Gianni Guerrieri* | # Information for efficiency and transparency in the real estate market: the italian experience

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Abstract This paper addresses the role of economic information in real estate markets. The analysis begins with the literature on economic theory in order to identify the economic information necessary for monitoring and analyzing the real estate market both in macroeconomic and microeconomic terms. In both fields, information regarding only price is not sufficient; many other variables are necessary. Regarding the importance of economic information, the indicator of real estate market transparency produced by Jones Lang LaSalle is also useful; it is based on the assessment of the quality and quantity of available information regarding goods traded and the economic phenomena that characterize the housing market. Finally, we analyze the state of the information in Italy regarding the real estate market and the institutional role and range of information furnished by the Housing Market Observatory managed by the Agenzia del Territorio.

INFORMATION AND MARKET EFFICIENCY

As evidenced by the economic literature of the past thirty years, the "information economy," one of whose leading exponents was undoubtedly Nobel Prize winner Joseph E. Stiglitz, has played a particularly innovative role in the theoretical field.

In theoretical models of general equilibrium or in neoclassical models, the problem of information is confined to the knowledge of the relative scarcity of goods. This problem is resolved by the time-series of prices for goods and services, insofar as prices convey relevant information that allows for the efficient allocation of scarce resources.

However, Stiglitz argues, *"Besides information about scarcity, there are many other problems of information that arise in an economy. Employers want to know about the productivity of their workers, their strengths and weaknesses; investors want to know the return on various assets in which they might invest; insurance companies want to know the likelihood that various people they insure might have an accident or get sick. These are examples of selection problems,"*[1] in which the problem lies in avoiding choices that can lead to the opposite effects of those desired. Typically, in the case the insurance sector, the increase in costs of insurance premiums could result in the non-renewal of a policy by a customer. Customers who do not renew will be the ones less likely to suffer the negative event that is insured. The consequence is that the insurance company may not derive as much economic benefit as expected from the higher cost of their premiums because, by increasing the number of insured under higher-risk policies, reimbursements might increase. Hence the great need for the insurance company to have full knowledge of the risk profiles of their policyholders. And,

clearly, this information is not in any way included in the "price," which can be applied to any risk profile unless, in fact, there is perfect information which, of course, does not exist.

There is, then, the related problem of encouraging "good behavior" in those situations in which, in an economic relationship, one agent has information that is not known to the others.

In general, flawed information is pervasive in the economic system and so it is reasonable to assume that, "*different people know different things. Workers know more about their own abilities than the firm does; the person buying insurance knows more about his health, for example, whether he smokes and drinks immoderately, than the insurance firm. Similarly, the owner of a car knows more about the car than potential buyers; the owner of a firm knows more about the firm than a potential investor; the borrower knows more about the riskiness of his project than the lender does.[2]*"

There are three main assertions in the theory of information economics that are relevant here:
• 	the price system does not include all the necessary information that comes into play in economic decision-making;
• 	in many situations, deficient or incomplete information underlies market failures and, in any case, is a cause of market inefficiency;
• 	information is a good that is fundamentally different from other goods and cannot be produced efficiently through market mechanisms.

I would like to focus on this last point to show that, according to Stiglitz, information "*possesses many of the properties of a public good—its consumption is nonrivalrous, and so, even if it is possible to exclude others from enjoying the benefits of some piece of knowledge, it is socially inefficient to do so; and it is often difficult to exclude individuals from enjoying the benefits. [….]. A piece of information cannot be purchased like a chair. An individual can look at a chair and ascertain its properties before purchasing it. But if the seller of information tells the information that he wishes to sell to the buyer (before he has bought it), there is no reason that the individual will pay for it…*"[3] For this and other reasons "*markets for information are inherently characterized by imperfections of information concerning what is being purchased; and mechanisms like reputation—which played no role at all in traditional competitive theory—are central.*"[4]

In a nutshell, tending towards financial information that is as complete, accessible and correct as possible - in the sense that it corresponds fully to a knowable reality - guarantees a more efficient functioning of allocative market mechanisms and of the contracts that drive these processes. At the same time, the production of economic information is not a good that can be efficiently exchanged within pure market processes.

In a well-known book[5], *Hernando De Soto* indicates that a good's ability to transform itself into capital and thus to become fungible in an economic system as a potential creator of development can be found in the *formal representation of property ownership*. In other words, a house without perfect formal representation of title is unlikely to become a guarantee for obtaining credit to start a business. Credit is based on the possibility of formalizing, and thus providing certainty as to, property ownership. A house without formal title is dead capital.

This *formal representation*, however, is but only one form of information available *erga omnes* certifying that a given good belongs to a particular subject. Without this *information* recorded in a property registry, markets cannot operate efficiently, or perhaps they cannot operate at all.

Since property, by definition, is considered to be a capital good, information regarding the real estate market is a prime component of the market itself.

