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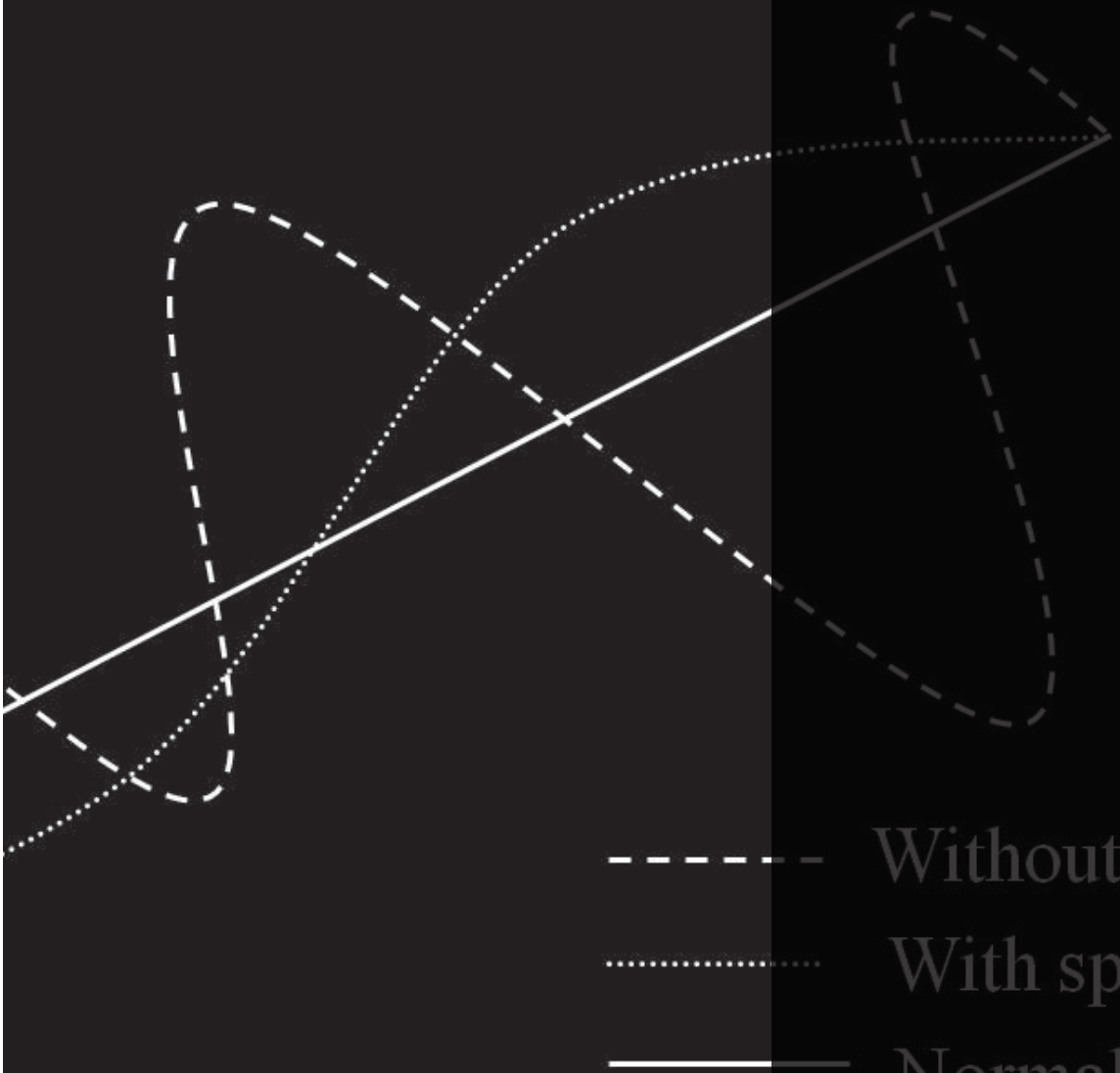

NON-TRANSPARENCY IN REAL ESTATE MARKETS: A GRAPHICAL SOLUTION[1]

