

VII. SECTORAL DEVELOPMENT

VII.1 Residential Real Estate Market in the Czech Republic: Still Going Strong

Housing markets around the world have been affected by the bursting of the real estate bubble in the United States, which had been triggered by a high delinquency rate among sub-prime mortgage borrowers. However, the impact of the sub-prime mortgage crisis followed by severe liquidity problems of major investment banks has been different for each country. According to the Economist's house price indicators from May 22, 2008, there are several countries with housing price

appreciation over 10%: Singapore, Hong Kong, Australia, Sweden, and China. On the other side of the spectrum, there are five countries where the real estate prices actually fell: Japan, Britain, Germany, Ireland, and the United States. The markets also slowed down in Switzerland, the Netherlands, Denmark, and Spain. Many Central and Eastern European countries, including the Czech Republic, experienced rising property values. The question is how these countries have been

Table VII.1.1 Prices and Rents for Existing Apartments (68 m²)

	2001	2002	2003	2004	2005	2006	2007
Prices – CR							
Average 335 Regions, 1,000 CZK	408	437	520	604	620	675	902
Annual Growth Rates %		7.23	18.98	16.06	2.74	8.89	33.62
Growth 2001–2003 %			27.58				
Growth 2004–2007 %							49.48
Prices – Prague							
in 1,000 CZK	1,252	1,437	1,843	1,855	1,809	2,047	2,517
Annual Growth Rates %		14.78	28.25	0.65	-2.48	13.16	22.96
Growth 2001–2003 %			47.2				
Growth 2004–2007 %							35.69
Rents – CR							
Average 335 Regions, CZK	3,565	3,732	4,206	4,598	4,627	4,565	4,911
Annual Growth Rates %		4.67	12.72	9.32	0.62	-1.34	7.58
Growth 2001–2003 %			17.98				
Growth 2004–2007 %							6.8
Rents – Prague							
CZK	7,526	8,443	10,252	9,893	9,204	9,139	9,275
Annual Growth Rates %		12.19	21.42	-3.5	-6.96	-0.7	1.48
Growth 2001–2003 %			36.22				
Growth 2004–2007 %							-6.25

Source: Institute of Regional Information, Brno

affected by the collapsing U.S. market. This section aims at characterizing the situation in the Czech Republic. The focus is on the market fundamentals until the end of 2007 due to data availability.

The analysis of factors affecting housing prices can be used to determine if there is a bubble in the Czech real estate market. Knowing whether there is a bubble is clearly important since a policy maker can guess the qualitative consequences of a burst such as a reduction in consumption followed by a recession. The first sign of a bubble is the rapidly increasing price of real estate. Using data from the Institute of Regional Information in Brno, the average price of a standard 68 m² apartment in the Czech Republic increased by 27.6% in the 2001–2003 period and by 49.5% in the 2004–2007 period (see *Table VII.1.1*). The growth for prices in Prague for the same periods was 47.2% and 35.7%, respectively. The shock from entering the European Union was anticipated and absorbed ex-ante since the rate of change in apartment prices slowed down significantly in the period 2004–2006. Prices then accelerated in 2007; they grew by 33.6% in the Czech Republic overall and by 23.0% in Prague, respectively. These unexpectedly large growth rates could be caused to some extent by shifting demand from newly built to existing apartments. The rapid acceleration outside of Prague may also be partly explained by an improved economic situation in these regions. However, the price increases are still large and the question remains if they have been supported by fundamentals.

The definition of fundamental variables reflects an underlying present-value model or a structural model. These are the two most frequently used ways of deciding whether real estate is overvalued. The present-value model

ties together asset prices with a stream of earnings related to a particular asset. This model views a house or an apartment as an investment vehicle with future rents determining the current prices. Predictions of this model are similar to yet another view which considers market segmentation, with apartments for rent on the one hand and apartments for purchase on the other. Both alternatives suggest that higher rents imply higher prices (either because a purchase is a good investment or because renters purchase their own apartments) and vice versa. Between 2001 and 2003, rents increased by 18.0% in the Czech Republic and by 36.2% in Prague (again using data from the Institute of Regional Information in Brno, see *Table VII.1.1*). In the subsequent four-year period, rents increased by 6.8% in the Czech Republic and actually dropped by 6.3% in Prague.

The structural model is a simple demand and supply model where supply determinants include depreciation, construction costs, etc., and demand determinants are, among other things, income, interest rates, housing cost, and the user costs of owning a house. Here we will focus on two main determinants of demand and one of supply: income, the mortgage market, and construction costs (see *Table VII.1.2*).

The increase of net disposable income and construction costs in 2001–2003 was 6.2% and 4.9%, respectively. Both the leftward shift of the supply curve and the rightward shift of the demand curve increased the prices of housing. While reliable data for the mortgage market are not available for this period, putting together these numbers with the growth in rents goes a long way towards explaining apartment prices. The relevant numbers are $6.2\% + 4.9\% + 18.0\% = 29.1\%$, which is comparable with the

Table VII.1.2 Determinants of Real Estate Prices

	2001	2002	2003	2004	2005	2006	2007
Net Disposable Income							
Mln CZK, 2000 Prices	1,750,744	1,790,709	1,858,831	1,914,389	2019537	2132085	2296042
Annual Growth Rates %		2.28	3.8	2.99	5.49	5.57	7.69
Growth 2001–2003 %			6.17				
Growth 2004–2007 %							19.94
Construction Costs							
Index, Average in 2005=100	89.47	91.88	93.88	97.37	100.20	103.08	106.75
Annual Growth Rates %		2.69	2.18	3.72	2.91	2.88	3.56
Growth 2001–2003 %			4.93				
Growth 2004–2007 %							9.64
Avg. Mortgage Rates %				5.24	4.67	4.83	5.16
Mortgage Volume							
Total, Mln CZK				7,583.9	8,378.3	8,267.5	12,930.4
Annual Growth Rates %					10.47	-1.32	56.4
Growth 2004–2007 %							70.5

Sources:

[http://www.czso.cz/csu/csu.nsf/ii/graf_2_stavebnictvi_celkem/\\$File/gjpcr051608_2.xls](http://www.czso.cz/csu/csu.nsf/ii/graf_2_stavebnictvi_celkem/$File/gjpcr051608_2.xls)http://dvw.czso.cz/pls/rocenka/rocnkavyber.makroek_duchod_enhttp://www.cnb.cz/cnb/STAT.ARADY_PKG.PARAMETRY_SESTAVY?p_cSest=942&p_ind=AABB&p_lang=EN

27.6% apartment price growth from 2001 to 2003. This supports the conclusion that the growth of apartment prices was in line with the fundamentals from 2001 to 2003. The numbers for the 2004–2007 period are 19.9% + 9.6% + 6.8% = 36.3%, much lower than the increase of 49.5% in the apartment prices. The missing element is the boom in the mortgage market that made mortgages available to a large portion of the population. This drove apartment prices up due to a higher demand for housing, especially in 2007. As a result, the real estate prices seem high compared to the fundamentals.

The reason for the large increase in the volume of mortgages is a big mystery. Czech households may have increased their demand

for mortgages by anticipating an increase in mortgage rates, which did not materialize. However, this is not likely to be the whole story since the mortgage volume rose by a whopping 56.4% in 2007. The numbers published by the Czech Statistical Office in the first quarter of 2008 indicate that housing prices are still increasing albeit more slowly than in 2007. The macroeconomic outlook has worsened somewhat due to slower GDP growth and rising inflation. This suggests that fundamental factors affecting the housing market will be weaker than in the past and hence the overvaluation of Czech residential real estate will be even greater. Sooner or later, the residential prices should go down.