3 ASSET MARKETS AND THE FINANCIAL INFRASTRUCTURE

3.1 THE FINANCIAL MARKETS

Thanks to the global excess liquidity, the monetary policy tightenings in the USA and the euro area in 2006 had no major impact on long-term yields on the major world currencies. Risk aversion stayed low on global financial markets. Low interest rates fostered a “search for yield” and investment in riskier assets. In a situation of expectations of tighter CNB monetary policy, the strong integration of Czech long-term yields and yields in the euro area could result in a flattening of the yield curve, which would increase the pressure on banking sector profitability. Corrections on the financial markets suggest increased investor nervousness associated with uncertainty about the current favourable situation. The impact of the corrections on the Czech financial markets was, however, dampened in 2006 by a negative interest rate differential of the Czech koruna against the euro and the dollar and by the sound fundamentals of the Czech economy.

Developments on domestic and foreign financial markets affect financial institutions directly by changing the value of portfolios of assets held, as well as indirectly through their impact on the real economy.

Short-term interest rates reflect the current monetary policy settings and expected changes thereto. In 2006, the money market rates of major global currencies rose gradually in response to increases in monetary policy rates (see Chart III.1). The Fed continued tightening monetary policy only until the first half of 2006 (see section 2.1). In mid-March 2007, money market rates indicated expectations of a slight decline in dollar rates in 2007 due to expected lower economic growth and a cooling on the real estate market. By contrast, the ECB raised its key interest rate throughout the year in a situation of economic recovery and growth in the money supply and wages. In mid-March 2007, the market was expecting a slight tightening of ECB monetary policy in the near future. The global shift towards higher monetary policy rates in the past two years can be interpreted as an attempt by monetary policy authorities to return interest rates to more neutral levels and thus prevent a possible overheating of their economies and growth in global imbalances.

The three-month koruna interest rate (PRIBOR) rose slightly in the second half of 2006 in response to two increases in the CNB’s monetary policy rates in July and September 2006. The CNB has held the repo rate at 2.5% since then. Market rates edged down again at the end of the year owing to appreciation of the koruna exchange rate and speculation on a possible lowering of monetary policy rates or continued stability thereof. This caused the negative interest rate differential vis-à-vis the euro rate to widen to more than 1 percentage point at the end of 2006. This widening might lead to depreciation pressures on the koruna, although it is being counteracted by positive market sentiment and the koruna’s equilibrium real appreciation trend. In mid-March 2007, the market was expecting further CNB rate increases in 2007 owing to a potential rise in inflation pressures in a climate of strong economic growth and renewed household consumption.

Money market rate volatility in the Czech Republic remains relatively low compared to the advanced countries (see Chart III.2), despite changes to CNB monetary policy implementation in 2006 (see Box 5).39

39 In March 2007, money market rates did not react either to the announced monetary policy changes, in particular the lowering of the inflation target to 2% from 2010, or to the changes in the frequency of monetary policy rate decisions and in communication.
The available evidence suggests that interest rates on bank loans to non-financial corporations in the Czech Republic are directly linked to money market yields. Any increase in yields would immediately be reflected in the financial conditions of corporations, affecting their profitability and potentially even their default rate (see section 2.2).41 However, the impact of the expected increase in short-term interest rates in 2007 on non-financial corporations’ ability to repay their debts can be viewed as very limited.42

The monetary policy tightenings had no major impact on the long-term interest rates of the major world currencies in 2006. In a situation of rising short-term rates,
the negative slope of the dollar yield curve thus increased and the euro yield curve flattened out in 2006 (see Chart III.4). Although yields on ten-year euro and dollar government bonds increased slightly in the first half of 2006, they edged downwards later on (see Chart III.3). In both cases, however, they remain relatively low, albeit slightly higher than in 2005. The persisting low level of long-term rates in the last three years is due to a combination of several factors. The long period of low inflation has lowered long-term inflation expectations and the term premium demanded by investors for long-term assets. Furthermore, the long-term real interest rate may also have declined due to the global savings surplus and hence excess liquidity on the financial markets (see section 2.1).

