NÁRODNÁ BANKA SLOVENSKA

MONITORING RESIDENTIAL PROPERTY PRICES IN SLOVAKIA

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1. Detection of residential property prices in the euro area

The analyses of price development and financial stability carried out by the European Central Bank (ECB) include information about changes in non-financial assets on a country by country basis. This concerns statistics on residential property prices, which have a significant effect on household spending and indebtedness, the mortgage market, investment development and ultimately also on financial and monetary stability in the medium and long term.

As regards monetary stability, the development of residential property prices has a significant impact on economic activity and on price changes overall. Growth in apartment prices is providing a boost to economic activity since investment in housing is on the rise and the wealth effect generated by increasing residential property prices is stimulating household consumption. That said, the intensity with which these effects are being felt varies between countries and depends on the extent to which houses and apartments are in private ownership.

From the view of financial stability, real estate is one of the main forms of security for loans. That is why a downturn in real estate prices together with a deterioration in the ability of households to make loan repayments could threaten the stability of the banking system and give rise to serious macroeconomic consequences.

The development of real estate prices is being evaluated by the ECB Governing Council at half-yearly intervals. A residential property price indicator for the euro area is compiled from non-harmonised national data, obtained in cooperation with the national central banks. Besides reflections on the data sources for real estate prices, the ECB Monthly Bulletin has successively published a comparison of the development in residential property prices and the Harmonised Index of Consumer Prices (HICP) for the euro area; in addition, it has recently brought a more detailed comparison according to selected aspects. Since June 2005, the aggregated indicator of real estate prices has been incorporated into an expanded table in the section Prices, although the most recent data is for 2004.

1.1 Current issues of methodology

The ECB Governing Council has made an issue of the need to collect comparable data on residential property prices for the various comparative analyses and the creation of aggregates for the euro area. The ECB has laid

down the following requirements for the collecting and processing of data, and also for the construction of indicators of residential property prices:

- Data is to be collected on a quarterly basis and made accessible for up to 90 days after the reference period.
- When processing data, the recommended harmonised methodology is to be used for the qualitative adjustment of the collected data, including the use of appropriate weight schemes for ensuring the statistical representativeness of the collected data.
- Construct an overall indicator of residential property prices and a partial indicators according to the following three aspects: 1) New and existing residential property; 2) Residential property in urban and extra-urban areas; 3) Residential property broken down into houses and apartments.

The IMF, too, considers the real estate market to be a potential source of financial instability. It has therefore included real estate prices into the group of Financial Soundness Indicators (FSI), and in 2004, in cooperation with interested international and national organisations, it completed work on a guide setting out the underlying philosophy of the proposed financial indicators and the methodology for constructing, analysing and publishing them.

Ever more attention is being devoted to the issue of real estate prices given the need to examine their potential effect on overall price stability in the euro area. After rising steeply in the second half of the 1980s (by 12% in 1990), average residential property prices in the euro area recorded relatively stable development up to 1998 (growing by around 2%) but their year-on-year growth became progressively sharper thereafter (reaching 7.2% in 2004). The development of residential property prices is differentiated between individual EU Member States, and experts admit that, as far as some countries are concerned, real estate prices have been significantly overvalued (a case in point being Spain and growth of almost 20%).

The ECB's aim, besides being to collect real estate prices, is to extend the coverage of the HICP so that it includes owner-occupied housing (OOH) costs. Most EU Member States do not at present include this item in the consumer price index, while those which do take it into consideration employ a different methodology for its calculation. One reason why these expenditures have not hitherto been noted in the HICP is the considerable difference in particular countries between the share of owner-occupiers and the share of imputed rent in HICP expendi-

ture (for example, Spain has a ratio of 84.3% : 2.6% and Germany 42.6% : 10.9%).

The ECB is supporting the original Eurostat plan under which the HICP should include OOH costs from 2007. For various reasons, however, the fulfilment of the original timetable has been delayed. The original objective to have OOH costs covered by the HICP from 2007 is overly optimistic in our view, considering that the pilot study of this issue, currently being conducted under the ongoing Eurostat project (one of the goals of which is to construct a quarterly price indicator for residences in the household sector), may not be expected to produce results for another 2-3 years or so. Even the ECB takes the view, published in last July's Monthly Bulletin, that only the decision on OOH costs, not the actual collection, is expected to happen in 2008. According to the relevant institutions, the actual launch of a harmonised collection of prices for residential property may not be expected to take place before 2010. This matter is a responsibility of the official statistical institutions, in accordance with the Memorandum of Understanding on Economic and Financial Statistics between the Directorate General Statistics of the ECB and Eurostat.

