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Measuring the commercial property prices in Italy: first evidence from a transaction based approach

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After reviewing the main features of the commercial property market in Italy and the main sources of statistics about cyclical developments in its single sectors, we provide a first indicator of the commercial property prices based on a transaction approach. In particular we integrate several pieces of evidence on prices actually paid to transfer property of different commercial properties in order to obtain a quarterly indicator covering the period since 1995Q1. In a preliminary validation exercise, we put forward a basic analysis of the cyclical patterns of our indicator compared with developments observed in Italy in both the residential property market and in the general economy.

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1. Introduction

Over recent years there has been an increasing interest in the scientific, institutional and market analyst community to monitor the developments of the commercial property markets for manifold reasons. In the first place, alike the residential units the commercial premises show a key role as collateral in the provision of funds, thus enhancing the interdependence between the real and financial sector of the economy at the macro level. From this standpoint, both aggregate cycles and financial stability conditions may be heavily affected by the developments in the real estate sector. The correlation among the two sides of the economy has apparently increased over time, and it shows even stronger during the episodes of financial crisis.

In the second place, unlike residential property, which enters the households' utility function as it provides accommodation to its owners and thus receives an intrinsic reservation value, the price of commercial property is mostly determined by the value of future rents. The demand for commercial property is more likely to be affected by the business environment and economic confidence. In addition to some specific characteristics of the commercial property market (such as longer construction lags, longer leases and different funding methods), this may cause distinct cyclical behaviour in the two segments of the real estate sector, as well as different channels to interact with the financial system and the real economy (ECB, 2000; Davies and Zhu, 2005, Panetta et al. 2010).

In the third place, banks may play a larger role in the financing of commercial than the residential real estate, as they lend for the purchase of land for development and existing buildings, they finance construction projects; they lend non-financial firms based on real estate collateral; moreover the cross border holding of commercial assets by the banking sector is by large higher compared with residential assets, showing an increasing trend in recent years .As a consequence, a declining trend in commercial prices may exert stronger and geographically more widespread effects on macroeconomic dynamics and the stability of the financial system.

Despite the increasing importance in the theoretical analysis, empirical evidence about the role of the commercial property in affecting macroeconomic developments is generally scarce due to the limited availability of data on both prices and numbers of transactions of non residential units. Focusing on European countries, where the statistical picture was initially very unsatisfying for the real estate sector as a whole, important statistical progresses have been recently achieved regarding the residential segment, with the dissemination of quarterly data on house prices to be eventually started in Autumn 2012 based on an harmonized methodology agreed within Eurostat. However the information gap remains very large for the non-residential sector, whose delineation is also controversial in the domestic official statistics due to the changing coverage across countries of the scarce data currently available regarding price indices, the number of transactions and the stock size.

In this framework increasing the use of price indicators of the commercial property has been included in the 20 recommendations listed in a joint report by the Financial Stability Board and the IMF to the G20 (2009), in order to enhance the ability to assess the world cyclical developments and financial stability. As recalled in the conclusions of the joint ECB and Eurostat Conference on commercial property prices indicators held in Frankfurt in May 2012, a first step is to exploit the mass of information that can be gathered from commercial data providers, albeit it is based on different sources, coverage and methodology across countries and regions.

Indeed most commercial property price indicators that are currently available are based on the valuation approach, as they deliver an estimate of the asset value in line with finance models but with possible deviations from the actual prices paid in transactions. From the one side the valuation approach allows to overcome the low liquidity issue of the commercial property that may bias the

measurement of market prices, even more so during financial crisis as the number of transactions dramatically declines. From the other side, the valuation based indicators are highly dependent on the domestic regulatory frameworks, and they hardly deals with the granularity of the commercial property markets, whose pattern may vary a lot over time; in addition, they may suffer from a delayed detection of the cyclical turning points in the commercial property markets (Geltner, 2012). Ideally, the indicators based on actual prices paid in transactions would closely match the users requirements regarding the analysis of the commercial property, but their compilation currently proves very challenging from the producers' standpoint due to the lack of basic information. This could call for an urgent investigation about all candidate sources of data, primarily in administrative domain, in order to pave the way for an early compilation of transaction based price indicators.

This paper puts forward experimental estimates of commercial property prices in Italy based on the transaction approach. For this purpose we exploit a variety of data provided by private organizations and Government agencies, that we combine to retrieve quarterly price indicators covering a relatively long time horizon (since 1995), suitable for analysing cyclical patterns of the commercial property market in Italy and understanding the main determinants.

Following a brief sketch in Section 2 of the main features of the Italian commercial property market, Section 3 reviews the most important data providers in Italy, by comparing the different sources, methodologies, time and market segment coverage. In Section 4 the compilation strategy of our experimental data is presented in details, and a preliminary validation of our price indicators is discussed in Section 5. A summary of main results and items for future research concludes.