Yields on ten-year Czech bonds move in line with euro yields. Their spread against euro bonds was negative in the first half of 2006 and in early 2007. The comovement of Czech and euro long-term bond yields suggests strong integration of the Czech and euro bond markets and may reflect the market-expected adoption of the euro as well as high credibility of the CNB (see Box 6).


The number of lags is determined on the basis of information criteria.

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**Box 6: Measuring financial integration on foreign exchange, stock and bond markets**

Financial market integration occurs when assets (currencies, shares or bonds) having the same risk factor and yield are priced identically by the markets no matter where they are traded. This follows from the law of one price.43 The more the individual segments of the Czech financial market become integrated with the European market, the more their asset prices will be affected by global (European) factors rather than local factors. Although high integration of asset prices with the advanced euro area countries may have a stabilising effect, it may at the same time create a channel for the transmission of external shocks to the domestic financial system.44

The concepts of beta-convergence (allowing the speed of financial integration to be determined) and sigma-convergence (allowing the degree of financial integration at any point in time to be determined) can be used to quantify the level of financial integration. Both concepts originate from the literature on economic growth and its dynamics.45 To quantify beta-convergence, it is useful to apply common regression analysis or the panel estimate method, in the form of the equation:

$$\Delta R_{i,t} = \alpha_i + \beta R_{i,t-1} + \sum_{l=1}^{L} \gamma_l \Delta R_{i,t-l} + \epsilon_{i,t},$$

where $R_{i,t}$ is the difference between the asset yields (national index) of country $i$ and a selected reference territory (a benchmark, European index) at time $t$, $\Delta$ is the difference operator, $\alpha_i$ is a dummy variable for the respective country and $L$ is the lag operator.46 The size of coefficient $\beta$ may be interpreted as a direct measure of the convergence speed. A negative beta

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43 If the law of one price did not apply, there would be scope for arbitrage. Assuming a fully integrated market with no barriers (economic, legal, cultural, etc.), any investor would be able to take advantage of this arbitrage opportunity, causing the law of one price to apply again.


46 The number of lags is determined on the basis of information criteria.
coefficient indicates the occurrence of convergence, and the absolute value of the beta coefficient indicates the convergence speed. The higher the absolute value of the $\beta$ coefficient, the higher the speed of convergence, and if $\beta = 0$, no convergence is observed.

To quantify sigma-convergence, the (cross-section) standard deviation ($\sigma$) is calculated according to the equation:

$$\sigma_t = \sqrt{\frac{1}{N-1} \sum_{i=1}^{N} \left( \log(y_{it}) - \mu_t \right)^2}.$$  

where $y$ is the asset yield, $\mu$ is the mean value of the data-set at time $t$ and $i$ stands for separate countries ($i = 1, 2, \ldots, N$). For the purposes of this analysis, we introduce $N = 2$, i.e. we examine the development of the sigma-convergence over time between the euro area and one of the countries under review. The coefficient $\sigma$ takes only positive values in theory. The lower is $\sigma$, the higher is the level of convergence. In theory, full integration is reached when the standard deviation is zero, while high (several digit) values of $\sigma$ reflect a very low degree of integration.

The results of the beta-convergence analysis for stock, foreign exchange and bond markets indicate that there is convergence of yields on Central European markets towards yields in the euro area (or Germany in the case of bond markets, Tables III.1–III.3 Box). The absolute values of the beta coefficient are close to one for all countries, which means that the levelling of newly arising differences in yield differentials between the relevant national economy and the euro area can be described as fast. Comparing the periods of 1995–2000 and 2001–2006, the speed of beta-convergence increased on all observed markets in the Czech Republic, whereas it declined for Slovakia. To sum up, the most progress in integration of financial markets with the euro area has been achieved by the Czech Republic, followed by Hungary, Poland and Slovakia.