The ECB and Eurostat agree in general on the necessity to harmonise the methodology for the collection of comparable data on real estate prices throughout the euro area. The information to date in this area shows that certain differences need to be overcome whether in the collecting and processing of data or in constructing indicators of real estate prices – differences which arise from the extent of the solution applied up to now and from the different national specifics. The same goes for the collection of comparable data on land prices.

All the current activities and initiatives concerning the collection of comparable data on residential property prices are lagging behind current needs. Moreover, the fact that different countries use substantially different methodologies for the collection of the required data on residential property prices and land prices makes it necessary to realise the meaningful value of the aggregated indicators for the euro area which are constructed from such relatively heterogeneous data. The ECB also takes the view that an aggregated residential property price indicator is more suited to characterising certain general trends than to making a comparison of the detailed relations in the development of these prices among individual euro area countries.

1.2 Collection of data on residential property prices in EU countries

According to the ECB's information, the data sources for residential property prices vary considerably among the EU 15 and are provided by:
• national statistical offices – Denmark, Luxemburg, Germany, Sweden,

• ministries – Spain (Ministry of Infrastructure and Urban planning), Ireland (Environment Ministry),
• mortgage lenders – United Kingdom,
• real estate agencies – Belgium, Finland, France, Portugal, Austria and Italy,
• land registry offices – The Netherlands,
• a national bank – Greece.

Often a combination of sources are used in order to collect reliable data. The reliability of data on real estate prices is affected by other factors besides the variety of sources, for example:
• the non-uniformity of data with regard to its geographic aspects, in other words its coverage,
• insufficient and different structuring of data according to apartment type,
• differences in the way real estate is sold (for cash, or under a loan),
• the weight schemes used to ensure that the original data is representative,
• different collection periods, and so on.

The ECB's construction of an aggregated quarterly indicator of residential property prices in the euro area (meaning, at present, data from the EU 15 except for the UK, Sweden and Denmark) is conditioned on the accessibility of national data for at least 80% percent of the countries (the data for Belgium and Luxembourg is not usually available since the period between the reference period and processing is delayed by 8 and 19 months). For the missing countries, average values are provided on the basis of the data from those countries that make it available. The aggregated residential property price indicator for the euro area is adjusted using weights that take into account how much the individual countries contribute to euro area GDP. The indicator calculated in this way may suitably be used only for the analysis of certain general trends in the development of residential property prices. Not even the ECB uses this substantially heterogeneous data to make detailed analyses of various aspects in the development of real estate prices among individual countries.

In order to increase the quality of the aggregated residential property price indicator for the euro area, efforts are being made to ensure that the national data consistently reflects the real market in such real estate. A prerequisite in this regard is the selection of suitable sources and the use of recommended methods for the qualitative adjustment of the collected data.

In 2004, the ECB made an issue of the need to collect data on residential property prices in the new EU Member States.

As regards accessibility to this data in the respective countries, the situation is as follows:

Czech – the national statistical office provides
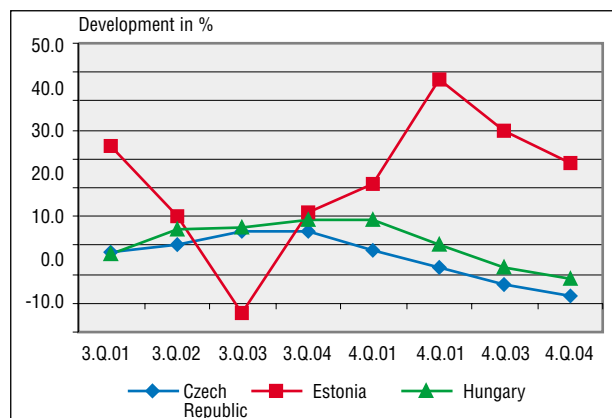Republic access to quarterly data for houses and

apartments for the whole country from 2001, and annual data from 1999;

