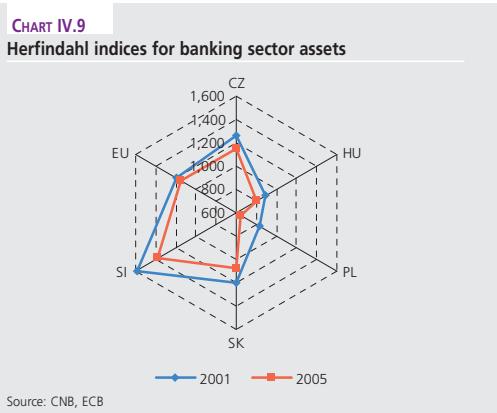
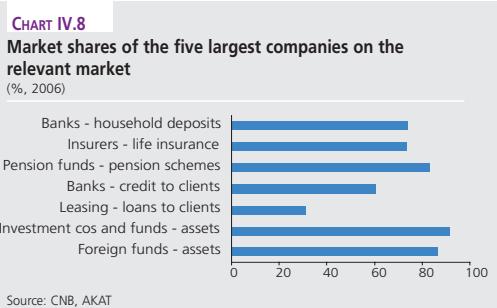


TABLE IV.1					
Foreign ownership in banking sectors (% of assets controlled by foreign entities)					
	2001	2002	2003	2004	2005
Foreign					
Czech Rep.	95	93	96	96	96
Hungary	64	57	57	59	59
Poland	69	67	68	67	69
Slovakia	89	95	95	97	97
Slovenia	15	16	18	19	21
EU	23	22	23	24	26
EU	90	88	90	91	91
Czech Rep.	56	57	54	56	56
Hungary	60	59	59	59	59
Poland	86	92	93	94	95
Slovakia	15	16	18	19	21
EU	16	15	15	17	18

Source: central banks, ECB

⁷⁴ The reasons underlying decisions on legal forms of business in other countries are discussed in more detail in the 2005 Financial Stability Report, section 4.8 *International Aspects*.

group – fulfil prudential criteria for maintaining stability.⁷⁵ Supervision of regulated consolidated groups also involves monitoring credit exposure limits and compliance with those limits among regulated consolidated group members, supervising the necessary capital covering risks and potential losses in the financial group, and monitoring ownership structures, relationships within groups and the reporting obligation. The present supervision is designed to prevent any potential contagion arising inside and outside the group in good time. By complying with the credit exposure limits and capital requirements, a parent bank heading a group should be able to cover its own risks and the risks of its subsidiaries.

Owing to the concentration of capital and the owner's influence, large financial institutions (groups) may be a source of systemic risk. In this regard, an extensive discussion is under way in the EU about the supervision of such entities and the application of a unified approach in cases where such entities fail. The Commercial Code, the Act on Financial Conglomerates, the Act on Banks and other sectoral laws lay down the financial and regulatory obligations of the parent undertaking, and, where applicable, of its subsidiaries, in relation to the risks and resolution of adverse financial situations within the group.

4.2 THE BANKING SECTOR

The overall assessment of the banking sector showed no major changes with regard to financial stability in 2006. The rate of growth of client loans was the highest since 1996, approaching the 20% level at the end of the year. Overall, the growth in lending is associated with the buoyant economic activity and rising household demand for financing of owner-occupied housing. The risk elements include a high proportion of loans to corporations with a floating interest rate or a rate fixed for up to one year and high growth in loans to property developers. High profitability is a precondition for maintaining the sector's stability in the years ahead. In the context of a high ratio of dividends paid there was a modest decline in the sector's capital adequacy, although this may indicate more efficient utilisation of bank capital. Stress tests confirm the current ability of banks to withstand significant macroeconomic shocks.

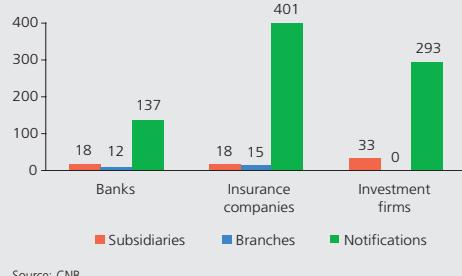
4.2.1 Loans and credit risk

The annual rate of growth of client loans increased during 2006 from 16.6% in January to 19.9% at the end of the year, the highest figure since 1996. Credit granted by the banking sector totalled CZK 1,413 billion at the end of 2006. The fastest growing sector in the lending area in 2006 was the household sector, followed by non-financial corporations. Households' contribution to the overall annual increase in bank loans was 49.2% and the corporate sector's contribution was 46.9% (see Chart IV.14). As regards the credit structure, corporations are still the main debtor of banks, with a 45% share of total loans. This share has remained virtually unchanged since 2003. The share of loans to households continues to increase; the current figure of 35% is almost four times higher than in 2000. Loans

⁷⁵ The EU directive on financial conglomerates, which has been incorporated into Czech law by Act No. 377/2005 Coll. on Financial Conglomerates, tightens up the prudential, and in particular capital, requirements placed by the regulator on financial groups meeting the definition of a financial conglomerate, thereby enhancing the stability of financial groups and the financial soundness of the system as a whole. At the end of 2006, a total of 81 financial conglomerates had been identified at EEA level. Although only one financial group is at present subject to the provisions regarding financial conglomerates in the Czech Republic, banks (8 banks and all 6 building societies), foreign bank branches (6) and insurance companies (11) operating in the Czech Republic are members of 15 financial conglomerates based in other EEA countries. These are major players on the domestic market. Also, some unregulated credit institutions operating in the Czech Republic are members of larger regulated groups subject to supplementary supervision of financial conglomerates in the EU.

CHART IV.10

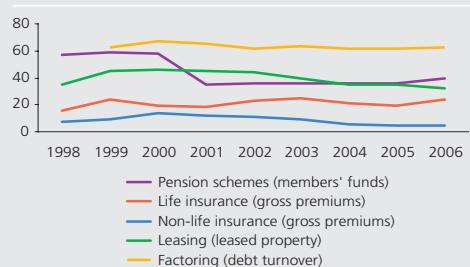
Presence of foreign financial institutions in the Czech Republic
(numbers as of 31 December 2006; with registered offices in EU, including indirect ownership; IFs exclude banks)



Source: CNB

CHART IV.11

Market shares of banking financial groups
(%)



Source: CNB, APF ČR, ČAP, ČLFA

CHART IV.12

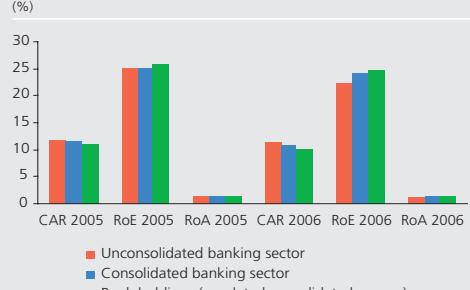
Shares of groups and the banking sector in the financial sector
(%)



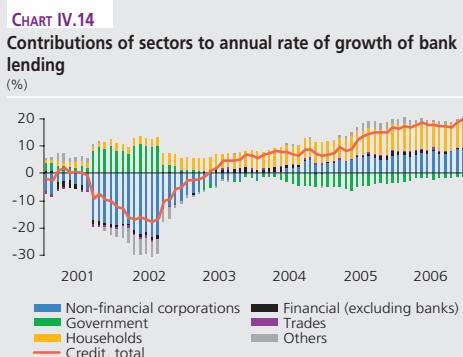
Source: CNB

CHART IV.13

Capital adequacy and profitability of groups and the banking sector
(%)

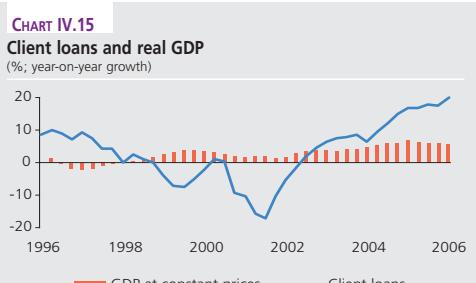


Source: CNB



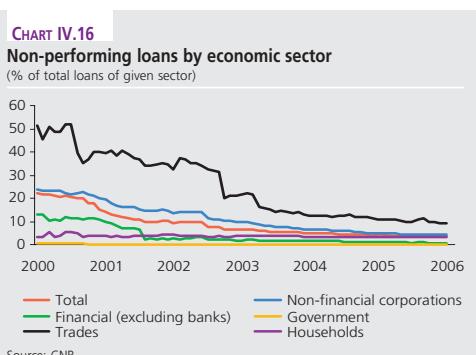
were again the main driving force of growth in total bank assets; their share of banks' balance sheets continued rising in 2006.