The results of the sigma-convergence analysis for individual countries in relation to the euro area (Germany) show that the lowest degree of integration on individual financial markets at the end of the period under review had been achieved by Hungary, followed by Poland (see Charts III.2–III.4 Box). A more marked degree of integration had been achieved by the Czech Republic and Slovakia, with the highest degree of convergence having been reached by the Czech foreign exchange and bond markets. Overall, it can be seen that gradual trend sigma-convergence of stock and bond markets has been taking place in all the observed countries since 2000. Although the foreign exchange markets are more volatile, a trend toward convergence can be observed for the Czech Republic and Slovakia, whereas Hungary and Poland show rather divergent developments.

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47 For pairs of countries, the calculated values in each period are essentially equal to half the square of the yield differential.

48 Except for the Slovak bond market, where the trend cannot be determined due to the unavailability of pre-2002 data.

49 Analyses conducted for selected euro area countries (Austria and Portugal) show that the Czech Republic’s level of financial integration with the euro area is similar to that of, for example, Austria for stock and bond markets (see Analyses of the Czech Republic’s Current Economic Alignment with the Euro Area 2006, CNB 2006, available on the CNB website http://www.cnb.cz/).
Although the slope of the Czech yield curve remains positive, the market-expected rise in short-term rates coupled with flat long-term rates, which are very close to euro rates, might result in a flatter Czech yield curve in the future. Since the banking sector typically transforms short-term liabilities into long-term assets, a flat or inverted yield curve may squeeze profitability and increase interest rate risk. The available evidence suggests that Czech banks diversify their income between interest and non-interest income to some extent. However, interest income is a major part of total income from financial activities (see section 4.2). 50

Low risk aversion and the “search for yield”, which encouraged investor demand for riskier assets, persisted in 2006 and early 2007 due to low long-term returns on major world currencies and the global excess liquidity.51 The low risk aversion was also fostered by continuing positive economic developments, corporate sector profitability, the absence of large defaults and low volatility on financial markets (see Chart III.5). The result is relatively high prices of riskier assets, low spreads for emerging economy bonds and continued growth in non-financial sector indebtedness, particularly in the euro area.

Nevertheless, several episodes took place in 2006 and early 2007 which tested the level of risk aversion of major players on the financial markets. These episodes were started by seemingly marginal events and might indicate some increased investor nervousness associated with uncertainty regarding the persistence of the current high liquidity and low risk aversion. Iceland’s rating was downgraded in February 2006 and the Icelandic króna immediately weakened by around 15%. The currencies of countries with a similar macroeconomic profile (New Zealand and Hungary) responded to this depreciation and stock market indices declined in some emerging economies. The financial markets saw a significant correction in May and June 2006, which led to sales of riskier assets, including shares, commodities, emerging economy bonds and some credit derivatives. A further correction took place in February and March 2007, caused by reports of a planned clampdown on illegal activities and curbs on investment on credit in the Chinese stock market and by problems on the US mortgage market (see Chart III.6).

In all these cases, the volatility of financial markets increased only temporarily and asset prices soon returned to their original levels. This can be viewed as evidence of the robustness of current financial markets to shocks. The increased resilience can be put into the context of better risk redistribution using sophisticated financial instruments (most notably derivatives).

The episodes also affected yields on Central European financial markets, in particular stock and bond markets and exchange rates (see Chart III.7). However, the impact on the Czech financial markets was fairly limited. The currencies of Poland and Hungary mostly depreciated during these episodes, but the Czech koruna held steady. This could indicate a stronger tendency among investors to differentiate between individual countries of the region according to their economic fundamentals, such as GDP growth, current account deficits or inflation rates (see section 2.1). The weak reaction of the exchange rate of the Czech koruna might also be due to the low interest rates, which are motivating investors to use

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50 Interest profit has a stable share of around 60%. The share of profit from fees and commissions in banks’ total profit from financial activities in the Czech Republic increased from around 15% in 1995–1999 to almost 30% in 2003–2006 at the expense of profit from other financial activities, such as securities transactions. See also 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, which indicates a sufficient degree of diversification of banks’ income in the Czech Republic in comparison with other Central European countries.