However, the economic information necessary for the proper functioning of the real estate market does not end with the primary mechanism of formal representation of property ownership. From the

2   J.E.Stiglitz *Information and the Change in the Paradigm in Economics*, The American Economic Review, giugno 2002. pp.469-470; (http://classes.maxwell.syr.edu/ecn611/stiglitz-lecture.pdf)
3   J.E. Stiglitz, *The Contributions of the Economics…*, op.cit.; p 1447; (http://www.accessmylibrary.com/article-1G1-68653523/contributions-economics-information-twentieth.html).
4   *Ibidem*, p.1449
5   H. de Soto, *The Mystery of Capital*, H de Soto, 2000

microeconomic point of view relating to agents' choices, there is no doubt that the sale of a property requires, first, certainty of title, but the market is efficient if the other characteristics of a property are also known. So, from a microeconomic point of view, the following information regarding the characteristics of a given property should be available:

• legal and planning-related information (property rights, liens, mortgages, planning permits and so on.)
• technical information (state of mechanical systems, state of repair, energy efficiency, etc.)
• economic information (market context, buying and selling prices of similar property, income derived from similar property).

If we think about this within the realm of *consumer choice* and *its sovereignty*, meaning the complete information that a consumer should have regarding the good that he/she intends to buy so that his/her allocation decisions can produce efficient results *for the system*, the risks due to the *information asymmetry* between seller and buyer in the real estate market appear ever more evident (although, at times, even the seller does not have all the knowledge of the property in question because, for example, he/she was victim of asymmetric information when purchasing the house from the developer or contractor).

A similar problem also arises when purchase of a property is not for its use but as an investment within a portfolio strategy when the buyer is not the user/consumer but an investor. Even in this case, knowledge of the characteristics of the good is crucial for evaluating, with less uncertainty, the convenience of the investment.

The general question is therefore how to reduce *information asymmetries* in order to render the market more efficient. The issue of information, however, is not relevant only for microeconomic decisions, but also for macroeconomic policies affecting public policy that seeks to stabilize economic cycles.

INFORMATION AND MACRO-ECONOMIC FRAMEWORK

Throughout history, financial crises have been recurrent and therefore do not represent such rare events that we can ignore their existence. The mechanisms which generate a crisis are known, "*Most crises begin with a bubble, in which the price of a particular asset rises far above its underlying fundamental value. This kind of bubble often goes hand in hand with an excessive accumulation of debt, as investors borrow money to buy into the boom. Not coincidentally, asset bubbles are often associated with an excessive growth in the supply of credit. This could be a consequence of lax supervision and regulation of the financial system or even the loose monetary policies of a central bank[6].*
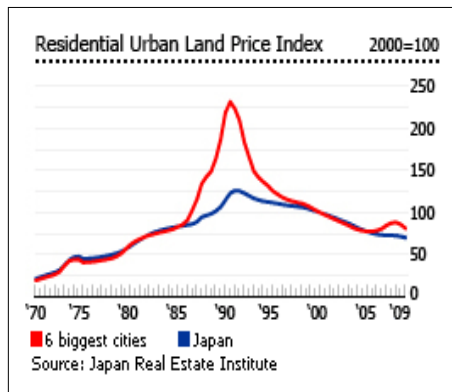

It is pertinent here to recall the two most significant real estate "bubbles" of the last 25 years: the first in Japan in the late 1980's, whose effects were limited to that country, and the most recent one, which was one of the determining factors in the global financial and economic crisis that exploded in 2008. In the late 1980s, Japan had low inflation and strong GDP growth. The growth of asset prices, both in the stock and real estate markets, led to monetary and credit expansion which, among other factors[7], led to a process of "*intensified bullish expectations*."

Figure 1 shows the trend of the price index in the

Figure 1 Level of residential prices in Japan

6 N. Roubini and S. Mihm: *Crisis Economics,* The Penguin Pres, 2010, (http://www.scribd.com/doc/36327721/crisis-economics). Mechanisms of financial instability and speculation have been extensively analyzed by economist Hyman Minsky. For an analysis of his work in general, see H. Minsky: *Can "It" happen again? Essays on Instability and Finance,* Armon, N.Y.: M.E. Sharpe, c1982.
7 Cfr. S. Shiratuska *Asset Price bubble in Japan in the 1980s: Lesson For Financial and Macroeconomics Stability*, Discussion Paper, 2003, Institute for monetary and economic studies Bank of Japan.

residential sector from the 1970s to 2009 for all of Japan and its six largest cities. It can be observed that, regarding the latter, in the second half of the 1980s, the index increased sharply by over 100% and, since 1990, it has also decreased sharply, today reaching pre-1985 levels.

The explosion of the stock market and real estate bubble led to long-term impacts on economic activity due to the effects on the stability of the finan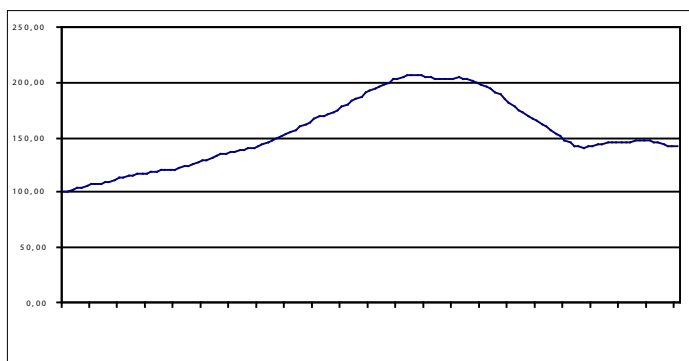cial system and conditions of access to credit, as well as a greater preference for liquidity which, in the end, depressed the conditions for the resumption of investment.