The rise in lending also means a rise in credit risk exposure. In its ultimate form, this is the risk of default on a loan or part thereof, or of default on contract leading to delayed repayments. This is the largest risk to which banks in the Czech Republic are exposed. The current high rate of growth of bank loans and growth of the Czech economy are mutually conditional (see Chart IV.15). Economic growth is at the same time a factor that mitigates credit risk, since it tends to help individual entities meet their obligations on time and in full. The effect of macroeconomic developments on the credit risk of banks was tested as part of the stress testing exercise. The stress tests confirm banks' resilience to adverse macroeconomic shocks at the end of 2006.⁷⁶



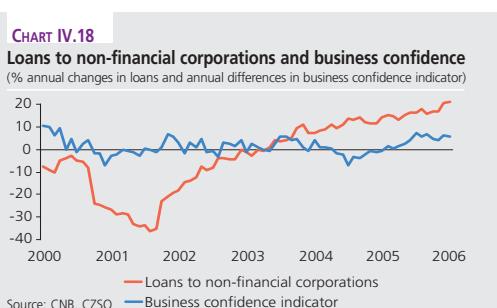
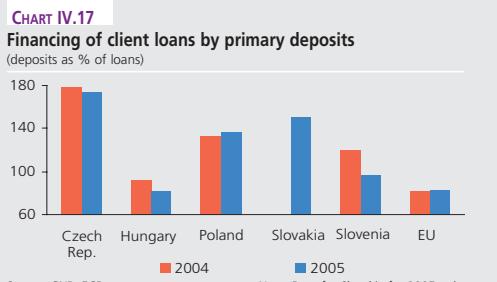
The favourable economic environment is increasing demand for credit and at the same time improving the financial condition of debtors. This is leading to a decline in the share of non-performing loans in total loans. At the end of 2006 this share was 3.6%, down by 0.5 percentage point year on year (see Chart IV.16). New loans are usually provided in the highest quality category, i.e. as standard loans. Problems with their repayment, leading to reclassification from the standard to the non-performing category, emerge some time later. Loan quality expressed as the percentage of non-performing loans is not the best indicator at a time of fast credit growth. The alternative flow indicator – the default rate – is a more reliable measure (see section 2.2). It suggests that the quality of loans assessed using stock variables is slightly overvalued at present owing to the buoyant growth in lending. As regards economic sectors, general government recorded the lowest share of non-performing loans in total loans at the end of 2006, with 0.14%. The worst quality was recorded by loans to small businesses (trades), where almost one-tenth of the total volume had not been repaid in compliance with the terms of contract at the end of December 2006.

Client deposits, which have long been roughly 1.5–1.8 times higher than loans to clients, are the most important source of loan financing (see Chart IV.17). The deposit/loan ratio is falling as lending gradually rises. In the future, this trend may be bolstered by a fall in deposits due to clients' efforts to achieve higher yields and, in the case of households, because of the need to provide for old age. By international comparison, financing of client loans by primary deposits is relatively high in the Czech Republic. It is more than twice the average in the EU, where banks obtain additional necessary external funds primarily on the interbank market and capital market.



4.2.2 Loans to non-financial corporations

Bank loans are a very important source of external financing for non-financial corporations. The rate of growth of such loans is gradually accelerating (see Chart IV.18). The present favourable economic climate is increasing corporations' need for external financing and thus also for bank loans. The main risks arising from the continued growth in loans to corporations include potential unfavourable developments in the balance sheets of major debtors and a potential softening of credit standards by banks owing to competitive pressures and the strong position of major clients. Another risk element is the preponderance of loans with a floating rate or a rate fixed for up to one year, which, in the case of long-term loans, may at a time of rising rates put a substantial burden on corporations in the form of interest payments and lead to a rise in defaults.



⁷⁶ See the article *Credit risk and stress testing of the banking sector in the Czech Republic* in the thematic part of this report.

The annual rate of growth in loans to the corporate sector was 20.9% at the end of 2006, up by 6.6 percentage points compared to 2005. These loans totalled CZK 635 billion at the end of 2006, the largest part being channelled into manufacturing, wholesale and retail trade and the real estate business (see Chart IV.19). Nonetheless, with a share of 33% the real estate business accounted for most of the rise in loans to the corporate sector. Loans provided to companies operating in this area have been growing rapidly since the second half of 2003, and the growth rate was 35–40% throughout 2006. The volume of these loans has trebled since the end of 2002, in line with the similarly high growth in loans for house purchase in the household sector and with the trend in the residential property market (see section 3.2). The recoverability of loans provided to developers may potentially be a problem (see section 3.2).

The share of non-performing loans in total loans to non-financial corporations fell by 0.6 percentage points last year to 4.5% in December. The ratio of standard loans to non-performing loans changed during 2006 in favour of standard loans most markedly in construction (see Chart IV.20).

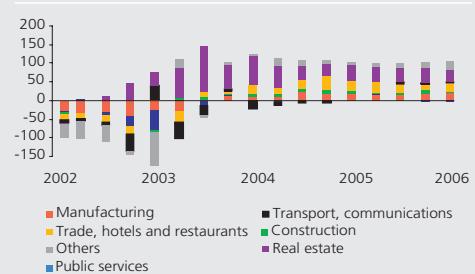
4.2.3 Loans to households

2006 saw continued buoyant growth in loans to households, which amounted to CZK 495 billion as of 31 December 2006. The annual growth rate was 30.4%, 3.6 percentage points lower than in 2005 (see Chart IV.21). Although the rate of growth slowed slightly, the total annual increase was 20% higher than in 2005. The strong dynamics caused by the low base are thus starting to subside.⁷⁷ At the end of 2006, the share of loans for house purchase was 75% and that of consumer credit was 20%. The breakdown by purpose thus remained virtually unchanged during 2006. The share of non-performing loans in total loans to households fell below 3% for the first time since 2000. Quality is being affected by the large volume of new loans and the dominant share of less risky loans for house purchase. Bank loans are a significant component of total household debt and in some cases may represent a very substantial burden for households. The growth in debt is feeding back into the overall financial condition of households and their consumption (see section 2.3).

The rising indebtedness of households in the Czech Republic in 2006 is a result of both current and expected income growth, competition between banks and persisting low interest rates. Uncertainty regarding future property prices has also probably played an important role in demand for loans (see section 3.2). This is largely due to uncertainty regarding the VAT rate on construction work as from 2008. Another factor common to all the new EU members is the still low level of household debt. The rate of growth in the new member states is thus much higher (see Chart IV.22). The volume of loans for house purchase is higher than that of consumer credit in all EU countries.

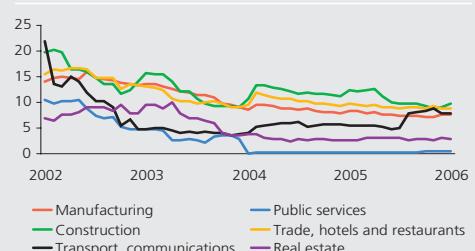
In 2006, banks attempted to increase their market shares not only by providing new loans, but also by assuming existing loans granted by other banks. In loan consolidation, clients are usually offered lower interest rates or the opportunity to increase the consolidated loan to an amount exceeding the sum of the existing loans. Competition in the lending area is increasing and is visible in a wide range of prices of comparable loans and in fee discounts. The spread of interest rates is quite wide (see Chart IV.23).

CHART IV.19
Shares of industries in total annual increase/decrease in credit to corporations (%)



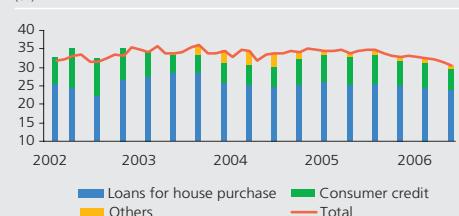
Source: CNB

CHART IV.20
Non-performing loans by industry (% of total loans of given industry))



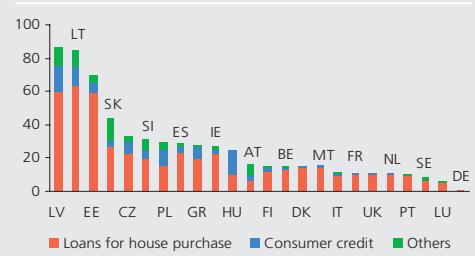
Source: CNB

CHART IV.21
Contributions to annual rate of growth of credit to households (%)



Source: CNB

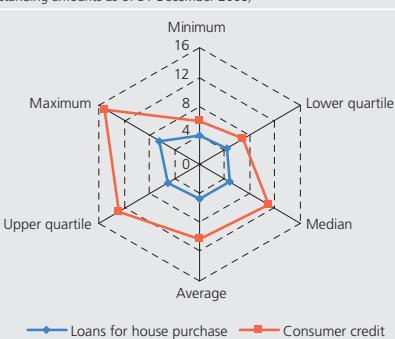
CHART IV.22
Contributions to annual rate of growth of credit to households in EU countries (%)



Source: CNB, ECB

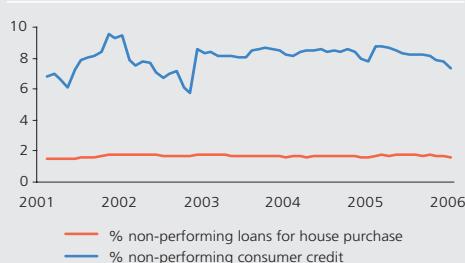
⁷⁷ For comparison, the 10% increase represented CZK 21 billion in 2004 and as much as CZK 38 billion in 2006.

CHART IV.23
Rates on koruna credit to households
(%; outstanding amounts as of 31 December 2006)



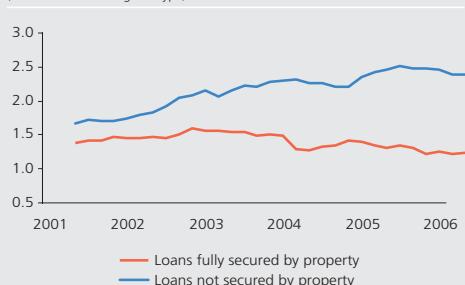
Source: CNB

CHART IV.24
Non-performing loans for house purchase and consumer credit
(% of total loans of given purpose)



Source: CNB

CHART IV.25
Non-performing loans to households for house purchase
(% of total loans of given type)



Source: CNB

From the banks' point of view, the most risky form of credit is consumer credit, which is not usually secured by collateral (see Chart IV.24). For this reason, the CZSO focused on consumer credit in its "2005 Living Conditions" survey (see Box 4). The share of non-performing loans in total consumer credit fell to 7.3% at the end of 2006.