51 The term “search for yield” is explained in the glossary.
the Czech koruna as a financing currency for carry trades. Corrections on global markets thus on the one hand lead to a “flight to quality”, i.e. sales of assets of riskier countries and depreciation of their currencies, but on the other hand lead to liquidation of positions in carry trades and hence appreciation of the currencies used to finance them.

The less developed markets of fast growing countries generate above-average yields for investors (see Chart II.4 in section 2.1). At the first sign of any instability, however, foreign investors pull their money out of these regions, which are perceived as riskier. Volatility on financial markets in Central Europe is thus much higher than in Western Europe or the USA. Once the situation calms down, foreign investors come back fairly quickly, causing a rapid return to the original values.

### 3.2 THE PROPERTY MARKET

Property prices saw comparatively rapid growth in 2006, on the back of roughly three years of stability. This growth exceeded that of wages in the economy. With respect to regions, the growth was driven primarily by the situation in Prague; the variance of prices across regions increased. The faster rise in property prices in the Czech Republic last year can be explained by the fact that in previous years they had lagged behind other EU countries. On the other hand, the rent return is decreasing, as rents are rising more slowly than apartment prices. It is therefore possible that part of the price growth is not related to fundamentals. The increasing number of flats under construction can also be viewed as a risk to financial stability, chiefly due to rising loans to property developers.

Property prices affect financial stability, as investment in property is viewed as a substitute for investment in financial assets as well as household consumption. Property prices thus show a similar profile in the business cycle as prices of financial assets (e.g. shares), although they are less volatile (see Chart III.8). Changes in property prices can affect the balance sheets of financial institutions via several channels. A fall in property prices can lead to a decline in financial institutions’ assets via their own investments in real estate or in real estate investment funds. Given high growth in loans for house purchase and the resulting increased sensitivity of household balance sheets to property price movements, a decline in property prices could also have a negative effect on households’ ability to repay such loans. At the same time, the value of the collateral on these loans would decrease, so a negative trend in the household sector would lead to greater impacts on the banking sector. The exposure of financial institutions to companies operating in the construction and real estate businesses (property developers), which have recorded credit growth, has a similar effect (see section 4.2).

It is clear that 2006 saw an upswing in property price growth (see Chart III.9). Following a period of price stability in 2003−2005, prices of flats and building plots in particular recorded growth in 2006.54 In some regions the price growth is very

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52 Unfortunately, the real degree of use of the Czech koruna as a financing currency for carry trades cannot be proved directly using data sources. However, some indirect indication is provided by the statistics on the Czech Republic’s international investment position and by the banking statistics, which show an increase in Czech banks’ koruna-denominated claims on non-residents in the last two years and an excess of commercial banks’ short-term claims on non-residents over short-term liabilities to non-residents.

53 For example, a fall in property prices would lead to a fall in the net assets of households.

54 It should be noted, however, that the 2006 data are preliminary and not entirely comparable with the data for previous years. The data up to 2005 reflect property transfer prices published by the CZSO, whereas the 2006 data are estimated from estate agencies’ supply prices. The latter, however, are not available for all regions and for all types of property.
strong in year-on-year comparison — supply prices of flats in Prague recorded year-on-year growth of 24.3% at the end of 2006, accelerating mostly in the second half of the year. This rise in prices is most probably linked with increased demand for housing, which can be put into context with the aforementioned strong growth in loans for house purchase, demographic effects and with the stable macroeconomic environment (real income growth and low inflation and interest rates). Besides these relatively natural factors, the growth in prices was also due to speculation on an increase in VAT on construction work from 5% to 19% as of 1 January 2008. However, given the uncertainty regarding the definition of “social housing”, which is expected to be excluded from the VAT increase, and the uncertainty regarding the tax changes in general (a government proposal to increase the basic VAT rate from 5% to 9%), a question hangs over whether this price increase is natural and whether it might be supporting the formation of a property market bubble. A comparison of flat prices and incomes may indicate the beginnings of a price bubble. At the end of 2006, the ratio of flat prices in Prague to wages was approaching the level recorded at the end of 2003 (see Chart III.10), when speculation on flat price growth connected with the Czech Republic’s accession to the EU peaked. This growth ultimately failed to materialise.

