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The Portugal situation during the Financial Crisis

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Abstract

Today it's frequently used the terms *PIGS* or *PIIGS*, acronyms used by economic journalists to refer to different countries of the European Union for their statement of affairs. The bad connotation is evident from the fact that pigs in English suggest the bad state of the economies of these countries. PIGS has been used at the beginning of the years 1990 to indicate four countries of southern Europe: Portugal, Italy, Greece and Spain. Ireland has sometimes been added during the year 2007, so the acronym is modified in PIIGS. Nevertheless, the alarms of BCE about the public accounts of these States it seems to exclude Italy from the group of the countries characterized by very bad statements of affairs. The aim of this work is to analyze especially during the financial crises the situation of the public accounts in Portugal, one of the countries with greater difficulties and probably with the worse condition if we exclude the dramatic Greek case. In Portugal, the economic growth has been superior to the average UE, for big part of the decade 1990-2001, even if the remains under the 75% of the principal European economies' PIL.

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1 Introduction

Beginning from 1984, the nation has begun its modernization in a stable environment, and it is united to the European Economic Community in 1986. The following governments have completed different reforms and made private different government firms, liberalizing key sectors of the economy, like financial and the telecommunications sector. Portugal has developed an economy based on the services, and it has been during the year 1999 one of the twelve nations founders of the Euro that it has adopted in January 2002, together to the other 11 UE members. The situation of the public accounts during the long term in Portugal as in France, Hungary, Poland and Italy it is now, however, “unbearable without considering possible increases of the expense”. These fact, is also put in evidence by the European Committee in a communication on the sustainability of the public accounts approved in July 2010. To determine the drastic situation of the fiscal politics of these Countries, are the “departure’s conditions of their accounts”. In the five countries in fact, is “the crisis and the support to the resumption that are leading to a very fast increase of the ratio debt/PIL, quickly compensating the progress reached in the last years on the front of the improvement of the accounts”. These situations change between the countries and they are determined “ in the most greater part of the cases” from the consequences of the crisis that it has brought States “ in a higher category of risk in the long term.”

2 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.

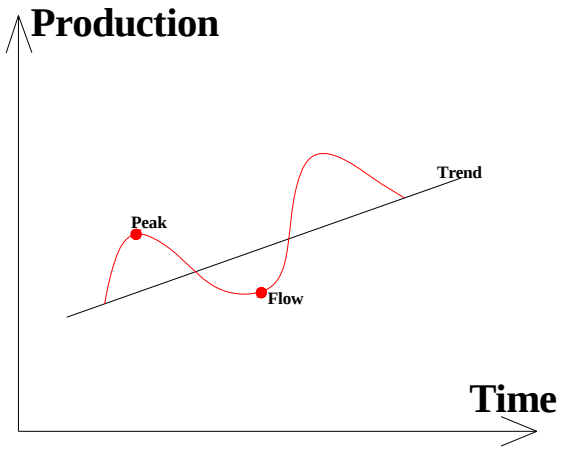

Figure 1: Economic cycle

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.

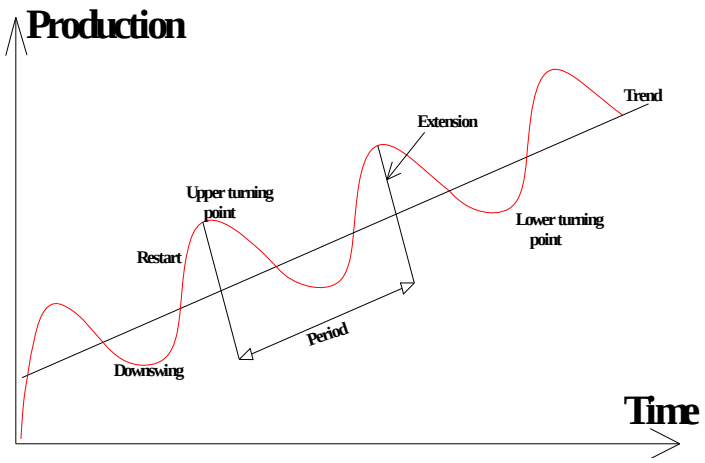

Figure 2 : Economic cycle

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.

