

Developing Commercial Property Price Indicators

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Abstract

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. 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.

Eurostat, together with the ECB, IMF, BIS and OECD has recently taken initiatives with the medium-term objective of developing the compilation of official statistics on CPPIs. This initiatives call upon the establishment of the reference methodological standards for the compilation of CPPIs and the build-up of an adequate infrastructure for their regular compilation.

To take this initiative forward, Eurostat, under the auspices of the Inter-secretariat Working Group on Price Statistics, committed to coordinate the compilation of a CPPI Handbook.

This paper presents an overview of the methodological and practical challenges in developing CPPIs and illustrates how the CPPI Handbook intends to address them. It also puts forward the key elements underpinning the future production process of official CPPIs.

Keywords: commercial property prices, real estate prices, price index

Introduction

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*, which addresses the statistical data gaps in relation to the economic and financial crisis.

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. What are the characteristics of these indicators as concerns, for instance, the valuation of the portfolio components at different points in time and the weighting schemes? How do they compare with indices measuring residential real estate price changes? What is the dividing line between residential and commercial property prices indicators and is it possible to aggregate them in synthetic measures for total real estate price changes? What can be their uses in national accounts in connection with the estimation of capital stocks and of stocks of non-produced assets? Are there other non-price commercial property indicators that can play a role for policy or economic decision making? These and other related questions on CPPIs still need to be addressed by the international statistical community.

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, gathered together users and producers of CPPIs in order to explore possible approaches¹. 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 Inter-secretariat Working Group on Price Statistics), 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. Section 1 of this paper illustrates how the CPPI Handbook intends to address the various methodological and practical challenges. Section 2 looks at the possible future set-up for official CPPIs and puts forward some of those that are regarded as key elements underpinning the future production process of official CPPIs. Eventually, Section 3 outlines some driving aspects towards the compilation of official CPPIs and related indicators.

¹ Presentations and other documents of the Conference are available at the following website: http://www.ecb.europa.eu/events/conferences/html/20120511_cppei.en.html

1. The CPPIs Handbook: methodology and practice for CPPIs compilation

Following the various contributions presented and discussed at the May 2012 Joint Eurostat-ECB International Conference on CPPIs, the need for an international methodological reference clearly emerged as an important pre-requisite to the development of CPPIs as part of official statistics. On the basis of the experience developed with the Handbook on Residential Property Prices Indices, published in April 2013, Eurostat has selected a team of authors for writing a Handbook on CPPIs. The selected team started working at the beginning of 2013 and the CPPIs Handbook is expected to be finalised at the end of 2014. The Handbook should address both the conceptual aspects of the methodology and the practical issues to be tackled for the compilation of CPPIs. Furthermore, it will contain a chapter on additional non-price indicators for commercial properties.

At present, the various topics and issues to be treated by the CPPIs Handbook can be detailed more in depth.

Commercial property: definition

The Handbook will aim to clarify conceptual aspects, definitions and related possible classifications for CPPIs. Commercial property consists 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). However, like for residential property, the non-produced *land* component – in particular, the land underlying the buildings - is very important in determining the overall joint value of the property as an asset. Distinguishing the structural and the land component in such a joint value, for example for purposes of national balance sheet compilation, represents a major challenge for both residential and commercial property stocks alike. This is a difficult area that can generally benefit from progresses made in commercial property statistics.

Classification of commercial properties

The classification of the various types of commercial properties is certainly an aspect that is more important for commercial property than for residential property. In residential property statistics, the distinction between different kinds of dwellings (flats, detached houses, etc.), although important from the point of view of the price indices compilers, is not so central from the user point of view. Commercial properties can be seen as heterogeneous also from the point of view of their use in economic production and hence their classification becomes more interesting from the user point of view. One cannot resort to the standard statistical classifications, such as the classification of products (CPA) or the classifications by economic activity (ISIC or NACE). The CPA only distinguishes the non-residential buildings in *industrial* buildings, *commercial* buildings, and *other* non-residential buildings². The classifications by kind of activity look at the main activity of the enterprise using the asset for production and do not differentiate between the various kinds of assets comprised in the real capital stocks allocated to the various activities.

Therefore, there is scope for proposing a somehow extended asset classification for commercial properties, a point underlined at the Frankfurt CPPIs Conference of May 2012. As a minimum, users would be interested in having data for *offices*, *retail trade*, *hotels*, *industrial buildings* and *land*. Finer classes could be defined at lower levels of the classification, at least for the industrial segment, although there is a clear trade-off between the user and the producer point of view. A related point

² See CPA group 5312.

that needs clarification is the role of buildings used for the business activity of residential renting, notably whether they belong to the residential or the commercial property field.

Valuation principle and quality-mix adjustment

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.

Regarding valuation, the leading principle should be the market transaction value of the new or of the used asset. While it should be possible to obtain reasonably reliable market values for newly produced assets³, the problem of the valuation of used assets hits much deeper for the compiler of CPPIs than for the compilers of RPPIs. In the case of commercial property the number of market transactions in used assets is lower 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. Hence, it is important in view of the compilation of the CPPIs Handbook to analyse these issues more in depth, as compared to the case of residential property. Literature and practical developments seem to point to some kind of *mixed models* using combinations of the various valuation approaches.

The quality-mix adjustment for measuring inter-temporal price changes is a classic topic of index-number theory and, as concerns real estate indices, it has been analysed in depth in the RPPIs Handbook. In particular, the RPI Handbook covers stratification issues, repeat sales approach, sales price appraisal ratio methods and hedonics. As CPPIs compilation is particularly affected by qualitative heterogeneity between assets, it is important to start from the results already available in order to analyse how these techniques can be applied in practice to commercial property; in particular data sources providing the input needed for the application of the different techniques have to be identified. Similar considerations apply to the choice of the aggregation formula and of the weights, notably to the alternative between flows or stock weights, values or volume weights.

