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AN HISTORICAL PERSPECTIVE SINCE 1890

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Why have governments succeeded in reducing French public debt historically and can these successes inspired us for the future? An historical perspective since 1890

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Résumé:

La question de la réduction de la dette publique est au cœur des débats actuels en France où son niveau s'est élevé à 86% du PIB en 2011. Dans cet article, nous examinons comment le solde primaire, le taux de croissance du PIB, le taux d'intérêt réel et le taux d'inflation ont influencé l'évolution du ratio de dette publique depuis la fin du 19ème siècle. Notre méthodologie se base sur une analyse à la fois historique et empirique. Notre objectif est d'expliquer pourquoi certaines années, le taux d'intérêt, la croissance économique et la politique budgétaire ont contribué à faire baisser le ratio de dette publique, alors que ce n'était pas le d'autres années. Quels sont les événements historiques permettant d'expliquer ces différences? Notre objectif est de réfléchir à des scénarios de sortie de crise de la dette actuelle en pointant les similarités avec les expériences passées.

Classification JEL:. H54C4

Mots-clés:. Debt ratio, France, historical analysis

Abstract :

The question of reducing public debt is at the heart of the current debates in France where the level of debt ratio amounted to 86% of the GDP in 2011. In this paper, we examine how the primary balance, the GDP growth rate, the real interest rate and the inflation rate have influenced the evolution of the debt ratio since the end of the 19th century. We use a methodology based on both historical and empirical analysis. Our aim is to explain why some years, the interest rate, the economic growth, the fiscal policy have helped in making public debt low, while they did not during other periods. Which historical events explained such differences? Our purpose is to think about scenarios of exit of the current French debt crisis making comparisons with the past.

JEL Classification: H54C4

Keywords: Debt ratio, France, historical analysis

1.- Introduction

How to reduce public debt ratio? Do we have to proceed to fiscal consolidations by a drastic reduction of public spending? Does a central bank has to let the inflation slip in order to inflate fiscal revenues? This paper tries to answer these questions in the specific case of France since 1890. We explore these questions using a methodology based on both historical and empirical analysis. The historical approach allows us to understand how various regulations of public finance can explain a resistance or on the contrary an ease to reduce the public debt ratio after the latter reaches high levels. The empirical exercise is useful to identify sub-periods during which the relationship between the debt ratio and its determinants has changed over time. By making this exercise, our purpose is to think about scenarios of exit of the current French debt crisis making comparisons with the past. We can wonder whether the current situation is exceptional, or whether the success of past strategies in curbing the high public debt could be useful for the current strategies. Why did past governments manage to reduce public debt from high to low levels?

This question is at the heart of the current debates considering the level of the French public debt which amounted to 84.7% of the GDP in 2011. Our objective is to examine how the primary balance, the GDP growth rate, the real interest rate and the inflation rate have influenced the evolution of the debt ratio since the end of the 19th century. The period which we study extends from 1890 to 2009. The econometrics allows, in a first step, to detect turning points, years of break, so as to identify specific historical periods during which its determinants were good early warning signals of reduction in the debt ratio. Such an exercise is necessary in a first step because in a second step our aim will be to explain why some years the interest rate, the economic growth, the fiscal policy have helped in making public debt low, while they did not during other periods. Which historical events explained such differences?

The historical experience raises questions about the efficacy of possible scenarios of exit from the current debt crisis in France. We review three possible configurations, from the worst situation of prolonged recession to the most optimistic or a strong rebound just like after World War II. This is not the first time an historical perspective is adopted to discuss

current public finance crises in the advanced economies. But, to our knowledge, no extended case studies exist on the European countries[3].

The rest of the paper is organized as follows. Section 2 presents the data. Section 3 provides empirical evidence of different regimes in the joint dynamics between the debt ratio and its determinants. In Section 4 we explain these different regimes with regard to the historical evidence. In Section 5, we wonder whether past experience can serve as a benchmark for possible exit crisis scenarios. Finally Section 6 concludes.

2.- Data

Choice of the period

The period we study extends from 1890 to 2009. Why beginning in 1890? The first general account of the French administration of public finance was published in 1815 and the public accounting was established in 1823. Series of public finances are thus potentially available since the so-called period of "Restoration". The years from 1816 till 1870 were peace years. There was no war to finance, the weight of public debt remained at low levels and fiscal policy was Malthusian in the sense that public spending served only to provide public services and there was no intervention of the governments in the economy[4].

Until 1870, the budgets were most of the time in surplus. Public debt became a matter of concern after this date, as bursts the war against Prussia. The debt ratio strongly increased until 1895 before declining once France entered the period of the so-called "Belle Époque". The explosion of debt had taken place in a war and economic contexts. We begin in 1890, because this period has similarities with the situation we are observing today. We consider an initial date characterized by a high debt ratio (in 1890, it was above 80%, just as it is now) following a huge recession (the Great depression of the end of the 19th century). The growth situation was not exceptional and the interest rates on public debt were not specifically low.

[3] For examples of other studies, the reader may refer to Abbas et al. (2011), Barro (1987), Bohn (1991), Drelichman and Voth (2008), Dufrénot and Triki (2012), Eichengreen (1988), Eichengreen and Lindert (1989), Prati (1991), Reinhart and Rogoff (2009), Ritsch (1996).

[4] See Leroy-Beaulieu (1874) and Fontvieille (1976).

Construction of a database

From a government budget constraint, it is known that the main determinants of the debt ratio are the following: the GDP growth, the interest rate on public debt, the inflation rate and the primary balance. We therefore need annual historical series for these variables, as well as for debt ratio. Because the data on these series are disseminated, we have to construct a new database, using different sources and making sure that the reconstructed series are consistent with each others. We summarize below the different sources used to build our database and refer the reader to Dufrénot and Triki (2012) for a detailed description of sources and methodology used to interpolate the data.

Primary surplus and interest rate payments

♦ For the period 1890-1939, we use the national accounts statistics (base 1938) constructed by Villa (1993) [5].