On the other hand, the current rapid rise in property prices can be explained quite well by catching-up of the price level in the Czech Republic with that in other EU countries. According to the annual report of the European Council of Real Estate Professions, flat prices in Prague at the end of 2005 were 87.3% of those in Berlin, 70.8% of those in Hamburg, 81.9% of those in Vienna, 45.5% of those in Rome, 26.2% of those in Madrid and 23.5% of those in Paris. In 1997–2005, meanwhile, house price inflation in the Czech Republic was not very high compared to the EMU countries (see Chart III.11). Property prices in the Czech Republic grew somewhat faster than in the euro area (by 13 percentage points in 8 years in the absolute index), but this was largely because the property price index in the euro area was affected by flat or falling prices in Germany. Up to 2005, property price growth in the Czech Republic lagged fairly significantly behind that in countries with stronger GDP growth (Ireland, Greece and Spain). As regards international comparisons, it is interesting to note that the slowest property price growth in the euro area is being recorded by Czech Republic’s neighbouring countries and major trading partners, namely Germany and Austria (which saw price decreases of 2.7% and 2.8% respectively in 1997–2005). Absolute property prices in Germany and Austria are still slightly higher than in the Czech Republic, but the flat price to wage ratio for Prague is already 2.5–3 times higher than that in Berlin, Vienna or Hamburg.

As regards regional price developments in the Czech Republic, the hypothesis of Prague as the price leader has been confirmed. Prices in other regions react with a lag. In the previous years of relatively stable price growth, there was a clear trend of price convergence across regions, with prices rising faster in regions with lower absolute prices than in those with high prices. In 2006, however, the price growth in other regions lagged somewhat behind that in Prague. This translated not only into an increase in the ratio of flat prices in Prague to the overall apartment price

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56 Originally, all flats with a floor area of up to 90 m² and family houses with a floor area of up to 150 m² were to have been excluded from the tax increase. Under the government’s new proposals, these limits are to be increased to 120 m² for flats and 350 m² for family houses. This definition covers most of the housing currently under construction.

57 In Brno, flat prices were 73.3% of those in Berlin, 59.5% of those in Hamburg, 67.8% of those in Vienna, 38.2% of those in Rome, 22.0% of those in Madrid and 19.8% of those in Paris.

58 This ratio is, however, still at 68% of the level in Madrid and 88.5% of the level in Paris. Data from the annual report of the European Council of Real Estate Professions.
index, but also into an increase in the standard deviation across regions (see Chart III.12). This can be interpreted as an increase in uncertainty regarding property prices. At the same time, however, it suggests that the current price growth in Prague cannot yet be viewed as a general trend and we will have to wait and see whether it is confirmed by price increases in other regions.

Given the possibility of buying property more often for speculative purposes and the related potential property price bubble, it is also necessary to analyse the relationship between property prices, market rents and yields on alternative assets (e.g. long-term bonds or shares). In recent years, market rents have shown consistently lower growth than prices, leading to a declining “rent return” (see Chart III.13). Property supply prices in Prague, for example, increased by 24% between the end of 2004 and 2006, while rents fell by 1.5%. The rent return thus decreased by 1.2 percentage points. This widening of the gap between rents and property supply prices was recorded in a situation where long-term bond yields grew by 0.3 percentage point. A decrease in rent return is also apparent in other regions, where, however, the return is higher in absolute terms, chiefly because of lower supply prices. The dependence of rent return on the absolute price level suggests that the speculative motive is not currently dominant as regards households’ investment in real estate. Given the concentration of housing construction in Prague and surrounds (see below), it is thus obvious that investors expect further growth in property prices in these regions.