2. Main features of the Italian commercial property market

According to data released by Agenzia del Territorio, the government agency dealing with the real estate sector, in 2011 the total construction stock in Italy was around 63 billions of units, or 2.3 per cent higher than the figure registered in the previous year. The largest share was made by the residential units, that stand for around 85 per cent of the total if box, cellars and the alike are considered (Table 1). Within the non-residential buildings, those used for office, retail and industrial destination proxy as a whole 7 per cent of total stock, with the largest number referring to the office units. An additional share of around 5 per cent of total stock is made of an heterogeneous aggregate of non-residential buildings, such as hospitals, schools, spa, gyms, for which statistics are however much less systematic and reliable. Accordingly, these units are not included in the delineation of the commercial property market considered in this paper.

Table 1

Stock and transactions of construction units in Italy - 2011

(thousands of units where not otherwise specified)

Destination of use	*Stock*	*% shares*	*Transactions*	*% shares*	*Turnover*
	(A)		(B)		(B/A)
Residential	**33,174**	**52.7**	**598**	**45.3**	**1.8%**
Box, cellars and others	**22,196**	**35.3**	**477**	**36.1**	**2.1%**
Office	**652**	**1.0**	**14**	**1.1**	**2.1%**
Retail	**2,800**	**4.4**	**35**	**2.6**	**1.2%**
Industrial	**702**	**1.1**	**12**	**0.9**	**1.8%**
Not else classified	**3,415**	**5.4**	**194**	**14.7**	**5.4%**
Total	**62,939**	**100**	**1,321**	**100**	**2.1%**

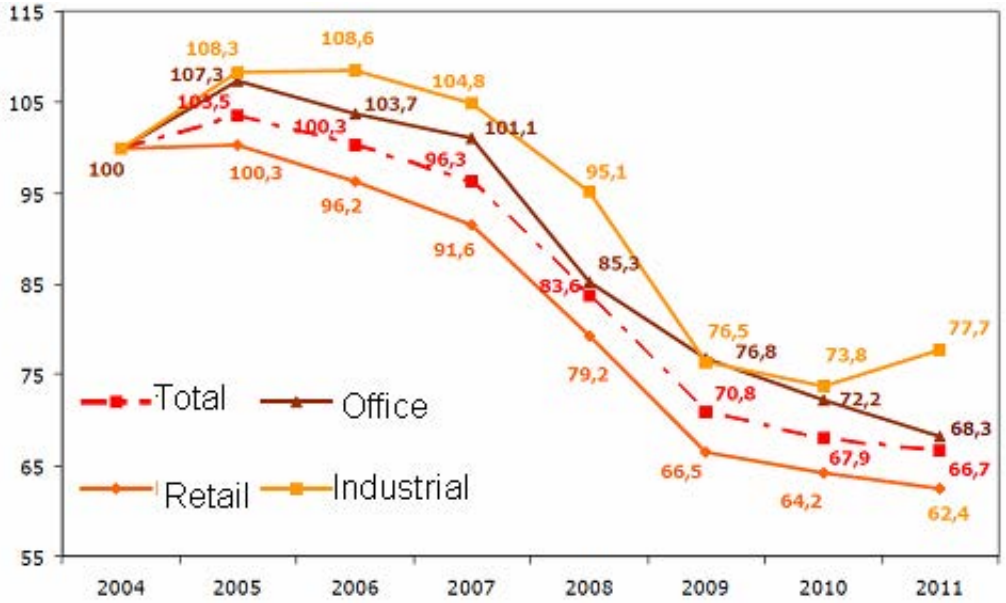
Source: elaborations based on data Agenzia del Territorio and Assilea

In terms of number of transactions, which totaled 1.3 billions in 2011 (-1,9 per cent lower than in 2010), residential units reasonably confirm the highest share (81 per cent of total market), followed by office (2.6 per cent), retail and industrial units (around 1 per cent for each category). Interestingly, the ratio of the number of transactions to stock, a statistics that proxies a turnover index useful to assess the asset liquidity, does not largely differ for non residential units compared with the residential ones, apart from the retail segment. However, it is likely that the official register (*Catasto*) improperly classifies part of this segment under the "Box cellars and others" as it often happens that some space in residential units are used for commercial destination, mostly in the case of small shops, even more so when they owned by producer households. As this category shows a high turnover index, it is likely that that statistics for the retail property is underestimated when we adopt the official property classification by destination.