♦For the period 1939-1948, when data are not available from Villa (1993), we extrapolate his series using the retrospective statistics by INSEE, 1966[6]. The extrapolation is done by using the growth rate of primary surplus and interest payments provided by the INSEE statistics.

♦For the period 1949-2009, we use the statistics provided by the INSEE (base 2000)

Public debt

♦For the period 1890-1938, we consider data from Villa (1993). Public debt consists of the short-term debt (treasury bills, current accounts and deposits, liabilities to the Central Bank), long-run debt (consolidated debt, long-term bonds), debt for the financing of the railway sector.

♦For the years 1939-1948, we again extrapolate the data provided by Villa (1993) using the growth rate of the INSEE retrospective statistics.

♦ For the years 1949-2009, we use the historical statistics provided by INSEE

GDP and inflation

♦For the period 1890-1948, we consider data from Villa (1993).

[5] http://www.cepii.fr/francgraph/bdd/ villa/mode.htm.

[6] Annuaire rétrospectif de la France, séries longues, 1948-1988, Insee, 1990.

♦From 1949 onwards, the series come from the INSEE statistics

♦The series of inflation is taken from T.Piketty (2001).

3.- Empirical evidence of breaks and turning points in the joint dynamics of the debt ratio and its determinants since 1890

Figure 1 shows that the debt ratio rose sharply in times of war and remained high in the following years. The high debt of 1890 comes from a war compensation paid to Prussia which amounted to five billion francs payable in gold or foreign currency. High debt levels in 1920 and 1946 are the result of the two world wars. This is usually said that the current level debt ratio is among the highest France has known in peacetime. Yet it seems that this level has been higher than it is currently, for instance during the period of so-called "Belle Epoque" (between 1890 and 1913) and in-between wars (see the second panel of Figure 1). What seems recurrent is that the debt ratio reached high levels after wars or as the result of depressions. Figure 1 shows that, until 1980, the debt ratio has steadily declined after rising strongly. It is no longer the case since then. The 1980s appears as a period of disruption. At best, its rise has slowed in some years (stepwise evolution). An interesting question is why?

INSERT FIGURE 1 ABOUT HERE

To answer this question we begin with a simple model showing a regime-dependence phenomenon in the joint dynamics of the debt ratio and its determinants. This implies that, the influence of the inflation rate, of economic growth, of the interest rate and of the primary surplus are not the same whether the economy is in a high debt or low debt regime. The model allows an identification of the historical years corresponding to the different regimes. An interesting feature of the model is that it detects several sub-periods for the joint dynamics of the variables.

We use the framework of Markov-switching VAR models since the latter are known to be adequate tools for the analysis of structural changes, regime and time-dependence and for the detection of turning points in the dynamics of economic variables. To our knowledge, this is the first time such a tool is used in the context of quantitative history. We summarize here the

main features of these models and refer the reader to the econometric literature for a more in depth formal analysis[7].

We consider a vector X of endogenous variables (debt ratio and its determinants) which is explained by a vector of intercepts α_0, autoregressive terms of order k and a matrix of residuals $\Omega\varepsilon$. For sake of simplicity, we consider a two-state model described by a latent variable s which is assumed to follow a first-order Markov chain. The model is specified as follows:

$$X_t = \alpha_0(s_t) + \Phi_1(s_t)X_{t-1} + \cdots + \Phi_p(s_t)X_{t-k} + \Omega(s_t)\varepsilon_t \quad (1)$$

ε_t is a 4-dimensional vector of disturbances which are uncorrelated at all leads and lags and normally distributed. X_t is a 4-dimensional vector which consist of the following variables : the debt ratio, the difference between the economic growth rate and the real interest rate on public debt, the primary surplus and the inflation rate. In (1), we assume that all parameters switch between regimes as well as the covariance matrix of the residuals.

The conditional transition probabilities are defined by the following matrix:

$$P = \begin{bmatrix} p_{11} & p_{12} \\ p_{21} & p_{22} \end{bmatrix}, \text{ where } p_{ij} = \Pr(s_{t+1} = j \mid s_t = i) \quad (2)$$

We proceed to the joint estimates of the parameters and probabilities using the Hamilton's Expectations-Maximization (EM) algorithm. We begin by estimating an unrestricted VAR with up to 6 lags in order to select the optimal lag length k. According to the different information criteria we select $k = 1$.We decompose the data before and after the Second World War. Since we study the debt dynamics during peacetime, we drop the years corresponding to the two World wars. The estimations are done for two sub-periods, before and after the Second World War: from 1890 to 1949 and from 1950 to 2009[8].

Figures 2 and 3 report the estimated smoothed probabilities of being in regime 1. Before 1950, regime 1 appears to reflect years of high increase in and of very high levels of debt ratio between 1919 and 1924. Figure 2 gives a first indication of how this happened. As is seen in this regime we have the conjunction of three factors at plays, namely the highest decreases in the inflation rate, in the primary balance and in the spread between the economic growth and

[7] Our approach here is based on the methodology initially proposed by Ehrmann et al. (2003).

[8] Detailed results about the estimations are not shown to save place, but are available upon request to authors. We discuss here the important aspect of the exercise, namely the identification of two regimes in the joint dynamics of the debt ratio and its determinants.

the interest rate. Figure 3 provides an example of periods of huge decreases in the debt ratio that coincide with high increases in inflation and in the economic growth rate (relative to the real interest rate).

The figures suggest the following historical chronology.

In Figure 2, there is a first step toward a downward evolution of the debt ratio which can be regarded as being smooth from 1890 until the eve of World War I, a period in France called the "Belle Époque". It seems that the slow decrease in debt originates from the fact that its determinants are either characterized by inertia (primary balance) or by irregular swings (inflation rate and growth rate relative to the real interest rate). Then, after World War I until the eve of the implementation of Poincaré's stabilization policy (between 1919 and 1924), the debt ratio explodes under the combined effect of a deteriorating fiscal balance and a decline in inflation and economic growth rate. Then, in the few years following the arrival of Poincaré to power in 1925, the fiscal balance improves thereby implying a decrease in the debt ratio. But, as can be seen, the decline in economic growth (caused by the crisis of the thirties) combined with inflation makes once again the debt ratio increases up until the eve of the World War II. During the first five years following the war, from 1946 to 1951, soaring prices and economic recovery drive down the debt ratio. The estimates say the following. The two periods before 1919 and after 1924 until 1951 can be considered as similar in terms of the dynamics of the debt ratio and correspond to a regime (regime 2) where on average the latter has diminished. This regime must be distinguished from the years 1919-1924 during which the debt has exploded. We find that regime 1 was less persistent than regime 2 with the estimates of the transition probabilities $p_{11}$and p_{22} equal to respectively 0.79 and 0.98.

