Partisanship, corporatism, and economic performance*

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Abstract. This article investigates the consequences on economic performance of the interplay among several political and economic institutions. Our aim is to link the partisan approach with the macroeconomic theory of trade unions. First, by using a simple setup, we are interesting in the comparative effects of left- and right-wing government performance. Second, we aim to analyze the relationship between these effects and different structures of the labor market.

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1. Introduction

Starting from the observation that both the performance and the industrial relation systems of OECD countries exhibit great differences, the recent economic literature on the inflation-employment performance has underlined the interrelation between the policymakers' actions and several aspects associated with the industrial relation system. The different institutional contexts, in which the monetary authorities act, seem able to explain a large part of the different macroeconomic performances of the OECD countries and their reactions to the large shocks (see, among others, Bean, 1994; Nickell and Layard, 1999; and Blanchard and Wolfers, 2000). In particular, the recent literature emphasizes the role played by three kinds of institutions: labor market structure, political effects, and corporatism.

Empirical studies show that different partisan alternatives lead, under different setting of the domestic economy, to a different performance. In other words, left-wing governments achieve a better performance in terms of growth, inflation, and unemployment in countries where there are strong and centralized unions. Right-wing governments achieve a better result when labor movements are weak. However, the economic performance is worse in countries where there is a divergence between winning parties and labor market structures (Alvarez *et al.*, 1991).

The strong link between policy objectives and government ideologies is also stressed by Saint-Paul (1998) who analyzed 40 changes in European employment-protection legislation since 1960. He classified each one according to whether it was a step towards or away from more job protection; and according to whether it affected all workers or just a specific group. Not at all surprising, ideology played a part: across-

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the-board reforms tended to happen under right-wing governments just as targeted increases in protection were associated with left-wing governments (similar studies are collected in Alesina *et. al*, 1997). The strong relation between political ideologies and the industrial relations system is also underlined by Oatley (1999), Detken and Gärtner (1994), and Franzese (1999) on both theoretical and empirical grounds.

Apart from political considerations, according to the well-known humped-shaped relationship—first introduced by Calmfors and Driffill (1988)—a large amount of research is also based on the observation that highly centralized and decentralized wage-systems seem to have been consistent with good macroeconomic performance (e.g., Calmfors and Driffill, 1988; Rowthorn, 1992). Recent contributions place the Calmfors and Driffill's relationship in an analytical context that is coherent with the microeconomic theory of trade unions and with its policy game extensions (Skott 1997; Cukierman and Lippi, 1999; Guzzo and Velasco, 1999). Results of this strand are not robust, since they hold only if unions are sufficiently inflation averse. Moreover, by introducing monopolistic competition in the good market, Coricelli *et al*. (2000) find a linear instead of a humped-shaped relationship. The relation has been also challenged by empirical studies that show its instability (see e.g. Fabiani *et al*., 1997; OECD, 1997; or Appelbaum and Schettkat, 1996).

In a different view, Soskice (1990) argues that the Calmfors and Driffill's hump-shaped relationship may derive from two separate factors: coordination and unions' strength. These factors have a negative and a positive effect on the performance, respectively. These factors are generally, but not always, correlated with centralization. This view of Calmfors and Driffill's hump-shaped relationship is in line with that proposed, among others, by Layard *et al.* (1991) and Bleaney (1996), who also provides some empirical evidence. Moreover, the same Calmfors (1993) has shown that the several facets of a bargaining system may not be easily synthesized by a single variable meant to measure the degree of centralization. For instance, decentralized bargaining units may be strongly coordinated through guidelines set at a central level, while formally centralized systems may have mixed features deriving from the effects of widespread wage drift and plant level bargaining.

The above definition of cooperation extended to all the social groups seems also to have inspired the recent policies of some European countries, which have characterized by a trend for the social partners to become more actively involved in the formulation of economic policy both at the national and European levels. At the national, regional and company levels social partner organizations have become more and more involved in drawing up employment pacts aimed at safeguarding or creating employment. These pacts seem to have a positive effect on the economic performance (see Traxler and Kittel, 2000; and Rhodes, 2001).