3 Analytical analysis

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. We observe the situation of the accounts in Portugal. We analytically can see the forecast that we can do for the Portuguese public accounts in the long period. The data used, are of Eurostat database 2010 and they are reported in the following table:

Table 1: Eurostat data report for Portugal in the year 2010

t	B(t)	Y(t)	b(t) Eurostat	d(t)
2006	100522	155446	0.646668296	0.039
2007	103702	163052	0.636005691	0.026
2008	110377	166463	0.663072274	0.028
2009	125910	163891	0.768254511	0.094

In which B(t) is the nominal value of the national debt, Y(t) is the PIL, b(t) is the ratio public debt/PIL and d(t) the ratio deficit/PIL. The OCSE (Organization for

the Cooperation and the Economic Development) data for the nominal interest rate (i) and the inflation rate in the years considered are reported in the Table 2:

Table 2: Expected inflation and interest rates for Portugal in the year 2010

Expected inflation	i
0.031	0.039
0.025	0.044
0.026	0.045
-0.008	0.042

From the data that we have available it can easily be found the real interest rate (r) and the variation rate of the PIL (g):

Table 3: Real interest rates and PIL growth rate for Portugal in the year 2010

r	g
0.08	
0.01	0.04
0.01	0.02
0.05	-0.01

We know also that r = interest rate - expected inflation, while $g = \frac{[\mathrm{Y(t)} - \mathrm{Y(t-1)}]}{\mathrm{Y(t-1)}}$.

We assume, now, that is not monetary financing. We know that the ratio debt/PIL in the long period can be express by this ratio:

$$\frac{B_t}{Y_t} = (1 + r - g)\frac{B_{t-1}}{Y_{t-1}} + \frac{G_t - T_t}{Y_t}$$

If we apply to our data we obtain the results in Table 4.

We can see then that the data are not so different from those observed. We now see a possible containment's politics of the ratio public debt/PIL. We suppose that the Portuguese government wants to maintain in 2010 a value of the ratio public debt/PIL equal to the value of the ratio public debt/PIL during the year 2009:

b(2010) = 76,8

Table 4: Data elaborated with the new assumptions for Portugal in the year 2010

t	2009	2008	2007	2006
B(t)	125910	110377	103702	100522
Y(t)	163891	166463	163052	155446
b(t)eurostat	0.76	0.66	0.63	0.64
d(t)	0.09	0.02	0.02	0.04
Infl.exp	-0.008	0.02	0.02	0.03
i	0.042	0.045	0.044	0.04
r	0.05	0.01	0.01	0.008
g	-0.01	0.02	0.04	
(1+r-g)	1.06	0.99	0.97	
b(t) estimated	0.8	0.66	0.65	

We want to see what value has to assume the ratio deficit/PIL d(t), where:

$$d(t) = \frac{G_t - T_t}{Y_t}$$

In which $G_t - T_t$ is the deficit or primary deficit. We suppose that the inflation has negative sign and it's equal to -1% on annual base so the expected inflation is equal to -1%. We hypothesize that also the growth rate of the PIL in 2010 is negative:

g (2010): -2%

as it regards the nominal interest rate we make a mean of the rates of the preceding years:

i (2010): 4,27%

The situation will be as presented in Table 5.

If it is wanted to maintain a constant ratio debt/PIL in 2010 the Portuguese Government must have a primary advance equal to the 5,6% of the PIL. Therefore the ratio deficit/PIL has to be equal to -5,6%. Since d(t) it is defined as:

$$d(t) = \frac{G_t - T_t}{Y_t}$$

So this fact means that: $G_t < T_t$

Table 5: Data elaborated with the new assumptions for Portugal in the year 2010

t	2010
B(t)	
Y(t)	
b(t)eurostat	0.76
d(t)	-0.05
Infl.exp	-0.01
i	0.042
r	0.05
g	-0.02
(1+r-g)	1.07
b(t) estimated	0.76