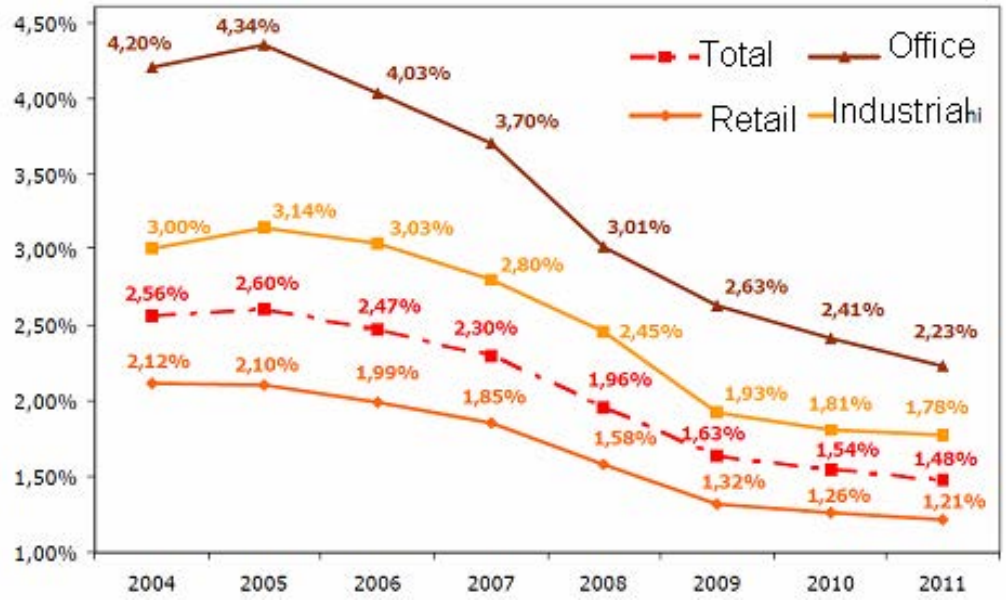
Figure 1

Recent developments on the non residential markets

A. Number of transactions; indices 2004=100



B. Ratio of number of transactions to stock



Source: Agenzia del Territorio and Assilea (2012)

Despite the possible statistical bias affecting the retail sector, it is worth noting that the turnover index reads 1.5 per cent in 2011, a value just marginally lower compared with the residential units. This preliminary evidence would mitigate the risk that adopting a transaction based approach to measure price development in the commercial property could lead to biased result due to the scarce asset liquidity; in particular, such risk may not be dramatically higher compared with the residential property, whose prices are almost unanimously assessed based on market transactions.

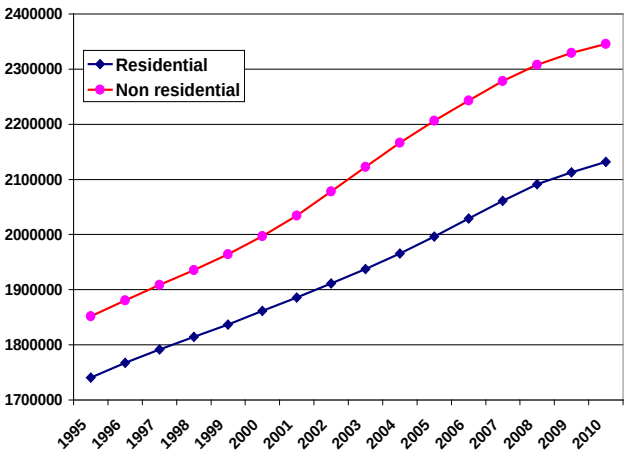
The reassuring picture about the limited liquidity issue affecting the Italian commercial versus the residential property is somewhat reinforced by considering that since 2007 transactions followed a pronounced negative trend for all real property assets (except from a partial recovery recently registered in the industrial segment, following quite a brisk fall; see Figure 1.A), thus pushing the turnover index down to a low in 2011 from 2.5 per cent averaged between 2004 and 2006 (see Figure 1.B). In the same period the average value was 2.8 per cent for the residential property, thus implying that the recent crisis did not cause a widening gap of liquidity of the commercial compared with the residential units.

Turning from the number of units to the value of the construction stock, the size of non-residential property proves larger than the residential assets. Based on national accounts, at the end 2010 the value of former was around 235billions euro against 215 for the latter; both real property components show a positive trend since mid-nineties, with some acceleration for the non-residential assets (see Figure 2.A). In terms of GDP, at the end of 2010 the stock value exceeded 150 per cent for commercial construction and was just below 140 for the residential one; both components marked a clear increase since 2001, when they were close to 122 and 115 per cent of GDP, respectively (Figure 2.b). The large size of the estimated value of commercial property adds interest to compile reliable indicators to monitor the respective price developments, hopefully matching the progress recently made by the European statistical community regarding house prices.

