

# Áron Horváth<sup>1</sup> and Gyöngyi Körmendi<sup>2</sup>: Changes in domestic housing prices<sup>3</sup>

Housing wealth plays a decisive role in households' wealth in Hungary. Therefore, the developments in housing prices are crucial both in terms of the real economy (households' consumption-investment decisions) and financial stability (risks of mortgage loans to households). The MNB took account of several indicators during the examination of the developments in housing prices in Hungary. The advantage of the recently elaborated FHB housing price index is that it is based on the most recent and most comprehensive transaction database available, and it also measures changes in prices within shorter time intervals more precisely. Based on this indicator, housing prices in Hungary increased by 15 per cent in real terms between the beginning of the millennium and the end of 2008. As for the recent past, all the available information indicates that housing prices still stagnated in 2008 Q4, before a moderate decline of around 6 per cent was observed in 2009 H1. The magnitude of the decline in domestic housing prices since the onset of global financial crisis can be considered low in international comparison. Pronounced declines in housing prices have been observed mainly in the Baltic countries, Bulgaria, the Ukraine and in some developed countries.

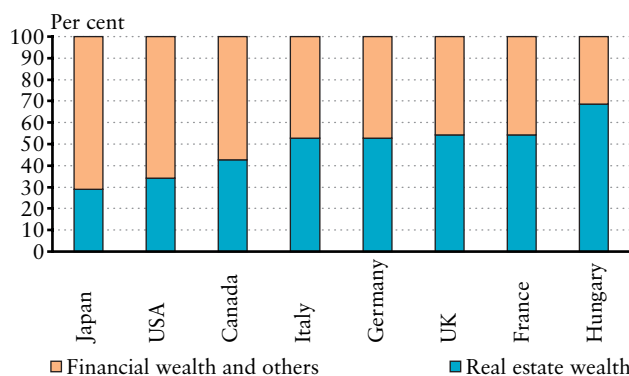
## WHY IS THE HOUSING MARKET IMPORTANT?

Around 90 per cent<sup>4</sup> of homes in Hungary are owned by their occupants. This ratio is much higher than the West-European average. Consequently, housing wealth has a determining share within households' wealth in Hungary. While housing wealth represents nearly 70 per cent of the total wealth in Hungary, this ratio is around or below 50 per cent in more developed countries (see Chart 1).<sup>5</sup> Consequently, the changes in housing prices have a significant effect on households' investment and consumption decisions.

Developments in housing prices are relevant not only in terms of macroeconomy, but also from the aspect of financial stability.<sup>6</sup> As a result of the high housing wealth, household mortgage loan product, which can be used for both housing investment (housing loan) and consumption (general purpose mortgage loan), plays a dominant role in banks' credit supply. At present, the share of real estates encumbered with a mortgage is nearly 40 per cent of the total housing stock.<sup>7,8</sup> In lending, the existence of real estate collateral has a potential loss-reducing function from the aspect of the

Chart 1

### Ratio of financial and real estate wealth in households' portfolio



Source: Gábor Vadas (2007): *Wealth Portfolio of Hungarian Households – Urban Legends and Facts*.

financial system. The average loan-to-value ratio (LTV) of mortgage loans is relatively low, at around 65 per cent. The risk is that a decline in housing prices will increase the level of LTV, i.e. reduce coverage. In the event that a loan with a

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<sup>3</sup> The views expressed in the paper are those of the authors and do not necessarily reflect the official views of Magyar Nemzeti Bank, the central bank of Hungary. The authors thank Gergely Kiss (Monetary Strategy and Economic Analysis) for his supporting comments.

<sup>4</sup> Source: *Report on Financial Stability*, April 2009. ([http://english.mnb.hu/Engine.aspx?page=mnbenn\\_stabil&ContentID=12307](http://english.mnb.hu/Engine.aspx?page=mnbenn_stabil&ContentID=12307))

<sup>5</sup> Gábor Vadas (2007): *Wealth Portfolio of Hungarian Households – Urban Legends and Facts*. [http://www.mnb.hu/Engine.aspx?page=seminar\\_2007&ContentID=9661](http://www.mnb.hu/Engine.aspx?page=seminar_2007&ContentID=9661).

<sup>6</sup> Zhu, H (2003): 'The importance of property markets for monetary policy and financial stability', presented at the IMF/BIS Conference on Real Estate Indicators and Financial Stability, 27-28 October, Washington DC.

