

Housing market and Financial crisis

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Abstract: In times when the financial and economic crisis is experimented after the Great Depression, this event has had serious consequences on the real estate sector and consequently on very vast urban areas. The process of the “urbanised reutilization” that has produced the contemporary city began quickly there. The city changed in consequence of the market and it is the same market that redefined the terms of the interventions ex-post. After subprime loans market crash where it was thought to have endless possibilities of growth, are we able to define the consequences that the crisis will have on the post-contemporary cities of Europe? Is it possible to foresee sceneries or visions of intervention and try to identify models of development without excessive waste of resources? We can start analyzing the cases that have before others restarted to go up the economic cycle again, and verify how this affected the processes of transformation of the post-contemporary city.

Key-Words: - housing market, economic cycle, business, panic, animal spirits, urbanization.

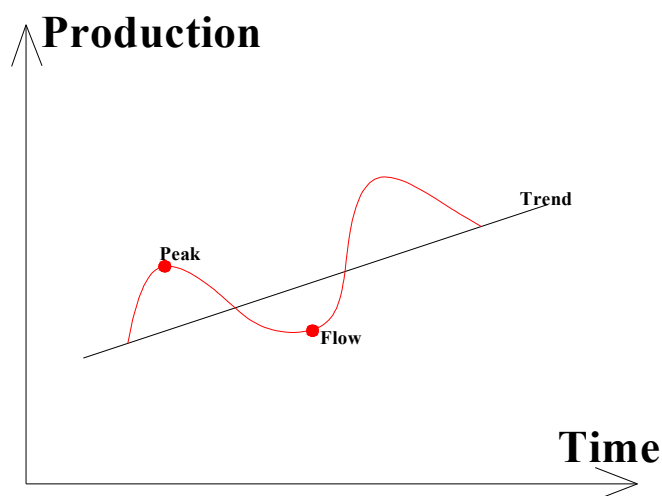
1 The dynamics of economic cycle

The speculative episodes that happened in the last years have very similar characteristics. In fact, when technological progress occur and improve man life status, history is cyclical with periods of crisis and recession that follow periods of boom and expansion. Many economists tried to analyze the phases that precede a crisis to individuate the “*economics waves*” characterizing past economic courses. The aim of economists is explain and foresee future economic fluctuations. This discussion about economic cycle it can be extended to financial markets, even if financial markets represent only an aspect of economic cycle. Mitchell and Burns (2003) define economic cycle like “*a fluctuation of country’s economic activity in which work is organized in firms*”. In general, economist’s analyses are about growth of gross domestic product, fluctuations of prices and of interest rates etc. The intersection of these phenomena produce upswing or downswing and these situations influence financial market’s course. So, economic cycle’s theories can be subdivided into two categories:

- **Exogenous theories:** They study the causes of fluctuations that are external to the economic system;
- **Endogenous theories:** They study the causes of fluctuations in the economic system.

In the figure (1) we can see the graphical representation of economic cycle in which it’s observed a general course of production in upswing and downswing.

Fig.1: Economic cycle



If we look the figure (1), we can notice that every fluctuation begins from the “floor” a minimum point of economic activity that represents departure point of upswing up the peak of economic cycle to which follow a downswing. To analyze the crises is important to observe past values because if there is a linked between current value and past value then future value are predictable (deterministic series). In general, time series are stochastic so, only a little part of them can be explained by fluctuations of past variables. We can represent time series (G) like:

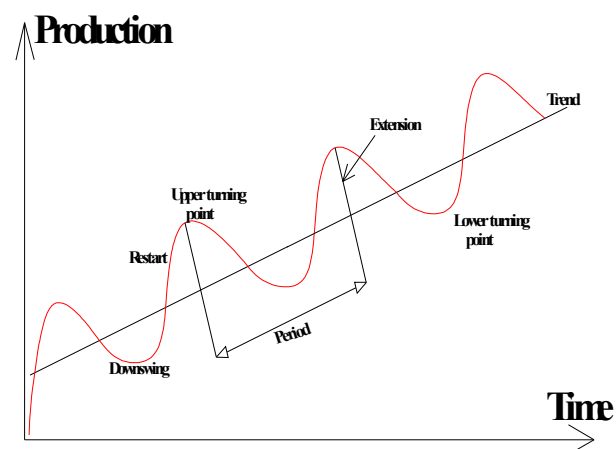
$$G = T + S + C + R$$

In which:

- **T**: It's the trend or pattern in which a phenomenon evolves in the long period. It points out the potential income of the economy for example, the middle rate of period's growth;
- **C**: It's the cycle component like fluctuations linked to upswing or downswing. It's the way according to the economy grows around the trend;
- **S**: It's seasonality and it's represented by fluctuations that are regularly repeated in a certain period;
- **R**: It's the casual component or residual component. It represents, for example, stochastic fluctuations.