Loans for house purchase ended 2006 with a 1.6% share in non-performing loans, which is comparable with the end of the previous year. These loans, however, do not form a homogeneous group. Roughly 64% of them are fully secured by property. Lower-volume loans usually take the form of building society loans not secured by property and special-purpose consumer credit. The quality of loans secured by property is higher than that of unsecured loans (see Chart IV.25). The share of non-performing loans is about 1 percentage point lower and stood at 1.3% at the end of 2006.

Mortgage loans are much more secure from the banks' point of view thanks not only to the existence of pledged property, but also to relatively low ratios of the value of the loan to that of the pledged property. In 2006, most banks provided mortgage loans to households for house purchase with an LTV (loan-to-value) ratio between 45% and 65%. The sector average was just under 53% at the end of 2006 (compared to 55% at the end of 2005). Property collateral is one way of reducing the risk weight of a loan when setting capital requirements for credit risk. Banks can achieve large capital savings by applying procedures under both the original Basel I framework and the new Basel II framework.

From the point of view of the financial sector, the growth in household debt cannot be viewed as particularly risky. In addition to enforcement of collateral, creditors can resolve any problems that might emerge especially in the low-income debtor segment, by means of execution of property.⁷⁸ Execution has been part of the Czech legislation for several years now. On the other hand, personal bankruptcy might provide some form of protection for households with excessive debt (see Box 3).

4.2.4 Market risk

Market risk consists in the potential to incur losses due to movements in the market prices of individual asset and liability items in banks' balance sheets. Given the prevailing types of banking operations in the Czech Republic, market risk poses a significantly smaller potential threat than credit risk. Capital requirements for market risk amount to less than one-tenth of those for credit risk. Banks are required to hold a necessary volume of capital for interest rate risk, foreign exchange risk, equity risk and commodity risk. Recent fluctuations on global financial markets suggest the risk of a rise in asset price volatility at a time of correction following a relatively long period of low interest rates and low volatility (see section 3.1). For the Czech banking sector, however, the potential loss from a decline in commodity prices or on the stock market is limited by the small volume of these assets in banks' balance sheets. As part of the stress testing exercise, banks were exposed to shocks simulating significant negative changes to interest rates and exchange rates. The tests confirm banks' resilience to such shocks at the end of 2006.

⁷⁸ This topic is analysed in Box 3: *Enforcement of Claims against Corporations and Households – Bankruptcies and Executions* in the 2005 Financial Stability Report.

Interest rate risk, namely the risk of incurring losses due to a change in interest rates, is the most significant market risk of the Czech banking sector.⁷⁹ From the point of view of the regulatory requirements for the creation of a sufficient capital cushion to absorb potential losses, this is the largest – roughly 86% – item of the capital requirements for market risk coverage (3.4% of the total capital requirements). The central bank's key rate, which in the Czech Republic is the two-week repo rate (see Chart IV.26), is the most important rate as regards market behaviour. In commercial banking, however, there is typically a lag in the pass-through of changes in the CNB's monetary policy interest rates, mainly due to the level of competition on the market. Long-term interest rates are also affected by the expected path of interest rates.

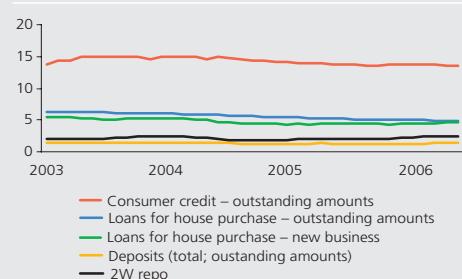
Banks manage their interest rate risk using methods of varying sophistication, ranging from volume limits, gap analyses, durations, changes in interest income and PVBP (present value of a basis point) through to scenario analyses or Value at Risk. Fixing interest rates for a pre-set period makes it easier for banks to manage interest rate risk in client transactions. Over 90% of loans to the corporate sector are provided with a floating rate or a rate fixed for up to one year, for example (see Table IV.2). For loans to households for house purchase, the corresponding figure is just 38.7%. This method of setting interest rates enables banks to react flexibly to market developments. From the financial stability point of view, however, a floating rate or a short fixation can also have a negative impact, since more defaults can be expected in times of interest rate growth, particularly in the case of long-term loans.

Foreign exchange risk is the risk of incurring losses due to negative movements in exchange rates. A bank's exposure to foreign exchange risk depends on the frequency, volume and type of transactions it executes. In 2006, the average representation of foreign currencies in banks' balance sheets was just under 20% on the asset side and just over 16% on the liability side. Foreign exchange risk is one of the most significant types of market risks for Czech banks, although from the quantitative point of view it is currently low. The overall foreign exchange position is almost balanced on a long-term basis and the net positions of individual currencies relative to overall foreign currency assets are very low (see Chart IV.27). The limits set for open currency positions, which are designed to minimise any negative effects relating to foreign exchange risk, are currently substantially higher than the actual positions.

Bank use derivatives transactions to hedge their open risk positions. In such cases banks are immune to risks stemming from the underlying instruments or are exposed to such risk only to the extent of inefficient hedging, i.e. residual risk. Banks can also trade in order to speculate on favourable movements in prices of underlying assets. Nonetheless, institutions in the Czech Republic tend to enter into derivative contracts for the purpose of hedging their positions, and so the risks to banking sector stability arising from derivatives transactions can be viewed as low. However, there are some risks associated with these transactions, too. Leaving aside the possibility of ineffective hedging, during transaction settlement banks are exposed to counterparty default risk, particularly in OTC operations. Losses can also be incurred due to operational risk connected with shortcomings in the transaction processing and settlement process directly in the bank. Another possible risk element for financial system stability is the transfer of risks to non-bank counterparties that do not have the necessary experience in managing derivative-related risks.

CHART IV.26

Rates on household loans and deposits and the reference rate (%)



Source: CNB

TABLE IV.27

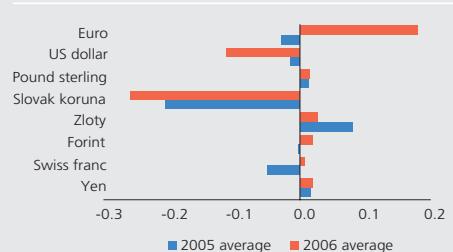
Structure of new koruna loans to corporations
(%; excluding overdrafts)

Fixation period	2004	2005	2006
Floating and fixation of up to 1 year	87,6	87,8	92,3
Fixation of 1-5 years	8,7	6,3	3,9
Fixation of over 5 years	3,7	5,9	3,8

Source: CNB

CHART IV.27

Net positions of selected currencies as a percentage of foreign currency assets (%)



Source: CNB

⁷⁹ Interest rate risk plays a significant role in the assessment of banking sectors by means of financial stability indicators, as stated in the article *Financial stability indicators: Advantages and disadvantages of their use in the assessment of financial system stability* in the thematic part of this Report.

4.2.5 Operational risk

Operational risk can be defined as the risk of incurring losses due to shortcomings or failures of internal processes, the human factor or systems and also the risk of incurring losses due to external events.⁸⁰ One component of operational risk is legal risk, where a loss may be incurred due to infringement of, or non-compliance with, a legal rule. Operational risk is present in all activities performed by banks. In contrast to credit or market risk, it is not associated with specific types of transactions or instruments. Operational risk has always existed in the banking sector and has often generated significant losses. Examples include Barings Bank's almost one billion dollar loss in 1995 and ČSOB's more than two billion koruna loss in 2003. Both losses occurred as a result of internal control mechanism failures that allowed dealers to engage in unauthorised speculation.

The need for systematic management of operational risk, including quantification of the potential related losses, is expressed in the new Basel II capital adequacy framework. The new capital requirements for operational risk will contribute to banks' stability by creating a cushion for risks which previously were not explicitly covered by capital. However, any banks that are unable to compensate for the rise in the capital requirement for operational risk by reducing the requirements for other types of risks could face a decrease in funds for further development or a reduction in profit available for distribution outside the bank.

Judging from the statements made by domestic banks, which were gearing up for the new capital requirement calculation rules during 2006, it can be expected that less than half of them will include operational risk in the calculation of their total capital requirement as early as 2007. This will probably cover roughly 50% of the banking sector's total assets. In 2007, most banks are considering using one of the simpler approaches.⁸¹

The Basic Indicator Approach⁸² allows relatively precise estimation of the rise in capital requirements resulting from the incorporation of operational risk. Applying this basic method across the board to the end-2006 values, the capital requirement for operational risk is highest (in relation to the real total capital requirement) in large banks and lowest in building societies. Compared to the calculation under the current rules, i.e. Basel I, the increases in the total capital requirement fluctuated around 10% in individual banks (see Chart IV.28). Under Basel II, banks will compensate for this increase to a greater or lesser extent by reducing their capital requirements for credit risk. Large banks also had the highest ratio of capital requirement for operational risk to assets; the figures for building societies were almost three times lower. These results are consistent with the assumption that banks performing a wider range of more sophisticated transactions are exposed to greater operational risk.