<sup>7</sup> *Report on Financial Stability*, April 2009. ([http://english.mnb.hu/Engine.aspx?page=mnbenn\\_stabil&ContentID=12307](http://english.mnb.hu/Engine.aspx?page=mnbenn_stabil&ContentID=12307)).

<sup>8</sup> From Hungary's point of view it is also important to emphasise the phenomenon that only two thirds of mortgage loans recorded on real estates are housing loans; the remaining one third consists of general purpose mortgage loans, which may carry special risk to financial stability.

high LTV goes into default, the price drop stemming from a forced sale may result in significant losses because of depreciation of the collateral, i.e. an increase in LTV towards 100 per cent. Of course, it is in both the bank's and the customer's interests to avoid a significant drop in the price, and therefore there is strong willingness on both sides to avoid the termination of the loan. This effort most often appears in the restructuring of loans.

## HOUSING PRICE INDICATORS IN HUNGARY

In our previous analyses of the Hungarian housing market we mainly presented the average price of the Hungarian Central Statistical Office calculated using the databases of the duties offices. Regional duties offices record the prices of all dwellings which are sold. Data collection has been centralised at the APEH (Hungarian Tax and Financial Control Administration) since 2007. The HCSO supplies the MNB with data on this basis. The database is complete, so developments in the prices of houses sold can be measured well. Although the recording of data before 2001 is often inaccurate and incomplete, even disregarding the problematic records, data on more than 600,000 transactions are available. Due to the time requirement of data recording and processing, the indicator which shows longer term, general trends was available with a delay of three quarters to one year.

We used the summarised data of housing advertisements on the website of Origo to follow current developments. Since 2001, approximately 300,000 advertisements can be observed annually at national level (200,000 of which are for Budapest). The disadvantage of the data source is that it contains offer prices. Therefore, unrealistic advertisements that have been displayed for a longer time cannot be excluded, and we cannot know the final purchase price resulting from bargaining during the transaction either. Data from the Internet probably underestimate long-term price developments, because with the spread of the use of the Internet the composition of advertisements may have shifted towards cheaper flats. It may also be presumed that in the current environment the difference between advertisement data and actual transaction prices is greater, because sellers reduce the offer price to a greater extent owing to the narrowing of the market.

The developments in the value of collaterals behind the loans are a key issue in the current economic environment. Therefore, together with the FHB Mortgage Bank Co. Plc., the MNB has developed a new indicator. The time series

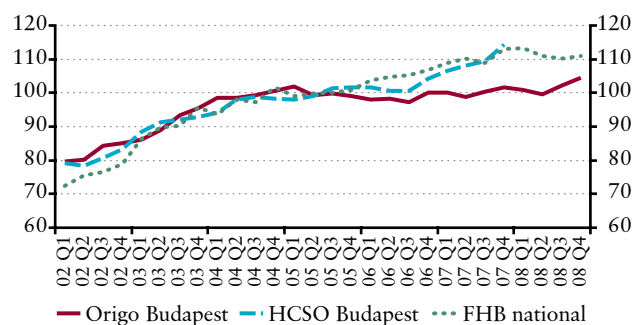
called FHB housing price index is prepared on the basis of real estate price data available to the FHB. The database contains all the information going back to 1998 accumulated during the operation of the bank as well as data recorded by regional duties offices. The bank takes over these data from the APEH, just as the HCSO does. Accordingly, this database also contains more than 600,000 entries. In the course of its own operation, the FHB also obtains up-to-date information on the housing market. As a result, transaction data for 2009 H1 are already available. We calculated the indicator measuring the value of the housing stock on the basis of the hedonic method,<sup>9</sup> which is in general use in international literature. This technique is used for treating the variability of the composition of observations (the sample) and for measuring the actual fundamental developments in prices of the stock as a whole. This is necessary because buying and selling does not take place in each period in connection with all dwellings, i.e. the sample consisting of the observable transactions does not represent the housing stock completely.

Chart 2 shows the developments in the previously used indicators and the FHB housing price index. The trends of the average price calculated by the HCSO and the FHB housing price index calculated using the hedonic method are similar, and over the longer term the same lesson can be learnt from them. The index calculated on the basis of the Origo database shows a lower increase. The chart also confirms that simpler indicators fluctuate more over the shorter run, while the index produced using the regression methodology shows a smoother development. It means that the change in the composition of dwellings sold may play a role in the short-term fluctuations, which is eliminated by the hedonic method.

### Chart 2

#### Developments in nominal housing prices on the basis of various calculation methods used by the MNB

(2005=100)



Sources: Origo, HCSO, FHB.