For the calculation is used the inverse formula given from:

$$\frac{G_t - T_t}{Y_t} = \frac{B_t}{Y_t} - (1 + r - g)\frac{B_{t-1}}{Y_{t-1}}$$

Since the primary deficit is defined as G(t)-T(t), where G(t) is the government expenditure in good and services in the year t and T(t) are the taxes subtracting the transfers at the time t, this result can be achieved decreasing the government expenditure in considerable way or increasing the taxes. A remarkable reduction of the government expenditure it is not possible for the difficulty to reach this objective, for the necessity to sustain the national economy in a situation of recession like the actual situation. An alternative could be the increase of the taxes, but also in this case we have analogous considerations: with the recession in action a conspicuous increase of the taxes could be wrong, also for the fact that the disposable income would reduce provoking a reduction of the consumptions, and therefore of the national product. We can conclude that under the current economic conditions it is difficult for Portugal stabilize the ratio debt/PIL during the year 2010. We can analyze the case in which the ratio deficit/PIL is zero for:

d(2010): 0%

Since d(t) it is defined as:

$$d(t) = \frac{G_t - T_t}{Y_t}$$

In this case:

$$G_t = T_t$$

We consider for the other variable the precedent hypotheses. We analyze how in this case change the ratio debt/PIL :

Table 6: Data elaborated with the new assumptions for Portugal in the year 2010.

t	2010
B(t)	
Y(t)	
b(t)eurostat	
d(t)	0
Infl.exp	-0.01
i	0.042
r	0.052
g	-0.02
(1+r-g)	1.07
b(t) estimated	0.82

Then b(t) = 82,4% of the PIL.

It can be affirmed, gives the obtained result, that the dynamics of worsening of the public accounts' conditions depends on the contracted debt in precedence. In fact maintaining a situation of primary balance during the year the dynamics of the accumulated debt also worsens. We know that, for the national debt, considering as unity of time the year, this relationship is:

$$(\Delta B / P) = G_t - T_t + INT - (\Delta BM / P)$$

Where G(t) and T(t) represent the quantities specified in precedence, INT is the expense for affairs on the national debt, while $\Delta BM / P$ and $\Delta B / P$ they respectively represent the variation of the stock of monetary base and the national debt deflated for the general level of the prices P. Since, the monetary financing is

not possible for the countries of the SME and we has assumed primary balance, the debt can grow only if grows the interest matured on the stock of preceding debt (INT).

Assuming primary balance and absence of monetary financing, the interests matured on the stock of preceding debt are equal to the product of the interest rate (i) and B that is equal of iB. The growth rate of the national debt is equal to iB/B, or to the interest rate i.

Therefore in our case:

$$i - [\Delta P / P] - [\Delta Y / Y] > 0$$

But $i - [\Delta P / P]$ is the real interest rate, that we have indicated as r, while $[\Delta Y / Y]$ is the PIL growth rate in constant prices, that we have indicated with g. So, we can say that, with a primary balance and absence of monetary financing, the ratio debt/PIL grows if r>g.

In our case:

$$r = 0{,}05265 \text{ and } g = -0{,}02$$

r is greater than g, so the ratio debt/PIL increases. We can consider another hypothesis about the primary deficit in relationship to the PIL of 2010 in the Iberian country. We suppose that:

$$d(2010): \quad 6\%$$

We know that d(t) it is defined as:

$$d(t) = \frac{G_t - T_t}{Y_t}$$

This means that:

$$G_t > T_t$$

We maintain valid the precedents hypotheses. We will evaluate how change the ratio debt/PIL in this case(see Table 7).

Therefore b(t) = 88,4% of the PIL. The hypothesis of a ratio deficit/PIL in 2010 equal to 6% conducts to a ratio 88,4% debt/PIL. It’s an hypothesis, therefore, very realistic, given the knowledge that we have on the course of the economy. With an

important deficit as that considered, Portugal has the possibility to sustain the economy in the hope of a recover and has also the possibility to maintain constant the fiscal imposition avoiding to penalize the consumptions, and the national product, because for a disposable income of the families too low. Obviously, an economic politics of this type cannot be extended for many years. The risk, in fact, is a total crash of the economic system because for a more controllable dynamics of the national debt in the long period.