INTRANSPARÊNCIA NO MERCADO DE IMÓVEIS: UMA SOLUÇÃO GRÁFICA

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Abstract
Real estate speculation has faced a recent problem caused by non-transparency in the property markets. Only a good base of information, transparency, gives the municipality the possibility to react to crisis, panics and real estate speculations. A possible way to provide transparency is to include in this map information about the old and updated values, number of transactions and the visualization of real estate speculation. Visualization of real estate speculation in the Standard Ground Value Map can give more transparency into the property markets, to their partners, supports the departments for a sustainable development of cities and to minimize the risk of a real estate speculation.

Keywords: Standard Ground Value Map; Real Estate speculation; Transparency.

Resumo
Um problema recente nos mercados imobiliários é a especulação imobiliária, causada pela intransparência desses mercados. Contudo, com uma base de informação boa, ou seja, transparente, pode-se dar às cidades a possibilidade de reagir contra uma crise, contra os efeitos do pânico derivado da queda nos preços ou contra a especulação imobiliária. Uma maneira possível de melhorar a transparência é a inclusão, nessa mapa, de informações sobre valores antigos e atuais, número de transações e a apresentação visual em cores das áreas com especulação imobiliária. Assim, a visualização destas áreas além de dar mais transparência aos mercados imobiliários e aos seus participantes, também apoia os departamentos dos municípios para um desenvolvimento sustentável e para a redução do risco de especulação imobiliária.

Palavras-chave: planta de valores genéricos; especulação imobiliária; transparência.

Introduction

The Standard Ground Value Map is basically well known. The problems of updating the Standard Ground Value Map are not new, but until now have not been resolved. For a sustainable development of cities, it is necessary to update this map every year, as papers and scientific work have demonstrated in the past, like Averbeck (2003) and Weise and Francisco (2006).

Weise and Francisco (2006) confirm that an annual update of the Standard Ground Value Map is necessary, because the values may increase significantly within one year. The result will be fewer taxes for the municipality. Until now, the tax-situation and the possibility to get higher taxes have been the main reasons for updating the Standard Ground Value Map.

In recent time, "real estate speculation" is one of the most frequently used terms, and the concerns about falling property prices, economic depressions, credit crises and their economical results are very high. That is the reasons why cities must take a deeper look at the property markets.

The best way for them is to have a better database of price changes in real estate and to give more information about the development of these markets and sub-markets. The instrument for this should be the Standard Ground Value Map.

That is why the target of this work is to demonstrate, what is a real estate speculation, how it will be possible to show where in the city area there have been big price changes within last 12 months, like real estate speculations, and how information about real estate speculation could be implicated in the Standard Ground Value Map.

Methodology

This paper is an indirect survey carried out through a documentation procedure in a form of a bibliographic research and theoretic study (VERGARA, 2005). Its primary aim is to describe what are real estate speculation and their limits to other forms of price increasing, etc. It is an application, mainly with sight to characterize and describe (VERGARA, 2005) its possibilities of use the information about real estate speculation in the Standard Ground Value Map. Beyond the primary objective, with this exclusively based approach on information about the speculation in the property market and the possibilities of using the Standard Ground Value Map give to the cities a new tool to resolve the problem of non-transparency.

Furthermore, this investigation is justified by the growing interest of investors and municipalities to receive more information about the property market and the problematic areas in the city that means areas with an extreme price increase and price cutting of properties.

Therefore, this case study shows how the Standard Ground Value Map can be used to give more information for the municipality tax collection, for the future development of the land utilization plan, about the real estate markets und their development and finally how necessary is a yearly update of the Standard Ground Value Map.

Real estate speculation

This chapter gives, firstly, the basic information about real estate speculation, and then a definition based on the characteristics of properties, over the situation of stable and unstable prices and the limits of speculation as well as a definition of real estate speculation. Finally, in this sub-chapter considers the non-transparency and the lack of information.

