

## **Real Estate Price Statistics Relevance, Links and Challenges**

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In recent years, the analysis of real estate markets has been intensified. Indeed, the demand for high quality statistics on national, euro area and EU real estate market supply and demand conditions has increased, in particular for changes in residential and commercial property prices over time. The considerable progress achieved in this area, both from the methodological and practical compilation point of view, addressed the basic requirements of availability of, residential property price indices. Similarly, work is in progress to set up the reference framework for the production of commercial property price indicators. Whilst real estate price statistics are relevant in their own, their usefulness is amplified when considering them in relation to other macroeconomic indicators such as national accounts (in particular sector accounts and financial accounts) and consumer price statistics. In addition, information on housing statistics in a broader sense encompasses other statistical sources than price statistics (national accounts, housing censuses, etc.). This paper explores the relevance and the links of real estate price statistics, housing statistics in a broader sense and selected macroeconomic indicators from a statistical and policy making perspective.

**Key Words:** housing statistics, national accounts, real estate price statistics.

### **1. Introduction**

In recent years, the analysis of real estate markets has been intensified and so has the demand for high quality statistics on real estate market supply and demand conditions, in particular changes in residential and commercial property prices over time (real estate price statistics). Although work in this area has progressed, notably for production, residential investment and price indices on rents, in particular in Europe in the context of the Harmonised Index of Consumer Prices (HICPs), the situation for other key indicators had been far from being satisfactory. For this reason, real estate statistics (in particular housing statistics) acquired a prominent visibility in Europe among the Principal European Economic Indicators (PEEIs) – a set of key macroeconomic indicators used for monetary and economic policy purposes – and three housing-related indicators have been added in 2008 to the original list of PEEIs: residential property prices, house sales and building permits.

In addition, in the aftermath of the financial and economic crisis, real estate prices have been identified as one of the statistical gaps to be addressed at global level. Indeed, they played a major role in the financial crisis bubble, but harmonised and internationally comparable statistics on real estate properties were, at that time, not yet systematically available. For this reason the International Monetary Fund (IMF) and the Financial Stability Board (FSB) launched “a call for international efforts to improve data on residential and commercial real estate, and the analysis of such data, in view of the importance of understanding and monitoring patterns of the financing of these assets by banks”. Such a call has been integrated in the G-20 Data Gaps Initiative (IMF-FSB, 2009).

The relevance of real estate price statistics becomes even more prominent when linking real estate price indicators to other indicators: national accounts indicators – e.g. GDP, household income indicators, profit indicators; financial indicators, etc.

Moreover, in 2010, in order to strengthen the macroeconomic surveillance in Europe, the European Commission has designed a “Scoreboard for the Surveillance of Macroeconomic Imbalances” composed by key macroeconomic structural indicators. As housing market developments have figured prominently in the financial crisis, the House Price Index (HPI) is one of the indicators considered in this context.

Starting from these general considerations, this paper explores in Section 2 the relevance of real estate price statistics (residential and commercial property prices) with a view to the current situation and the future developments in this area. Section 3 is devoted to first considerations to the links between real estate price indicators and other relevant indicators. Eventually, Section 4 outlines the future challenges in this statistical area.

## **2. Relevance**

### **2.1. Residential Property Price Indices and housing statistics**

When speaking about residential property price indices the reference is to House Price Indices (HPIs). With the intensification of the analysis of housing markets in recent years, the request for high quality statistics on housing statistics, notably HPIs, at global, European and national level considerably increased.

In order to create the capacity of regularly producing House Price Indices, the European Statistical System (Eurostat and European National Statistical Institutes - NSIs) set up a series of pilot projects to develop and compile housing price indices within the methodological framework of the Harmonised Index of Consumer Prices. Prior to the pilot work carried out by Eurostat and the NSIs, there was very little comparability between national data on housing prices within the European Union. At that time, the available indices came from various sources, often from outside official statistics. The concept underlying these particular indicators often differed widely, in particular with respect to the type of underlying price data (transactions prices, appraisals values, judgements by market experts, offer prices), the coverage of regions and of dwelling types (some of them only covering urban areas or capital cities or only covering flats or existing dwellings) and the treatment of quality attributes that differ across properties for which prices have been collected over time.

Given the above differences, the development of comparable, timely and high frequency statistics on changes in residential property prices became essential. Moreover, mirroring the practice of the Harmonised Indices of Consumer Prices (HICPs), the house price indices at European level has been built to reflect, as closely as possible, actual transaction prices.