Table 7: Data elaborated with the new assumptions for Portugal in the year 2010

t	2010
B(t)	
Y(t)	
b(t)eurostat	
d(t)	0.06
Infl.exp	-0.01
i	0.042
r	0.052
g	-0.02
(1+r-g)	1.07
b(t) estimated	0.88

4 Conclusion

In this work we want to put in evidence that the governments have to keep on sustaining the economy and they are necessary consolidation's strategies of the accounts for efficient political intervention in period of economic crisis. The measures to grow the confidence and to sustain the demand they can be successful only if they are perceived from the markets and from the public opinion as temporary and compatible with the sustainability of the accounts on the long term. A "key" factor of the *exit strategy* to which it is working to European level. The strategy of consolidation of the accounts it is founded on three factors: reduction

of deficit and reduction of debt, increase of the employment and reform of the welfare become “essential” and not an options for many UE Countries to improve their economical situation.

References

[1] N. Acocella, *Fondamenti di politica economica*, Carocci, Rome, 2006.

[2] R. Adalid and C. Detken, Money’s role in asset price booms, *ECB Working paper* No **732**, (2007).

[3] T. Anderson and C. Hsiao, Estimation of Dynamic Models with Error Components *Journal of the American Statistical Association*, **76**(375), (1981), 598-606.

[4] B. Bernanke and M. Gertler, Agency costs, collateral and business fluctuations, *American Economic Review*, **79**, (1989), 14-31.

[5] B. Bernanke, M. Gertler and S. Gilchrist, The financial accelerator in a quantitative business cycle framework, in: J. Taylor and M. Woodford edition, Handbook of Macroeconomics, **1**, (1989), 1341-1393.

[6] C. Borio, N. Kennedy and S. Prowse, Exploring aggregate asset price fluctuations across countries: measurement, determinants and monetary policy implications, *BIS Economic Papers*, **40**, (1994).

[7] C. Borio and P. Lowe, Securing sustainable price stability: should credit come back from the wilderness? *BIS Working Paper*, **157**, (2004).

[8] K.E Case, Real estate and the macroeconomy, *Brookings Papers on Economic Activity*, (2000), 119-162.

[9] N- K Chen, Bank net worth, asset prices and economic activity, *Journal of Monetary Economics*, **48**, (2001), 415-36.

[10] C. Goodhart, *Price stability and financial fragility*, in K. Sawamoto, Z. Nakajima, H. Taguchi editions. *Financial Stability in a Changing Environment*, Macmillan, London, 2005.

[11] C. Goodhart, The ECB and the Conduct of Monetary Policy: Goodhart's Law and Lessons from the Euro Area, *Journal of Common Market Studies*, **44**, (2005), 757-778.

[12] C. Goodhart, Whatever Became of the Monetary Aggregates, *National Institute Economic Review*, **200**, (2007), 6-25.

[13] C. Goodhart and B. Hofmann, *Deflation, credit and asset prices*, in : R. Burdekin and P. Siklos editions. *Deflation. Current and historical perspectives*. University Press, Cambridge, 2004.

[14] C. Goodhart and B. Hofmann, *A second central bank instrument*? in: P.B. Sorensen edition, *Monetary Union in Europe. Historical perspectives and prospects for the future*. Essays in honour of Niels Thygesen, Publishing Copenhagen, 2004.

[15] C. Goodhart, B. Hofmann and M. Segoviano, Bank regulation and macroeconomic fluctuations, *Oxford Review of Economic Policy*, **20**, (2004), 591- 615.

[16] C. Goodhart, B. Hofmann and M. Segoviano, Default, credit growth and asset prices, IMF *Working Paper*, **6**, (2006).

[17] P. De Grauwe, *Economy of monetary union*, Sixth edition, Il Mulino, Bologna, 2006.

[18] B. Hofmann, Bank lending and property prices: some international evidence, HKIMR *Working Paper*, **22**, (2003).

[19] B. Hofmann, The determinants of private sector credit in industrialized countries: do property prices matter?, *International Finance*, **7**, (2004), 203-234.

[20] ISTAT, *Italy in codes*, ISTAT, Rome, 2007.

[21] A. Meltzer, Monetary, credit and (other) transmission processes: A monetarist perspective, *Journal of Economic Perspectives*, **9**, (1995), 49-72.