Figure 2 Standard & Poor's housing U.S.A.price index

Figure 3[8] existing homes sold NAR

The recent "real estate bubble" that burst in the U.S.A and several other European countries also occurred at a time when inflation and inflationary expectations did not raise any concern. In this case, the bubble was fueled by expansionary monetary policies, low interest rates and by financial innovations that allowed the exportation all over the world of masses of securities (securitization and derivatives), the base of which was the underlying mortgages paid for home purchase. When the first insolvencies came about in so-called subprime mortgages, which had been granted to subjects at risk for loan repayment, and housing prices naturally started to fall, the mountain of debt, based on unprecedented leverage, falte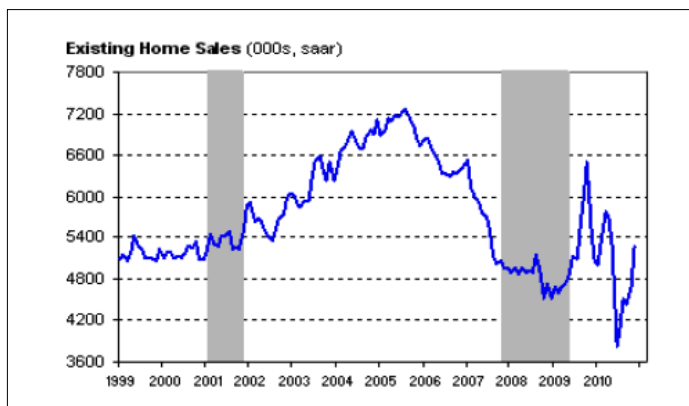red and collapsed, pulling along the financial system and the broader economy, dragging the countries into one of the worst postwar recessions.

Unlike Japan, in this case, the effects of the crisis spread deeply throughout the world economy due to the close interrelationship between the "real estate bubble," involving not only the U.S.A but also several countries in Europe and beyond, and financial transmission mechanisms insofar as the securities had been purchased by banks and financial entities around the world.

Figure 2 shows the housing price index based on Standard & Poor's data (a national indicator measuring the prices of single-family homes in the twenty major urban areas in the country).

The enormous increase in housing prices that occurred between January 2000 and mid-2007 (+99.85%, with an average annual rate approximately equal to 9.4%) is evident. Since mid-2007, a precipitous drop began; it halted in mid-2009 and closed at about -30% in January 2011.

Even residential sales (see Figure 3)[88] saw a dramatic collapse after 2005. These negative effects, which are so markedly evident, driven by speculative cycles in the real estate market (aside from other considerations regarding the deeper causes for the dissemination of the "real estate bubble" to be found primarily in the functioning of the financial system itself), should also make us think about some elements relating to the capacity of current economic indicators to "inform" regarding the

8   Table from: Friulia Finanziaria FVG – Market Report 201, source: Stone & McCarthy Research)

existence of systemic risk connected to the real estate markets. In fact, the consolidated correlation between the real estate cycle and the financial system should make it clear that knowledge of the trends in the real estate market is also part of the information necessary for monitoring macroeconomic developments in general.

In Europe, although many countries enjoy the single currency and since there is freedom of capital movement, there is still no methodologically consistent information regarding the real estate market that can provide useful indicators for understanding the connections between developments in that market and the economy in general.

The European Central Bank uses and provides a set of indices of housing prices for each of the seventeen euro countries. This data, however, is deeply inconsistent in terms of its collection and processing methods as well as in terms of the subjects producing the original data. Citing some examples: in France and Spain data is generated by public bodies (INSEE in France and "Ministry of Development - Secretary of Housing and Urban Development" in Spain); in Italy data is provided by a specialized periodical (*il Consulente Immobiliare*); and in Germany by a leading research and consulting firm. From a methodological point of view, it is impossible to identify how basic data is collected and processed, or how it is synthesized (weighting of the criteria used) to come up with a number that is an index for price measurement.

Eurostat is working to produce an index for housing prices. It's believed this is a good thing. However, the set of indicators should be broadened to include:
• number of housing units bought and sold (new and existing);
• amounts bought and sold (expressed in square meters);
• existing housing stock;
• relationship of the number of homes bought and sold to existing stock;
• the number of purchasers and their main characteristics (age, gender, income and available housing stock);
• type of financing, distinguishing amounts deriving from self-financing and those from debt, detailing the loans in terms of the type of collateral provided (purchased housing, other property, other collateral) and qualifying other forms of financing;
• a similar set of indicators for the non-residential sector, particularly for the most common uses (Shops, Offices, Industrial Warehouses).

Only with the above information will we be able to perceive, with the consolidation of the historic time-series over time, the advent of real estate "bubbles" and their associated economic-financial risks. In fact, it is not a given that growth of real estate assets, even if intense, in and of itself constitutes an inflationary bubble whose deflation must have negative effects on the economy. Much depends on the means of financing, the characteristics of the buyers, the relationship between sales of new and existing stock, the geographical area involved in the price growth (total national territory, cities, etc.).