INSERT FIGURE 2 ABOUT HERE

During the years 1951-1961 and 1969-1975, it seems that France inflated away a portion of its public debt using inflation to reduce its real interest rate (Figure 3). This propels the debt-GDP ratio downward. However, it seems that the primary balance does not contribute to holding down this ratio. Indeed, we observe no difference in the behavior of the fiscal balance between the two regimes. Its evolution is uneven in both cases. Regime 1 is now identified as a regime of debt reduction, while regime 2 describes times of debt increases. Contrary to what we observed before World War II, the estimates now yields higher persistence in the phases

of rising debt with $p_{11}$and p_{22}estimated to be respectively 0.85 and 0.97. In figure 3, two factors seem to explain the sharp increase in the debt ratio from the early 1980s, namely the downward trend of the gap between the economic growth and the real interest rate, and, the sharp slowdown of inflation.

INSERT FIGURE 3 ABOUT HERE

4.- Some explanations of the results in terms of economic history

The econometric model shows periods during which the debt ratio determinants seem to slowdown its development, while in other periods they do not. To understand why, we now examine the historical context that influenced the evolution of the inflation rate, of the real interest rate, of the growth rate and of the fiscal policy in France from 1890 onwards.

The role of the inflation rate

Decreases in the debt ratio have sometimes coincided in the past with periods of high inflation, except during the two world wars where public debt and rising prices were observed (see Figure 4). France has experienced several kinds of inflationary pressures, but not all yielded a diminution of the debt ratio.

INSERT FIGURE 4 ABOUT HERE

First, sharp increases in prices have emerged after wars or as a result of major economic recessions, for instance between 1922 and 1925, between 1935 and 1938 or between 1946 and 1948. There seems to be a link between the loss of growth at a given time and magnitude of price increases observed during the following periods (mostly losses in potential GDP).

Secondly, there is an extensive literature on the role of fiscal and monetary policies in causing inflation episodes in France. The latter applies to the inflation of the 1920s. Some authors emphasize the role of inflation expectations between 1920 and 1926. In the early 1920s, the Germinal franc was attacked in the exchange rate markets because the government refused a nominal devaluation of the currency in spite of the fact that the macroeconomic indicators were not good: the trade deficit was high, Germany could not pay its war debts to France and the debt service was absorbing 20% of the budget deficit. Governments before

that of Poincaré, could have chosen to devalue the currency considered overvalued relative to its gold value, what they did not. Anticipating that such a devaluation would take place sooner or later, investors withdrew their capital, causing a depreciation of the franc. In this context, between 1922 and 1926, inflation reduced the burden of public debt.

The argument according to which inflation was fueled by expectations of a forthcoming currency depreciation is also true for other periods than the 1920s, for instance during the two sub-periods 1934-1940 and 1945-1949. In 1934, the macroeconomic fundamentals were deteriorated (twin deficits, decline in industrial production) in a context of global economic crisis. While the UK and the U.S. have devalued their currencies, the Laval government opted for an internal depreciation (lower prices) that will finally prove to be a failure. The franc was eventually devalued in 1936. During the period 1945-1949, a first exchange rate adjustment took place in December 1945, another in 1948, a third in September 1949. Just as in the 1920s, the incrementalism of government exchange rate policy during these different years has been interpreted as a reluctance to adopt appropriate policy measures, leading to attacks on the franc. Each time, expectations of future depreciation then fueled inflation through import prices.

Thirdly, up until the 1990s, inflation was a consequence of a situation of financial repression. Indeed, governments relied on the banking system to finance debt. This was the case after World War I, when public debt was held by big banks (Credit Lyonnais, Société Générale, Crédit Industriel et Commercial). In the inter-war period, the “Caisse des dépôts” and “Caisse d’amortissement” reduced the floating component of debt by buying short-term public debt and by exchanging it against long-term securities. During the years 1940, the financing of public debt was done through the so-called “circuit of the Treasury” by puncturing the resources of banking, monetary and financial markets. The Bank of France acted as lender of last resort, there was no target for the growth rate of the monetary base and no target for price stability. This does not mean that all the observed periods of inflation had a monetary origin, but simply that governments did nothing to address price increases. This was a mean to maintain debt to sustainable levels without having to adjust by fiscal consolidation. However, the reduction of public debt through inflation of monetary origin was no longer a feasible strategy from the early 1990s due to institutional reforms: the central bank became independent from the governments in 1993, disinflation policies began, capital markets were deregulated and later the country adopted the euro.

To summarize, the inflationary periods were observed in several contexts:

♦ sharp price increases after years of massive destruction of productive capital or after a downward trend of potential growth (1922-1925 and 1946-1948 after the two world wars);
♦ once the country escaped from a great recession (between 1935-1938 after the depression of the 1930s);
♦ inflation expectations (between 1920 and 1926);
♦ the financing of fiscal policies by the central bank up until the beginning 1990s in a context of financial repression.

In Figure 2, we observe a period of huge price increases before the Second World War, between 1938 and 1951, in regime 2 (the regime where the average debt ratio has been on a downward trend). In the same figure, after World War II, we observe two periods of sharply rising prices in regime 1 (regime characterized by sharp reductions in the debt ratio). The first rise occurs during the decade from 1951 to 1961 and the second occurs after the social uprisings of 1968 and until 1975 the year following the first oil shock. By combining these observations with the developments of the preceding paragraphs, we are inclined to conclude that two types of inflation have brought down the French debt ratio since 1890. One, until 1950, was an inflation occurring after an episode of economic recession or after a war (inflation caused by a depletion of the production capacity). After 1950, the inflation was caused by the excess demand linked to the policy of financial repression. After the long recession that followed the 2009 crisis, it is conceivable that if inflation re-appears once the economy exits from the downturn, it will be of the first type.

