

3 THE CORPORATE AND HOUSEHOLD SECTORS

The credit ability of the private non-financial sector improved in line with the improving macroeconomic indicators. This improvement was fostered mainly by the easy monetary conditions associated with the lowest-ever interest rate level and, compared to 2002, the Czech koruna's weaker exchange rate against the euro. The improving global growth outlook also meant considerably better export opportunities for domestic corporations. A positive role was also played by factors of a more systemic nature, linked, *inter alia*, with the earlier positive effects of foreign direct investment and ensuing improved corporate management, and with new risk management systems brought in by the foreign owners of domestic banks. These, along with other factors, facilitated the development of lending in areas which had previously been neglected by banks (lending to households).

Although an improvement in the financial soundness of the domestic non-financial sector emerged at the start of 2003, its impacts on lending activity were limited and lagged and in most sectors were not felt until 2004. The exception was lending to households, whose year-on-year growth rates were high throughout the period, thanks chiefly to the aforementioned systemic factors. The linkage between lending to households and household consumption was quite weak up to mid-2002, but since then has become stronger.

By contrast, lending to non-financial corporations was flat or falling year on year up to 2003. In public non-financial corporations, this was due to generally worse economic performance, whereas in foreign controlled corporations domestic resources were replaced by foreign funds obtained directly from their owners. Lending to small businesses is being hampered by information asymmetry and by the fact that this sector has the highest proportion of bad loans. Within the corporate sector, private domestic corporations are contributing most to credit growth, but even they are being constrained by persisting information asymmetry and a still short credit history. The massive declines recorded in 2001–2002 were also due to transfers of bad loans from banks to the Czech Consolidation Agency. Despite this, we can detect pro-cyclical, slightly lagged corporate lending behaviour. Another factor underlying the slowdown in lending was the use of alternative sources of financing by corporations (see the box *Corporate Financing Alternatives* for details).

Box

Corporate Financing Alternatives

Bank loans are just one of the corporate sector's financing options. The others are:

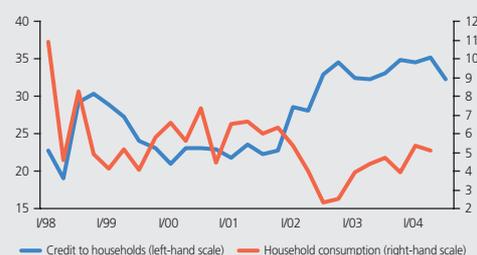
- *internal funds*, the level of which is determined by the economic performance of corporations themselves;
- *foreign loans to corporations* – in 2003 these rose by CZK 28 billion to CZK 519 billion. FDI loans grew more slowly than other foreign loans extended to corporations;
- *intercompany debt* – at CZK 720 billion this far exceeds bank loans to corporations (by 68%). Intercompany debt in corporations with 100 or more employees comprises long-term and short-term liabilities, including past-due liabilities; it is usually forced trade credit and also includes funds obtained from abroad;
- *financial leasing* is chiefly geared to the corporate sector (only around 10% goes to natural persons). In 2003, leased property amounted to CZK 173 billion, representing a ratio of 40% in relation to bank loans;
- *issues of corporate bonds and equities* are used only infrequently owing to

CHART III.1

Credit to non-financial corporations and investment
(year-on-year change in % in nominal terms)

Source: CNB, CZSO

CHART III.2

Credit to households and household consumption
(year-on-year change in % in nominal terms)

Source: CNB, CZSO

TABLE III.1

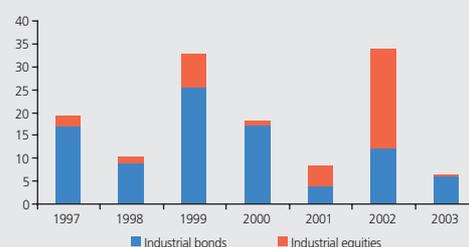
Growth of credit to the private non-financial sector
Contributions of sectors

(p.p. to total year-on-year growth)

	IV/01	II/02	IV/02	I/03	II/03	III/03	IV/03	I/04	II/04	8/04
Public	-5.2	-5.0	-0.7	-0.3	-1.3	-0.7	-1.1	-1.1	0.1	-1.1
National private	-18.7	-20.6	-11.7	-9.0	-6.5	-2.4	0.8	1.7	4.2	4.2
Foreign controlled	0.7	-2.3	-2.0	-0.4	1.8	-0.1	-0.6	-0.8	-1.7	0.5
Trades	-0.5	-1.1	-0.2	0.2	0.4	0.0	0.5	0.2	0.4	0.3
Households	2.5	3.5	6.1	6.4	6.9	7.8	8.8	8.9	10.2	9.9
Credit, total	-21.2	-25.5	-8.5	-3.1	1.2	4.6	8.5	9.0	13.2	13.7

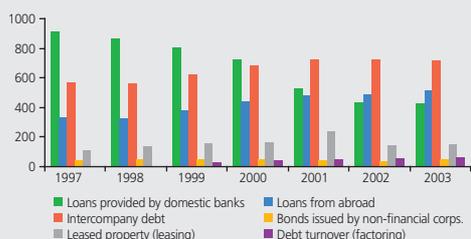
Source: CNB

CHART III.1.BOX

New issues of corporate bonds and equities in the given year
(CZK billions)

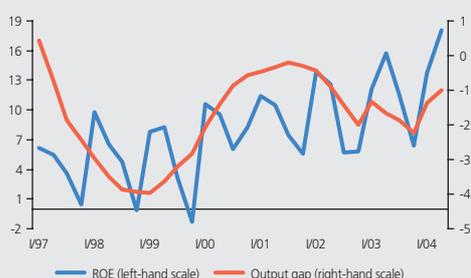
Source: KCP

CHART III.2.BOX

Corporate financing alternatives (illustrative survey)
(CZK billions)