4.2.6 Profit and capital

The Czech banking sector ended 2006 with a net profit of CZK 37.9 billion, thus extending its several-year series of high net earnings, albeit with a decline of 3.1% compared to 2005. The net profit achieved in 2006 is the second highest ever

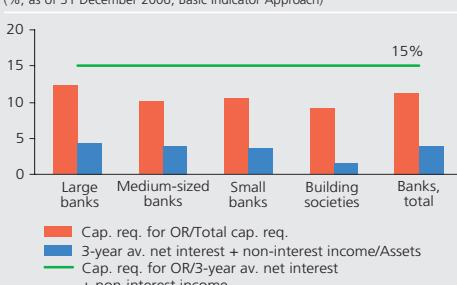
⁸⁰ Examples of operational risk include internal embezzlement, cyber crime (a risk that is growing as electronic banking expands), supplier default, (un)intentional staff error, payment, settlement or other system failure, and natural disasters.

⁸¹ The various approaches are defined in a draft decree of the CNB on the prudential rules for banks, credit unions and investment firms implementing Basel II. The decree is published on the CNB website <http://www.cnb.cz/>.

⁸² The Basic Indicator Approach sets the capital requirement equal to 15% of the three-year average of the sum of adjusted net interest and non-interest income.

CHART IV.28
Capital requirement for operational risk – Basel II back-projection

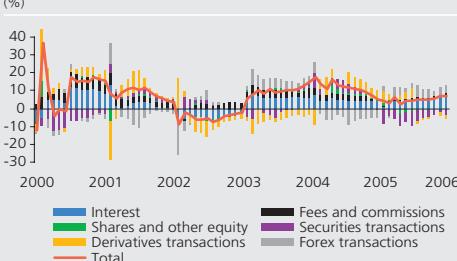
(%, as of 31 December 2006; Basic Indicator Approach)



Source: CNB

CHART IV.29
Contributions to annual rate of growth of profit from financial activities

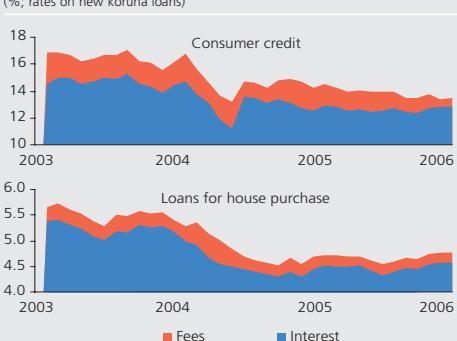
(%)



Source: CNB

CHART IV.30
Decomposition of average annual percentage rates of charge on credit to households

(%; rates on new koruna loans)



Source: CNB

recorded. The main source of profit for most banks was growing income from financial activities. However, there was simultaneous growth in administrative expenses and costs stemming from asset impairment. Sufficient profit generation is one of the most significant factors strengthening the financial stability of individual institutions and the sector as a whole. However, balanced profit distribution remains a necessary condition.

Year-on-year growth in profit from financial activities increased by 2 percentage points to 7.3% in 2006. The growth was driven primarily by interest profit, with annual growth of 13% and an almost 62% share of the total profit from financial activities. Profit from fees and commissions also contributed to the growth, recording an annual rise of 3.5% and a share of 28% (see Chart IV.29).

Interest on loans to corporations and households was the main component of interest income in 2006. Loans to corporations are larger in volume, but lower in price. The average interest rate on new koruna loans to households was 10.8% at the end of 2006, whereas corporations obtained credit at 5.9% on average. This makes the resulting full-year ratio of interest received from households to interest received from corporations roughly 3:2. Loans to non-banking clients were the source of more than half the total interest income. Besides interest income, bank loans are also a significant source of fee revenue (see Chart IV.30). However, the payment system remains the most important generator of profit from fees and commissions, with a 54% share.

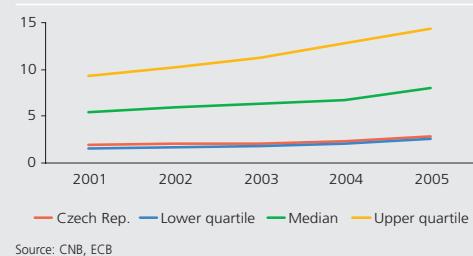
Operating cost management is a significant factor as regards net profit generation. Personnel expenses are the main component of operating costs. They recorded growth in 2006, as did some other operating expense items. Banks operating in the Czech Republic need more employees to manage their assets than their counterparts in most other EU countries (see Chart IV.31). By comparison with the new EU member states, however, the productivity of Czech bank employees as measured by average volume of assets managed is the third highest behind Malta and Cyprus.

Return on assets amounted to 1.2% and return on equity 22.4% in 2006. Both indicators declined compared to 2005. A comparison of European banking sectors reveals that the return on assets of banks in the Czech Republic was above the upper quartile in 2004 and 2005 (see Chart IV.32). The current profitability of banks is comparable with those achieved in other financial sectors and higher than in the corporate sector (see sections 2.2, 4.3 and 4.4).

The capital adequacy ratio fell from 11.86% in 2005 to 11.41% in 2006, mainly because of the slightly lower net profit, a high volume of dividends paid and growth in capital requirements due to the rising lending. There was also a parallel decline in Tier1 capital adequacy to 8.17%. However, all the individual banks exceeded the 8% regulatory minimum for total capital adequacy. The decline in the capital adequacy ratio in 2006 signals a further fall in the level of risk coverage by disposable capital, although it may also signify more efficient capital utilisation. Among the European banking sectors the Czech Republic was ranked in the middle as regards overall capital adequacy ratio (CAR) and in the top 25% in terms of Tier 1 CAR in 2005 (see Chart IV.33).

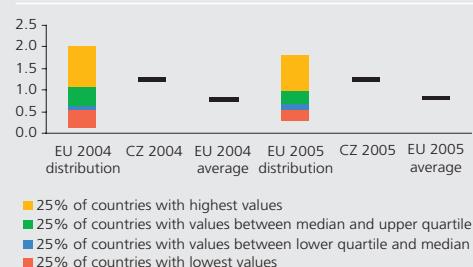
Dividends totalled CZK 27.4 billion in 2006, the highest figure ever recorded. The ratio of dividends to net profit of the previous year was 70%, i.e. the second-highest value behind 2004 (79%). Most of the dividends were repatriated to the home countries of the owners of banks operating in the Czech Republic (see Box 7). Dividend payments abroad affect the current account of the balance of payments and hence also have implications for the external imbalance of the Czech economy (see section 2.1). Although capital was greatly strengthened year on year by retained profit and subordinated debt, its 17% rate of growth was below that of the capital requirement, which was almost 22% (see Chart IV.34).

CHART IV.31
Assets managed per employee in EU banking sectors
(EUR millions)



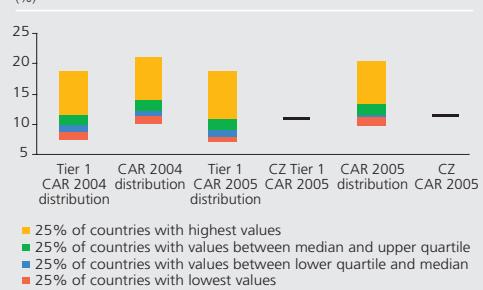
Source: CNB, ECB

CHART IV.32
RoA distribution of EU banking sectors
(%)



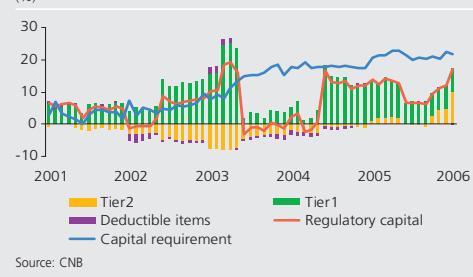
Source: CNB, ECB

CHART IV.33
Capital adequacy and Tier 1 CAR distribution of EU banking sectors
(%)



Source: CNB, ECB

CHART IV.34
Contributions to annual rate of growth of regulatory capital and rate of growth of capital requirement
(%)



Source: CNB

Box 7: Foreign investment in the banking sector and repatriation of profits

Repatriation of profits has two significant consequences, both of them potentially affecting the financial stability of the entire system. As regards the prudential business of financial institutions, there is the question of maintaining a sufficient capital cushion to cover risks. But a no less significant aspect of dividend payment is the effect of the outflow of capital abroad in the form of dividends on the current account of the balance of payments.

Foreign investors acquired the largest share in the Czech banking sector by purchasing state-owned stakes during the privatisation of large banks. Further market shares passed to foreign owners through purchases of existing private banks owned by Czech capital. Other companies were granted completely new banking licences. Except for 2005, the participation of foreign entities in the capital of Czech banks has been growing continuously since the end of 2000 (see Table IV.1 Box). The process of change in the ownership structure of banks continued in 2006, when, in addition to several transfers among foreign owners, a bank with a Czech shareholder was sold to a foreign buyer. The changes in the ownership structure of banks and non-banking financial institutions to some extent reflect the situation abroad, where a process of consolidation has been a major feature for years.