Information of this kind, especially consolidated in historical time-series, can pave the way for analysis and comparative studies; provide a unified framework for market operators; serve as a reference point for national authorities.

In addition, an important element to make available for understanding the functioning of our economies is adequate historic time-series concerning the appraisals of the values of real estate holdings.

Other information should be added to the above list - again more uniform from a methodological point of view - regarding the entire real estate finance sector (funds, management companies, real estate companies). In this context, however, a set of information exists and is accessible since these organizations generally operate within regulated markets.

INFORMATION AND THE MICRO-ECONOMIC FRAMEWORK:
APPRAISAL OF REAL ESTATE ASSETS AND MARKET TRANSPARENCY

One connection between the macroeconomic and microeconomic view of the real estate market can be made by the role of the appraisal of real estate assets. The latter, in fact, rests at the base of

a pyramid which allows credit to be provided or allows the values of assets in a real estate fund to be brought up to date.

Of particular importance is appraisal for the purpose of granting credit. Beyond the more or less aggressive credit policies called for in the financial systems of each country, there is no doubt that the correct appraisal of a given property is an essential guarantee for the health of the system.

More generally, since the real estate market is characterized by a wide diversity of goods, the usual mechanisms of price formation do not necessarily allow appraisal of a given property. For this reason, the professional appraiser has always existed.

Once it has been established that a property to be appraised is unique or can potentially be compared to similar properties within the existing stock in a given area, an appraiser's first task is to understand if the market segment in which the property is located (geographically and typologically) is a dynamic one, characterized by numerous transactions and thus by the existence of different prices. Secondly, he/she needs to ascertain the degree of homogeneity between the properties traded within that market segment and the property being appraised. If the information is sufficiently solid, then comparative methods can be used to reach an estimate either of the property's value or of the most probable price at which that asset might be traded. But even limited to this approach, the level of information that an appraiser must possess requires a considerable level of detail: prices of transactions, the floor areas of bought and sold properties and their characteristics, the value that each feature "transmits" to the final price (marginal prices)in addition to other legal (property liens, for example) and technical information (state of repair, mechanical systems, energy efficiency) that affect the value of a property and therefore the price at which it can be traded.

The question of information that is adequate for a more accurate appraisal extends to any appraisal procedure applied to the specific case. The unavailability of this information, or most of it, not only makes the estimates and professional appraisals more uncertain, but it also renders the citizen/purchaser totally unable to exercise control over the quality/price relationship of the property (the house) that he/she intends to purchase. This also influences the degree of transparency of a given market.

In general, one might argue that, ultimately, the opacity of the market caused by the limited availability of detailed information regarding the features and prices of properties can certainly make the allocation of resources less efficient, but to some extent it will affect investment risk and in the end the market agents will define the price of that risk. In other words it is a problem of the agents themselves; it is up to them to create the conditions for improving the level of information available.

Personally, I don't believe that this kind of response is always valid - for two major reasons.

First of all, there are real estate markets in which demand is pulverized and exercised mainly by families. In these contexts, it is reasonable to assume that the possibility to be "captured" by supply or by brokerage is quite ample and it is possible that sufficient incentives do not exists to modify and mitigate information asymmetry. It follows that government initiative to reduce this asymmetry, and thus to render information - useful in guiding economic choices in a more conscious way - accessible to all potential buyers, could be a forward-looking strategy that would most certainly strengthen the functioning of market mechanisms and protect the consumer.

Second of all, the appraisal must be able to draw upon market information in an egalitarian way. The characteristics of information as a good, mentioned above, are such to configure it as a public good. It is extremely important to avoid the formation of positions or other barriers limiting access to the appraisal market on account of the emergence of monopolies or lobbies that administer the production of information. For this reason, either a system of regulation must be established to avoid outcomes that distort the market and the competition, or direct action must taken by the public sector to take on the task of producing and delivering information.

Finally, there is another argument that leads us to believe that a regulated system of information would be more effective: the risk of *information overload*. In the words of H. Simon[9], in a world of information,

9   H.A. Simon, *Designing Organizations for an Information-Rich World*, in Martin Greenberger, *Computers, Communication, and the Public Interest*, Baltimora, MD: The Johns Hopkins Press, 1971

information consumes *"the attention of the recipients."* It is therefore necessary to filter information sources carefully. Too many sources, especially if they use different methodological bases to create their information, leads to a wealth of information that, in fact, consumes *"the attention of its recipients"* and creates the need to *"allocate"* attention *"efficiently among the overabundance of information sources that might consume it."*

AN INDICATOR OF TRANSPARENCY IN PROPERTY MARKETS

Jones Lang Lasalle, a private *"financial and professional services firm specializing in real estate services and investment management[10]"*, since 1999, has issued its *"Real estate transparency index."* For the methodology utilized, please refer to the 2010 volume *"Mapping the world of transparency - Uncertainty and risk in real estate.[11]"*

In summary, the index established by Jones Lang Lasalle is formed by the weighted scores of 5 sub-indices relating to:

"performance measurement" in terms of availability of historic time-series of indices of public and private investment in the construction sector and of the frequency and reliability of property appraisal;

"market fundamentals" in terms of availability of accurate historic time-series regarding supply, demand, rental rates, rental income on all types of real estate in key markets;

"efficient and standardized reporting of companies in the sector" in terms of financial reporting and corporate governance;

"efficient and correct system of legal regulation" in terms of enforceability of contracts, security of titles, tradition of property rights, equitable and efficient tax systems and building regulations;

"fair and affordable transaction procedures" in terms of availability of before-sale information, the correctness of the bidding/negotiation process, presence of service providers with professional standards, transparency in charges and fees for the management of the service, availability of information on debt and on the role of regulatory authorities.