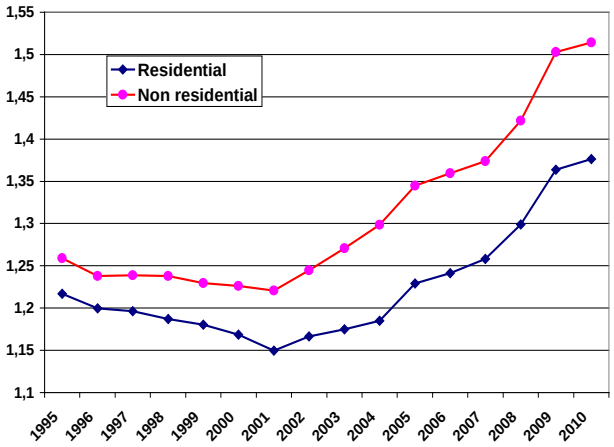
Figure 2

Construction stock in national accounts

A. ***Millions euro (2010 chained values)***



B. ***Percentage Ratios to GDP***



Source: elaborations based on data from Istat and Bank of Italy.

3 Available sources on commercial property prices in Italy

The current picture of statistics about non-residential property price is very unsatisfying in Italy, as well as in most European countries, even more so concerning public data. For the time being, in Italy there are no official data covering commercial property prices. Some estimates can be

obtained by commercial providers based on a valuation approach, but their regular and timely dissemination to the general public is quite restricted due to property rights.

Other data are released by public or private organizations specialized in property transactions both to the subscribers to their reports and, under a reduced scale, to the general public through press conferences. In general, the geographical coverage, the type of property considered, the time horizon, the collection frequency and the basic sample design of the available data largely differ depending on their sources. In view of our purposes, namely to put forward an experimental indicator of the commercial property prices based on the transaction approach, we can identifies three main sources of experimental data. They are two private research institutes (*Nomisma* and *Scenari Immobiliari*) and a government agency (*Agenzia del Territorio*) jointly with *Assilea* (Association of Italian leasing operators). All of them provide some price statistics for commercial property in Italy by mostly using information on actual transactions.

Nomisma collects data on prices actually paid in transactions directly from a sample of real estate agencies; the time horizon starts in the early nineties and covers 13 large municipalities and 13 intermediate ones over all the country. Data are released semi-annually one month later the end of reference period. *Nomisma* monitors Retail and Office units, providing simple average prices for the two types in isolation.

Scenari Immobiliari computes average prices based on public advertisements under the assumption that a property is sold when it ceases to be offered, its sale price is estimated by a mathematical model that considers the time it has been on the market and any change in the price (calculated by reference to a single location) during the period concerned.[1] Accordingly, data do not refer to the actual prices reported on house sales, but they are an estimate of the interval within which the final selling price may fall. *Scenari Immobiliari* computes average prices since the middle nineties for virtually all province capitals and major non capital municipalities, with a monthly frequency and one month delay with respect to the end of the reference period. Although the basic estimates refer to single components (Retail, Office and Industrial units), as the use destination of a specific unit is not codified and matches the description reported in the public advertisements, price data are publicly available for the sole total commercial property.

Agenzia del Territorio (jointly with *Assilea*) collects data from individual transactions and leasing contracts, and disseminate data virtually covering all the country, but with only a partial coverage of the total market value. In particular, in 2011 the number of registered contracts actually monitored was around 8000, making almost 20% of the total value of the estimated turnover in the commercial market. As for the property coverage, data refer to three categories (Retail, Office and Industrial units) and adopt a classification by destination in line with the national register (*Catasto).* The dissemination strategy is twofold: i) annual data, for single segment of the commercial property by main locations and national aggregates, are made available in public reports with 5 months delay for years starting in 2007; ii) semi-annual data for individual contracts, covering periods since S1-2003, are provided to subscribers with a delay of around three and four months respectively for the first and the second semester.

4. Towards the computation of a quarterly price indicator

By combining data available from three different sources we aim at computing an experimental indicator of the commercial property prices in Italy, that would meet as closely as possible the following desired properties:

[1] The starting point is the prices requested by sellers as reported in advertisements mainly published on the internet; these are then updated at three different points in time, based on the hypothesis that when the advertisement no longer appears, the house has been sold. The published values are finally obtained using non-linear interpolations reported for each reference area in a given period. In respect of residential dwellings located in semi-central areas only, the data are aggregated in a national index using a weighting system based on the stock of dwellings of each municipality.

i) a clear delineation of targeted markets
ii) representativeness of country-wide trends
iii) relatively high reliability and accountability
iv) good time coverage
v) high frequency and timeliness

In this section we describe the strategy we followed to estimate a price indicator based on transactions actually made on the commercial market, and discuss the preliminary results. It is worth stressing that at this stage the indicator is experimental as the source data are heterogeneous under many respects, and a significant progress is required mostly in order to improve representativeness in terms of location and type of commercial property. The main purposes of our experimental indicator are to provide a first input for the analysis and understanding of the developments in the non-residential real sector, and to signal the potential contribution that administrative data can provide in computing a transaction based price indicator.