#### *2.1.1. House Price Indices: a methodological challenge*

The first and most important issue in setting up the production process of HPIs has been the availability of data on dwelling purchases: information on the price of the transaction and dwelling characteristics. The dwelling characteristics which most influence its price are the type of dwelling (flat, detached house, terraced house, etc.), its size and location.

A second key challenge has been the heterogeneity of the housing market, where virtually every product (dwelling) bought and sold is different from the next one in some respect. The quality adjustment from one time period to the next is therefore a major methodological issue in compiling house price indices.

To address these methodological challenges and progress towards the compilation of HPIs, in the context of the G-20 Data Gaps Initiative and under the auspices of the Inter-secretariat Working Group on Price Statistics (IWGPS), Eurostat commissioned a team of internationally recognised price statistics experts to write a handbook to provide recommendations on good practice for compiling house price indices and to

explain the different user needs for such indices. The Handbook, who benefitted from the international endorsement in different dedicated fora, is now available and officially released on the Eurostat website (Eurostat, 2013).

### 2.1.2. *Why RPPIs?*

The regular production and dissemination of RPPIs is important in itself. In order to ensure the regular EU-wide production and publication of housing price indices, a reference legal framework has been established at European level.

The new statistical information on HPIs responds to a demand expressed by users, notably the European Commission, the European Central Bank, economic analysts, media and citizens in general. House price evolution is important for economic and monetary policy purposes, in particular inflation targeting, monitoring of macroeconomic imbalances and of risk exposure of the financial sector. It is also relevant for households, as it measures changes in the prices of the most important component of households' expenditure and wealth.

Since January 2013, these data are regularly published by Eurostat in a quarterly dedicated news release reporting figures for the euro area, the European Union and EU countries. As with all euro-indicators, they are also available on the Eurostat's website. Such an indicator addresses a statistical gap that economic actors highlighted since long-time and proved, in few months, to be an important reference in this field.

### 2.1.3. *International scenario and future developments*

At international level, the G-20 Data Gaps Initiative and the dedicated conferences on residential property price indices highlighted the need to have a common methodological framework for the compilation of residential property price indices (the RPPI Handbook, Eurostat, 2013) as well as a common understanding on reference housing statistics indicators.

In this context, the efforts put in place by international organisations are leading to a global progress in this area based on the project of the Inter-Agency Group on economic and financial statistics (IAG) – within the G-20 Data Gaps Initiative – whose aim is to promote the compilation of House Price Index for G-20 economies. Indeed, the methodological framework will be complemented by the collection of data at international level according to a harmonised approach sponsored by the IWGPS members (in particular, Eurostat, OECD, IMF supported by the Bank of International Settlements - BIS). The feedback from the G-20 economies and the efforts they put in place for setting up the collection and dissemination of RPPIs further confirmed the overall trend towards the availability of an international comparable dataset on RPPIs.

The proposed strategy at global level, relies on a step-wise approach towards the collection of residential property prices taking into account different national contexts and focussing on: (i) harmonisation of good practices with regard to geographical coverage (initial separate series covering the capital city, flats or single-family houses and new dwellings is a proposed starting point preferably on a quarterly basis with a three-month reporting lag – followed by all big cities the whole country); (ii) coverage of property-type, expanded to cover all types of dwelling (with progressive coverage of old (existing) dwellings); (iii) methodological improvements towards best methods as highlighted in the RPPI Handbook; (iv) progressive extension to additional housing indicators (building permits, housing starts, pending home sales, house sales - existing and new houses -, vacancy rates, construction activity, land price indices).

## 2.1. **Commercial Property Price Indicators**

Commercial Property Price Indicators (CPPIs) are a new and challenging statistical area for which there is an increasing demand that is expected to lead to important methodological and practical developments in the coming years. These indicators are

of high interest for both public institutions and private investors who would wish to carry out economic and financial analysis. The lack of these data has been particularly highlighted in the economic and financial crisis started in 2007. This led to the recognition of CPPIs among the macro-economic indicators identified by the G20 Data Gaps Initiative.

However, international standards have not yet been developed in this area. Indeed, the concept of commercial property is not yet defined in official statistics and the links with related areas of official statistics, such as price statistics and national accounts, not yet explored. Most of the available indicators for commercial property prices have been developed by private producers for purposes such as measuring the performance of real estate investment portfolios.