The global framework which emerges is shown in Table 1 below. Specifying that a high level of transparency has a value equal to 1; when the value is greater than 1, the market is less transparent.

Table 1 2010 real estate transparency index referred to global macro regions and by sub-indices

	GLOBAL	AMERICAS	EUROPE	ASIA PACIFIC	MENA
Performance Measurement	3.12	3.66	2.47	2.99	4.20
Market Fundamentals	3.23	3.58	2.57	3.23	4.29
Listed Vehicles	2.60	3.60	2.15	2.19	3.21
Regulatory and Legal	2.52	2.69	2.05	2.44	3.47
Transaction Process	2.82	3.01	2.24	2.89	3.78

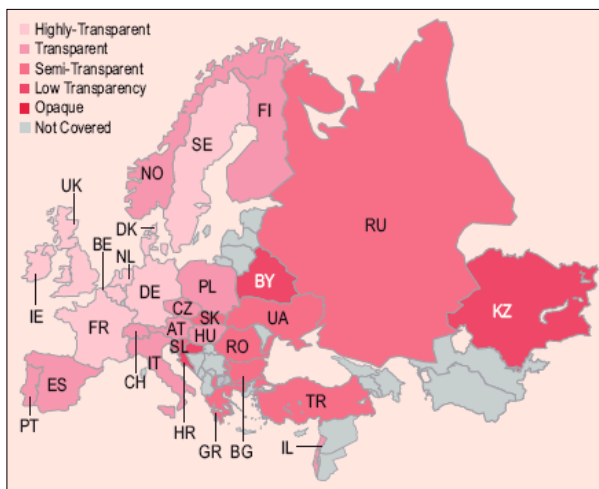| REGION	AVERAGE SCORE 2008	AVERAGE SCORE 2010	CHANGE
Asia Pacific	2.91	2.78	0.13
Middle East & North Africa	3.80	3.81	-0.01
Europe	2.35	2.20	0.15
Americas	3.19	3.16	0.03
Global	2.87	2.77	0.10

Fonte: *Jones Lang Lasalle*

10   See: http://www.joneslanglasalle.it
11   Report can be found: http://www.joneslanglasalle.com/Pages/GlobalTransparencyIndex.aspx

Figura 4: Real estate transparency index 2010- Europa

First, it can be noted that among the five sub-indices considered, those that have, worldwide, a score further away from transparency are the first two relating to the availability of economic information. This, in relative terms, is also true for each macro-area, including Europe.

The synthetic index shows Europe as a macro-area with higher scores (a more transparent market), especially with the highest positive variation when compared to the same index of 2008. Africa is, however, the only area where the overall index shows a decline, albeit very slight, when compared to 2008.

Within Europe, the synthetic index (global) shows, however, broad differences. Figure 4[12] shows the degree of transparency of the market measured by the index in question.

There are eight countries with a high degree of transparency having a synthetic index between 1.50 and 1.24 (UK, Sweden, Ireland, France, Holland, Germany, Belgium, Denmark).

But among these countries, with reference to the sub-indices relating specifically to the availability of financial information, there are six countries in the range between 1.50 and 1 for the sub-index "*Performance Measurements*" along with Spain and Portugal; while there are only four for the sub-index "*market fundamentals*" along with the Czech Republic and Poland.

Although the report stated that these sub-indices have improved in the European area, it is clear that there is still plenty of room for further improvement in economic information in the interest of market transparency. The possibility of creating a European real estate market could strengthen Europe's economic space making it more cohesive. This is a vital component for capital movement and portfolio diversification. If this development came about within a context of competition "between cities on a human scale," a virtuous cycle could be generated.

THE STATE OF INFORMATION IN ITALY

Italy has ample margins for the development of economic information regarding the real estate market, in terms of macroeconomic and microeconomic indicators.

Undoubtedly, over the course of the first decade of the 21st century, coinciding with the development of real estate funds and in the presence of strong market growth, there has been marked improvement in the quality and quantity of economic information.

Without going into detail, it is worth recalling:

• increased economic information regarding real estate finance (which, incidentally, was almost entirely absent before this time);

• reconstruction of historical time-series of prices and studies conducted by the Bank of Italy, which, today, along with the Agenzia del Territorio and Tecnoborsa, directly oversee the economic survey (short-mid term) regarding brokers' perception of real estate market performance[13];

• growth of numerous real estate market observatories that provide economic estimates for real estate typologies in different geographical areas; these observatories are created by research and consultancy firms, by groups of brokers or by specific networks of real estate agents, as well as by the Agenzia del Territorio

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12   Figure 4 is drown from mapping the world of trasparancy- Uncertainty and risk in real estate
in http://www.joneslanglasalle.com/Pages/GlobalTransparencyIndex.aspx • p.24
13   *Sondaggio congiunturale sul mercato delle abitazioni in Italia*, quarterly survey conducted by Bank of Italy (Banca d'Italia), Agenzia del Territorio e Tecnoborsa.