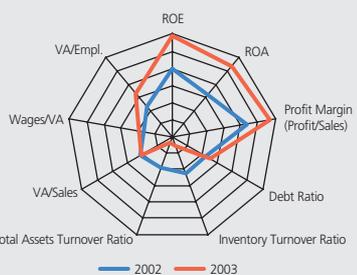
Note: Intercompany debt (including trade credit from abroad) and bonds are for corporations with 100 or more employees. Since 2001 leased property in net value after tax. Source: CNB, CZSO, MIT, ALS, AFS

CHART III.3

Cyclicality of corporations' return on equity
(%)

Source: CNB, CZSO

CHART III.4

Key financial indicators for non-financial corporations
(2001=100; index > 100 - improvement; index < 100 - deterioration)

Note: Scale from 80 to 140 in steps of 10. No data on short-term liabilities were available for the liquidity indicators, so data on total liabilities were used. Source: CZSO, CNB calculation

the underdevelopment of the capital market and also to lower demand. In 2003, new issues of securities totalled CZK 6 billion, and there were no new issues in 2004. Corporations used funds totalling CZK 49 billion from previous years' issues;

- *factoring and forfaiting* – these alternatives supplement the market and do not generally compete with bank credit. Turnover of purchased receivables was CZK 64 billion in 2003, a rise of 40% on a year earlier.

Through their subsidiaries, banks also provide forms of financing other than bank credit to the corporate sector. Within banking financial groups they cover 39.8% of leasing transactions and 63.5% of factoring transactions.

3.1 NON-FINANCIAL CORPORATIONS

The pick-up in economic growth brought about an improvement in virtually all indicators for non-financial corporations. In line with theoretical assumptions, return on equity (ROE¹) has been pro-cyclical, especially recently. This indicator is meanwhile more volatile than GDP growth itself (or the output gap). Furthermore, there is a clear upward trend in ROE over time which is higher than the output gap "trend".

The financial indicators improved in both 2003 and 2004 H2, with profitability indicators² showing the largest improvement. ROE rose from 9.7% in 2002 to 11.2% in 2003 and on to 15.9% in 2004 H1; return on assets (ROA)³ increased from 10.5% (2002) to 12.5% (2003) and 14.6% (2004 H1); and the profit to sales ratio⁴ rose from 5% (2002) to 5.5% (2003) and 7.3% (2004 H1). In 2003, corporations used this profitability improvement to restructure their balance sheets, both on the asset side (improved liquidity indicators⁵) and on the liability side, where the debt ratio⁶ was reduced (from 49.1% at end-2002 to 48% at end-2003) and the average maturity of loans⁷ was extended, leading to a reduction in the sensitivity of corporate financial costs to changes in short-term interest rates. The reduction in indebtedness, together with the fall in interest rates to a historical low, generated a fall in debt servicing costs. On the other hand, 2003 saw some deterioration in asset turnover indicators.⁸ This, however, may have been due to stocking up by corporations in expectation of faster growth in 2004. Productivity growth outpaced wage growth, even though the latter was relatively high. Around 70% of the productivity growth was attributable to a rise in output per employee and about 30% to a decline in the number of employees.

The indicators continued improving in 2004 H1, again being driven by higher profitability. Compared to 2003, there was an improvement in asset turnover

1 Return on Equity = Earnings before Taxation/Equity.

2 The profitability indicators are recalculated on an annual basis to allow comparison of quarterly, semi-annual and annual data. The quarterly data on profit are multiplied by four and the semi-annual data by two.

3 Return on Assets (ROA) = (Earnings before Taxation+Depreciation+Interest Expenses)/Total Assets.

4 Profit to Sales Ratio (or Profit Margin) = Earning before Taxation/(Sales of Goods+Sales of Own Production).

5 Current Ratio = (Financial Assets+Inventories+Receivables)/Liabilities; Acid-test Ratio = (Financial Assets+Receivables)/Liabilities; Cash Ratio = Financial Assets/Liabilities.

6 Debt Ratio = Liabilities/Total Shareholder's Equity and Liabilities.

7 The share of short-term loans (with maturity of up to one year) to non-financial corporations fell from 44.1% at end-2002 to 39.8% as of 31 August 2004; the share of medium-term loans (with maturity of 2-5 years) increased from 23.3% to 25.4%; and the share of long-term loans rose from 32.7% to 34.8%.

8 Inventory Turnover Ratio (in days) = Inventories/Sales*360, Average Collection Period = Receivables/Sales*360, Total Assets Turnover Ratio = Assets/Sales*360.

indicators (the stock turnover ratio decreased by 1.9 days to 42.9 days). On the other hand, the corporate debt ratio increased slightly (from 48% at end-2003 to 48.5% as of 30 June 2004), but this increase is not yet very significant and reflects an upswing in investment as well as in lending activity.

A more detailed insight into the impact of corporate financial indicators on credit risk could be obtained from information on the distribution of these indicators across individual companies or groups of companies. In terms of the financial stability of the domestic financial sector, the improved average results might conceal problems in one part of the corporate sector. This might be true for the Czech corporate sector, whereas the domestic financial sector's exposure to foreign controlled companies, where the best financial results can be expected, tended to decrease. Comparisons of the condition of medium-sized (20–99 employees) and large (more than 100 employees) enterprises are complicated by a narrower range of reported indicators for the former category (for example a profitability indicator is lacking). The distribution of the indicators for which a comparison is possible (for example the value added-wages ratio) indicates a better situation in large corporations (a higher median), but a greater spread of the distribution of their economic results.