<sup>9</sup> Kain, John F. and John M. Quigley (1970): Measuring the Value of Housing Quality. *Journal of the American Statistical Association* 65 (330), June 1970, pp. 532–548.

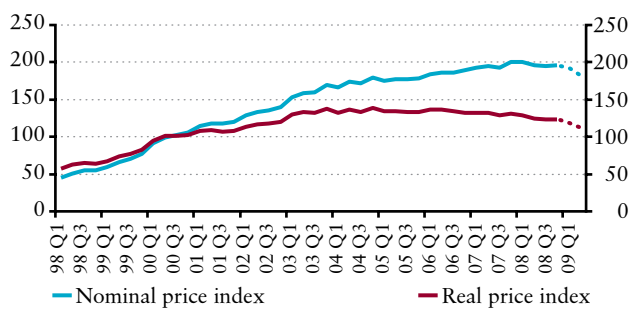
## CHANGES IN HOUSING PRICES IN HUNGARY

Charts 3 and 4 depict the indicator deflated by the consumer price index, i.e. they show the changes in real housing prices on the basis of the FHB housing price index. The history of the housing market in the last decade can be divided into three parts. Early in the period, in 1999 and 2000, prices increased considerably (by 60 per cent in real terms in two years). Supply grew significantly after the turn of the millennium, with a simultaneous slowdown in the increase in prices. The end of the period of the housing subsidy system is clearly visible in the 2003 Q4 outlier: before the introduction of the tightening measures in 2004, housing purchases that were brought forward added to the demand (in real terms, a total 28 per cent price increase was observed between 2001 and 2004). Following this, the real value of

dwellings stagnated, before starting to decline in 2007. In the four years between end-2004 and end-2008, the total decline in housing prices amounted to 13 per cent in real terms.

The period since the beginning of the crisis deserves special attention. The processing of this period by the duties offices is still going on. Consequently, neither the HCSO's nor the FHB's housing price index databases are complete. Chart 5 depicts the recent developments in our indicator based on the two kinds of databases. Both sources suggest that no decline in prices was experienced in 2008 Q4, when the crisis started. Based on the information available so far, however, it is almost certain that housing prices in Hungary declined slightly in 2009 H1. For the time being, the magnitude of the decline can only be measured with a high degree of uncertainty, but in all likelihood it is around 6-8 per cent compared to end-2008.

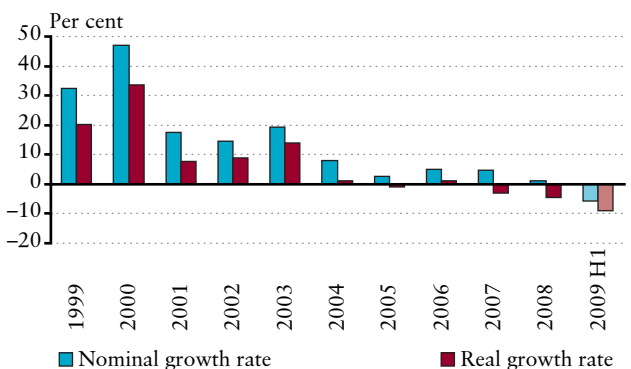
**Chart 3**  
Developments in housing prices in nominal and real terms on the basis of the FHB housing price index (2000=100)



Note: The dashed lines indicate that the set of information for the period is incomplete.

Sources: HCSO, FHB.

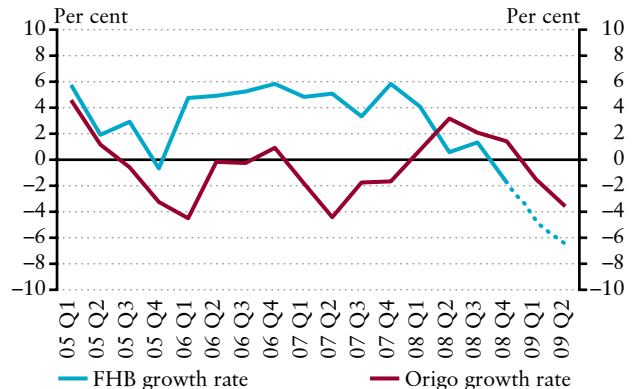
**Chart 4**  
Nominal and real annual growth rate of housing prices on the basis of the FHB housing price index



Note: The hatched columns indicate that the set of information for the period is incomplete.

Sources: HCSO, FHB.