In the figure (2) there is a more complete description of economic cycle.

Fig. 2 : Economic cycle



The economic systems, in fact don't have a linear development, but rather discontinuous. The economy grows, around a “middle value”, like in the figure (2), through phases of intense activity and phases of depression. The discontinuous course around a linear trend is evident in the figure (2). The discontinuous course of the economy along its growth path it is said “economic cycle”, because it is characterized by phases of expansion (when the economy grows above the value of the trend) and of recession (when it grows below trend's value). Both components of the economy are relevant. The growth is very important because it measures the available resources for the collectivity. The importance of the cycle is less clear, but they are associated costs to both the expansion and the recession. In downswing, the enterprises don't assume, and we can observed high unemployment rates and the social problems to them connected. Otherwise, if the economy grows and we are in a upswing phase we can observe high inflation and the costs that derive from this situation; the inflation, in fact, reduces purchase people's power, it has negative effects on the distribution and it causes high interest rates. Connected situations with the instability of market's economies, like unemployment, inflation, underdevelopment, represent failures of the macroeconomic market, due to the presence of inefficiency and they can be explained by the macroeconomic theory (Acocella, 2006). The aim of economic policy is to solve these problems; so we can simplify individualizing two main objectives:

- Growth's rate medium must be high;
- The variability of the economic cycle must be reduced, or it must be reduced the oscillations around the trend to decrease the costs associated to the expansions and the recessions.

In general, we can define these macroeconomic policies like long term's policy (the policies that have effects on the growth) and policy of short term (the policies that have effects on economic cycle's course). Long term's policies are about to the support of the innovation, to the growth, and in general for the efficiency and they concern, for example, the composition of the expenditure's government, the regulation of the markets etc. Short term's policies are instead the monetary policy and the fiscal policy. Nevertheless, there are very different theories about economic cycle and the policy's role. For example, the Austrian economists underlines that an excessive expansion of banking credit and the manipulation of interest rates by the monetary authorities is the cause of crises and crash. Otherwise, classical economists following Say's law, underline that the markets are always in a *market clear condition* and the interventions of policy are not necessary. Finally, the monetarists explain that the oscillations of economic cycle depend on banks loans' decisions. If, banks have excess of liquidity they increase credit supply and decrease loan's interest; so there is an expansion of production and investments. But the increase of credit supply reduces banks' reserves then loan's interest increase, credit supply decrease, production and investments decrease. Credit reserves produce an inversion of the economic cycle.

2 The relationship between economic policy and the real estate market

We know that the investment and consumption are a part of national income, and that the sector of housebuilding is an investment less weight with respect to consumption, but not least importance. In fact, the investments are the most volatile component of the income and, therefore, the most important to understand economic cycle's fluctuations. In fact, stabilization's policy are more aimed at stabilizing the variations of the most volatile component: *the investment*. An important aspect of the housebuilding's sector for the economic policy are lagged. The economic policy is subject to different types of lagged (Acocella, 2006). First of all, there is the possibility of an administrative lagged or the time that it is necessary for taking a decision. This lagged is, generally, less short in the case of the fiscal policy but not in the case of monetary policy, because for autonomy power that characterizes a lot of central banks. We must also consider, lagged in effects, that it can be long and variable, if we consider some determined objectives, also in the case of the monetary politics. The delay in the effects is measured by time that it is necessary so that objective variables are influenced. It is due to the complexity of the economic processes, like banks' portfolio adjustments. This implicates that, in comparison to objectives as the income, the employment and in general the monetary stability, the effects of economic policy can result notably delayed. So,