The aim of this article is to build a general model compatible with some of the above empirical stylized facts shown, among others, by Soskice (1990), Alvarez *et al.* (1991), Appelbaum and Schettkat (1996), Oatley (1999), and Rhodes (2001). Our claim is that political, economic, and institutional features of the industrial relation systems are strongly inter-related, and therefore, they cannot be separately analyzed without a high risk of misunderstanding their effects on the economic performance.

In particular, this article investigates the consequences of the interplay among several political and economic institutions on economic performance. We aim to link the partisan approach with the macroeconomic theory of trade unions, which makes endogenous the Barro-Gordon inflation bias and the natural level of employment in a

unionized economy. More in detail, by using a simple setup, first, we are interesting in the comparative effects of left and right-wing governments on the performance. Second, we aim to analyze the relationship between these effects and different structures of the labor market.

The article is organized as follows. Section 2 outlines the model. Section 3 closely examines and discusses the institutional setting structure. Section 4 solves the model. Section 5 analyses partisanship. Section 6 analyses corporatism. Section 7 analyses various hump-shaped relationships among variables related to the industrial relations. Section 8 provides concluding remarks.

2. The Basic Model

Four agents (central bank, government, unions, and firms) operate in a closed economy. The central bank sets nominal money supply. Firms maximize profit. The central bank influences the aggregate demand by monetary policy. Nominal wages are set by the interaction between monopoly unions and the government.[1] Firms determine employment by the labor demand constraint.[2]

Preference functions of central bank, government and unions are the following:

$$V = \frac{1}{2} E_{-1}\left[-\beta\left(\pi - \pi_B\right)^2 - \left(y - y_B\right)^2\right] \qquad [1]$$

$$G = \frac{1}{2} E_{-1}\left[-\gamma\left(\pi - \pi_G\right)^2 - \left(y - y_G\right)^2\right] \qquad [2]$$

$$U = E_{-1}\left[\alpha\left(w - p\right) - \frac{1}{2}\left(y - y_U\right)^2\right] \qquad [3]$$

where E_{-1} is the expectation operator (i.e. the pre-shocks expectation); π is the inflation rate, defined as $(p–p_{-1})$; y is the real output (employment) level; π_B and π_G are the inflation rates desired by the central bank and by the government; $(w–p)$ represents the real wage (equal to the nominal wage less the price level); y_B, y_U and y_G are the central bank's, unions' and government's desired real output levels.

In the literature β is often called the central bank's degree of conservativeness, which can be considered a central bank's independence index (Cukierman and Lippi, 1999). Parameter α is an index of the distortion of labor market as it measures the importance of the wage premium for the unions, which mainly depends on the reservation wage (therefore, e.g., from the unemployment benefits).

The economy is synthesized in equations [4] and [5].[3]

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[1] The government participates to nominal wage determination in many ways. There are specific tools that the government can use to affect the outcome of collective bargaining, e.g. compulsory mediation of labor market disputes, public employment or taxation. In addition, it may control the bargaining power of labor unions by making easy or hard unions' formation. See Blanchard and Giavazzi (2001) and Palokangas (2002). On the importance of including the government in wage negotiation, see also Bruno and Sachs (1985), Calmfors and Driffill (1988), and Pekkarinen *et al.* (1992).

[2] The introduction of right to manage assumption complicates the algebra of the model but do not substantially alter its results. By contrast, the relevant assumption is the possibility that the government influence nominal wages because this assumption implies the non-neutrality of the monetary policy. See Acocella and Di Bartolomeo (2003) for a full discussion.

[3] The economic structure is taken from Cubitt (1992, 1995).

$$p = w + \frac{y}{\eta} + \varepsilon \qquad [4]$$

$$y = m - p + \nu \qquad [5]$$

Equation [4] represents the aggregate supply with real wage elasticity equal to η; $\varepsilon \sim iid\ (0, \sigma_\varepsilon)$ is a production shock. Equation [5] represents the aggregate demand where the real money supply elasticity is equal to one; $\nu \sim iid\ (0, \sigma_\nu)$ is a demand white noise term (i.e. the velocity shock).