4.1 The computation strategy

We start from the annual data released by *Agenzia del Territorio-Assilea* (AdT henceforth) for years since 2007 as we believe that they better match properties i) to iii), and we exploit the informative content of data provided by *Nomisma* and *Scenari Immobiliari* in order to progressively move towards properties iv) and v).

Regarding *AdT* data, it is however worth mentioning that they are themselves to be considered preliminary estimates as they are currently fraught with the difficulties mostly related to the limited representativeness (even if higher in comparison with alternative data source) of the whole country, that was already mentioned in the previous section, and to the controversial reliability of the unit classification made by the national register (*Catasto*). In this respect, while the delineation of the commercial property is clearly identified by AdT according to the *catastal* codes (Table 2), the national register is occasionally unreliable as some large, residual categories include construction units that could be imputed to specific use destination under a better scrutiny or the register receives with a huge delay (or misses receiving at all) changes in the use destination.[2]

Table 2

Classification of the commercial property

	Office		Retail			Industrial
Unit type	Offices	Banks	Shops	Commerc. Departments	Hotels	Sheds
Catastal codes	A10	D5	C1 and C3	D8	D2	D1 and D7

Under these caveats, the **first step** in computing our indicator was to combine the annual *AdT* data available only since 2007 for main cities, all regions and the whole country with the semi-annual micro-data, that are released by *AdT* upon request, regarding a sample of contracts settled since the first semester 2003. In particular, we aggregated the individual semi-annual data to obtain country-wide annual data for each commercial asset (Office, Retail and Industry), and we used them to retropolate back to 2003 the original annual data.[3,4] In this way we obtained annual data since

[2] In addition to the possible bias in registration of the retail units that was already mentioned in Section 2, the number office units could also be underestimated as many units actually used for office destination are included in a sub-group of the D cell ("Non ordinary units").

[3] Due to data limitations, in order to average the individual semi-annual series we adopted the same weighting scheme for every asset, based on the number of total transactions of commercial property by province capitals; the elementary unit was the simple mean of individual data on prices by province capital and commercial asset. Alternatively, we adopted an unweighted mean of individual price data by commercial asset, finding virtually negligible discrepancies

2003 for all the three components of commercial property for the country as a whole; we turned them into the semi-annual frequency by applying standard technique for temporal disaggregation (à la Chow-Lin) and using as semi-annual indicator just the nation-wide average value of the individual semi-annual series. As a result, we obtained semi-annual data for prices of the Office, Retail, Industry and Total commercial property (weighted average over the three components) covering the whole country since S1_2003.

In the **second step** we retropolated the semi-annual series from S1_2003 back to S1_1995 based on trends of *Nomisma* data, that are available only for Office and Retail units. Accordingly we first calculated semi-annual series for the prices of the two categories of commercial assets since S1_1995, then we aggregated them as a weighted average to proxy the trend in prices of total commercial property, that was imputed to the semi-annual series of total units for periods prior to S1_2003.

In the **third step** we used the quarterly data on construction costs released by ISTAT and on price of non-residential property estimated by *Scenari Immobiliari* to obtain, through temporal disaggregation techiniques, a quarterly indicator of the Total commercial property prices covering the whole country since Q1_1995.

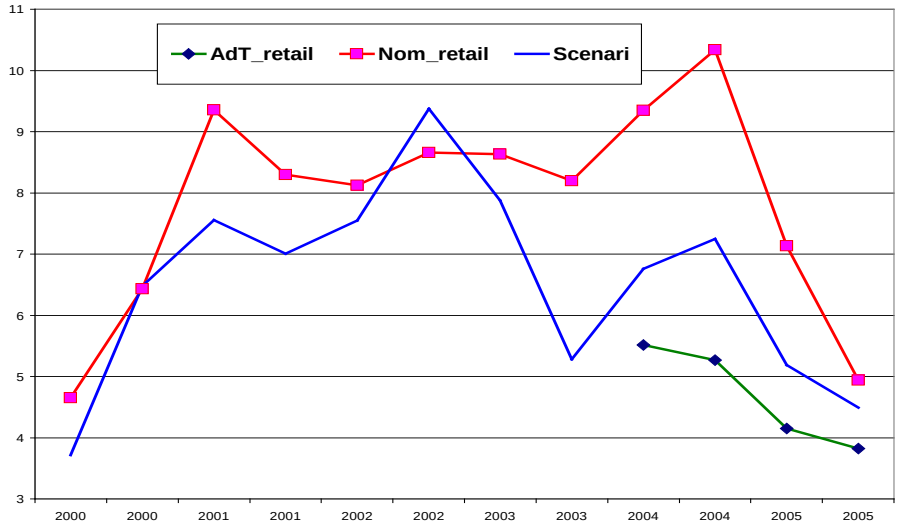
As a result, we obtained semi-annual indicators of prices of the Office, Retail and Total commercial assets in Italy since S1_1995 and a quarterly indicator for only the Total since Q1_1995. All indicators are based on the transaction approach and refer to the whole country; the latter may be an important limitation of our indicators as they do not allow to monitor the dynamic granularity of the commercial property market.