The gap between economic growth and the real interest rate

When the two curves describing the structural components of the growth rate and of the real interest rate are superimposed, what is striking is the similarity between the first part of the "Belle Époque" years between 1890 and 1905 and between 1984 and 2009 (see Figure 5)[9]. We observe 15 to 20 consecutive years during which the real interest rate exceeds the economic growth rate. But the gap is significantly greater during the second sub-period. During the years 1926-1937 the real interest rate is also moving above the growth rate, but this occurs in a context of economic depression (negative growth).

[9] The structural components of the GDP growth rate and of the real interest rate are computed using a Hodrick Prescott filter in order to neutralize the effects of the cyclical components.

The structural economic growth rate has itself different dynamics when we compare the three periods. Between 1890 and 1905, the growth rate is moderate (less than 2% on average) because this period includes the end of the Great Depression. Between 1931 and 1937, production decreased due to the crisis and the failure of competitive deflation policy adopted to address trade imbalances (lower prices and wages reduced domestic consumption and investment). The recession of 1931 to 1937 has contributed to the higher debt ratios observed in Figure 1. Though the economic growth is on average higher during the years 1984-2009, compared to the period from 1890 to 1905, the deviation from the real interest rate is more pronounced. This explains why the debt ratio increased between 1984 and 2009 while it remained stable in between 1890 and 1905.

INSERT FIGURE 5 ABOUT HERE

Figure 5 also shows two sub-periods with a positive gap between the GDP growth rate and the real interest rate. If we put aside the war years, the real GDP evolves above the real interest rate during the period 1920-1929 and from 1950 to the beginning 1980s. Both periods were characterized by a burst of growth. In 1950, production grew at an annual rate of 8.19% in 1956, 9.51% in 1960, 6% in 1966, 5.16% in 1970, 5.59% in 1975, etc. By comparison, the real GDP growth jumped at 20.27% in 1922, 11.97% in 1924, 4% in 1926, 8.88% in 1929.

To sum up, by crossing these observations with Figures 1 and 2, we can consider that not all kinds of economic growths lower the debt ratio. Historically, phases of reduction of public debt as a percentage of GDP coincided with periods of exceptional growth. This was the case between 1935 and 1939, the years following the Great Depression of the 1930s, during which the “Front Populaire” adopted measures to stimulate global demand and which resulted into a higher growth rate. This was also the case during the post-war reconstruction and between 1948 and 1973. These situations contrast with the period of the “Belle Époque”, between 1896 and 1913, where growth was positive, but the GDP growth rates were well below those observed in the years 1935-1939 and 1948-1973.

The role of primary surpluses

Figure 6 shows the comparative evolutions of the cyclical and structural fiscal balances[10]. A change in opposite directions, respectively in the same direction, often provides an early indication of pro-cyclical, respectively countercyclical fiscal policy, depending upon whether

[10] The structural component is computed using an HP filter.

a government neutralizes the cyclical changes of the primary balance caused by the business cycle. A striking feature in the figure is that apart from the war years, the two fiscal balances have often evolved in opposite directions, the few years they have varied in the same direction (being positive), corresponding to the period 1922-1926.

INSERT FIGURE 6 ABOUT HERE

In one case, the change in the opposite direction of the two balances reflects a situation in which discretionary public spending was used to stimulate the economy and boost growth, after a war, a sharp recession, by implementing major infrastructure projects (1910-1914, 1919-1922, 1936-1939, 1945-1949).

In another case, the change in the opposite direction of both the cyclical and structural primary balances reflects the orthodoxy of fiscal policy, with governments carrying out fiscal consolidation in good times (1900-1910, 1925-1935, 1950-1970). The standard example is that of the period 1925-1935. From the mid-1920s, the "ideology" advocating economic financial efforts to support the economy was popular in the economic policy circles. This was illustrated by the adoption of several measures of tax increases: the forced loan on capital in 1925 under the “Cartel des Gauches”, the mandatory renewal of maturing Treasury bills, the increase in 1926 of the tax on turnover. Even the Poincaré government greatly increased indirect taxes on consumption (drinks, transport) and established taxes on financial gains.

The figure shows that from the beginning 1980s, the structural primary balance is generally negative, whatever the sign of the cyclical balance. This reflects the fact that fiscal policy has been countercyclical during the economic downturns, but pro-cyclical during the expansive phases. This is one of the hallmarks of this period compared to the previous years. Whereas previously, fiscal policy appears to have been countercyclical, with deficits being dug in the low phases of the cycle, but reduced in high phases, this type of strategy seems to have changed since the beginning 1980s. This might explain why the debt ratio follows a stepwise evolution since then and why governments encounter difficulties in making it lower in good times.

5.- Scenarios of exit debt crisis in light of historical experiences

Can we learn from past history to consider strategies for reducing the ratio of public debt over the forthcoming years? Can we apply to future years a historical counterfactual: what

would happen if the historical conditions were realized today? One can consider three possible exit scenarios of the current debt crisis. The first would be a return to the situation that prevailed before the 2008 crisis, a period similar to the years of the "Belle Époque" between 1890 and 1913. The second would be a situation of sluggish growth, followed by a relapse, as was the case in the 1920s and 1930s. A third scenario would be characterized by an exceptional and unexpected economic recovery, as during the years from post World War II to the mid 1970s. In each case, what would be the right strategy of governments? Should we proceed like our predecessors, or would the context be different?

5.1.- First scenario : the economy goes back to the situation prevailing before the 2008 crisis

The situation would be similar to the years of the "Belle Époque" (between 1890 and 1913), with the difference that interest rates would be higher (between 1890 and 1914, interest rates had decreased importantly, which is not the case today). The similarity would be that the annual growth rates would be approximately around 2% to 3%, which is above the current 0% growth rates, but far below the 6%-8% observed after World War II. So, the situation would be that of a moderate growth rate.

