## EXPERIMENTAL INDICATORS OF COMMERCIAL PROPERTY PRICES

Commercial property, as part of the wider real estate sector, is generally defined as income-producing property. It encompasses office buildings, retail establishments (e.g. restaurants, shopping centres and hotels), industrial buildings (e.g. warehouses and factories), and residential property that is being leased or developed for commercial purposes. Indicators that capture the development over time of commercial property prices are needed by a wide range of users. Commercial property markets play an important role in the real economy and are also important for financial stability analysis, primarily owing to banks' large loan exposures to commercial property.

In November 2010 a clear impulse for developing statistics on indicators of commercial property prices came from the IMF and the Financial Stability Board, supported by the Inter-Agency Group on Economic and Financial Statistics.[1] Thus, the ESCB has taken practical steps to develop commercial property price indicators for the EU. This box presents the first results of, and the methodology used for, experimental indicators of commercial property prices published by the ECB.

### Potential uses of the data

Measures of commercial property prices can provide valuable input to both monetary policy and financial stability analyses. This reflects the role that these prices can play in the monetary transmission mechanism and the assessment of the asset quality of bank balance sheets.

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1 The Inter-Agency Group is composed of the Bank for International Settlements, the European Central Bank, the European Commission (Eurostat), the International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations and the World Bank. See http://www.principalglobalindicators.org/about_iag.aspx for more information.

The role of commercial property prices in the transmission mechanism is similar to that of other asset prices. Commercial property prices may move in response to changes in financing conditions and expectations triggered by monetary policy actions. Changes in commercial property prices would primarily impact on investment decisions by firms as well as their financial health as evidenced by their balance sheets and consequently their financing conditions.

It has been observed that commercial property prices are prone to boom and bust cycles, and may have a marked effect on output and demand, as well as having a direct impact on the balance sheets of financial institutions. This link to boom and bust cycles means that commercial property market developments play a key role in financial stability analysis. Such developments were arguably among the causes of the financial crises observed in Nordic countries and in the United States in the early 1990s, in Asian economies in the late 1990s and, more recently, in Ireland and Spain as part of the global financial crisis that erupted in 2008. Indeed, commercial property prices have seen higher rises than would be explained by macroeconomic fundamentals, followed by sharp falls.[2]
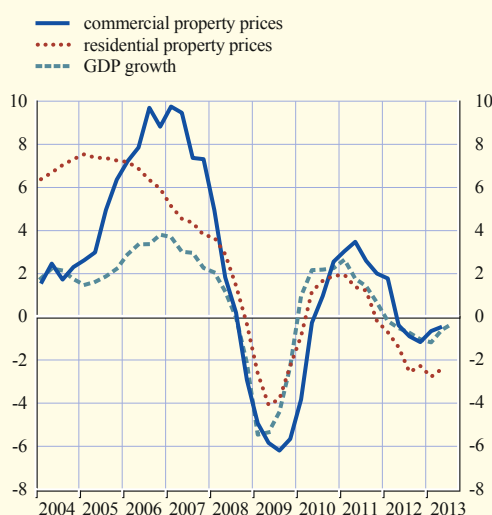
### First results

The ESCB has developed experimental indicators of commercial property prices, along with suitable metadata to ensure that the data are used appropriately. The indicators,[3] which are being published for the first time in this box, will be produced at a quarterly frequency around 65 days after the end of each quarter. The euro area data appear in Table 5.1.2 in the statistical section of this issue of the Monthly Bulletin and will also be included in other ECB publications such as the Financial Stability Review.

The chart shows the long-term evolution of the new headline data as compared with the ECB estimation of residential property prices and GDP. Of particular note is the sharp rise in the indicator of commercial property prices until the start of the financial crisis and the immediate fall thereafter. Commercial property prices in the euro area have been more cyclical than residential property prices during the last decade. In addition, commercial property prices have been more volatile, partly reflecting the fact that homeowners are more likely than commercial property occupiers to stay in their property, even if the value of the

**Commercial and residential property prices and real GDP growth in the euro area**

(annual percentage changes)

— commercial property prices
····· residential property prices
--- GDP growth



Sources: ECB, experimental ECB estimates based on IPD and national data, and Eurostat.