Eurostat, together with the ECB, IMF, BIS and OECD has taken initiatives with the medium-term objective of developing the compilation of official statistics on CPPIs. An international conference on CPPIs, hosted by the ECB in May 2012 (ECB/Eurostat, 2012), gathered together users and producers of CPPIs in order to explore possible methodological and practical approaches to their compilation. The need for reference methodological standards emerged as one of the conclusions of the conference, together with a preliminary structure for a CPPI Handbook. Eurostat (under the auspices of the IWGPS), has taken this initiative forward and, at the beginning of 2013, has selected a team of leading academics and price statistics experts for working on the writing of a CPPI Handbook to be finalised by end 2014.

#### *2.2.1. Commercial Property Price Indices: a new methodological challenge*

The CPPI Handbook will aim to clarify conceptual aspects, definitions and related possible classifications for CPPIs. The starting point is defining Commercial properties: they consist of products (buildings and other structures) that have both a flow dimension (as part of output and of gross fixed capital formation) and a stock dimension (as part of produced non-financial assets).

The classification of the various types of commercial properties is certainly a prominent aspect to be dealt with. Commercial properties can also be seen as heterogeneous from the point of view of their use in economic production and hence their classification becomes more interesting from the user point of view. Therefore, there is scope for proposing a somehow extended asset classification for commercial properties (beyond the traditional but limited CPA or NACE classifications). As a minimum, users would be interested in having data for offices, retail trade, hotels, industrial buildings and land.

The high degree of heterogeneity that characterises commercial property items leads to two other important conceptual issues: the valuation principles to be used for pricing commercial property and the quality-mix adjustment needed for inter-temporal price comparisons. In the case of commercial property the number of market transactions in used assets is lower than in residential property and the higher degree of heterogeneity concurs to make it very difficult to use exclusively transaction-based valuations for CPPIs. The use of appraisal-based methods and also of methods based on capital market valuations is therefore likely to be much more important for the compilation of CPPIs.

These issues, together with additional indicators, sources and methods and good compilation practices, will form the core of the CPPI Handbook and will contribute to clarify the scope of official indicator on commercial property prices. The successive implementation phase will ask for new collaborative forms between official statisticians and private providers of statistical information that will most probably result in a new modern way of compiling official statistics on the basis of a compromise between specific expertise and competence in dedicated fields and consolidated know-how in producing official statistics.

### 3. Links: beyond RPPIs and CPPIs

To understand, assess and evaluate the dynamics of the housing market, real estate price indicators in themselves are useful but not sufficient: more and more often they are compared to other relevant indicators (national accounts, financial indicators, household and enterprise indicators) to describe their comparative behaviour in order to highlight policy implications.

For example, the HPI has been used in conjunction with other macroeconomic statistics to build derived indicators for the analysis of the housing market dynamics.

A well-known example is the deflated (or real) house price index, which is part of the Scoreboard of indicators used in the Macroeconomic Imbalances Procedure (MIP) of the European Commission.

In order to put house price dynamics into perspective, analysts have developed other indicators that combine the HPI with, for example, the price index of rents, in the form of a price on earnings ratio, or measure affordability using price-to-per capita disposable income of households (Fig. 1).

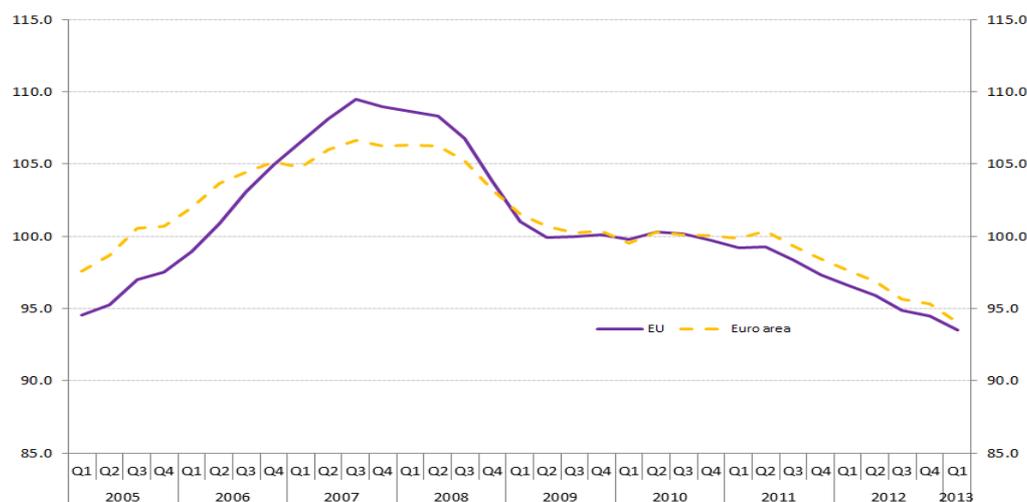
Fig. 2 illustrates how HPIs are compared with credit for house purchases and GDP to assess the different dynamics.