Between 1890 and 1914, the most important policy makers were the central bankers, because they concern was monetary stability (under the regime of gold standard). Monetary credibility motivated fiscal policy characterized by a financial orthodoxy, loan to governments being considered only for exceptional expenses (at least, they were no longer to fund current spending in sharp contrast with what had been done by the constitutional monarchies and during the years of the Third Republic). Clearly, the fiscal objective was a balanced budget. As shown by Fontvieille (1976), the coverage rate of state spending was close to 100%.

Today, the objective of safeguarding the euro is present in many political speeches. It is in this context that reforms are being proposed in the conduct of fiscal policy: changing the rules of the Stability and Growth Pact, constitutional entrenchment of national fiscal rules, possible changes to EU treaties with a new Pact of Fiscal stability. For the first time since decades, French Governments plan to come back to a balanced budget within three to four years. As was the case during the "Belle Époque", current spending is diminished and the objective of fiscal policy is the reduction of long-term debt. But, unlike the period 1890-1913, the constraint on borrowing in future years may be stringer. At that time, most of the public debt

was held in the form of perpetual annuities by annuitants. It was therefore not subject to an immediate demand for repayment. Today, the public debt is held by the markets in which the actors are anonymous and whose mood and psychology is a component of fluctuating interest rates. The fundamentals are no longer necessarily the key elements that determine the interest rate spreads. Between 1895 and 1914, the debt ratio has declined because of the policy of fiscal consolidation, a common feature of the current stance of fiscal policy, but it worked because the other determinants of debt had changed. In particular, the nominal interest rates of government debt remained stable and close to the rate of GDP growth.

To the extent that, over the forthcoming years, the French economy would experience growth rates similar to those of the "Belle Époque" period (between 3% and 4% on average), the ability of a government to provoke a reversal in the upward trend of the debt ratio would not only depend on the credibility of fiscal policy, but also on exogenous factors related to the behavior of actors in the financial markets. That is the big different with what happened between 1890 and 1914.

5.2.- Second scenario : slow growth followed by a relapse of the economic activity

This scenario would take us back in the 1920s and 1930s. France dominated the global activity in some technological sectors, car and chemical industry, but was experiencing an industrial backwardness in other sectors due to low productivity, slow technical progress, and small domestic market. Economic policy was protectionist. On the fiscal side, the left and right had opposite approaches. According to some, it was necessary to increase taxes on capital gain and to reduce indirect taxes and income taxes. According to others, it was necessary to avoid increasing direct taxes. In any case, the first half of the 1920s was that of precarious balanced budgets and of tax increases.

If we attempt a comparison with the current period, we could find some common points First, France is facing competitors in the world, the emerging economies, and the current call to focus on products and services made in France can be interpreted as a desire to return to a form of disguised protectionism. In what concerns fiscal policy, as we already noted, governments aim at achieving fiscal balance, what motivates an offensive in the collection of taxes and spending cuts. In the 1920s, the policy of fiscal tightening resulted in surplus when Poincaré came to power. This fiscal discipline caused large capital inflows in 1928-1929. Today, the fiscal authorities expect the same phenomenon in two to three years in order to reduce the cost of public debt. Hence, their idea to build fiscal credibility by making fiscal

policy independent of governments (call for a national unity around issues of sustainability of public debt).

Moreover, one might consider that the conduct of a tight fiscal policy in the 1930s, in a context of sluggish growth, has enabled France to experience the Great Depression later than the other countries. Fiscal discipline advocated today also aims to avoid destabilization of the euro monetary disturbances that are harmful for economies. However, the late entry of France in the 1930s crisis was due to three factors. The first was the adoption of measures to support growth in 1928: rising public commissions in areas that were beginning to falter, notably construction and steel industries, establishment of social insurance in 1928; free of secondary education; laws on family allowances in 1931, agricultural price supports. The second factor was the Poincaré devaluation that helped boost exports through greater price competitiveness. A third factor is often overlooked. In 1929, the tax structure has changed: the tax burden on business profits declined, while wages continued to be heavily taxed. However, the global context of crisis did not prevent France from being affected in turn, beginning in 1931, ending the slow growth of the 1920s, despite its tight fiscal policy.

If this were to happen today, we would observe differences compared with what happened at that time. First, the digging of new budget deficits would be less instantaneous than was the case because of the moratorium on the settlement of war reparations by Germany. The problem is that these benefits were included in the budget, and expenditures voted accordingly. Secondly, in 1931, the United Kingdom was the largest trading partner of France. The economic crisis and the negative impact on the budget had as main cause the devaluation of the Sterling. Today's major trading partners of France belong to the euro area. The risk is more from the emerging economies if their governments launched into policies of competitive devaluations.

However, in case of relapse, some discussion of fiscal policy would inevitably resurface, as in the 1930s. First, at the time, governments chose, initially, to respond to the crisis by deflation with a focus on business competitiveness. As Keynes explained, it was a mistake in a context where demand played an increasingly important part in growth. The choice of supply policies is again as the forefront of the recent policy debates. For example, recent developments of the rules of the Stability and Growth Pact put forward measures of internal deflation as support for more stringent fiscal policies (they are presented as structural measures to reduce production costs and to restore competitiveness savings). Nevertheless, internal deflation can have unwanted effects, especially if it results in reduced profit margins, if wages fall faster than prices, and if prolonged.

Another issue during the 1930s was that fiscal policy should be used to fight against deflation. The response was a reduction in public spending (in 3 years, there were no fewer than 14 plans cuts in public spending) and tax increases. One of the key measures was the reduction by 10% of salaries, pensions, annuities and rents by Laval. These decisions were accompanied by protectionist measures to protected French industry. One characteristic of this period was a commitment to balanced budgets intended to "restore confidence" (that was the expression used) under the regime of gold standard ardently desired by France but challenged by a large number of countries in Europe. This policy failed for several reasons. The United Kingdom and the United States devalued their currency, the gold bloc disintegrated in 1935 with the devaluation of the Belgian Franc and the refusal of other European countries to join the gold bloc. Especially, fiscal restraint led to a decline in revenues and widened the budget deficit. What can be learned from this period is that we have no historical examples of fiscal consolidations in France whose effects have been expansionary. Thinking that an economy could recover its growth on the basis of a return to budget surpluses that would have boosted the confidence of markets does not seem an experience confirmed by historical observation, particularly in a context of weak growth.