The rent deregulation process under Act No. 107/2006 Coll. is new information with respect to the relationship between prices and rents. A positive aspect of the Act is that, unlike previous amendments, it aims to link the speed of rent deregulation with market factors. The rate of deregulation will thus be higher in regions with the highest degree of rent distortion (see Chart III.14). The objective of the Act is for regulated rents at the end of 2010 to reach 5% of the “target price” announced by the Czech Ministry of Finance. The fact that this 5% is still below the rent return calculated in Chart III.13 and that the “target prices” are roughly 70%–80% of current market/supply prices means that distortions will remain on the property market even after the planned deregulations. Nonetheless, it can be expected that in some regions the deregulation may affect unregulated rents and hence also prices (particularly in regions above the regression curve in Chart III.14, where rent deregulation is fastest relative to the current degree of regulation).

The rising property prices, together with the growing availability of loans for house purchase, has also generated a recovery in housing construction. The number of housing starts is currently at its highest level since the first half of the 1990s, when the previous “social” construction of mostly prefabricated “panel” buildings (launched during the central planning period) was nearing completion (see Chart III.15). However, the number of housing completions fell by about 8% compared to 2004 and 2005. The rise in housing starts and the fall in housing completions

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60. Rent return = 12 * market monthly rent/supply price of flat. This yield does not take into account wear and tear and other costs relating to ownership of the property (repairs, charges for some services etc.) or the “credit risk” associated with the tenant’s potential failure to pay. Therefore, this yield should always be higher than yields on more liquid other assets, which are not burdened with such costs or risks (bonds, for example).
61. The exceptions are Prague 1 with 2.9%, Prague 2 with 3.65% and Prague 6 with 4.6% of the target price, and lower-quality flats.
62. The “target rent”, i.e. rent after the deregulations in 2010, is on average 58% of the current supply rent, with a minimum of 41% in Ústí nad Labem and a maximum of 74% in Hradec Králové.
63. The feedback to prices via the increased supply of flats is not of great significance so far, as the ratio of all flats completed since the end of 2001 to the total housing stock this year is still relatively low (4.0%).
logically resulted in a rise in the number of flats under construction. This is at its highest level since 1989. An increasingly large proportion of the housing under construction is intended for sale and a considerable part of it is debt financed. The increasing number of flats under construction (if the present number of completed flats were maintained it would take 5.6 years to complete the flats currently under construction) thus poses a risk. This is confirmed by microeconomic studies of specific property development projects in Prague. These studies reveal a lengthening of the time it takes to sell apartments, which means additional costs for developers. These costs are of relatively low significance in the case of general growth in flat prices. If prices fall, however, they could become a risk factor as regards repayment of loans by these entities.

3.3 THE FINANCIAL INFRASTRUCTURE

Financial stability continued to be supported in 2006 by the smooth operation of the interbank payment system CERTIS and the short-term bond system SKD, both of which are administered by the Czech National Bank. An upgraded version of CERTIS with greater capacity and lower running costs went live at the end of the year. Progress was also made with the SEPA (Single Euro Payment Area) project in 2006.

### 3.3.1 SKD and CERTIS – transaction volumes and recent developments

The Short-Term Bond System (SKD) is used for issuing and registering all book-entry securities with maturities of up to one year and for settling trades in these securities. T-bills and CNB bills are registered in SKD. The system enables sales of securities, repos and sell and buy operations, as well as pledges and exchanges of securities. CERTIS (Czech Express Real Time Interbank Gross Settlement System) processes all domestic interbank transfers in Czech koruna in real time.

In 2006, SKD processed around 13,800 transactions with a total value of CZK 47,534 billion. Despite a decline in the number of transactions, their total value increased by 22% compared to 2005 (see Table III.1). An average of CZK 188 billion was processed every day. SKD’s turnover in roughly 17 days equalled annual nominal GDP.

Smooth and stable interbank settlement is supported by the use of intraday credit (see Table III.1). The CNB uses intraday credit to provide additional liquidity to eligible entities (commercial banks in particular) in order to ensure smooth settlement of orders in CERTIS. The volume of intraday credit increased by about 90% in 2006 compared to the previous year, to CZK 6,884 billion, mainly due to pressure for use of this instrument to ensure smooth interbank payment processing. The volume of intraday credit had been increasing steadily in previous years as banks became more aware of how it can be used. Interest-free intraday credit is provided to CERTIS participants through SKD. This credit is collateralised, which reduces credit risk to the minimum possible level.