Similarly, CPPIs are considered in the context of private portfolio investments and used in conjunction with indicators derived from this area or from the financial/banking sector (risk analysis).

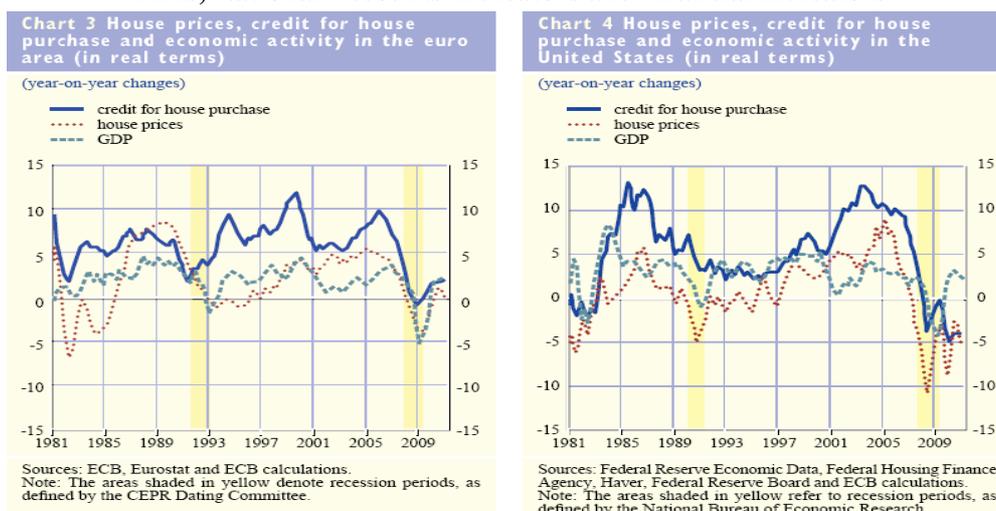
These comparative analyses require an underlying integrated system of international harmonised indicators which allow fixing benchmarks for performance assessments. PEEIs at European level and Principal Global Indicators at world level are the concrete attempts to answer to this request. Macroeconomic scoreboards are also constructed in this direction.

A sound methodological background, complemented by a clear understanding of what should be compared with what and for which purposes is paramount in this context. Therefore, in the future, research on comparative behavioural indicators and international harmonisation will play a major role for RPPIs and CPPIs.

**Figure 1: Ratio of House Price Index to HICP for actual rents - index levels (2010 = 100)**



**Figure 2: Examples of combined use of HPIs, National Accounts Indicators and financial indicators**



#### 4. Challenges

In the coming years, official statisticians will face several challenges in setting up real estate price statistics:

- Finalisation of the methodological framework (RPPI and CPPI Handbooks).
- Compilation of official RPPIs and CPPIs – concrete results have already been achieved at European level with the release of HPIs; for CPPIs practical issues have to be addressed to create the conditions for the regular compilation of indicators.
- A step-wise approach to the compilation of official RPPIs and CPPIs should be established targeting a gradual increase of scope in its different dimensions (geographical coverage: target first big cities and extend the coverage progressively to the entire country, ideally with regional details; typologies of properties: initially select specific types of properties and then progressively extend them to the entire classification; indicators vs. indices: initially target the compilation of indicators and explore the potential to switch to a full proper index coverage).
- An appropriate communication strategy should accompany the production and dissemination of RPPIs and CPPIs and related indicators as well as associated metadata, aiming at clarifying the nature and limits of the produced statistics.
- A pragmatic attitude should guide the overall approach.

#### References

- European Central Bank-Eurostat (2012), Proceedings of the Joint BIS-ECB-Eurostat-IMF-OECD international conference on “Commercial property price indicators”, Frankfurt, May 2009.
- Eurostat, “Residential Property Price Indices Handbook”, Luxembourg, 2013.
- International Monetary Fund and Financial Stability Board (2009), Summary of the Users Conference on the Financial Crisis and Information Gaps, Washington, 8-9 July 2009.
- Passerini P. (2013), “Developing Commercial Property Price Indicators”, Ottawa Group meeting, Copenhagen, 1-3 May 2013.