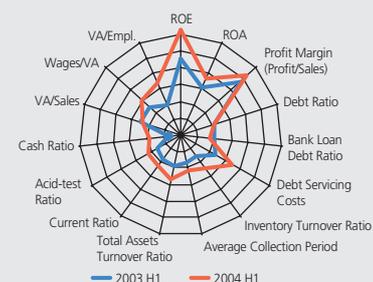
The distribution of the profitability results for large corporations according to the main NACE categories has recorded a shift to the right. It also shows a double-peak (or even triple-peak) character. This might be interpreted as a legacy of unresolved structural problems in Czech industry, which persist in parallel with the markedly positive development of some corporations (especially foreign ones) resulting from higher FDI in the past. The FDI has not gone into sectors where these structural problems exist. The essential question in this "two-speed" corporate sector is whether structural changes in the domestic corporate sector will lead to a closing of the performance gap between sectors dominated by foreign owners and sectors dominated by domestic owners, or whether this gap will persist. The distribution of economic results suggests that some heterogeneity also exists among domestic corporations, as some of them are showing improved profitability, although they remain less profitable than foreign corporations. However, only marginal improvements have been recorded in the least profitable sectors (those with ROEs of less than 5%, e.g. the leather industry, agriculture and the public sector).

All this is partly confirmed by the profitability developments in the main economic sectors. One positive phenomenon in 2004 H1 was the fact that profitability improved not only in foreign private corporations, but also in domestic private corporations, despite a fall in their profitability in 2003 Q4. The profitability of public corporations remains very low, but their influence on the economy is gradually waning.

The question remains whether the improved corporate sector indicators are actually translating into improved credit risk indicators within the financial system (especially the banking sector). The available data confirms a link between ROE and the share of classified loans in the overall volume of loans across the NACE categories.⁹ This link has been proved for the ratio of classified loans to total loans, the ratio of non-performing loans to total loans and the weighted classification ratio. On the other hand, the link between change in profitability and change in the number of units in NACE categories is not statistically

CHART III.5

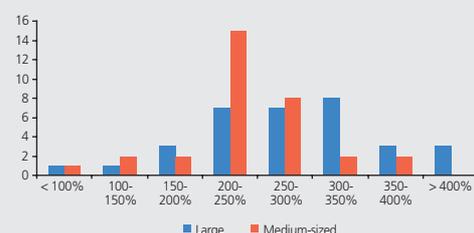
Key financial indicators for non-financial corporations
(2001=100; index > 100 - improvement; index < 100 - deterioration)



Note: Scale from 80 to 140 in steps of 10.
Source: CZSO, CNB calculation

CHART III.6

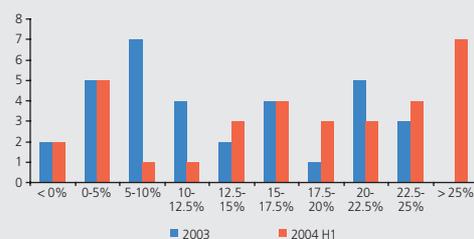
Distribution of value added-wages ratio for large and medium-sized enterprises
(2004 H2)



Source: CZSO

CHART III.7

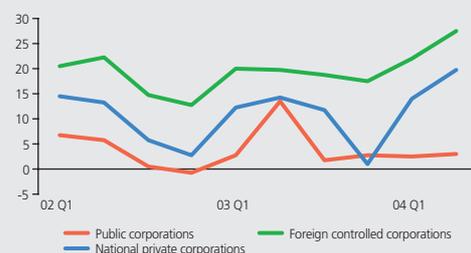
Change in ROE distribution for large enterprises
(> 100 employees)



Source: CZSO

CHART III.8

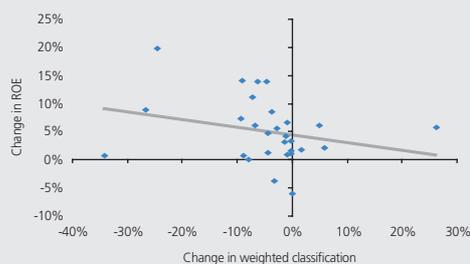
Profitability (ROE) by main sectors
(%)



Source: CZSO

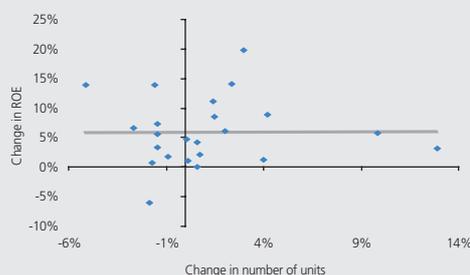
⁹ However, the improvement in loan portfolio quality is largely due to flat lending to the corporate sector in recent years.

CHART III.9
Changes in profitability vs changes in loan classification
 (by NACE category; in p.p. as of 30 June 2004)



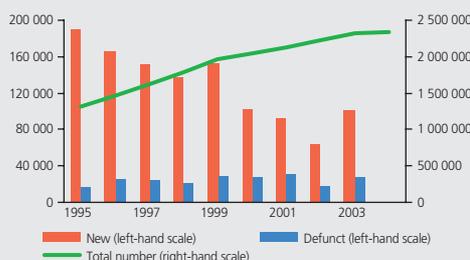
Source: CZSO

CHART III.10
Changes in profitability vs changes in number of units
 (by NACE category; changes in p.p.)



Source: CZSO

CHART III.11
Numbers of businesses (new, defunct and total number)
 (according to Business Register)



Source: CZSO

significant. This conclusion is in line with the findings of previous studies¹⁰ using CZSO financial indicator data on individual companies, which showed that the link between the probability of a corporation's dissolution and its financial results also has low statistical significance.