The most important European shareholders of Czech banks are registered in Belgium, France and Austria (see Chart IV.1 Box). This corresponds to the ownership structure of the largest domestic banks. The USA is the most significant owner from outside the EU. The EU's share in total investment in the Czech banking sector has risen from less than one half to more than 70% in the last six years, while the USA's share has remained roughly constant at around 8%. In terms of ownership, the Czech banking sector is strongly dependent on developments in the EU in particular. However, the international financial groups to which domestic banks belong operate in many other regions.

Foreign shareholders of 17 banks, including all 6 building societies, have so far decided to pay dividends on investments in the Czech banking sector. The number of banks paying dividends has gradually risen in recent years. In each of the last three years 13 banks have paid dividends, although their composition has differed. The volume of dividends paid has also gradually risen, growing roughly five-fold between the end of 2000 and 2006 (see Table IV.2 Box). Dividends totalling CZK 27.4 billion were paid in 2006, the highest ever amount. Owing to the definition of FDI as an investment amounting to at least 10% of capital, FDI-based dividends paid abroad are somewhat lower than the total volume of dividends paid to other countries. In 2006, a total of CZK 25.8 billion was paid abroad, of which return on FDI was CZK 20.2 billion. Dividends from banks accounted for 22.5% of total dividends paid on FDI in the Czech Republic in 2006.⁸³

The geographical structure of the flow of dividends to some extent reflects the shareholder structure, since banks whose state-owned stakes were sold

TABLE IV.1 (Box)

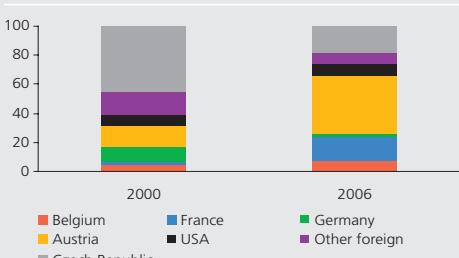
Changes in foreign investment in bank equity capital in the Czech Republic
(CZK millions; direct ownership)

Year	Foreign, total	EU	USA	Other foreign
2001	8,845	9,028	-1,679	1,496
2002	350	-598	460	488
2003	350	2,097	-156	-1,591
2004	38	247	-107	-102
2005	-1,148	-1,641	364	129
2006	353	497	-221	77

Source: CNB

CHART IV.1 (Box)

Geographical structure of shareholders of banks active in the Czech Republic
(%; direct ownership)



Source: CNB

TABLE IV.2 (Box)

Dividends paid in the banking sector by year
(all shareholders; direct ownership)

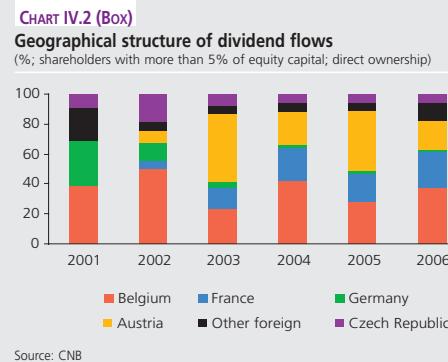
Year	No. of banks/ % of total excl. branches	Volume (CZK millions)	Paid abroad (%)	Paid to EU countries (%)
2001	9/32	5,109	91	73
2002	12/43	6,018	82	81
2003	12/46	7,483	92	90
2004	13/50	23,902	94	92
2005	13/54	13,635	94	91
2006	13/54	27,390	94	86

Source: CNB

⁸³ An analysis of the effect of German FDI on the sector of non-financial corporations is given in the article *Foreign direct investment and the Czech corporate sector: Potential risks to financial stability* in the thematic part of this Report.

to foreign buyers in the past have been achieving high net profits for several years now. The dividends are thus heading mainly to EU countries (see Chart IV.2 Box). In some years, the structure has also been affected by strategic decisions made by major shareholders on whether to distribute dividends at all and, if so, in what amount. In the privatisations of the three large banks, investors in all cases paid more than the total value of the dividends paid so far.⁸⁴ When assessing the returns on these FDIs, however, one should not overlook other financial flows, which in some cases have decreased the value of the initial investment.

Over the past six years, the foreign shareholders holding more than 5% of the equity capital of dividend-paying banks have come from nine countries in all. Only three of these countries are non-European. However, the following two factors should be taken into account when assessing a shareholder's home country and thus also the country to which repatriated profits ultimately flow. First, the current opportunities for legal and tax arbitrage make some countries more attractive for company registration. Second, there is sometimes a chain of ownership leading to the final owner.



4.3 INSURANCE COMPANIES AND PENSION FUNDS

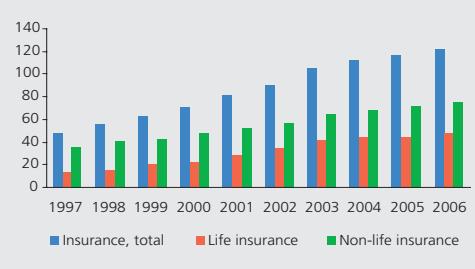
Insurance companies have significant long-term potential for further development in the life insurance and non-life insurance segments. Insurance penetration is low compared to the euro area countries. Insurance companies meet the required solvency criteria. Pension funds also have further growth potential, as evidenced by increasing interest in private pension plans. Planholders' contributions increased by almost 18% year on year in 2006.

4.3.1 Insurance companies

A total of 49 insurance companies⁸⁵ were active in the Czech market in 2006, of which 6 were life insurance specialists and 26 non-life insurance specialists and 17 were universal insurers keeping separate accounts for life insurance and non-life insurance (2 insurance companies simultaneously also operate as reinsurance companies). There was an increase in the presence of entities operating under the freedom to provide services and the right to establish branches (see section 4.1).⁸⁶

Traditional segments are the most important categories on the insurance market. These include permanent life insurance and combined term and permanent insurance (54% of life insurance premiums). As regards non-life insurance, the most important categories are vehicle liability insurance (30% of non-life insurance premiums), property insurance for entrepreneurs and private individuals (24%), vehicle accident insurance for entrepreneurs and private individuals (21%) and business insurance (19%).

CHART IV.35
Life and non-life insurance (premiums written)
 (CZK billions)



⁸⁴ At the end of 2006 the dividends paid so far amounted to 50% of the initial investment in these three banks on average.

⁸⁵ Of which 33 are domestic insurance companies and 16 are branches of insurance companies from the EU and third countries.

⁸⁶ Developments in the Czech insurance market are discussed by Heřmánek, J., and Davidová, P. (2005): *Finanční stabilita bank a pojišťoven je pro finanční sektor rozhodující* (Financial Stability of Banks and Insurance Companies is Crucial for the Financial Sector). Pojistný obzor, 11/2005.

CHART IV.36
Insurance premiums and financial investments in selected EU countries
(% of GDP; data for 2005)



Source: CNB, CEA, CSO

Note: Premiums correspond to annual premiums written.

Growth in premiums written has slowed in recent years. A significant factor underlying this slowdown is non-life insurance price competition linked with the freedom to provide services and the entry of new players to the market (prices of motor vehicle insurance, for instance, have come down). On the life insurance market, the original medium-term permanent life policies with single premium payments and payment of the policy amount have been terminated. The new policies reflect market conditions and interest rates and usually stipulate a longer investment period. Premiums written increased in 2006, although at a slower pace than prior to 2005 (see Chart IV.35).

An international comparison suggests that the Czech insurance market has further long-term growth potential. The Czech insurance market ranks seventeenth among the 25 EU countries in terms of both premiums written and financial investment as a percentage of GDP. In 2006, the ratio of premiums written to GDP was 3.8% for the Czech insurance market, roughly half the average for the EU countries (see Chart IV.36).

In developed countries with a tradition of life insurance, the ratio of financial investment from life insurance to financial investment from non-life insurance was 445% in 2005, while the ratio of life insurance premiums to non-life insurance premiums was 160% (the respective ratios for the Czech Republic increased from 202% to 215% and from 62% to 63% at the end of 2005). According to these ratios, domestic insurance companies have potential for developing life insurance services and products.

At 2.1% of GDP, financial investment in life insurance in the domestic insurance sector is low in relation to the selected EU countries (see Chart IV.36). Given the factor of growing climate volatility,⁸⁷ a review of non-life insurance policies and insurance schemes can be expected in the future.⁸⁸

Insurance companies are setting aside higher technical provisions to cover their liabilities (see Chart IV.37). Claim costs increased in 2002 following the floods and the payment of insured losses (see Chart IV.38). Reinsurers account for 17% of total claim settlement costs, of which 2% in life insurance and 25% in non-life insurance. Claim payments were most often related to life insurance (33% of total claim payments), vehicle liability (19%), vehicle accidents (17.8%) and natural disasters, including damage to property (16.6%).

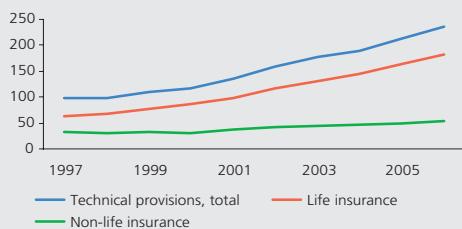
Technical provisions are a source of funds for investment in financial assets. Insurance companies invested 50% of their funds in risk-free bonds and 6% in reinsurance companies. Other investments are made in mortgage bonds and mutual fund units, property and marketable shares and bonds (see Chart IV.39).