Basics

Speculation was already a known phenomenon since around 2000 years ago. The word speculation has its origins in Latin *spec* that means "looking" (KANITZ, 2003), but also *speculum*, "mirror", or in Latin *speculari*, which means "peek" and "observe". The speculation of the land was already important in the politics of the kings. Over time the number of people, which are speculating, is always increasing. Today, there exist four different types of speculation:

- In common a statement not approved;
- Philosophical Thought (philosophical speculation) (GEIGER, 1964);
- Definition of literature (fiction) (HAHN; IWOLEIT; MOMMERS, 2002), and
- Possibilities for investments and short-term profit (speculation economic).

The first three types of speculation will not be addressed in the work, because the results of real estate speculation are possible to approve and do not have a relationship with the scientific or philosophical thought with the concepts of literature. Therefore, only the economic speculation, considering the speculation property as a part of economic speculation will be addressed.

Stucken (1956) articulates that the economic speculation as an extensive treatment on the side of the exact speculation in the following cases:

- Early or delayed Purchase, respectively, may lead to the increase or decrease in the volume of purchases by consumers;
- Early or delayed Investment activities, respectively, may lead to the increase or decrease in the volume of investments by producer and negotiator, and
- Early or delayed Currency exchange by the exporter and importer.

An accurate speculation occurs when there are goods, capital and other items being purchased (sold), and that a later time again are sold (purchased) in this transaction was accomplished only because of a change in expected price, not because someone really wanted the benefits of ownership of these items (KALDOR, 1939).

Speculation may be defined differently as (ASCHINGER, 2001), the aspiration of profit of holding motivated by differences between prices and expected time of the market. This definition already includes many of the definitions above.

Definition of real estate speculation

To define property speculation is necessary, firstly, to call the characteristics of real estate, than limits of speculation to define in the end of this sub-chapter real estate speculation.

Characteristics of properties

The characteristics of the properties are different in many aspects, for example legal characteristic and economic characteristics. For this work, only speculation in urban areas will be considered, to visualize it in the Standard Ground Value Map.

Until now, no all countries have a legal definition for the term "property" (SCHULTE et al., 2000). In Brazil, the property and land are synonymous words. Moreover, terrain as well as the surface, direct territorial, vegetation and buildings, are legally determined by the Law of Registration (BRAZIL, 1973) and the Civil Code (BRAZIL, 2002). The Law of register was established for all public registers in Brazil. But the register of real estate is a part of this law.

A deeper discussion on this matter will not be performed in this paper because the problems related to these concepts are legal, and not part of the objectives of this work.

Economically, a property is a discrete entity that has the function of generating benefits (generally) (MURFELD et al, 2006). A property can also be defined as a resource that generates benefits to its owner. The real estate entity, property, has the characteristics of immobility, heterogeneity, long-term planning and project development, and longevity. The characteristic of immobility is crucial in the classification of a property. The disparity amongst the real estate characteristics indicates the heterogeneity.

A property market is an aggregation of many sub-markets. All submarkets are developed differently, usually in cycles, with great differences in phase with complex transactions and generally large timeframes to completion, different from product markets.

The dispersion of sub-markets, spatial heterogeneity and the distance leads to non-transparency and the inefficiency of markets, conform to Sailer and Bach (2006). The transparency increased in the market with new media such as internet and auctions. But that does not mean that the market is perfect and the government has the opportunity to give more transparency to the real estate market, by Standard Ground Value Map. (See more in chapter Standard Ground Value Map.)

For a seller and buyers each property is usually a high initial investment combined with a long investment decision. A real estate transaction decision faces great uncertainty about the future and investment. In the event of a need to react, the time frame and costs are considerable. For the location of the land there could be more legal restrictions such as the land utilization plan.

Especially for buyers, the non-transparency of the market and uncertainty about the decisions are of greater importance. That's because the product is hardly replaceable and a division of the property (land) is limited.

Speculation with stable prices and unstable prices

In literature and research on the influence of speculation for prices, it encounters the speculation with stable prices and unstable prices.

The speculation of stable price is defined as the reduction of oscillation of prices resulting from speculative activities. However, the stability of the price can be understood as stability of the market. This definition comes from a non-participant in the market speculator, for various purchases and sales and creates more or less fluctuation in the prices, so there is a trend of the market sustainable, as can be seen in Figure 1.