The weak link between change in profitability and change in the number of active economic agents suggests that elimination mechanisms to remove unsuccessful corporations are still not fully functional in the economy. A general lack of good-quality data from this area¹¹ and the weak link between corporate financial indicators and corporate credit risk thus significantly heighten the uncertainty in interpreting this credit risk. If there is a weak link between the standard indicators and a corporation's ability to repay its loans, then even advanced credit risk models adopted from abroad have limited effectiveness.

Another reason for the weak link between the dissolution of economic agents and their financial results is the trend in the total number of economic agents according to the CZSO's Business Register. This number has been increasing steadily and has almost doubled since the mid-1990s. The available data does not so far show any evidence of the fall in the number of entrepreneurs which was expected following the tightening of the conditions for their business activity in 2004 H1 (the introduction of cash registers, a minimum tax, etc.). The growth in the number of entities in the register has merely slowed. A significant increase in the number of businesses, even if it is due to an improved business environment, could have an adverse impact on financial stability, and specifically on small and medium-sized enterprises' ability to borrow. This is linked to the short financial history of these entities and to the ensuing complications in assessing credit risk. Nevertheless, the slower growth in the number of new economic agents in the register has fostered an improvement. At the end of the first half of the 1990s, roughly one-quarter of corporations were less than two years old, compared to less than 10% at present.

Although the overall situation in the corporate sector has improved from the point of view of financial stability, some risks persist. We have already mentioned the risks connected with the problem of interpreting the link between improved corporate results and the probability of corporations' survival, which have been present throughout the transformation period. These risks are also linked with certain institutional problems in the Czech economy – generally low debt enforceability, excessively long bankruptcy proceedings, slow operation of the courts, persisting corruption and so on.

Growing intercompany debt is another risk to the corporate sector as a whole (see the box *Corporate Financing Alternatives*).

Another risk relates to the high openness of the Czech economy. Corporate statistics reveal that the share of exports in corporate sales is 30.6% and the share of imports in costs of sales is 32.7% (data for 2004 Q2). The high openness

10 For studies on medium-sized enterprises in 1999, see, for example, Hlaváček J., Hlaváček M.: "Porovnání přežívajících a zanikajících podniků v české ekonomice na konci 90. let", in *Finance a úvěr*, 9/2002, 502. For studies on large enterprises in 1999–2001, see Hlaváček M.: "Nestandardní modely pro rozhodování a vyjednávání ekonomických týkající se ekonomických informací" (Chapter 5), dissertation at the Institute of Economic Studies, Faculty of Social Sciences, Charles University.

11 Most commercial banks have good enough data on the corporations that borrow from them. There is, however, a persisting problem in that this data can be difficult to compare with data on corporations that have either not applied for credit or applied unsuccessfully (for various reasons). *Ex post* assessment of the success of credit risk models thus only reflects the first-order errors, i.e. whether the bank provided a loan which eventually proved bad. Second-order errors, i.e. where the bank denied a loan to a company that is now prosperous and would be able to repay without problems, cannot be determined by the bank.

of the Czech corporate sector (including its ownership structure) means greater sensitivity of corporate financial indicators to exchange rate developments. Adverse effects can potentially arise from an appreciation (impacts on competitiveness) and from a significant depreciation (or expectations thereof, in which case foreign owners would increasingly transfer their high profits back home). Although some studies have pointed to a surprisingly low sensitivity of foreign trade to the 2002 appreciation shock, and although corporate profitability reached a solid level that year, recording a year-on-year improvement, it is not certain whether this was due solely to the aforementioned one-off improvements of a mostly institutional nature (better management thanks to foreign owners). It remains an open question whether these factors have already unwound and thus whether the corporate sector's sensitivity to exchange rate movements has been renewed. On the other hand, we should add that the impacts through exports and the impacts related to the change in behaviour of foreign owners may offset each other to some degree.

The high openness of the Czech economy also means a high dependence on foreign economic growth. In this context, the risk arising from high prices of oil and other raw materials (iron and nonferrous metals) have lately become particularly significant. These could directly affect the financial results of certain industries (transport, manufacture of transport equipment, etc.), and what is more, a slowdown in global economic growth could have an adverse effect on the corporate sector as a whole.

In addition to a downturn in economic growth, the possible negative supply shock resulting from further oil price growth would lead to a pick-up in inflation. This could result in a tightening of the domestic monetary conditions. Although stress tests have shown that the banking sector has a relatively strong resistance to a shock resulting from an interest rate increase (see Annex 1), some degree of risk does exist.

In the context of possible interest rate increases, we must mention the negative impacts of the public finance deficits. Their high level is adversely affecting the Czech Republic's credit rating and hence the level of interest rates on loans to private corporations. High government expenditure also implies a need for high corporate taxation, which may lead to transfers of foreign capital to countries with lower taxation and consequently to constraints on sources of corporate financing and to exchange rate volatility. The negative impacts of the high public budget deficits are bolstered by the expenditure structure, as most expenditure is mandatory (social benefits, retirement pensions, etc.) and insufficient resources are left for spending that positively affects the condition of the corporate sector (expenditure on infrastructure, research and development, education, etc.).

3.2 HOUSEHOLDS ¹²

Loans to households have been the fastest-growing item of lending by the domestic banking sector in recent years. Their annual growth has exceeded 30% for more than two years (see section 4). Loans to households are thus the largest contributors to the total annual growth in loans to the private non-financial sector. The fast growth in lending to households could itself mean an increased

¹² The "Households" statistical category comprises two subcategories: "Households – trades" and "Households – individuals". These two subcategories are very heterogeneous (for instance, there are differences in the proportion of classified loans – see section 4). Loans to sole traders are thus closer in nature to loans to non-financial corporations. In the following section, we will focus on the subcategory of loans to individuals.