it's important to choose the policy that will be necessary in the future. There is at the end a problem of observation. The economic policy has to react to the state of the economy, in fact during an upswing it would limit the economy, on the contrary during a recession the policy would stimulate it. In reality, it's not immediate identify fall or boom of the economy before they are realized and, for this reason the policy can be inefficient. In synthesis, since the economic policy acts with strong delays it's very important to anticipate the course of the cycle for the stabilization and the efficiency. The housebuilding sector results an important variable in this context, because the variations of this sector generally anticipate the economic cycle. The indicators linked to the sector of the housebuilding are called "*leading variable*", or variables whose "positive peaks" (for those pro-cyclical) or "negative peaks" (for those anti-cyclical) are observed before the "GDP's peak". Some of these indicators are: the residential housebuilding, the permissions for new constructions, the investments in new installations. These indicators are also important for the expectations on the future, that represent important variables for the economic policy. The impact of the housebuilding is less relevant for the growth. In the industrialized countries growth is, linked to the technological innovation, in particular to the innovation that replaces the capital with capital saving. Housebuilding's sector is characterized by low part of capital, particularly of advanced technology's capital, that it is not strategic for the economic growth. In countries with limited degree of development the housebuilding could sustain processes of growth and development. Spain and Germany represent for example, countries where housebuilding sector have an important role for growth and development in particular after UE.

3 A comparative analysis between construction's investments in the world

During the year 2009 the global value of the investments in the constructions' sector is equal to 4.690 million of euro. In comparison to the year 2008, the investments were decreased by 3,34%. Its weight on the world output (2009) it is in fact equal to the 11,5% (during the year 2006 it was equal to 12,2%). In the year 2010 thanks for the increase of the resources for infrastructures' sector the (+4,5%), especially in Asia (+6,3%) and in America (+6,7% in North America and +5,5% in South America), the forecasts are in a growth of 2,6%.

Table 1: Constructions' investment in Europe

	2005	2006	2007	2008	2009	2010	Variation 2009/2005
Total Investment	4.392	4.653	4.824	4.852	4.69	4.813	299
Var %	4,82%	5,96 %	3,68 %	0,58 %	-3,34%	2,61 %	6,80%
Residential	1.899	1.966	1.904	1.778	1.744	1.772	-155
Var. %	5,39%	3,55 %	3,14 %	6,62 %	-1,94%	1,61 %	-8,16%
Non Residential	1.358	1.475	1.598	1.674	1.579	1.612	220
Var. %	3,99%	8,57 %	8,33 %	4,76 %	-5,68%	2,11 %	16,22%
Infrastructures	1.135	1.212	1.322	1.4	1.368	1.429	233
Var. %	4,89 %	6,85 %	9,06 %	5,90 %	2,3 %	-1 4,46 %	20,56%

Source: Cresme Annual Report 2010

In the year 2009, the residential sector represents the first global market with 1.778 million, a decrease of 1,9% compared to the last year. But the "negative year" for the sector was the year 2008 when the market collapsed of 6,6%. In the year 2010, the prevision is a sector's increase of 1,6%. After eight years of growth, a recession also arrived for the non residential market. The year 2009 closed with an investment's contraction of 5,7%. In fact for the non residential market, the year 2010 will represent a period of an expected increase in investments of 2,1%. In general, in the year 2009 for the first time the Asian market with 1.743 million of investments (37% of the total one) has overcome the European market (1.591 million of investment). The gap decreases if we considered the parities exchange rates of purchasing power.

Table 2: Constructions' investment during the year 2009 for macro-area

	Investment	Impact on total %	Population	Investment per capita	Investment per capita	% GDP
Asia	1.743	37,2%	4.035	432	x	15,1%
Europe	1.591	33,9%	738	2.156	1.890	11,5%
North America	830	17,7%	449	1.850	1.887	7,4%
South America	251	5,3%	395	636	893	12,9%
Africa	178	3,8%	981	181	325	16,7%
Australia and New Zealand	98	2,1%	26	3.738	2.995	12,6%
World	4.690	100%	6624	708	808	11,5%