Notice that since there is an inverse relationship between the real wage and output equation [3] implies that the desired expected output target for the union is:

$$E_{-1}(y) = y_U - \frac{\alpha}{\eta} \qquad [6]$$

Equation [6] is obtained by simply maximizing equation [3] subject to the labor demand constraint [4]. We will refer to equation [6] as the (expected) output desired by the unions.[4]

3. Institutional Settings

We assume that government and unions bargain the nominal wage.[5] The bargaining process is usually complex. Nevertheless, its results can be easily circumvented by assuming that the two players maximize a common utility function, which is a linear convex combination of the logarithms of their respective utility functions.[6] We have, however, chosen this specification to generalize the results of Detken and Gärtner (1994), Gylfason and Lindbeck (1994), Cubitt (1995), and Acocella and Ciccarone (1997), which can be easily derived as particular case of a bargaining procedure used by us (see, e.g., Sections 6 and 7, and below).

We assume the weight associated with the unions in the bargaining equals its economic power, determined by the labor market forces, discounted by some factors that take account of political and social relationships between unions and the government.

The union power in wage-bargaining varies across countries and time. It depends on historical, social and cultural factors that are reflected in the economic conditions under which unions operate. We capture it by an exogenous parameter σ. According to Naylor and Raaum (1993) and Corneo (1997) unions' bargaining power can be seen as an increasing function of the membership. Therefore, a possible economic interpretation of σ is to consider it as an element of wages-bargaining centralization, and refer to it as "degree of unionization." We follow this interpretation.

As said, the degree of unionization is discounted by the political influence of political system on unions' behavior (Φ), and the degree of corporatism (Σ). Hence, formally the government's bargaining power, δ, can be expressed as.

$$\delta = 1 - (1 - \Sigma)(1 - \Phi)\sigma \qquad [7]$$

[4] See Acocella and Di Bartolomeo (2002) for a full discussion.

[5] A next task of our research is to formalize the wage bargaining between the government and unions by introducing taxation. See however footnote 1.

[6] Notice, however, that the described *bargaining technology* does not strictly represent a Nash bargaining solution.

The reader should note that we use different discount factors (unless their effects on the model are the same) because they capture different aspects of the bargain process and, therefore, imply different consequences.[7] More in detail, Σ and Φ can be interpreted as follows.

Parameter Σ represents the *degree of corporatism*. It is an index of cooperation in line with Cubitt's CORP1-3 definitions (see Cubitt, 1995: 249). Remark that, according to Tarantelli (1986) and Soskice (1990), we are implicitly assuming that corporatism has a monotonic effect on government's performance. In spite of that, in Section 9 we will show how hump-shaped curves in Calmfors and Driffill's style can also be derived.

Parameter Φ represents the political influence of the government on unions, which is, according to Detken and Gärtner (1994), linked to the *ideological animus* of the unions. The implicit assumption is that the unions' members, or their leaders, are left-wing party supporters. When a right-wing party wins the election, we set the political influence parameter equal to zero. Hence we restrict our attention on positive partisanship. Detken and Gärtner (1994) also investigate the possibility of negative Φ, when a right-wing party wins the election.

4. Game Solution

The monetary authority plays at the same time as the wage are negotiated. Preference function of the central bank [1] is maximized with respect to the nominal money supply subject to the reduced form of the model [4] and [5]. Corresponding central bank's optimal wage-contingent policy rule is:

$$m = -\frac{\beta-\eta}{\beta+\eta^2}\eta w + \frac{1+\eta}{\beta+\eta^2}\left(\eta y_B + \beta p_B\right) \qquad [8]$$

The bargaining between unions and the government is expressed by a maximization of a linear convex combination of the logarithms of the preference functions of the government and unions subject to the reduced form of the model [4] and [5]:[8]

$$\max_w E_{-1}\left\{\delta \ln\left[-\frac{\gamma}{2}\left(\pi-\pi_G\right)^2 - \frac{1}{2}\left(y-y_G\right)^2\right] + \left(1-\delta\right)\ln\left[\alpha\left(w-p\right) - \frac{1}{2}\left(y-y_U\right)^2\right]\right\} \qquad [9]$$