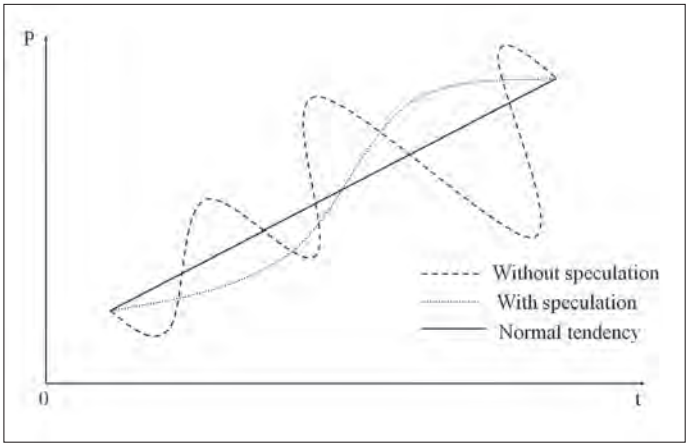

Figure 1 • Oscillation of prices.

The speculative participant's in the market reduces the amplitude and / or frequency of the cycle of non-speculative prices. In a given period, it can talk that the speculative activity during this time has been stable for the price (MEADE, 1951; FARREL, 1966).

Already contrary, the speculation creates an unstable moment in an economic crisis, usually in the capital market, and signifies in many cases an economic loss, as you can see the crisis of property claims in the United States in 2007 (BBC, 2007; BBC1, 2007).

Limits of speculation

Not all increases in property prices are the result of speculation. Scientifically, there is talk about speculation in the case where the price of the property rises above a value considered as normal, which does not reflect the need to have this property. To determine property speculation, it needs to be delineated by the non-speculative life cycle of real estates and in crisis.

Life cycle of properties

Real estate speculation is part of the life cycle of properties. Becker (2006) wrote that the real estate cycle exists continuously and during all phases of cycles there is speculation. Speculation generally occurs throughout the relatively lengthy real estate lifecycles (phase of the development until destruction of the property), which causes considerable uncertainty. In the beginning of an exploding real estate bubble (falling real estate prices) properties may still be under construction or in planning (WERNECKE; ROTTKE, 2006).

Crisis

Not all speculations are dangerous to the market. Crises, panics and crashes are exaggerated reactions of the market (KINDLEBERGER, 1996). Mello and Spolador (2004) argue that at the end of each speculation happen a crisis and a crash. Galbraith (1992) states that embedded in a situation of speculative mania are a future and inevitable fall in prices and the fall can be smooth or gradual. The property market of London in the years 2003 until today is an example of gradual decline. Not all speculations are crisis, panic or crash at the end.

Definition of work

Respecting and including what has been written in this chapter, real estate speculation can be defined as: a phenomenon which occurs in all parts of property life and it is present in the property market where groups looking for motivated exploitation of profits in a time period around 5 to 10 years.

Non-transparency and lack on information

The main problem of the real estate markets is the lack of transparency and information. Planning and construction need a long time period. Also the business as well as buying and selling can have a longer period on the order of a year, greatly variable with respect to property and the market situation.

In the capital market everyone see at the same time the results of transactions and changes in prices. Until now, that level of transparency in the real estate market does not exist. The best instrument for governments and town halls for supply information about this market is the standard ground value map.

Papers like Weise and Hornburg (2005) had shown that for an identification of real estate speculation is necessary to observe several factors, like price development, inflation, interest rate, number of transactions, income, etc. Only the price development and the number of transactions are important for future disquisition.

Standard Ground Value Map

The Standard Ground Value Map, a municipal tool, has different aspects. Some basics are discussed, then the creation of a model and the necessary valuation of properties to determine the advantages of updating and using a Standard Ground Value Map.