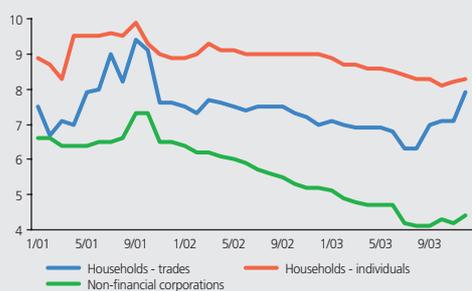
level of risk in the financial sector, as this is a new product in the Czech financial market. Estimates of the probability of default for individual households are thus very complicated, owing to the relatively short existence of the credit register and the absence of debtors' credit history.

From a purely statistical point of view, the share of classified loans in total loans to households may be somewhat underestimated in a period of fast growth in loans to households. This can occur because of the relatively long maturity of these loans and the fact that new loans are generally classified as standard. New loans will thus "dilute" past classified loans. Later on, when loans to households have stabilised, the share of classified loans may show an autonomous increase.

The main reasons for the robust rise in loans to households include:

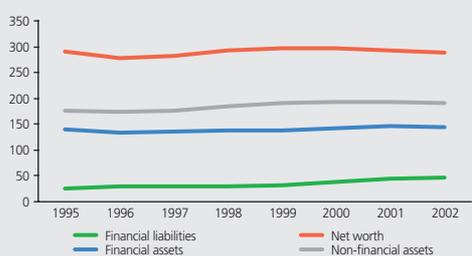
- a low initial base, together with transfer of technology and new banking products from new foreign owners;
- a decline in the interest of newly privatised corporations in resources from domestic banks, which has forced banks to seek new places to allocate funds from deposits;
- falling interest rates, which have led to a rise in households' demand for credit;
- the comparative benefits for banks of lending to households, as interest rates on loans to households have responded to the drop in money market interest rates to only a limited extent, which has led to a rise in margins;
- a reaction to the development of competing non-bank loans to households (the fastest growth in non-bank loans to households was recorded in 2000, whereas bank loans to households grew fastest in 2002 – see the box *Investment and Borrowing Alternatives for Households*);
- a change in lifestyle, demographic factors (housing financing by the 1970s generation), changes in the state's housing support policy (support for lending and building savings schemes instead of state-organised residential property building), real wage growth, a flat/falling price level, tax privileges on building savings schemes and mortgage loans, reactions to expected tax changes (an expected increase in VAT on construction work from 5% to 19% in 2007);
- the lower risk connected with these loans – despite a deterioration in the share of classified loans, loans to households remain the lowest-risk loans in the private non-financial sector;
- the foundation of a register of natural persons' loans and better possibilities of recovering loans from natural persons.

CHART III.12
Interest rates by sector
(on total loans; % p.a.)



Source: CNB

CHART III.13
Shares of households' assets and liabilities in their net disposable income
(CZK billions)



Source: CZSO, CNB calculation

Despite the frequently discussed dramatic rise in the rate of growth of loans to households, these loans currently have a relatively low share in households' overall balance sheets by comparison with asset items. The volume of financial liabilities on households' financial accounts has risen (and is now almost three times that in 1995)¹³ and their growth rate exceeds that of other items in households' financial accounts. However, their volume is negligible compared to financial and non-financial assets. Households' total assets (financial and non-financial) are still more than seven times higher than their financial liabilities.

As indicated in section 4, households use loans primarily to finance property purchases. These loans account for more than 70% of total loans to households. The sensitivity of household consumption to household credit growth was quite weak until 2002. Consequently, there is no change in total net worth in the

¹³ Households' financial liabilities rose by 187.8% between 1995 and 2002. Significant growth can be expected to have continued in 2003. As shown in Chart III.13, this rise is partly offset by disposable income growth of 60.8%.

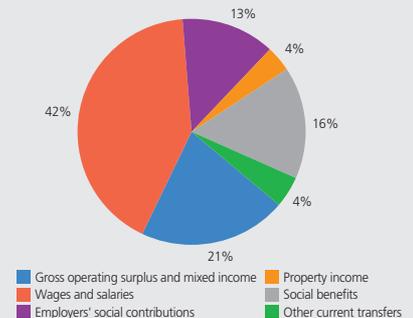
overall balance sheets (assuming that prices are stable on both the asset and liabilities sides); there is only a rise in total assets and total liabilities. This is reflected in a higher sensitivity of net worth to property prices. Property prices are discussed in section 4.3.

Households' ability to repay loans is chiefly influenced by their disposable income.¹⁴ Disposable income depends on aggregate output, the income balance and the activities of the government (above all taxation of households and distribution of transfers, but also housing loan support and suchlike). The current economic recovery is thus fostering a fall in credit risk in the household sector. The dependence of households' ability to repay loans on disposable income also determines the major risks. On the resources side, the main components of disposable income are wages and employers' social contributions. The shares of social benefits (around 20%) and property income (interest, dividends, etc. – 5%) are also important. The primary risks to disposable income are low wage growth and declining employment (or rising unemployment, or a falling rate of economic activity). Growth in overall wages must be consistent with labour productivity growth, otherwise the risk would merely shift from households to the corporate sector. However, recent trends in the corporate sector indicate that labour productivity is growing at a satisfactory pace (see section 3.1). There is a risk of redistribution of value added from wages to earnings, especially if foreign employers transfer their earnings abroad on a larger scale.

Uncertainty surrounding the public finance reform is another persisting risk to disposable income. Although reform is inevitable from the point of view of overall macroeconomic stability, its short-term impacts on households' balance sheets may pose certain risks to financial stability. This might happen above all in the case of households with lower and middle incomes, as it is not certain whether they know what proportion of their income comes from redistribution. On the other hand, high public finance deficits have adverse effects on households' disposable income, just as they have on corporations, primarily through high taxation.