5.3.- Third scenario : strong economic growth

It would, undoubtedly, be the most favorable scenario for converting the current budget deficits into surpluses. Comparing with the past, this scenario corresponds to the period 1948-1973. In the favorable scenario for growth as strong as during the post-war boom, a strategy to reduce the ratio of the French public debt could be the following. The governments could pursue a countercyclical taking advantage of the good times to reduce discretionary spending. This raises a question: how would this been done? Should we necessarily tie the hands of governments by imposing this through new fiscal laws? Or can we expect self-discipline? These issues are usually discussed in the field of political economy of public finances (see for example, Winer and Hetish (2004)). It seems that European countries (including France) have tended to adopt pro-cyclical policies in the past during phases of high economic cycle. Turrini (2008) shows that pro-cyclical bias is due to adjustments on the expenditure side. Candelon et al. (2009) show that this bias was even more important in those economies facing supply constraints. So, these works motivate the choice of rules. One might nevertheless criticize this view, arguing several arguments. The first is that the establishment of rules does not guarantee that governments do not deviate. The past difficulties of the Stability and growth

Pact is an illustration. Furthermore, the imposition of rules raises the question of democratic legitimacy, a point made today by those who oppose the proposed constitution for the golden rule or hardening of the Pact rules.

6.- Conclusion

In view of the preceding arguments, it appears that the ability of governments to curb the upward trend of the public debt ratio was, historically, due to two kinds of factors. The first factor is “luck”, namely an exceptional and unexpected GDP growth rate well above the real interest rate. In this respect, what happened from the end of World War II to the mid-1970s is a good illustration, just as is the rebound in activity following the long depression of the 1930s. The second type of factors is directly related to fiscal policy. There is no historical evidence that fiscal consolidation per-se allowed debt to decline. The decrease in debt was rather possible due to a consistent countercyclical fiscal policy until the early 1980s. Since 1980, we note that governments have not taken advantage of the phases of improvement of the economic activity to reduce their budget deficits.

Can we use the past as a counterfactual experiment to consider scenarios of exit crisis of public debt? Yes and no. In case of a future rebound of the economic growth rate at levels observed before the onset of the 2008 crisis, we would be in a situation reminiscent of the years of the “Belle Époque” before World War I, except that today the public debt is no longer owned by annuitants. Therefore, an uncertainty would weigh on the evolution of interest rates. The worst scenario would be that of the 1930s, a vicious cycle of prolonged depression and a debt ratio that grows even more. The debates of that time might then reappear on the tradeoff between supply-side policies and demand-side to solve the debt crisis. Finally, the best scenario would be that the thirty glorious years, but this time we would be totally dependent on economic growth.

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Figure 1. French public debt ratio between 1890 and 2009