From the above expression, the nominal wage contingent to *m* can be obtained as:

$$w = \frac{\eta-\delta\gamma}{1+\delta\gamma}\frac{m}{\eta} - \frac{1+\eta}{1+\delta\gamma}\left[\delta\left(y_G-\gamma p_G\right) + \left(1-\delta\right)\left(y_U-\alpha\eta^{-1}\right)\right] \qquad [10]$$

By solving the two-equation system [9] and [10], we obtain the controls equilibrium values:

$$w^N = \left(\eta-\delta\gamma\right)\frac{y_B+\beta\eta^{-1}p_B}{\beta+\delta\eta\gamma} - \left(\beta+\eta^2\right)\frac{\delta\left(y_G-\gamma p_G\right)+\left(1-\delta\right)\left(y_U-\alpha\eta^{-1}\right)}{\eta\left(\beta+\delta\eta\gamma\right)} \qquad [11]$$

[7] To avoid confusion, it should be noted that, in this paper, the discount factors are not inter-temporal discounts, but static discounts, i.e. *x-discount* indicates the reduction (increase) in unions' (government's) bargaining power according to *x-reason*.

[8] The two players determine nominal wage that is a common control variable. Possible losses in the bargain (e.g., caused by the duration of workers' strikes) are implicitly discounted in the bargaining power index.

$$m^N = (\delta\gamma - \eta)\frac{y_B + \beta\eta^{-1}p_B}{\beta + \delta\eta\gamma} - (\beta + \eta^2)\frac{\delta(y_G - \gamma p_G) + (1-\delta)(y_U - \alpha\eta^{-1})}{\eta(\beta + \delta\eta\gamma)} \qquad [12]$$

Finally, we derive the equilibrium values for output and inflation by substituting equations [11] and [12] in the reduced form.

$$y^N = \frac{\delta\eta\gamma y_B + \beta\left[\delta y_G + (1-\delta)(y_U - \alpha\eta^{-1})\right]}{\beta + \delta\eta\gamma} + \frac{\beta\delta\gamma(\pi_B - \pi_G)}{\beta + \delta\eta\gamma} + \frac{\eta(\nu - \varepsilon)}{1+\eta} \qquad [13]$$

$$\pi^N = \frac{\beta\pi_B + \delta\eta\gamma\pi_G}{\beta + \delta\eta\gamma} + \frac{y_B - \left[\delta y_G + (1-\delta)(y_U - \alpha\eta^{-1})\right]}{\beta + \delta\eta\gamma} + \frac{\nu + \eta\varepsilon}{1+\eta} \qquad [14]$$

The Nash equilibrium employment [13] is equal to the sum of three terms. The first term is the weighted average between the two macro-players' output targets, where the weights are the players' inflation-aversions (notice that the government's aversion is always discounted by its bargaining power). The second term is the central bank and government's desired inflation difference multiplied by a factor, which is a measure of the players' inflation aversions. The third term is a linear combination of the demand and supply shocks.

Similarly, equilibrium inflation is also equal to the sum of three terms: the weighted average between the desired inflation levels, the difference between the optimal output levels multiplied by an inflation-aversion factor and a linear combination of the shocks. The more the players are inflation-averse, the less relevant in inflation determination the second term of equation [14] is.[9]

The meaning of the results is clear. When government is introduced in a unions-central bank game, unions are no longer able to impose their optimal output level as it occurs in the Barro-Gordon standard games.[10] Therefore, the equilibrium output depends on all the players bargaining powers and desired targets. Monetary policy is no longer neutral since increases in the inflation aversion reduce the inflation bias but also affect the employment as well as change in the monetary authority or government targets. We will closely analyze the economic sense of our results in the following sections.

5. Partisanship and Economic Performance

This section introduces the Alesina-Hibbs' partisanship hypothesis, which implies that government's political orientation may be different according to the nature of the political party in office. Political parties can have a right- or left-wing attitude in the sense we are going to specify.