Estonia – the national statistical office provides quarterly data for the capital city from 1997;

Hungary – the national statistical office provides quarterly data for the capital city from the fourth quarter of 2001;

Poland – the national statistical office provides annual data for the whole country from 2003;

Latvia – the national statistical office provides annual data for new and existing residential property for the whole country from 2002;

Lithuania – the land registry offices are expected to provide the required data for new and existing residential property from July 2005;

Malta – quarterly data for houses and apartments for the whole country from 1980 is provided through classified advertisement records of real estate transactions;

Slovakia – the first data was acquired for the first quarter of 2005 from the National Association of Real Estate Offices of Slovakia;

Slovenia – the collection of the necessary data through tax offices is under consideration;

Cyprus – the options for collecting the necessary data have not yet been clarified.

Data sources for real estate prices are also relatively varied in the new EU Member States. According to the acquired information, individual national central banks most often obtain data on real estate prices through national statistical offices and real estate agencies. In the Czech Republic, for example, there is cooperation between the Statistical Office and financial offices but, in order to collect current data, there are also efforts to cooperate with real estate agencies.

The new Member States are, it may be said, generally demonstrating an intention to collect data from any accessible source by means of methodologies operatively adjusted to national conditions.

Chart 1 Quarterly development of residential property prices in the Czech Republic, Estonia and Hungary (year-on-year change)

2. Options for the collection of residential property price data in Slovakia

Having joined the EU, Slovakia is required to fulfil agreed obligations to particular pan-European institutions. Among the ECB's requirements of national banks is that they provide quarterly data on real estate prices.

In Slovakia, at present, the real estate market (though displaying substantial regional differences) is linked above all with the leading players in real estate transactions and their interest in information on the situation and development of real estate prices. Price data for individual real estate is becoming an object of interest for property developers, commercial banks, and also the NBS. A wide-ranging order from society for information on real estate prices is gradually being created.

Through the national accounts and in accordance with the ESA 95 methodology, the Statistical Office of the Slovak Republic (ŠÚ SR) conducts an annual survey of aggregated information on non-financial assets for the whole economy, as well as for the main sectors and industries. Price data for individual real estate is, however, not yet covered by the periodical statistical survey and there is not even an officially administered data source for this purpose.

As regards the collection of real estate prices, one of the notified activities is the preparation of the pilot project entitled "Price monitoring for buildings and building land", which is being coordinated by the Construction Faculty of the Slovak Technical University (STU) in Bratislava, in cooperation with the ŠÚ SR and the Geodesy, Cartography and Cadastre Authority of the Slovak Republic.

The NBS's request that the ŠÚ SR include a survey of real estate prices in the Programme of State Statistical Surveys for 2006-2008 was not accepted. The ŠÚ SR justified this decision on grounds that its projected budget provided insufficient financial and human resources. Another serious reason, according to the ŠÚ SR, is the lack of a methodology for the survey, something which is due to come out of the pilot study on practical ways to audit residential property prices, now being carried out under the Eurostat project[1].

In seeking options for the collection of residential property prices, the NBS has signed an agreement with the National Association of Real Estate Offices of Slovakia (NARKS) on ensuring the processing of data on real estate prices. The subject-matter of the agreement is the obligation of NARKS to process a database of real estate price data for each quarter of 2005 in such a structure and regional breakdown that meets the requirements of the ECB.

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[1] Five countries have been engaged in the Eurostat project (HICP-OOH) since 2000 (Germany, Spain, Poland, Finland and the UK) and more countries are due to participate in it from 2006. The project comprises seven modules and, according to the ŠÚ SR, Slovakia is interested in module 1 (dwelling prices),

2.1 Characteristics of residential property prices data from the NARKS database

The NARKS database on the prices of houses and apartments only contains data for a particular part of executed real estate transactions, since only around one in ten of the entities which mediate the purchase and sale of real estate are actually members of the association.