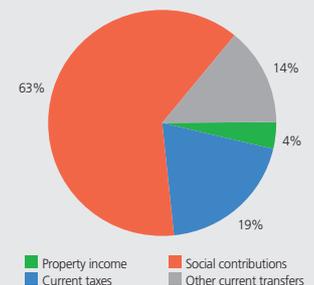
Interest paid and received is a specific factor in the formation of disposable income. Although households' financial liabilities are still much lower than their financial assets,¹⁵ total payment of interest on loans is already about twice the sum of interest received on deposits. The relationships of households to the financial sector as a whole thus imply adverse effects on disposable income. The share of interest expenditure in gross disposable income slightly increased in 2003 and 2004 H1. In addition to an overall increase in indebtedness, the crucial difference by comparison with the situation in 2000–2001, when households' interest income was higher than interest paid, lies in a widening of the spread between the interest rate on deposits and the interest rate on loans (see section 4). Interest rates on loans to households remain high compared to other sectors (non-financial corporations, financial institutions, government, trades, etc.).¹⁶ This may be due to relatively high concentration in this market segment (in mid-2004, the Herfindahl index was 0.16 for loans to households, compared to 0.11 for total loans and 0.14 for total deposits).

CHART III.14
Structure of households' current income
(2003)



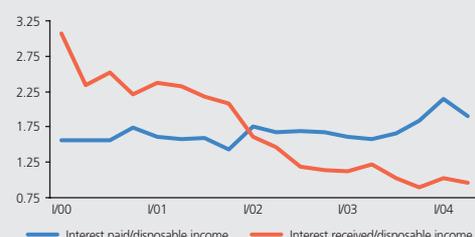
Source: CZSO

CHART III.15
Structure of households' current expenditure
(2003)



Source: CZSO

CHART III.16
Shares of interest received and paid in disposable income
(%)



Source: CZSO, CNB calculation

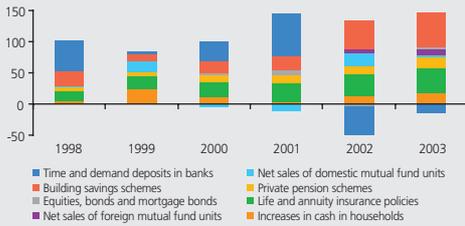
14 Disposable income indicates the volume of resources available to households for consumption and saving, i.e. income available to households for repaying their liabilities (here, the repayment of a liability is regarded as part of saving). Disposable income is defined as households' current income minus households' current expenditure. Households' current expenditure thus does not include household consumption.

15 The ratio of financial liabilities to financial assets is 32.1% and the ratio of loans to cash and deposits is 22.5% (end-2002 data).

16 In mid-2004, interest rates on the stock of loans were 8.1% for households and 4.5% for non-financial corporations. There was, however, a difference within the household sector between interest rates on consumer loans (15%) and interest rates on housing loans (6.1%).

CHART III.3.BOX

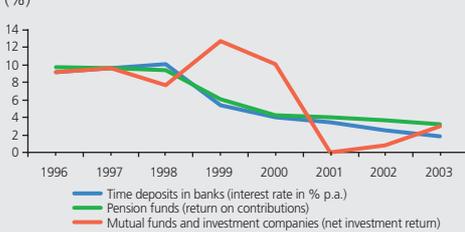
Allocation of households' deposits and savings
(increases in given year in CZK billions)



Source: CNB, CZSO, UNIS, AKAT

CHART III.4.BOX

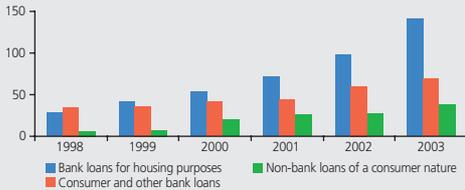
Comparison of alternative forms of investment by households
(%)



Source: CNB, CZSO

CHART III.5.BOX

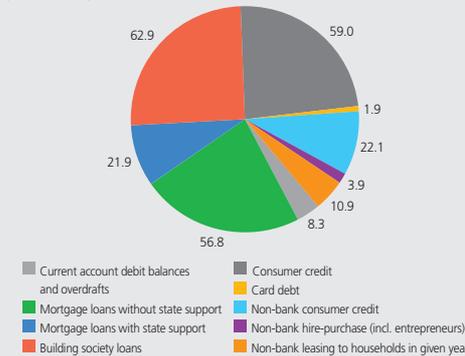
Bank and non-bank loans to households
(CZK billions)



Source: CNB, ALS

CHART III.6.BOX

Bank and non-bank loans to households in 2003
(CZK billions)



Source: CNB, ALS

Box

Investment and Borrowing Alternatives for Households

Besides the various interest yields, clients also weigh up the benefits of state contributions to pension schemes and building savings schemes and the benefits of employers' contributions to pension schemes and annuity insurance policies when considering the range of alternative investments open to them.

A decline in the number of time deposits was apparent in 2002 and 2003 as interest rates on such deposits in banks fell. The outflow went mainly in the direction of building savings schemes, life and annuity insurance policies and pension schemes.

Turning to loans to households, particularly strong growth has been recorded in recent years by housing loans, i.e. mortgage loans (with or without state support) and building society loans. Growth in bank consumer loans, which compete with non-bank consumer loans, hire-purchase and leasing for households, has recently slowed somewhat.

3.3 PROPERTY PRICES

Property prices play an important role in the assessment of household credit risk. Loans to households which are used to finance property purchases or property construction or which are secured by property account for almost three quarters of total loans to households (71.6%). In the last three years this share has risen by 16.2 percentage points. The volume of housing loans is also closely linked to housing construction.