Basics

Standard Ground Value Map is a map of the urban area and/or area of expansion of the city, where they are affixed on each side of the urban, the basic values of square meters of land due homogenization in their attributes, even temporarily, given technical criteria and uniformity throughout the city. The objective of the standard values of the property is a basis for the calculation of the Land Tax and the Transfer Tax of Real Estate (EMPLASA *apud* AVERBECK, 2003).

The Standard Ground Value Map consists of a graphical document and often also tabulated, representing the spatial distribution of mean values of the property in each region of the city, usually presented in face of court. Its main function is to allow the definition of a policy of property taxation that is fair and equitable. The value map has a second function to report on the real situation in the property market and to support the valuation of real estate.

Model e valuation

The model for evaluation of the property is a basis for creating the Standard Ground Value Map, with explanation of the conditions of applicability and the parameters that must be observed. Therefore, the model is representative of technical reality (ABNT, 2004).

The assessment seeks the market value, which is defined in the Standard Evaluation of Assets - NBR 14653 (ABNT, 2004) as "most likely by the amount which it voluntarily and consciously negotiates an asset at a date of reference, within the current market conditions."

Averbeck (2003) explains that the process of evaluation of properties for the preparation of a Standard Ground Value Map requires the understanding of the basic characteristics of the population and real estate in the city so that the adopted model allows the valuation of all the properties, with exceptions, because at the end the individual value of each property will be realized.

The creation of the model depends on the applied methods of valuation. The ABNT (2004) provides some alternatives like the comparative method of depreciated replacement cost. The choice of the model is dependent on the sample of data, the quality of the researched information, the type of information contained in the land register, the ability of the valuator and available resources like time, team, software and disposable information. Additionally, public defence and social responsibility before the various segments of society, which constitute success in the debates and demonstrations of how the model works.

The Standard Ground Value Map, also described as valuation in bulk, are maps of the urban area that present the values per square meter of land with or without constructions, block by block (ZANCAN, 1996). This bulk valuation exists as two major techniques for valuation:

- A classic, which uses the homogenization empirical modelling of factors, such devoted, normally applied the same were in different cities and reality of the market (MÖLLER, 1995), and
- Of statistical inference, that extracts of the local reality the rule of creating the price of the property and usually is based on scientific methodology in the evaluation process (PERUZZO TRIVELLONI, 2005).

For the definition of the valuation model are the essential tests of hypotheses, residual analyses, the estimation of intervals and the interpretation of the true meaning of the obtained results. By means of recent transactions, which did not participate in the sample for modelling, it may be interesting to measure the responses of the model and its validation.

The homogeneous areas are established mainly from the study of the use and occupation of land and the planning legislation. The areas of valuation are established from the study of the property market and often coincide with the areas of homogeneous use of land. But it is very often not a complete coincidence, because within a homogeneous area may exist public roads with commercial attractiveness that cause significant change in the prices of property. Within the same area of homogeneous use of land, poles of devaluation that trim the price of property may exist.

It is usual to divide the areas of valuation in the middle of the court, in the bottom line of the lots, because the front of the public street has strong influence in value. The lack of attention to this point, common in small cities, distorts values and tax injustice. Variations of the significant value in the same public roads often require new homogeneous areas every court, every segment of the street.

The view of spatial distribution of the value is very important for the definition of the areas of valuation (or sectors, sections of common floor area with same value, one side of a block etc.). The use of georeference data and analysis of influence of the distance from poles of value enhancement or poles of devaluation leads to safer results, which may waive the division into areas of valuation.

High variations in values (case of real estate speculation) in the property market in time bring difficulties to the property taxation as the models for valuation, the areas of valuation and the values of face of court are maintained over time, until the next appraisal, and are to be removed from the reality of the market.

Monitoring developments in the real estate market will be a key issue for larger cities, where the issues involving the market value are more frequent. The development of new models of valuation and re-valuation of the areas are essential to achieving the fair taxation of the various real estate taxes.

The Standard Ground Value Map define the basic values of the property that means a rule per unit area (R$ / m), which will be used for an individual valuation. For both the information to the individual valuation must be composed of the land register, make evident that the valuation should occur on the updated land register.