The output compilations of prices for existing apartments and houses are made on the basis of classified advertisement records. For any component real estate, the database software offers the number of transactions in that particular type of residential property and also the following price variants:

– average offer price in SKK (an arithmetic average of prices for the respective type of residential property, based on the classified advertisement records);

– average offer price in SKK/m^2;

– representative average offer price in SKK (an arithmetic average of prices for the respective type of residential property, based on classified advertisement records and excluding extreme prices);

– representative average offer price in SKK/m^2;

– representative average sale price.

Of the data in the output compilations for the first two quarters of 2005 (broken down by district and by individual types of apartments and houses), only the figures on average offer price in SKK could realistically be used. The output compilations contained hardly any data on average sale prices in SKK since the life cycle of classified advertisement records on offered real estate includes only in exceptional cases any supplementary information on the sale price.

The extent to which the offer price and sale price correspond depends on the level of development in the real estate market. If certain apartments have been up for sale for, say, a year, then their sale price is likely to be lower by approximately 10-15%. But as regards the reliability of generalised information from the incomplete data, it is less important whether data on offer or sale prices is used than that account is taken of the maximum real number of executed real estate transaction in particular regions.

From the evaluation of data provided by the NARKS database for the first two quarters of 2005, certain facts are clear:

the implementation of which is divided into 16 stages spread over a period of 18 months. A total of 11 countries are due to participate in this module. The ŠÚ SR and Eurostat signed an agreement towards the end of 2005. The success of the entire project depends, however, on the lauch of modules concerning activity coordination in regard to auditing the implementation of price collection for dwellings and for the renovation and major reconstruction of residential property, as well as auditing the collection of prices for building land. Another important task is to prepare the technical manual for the gradual implementation of the measures under the first three modules. Then there are modules 4 to 7, which, according to current information, have not yet received any expressions of interest, a fact that could further delay the completion of the pilot project.

• The database does not include all the attributes for real estate breakdown as required by the ECB;

• Price data for apartments and houses is not specified for new and existing;

• Data on houses is not structured according to number of rooms but on a breakdown into houses and villas;

• The database records a significant number of cases where particular districts have only a few transactions for certain types of real estate, which increases the potential risk that information on real prices in real estate transactions will be distorted (for example, only the more expensive sales in Poprad district were included in the database);

• Data on prices per 1 m^2 of building land have been available since the third quarter of 2005;

The methodology for the collection and initial processing of residential property prices is incorporated into the software, and it is relatively complicated to make any changes to the software for the purpose of observing NBS criteria and requirements more consistently.

Despite the fact that the NARKS database on residential property prices is not being created for the purpose of meeting ECB requirements and does not even meet some of the statistical requisites of the sample set, it remains at present one of the few accessible data sources through which general information on the state and development of residential property prices in Slovakia may be acquired.

Given that a Europe-wide system for the collection and publication of data on real estate prices through national statistical offices may not, on the basis of development to date, be expected until after 2010, we consider the current data sources for real estate prices in Slovakia to be a transitional solution. The continuous information used for processing and generalising data from the NARKS database may in future be used to check and select an appropriate data source serving an official system for the quarterly collection of real estate prices, in accordance with the harmonised methodology employed in the euro area.

2.2 Methodology for processing data from the NARKS database

During the initial processing of data from the NARKS database, we took from the output compilations the calculated representative average offer price in SKK/m^2 for particular types of existing apartments in respective districts. As far as existing houses are concerned, representative average offer prices in SKK/m^2 for particular house types are not available in the output compilations and the calculations need to be finalised. In making the calculation, we first took the representative average offer price for particular house types in each district and divided it by a selected value for the average size of their usable area (150 m^2 for houses and 250 m^2 for villas).

In the second stage, we used a weighted arithmetic ave-

rage to calculate the average prices per 1 m² for particular types of apartments and houses in individual regions. The weights were the total number of transactions involving the particular types of apartments and houses in districts of the respective region.