Insurance companies were compliant with the solvency criteria (according to audited 2005 results), i.e. their internal funds were greater than or equal to the required solvency margin. The aggregate available margin was 3.4 times the required solvency margin on the life insurance market and 3.8 times that on the non-life insurance market. Insurance company stability was fostered by high return on equity, which reached 25.1% in 2006. Return on assets was 4.5%.

⁸⁷ The European Insurance and Reinsurance Federation's (CEA) Annual Report 2005–2006 examines the recent record-high insured losses due to natural catastrophes and presents the differences in rates of insurance coverage for natural catastrophes in insurance products across EU countries. The European market is very heterogeneous as regards insurance schemes in this area. For some natural catastrophe risks the insurance coverage is low, while for others insurance is only optional and not contractually obligatory.

⁸⁸ Insurance companies are taking a more prudential approach to the insurance of risks by using weather charts and flood maps, reinsuring themselves and using the services of international reinsurance companies. They calculate their premiums using technical and actuarial methods, and they raise those premiums in the event of more frequent insured losses.

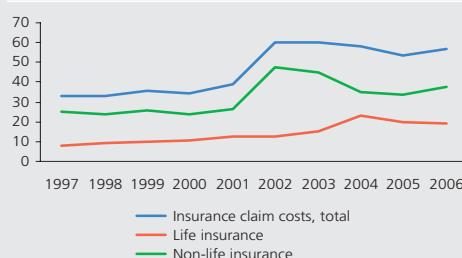
CHART IV.37
Total technical provisions
(CZK billions)



Source: CNB

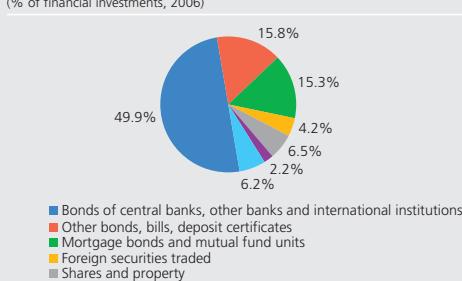
Note: The data relate to net technical provisions, i.e. net of the share of reinsurers in creation of provisions, and exclude the Czech Insurers' Bureau.

CHART IV.38
Insurance claim costs
(CZK billions)



Source: CNB

CHART IV.39
Financial investment in assets
(% of financial investments, 2006)



Source: CNB

Box 8: The stress test methodology for insurance and pension funds

This box summarises the draft methodology and results of the first stress tests conducted by the CNB for insurance companies and pension funds. Similar tests form part of the financial system stability analyses performed by central banks and supervisory institutions in numerous European countries and also in the FSAP reports of the International Monetary Fund and World Bank.⁸⁹

The stress tests presented in this box use the solvency calculation method applicable to insurance companies (under the Solvency I framework) and the ratio of the minimum required solvency margin to the available solvency margin. They used data on balance sheet and off-balance sheet positions to assess the resilience of insurance companies and pension funds to adverse shocks. Furthermore, the capital adequacy calculation methodology valid for banks in 2006 was also applied to insurance companies and pension funds in order to compare the resilience of individual groups of financial institutions to shocks. The effects of these shocks and of combinations thereof were assessed by comparing the capital adequacy ratio (CAR) before and after the shocks. These tests have significant limitations which must be taken into consideration when assessing the results.

The test scenarios take into account international practice and the Czech conditions. They consist of combinations of adverse changes in interest rates, the exchange rate, loan quality and share prices. The size of the decrease in share value is derived from the volatility of share prices and is also related to equity mutual fund portfolios. Investments in bond funds are also differentiated. In the tests this covers the equity and interest rate risks⁹⁰ arising from investing in traded shares and mutual fund units. The calculation of the effect of the exchange rate shock in the test should be viewed as approximate, since it is based on only partial information on foreign currency assets derived from the available information on securities portfolios. Due to the incompleteness of the information sources, liquidity risk is not tested. This first version of the tests does not include the effect of longevity risk. The tests covered 33 domestic insurance companies. The tests on pension funds cover 11 entities.

Scenarios I and II are derived from similar scenarios used by the CNB for stress tests in banking (see the 2004 and 2005 Financial Stability Reports) and add further assumptions to them. Table IV.3 Box gives a survey of the chosen scenarios, shock sizes and differences in portfolio stress for banks, insurance companies and pension funds in the Czech Republic.

TABLE IV.3 (Box)
Scenario type and shock size in stress test

Scenario type	Scenario I			Scenario II		
	Banks	Insurers	Pension funds	Banks	Insurers	Pension funds
Interest rate rise	1 p.p.	1 p.p.	1 p.p.	2 p.p.	2 p.p.	2 p.p.
Exchange rate depreciation	15%	15%	15%	20%	20%	20%
Increase in NPLs	30%	30%	30%			
Increase in NPLs/total loans				3 p.p.	3 p.p.	3 p.p.
Interbank contagion risk	x			x		
Decrease in share value		10%	10%		15%	15%
Increase in risk in LI (risk of epidemic)				3%		5%
Increase in risk in NI (risk of climate change)				50%		50%
of which change in sector structure:						
... motor vehicle insurance ¹⁾		5%			12.5%	
...act of God and property damage ²⁾			200%			200%

Note: Potential initiation changes in sector structure arising from ¹⁾ an increase in motor vehicle insurance costs; ²⁾ an increase in costs resulting from climate change and property damage.

TABLE IV.4 (Box)
Summary of results of stress tests, June 2006:
Insurance – solvency, scenario I
(%; percentage points)

Scenario type Insurance type	Scenario I		Life	Non-life
	Total			
SOLVE¹⁾ (%)	333		325	339
Total effect of shocks from exposures (p.p.)	-67		-36	-91
Interest rate shock	-33		-9	-52
Exchange rate shock	16		0	29
Credit shock	-23		-26	-21
... indirect effect of exchange rate shock	-2		-2	-2
Share shock	-27		-1	-47
Total effect of shocks in insurance (p.p.)	-20		-7	-30
Life insurance	-3		-7	0
Non-life insurance	-17		0	-30
...motor vehicle insurance	-8		0	-14
...climate change, act of God, property	-7		0	-13
Profit allocation and equalisation provisions (p.p.)	79		29	119
Post-test SOLVE (%)	325		311	337
Capital injection (percentage of GDP)	0.1		0.0	0.1

Note: ¹⁾ SOLVE is the ratio of the available solvency margin to the required solvency margin (%).

TABLE IV.5 (Box)
Summary of results of stress tests, June 2006:
Insurers – capital adequacy, scenario I
(%; percentage points)

Scenario type Insurers (institutions)	Scenario I			
	Total	Life	Non-life	Universal
CAR¹⁾ (%)	14.2	38.9	46.0	11.1
Total effect of shocks from exposures (p.p.)	-4.2	-5.4	-2.1	-4.4
Interest rate shock	-2.1	-2.7	-1.5	-2.1
Exchange rate shock	1.0	0.6	0.2	1.1
Credit shock	-1.4	-0.4	-0.1	-1.6
... indirect effect of exchange rate shock	-0.1	0.0	0.0	-0.1
Share shock	-1.7	-2.8	-0.7	-1.7
Total effect of shocks in insurance (p.p.)	-0.4	0.0	0.0	-0.4
Life insurance	-0.1	0.0	0.0	-0.1
Non-life insurance	-0.3	0.0	0.0	-0.3
...motor vehicle insurance	-0.1	0.0	0.0	-0.1
...climate change, act of God, property	-0.1	0.0	0.0	-0.1
Profit allocation and equalisation provisions (p.p.)	3.7	-3.2	1.4	3.9
Post-test CAR (%)	13.3	30.3	45.3	10.2
Capital injection (percentage of GDP)	0.1	x	x	x

Note: ¹⁾ CAR is the capital adequacy ratio, defined in accordance with the relevant CNB regulations governing the capital adequacy of banks in 2006.

⁸⁹ Central banks and authorities supervising insurance companies in numerous EU countries currently engage in stress testing of insurance companies. Some publish the results of their tests in financial stability reports. The results of stress tests for insurance companies and pension funds conducted as part of the Netherlands FSAP are given in the relevant report (IMF Country Report No. 04/312, 2004). The French FSAP report describes the results of tests structured similarly for insurance companies as for banks (IMF Country Report No. 05/185, 2005). The basic stress testing procedures for individual insurance companies are contained, for example, in the International Association of Insurance Supervisors (2003) document: *Stress Testing by Insurers*.

⁹⁰ A simplifying assumption of an interest rate shock affecting only the asset side of insurance companies' balance sheets was adopted for the first version of the stress testing. In practice, a change in interest rates would also affect the liability side, particularly in life insurance. Following a rise in market interest rates, the fixation of the technical interest rate would limit the interest rate shock to insurance companies' balance sheets.

TABLE IV.6 (Box)**Summary of results of stress tests, June 2006:****Insurance – solvency, scenario II**

(%; percentage points)

Scenario type Insurance type	Scenario II		
	Total	Life	Non-life
SOLVE¹⁾ (%)	333	325	339
Total effect of shocks from exposures (p.p.)	-92	-28	-143
Interest rate shock	-65	-18	-103
Exchange rate shock	21	0	38
Credit shock	-8	-9	-8
... indirect effect of exchange rate shock	-3	-3	-2
Share shock	-40	-2	-70
Total effect of shocks in insurance (p.p.)	-22	-12	-30
Life insurance	-6	-12	0
Non-life insurance	-17	0	-30
...motor vehicle insurance	-8	0	-15
...climate change, act of God, property	-7	0	-13
Profit allocation and equalisation provisions (p.p.)	88	18	143
Post-test SOLVE (%)	307	303	310
Capital injection (percentage of GDP)	0.2	0.0	0.1

Note: 1) SOLVE is the ratio of the available solvency margin to the required solvency margin (%).