Source: Cresme Simco 2010

According to the Cresme's data, the industrial production's index about constructions was influenced by the collapse of real estate Italian market in the first two months of 2010 in comparison to the 2007. The index in fact, fell to 52,6%. There was a big drop in houses' trading of 30% in comparison to the year 2006. So, it's necessary that the relationship between Italian growth and constructions must become more solid because there can be no development if people do not have a home or mortgage payments are too higher, so the political choices must support economic and social role of real estate market. If we made a structural analysis we first of all have to consider that Italy, transformed around 50-60 years from agricultural society to industrial society, today it is turning into a tertiary society and this puts in evidence that constructions' sector will play an important role in the new economic model. A first consideration is that constructions' sector goes reducing its importance on the GDP, in fact it passed from 15,6% in 1970 to 9,7% in 1990. This happens not because people are spending less in constructions but because they increased the investments in the other sectors like transport, technological endowments, machineries and equipments, etc. In general, it appears clear that the sector of real estate has a secondary weight respect other sectors (see table 3 and table 4).

Table 3: Constructions' weight on GDP in Italy

time	GDP	Construction	% on GDP
1970	67.133	10.492	15,6
1990	1.310.659	146.298	11,2

¹ The index is calculated at purchasing power parity

1997	1.950.680	185.108	9,5
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Source: Cresme Annual report 2010

Table 4: Constructions' weight on the total fixed investments

Country	1976	1997	Variation 1976/1997
France	63,4	51,3	-12,1
Germany	65,3	53,2	-12,1
Netherlands	63,3	48,8	-14,5
Japan	67,7	50,9	-16,8
United Kingdom	58,2	54,4	-3,8
Usa	61,2	46,0	-15,2
Italy	60,7	47,3	-13,4

Source: Cresme Annual report 2010

If people increase the investment in technology what is the effect on constructions' sector? What traditional operators can do in comparison to these new markets in high growth? We can notice (see table 2) that the reduction of constructions' weight inside the compartment of the fixed investments it is not only Italian problem. Of the other side must not be forgotten, in fact, that today is the same market that extends to be more international. Before the constitution of European Union Italy and also Germany had an economic model that defended the operators from the foreign competition: instability and inflation made difficult for foreigners to operate on a market territorially diversified.

4 Construction market in Italy

The Italian construction market today is complex. The market trend is influenced by:

- Housing market and its relationship with new constructions;
- Uncertainty on public construction trend;
- The capacity of building to restart;
- The capacity of market players to seize external opportunities.

These factors influence building market that seems to stand still around year 2005 and back in 2006: + 1,1%. Around 2007 drops; we can see these movements in the figure (3) and in the table (5).

Table 5: Investments in buildings: Fixed prices 1995-Variation %

	2000	2001	2002	2003	2004	2005	2006	2007	2008
New constructions	5,6	8,4	7,9	1,4	3,6	1,4	0,8	-1,9	-1,9
Residential	6,2	8,5	6,3	5,2	7,1	7,8	5,3	-3,0	-5,7

Private non Residential	7,6	8,0	13,8	-8,5	-5,0	-1,9	-3,8	0,3	2,4
Public non residential	2,5	8,5	4,2	4,4	5,4	-3,5	-5,7	-1,0	0,2
Civil engineering	2,8	8,6	4,0	7,5	7,2	-5,2	-1,5	-2,0	1,0
Renewal	5,8	2,1	-1,7	-0,6	1,0	-2,0	1,5	1,3	1,2
Residential	6,9	0,3	-3,0	-0,6	0,0	-0,3	3,0	2,0	2,0
Private non Residential	4,8	2,0	-2,5	-4,0	-2,0	-1,8	1,2	1,4	1,0
Public non residential	4,0	4,0	1,0	2,9	4,0	-6,0	-2,4	-0,4	0,4
Civil engineering	4,6	7,7	2,5	3,0	6,7	-5,2	-0,9	-0,5	-0,5
Total investments	5,7	5,1	3,0	0,4	2,3	-0,2	1,1	-0,4	-0,4
Maintenance	5,1	2,5	1,3	0,0	0,5	0,3	0,2	0,8	0,9
Production Value	5,6	4,6	2,7	0,3	2,0	-0,1	1,0	-0,2	-0,2