A further limitation of our calculations comes from the heterogeneous methods, quality and sample design underlying the different data sources we adopted. Accordingly, the trend in the different price indicators could significantly differ, thus affecting the reliability of both the retropolation and the temporal disaggregation used in our computation strategy. At a first scrutiny, however, divergences in dynamics of the basic price series are not dramatic on average, even if they occasionally prove relatively large as, for example, in the case of retail units (Figure 3)

Figure 3

Price Indicators for Retail Units (Total property for Scenari Immobiliari)

(percentage yearly changes**)**



with the weighted mean. However both series, taken as yearly average, differ from the original annual data as the latter are obtained based on estimates of the stock shares, that are not currently circulated by *AdT* as still under scrutiny.

[4] Retropolation of the annual aggregate series was simply obtained by imputing for years prior to 2007 the dynamics of annual (and national) averages of the semi-annual micro data.

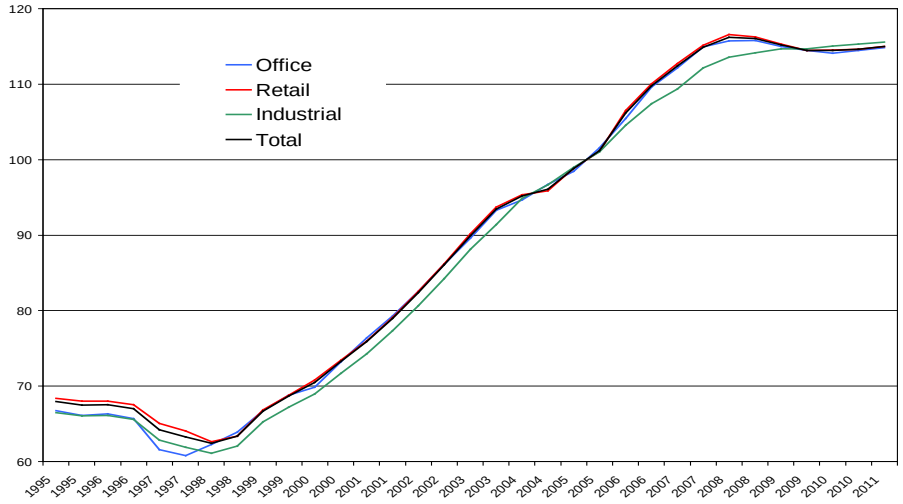
4.2 Preliminary results

According to our calculations, in Italy commercial property registered a bold revaluation between the first semester 1999 and the first semester 2008, by an annualized rate of around 5 per cent per period in nominal terms (Figure 4). As the financial crises deepened, commercial property prices went down, by an annualized rate of around 0.5 per cent per period until the second semester 2010, followed by a virtually stagnation over the next year (Figure 4). The expansionary phase was common to all commercial assets, proving however less pronounced for the industrial ones since the mid 2000s, likely in line with the first signs of cyclical slowdown in the industrial production. Interestingly, the downward correction during the recent financial crisis was more limited compared with the deflation that followed the currency and financial turmoil in the nineties.

Figure 4

Price indicators for commercial property in Italy

(semi-annual data; indices 2005=100)