Left panel : whole period – Right panel : with times of war dropped

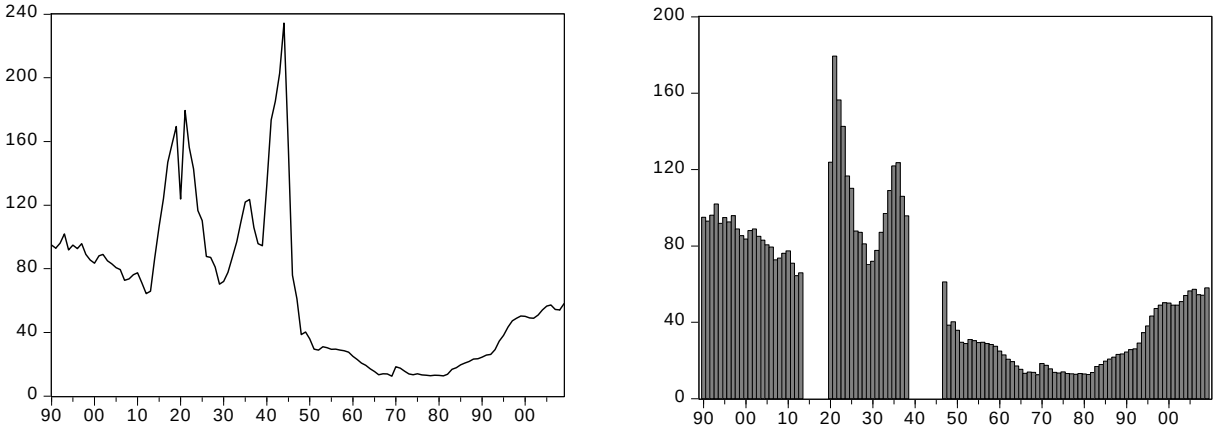


Figure 4. Debt ratio and inflation rate

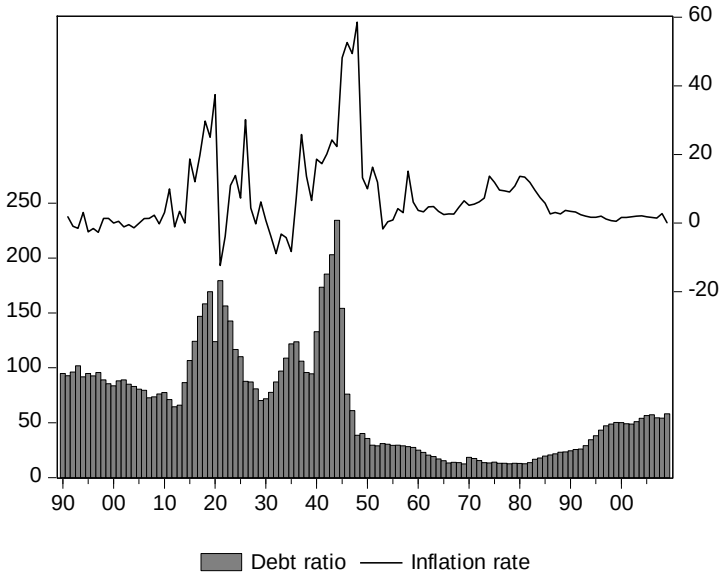


Figure 5. Gap between the GDP growth rate and the real interest rate

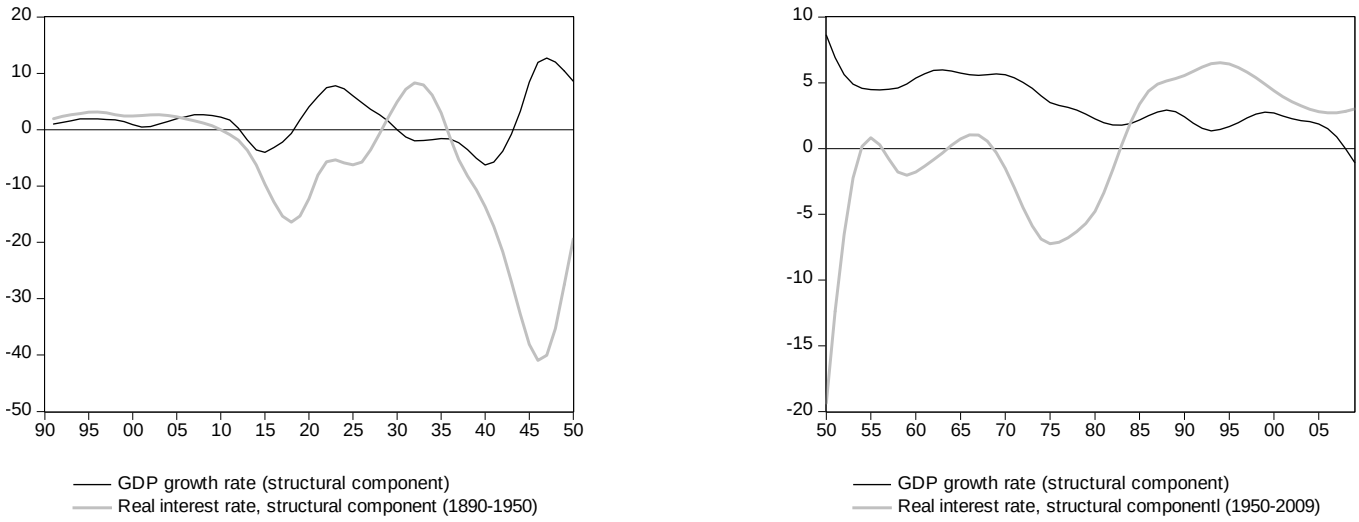


Figure 9. Cyclical and structural primary surplus

Solid line: cyclical, Shaded graph: structural

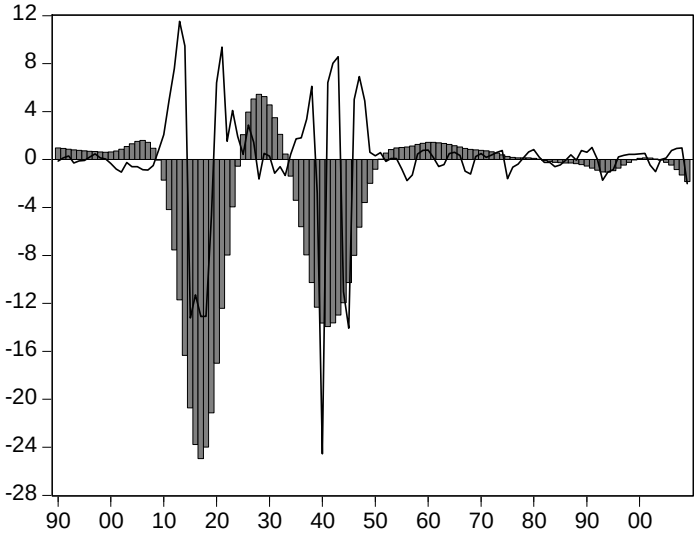


Figure 2. – Estimated smoothed probabilities of regime 1 and debt ratio determinants: 1890-1949