- the commitment of ISTAT (Italian National Institute of Statistics) to the construction of the accounts of the national stock (and thus the value of the country's real estate stock) and of the housing price index with the Eurostat project;
- establishment, in 2001, of the Agenzia del Territorio (with the task of managing the Real Estate Observatory) following organizational reform of the Finance Ministry.

All of this has allowed Italy to improve its Jones Lang LaSalle transparency rating, which has jumped from 2.82 in 2001 (23rd out of the 51 nations considered) to 1.89 in 2010 (21st out of the 81 nations considered). Despite these positive developments, there is still much to be done in terms of economic information. First, it is essential to establish and achieve minimum standards in data collection and processing in order to avoid phenomena of information overload that might arise in the presence of different information sources.

To borrow an example from Professor Tamburini, President of Assoimmobiliare (*Italian Real Estate Industry Association*) it sometimes happens that different observatories in Italy provide information regarding price levels in euro/sqm for the same city; often this data cannot be compared except for the name of the city itself.

In this regard, it is important to set out a framework that, while not impeding anyone from producing economic information, requires certain minimum standards in order to guarantee uniformity. The first of these would be to specify in detail the methodologies utilized and how data collection and processing are controlled. Because the real estate market has become so complex and has such strong implications for the rest of the economy, it is essential that all parties are guaranteed quality in information collection. Otherwise there is a risk of transferring costs to subjects who, in Simon's words, must allocate their "attention" more efficiently when facing a dishomogeneous variety of sources.

I believe that the regulation of these minimum standards of uniformity is the task of the public sector with the assistance of all those who produce information.

In the second place, it is necessary to enlarge the field of observed phenomena, for example relating to property leases and resulting gross yield, vacancy surveys, better typological segmentation in the non-residential sector, new buildings and their values and much more.

All of this allows us to understand levels and trends in the real estate market and can assist operators in defining and making purchasing and/or investment decisions.

However, what remains to be constructed is that level of microeconomic information that can support and guarantee real estate appraisal activities. In this regard, the role of public sector control is absolutely essential, if not as manager and producer of data, then to avoid, as already stated, the emergence of monopolies, cartels, barriers to entry, in order to protect privacy and thus ensure proper use of the data produced. In this context, in my opinion, those public subjects that manage land registries and cadastral databases must play important roles.

The latter, while normally for tax purposes, possesses information relating to real estate and its characteristics. It is a matter of structuring the information in such a way that it can be useful in providing microeconomic elements for appraisal purposes.

THE AGENCY'S (AGENZIA DEL TERRITORIO) REAL ESTATE OBSERVATORY

As already mentioned, the law establishing the Agency (which became operative in 2001) mandated that it manage the Real Estate Observatory and its assessment services. The Observatory's mission can be summarized as follows:
- contribute to the transparency of the real estate market;
- provide support for the Agency's assessment activities;
- improve cadastre and real property databases for statistical-informational purposes.

The Observatory works on two principal levels:
- production of statistics regarding the real estate market starting with the cadastre and real property and financial administration databases in general (started in 2001);

• management of the real estate price database (launched on January 1, 2004) which required a gestation period of approximately three years for its design and testing.

Real estate market statistics

The Observatory currently provides the following statistics:

• *Residential real estate report*: geographical and sectoral analysis regarding number of residential units sold and distribution of housing stock, price indices, mortgages;
• *Report on non-residential property*: for the most important segments (shops, offices, warehouses);
• *Quarterly Notes*: quarterly update of the number of property sales, mortgages and real estate prices (updated twice yearly);
• *Regional reports*: twice yearly analyses of 15 cities and their provinces;
• *Property in Italy*: annual report on the distribution of income and holdings of real estate assets, on the use of the same assets (leased, third party use, free and available, etc.);
• *Cadastral Statistics:* annual report on the real estate units surveyed by the cadastre.

Further information has been generated by specific analyses that will become available in the forthcoming publications entitled *Obervatory Notebooks*, which will be issued twice yearly on such topics as the analysis of the socio-economic characteristics of real estate buyers and sellers.

Finally, as already mentioned, the Agency collaborates with the Bank of Italy and Tecnoborsa for the survey of the housing market in Italy.

In the coming years, the goal is to expand information to cover such areas as:

• annual amounts of new construction;
• amounts of changes in building use and renovations;
• amount of land consumed yearly by new constructions;
• distinction between real estate transactions of new and existing property; distinction between final uses of residential property – owner use, vacation home, investment property, other.

The time-frame required for these developments will not be a short one, because it involves modifying the flow of updated cadastral data, currently only used for tax purposes, also to allow the availability of statistical information.

The published information and data bases can be downloaded free of charge from the Agency website in the section dedicated to the Real Estate Observatory (http://www.agenziaterritorio.it/?id=590).