We introduce the following assumptions:

(a) Right- and left-wing parties have different opportunity costs of low inflation in terms of employment. We assume that a left-wing government is more averse to the

[9] Notice that without unions (δ = 1) the game collapses in a traditional coordination problem between the central bank and government (see Andersen and Schneider, 1985). By contrast, when the unions are really monopolists (δ = 0), the game is the same presented by Acocella and Ciccarone (1997). As said, our framework nests different models.

[10] See Acocella and Di Bartolomeo (2002) and Acocella *et al*. (2003) for a full discussion.

utility losses caused by unemployment. We suppose that a right-wing government is more averse to the utility losses caused by an inflation rise. See Hibbs (1977).

(b) The central bank is more averse to the utility losses caused by inflation than the government (right- or left-wing).

(c) The bliss points of the central bank and of the government (right- or left-wing) are full employment and zero inflation; unions care about real wage and desire full employment.[11]

(d) Corporatism (or political exchange) is not considered. This implies $\Sigma = 0$. We will remove this assumption in the next Section.

(e) Shocks are not considered and the output elasticity of the real wage is set equal to one. These assumptions are only introduced for the sake of exposition. The reader should only note that the assumption $\eta = 1$ guarantees that we are always considering a stable solution, without this assumption the equilibrium could be unstable (see Di Bartolomeo and Pauwels, 2002).

Given the above assumptions, the preference functions of the central bank and right- (left-) wing government only diverge for their marginal substitution rate between inflation and unemployment. From assumptions (a) and (b) we obtain that the central bank is more inflation-averse than the right-wing government, and that the right-wing government is more inflation-averse than the left-wing government. Therefore, the inequalities $\beta > \gamma^R > \gamma^L$ hold (superscripts identify right and left governments).

Equations [13] and [14] becomes:

$$y^{NN} = \bar{y} - \left(\frac{\beta(1-\delta)}{\beta + \delta\gamma^i} \right) \frac{\alpha}{2} \qquad i \in \{R,L\} \qquad [15]$$

$$\pi^{NN} = \left(\frac{1-\delta}{\beta + \delta\gamma^i} \right) \frac{\alpha}{2} \qquad i \in \{R,L\} \qquad [16]$$

where $\bar{y}$ is the full employment output. Equations [15] and [16] now describe output and inflation under two political alternatives.

First, notice that, when a non-partisan monopolist union is assumed (i.e. the government has not any bargaining power), we obtain the standard result of policy neutrality that is already largely discussed and considered in Gylfason and Lindbeck (1994) and Acocella and Ciccarone (1997). Furthermore, when a non-partisan monopoly union is assumed the Rogoff's standard proposition holds (i.e. the higher the central bank's conservativeness is, the lower the inflation rate is). However, when, in line with Detken and Gärtner (1994), rational-partisan monopolist unions are assumed (i.e. $\sigma = 1$, but $\Phi \neq 0$), monetary policy is no longer neutral since $\delta \neq 0$.

Second, if unions are not monopolists, neutrality vanishes. In general terms (i.e. without specifying the government nature), if the government's bargaining power *ceteris paribus* increases, employment arises and inflation decreases. The positive effect on employment occurs because the government's optimal level is higher than that of unions, since the government does not take account of the real wages. Therefore, the lower the unions bargaining power is, the higher employment is. The positive effect on inflation occurs because the higher the employment level that

[11] We introduce these assumptions only as exposition devices.

government-unions follows, the lower the inflation bias is. This is because the inflation bias is the cost that unions impose on the central bank's willingness to reach full employment by an inflationary policy. Then, the more the economy nears full employment, the lower the central bank's willingness to inflate the real wage becomes. The same holds when government's inflation-aversion rises. A rise in the unions' preference for the real wage has the negative effect on inflation and employment. Furthermore, the Rogoff's proposition holds in the following terms: the higher the central bank's conservativeness is, the lower (higher) inflation (output) is.

The above results are summarized in table 1, which can be easily derived by differentiation of equations [15] and [16].