### Table III.1
SKD – statistical information

<table>
<thead>
<tr>
<th>Period</th>
<th>Total value of transactions (CZK billions)</th>
<th>Total number of transactions</th>
<th>Total volume of intraday credit (CZK billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>47,534</td>
<td>13,810</td>
<td>6,884</td>
</tr>
<tr>
<td></td>
<td>Source: CNB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table III.2
CERTIS interbank payment system – statistical information

<table>
<thead>
<tr>
<th>Period</th>
<th>Turnover (CZK billions)</th>
<th>Average daily turnover (CZK millions)</th>
<th>No. of transactions (millions)</th>
<th>Average daily no. of transactions (millions)</th>
<th>GDP/ Average daily turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>105,343</td>
<td>431</td>
<td>262</td>
<td>1.12</td>
<td>5.6</td>
</tr>
<tr>
<td>2003</td>
<td>66,918</td>
<td>385</td>
<td>317</td>
<td>1.26</td>
<td>6.6</td>
</tr>
<tr>
<td>2004</td>
<td>110,127</td>
<td>434</td>
<td>333</td>
<td>1.32</td>
<td>6.4</td>
</tr>
<tr>
<td>2005</td>
<td>129,954</td>
<td>488</td>
<td>356</td>
<td>1.40</td>
<td>6.0</td>
</tr>
<tr>
<td>2006</td>
<td>151,537</td>
<td>604</td>
<td>382</td>
<td>1.52</td>
<td>5.3</td>
</tr>
</tbody>
</table>

| Source: CNB |

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64 In 2002, flats for sale after completion accounted for 19.3% of all completions, 20.4% of all starts and 14.5% of flats under construction. By 2005, the figures had risen to 34.4%, 37.9% and 19.8% respectively.

65 Housing construction is concentrated mainly in Prague and the Central Bohemia Region, which accounted for 36.9% of housing completions and 37.3% of housing starts in 2006. See Čápová, D.: Vývoj cen bytů a nemovitostí určených pro bydlení – realitní bublina v Praze (Flat and Residential Property Prices – A Real Estate Bubble in Prague). In: Proměny bydlení. Ostrava: VŠB-TUO, 2006, díl 1.

66 A more detailed description of these systems is given in the 2004 Financial Stability Report. Risk management and the evaluation of these systems against international standards is dealt with in the 2005 Financial Stability Report.
SKD recorded no system-relevant failures in 2006; the percentage uptime was 99.8%. This demonstrates that the CNB also pays sufficient attention to SKD operational risk management. The business continuity plan is tested twice a year with the involvement of SKD participants.

As in previous years, CERTIS ran smoothly in 2006, with a continued upward trend in the number of payments settled (see Table III.2). CNB Clearing processed 381.7 million items totalling CZK 151,537 billion, which represents a rise of 23% compared to 2005. The average daily number of items processed was 1.52 million and the average daily value of the items was CZK 603.7 billion (see Charts III.16–III.18). These figures reveal the extent of payment settlement in CERTIS and its significance for financial stability. It took roughly five and a half working days to reach a turnover equal to annual nominal GDP.

Even the record number of items (4.949 million) processed in one day in September 2006 caused no problems and posed no threat to the smoothness of settlement, even though this figure is close to the capacity of the former CERTIS technical platform. The 2005 maximum number of items processed was exceeded by about 10%.

In November 2006, a new CERTIS system was successfully put into routine operation (see Chart III.19). CERTIS was upgraded due to increasing demands on the system’s capacity and efforts to cut running costs. This made it possible to reduce prices for users. The upgrade, which involved transferring the core of the old system to a new platform, allowed the existing functions and tried-and-tested standards to be preserved while significantly reducing the risk of system overload and the risks to smooth and secure settlement. Whereas the former system had processed about 400,000 items an hour, tests of the new system proved its ability to handle up to 1 million items an hour. On 1 August 2006, the old and new systems started operating in parallel. This proved that the data processing results were the same in both systems. Since the data transfer format was unchanged, banks merely had to redirect their communications.