Thirdly, we calculated the "objectivised" average offer price per 1 m² for particular types of apartments and houses in Slovakia. Using a weighted arithmetic average, this value was calculated by taking the sum of the multiples of the prices per 1 m² for particular apartment and house types in individual regions (calculated in the second stage) and the selected weight coefficients (in %) for the individual regions[2], and dividing this figure by 100 (the individual regions as the sum of their relative shares in the assumed real transactions in apartments for the whole of Slovakia, in %). It is shown by the following equation:

$$CON_{SR} = \frac{\sum\limits_{k=1}^{8} CON_k . v_k . 100}{100},$$

where:

CON_{SR} – the objectivised average offer price per 1 m² of particular apartment and house types in Slovakia,
CON_k – the average offer price per 1 m² of particular apartment and house types in individual regions,
v_k – selected weight coefficients for individual regions, generally corresponding to the actual share of the regions in apartment transactions for the whole of Slovakia,
k – individual regions.

Using the stated weighting, the average price per 1 m² of the respective residential property is calculated for the whole of Slovakia, partially reducing the disparity between the recorded and real transactions in dwellings in individual regions, as Table 1 shows.

The weighting should ensure that account is taken of the real share of individual regions in the creation of the aggregated average price for a given residential property for the whole of Slovakia. This is an important step in order to achieve an objectivised generalisation of the characteristics calculated from the incomplete (selected) data.

The method used for calculating the average price of monthly rents for individual regions and the whole of Slovakia was similar to that used for calculating the price per 1 m² of real estate.

[2] After consulting representatives from NARKS, it was decided to use the following weight coefficients: BA – 0.52, TT – 0.14, TN – 0.04, NR – 0.08, ZA – 0.07, BB – 0.06, PO – 0.03, and KE – 0.06.
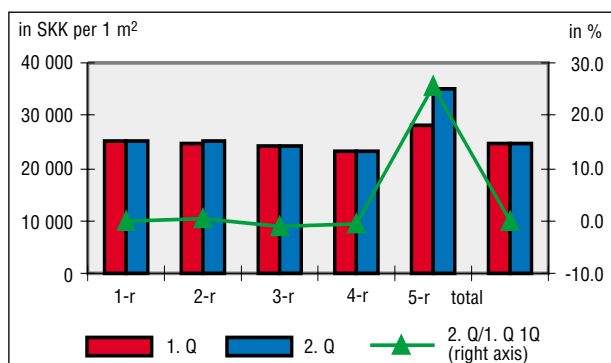
Table 1

	BA	TT	TN	NR	ZA	BB	PO	KE	SR
Share of recorded transactions in %	95.99	2.23	0.06	0.92	0.23	0.27	0.09	0.21	100.00
Share of assumed real transactions in %, or v_k in %	52.00	14.00	4.00	8.00	7.00	6.00	3.00	6.00	100.00

2.3 Preliminary results for the development of real-estate in Slovakia in the first and second quarters of 2005

Table 2 gives a summary of the number of executed transactions in selected real estate, the preliminary average price values per 1 m² for particular residential properties, and the average price values for monthly rents for the first two quarters of 2005.

The number and structure of real estate transactions in the first two quarters of 2005 was relatively similar. The database records 50 608 residential property transactions for the first quarter (almost 41 000 involving existing apartments and almost 10 000 existing houses). Though the database shows fewer transactions in the second quarter compared to the first, their structure remained practically unchanged. Apartment sales accounted for around 80% of all transactions in residential property, and sales of houses and villas for around 20%. Moreover, most of the trading was in three-room apartments.

In keeping with the calculation methodology, the average offer price per 1 m² for apartments stood at almost SKK 25 000 for the first two quarters of 2005. With the exception of five-room and larger apartments, the average offer price for apartment types hardly changed at all from one quarter to the next.

Residential property prices vary substantially between regions. There is a significant difference between the offer prices for apartments and houses in Bratislava region (for example, around SKK 33 000 per 1 m²) and other regions (from around SKK 11 000 per 1 m² to SKK 19 000 per 1 m²). An example of a comparatively high offer price per 1 m² is found in Prešov region (around SKK 22 000).

The average offer price per 1 m² for existing houses was slightly higher than the price for apartments and did not change significantly in the first two quarters of 2005 (fluctuating at around SKK 27 000).

The aggregate average offer price per 1 m² for apartments and houses, and the average price for monthly rent of such real estate remained at almost the same level for the two quarters.