According to Esteio (2004), the stages of development of a PVG are: analysis of the registry database; definition of the plant reference registry; collecting data; definitions of variables; calculations and analyses.

Advantages

The organization of PVG current market may benefit the municipalities in various ways favoring (VIEIRA et al., 2002):

- A tax justice;
- The processes of expropriation;
- The normalization of the property market; and
- Training criterion for recovery of contribution of improvement.

Besides the tax issue, it should be emphasized that the PVG is also a tool for municipal planning, to the extent that reflects the rate of valuation of property and thereby provides regulation of the action of the municipal government regarding the use and occupation of land (MACHADO, 2006).

It is essential then that the fundamental characteristics of the property and its location for the valuation can be extracted from the land register automatically. In the process of updating the land register and the general map of values it can be interesting to embed information important for the valuation and for the better understanding of the property market in the land registry.

Visualization of real estate speculation in the Standard Ground Value Map

The base for the following disquisitions is policy to perform a yearly update of the Standard Ground Value Map. Vieira et al. (2002) said already that it is necessary for a tax justice, normalization of the property market and so on. The mayor does not have many possibilities to regulate the real estate markets. The best way for regulation is a good information database. An current Standard Ground Value Map is a first step. To achieve this, the data, price, location and qualities of the sold real estate , from the transaction contracts in the city, could be compiled into the database.

A second step is to give more information to investors, owners, bancs, and other departments in the city. A best possibility to create more transparency into the real estate market is by using a Standard Ground Value Map and a report. The report includes a lot of statistics about the sold properties and prices.

Being of such major importance, historically a Standard Ground Value Map includes only the current prices, but says nothing about the development of the market. That's why, it is necessary to include more information in the map, as it shows in figure 2. This information is:

- Current and old price;
- Number of transactions; and
- Price increasing.

This basic information in the map and accompanying report, can provide greater transparency to the property market through the reduction of misinformation. The location of speculation areas can be located easily as well as area with price reduction.

Case study: Pedra Branca

Area of Study

The city of Palhoça is located around 15 km from the coast between Florianopolis and Serra do Mar. Its access is the freeways BR-101. As if all the beauty and calm of Palhoça is not enough, Pedra Branca is around 18 kilometers far away of Florianópolis, the capital of Santa Catarina. The population of Palhoça counts around 122,471 people and the land area of 395 km2 (IBGE, 2008). The study area is within the city of Palhoça, better to say in the district University City - Pedra Branca and is only five minutes from the centre of Palhoça.

The district Pedra Branca is distributed in three parts A, B and C. Only the parts B and C still have lots for sale. Until now, it is not possible to assess the part A. The city hall of Palhoça established the areas zones, 222 to 232 for the district Pedra Branca. To make this comparison of two years it was necessary to col-

lect a larger number of possible samples in this district and compare this data with the data of the city. This sample represents approximately 15% of the property of the district Pedra Branca. Totally more than 300 market data points were validated and used in the analysis and modelling statistics.

For every homogeneous areas the unit value of the land was estimated by analyses of that information. The results represent a consistent uniformity in all localities of the district in relation to market values. The evaluation was done to each area zone with a land paradigm.

Determination of Paradigm Property

To initiate the valuation by regression, the following characteristics were used for the terrain paradigm, presented in table 1:

Table 1

Terrain paradigm

Nature	Topography	Pedology	Form	Designed Front	equivalent Depth	Area	...
supply	plan	dry	regular	15	30	450	...

The samples by the areas were analyzed of statistical regression. The value of the analysis of the area 222 follows:

- R-squared adjusted: 0.999997857 • relationship is perfect
- F, meaning: 1.45756 E-09 • Grade III (NBR 14653-2, item 7)
- P-value: 0.001299 • Grade III (NBR 14653-2, item 7)
- Land Paradigm: R$ / m² 169.53

The value of land paradigm of the area 222 is: **R$ / m² 169.53.**

Table 2 presents the final results of the regression made in relation to the values of the municipality of Palhoça. The valuation of the area 232 could not be done because there were no transactions. Other areas were evaluated and represent a big difference between the valuated values and the values of the municipality. The differences are between 36% and 66%.