Around here table 1

Table 1 also reports the effects of parameter changes in terms of performance in the following sense. In comparative static analysis, when the effects of preference parameters are clear and opposite in inflation and output determination, we can generally speak of performance (or social performance) meaning any social loss function that decreases in unemployment and inflation (see Cubitt, 1995: 249-50). According to the above view, e.g., we can state that, *ceteris paribus*, the higher the government's inflation-aversion is, the higher the performance is. By contrast, the effects of increases of the degree of conservativeness cannot be analyzed in terms of the social performance above described without specifying it since higher levels of central bank's inflation-aversion imply lower inflation but lower employment

When government's nature is introduced, by comparing both [15] and [16] for $i \in \{R, L\}$ (i.e. $y^L - y^R > 0$ and $\pi^L - \pi^R < 0$) it is easy to check that the best (worst) performance of a left- (right-) wing governments is driven, in both cases, by the following condition (crossing condition, henceforth):[12]

$$\sigma > \frac{\left(\gamma^R - \gamma^L\right) - \Phi\left(\beta + \gamma^R\right)}{\left(1 - \Phi\right)\left(\gamma^R - \gamma^L\right)} \qquad [17]$$

Since the condition is the same for the best (worst) performance in terms of both employment and inflation, we can again talk of social performance.

The crossing condition synthesizes two different forces.

i) The left-wing government tends to achieve a better performance since its bargaining power is always higher than that of a right-wing government because of the unions' partisanship. This effect depends on the existence of a positive bargaining power difference between left- and right-wing governments (i.e. $\delta^L - \delta^R > 0$). We refer to this effect as left-wing effect (LWE, henceforth).

ii) The right-wing government tends to achieve a better performance since its inflation-aversion is higher than that of the left-wing government. Thus this effect depends on the existence of a positive inflation-aversions difference between right- and left-wing governments (i.e. $\gamma^R - \gamma^L > 0$). We refer to this effect as right-wing effect (RWE, henceforth).

[12] We derive the condition of the best (worst) performance for a left- (right-) wing government just for an expositional reason. It is clear that is exactly equivalent to derive the best (worst) performance condition for a right- (left-) wing government by inverting the above inequality.

The RWE and LWE are not symmetric. The LWE is decreasing in the bargaining power of the union since the governments' bargaining powers difference is a constant fraction of the unions' bargaining power. By contrast, the RWE is unaffected by changes in the degree of centralization. Hence the crossing condition will be more likely to be satisfied when the unions' bargaining power is high.

We can draw a generic performance curve by considering different degree of unionization for both left- and right-wing governments. Both curves are decreasing in the degree of unionization, but they are associated with different shapes. The right-wing government's performance curve tends to be steeper than that of the left-wing government. Moreover, the higher is the inflation-aversion difference, the higher is the right-wing initial performance. The higher is the unions' partisanship, the higher is the left-wing final performance.

In graphical terms, the above sentence is represented in figure 1(a) where the *LL* and *RR* curves represent the performance curves of left-wing and right-wing governments, respectively. Curves are convex because as the degree of unionization decreases, the central bank's preference (zero inflation and full employment) becomes more important than the joint preference of unions and government. However, curves can be also linear or concave depending on the unknown function of welfare, but for any welfare function equation [17] holds with equality in point B. On the left of point B, the right-wing performance is higher than that of the left-wing government; and on the right of B, the contrary occurs.

Around here figure 1

In other words, left-wing governments achieve a better economic performance than those of right-wing governments in countries where large workers' associations are present. Right-wing governments obtain better results than those of left-wing governments in countries with weak unions. Notice that performance curves are not defined in $\delta = 1$ (see the footnote 15).

6. Corporatism

Let us insert corporatism into our model by removing assumption (d). We show the effect of corporatism on crossing condition in Figure 1(b) and 2.

In figure 1(b), an increase in the degree of corporatism shifts the performance curves of both parties upward, respectively, leading the crossing condition far from the y-axis.

The performance curve of the left-wing government shifts from *LL* to L_1L_1 while the right-wing one moves from *RR* to R_1R_1. Hence, point E represents the new crossing point where the degree of unionization is higher than that at the initial point B.