TABLE IV.7 (Box)**Summary of results of stress tests, June 2006:****Insurers – capital adequacy, scenario II**

(%; percentage points)

Scenario type Insurers (institutions)	Scenario II			
	Total	Life	Non-life	Universal
CAR¹⁾ (%)	14.2	38.9	46.0	11.1
Total effect of shocks from exposures (p.p.)	-5.9	-9.2	-4.7	-6.0
Interest rate shock	-4.2	-5.5	-3.1	-4.3
Exchange rate shock	1.4	0.8	0.3	1.5
Credit shock	-0.6	-0.2	-0.8	-0.5
... indirect effect of exchange rate shock	-0.2	0.0	0.0	-0.2
Share shock	-2.5	-4.3	-1.1	-2.6
Total effect of shocks in insurance (p.p.)	-0.4	0.0	0.0	-0.4
Life insurance	-0.1	0.0	0.0	-0.1
Non-life insurance	-0.3	0.0	0.0	-0.3
...motor vehicle insurance	-0.1	0.0	0.0	-0.2
...climate change, act of God, property	-0.1	0.0	0.0	-0.1
Profit allocation and equalisation provisions (p.p.)	4.7	-2.3	2.8	4.9
Post-test CAR (%)	12.6	27.3	44.1	9.5
Capital injection (percentage of GDP)	0.2	x	x	x

Note: 1) CAR is the capital adequacy ratio, defined in accordance with the relevant CNB regulations governing the capital adequacy of banks in 2006.

Capturing the aforementioned market risks and credit risk in combination with shocks specific to insurance⁹¹ constitutes a relatively new approach to the stress testing of insurance companies. The risks concern life and non-life insurance (the risk of natural catastrophes and their consequences, and the risk of occurrence and consequences of epidemics). The tests entail shocks that could adversely affect insurance companies' asset portfolios and induce additional costs, and calculate the capital requirements needed to increase the solvency and capital adequacy of insurance companies. The effects of specific shocks are calculated separately for life and non-life insurance. In the case of non-life insurance the shock concerns climate change and the property consequences of natural catastrophes (the risk of catastrophic events). The hypothetical shock to life insurance is associated with the risk of occurrence and consequences of epidemics.

Universal insurance companies should withstand the shocks to both life and non-life insurance. The life insurance shock was defined as an increase in premium provisions, premiums written or gross technical provisions depending on the category of life insurance. These items were in all cases increased by 3% (scenario I) or 5% (scenario II). In non-life insurance, the shock for both scenarios was set as a 50% rise in gross insurance claim costs in a reference (usually three-year) period and was derived from historical experience (the insured losses during the floods in the Czech Republic in 2002).

The calculation includes payments made by reinsurance companies. The proportion of such payments after a shock remains the same as prior to it. Where current reserves or payments by reinsurance companies are not sufficient for insurance companies and the required solvency margin would fall, the uncovered part of the effect of the shock represents the capital requirement. The calculation is, however, fairly conservative, because the proportion of claim payments made by insurance companies themselves would very probably be lower in reality. However, the calculation of the required solvency margin under Solvency I requires minimum coverage by insurance companies themselves of 50% for non-life insurance and 85% for life insurance. Owing to these parameters the regulator would require an increase in insurance companies' reserves even if they were fully secured against adverse events.

The effects of the shocks may negatively affect the solvency of insurance companies. Therefore, the capital requirements created by the combination of the credit shock and market shocks enter the so-called available solvency margin. The specific shocks simultaneously enter the required solvency margin of insurance companies. The total solvency (SOLVE) – the ratio of the available solvency margin to the required solvency margin – is given for life and non-life insurance. The effects of the shocks and the combinations thereof were assessed by comparing the observed SOLVE values before and after the shocks.

To balance any losses, insurance companies would use profits (which are assumed to reach the average amount of the last two years in the absence of shocks) and equalisation provisions (in non-life insurance), if available, to prevent a decline in solvency in life and non-life insurance below the set minimum of 100% or to prevent a decline in capital adequacy (see Tables IV.4–IV.7 Box).

⁹¹ The new Solvency II regulatory framework in the insurance industry will affect not only the technical risk for life, non-life and health insurance, but also market risks and credit and operational risks. The first draft general directive should be adopted by the European Commission in July 2007, and implementing regulations will be prepared in a process organised by CEIOPS (Committee of European Insurance and Occupational Pensions Supervisors). The directive and its implementing regulations can be expected to take effect in 2011.

The stress test results indicate that the insurance company sector as a whole would be able to withstand even relatively strong shocks, taking into account their current capitalisation and the role of collateral. However, the effect of scenario II on non-life insurance in universal insurance companies would be considerable.

Insurance companies would be able to withstand the extreme stress ensuing from the specific shocks (climate change, epidemics) with an impact of CZK 60 billion (even though this figure exceeds the clean-up costs of the 2002 floods by roughly one-third). This is thanks to the volume of technical provisions, the spreading of claim payments over several years, the involvement of, and payments by, reinsurance companies, and part payment of losses by policyholders. Insurance companies are capable of responding to an increasing frequency of climate change manifestations and potential rising losses and claim costs by changing their procedures, particularly in non-life insurance.

The stress test also calculates the negative effects of macroeconomic shocks to assets. Nevertheless, this involves some simplification, since the effect on the liability side is ignored.⁹² The effect of the exchange rate shock in the test, given the depreciation under consideration, is opposite to the decrease in share value considered. The effect of the aggregate shock is therefore not as sizeable.

In the case of pension funds, only the effects of shocks which might affect the prices and quality of funds' assets and have a negative effect on capital adequacy are considered. The credit shock was widened to include claims on other credit institutions. As in the stress tests for banks, the allocation of profit to cover any negative effects of the shocks is considered.

The stress tests on pension funds indicate that they are able to withstand adverse shocks. The aggregate effect of the shocks would be very strong for them if the appreciation of the currency were accompanied by a fall in the value of their investments, i.e. a decline in prices of the shares and bonds they hold (see Table IV.8 Box).

4.3.2 Pension funds

At the end of 2006, a total of CZK 136.4 billion in contributions was registered on the accounts of private pension planholders. State contributions accounted for CZK 18.9 billion of this amount. Funds from employers totalling CZK 13.7 billion, to which the state contribution does not apply, receive preferential treatment in terms of taxation and the social insurance assessment base. Overall, around CZK 58.2 billion has been paid in benefits since 1994, of which CZK 39.8 billion as lump-sum settlement and CZK 6.6 billion as termination settlement. The other items paid include retirement, service, survivors' and disability pensions and other payments.

Contributions from planholders increased in the last period, recording 17.5% year-on-year growth at the end of 2006. This growth in funds is motivated by the state contribution and tax deductions and by a stronger motivation among individuals to provide for their old age (for more details see Chart IV.40).

The growth potential of pension schemes compared to the available data for euro area countries (around 17% of GDP in 2005) is considerable. The ratio of pension

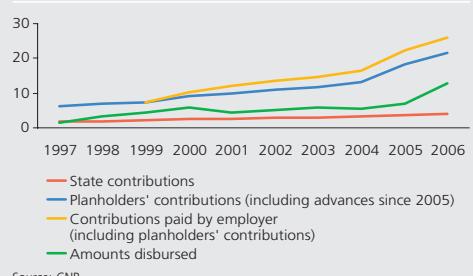
⁹² While a macroeconomic shock will affect assets immediately, the effect on the liability side will emerge some time later.

TABLE IV.8 (Box)
Summary of results of stress tests, June 2006:
Pension funds
(%; percentage points)

Scenario type	Scenario I	Scenario II
CAR ¹⁾ (%)	8.3	8.3
Total effect of shocks (p.p.)	-0.9	-3.1
Interest rate shock	-1.9	-3.7
Exchange rate shock	3.9	5.3
Credit shock	0.0	-0.1
... <i>Indirect effect of exchange rate shock</i>	0.0	0.0
Share shock	-3.0	-4.5
Profit allocation (p.p.)	0.4	1.7
Post-test CAR	7.7	6.9
Capital injection (percentage of GDP)	0.02	0.03

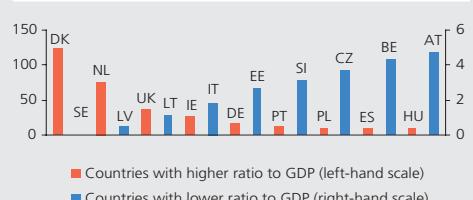
Note: 1) CAR is the capital adequacy ratio, defined in accordance with the relevant CNB regulations governing the capital adequacy of banks in 2006.