5 The relationship between housing market and employment

During 2006 and for the first year since 1999 there was a reduction of employment in the building sector (-0,6%) but to depart from the last year up to the 2007 the dynamics is again inverted returning to grow (+2,1%). Analyzing the data of the last period of the year 2006 and 2007 it is necessary a deeper evaluation. In fact, it's possible that the data was influenced by the effects of the legislative provisions introduced during 2006 (particularly the DI 233/2006 convert in the Law 248/2006, known as Law Bersani-Visco and the D.Lgs. n. 276/2003). The controls' activation on the yards in only one year of inspections (between August 2006 and August 2007) put in evidence 162 thousand unknown workers: 74 thousand are Italian and 88 thousand are foreigners. These workers are 89.559 with age inferior of 30 years and 72.470 with age superior of 30 years. An emersion that is added to the emersion recorded between 2002 and 2003 for the laws 189/2002 and 222/2002 (Bossi-Fini) with 110 thousand foreigners workers in the building sector. In the hypothesis that all these new registrations are directly referable to emersion phenomena, the increase of the 80.800 workers recorded by the official statistics between the 2006 and 2007 will change the sign passing to a decrease of 81.200 unities, equal, in percentages, to a - 4,3%. In the most prudential hypothesis that the only 40% with less than 30 years and the 70% of those with more than 30 years are directly referable to emersion phenomena, we will obtain a variation of the real occupation equal to -0,3%.

Table 6: Employments in the construction sector net of emersion(Value in thousands)

	Employments in construction sector for Istat	Estimation net emersion		
		Hypothesis Min	Hypothesis Med	Hypothesis Max
Estimation of emersion		86,6	102,8	162,0
First term 2006	1896,9	1896,9	1896,9	1896,9
Second Term 2007	1977,7	1891,2	1875,0	1815,7
Variation in absolute value	80,8	-5,8	-22,0	-81,2
% Variation	4,3%	-0,3%	-1,2%	-4,3%
Age:				
Age<30		35,8	44,8	89,6
Age>=30		50,7	58,0	72,5
Shares based on the estimated:				
Age<30		40%	50%	100%
Age>=30		70%	80%	100%

6 Residential Market of new production

The principal problem of the real estate market is the weight that the new residences have reached on the total tradings: during 2000 the new residences represented 28% of the tradings, during 2007, with 336.000 residences built, they will increase of 40,2%. Moreover, if we analyze the data on the building permissions in 2008 we can notice that it will complete 323.000 residences, 3,8% in less than 2007. Besides, the weight of the building multifamily emerges on the total of the new residences, an important indicator of real estate market.

Table 7: Number of buildings completed in Italy (thousands)

	New Residential buildings				TOTAL	Illegal buildings
	Single-Double family buildings	Multi family buildings	Total	Expansions and non-residential buildings *		
1982	148	239	388	57	444	70
1999	46	113	159	34	193	25
2003	50	164	214	38	252	29
2004	51	187	238	40	278	32
2005	49	211	260	42	302	32
2006	51	242	293	40	333	30
2007	48	250	298	38	336	28
2008	46	241	287	36	323	28

Source: Cresme 2008

7 The effects on the non residential market

The year 2007 represents for the residential sector the first year of invested resources' reduction(-3%) and the last year of number yards' growth (+1,9%). Contrarily, for the non residential sector, 2007 is a year of recover in particular of the industrial sector. The investigation of Ance shows that the investments in private non residential housebuilding are grown of 1,9 % during 2007 and they will grow of the 1,1% during 2008.

Table 8: Investments of new non-residential housebuilding

% Variation with fixed prices

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Firms	2,7	3,3	9,0	16,9	-18,1	-11,7	-3,8	-4,7	2,6	2,7
Commerce	0,9	3,6	4,5	11,1	7,5	5,7	-0,9	-1,9	-2,5	2,0
Offices	0,9	8,7	8,5	12,5	-8,0	-8,2	-3,0	-2,8	1,5	1,1
Schools	2,0	1,0	1,5	2,5	3,0	2,0	-1,5	-2,0	4,2	4,5
Hospitals	8,5	7,7	1,4	4,0	2,8	2,2	0,8	0,7	1,0	1,0
Other	4,8	6,2	9,4	7,3	2,5	2,2	-0,18	-5,6	-2,0	1,6
TOTAL	3,1	4,8	8,1	11,8	-6,1	-2,9	-2,3	-4,2	0,0	1,9

The dynamics of the new housebuilding reflects the course of the non-residential real estate market, the available data about the market of the instrumental properties, are about the year 2006 in which tradings decrease (-3,3%) in comparison to the 2005. The most damaged sector results commercial centre (-6,1%), that had recorded the greatest increases in the two preceding years (+10,1% in 2004 and +11,6% in the 2005).