A risk arising from property price movements is associated with housing loans.¹⁷ A decrease in the market value of a property negatively influences the amount of a newly provided loan for which the property is used as a pledge. It can also cause a loss in the event of a forced sale at a price lower than the purchase price. In the Czech Republic, this risk is reinforced by the imperfect and slow operation of the relevant institutions (the cadastral registry, courts, etc.), which may mean additional risks or costs in the event of a sale of the pledge/property.

Some debtors may have opted to use a mortgage loan to purchase property as an investment. The value of the investment is influenced by movements in prices and interest rates and also by the rents that can be asked. In the event of an overall increase in the price of money, reflected in a rise in mortgage interest rates, rents may not cover the full amount of the instalments and owners may start selling flats, thus exerting downward pressure on property prices. As indicated in the box *Property Price Determinants*, a large part of the property price growth between 2000 and 2003 was probably not speculative.

Data on property transfer prices obtained from property transfer tax returns suggest that prices rose for all types of property between 1998 and 2002. The lowest increase was recorded for building plots (around 30%), followed by family houses (around 50%), apartments (more than 70%) and apartment blocks (which almost doubled). The annual price growth generally tended to increase, but there was a slowdown in 2000 and at the end of 2002.

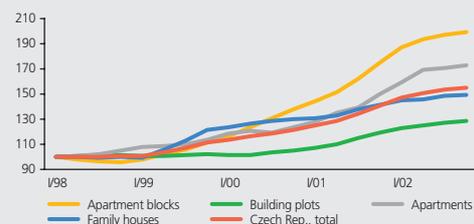
As the more up-to-date figures on supply prices in estate agencies indicate, the relatively fast property price growth continued into 2003, with apartment prices rising by around 27%. Speculation on further spiralling growth in property prices following the Czech Republic's accession to the EU did not materialise, as property prices in the spring partly corrected their growth of 2003 and 2004 Q1 and fell by roughly 5%. Subsequently, prices have risen modestly and are now around their end-2003 level. The current stagnation and possible further decline in the prices of some properties may also be related to interest rate growth.¹⁸ Conversely, however, some other factors indicate renewed modest growth in the prices of residential and non-residential properties. These factors include, in particular, constant demand for high-quality housing, the planned introduction of loans for newlyweds and the entry of foreign and domestic real estate funds onto the market.

CHART III.17
Mortgage loans and construction of new apartments



Source: CNB, CZSO

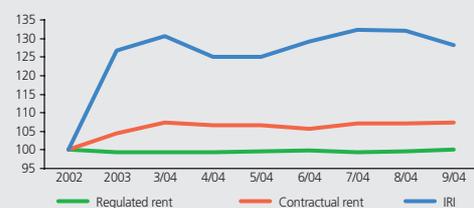
CHART III.18
Property prices - transfer prices according to tax returns
(absolute index; 1998 Q1 = 100)



Source: CZSO, CNB calculation

CHART III.19
Apartment supply price index vs rents

(Institute for Regional Information, figures from estate agents; 2002 = 100)

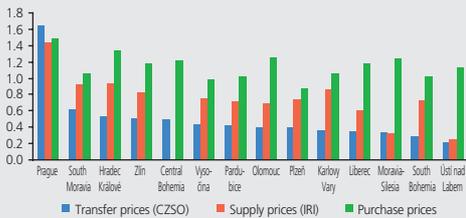


Source: IRI

17 In the following text, we will differentiate between the following types of property prices: **property transfer prices**, based on the Ministry of Finance statistics from property transfer tax returns and published by the CZSO. These prices are the closest to actual **market prices** in terms of methodology. There are also **property supply prices**, which indicate property sale supply prices in estate agencies and are published by the Institute for Regional Information. Supply prices should be higher than transfer prices. Another category is **property purchase prices** (provided by the CZSO), which broadly indicate the cost of building new property. The last category is **hypothetical property prices**, which are calculated from market rents (from the CZSO's consumer price statistics) and long-term interest rates. Hypothetical property prices implicitly regard real estate as a type of asset that is a substitute for financial assets (for details, see the box *Property Price Determinants*).

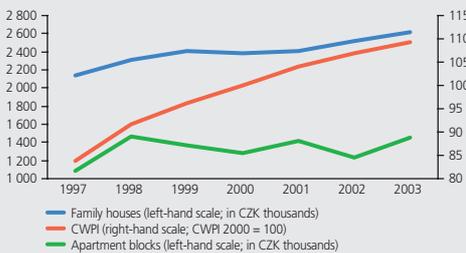
18 A description of the relationship between property prices and interest rates is outlined in the box *Property Price Determinants*.

CHART III.20
Property price distribution by region
(2002; 68 m² apartment; CZK millions)



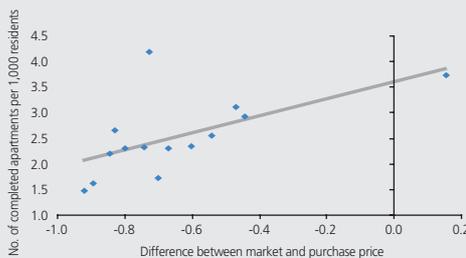
Source: CZSO, IRI

CHART III.21
Apartment purchase prices vs construction work price index



Source: CZSO

CHART III.22
Housing construction intensity vs difference between market and purchase prices of apartments
(by region; prices in CZK millions; year: 2002, apartments 2003)