## Observatory real estate estimates and quotations

Twice yearly, the database provides real estate prices referred to geographical area and prevalent property typologies (housing, shops, offices, industrial buildings) within a range of min-max values per unit area (expressed in € per square meter) considering an average, or prevalent, state of repair of buildings (for example "excellent" if it is an area with new construction).

Basically, as we can see in Figure 5, the query is performed by indicating the city, the municipality and the address. A map is positioned on the chosen street, and this falls within a defined zone of the city; by clicking on that zone, a screen indicates the choice of property type and once the choice has been made, another screen appears with the relative ranges for the chosen typology and zone[14]. Given the particular heterogeneity of real estate in relation to other goods, the survey of average prices is subject to evident limits regarding significance. For this reason, we believe that a survey system would more useful if it were based on the ability of professionals to appraise the congruence of the samples examined in relation to existing stock and if it could define a range of unit prices within which an average would most likely fall.

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14 In order to increase the usage of the data bank regarding real estate values, the OMI mobile application which allows consultation by mobile phone, was made available in June 2011. See www.agenziaterritorio.it/?id=590

Figure 5 Consultation - Observatory Prices Agenzia del Territorio
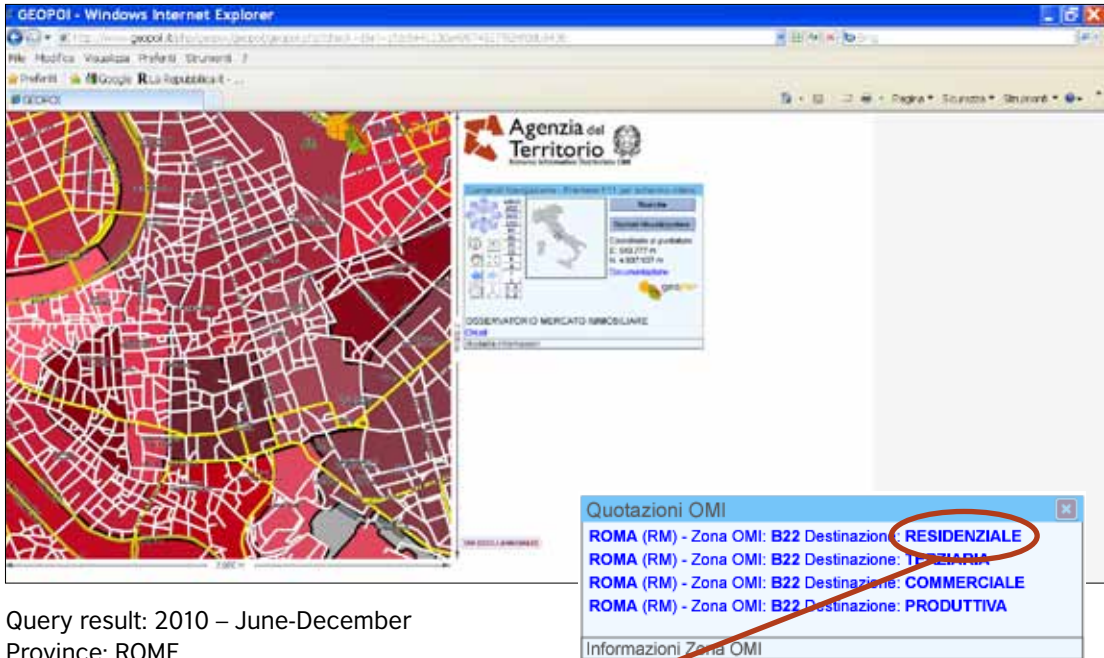
Query result: 2010 – June-December
Province: ROME
City: ROMA
Zone: Central/PIGNA (VIA DEL PLEBISCITO)
Zone code: B6
Cadastral micro-zone n.: 1
Prevalent typology: Residential
Use: Residential

Typology	Conditions	Market value (€/mq)		Area (G/N)	Rental value (€/mq x month)		Area (G/N)
		Min	Max		Min	Max	
Residence	NORMAL	6.700	9.400	G	25,8	36,3	G
Box	NORMAL	5.100	6.700	G	27,8	36,5	G
Covered parking	NORMAL	3.700	5.100	G	21,3	29,8	G
Open-air parking	NORMAL	2.250	2.900	G	13,5	17,3	G

- Conditions in capital letters refers to the most prevalent in the ZONE
- Market Value is expressed in Euro/Sqm and refers to net (N) or gross (L) area
- Rental value is expressed in Euro/sqm per month for net (N) or gross (G) area
- The Market Value of storage spaces, parking spaces and garages does not differ significantly according to their physical conditions/state of preservation
- For the COMMERCIAL (Shops) typology E/N/D (excellent/normal/decay) is understood to refer to the commercial location and not to the state of repair of the property unit.

The key steps in reaching these results are:
- division of the cities into areas that are as homogeneous as possible in terms of the housing (or prevalent) market;
- conducting of the survey of economic data for individual real estate units;
- processing of this data;
- validation and publication.