2  See, for instance, *Commercial property markets: financial stability risks, recent developments and EU banks' exposures*, ECB, December 2008; Ball, M., Lizieri, C. and MacGregor, B.S., *The Economics of Commercial Property Markets*, Routledge, 2008; Hilbers, P., Lei, Q. and Zacho, L., "Real Estate Market Developments and Financial Sector Soundness", *IMF Working Paper*, No 01/129, 2001; Zhu, H., "The importance of property markets for monetary policy and financial stability", *BIS Papers*, No 21, 2003; Wheaton, W., "Real Estate Cycles: Some Fundamentals", *Real Estate Economics*, 27(2), 209-230; Davis, P. and Zhu, H., "Bank lending and commercial property cycles: some cross-country evidence", *BIS Working Paper*, No 150, March 2004; and Englund, P., "The Swedish Banking Crisis: Roots and Consequences", *Oxford Review of Economic Policy*, Vol.15, No 3, 2004.
3  Available in the Statistical Data Warehouse section of the ECB's website at http://sdw.ecb.europa.eu/reports.do?node=1000003724

property declines. In recent years, commercial property prices have shown signs of stabilisation, in line with the broader macroeconomic environment, while residential property prices continue to record significant declines.

**Methodological issues**

Standard statistical methodology suggests that price indices should be calculated by collecting actual transaction prices of the good or service in question and comparing these over time, while making adjustments for changes in the product's quality in order to compare like with like. While transaction prices remain the preferred option for price stability analysis, they are problematic for commercial properties, which are infrequently traded and also tend to be highly heterogeneous in use, quality and other factors. The limited number of transactions observed, in particular in smaller countries and during times of financial or economic stress, complicates the measurement process.

Given the difficulties encountered in collecting representative information on transactions, which is also comparable over time, and hence in deriving meaningful price data, it is necessary to examine alternative or complementary sources of information. To do this, the ESCB conducted a stocktaking exercise aimed at determining what indicators exist in the EU to measure commercial property prices. In broad terms, three types of data source were identified, aside from transactions data. These include official property valuations, other expert judgement and financial market data.

a)  Valuation-based data sources. The majority of the price data identified for commercial property are valuation-based indices, and the data sources are predominantly private entities such as estate agencies and other financial market or real estate companies. These indices are often designed for performance measurement purposes rather than for measuring price changes over time. Such valuation-based indices, while allowing a price estimate to be collected when it would not otherwise be available, are often subject to valuation errors and smoothing issues. Furthermore, the underlying number of assets included in the sample may change over time and the short length of the series can hamper analysis.

b)  Expert judgement. An alternative approach that can be used is to ask property market professionals (e.g. appraisers, architects and property portfolio managers) to make a judgement on the price for a specified but fictitious property. This method is used in some of the better-known commercial indices but suffers from the same concerns as valuation-based measures. Moreover, such indices tend to concentrate only on the prime segment of the market. The approach does have the advantage of providing timely estimates.

c)  Financial market data. In several countries, there are unit trusts or other financial vehicles (e.g. real estate investment trusts) that solely contain commercial properties as the underlying assets. Movements in these trusts might then be used to infer changes in commercial property prices. However, the underlying assets are unlikely to be representative of the market as a whole, and movements in the value of the financial asset will be due not only to the change in underlying commercial property prices but also to other factors, such as the gearing of the fund in question or money market rate movements. The data are, however, available in real time.

In order to supplement official data sources, the ESCB investigated the provision of data via commercial data suppliers. IPD is a commercial information business providing market data and performance analysis for the owners, investors and managers of commercial real estate. In 2011 this

source was chosen to supply the ECB with quarterly commercial property price indices for all directly held commercial real estate assets and for the four main market sectors – retail, office, industrial and residential. To avoid double counting, the indices exclude any data from interests in real estate that are indirectly held through investment vehicles (funds, trusts, etc.), since the assets backing these interests will normally be recorded as separate entries. The IPD data are a key input in the production of the ESCB dataset. IPD uses two different methodologies to estimate commercial property prices at the national level: a valuation-based method and, where the required data are available, a transaction-linked method. The valuation-based method uses data on professional valuations of existing buildings. Ideally, the market valuation of a property corresponds to the price that would be agreed between a willing buyer and a willing seller within a reasonable negotiating period, net of purchasers' costs (e.g. legal fees and tax payments). However, valuations may diverge from the prices that would be settled if a transaction were to take place. The calculation of valuation indices starts from very detailed asset-level prices, which are then used to calculate sector and national aggregates.