Table 2

Result of the difference between municipal and assessed value

Areas	Traded Properties	Municipal Value [R$/m²]	Valuated Value [R$/m²]	Difference between Municipal Value and Valuated Value [%]
ZH222	6	81,96	169,53	206,8442
ZH 223	20	167,08	468,30	280,2870
ZH 224	9	114,93	320,47	278,8393
ZH 225	5	85,39	157,74	184,7286
ZH 226	16	129,10	211,33	163,6923
ZH 227	20	83,67	161,53	193,0528
ZH 228	7	176,82	267,80	151,4535
ZH 229	67	101,54	183,99	181,1957
ZH 230	9	94,22	190,78	202,4831
ZH 231	24	150,00	409,50	273,0000
ZH 232	0	94,22	university	

The follow-up figure presents the final Standard Ground Value Map with information about real estate speculation. This map gives a better orientation about the development on the property markets, by using the current (updated) and old (non-updated) prices. The heights of the green cylinder say something about the number of real estate transactions and the color of the areas indicates how risky in terms of property speculation this area is.

For a better visualization is it better to put behind the Standard Ground Value Map normal geographical map.

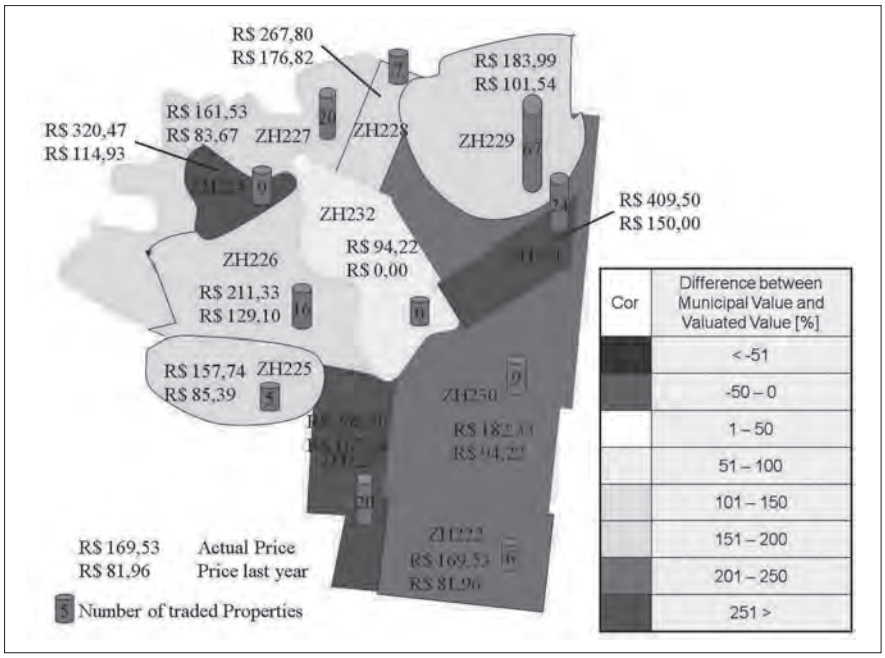

Figure 2 • Standard Ground Value Map with speculations information into it.

Conclusion

The Standard Ground Value Map is a very good tool for municipalities to apply, especially for taxation. So far the main problem is the annual updating of it. An updated Standard Ground Value Map can give a lot of information to several departments over the development of the property markets.

The property market has a big importance for the municipality's taxation directly and indirectly. That is why it is important to observe it. Only a good base of information, transparency, gives the city the possibility to react in crisis, panics and real estate speculations. Property speculations are in the recent times often heard around the globe, as well as in Brazil.

The Standard Ground Value Map is a fantastic tool, if this map includes more information in it, as it was presented. The visualization of speculation in this map over the number of transactions, the old and current value per m² as demonstrated in color show easily where the departments have to take a look or to influence. In this way the Standard Ground Value Map can give more transparency into the property markets, and supports the departments for a sustainable development of cities and minimizes the risk of real estate speculation.

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