The choice to divide the study into geographical areas stems from the fact that heterogeneity of goods often tends to be expressed in local clusters. It is obvious, in fact, that the urban development process is marked by eras of construction with similar design features. In the second place, in urban areas, the location factor is now the most common "strong" factor explaining prices. All this means that a significant reduction in the variability of the phenomenon being investigated can be observed in a homogeneous territorial segment. Along with these positive aspects is also the concrete empirical problem of objectively defining the perimeter of a homogeneous urban area. For this reason, an analysis of the homogeneity of the socio-environmental, economic and location characteristics must be carried out regarding: centrality in terms of functional presence and accessibility to public and private facilities and services of every type and degree; the level of urban and suburban transport services; road connections; the presence of educational, health, sports, business, tertiary facilities etc. This structure must be subjected to partial or total revision in order to keep up with the dynamics of development in the city and in the real estate market.

The 8092 municipalities covered by the Observatory are divided into zones. The following tables provide some data regarding the zoning.

CLASSES OF MUNICIPALITIES BY OBSERVATORY ZONE	Number of municipalities
<3	5043
4-6	2.202
7-10	613
11-20	192
21-30	31
>30	15
total municipalities	8096

Table 2.1
Number of municipalities
by number of Omi zone

ZONE DISTRIBUTION BY TYPE	Number of zones
Central	9483
Semicentral	2467
Periphery	7386
Suburban	5213
Rural	6382
TOTAL ZONES	30931

Table 2.2
Number of
Omi zones by type

Finally, I will mention some of the processes which contribute to the construction of the Observatory database.

The survey is conducted twice yearly in those municipalities in which there is a real estate market (more than 1,200 municipalities for about 70% of the national transactions) selecting, for each building type, a significant sample on the municipal level, but identified so as to contain less numerous samples for each zone. These samples are adequate for providing at least a range of values (min-max) that is significant (confidence interval) for the zone. The survey is carried out using standardized forms compiled with detailed information regarding individual property units (identification data, location factors, intrinsic and extrinsic characteristics of the building and real estate unit, etc.).

The sources of the investigation are sought in advance and selected according to their reliability in providing prices and market value, and can be summarized as follows:

- Transactions
- Real estate agencies
- Real Estate Publications
- Agency Estimates
- Direct Information
- Other

At present, the weights of the various sources can be derived from the 2010 information on file:

Figure 6 Means of acquisition of basic economic information
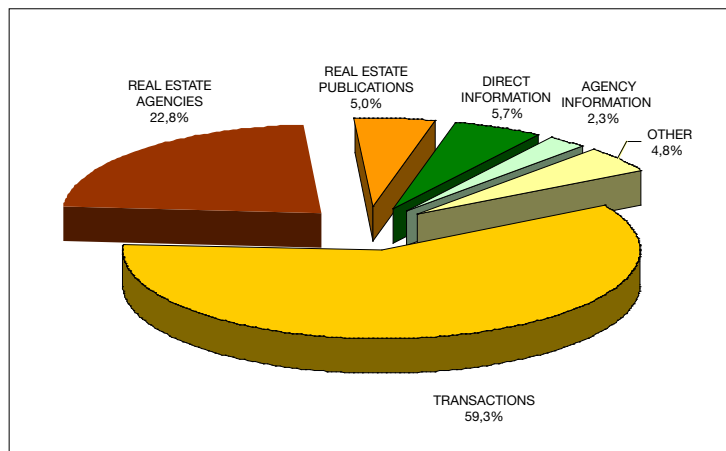
After they are statistically evaluated, the range of values per unit area provided by each of our offices through standardized IT procedures are then subjected to a validation process that requires the supervision of an Advisory Board from each office, and also includes, beyond the technical staff and directors of the office, delegates from local industry associations, local professional associations and technical and administrative staff from the larger municipalities. Next, a special validation committee from the Provincial office determines the values pertaining to the local real estate market in order to update the Observatory database. Before publication, additional centralized consistency controls are performed. Care in the control procedure allows the standardization of "behavior" throughout the single offices and improves the reliability of the information provided.

BRIEF CONCLUSIONS

The availability and accessibility of economic information regarding the real estate market must be strengthened.

It is desirable that the production of economic information come about with government regulation or through the direct involvement of the public sector in information production in order to avoid the risk of distorting the information market (monopolies and cartels) and consequently the real estate appraisal market.

It would be useful to verify the level of information that the management bodies of administrative real estate data - such as the Cadastre or the Real Estate Registries – are able to generate for the transparency of the real estate market. In this sense, work could be done to standardize a core of information, initially limited, that would be useful for the macro-economic knowledge of the real estate market. The European statistical system could ensure the collection and availability of this information.

Finally, it should be hoped, that on the European and international levels, the effort that has been, and is still being, made to define appraisal standards, will not be confined to the definition of theoretically flawless "principles" that are utterly inapplicable due to the lack of "raw materials" - meaning detailed micro-economic information. It would be useful to identify the necessary minimal conditions for the availability of information that can render the principles of appraisal practice operationally concrete. In this regard the supervisory authorities, especially the monetary ones, should become more sensitive to this topic in light of the importance of real estate appraisal in the process of delivering credit, establishing and managing real estate funds, and in reviewing the guarantees provided by insurance companies.