Additional indicators

A new topic included in the CPPIs Handbook scope concerns the additional indicators that can be developed in conjunction with, if not as a by-product of, the compilation of CPPIs. The 2012 CPPIs Conference contributed to launch the discussion and led to the identification of variables that could address recognised users' needs. These include: value and price indices for commercial rents, vacancy rates, capitalisation rates, yields, transaction volumes and transaction values. Some of these variables (first of all, but not only, those related to transactions) are directly linked to the compilation of price indices for commercial property. Others may need additional investigations on the sources available and on the statistical methods needed for their exploitation. This leads to the last part of the Handbook, which will cover the more practical aspects of CPPIs compilation, including an analysis of the experience of existing CPPIs producers.

³ These values (and a corresponding price and volume split) are already needed for the compilation of the GDP and of its components such as in particular gross fixed capital formation.

2. Data sources and some key elements underpinning the future production process of official CPPIs

From the point of view of official statistics, it is important not to restrict the notion of statistical methodology to the conceptual definitions of the target indicators and to the theoretical discussion on alternative formulae for the various indicators. Although these aspects are essential, another key feature of a methodology for official statistics is the definition of adequate *sources* from which the indicators can be derived, as well as of the steps needed to derive the indicators from the various potential sources. This type of analysis can also be used by the policy-maker to take decisions on the most appropriate collection agents and collection system.

Concerning CPPIs, the debate on the potential sources that took place at the May 2012 Joint Eurostat-ECB International Conference has identified a certain number of candidates. These include administrative sources on transactions, business accounts and business surveys, but also accounts and appraisals available from the business community, including banks and other intermediaries such as real estate investment funds, brokers, agents and private vendors. Stock market quotations of financial assets related to real estate investment also represent a potential source.

Administrative data consist mainly of registered transactions in commercial properties, which can derive from land registries, tax authorities of various kinds, notaries or regulatory agencies. Although transaction data cannot have for CPPIs the same dominant role that they have for RPPIs⁴, the construction of administrative databases for non-residential real estate can usually be coupled with the residential property database, so that the marginal cost of collecting this information should usually remain reasonable. This would allow the compilation of data for commercial real estate transaction values and volumes (in some sense to be defined more precisely), which have an interest for themselves. This would also allow keeping as much as possible an up-to-date link with objective valuations to be used in conjunction with other valuation approaches. Therefore, transaction sources appear anyhow an important ingredient for developing a collection system for CPPIs. But what are the characteristics of the underlying assets that are more useful for CPPIs compilation, including for the calibration of various valuation models used? How could these characteristics be collected in the most effective way? These more specific questions should be addressed by the CPPIs Handbook, also on the basis of an analysis of case studies on indicators already available.

Indeed, because of the relative infrequency and the heterogeneity of transactions in commercial property, case studies presented at the CPPIs Conference showed that several existing indicators result from modelling available data on transactions through hedonic regressions that take into account property characteristics such as type, industry, location and other spatial characteristics. The use of property appraisals as an explanatory variable in the models is also a recurrent feature, while the repeat sales approach seems to be much more limitedly used in the current practice. It appears therefore that a multi-source approach will be required in the field of CPPIs. Transaction based data are likely to be the best theoretical approach but appraisal valuation data, probably accompanied by indicators derived from stock-markets, are also likely to be key inputs to what has been called a “triangulation” or “cocktail” approach. Supporting indicators will also be important for users in order to understand headline data. These might include data such as vacancy rates, financing information, rents, etc.

⁴ See the Residential Property Prices Handbook, chapters 4 to 6, for a comprehensive analysis of the techniques recommended for the exploitation of transaction data.

The discussion at the Conference also indicated that this heavy dependency on appraisal valuations, on the one hand, and on data modelling, on the other hand, has some consequences for setting up a CPPIs compilation system. Appraisal data most frequently result, in particular for commercial property, from sources linked to the business community. Hence, a higher involvement - compared to other statistical areas - of private data compilers linked to the business community can itself become a necessary condition, rather than an option, for the development of official CPPIs compilations. The strong reliance on data modelling must, on the other hand, be counterbalanced by the highest possible degree of transparency in the sources used and in the methods used by the compilers. The development of quality standards and the requirement of transparent “metadata” information on the data producers can strongly take advantage from the experience of the European Statistical System. Therefore, a partnership between both official and commercial data providers in CPPIs is likely to be both desirable and mutually beneficial.

3. Towards the compilation of official CPPIs and related indicators

The definition of a methodological framework for the compilation of CPPIs and related indicators through a dedicated Handbook is the first step towards the compilation of official CPPIs. As underlined in the previous sections, several methodological and associated practical issues have to be addressed in order to create the conditions for starting the regular compilation of statistics in this area.

From a practical point of view, the following elements should be taken into consideration:

- National statistical authorities should take the leadership in compiling CPPIs and related indicators.
- Due to the importance at international level of such indicators, the compilation of CPPIs and related indicators should be based on an international harmonised methodology leading to internationally comparable results. The CPPI Handbook will represent the methodological and practical reference in this statistical field.
- A pure transaction-based approach will be difficult to be realised because of the nature of the properties transacted, their uniqueness and their characteristics. A regular provision of detailed information by property class, by region and by market segment based on standards established in official statistics, based on different and complementary data sources, will be necessary for the regular compilation of official indicators.
- CPPIs and related indicators qualify for a statistical area where statistical compilers will have to bring together public and private market information.
- A step-by-step approach to the compilation of official 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 CPPIs and related indicators as well as associated metadata, aiming at clarifying the nature and limits of the produced indicators.
- A pragmatic attitude should guide the overall approach to the official production of CPPIs.

References

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