The crossing condition then becomes:

$$\sigma > \frac{\left(\gamma^R - \gamma^L\right) - \Phi\left(\beta + \gamma^R\right)}{\left(1-\Phi\right)\left(1-\Sigma\right)\left(\gamma^R - \gamma^L\right)} \qquad [18]$$

Now equation [18] is, for a left-wing government, more restrictive than [17]. Therefore, in a corporatist system, a left-wing government needs a higher degree of unionization to achieve a better economic performance than in a non-corporatist one. This occurs because a rise in the degree of corporatism has the same effect of as a

reduction in the degree of unionization.[13] Therefore, it is positive for both left and right governments, but the government with a preference function closer to that of the central bank (which is the right government by assumption) tends to gain more.

Figure 2 shows the relationship between corporatism and government's performance. An increase in the degree of corporatism allows, *ceteris paribus*, the government (right or left) to achieve a better performance. However, a right-wing government gains more than a left-wing government. The right-wing government's performance curve (DA) has a stepper slope than that of left-wing government (CB) for the reasons discussed above.

Around here Figure 2

Notice again that the right-wing government's performance curve could cross the performance curve of the left-wing party outside of the domain of Σ. If the curves cross for a value of Σ greater than one, a right-wing government could never achieve a better economic performance than a left-wing government, but our propositions still hold.

The results of this section show that corporatism is crucial in the interpretation of economic performance. However, it is not correct to reckon that the government can fine-tune performance by varying the degree of corporatism for the following reasons.

i) No precise account of the determination of the corporatism has been given here. There is no suggestion that the degree of corporatism is a policy variable under the control of the government.

ii) In addition, if we suppose that the government can influence the degree of corporatism by law, this policy will be strongly opposed by a non-government party, or by the same government when it allows the opposition-party to achieve a possible future better performance.

iii) Like most policy games, our investigation is based on a static model. It contains no account of disequilibrium dynamics that might be important in the short-run analysis.

Our aim only is, however, to underline the complexity of the institutional analysis and the relevance of considering their interplay. The lack of the account for the institutional interaction may, in fact, leads to misunderstand the economic determinants of the performance as we will show in the next Section.

7. Hump-Shaped Relationships

Our results can be interpreted in various ways. In the previous section, we implicitly interpret them as a prediction of difference in performance of a given country under different governments and/or labor market structures. Results can be also seen as a prediction of difference in countries in which the degree of corporatism, unionization, partisanship and the *color* of the government changes exogenously. In this context of multi-country comparison, a left-wing government is just a government supported by a partisan union, whereas a right-wing government is one with a high degree of

[13] Because it affects the differential between right-left wing governments' power markets, i.e. $(\delta^R - \delta^L)$, and not the differential between right-left wing governments' anti-inflationary preferences, i.e. $(\gamma^R - \gamma^L)$.

inflation-aversion. In Figure 3, we draw two hump-shaped relationships derived from our model.

Around here Figure 3

Figure 3(a) underlines the difference in the unions' bargaining power by analyzing the influence of institutional setting on corporatism. *LL* is the performance curve associated with a low degree of unionization (σ_1) and *HH* is the performance curve associated with a high degree of unionization (σ_2).[14] Therefore, points A, B, C, and D represent an example of different combinations between the degrees of corporatism and of unionization on economic performance.

A high corporatist system (point D) can achieve a better performance than low less unionized corporatist systems can (point B and C). In addition, a weakly unionized and corporatist system (point A) may obtain better economic performance than more corporatist and unionized systems (point B and C).

In figure 3(a), different degrees of unionization allow a hump-shaped relationship between corporatism and economic performance. Observe, however, that Calmfors and Driffill (1988) consider centralization instead of corporatism. The centralization of wage bargaining does not necessarily imply cooperation. Nevertheless, the adoption of a high employment target and/or the consideration of inflationary consequences of their action by the representatives of organized labor are sometimes seen as implications of centralization (see Cubitt, 1995). Therefore, using the definition of corporatism adopted in this paper,[15] we can consider point A as a system with weak uncoordinated unions (fully decentralized). Point B represents a system with strong uncoordinated unions (medium centralized); and point c represents a system of strong coordinated unions (centralized).

Figure 3(a) is close to the view of Calmfors and Driffill's curve proposed by Soskice (1990) and supported, among others, by Layard *et al.* (1991) and Bleaney (1996). Soskice (1990) argues that the Calmfors and Driffill's hump-shaped relationship may derive from two separate factors: coordination and unions' strength, with negative and positive effect on performance, respectively. These factors are generally, but not always, correlated with centralization.