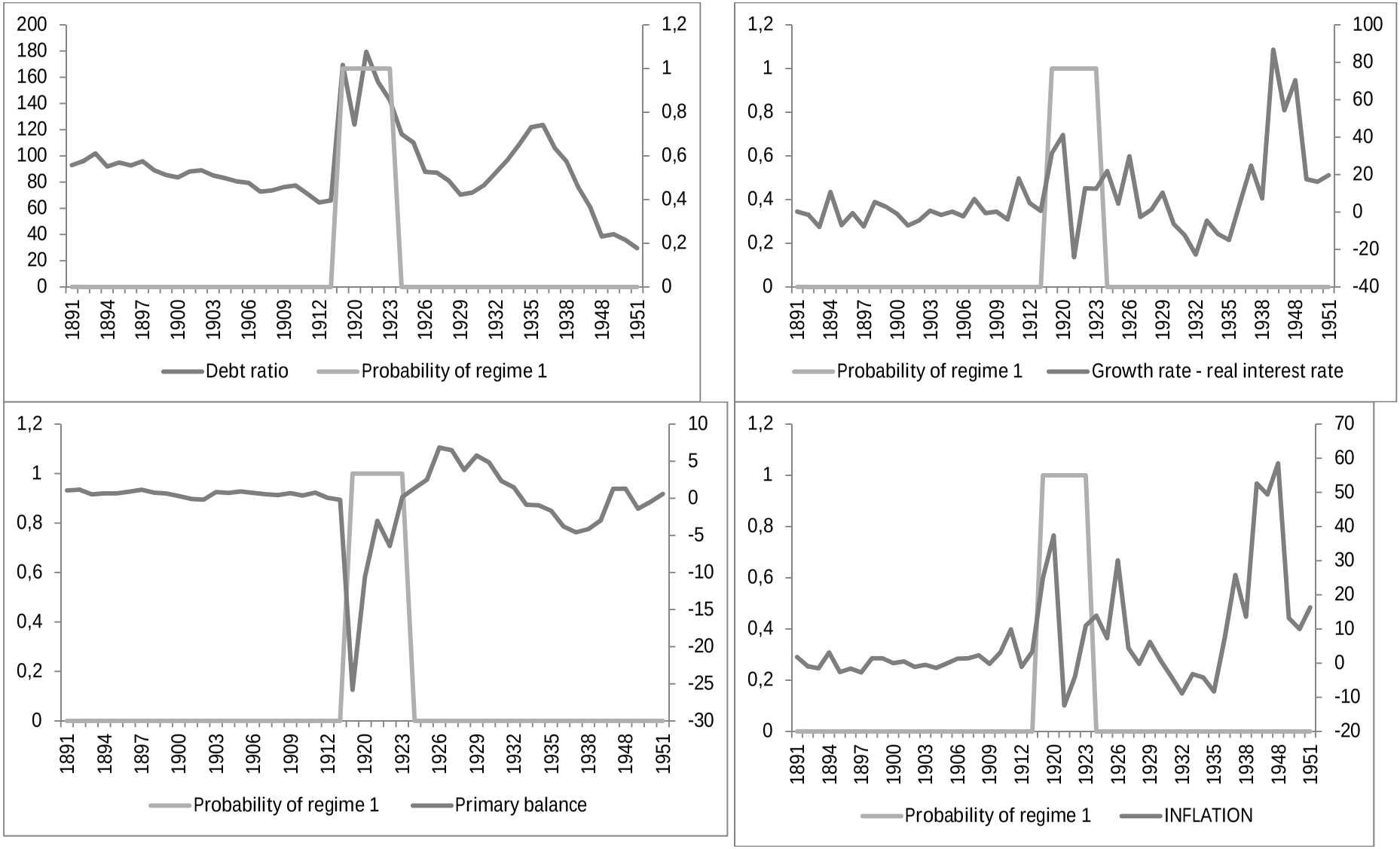
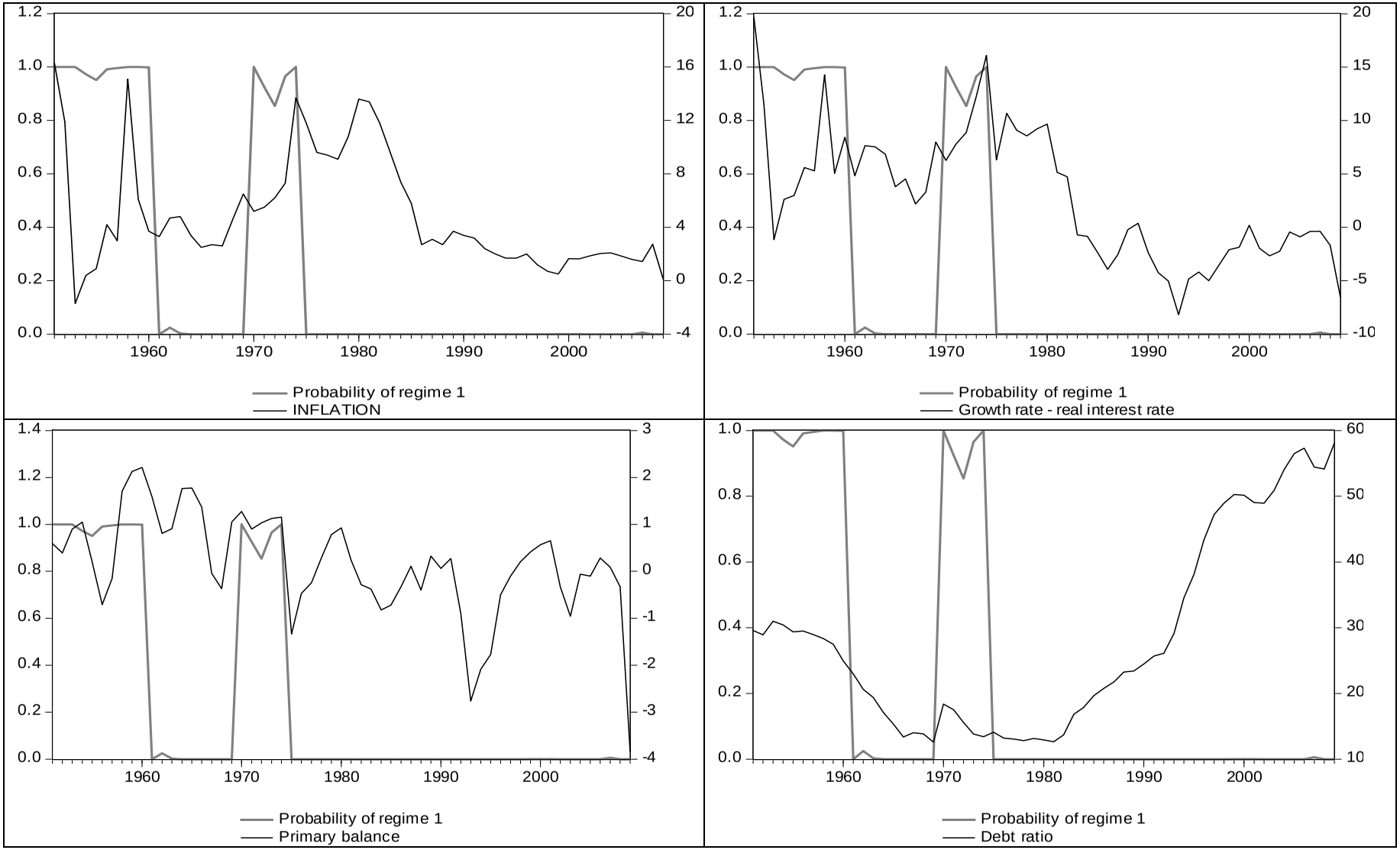


Figure 3. – Estimated smoothed probabilities of regime 1 and debt ratio determinants: 1950-2009



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