Source: CZSO

When assessing credit risk it is also important to evaluate the distribution of property prices by region and to relate these prices to property purchase prices. Property purchase prices that are substantially higher than market prices might imply a risk of an incorrect initial credit risk assessment, especially for those housing loans which are used to build new properties rather than to purchase existing real estate. In the Czech Republic, the property price spread with respect to region is quite large, the highest prices being in Prague (with Brno in South Moravia and the Hradec Králové region being a distant second and third respectively) and the lowest being in the Ústí region. As expected, property supply prices in most regions are indeed higher than actual transfer prices. The differences range from 30% to 60% of supply prices. Prices in Prague and the Moravia-Silesia region are the exceptions.¹⁹

Because loans guaranteed by property are used to build property, it is also important to monitor the relationship between the distribution of property prices (both transfer prices and supply prices) and the distribution of property purchase prices (i.e. building prices). Although prices in Prague are again the highest (mainly owing to higher building plot prices), the regional differences in purchase prices are much lower. In all regions except Prague, purchase prices are higher than market prices (in most regions, market prices are less than one-half of purchase prices). This can be explained by the fact that the building price is determined by cost factors (e.g. by construction work prices²⁰) to a larger extent than market prices.

If housing construction was concentrated in regions with higher differences between supply prices and market prices, this would imply some degree of credit risk (banks would provide loans for property purchases, but if the client's payment discipline was bad, they would collect the pledge at a much lower market price). However, data on housing construction, which can be used to proxy the breakdown of housing loans by region, indicates that housing construction is concentrated more in those regions where this difference is lowest,²¹ thereby reducing this risk somewhat.

Box Property Price Determinants

Although the properties included in the aforementioned indices are used by their owners primarily for personal residential purposes, the view has been expressed that the end-2003 rise in property prices was speculative and related to the Czech Republic's accession to the EU and the expected relaxing of restrictions on property purchases by foreign natural persons.

These two hypothetical subcategories²² of loans for financing property purchases, i.e. loans to cover owners' personal housing needs and loans to

19 This may be due to statistical imperfections, possible differences in the wear and tear of flats in individual regions, or disproportionate price developments in Prague (prices in the most expensive parts of Prague are roughly twice as high as those in the cheapest districts).

20 The transmission of these costs into purchase prices has been partially contained. Given the limited share of housing construction in the total number of flats and houses, property market prices are determined more by the relationship of demand to the existing stock of flats/houses than by these costs.

21 The Central Bohemian region is an exception because of its very specific link to Prague. Housing construction in this region is more intensive (especially with respect to its lower population), but tends to take the form of construction of family houses. Thus the link between existing property prices and newly built property prices is relatively weak.

22 The two subcategories are only hypothetical because in most cases when providing a loan it is not possible to determine whether the property is being purchased for housing purposes or for speculative purposes. There are also property purchases that lie on the borderline between these hypothetical subcategories, e.g. when parents buy a flat for their underage child the purchase is speculative until the child comes of age.

cover speculative property purchases, seem to differ significantly in terms of credit risk and sensitivity to external factors. In the case of loans to cover owners' housing needs, housing is a necessary commodity and one can assume that households will try to hold on to their property "at any cost" and will therefore endeavour to repay the loan despite unfavourable movements in other variables (property prices, yields on other assets, market rent, market interest rates, etc.). However, increased credit risk can be expected for loans to cover speculative purchases if unfavourable trends arise.

If a property is regarded as an asset, the return on it needs to be compared with the returns on other assets. In addition to capital return (growth in the price of the property), market rent – which is monitored in the consumer price index (under category 04.111.06 *Category 1 rental flat with two rooms and with contractual rent*) – can be regarded as a return on the property. Assuming zero capital return and constant future rent, and comparing investment in the apartment with investment in long-term government bonds, the price of the property can be estimated (again assuming constant interest rates) using a simple formula for the perpetuity price, in which present and future rents are discounted by the nominal interest rate on long-term government bonds. Thus, the price of the property should equal:

$$P_H = \sum_{k=1}^{\infty} \frac{R}{(1+i)^{k-1}} = \frac{R \cdot (1+i)}{i}, \text{ where } P_H \text{ is the price of the apartment, } R \text{ is}$$

the market rent and i is the long-term interest rate on government bonds.

The formula indicates a positive dependence of the property price on market rent and a negative dependence on interest rates.

Data on actual property prices, when compared to "hypothetical" property prices calculated using this formula, indicate that the growth in property prices in recent years can be explained to a large extent by the rise in the market rent index and the decline in long-term interest rates. It would also be possible to link the minor correction in property prices in 2004 to interest rate growth. Actual property prices, however, reacted more to the rise in market rents (in 2001 H2), while their reaction to the interest rate decline (by 3.3 percentage points, or almost 50%, between mid-2001 and mid-2003) was much weaker, as was their reaction to the subsequent interest rate growth (by 1.5 percentage points between mid-2003 and the end of 2004 Q3).

It appears, then, that current property prices are in a state of relative equilibrium. They probably do not incorporate expectations of future radical growth in property prices and are not very sensitive to interest rates (contrary to expectations). However, as "hypothetical" property prices have already reached the level of "actual market" prices, there is some risk of a decline in property prices in reaction to possible further growth in interest rates. There is also some risk related to the difference between contractual rents and regulated rents. Since the beginning of 2001, this difference has risen by around one-third owing to a slowdown in rent deregulation, which is another factor that has fostered growth in apartment prices. Although rent deregulation is inevitable and desirable for the economy as a whole (rent regulation has adverse effects on labour force mobility, wealth redistribution, maintenance of "regulated" apartments, etc.), it might result in a temporary decline in contractual rents, thereby making investment in new property less attractive and reducing the prices of new property.

CHART III.7.BOX
Comparison of prices (CZSO vs IRI and hypothetical price)
(index, 2000 Q4 = 100)



Source: CZSO, IRI, CNB calculation

CHART III.8.BOX
Determinants of hypothetical property prices
(indices, January 2001 = 100, interest in % p.a.)



Source: CZSO, CNB