The CNB’s fee-charging policy is managed with a view to promoting smooth settlement, enhancing payment system efficiency and increasing the number of non-cash payments executed in the Czech Republic. The fees are derived from the number of transactions entered into the system and from the time of entry. The fee per item increases as the day progresses – the fee band applied depends on when the payer’s bank sends the relevant files to the CNB. The available statistics show that most client items are sent in the cheapest bands at night or in the early hours of the morning (formerly CZK 0.25 and CZK 0.65 per item respectively, and since 1 January 2007 CZK 0.22 and CZK 0.40 respectively). The other bands – the fees for which were formerly as high as CZK 200 (CZK 100 since 1 January 2007) – are used primarily for transfers covering securities transactions or transactions between banks, or for urgent interbank payments. For banks that transfer large numbers of items the central bank provides quantity discounts that depend on the total number of transactions sent for settlement per month (for monthly volumes of between 250,000 and 2.5 million the discount is CZK 0.04 per transaction; for the next band – up to 5 million – the discount is CZK 0.08 per item; and above this level it is CZK 0.13 per item).
3.3.2 Monitoring of European trends

The CNB actively monitors developments in the European infrastructure and issues associated with the EU’s new payment framework. CNB representatives work in the relevant ECB committees and working groups, are involved in the preparation of the Payment Systems Directive and, together with the Czech Banking Association, monitor progress with preparations for the Single Euro Payment Area (SEPA).\(^{67}\)

The establishment of SEPA is considered the most important payment systems project in Europe. SEPA will enable clients to execute any euro payment transfer from a bank account or by card under the same conditions as in the existing national payment systems. All payments should be at least as safe and efficient as in the current best national systems and should have the character of domestic services. The SEPA implementation process has been divided into several phases for 2008–2010. SEPA is a voluntary initiative of commercial banks. The main co-ordinator and decision-making body for banks in relation to SEPA issues is the European Payments Council. The Czech Banking Association has been an EPC member since 2004. The successful involvement of Czech banks’ representatives in the EPC, and specifically in the direct debit working group, is evidenced by the incorporation of the Czech direct debit system into the Direct Debit Scheme Rulebook and its approval as fully SEPA-compatible.\(^{68}\)

Thanks to EPC membership Czech banks obtain regular information about progress with the SEPA preparations and can prepare in good time for costly changes. For banks, however, the introduction of SEPA products will mean large investments in system modifications,\(^{69}\) increased expenses and increased competition. SEPA will ultimately affect all bank clients, i.e. the whole financial sector. The CNB is working in partnership with the CBA to prepare documents governing the implementation of the main payment instruments after 1 January 2008.

The Czech Republic will have to adapt to the SEPA standards for euro payments only (both domestic and cross-border). Given also that most payments in the Czech Republic are denominated in korunas,\(^ {70}\) there is no danger of commercial banks active in the Czech Republic being unable to perform the tasks that the project will impose on them in 2008–2010. When the euro is adopted in the Czech Republic, all the agreed standards for cross-border payments will have to be in place. For this reason, the SEPA issue is included in the mandate of the NCG\(^ {71}\) Financial Sector Working Group. This group is responsible for preparing the payment and settlement system conversion plan, connecting to the European payment system and making changes to the domestic interbank payment system.

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68 Unlike the method usually applied in the Czech Republic, the direct debits frequently used in Germany, Italy and France are based on a high degree of trust between payers and beneficiaries, supported by strict legislation in this area. The Czech method is fully automated and risk-free for both clients and banks: consent to debit is checked by the payer’s bank, and the beneficiary’s bank credits the funds to the beneficiary’s account only after obtaining payment from the payer’s bank.

69 For example, orders and Swift messages will have to be extended to include a number of fields, e.g. the identification code of the payer and the identification code of the beneficiary.

70 SEPA applies to euro payments only. A new directive on payment services has been prepared in parallel with the SEPA project. This governs payment conditions in the EU as a whole regardless of the payment currency.

71 The National Co-ordination Group for the Introduction of the Euro.