The transaction-linked dataset uses the same valuation data, but supplements them with available data on transactions in the market in the quarter in question. These are determined by estimating the sale prices of the properties sold as a function of their prior valuations by means of linear regression. The regression coefficients associated with valuations are then used to estimate the hypothetical sale price of the unsold properties in the quarter.

Although the transaction-linked approach is a significant improvement over the valuation-based approach, several caveats are applicable.

- A reduced number of transactions may significantly affect the statistical quality and the reliability of the transaction-linked indicator estimations. The basic estimation model includes checks to determine whether there are a sufficient number of transactions to produce the associated coefficients with dummy country variables.

- Portfolio investment/disinvestment can cause problems in interpreting the data, as volume changes could have an effect on the prices recorded. To prevent structural breaks emanating from volume changes in the portfolio, the sample is held constant for five consecutive quarters to allow the compilation of year-on-year percentage change series.

- A true quarterly index is necessary to analyse commercial property market developments in a timely manner. Although the IPD dataset does contain some quarterly data, valuations for those countries for which these are not available are interpolated from annual data.

- Professional investment managers servicing institutional investors are likely to focus on the prime segment of the commercial property market – mostly modern buildings in sought-after locations. This is then unlikely to be representative of the market as a whole.

- The source data used at present do not include building or construction projects which are still under development. This can be a drawback in the context of financial stability analysis, as the data cannot be used to gauge the credit risk confronting banks that have lending exposures to commercial property developments.

The IPD datasets currently used to construct the headline dataset at the ECB contain national quarterly price series for Belgium, Ireland, Spain, France, the Netherlands, Austria, Poland,

Portugal, Sweden and the United Kingdom, with some of these series derived from interpolated annual data. Several EU countries have alternative data that are to some extent based on transactions. These are Denmark (produced by the national statistical institute), Germany (sourced from bulwiengesa AG) and Italy (produced by the Banca d'Italia). These sources are used for the countries concerned.

For the ESCB dataset, the preferred data are provided by national statistical institutes or other sources that have been endorsed by the respective national central bank. Where these are not available, IPD data are used by the ECB to compile euro area and EU aggregates. The euro area and EU indices are calculated using nominal GDP weights. A moving five-year average of GDP weights is applied to the annual percentage change of the chosen data source for each available country.[4] Countries that are not covered by either national data sources or the IPD dataset are assumed to show the same development as the GDP-weighted average of the countries for which indicators of commercial property prices have been compiled.

The ESCB intends to continue developing the experimental indicators of commercial property prices by addressing the limitations mentioned above. In this respect, it has established a work programme of quality enhancement objectives, both at a national level and for the IPD dataset, for the forthcoming years. The medium-term statistical research agenda includes:

- an ongoing exploration of alternative data sources for the countries which are not currently covered by the available source data to enhance the coverage of actual transactions and to determine whether it is possible to estimate longer time series for countries for which data exist;

- the establishment of related indicators, such as for rents and vacancy rates;

- an exploration of whether it is possible to integrate information on property under development into the index or whether a separate indicator needs to be provided.

In recent years property prices have proven to be relevant indicators for both monetary policy and financial stability. Clearly, the measurement of property prices needs to be further enhanced to improve their usability for policy-making purposes. Overall, the new indicators of commercial property prices represent a first step towards monitoring developments in commercial property prices across the EU on a less heterogeneous basis that has so far been the case. Further methodological developments to meet the remaining analytical requirements are expected to follow in the medium term.

4   The threshold coverage in terms of GDP weights for compiling euro area and EU aggregates is 70%.