CHART IV.40
Pension fund sources and amounts disbursed in given year
(CZK billions)



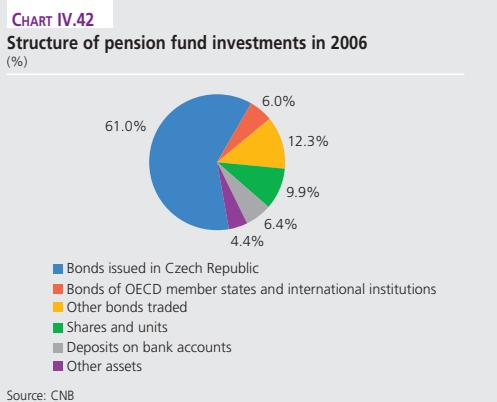
Source: CNB

CHART IV.41
Pension planholders' funds
(% of GDP)



Source: CNB, ECB

Note: Data for 2005. Selected EU countries.



schemes in the Czech Republic was almost 5% of GDP in 2006. Even though this is still relatively low, it sends out a signal of changing household preferences. Due to demographic trends, further growth in private pensions is expected as a supplementary pillar to the pay-as-you-go state pension system (see Chart IV.41).

Under the limits set by law, pension funds invest the funds they raise from planholders in relatively safe assets. At the end of 2006, 86% of assets were invested in less risky bonds issued by general government, deposits with domestic banks and other bonds. 9.9% of funds were invested in shares and units, which can be more volatile (see Chart IV.42).

Pension funds have achieved a sustained high return on assets from net profits, which in 2006 stood at 2.8%. The profits have helped to increase the value of investors' contributions.

The existing pension funds are designed to provide a non-negative annual yield which, after coverage of fund administration costs, should ensure that the client's contribution (and also the state contribution to the client's account) gains in value. In the case of bank-owned funds, capital coverage sufficiency and risk liability pertain to banks as shareholders.

The possibility of introducing investment plans with a risk profile excluding any guarantee to provide a return on investors' contributions has been discussed in recent years as an alternative to the current pension plans with guaranteed positive annual yields. This type of plan would offer riskier, but probably also more profitable investment allocation.

4.4 OTHER FINANCIAL INTERMEDIARIES

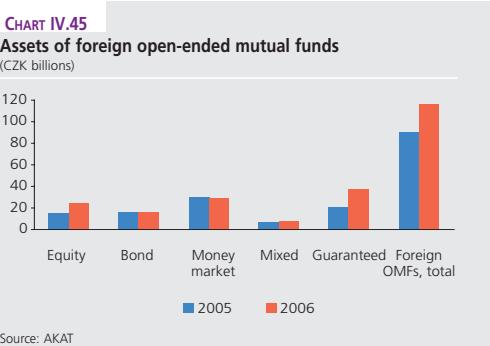
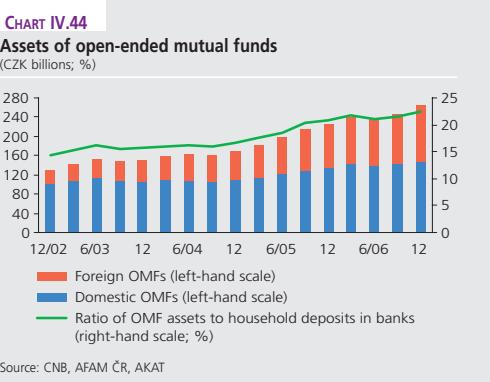
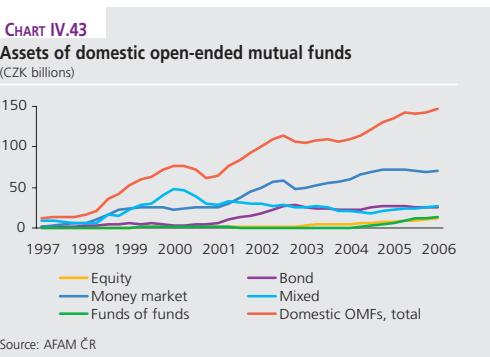
Mutual funds remain an attractive form of household investment. Last year saw growing interest in higher-yield funds and foreign guaranteed funds. The growing volume of transactions and the strong performance and profitability of non-bank investment firms send out a signal of stable financial intermediation on the capital market. Leasing companies and other lending companies – primarily hire-purchase companies providing non-bank loans to households – continued lending to the non financial sector.

4.4.1 Investment companies and mutual funds

In 2006, 13 investment companies were operating on the capital market, three of which were controlled by resident banks. The companies maintained a high RoE of 29% and RoA of 19.8%. Investment companies administer domestic open-ended mutual funds. The accounts and transactions of these funds are separate from transactions on the company's own account.

Domestic open-ended mutual funds are a form of collective investment designed mainly for individual investors. At the end of 2006, 77 funds, with assets of CZK 158 billion, were active. Of this number, 8 funds, with assets of CZK 78 billion, were money market funds (see Chart IV.43). 47 funds, with assets of CZK 132 billion, were administered through domestic subsidiary banks. Open-ended mutual funds invested in government bonds (28%) and other bonds (41%), as well as in units (13%) and shares (17%). The funds channelled less investment into domestic securities (40%), and invested their remaining funds in foreign securities. In doing so, they may have been motivated by prospects of higher returns, risk diversification and the limited investment opportunities in the Czech Republic.

Foreign mutual funds offer products on the domestic market through registered investment intermediaries and investment firms (see Chart IV.44). The investment



itself is carried out by investment companies (funds) registered abroad. The total invested in foreign funds in the Czech Republic in 2006 was CZK 117 billion, 90% of which was intermediated by banks (see Chart IV.45).

At CZK 9 billion, net sales of domestic funds' units were lower in 2006 due to a shift in household interest to higher-yield funds and funds with larger guarantees (see Chart IV.46). Interest in bond funds and money market funds decreased, while that in equity funds and funds of funds increased. There was growing interest in guaranteed funds offered from abroad.⁹³

Mutual fund units are an important alternative to bank deposits. The expansion of funds' assets is not connected solely with investments motivated by short-term factors. Medium-term and long-term investments, which are of a saving nature and also require higher minimum deposits, are also on offer. Banks are heavily involved – through their subsidiary investment companies – in the intermediation of transactions in this market segment.

4.4.2 Investment firms

There were 13 bank investment firms and 38 non-bank investment firms active in the capital market at the end of 2006. Some non-bank investment firms are members of banking groups. Non-bank investment firms recorded around CZK 21 billion in total assets, as in 2005. Bank and non-bank investment firms carried out twice the volume of transactions for their clients compared to the previous year – around CZK 1,890 billion a day on average. The vast majority were realised by non-bank investment firms.⁹⁴ Most transactions involved interest rate forwards and futures (i.e. FRA contracts – 93%) and transactions in bonds and bills (2.6%).

Non-bank investment firms generally achieved higher profitability (RoE 22.2% and RoA 4.2%). The capital ratio of investment firms was high (average 99%, median 54%), but the values were dispersed over a wide range (from the required 8% through to 405%). This is mainly because only some investment firms trade actively on their own account and have positions in their trading portfolios for which capital requirements are calculated (see Chart IV.47). The volatility of their results is due to the nature of their activities, which entails frequent changes in trading portfolio positions (see Chart IV.48).

4.4.3 Leasing companies and other lending companies

There were 230 leasing companies (with assets of CZK 238 billion) and 57 other lending companies (with assets totalling CZK 90 billion) active on the non-bank credit market at the end of 2006. CZK 193 billion had been lent in leasing, of which CZK 131 billion to corporations and CZK 58 billion to households (see Table IV.3). The low overall year-on-year growth in loans of 5.3% (as compared to growth in non-bank loans to non-financial corporations of 21%) was due to cuts in the tax breaks offered on lease financing. Consumer credit, hire-purchase loans and credit card loans from other lending companies totalled CZK 66 billion, the overwhelming majority of which was provided to households (or individuals). Their annual growth of 17% was below that of bank consumer credit provided to households (22%).

A potential risk arising from the activities of non-bank credit institutions is the fact that they are not subject to direct supervision. Many leasing companies, however, are controlled by banks or other large financial institutions, i.e. they belong to banking groups (see section 4.1).

CHART IV.46
Net sales of domestic open-ended mutual fund units
(CZK billions)

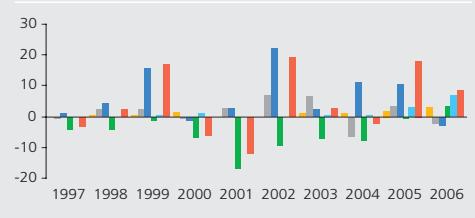
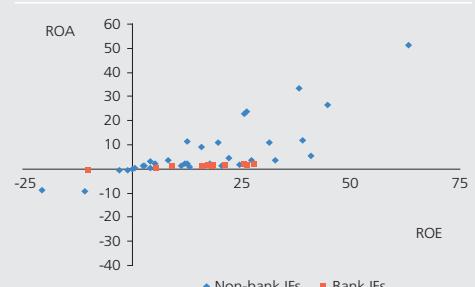


CHART IV.47
Distribution of investment firms by capital adequacy



Source: CNB

CHART IV.48
Returns of investment firms
(%, 2006)



Source: CNB

TABLE IV.3
Activity of leasing companies and other lending companies
(CZK billions; %)

	2005	2006	Change in %
Leasing companies			
Loans, total	183.0	192.8	5.3
Loans to households	53.9	57.5	6.7
Loans to non-financial corporations	126.9	131.7	3.7
Other lending companies			
Loans, total	54.1	66.5	23.0
Loans to households	51.1	59.6	16.7
Loans to non-financial corporations	2.2	3.6	63.6

Source: CNB

⁹³ Guaranteed funds offer a contractual guarantee of return of principal and minimum yield.

⁹⁴ For derivative transactions the notional value is used. This significantly overvalues the transaction volume in comparison with securities transactions.