The average monthly rent for apartments over the first two quarters of 2005 stood at almost SKK 16 000, and with all apartment types it was lower than the average offer price per 1 m² for their sale. As regards houses, the average monthly rent for the first quarter was almost SKK 55 000 and it increased in the second quarter by around

Table 2 Basic data on the sale and rent of residential property for the first two quarters of 2005

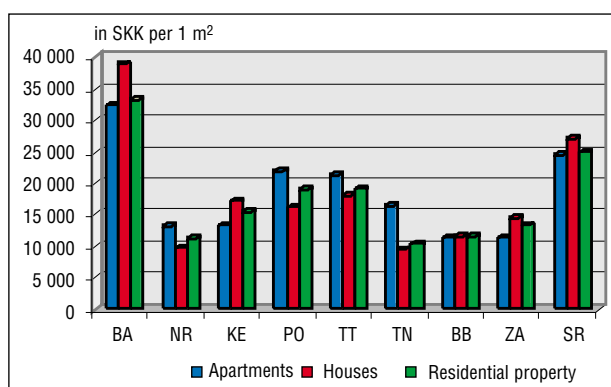| Type of property	Sale				Rental			
	Number of transactions		Price per 1 m² in Sk		Number of transactions		Monthly rent in SKK	
	1.Q	2.Q	1.Q	2.Q	1.Q	2.Q	1.Q	2.Q
Existing apartments:	40 882	37 824	24 565	24 526	8 319	7 975	15 579	16 283
of – 1-room	7 928	7 337	25 223	25 192	1 201	1 235	8 264	8 627
which: – 2-room	10 826	9 231	24 930	24 977	2 382	2 354	12 474	12 698
– 3-room	15 426	15 389	24 327	24 033	3 290	2 982	16 886	18 161
– 4-room	6 239	5 371	23 436	23 278	1 211	1 051	23 479	23 414
– 5-room or larger	463	496	27 940	35 129	235	353	25 449	29 885
Existing houses:	9 726	8 671	26 819	27 139	2 307	2 076	54 670	56 065
of which: – houses	9 425	8 499	26 248	26 809	2 249	2 017	39 338	40 286
– villas	301	172	44 692	43 445	58	59	70 002	71 844
Total:	**50 608**	**46 495**	**24 998**	**25 014**	**10 626**	**10 051**	**24 066**	**24 500**

Source: NARKS database and NBS own calculations

Chart 2 Offer prices for particular apartment types in the first and second quarters of 2005

Source: NARKS database and NBS calculations

Chart 3 Residential property prices in the second quarter of 2005 by region

Source: NARKS database and NBS calculations

2.6%. The average monthly rent for apartments is substantially lower than that for houses.

2.4 Assessment of the residential property price development in Slovakia from 2002
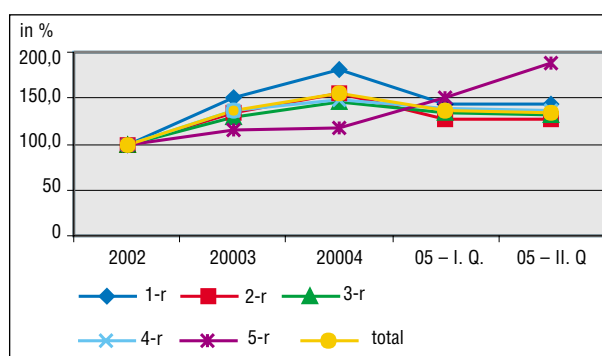
For the purpose of comparing the development of offer prices for residential property over the longer term, the methodology used to calculate comparable prices of residential property was also used to calculate the annual data on residential property prices for the period 2002-2004 that is accessible from the NARKS database (quarterly data for the stated years are not available).
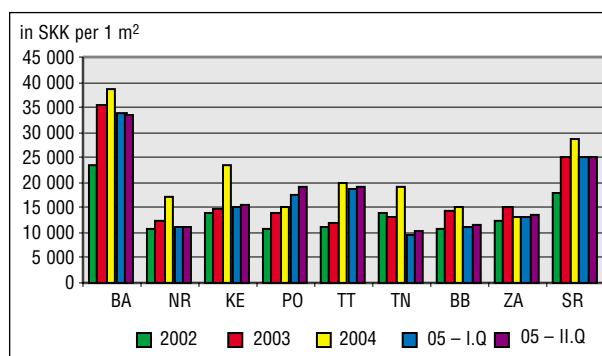
As regards the development of prices for particular apartment types, it may be noted that the prices per 1 m² that grew above average from 2002 to 2004 were mainly those for one- and two-room apartments and that the prices per 1 m² for larger apartments have risen substantially since 2004 (especially in the second quarter of 2005).