Table 9: Variation in the number of property non-residential transactions

Transaction (var %)						
	2001	2002	2003	2004	2005	2006
Offices	21.7	68.2	-36.5	11.2	6.8	-3.3
Commercial centres	10.3	25.6	-14.2	10.1	11.6	-6.1
Industries and Hovels	9.4	35.1	-25.4	11.8	7.7	-0.1
Shops and workshops	-4	25.3	-14.7	6.1	0.2	-4.2
Total	3.8	36.5	-22.5	8.4	3.7	-3.3

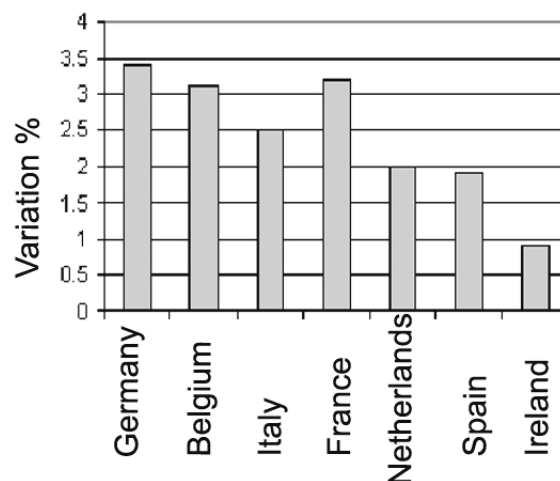
8 Real estate, bubbles and economic policy

An interesting aspect of the relationship between real estate market and macroeconomics is how different shocks have influenced the course of the market. According to Iacoviello and Blacks (2008), to analyse the course of the real estate prices' fluctuations and the course of the investments in United States' real estate market (from historic data it's deleted the trend subtracting the average of the period) it is very important the effect of the three factors: monetary shock, technological shock and shock in consumer preference. In the period between 1965 and 2006 they observed two great expansions of the dwellings' real prices: the first between 1976 and 1980 and the second between 2000 and 2005. During the first expansion, the price is increased by 17% above the trend, while during the

second expansion is increased by 12%. The prices' course was accompanied by a large oscillation of the investments in the residential housebuilding: with small variations between 1976 and 1980 and an increase of 25% between 1980 and 1986. In the first prices' increase, the main role was played by preferences' shocks; otherwise the monetary policy has reduced the price increase of 3% between 1976

and 1980. The technological shocks have contributed to the real estate price increase of 5% (Iacoviello and Blacks 2008). The expansion of the period 2000-2005 is mainly linked to the shocks in the consumers' preferences, but also the monetary factors have an important role to explain the real estate prices' increase and the real estate investments' increase. In this period like the monetary factors, in particular American Federal Reserve policy, is important to explain the beginning of the upswing or the beginning of the downswing. In this period, monetary policy has contributed to reduce the real estate prices and the investments respectively of 3% and 11%. Housebuilding sector is relevant for the dynamics and the macroeconomic policy. This involves, for example, an important link between interest rate, inflation and real estate price (Brunermeier and Jullard 2006). Low interest rates, stimulate, in fact, residences' demand and real estate demand in general, causing prices' increase. It happens the contrary in the case of high rates. In the European countries, the real estate markets have shown different evidences. Spain and Ireland for example, show a great increases of real estate price, that are doubled in the first one country and triplicates in the second. In the same period prices are reduced in Germany. On the contrary, the interest rates in the European countries have followed different dynamics. The figure (3) describes interest rates' variation in some European countries between 1997 and 2004.² Ireland, Spain and Netherlands are less subject to change otherwise it is happened for Germany, Belgium and France.