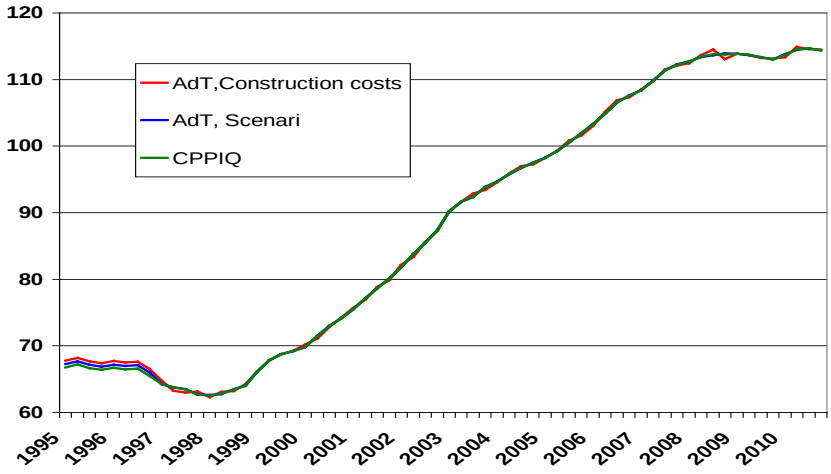
Source: elaborations on data Istat, Agenzia del Territorio-Assilea and Nomisma

Regarding the quarterly price indicator, that we were able to calculate only for all commercial property and for the whole country, we first notice that its developments are not significantly affected if the temporal disaggregation of the semi-annual indicators is based on price data estimated by Scenari Immobiliari (blue line in Figure 5), on the Istat index of the costs of construction (red line) or on both series (green line). We adopted the latter as our reference indicator to take account for both valuable information on costs and margins of developers.

Figure 5

A quarterly indicator for commercial property prices in Italy

(Total non residential market; index 2005=100)



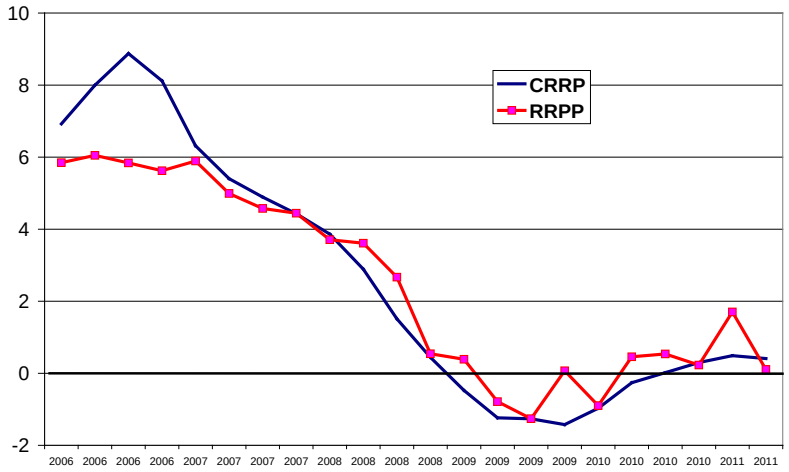
Focusing on recent developments, our quarterly indicator shows that yearly rate of commercial property prices in Italy peaked in the late 2008 (8.3 per cent in the third quarter; line blue in Figure 6), followed by a progressive and pronounced deceleration, which lead to negative changes in the first quarter of 2009. The decline become particularly severe in the last quarter 2009 (around -1.5 per cent) and continued until the early 2010; in following quarters commercial prices posted a moderate increase, although largely below producer inflation.

Compared with residential property price dynamics (red line in Figure 6), both the accelerating phase in the mid 2000s and the declining one in late 2000s appear more pronounced for commercial property prices, likely signalling a higher sensitivity to changes in the economic climate in line with the recent literature.

Figure 6

Prices of the commercial and residential property

(y-o-y percentage changes)

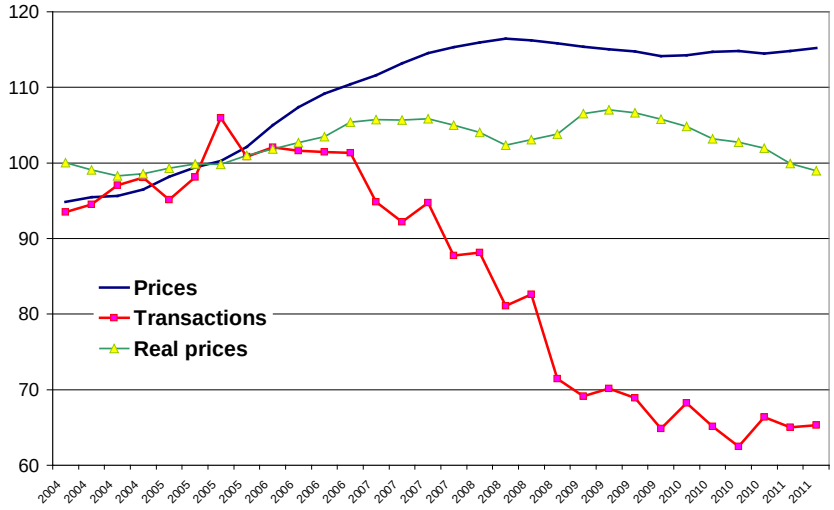


Source: this paper for commercial prices (CRRP), elaborations on data from Banca d'Italia Agenzia del Territorio and Istat for residential price (RRRP)