**Chart 5**  
Growth rate of housing prices on the basis of nationwide data of the FHB and Origo (year on year)



Note: The dashed line indicates that the set of information for the period is incomplete.

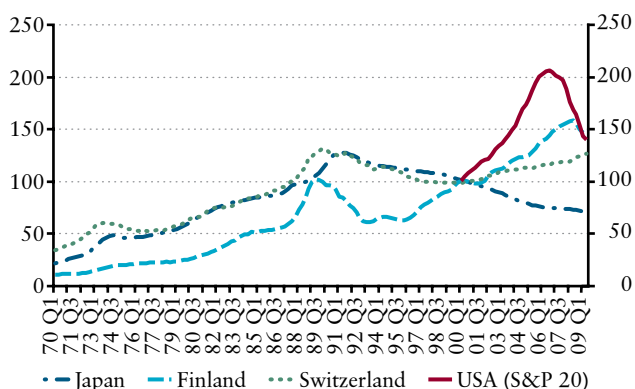
Sources: Origo, HCSO, FHB.

## CHANGES IN INTERNATIONAL HOUSING PRICES

The recent development of Hungarian house prices should be interpreted in international context. Firstly, we present the experiences of some countries where the volatility of housing prices was historically significant. In Chart 6, the Japanese, Swiss and Finnish time series show episodes of dramatic increases and significant corrections in the housing markets of these countries. The best known of them is the real estate market bubble in Japan, which developed in the 1980s before bursting in 1991. In this period housing prices in Japan more than tripled in just 5 years, with the peak followed by a slow decline and subsequent long period of stagnation that is still

**Chart 6**

**Housing prices in Japan, Finland, Switzerland and the United States between 1970 and 2009 Q1**



Note: For Japan, Finland and Switzerland the average price calculated for the year 2000 equals 100. For the USA the January 2000 value represents the basis value of 100.

Sources: OECD, S&P.

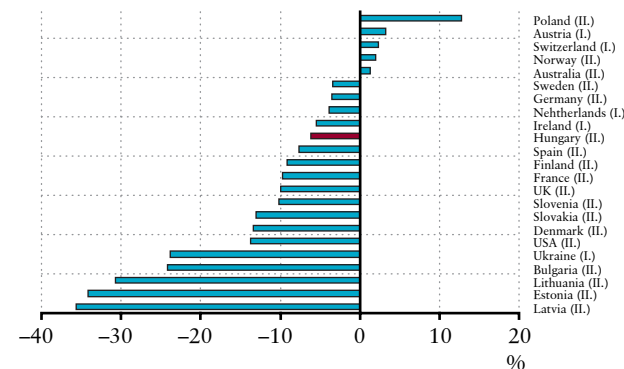
going on. Similar, less known episodes can be observed in the time series of the chart depicting housing prices in Switzerland and Finland. At the turn of the 1990s, a 100 per cent increase and decline took place in Switzerland and Finland in the span of just half a decade. The same chart depicts the time series of US housing prices as well (Case-Shiller Composite home price index). Just roughly estimating, one can see that the past fluctuations in US housing prices can be compared to the selected episodes, which are historically significant as well. Housing prices doubled since the start of the millennium, then fell by as much as 30 per cent after reaching a peak.

Secondly, we examined changes in housing prices around the world since the outbreak of the crisis (Chart 7). Prices

**Chart 7**

**Changes in housing prices since the onset of the crisis**

(latest data – for 2009 Q1 or Q2 – compared to 2008 Q3, per cent)



Sources: Arco Real Estate, Statistical Office of Estonia, BIS, Bulgarian National Statistical Institute, S&P, Statistics Denmark, National Bank of Slovakia, Statistical Office of Slovenia, Halifax, ADEF, Tinsa, Permanent TSB/Economic & Social Research, Statistics Netherlands, Hypoport, Statistics Sweden, Australian Bureau of Statistics, Statistics Norway, Swiss National Bank, Österreichische Nationalbank, Central Statistical Office Poland, Global Property Guide.

dropped the most in countries where they had jumped significantly higher in the previous years. The collapse of the housing market in the Baltic states runs parallel with the decline in the real economy. Prices started to fall earlier in the United States and United Kingdom, as the decline in housing prices played the role of the spark that caused the outbreak of the crisis. A moderate decline in housing prices is observed in most countries, and – as exceptions – increases took place in some countries despite the crisis. Based on the information available to us, housing prices in Hungary have declined moderately, by nearly 6 per cent, since the beginning of the crisis. This cannot be considered as salient in international comparison.