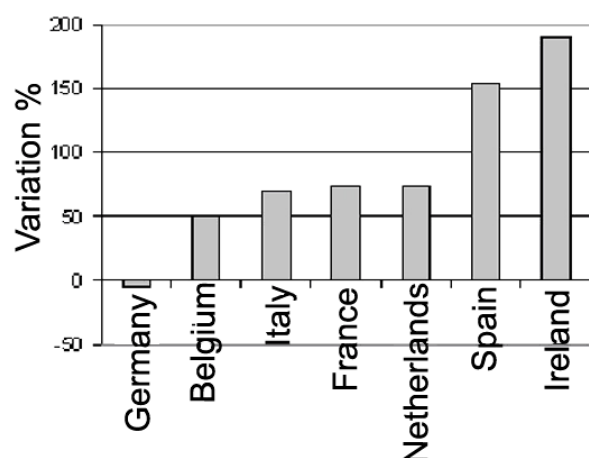
Fig. 3: Real interest rates



The real estate price variation for the same countries in the same period are shown in the figure (4) that underlines real estate price increase in Spain and Ireland and a smaller increase in the other European countries. In Germany, in particular there was a smaller increase of real estate price market.

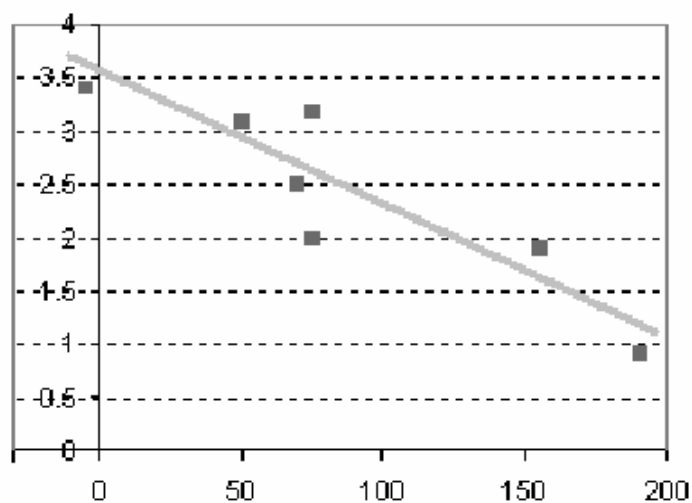
² The date are taken from De Grauwe 2006.

Fig. 4 : Real estate prices market



In the figure (3) and (4) there is a symmetry that can be highlighted if we report real estate prices (axes x) and interest rates (axes y). If we report in the same graph we can note a negative relationship like it's shown in the figure (5).

Fig. 5: The relationship between real estate prices market and real interest rates



Countries where the interest rates were low have had a price increase of the residences. Particularly, in Spain and Ireland there was a speculative bubbles that started from real estate market and extended in all European credit markets. For example, in Italy, similar dynamics are in action, for the influence of U.S. market. After the growth of the guarantees' credit value (about real estate market), banks have begun to speculate. In Europe the nominal interest rates are controlled by European central bank and the interest rates are the same for the whole area, the expansion of the credit happens, therefore, in a situation of constant interest rates so the bubble is not controllable.

When the bubble bursts the risk it is that the economy moves into a phase of deflationary adjustment, during which the consumers will discover that the value of the contracted loan is larger than their houses in real terms, or rather deflated (De Grauwe, 2006). A speculative bubble in the real estate market has been the origin of the crisis in Japanese economy. Economic preventive policy are essential in these cases. In the case of Europe, the Bank of Spain for example, has proposed an interesting strategy to hold under control the crisis, using its vigilance power. Spanish central bank aims to check the relationship between loan's amount and real estate value to stabilize the economy. If the price increase the possibility to grant loans decrease to stabilize the economy, reducing it during the expansion and, on the contrary, it during the recession. When the real estate prices increases possibility to grant loans automatically decreases limiting the extension of the credit in the upswing and amplifying it in the downswing, acting as an automatic stabilizer.

9 Conclusions.

In this work I have underlined the importance of the real estate sector for the economic policy, to put in evidence the relationship between growth, economic cycle and real estate market. I have underlined that the construction's sector is very important to anticipate the conjuncture and to define some optimal economic policy and to reduce its delays. I have also put in evidence that in the housebuilding sector there are some dangerous elements that can lead phenomena of strong instability, speculative bubbles, like in the case of Japan. The recent course of the American and European markets underlines in fact, the problem of the instability and its importance. The failure of the economic policy about the real estate American market is, in fact, according to many economists, one of the principal reasons of the collapse of the financial markets of the whole countries³.

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³ Shiller (2000) and Case and Shiller (2004)

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