Figure 7

Prices and transactions on commercial property markets

(Indices 2005=100)



A common property of commercial and residential property prices in Italy is a significant rigidity, at least when they are valued in nominal terms, to adjust to a downward correction in the number of transactions. Indeed, commercial transactions briskly declined since late 2006, showing some signs of stabilisation only in recent quarters (Figure 7). At the same time nominal commercial

prices kept increasing until late 2008, albeit with a slowdown, and show a relatively moderate reduction just over the following year. Alike in the residential sector (Nobili and Zollino, 2012), the decrease in commercial prices was more pronounced and prolonged in real term (or net of producer inflation): between the second quarter 2011 (or the latest data currently available) and the same quarter 2009 the overall fall in real prices of commercial property exceed 7.5 percentage points.

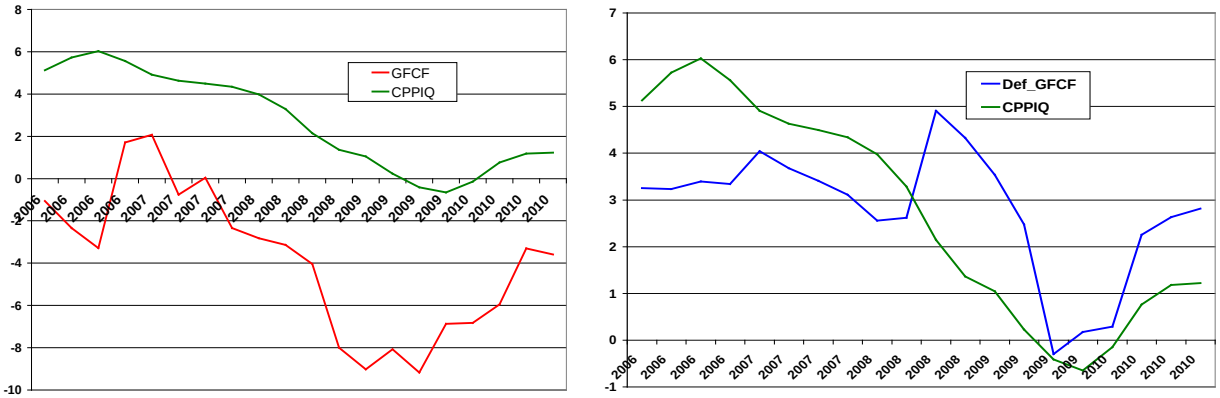
As a further preliminary test for a reliable information content of our indicator of commercial property prices we see that its developments are not at odds with data in the national accounts regarding both volume and deflator of non residential investment. From the one side the deterioration in property price trend may contribute explaining the contraction in investment since the late 2000s, whose intensity moderated in recent quarters as property prices somewhat improved (Figure 8A). From the other side, abstracting from volatility in quarterly data, developments of property prices reasonably matches underlying trend in deflator of non residential investment (Figure 8B).

Figure 8

Commercial property prices and non residential investment in national accounts

A. Property prices and investment spending ***B. Property prices and investment deflator***

(percentage changes year on year)



5. Agenda for future research

At the current stage of research, the quarterly indicator of commercial property prices in Italy is a preliminary outcome, that mostly suggests that combining pieces of information currently available from several sources can be a promising strategy towards a transaction based price index. There is however important progress still to be made to improve reliability and representativeness of the source data, and thus of the final price indicator.

Computing an experimental indicator, albeit largely imperfect yet, on commercial property prices may be a valuable step in order to fill an important information gap regarding a large segment of the real estate sector. In the short run, it provides the only input currently available in order to monitor cyclical developments in the Italian commercial property prices and to analyse the main determinants. In perspective it may help that the official computation of a proper price index is soon established, in line with the success story of house prices. Indeed, in most European countries they were first proxied by imperfect indicators selected or estimated by users before being part of a larger project supported by Eurostat, and eventually the dissemination of official house price index would start in Autumn 2012 for virtually all European countries.

Waiting for the official index, on top of our agenda for future research there is a sounder validation of the source data used to compute the experimental indicator through a severe scrutiny of the underlying methodology. Some progress in this direction has been already achieved, but much work is still to be done.

In the same vein, comparison between trend in our indicator and indicators based on a valuation approach could provide further insights as soon as those indicators become available for Italy in a reasonably long time horizon. At that time, an accurate econometric analysis could compare the performance of transactions versus valuation based commercial prices to explain developments of non residential investments in Italy as well as the credit flow to developers.

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