Based on the calculations, it may generally be said that residential property prices in Slovakia rose relatively sharply from 2002 to 2004 (by almost 60%) and that they fell by

Chart 4 Offer prices per 1 m² for particular apartment types from 2002

Source: NARKS database and NBS calculations

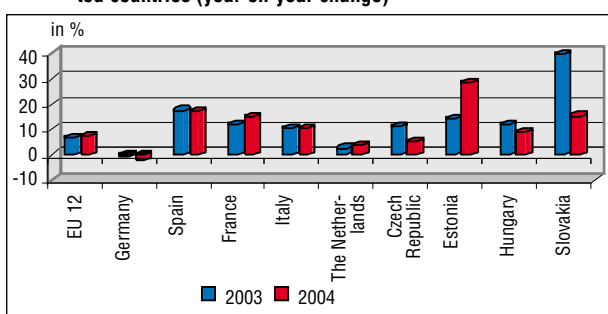**Chart 5 Prices per 1 m² for residential property in Slovakia from 2002, broken down by region**

Source: NARKS database and NBS calculations

around 13% in the first two quarters of 2005 compared with the average for 2004. In 2005, the level of residential property prices returned more or less to the level they were at in 2003 (around SKK 25 000 per 1 m² on average).

The creation of time series for residential property prices on the basis of accessible (not uniformly defined) data for individual countries only makes possible a general international comparison of the price development for the given segment in previous years. As Chart 6 makes clear, there is a considerable difference between the development of residential property prices for the past two years in Slovakia and in certain EU Member States.

Chart 6 General development of residential property prices in selected countries (year-on-year change)

Source: NARKS database, ECB working document WGGES/2005/03-1 Residential Property Price Statistics, and NBS calculations

Real estate price data from the NARKS database and the methodology for its processing are so far only providing general information on the prices of selected types of residential property. The available data for the first two quarters of 2005 has been processed in such a way that it is possible to apply a similar procedure when processing the available annual data from 2002. When selecting the procedures, account was taken of expert opinions on the current development of residential property prices in the conditions of Slovakia. The aim is to acquire a time series of the same materially defined and processed data for individual time periods. The methodology used represents one of the possible approaches to the utilisation of residential property price data from the NARKS database. The acquired information needs to be evaluated over the longer term, and also compared with other available data sources for residential property prices, in order to verify how reliably it reflects the actual state of the residential property market. At the same time, it is necessary to generalise and to adopt methodological measures for improving the quality of its collection in the future.

Conclusion

The steps taken by the NBS for the collection of residential property prices in Slovakia have been accompanied by the same difficulties experienced in this area by old and new Member States alike. The basic problem is the lack of a unified methodology and an official national coordinator for the collection of real estate prices.

A significant contribution to the harmonisation of procedures for the collection of real estate prices has been made by the ECB's specifically defined requirements for the content and structure of collected data. Also important is the continuing pilot project of Eurostat for the possible extension of HICP construction with OOH costs, a project in which several Member States are beginning to participate. The way the issue of the unified collection of real estate prices has so far been addressed indicates that the official national collection of real estate prices may not actually begin until after 2010.

Despite the fact that the data from the NARKS database does not fully correspond with ECB requirements and as yet does not even provide a statistically-adequate representative and international picture of real prices of residential property in Slovakia, it has up to now served the NBS as an important source of information, indeed the only one available, on the state and development of residential property prices in Slovakia.

The generalisations made from the data on residential property prices in Slovakia should only be considered for general purposes. They are marked by the gradual development in the content of the data, and likewise by the adaption of the methodology used to process residential property price data in order to meet the needs of the NBS. As the data is used more intensively, however, so the NBS is coming out with various ideas for improving procedures in regard to the content of the database and the general improvement of its quality. These facts need to be gradually and professionally addressed and clearer conclusions may be reached in 2006 after the processing and evaluation for all the quarters of 2005.

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