Figure 3(b) represents an alternative interpretation of Calmfors and Driffill's relationship based on the relationship between political parties and unions. High corporatist systems (as, e.g., those represented in points D and C) achieve better economic results than low corporatist ones (as, e.g., in point B). However, low corporatist systems (as, e.g., in point A) can also achieve better economic results than more corporatist ones (as, e.g., in point B).

This result may hold if two conditions are met: i) in the low corporatist system the government is a left-wing government and in the high corporatist system the government is a right-wing government; ii) in the high corporatist system, the positive effect of corporatism does not compensate for the positive that left-wing government has on unions in the low corporatist system.[16] However, a higher degree of

[14] The reader should note that here we are considering two performance curves without introducing assumptions about the government's political side.

[15] Recall that here corporatism can be see as a measure of how much unions take into account full employment and low inflation (Cubitt's CORP 1-3 definitions).

[16] It is obvious that if the unionization degree is high, this situation is possible. This occurs because the political influence is expressed in terms of the bargaining power of the unions.

corporatism always allows the government to achieve a better economic performance. The analysis of Figure 3(b) is not in contrast to the interpretation of Figure 3(a), but is an extension of that traditional interpretation. Consideration of also figure 3(b) makes compatible the theoretical interpretation with the OECD's (1997) study that point out the instability of the Calmfors and Driffill's relationship.

Several empirical studies underline the hump-shaped relationship instability, i.e. the shape of the relationship between unemployment (and other macroeconomic performance indicators) and the degree of centralization has not always been confirmed in the empirical studies. This instability of the Calmfors and Driffill's hump-shaped relationship (and, more in general, of relationships between the industrial relations and the economic performance) is well known since a long time (see, among others, Tarantelli 1986; Bean, 1994; Appelbaum and Schettkat, 1996; and OECD, 1997).

Fabiani *et al.* (1997) underline the role of the nature of shocks. They argue that this instability of the relationship may derive from the interaction between the bargaining structure and the nature of the shocks experienced by an economy. A centralized structure may be better suited to offset aggregate and undifferentiated shocks, while a more decentralized one may more promptly respond to structural and micro-based shocks. In this case, the empirical estimates may lead to robust results only if appropriate variables controlling for the nature of the shocks are introduced. Bean (1994) and Blanchard and Wolfers (2000) also argue that the role that shocks play in determinate the economic performance is important, but both also argue that the differences in the domestic institution are the key to understand the differences in the performance.

By combining the analyses of the above sections, we can obtain an unstable hump-shaped relationship without considering asymmetric shocks.[17] The instability is driven by the instability of the political parameters, which are subject to higher degrees of volatility than the labor market parameters.

Other linear (as that proposed among other by Tarantelli, 1986) or hump-shaped relationships can be easily derived. According to Tarantelli (1986) and Calmfors (1993) several facets of a bargaining system may not easily be synthesized by a single index meant to measure the degree of centralization. Our model, in its own simplicity, shows how the effects of the bargaining system on aggregate wage formation and macroeconomic performance are more complex than originally acknowledged. The factors that influence economic performance are many and interrelated. Different political environments, labor market structures, degree of cooperation, and social preference contribute to achieve a better or worse economic performance.

8. Conclusions

In this article, we have exhibited how a left-wing government can achieve a better economic performance than that of a right-wing government in large unionized economies. By contrast, we have also shown how a right-wing government can

[17] It is also possible to consider the impact of the shocks structure on the hump-shaped relationship since shocks are included in the model. In this paper we prefer to focus on the deterministic differences in the institutional set-up for reason of conciseness leaving to future developments the analysis of the shock structure effects.

achieve a better economic performance in weakly unionized countries. The result is in line with recent empirical studies.

Two different forces drive different performances of different political parties in office: the LWE and RWE. The former supports a left-wing government's performance through unions' partisan action. The latter supports a right-wing government's performance under the assumption that its aversion to inflation is larger than that of the left-wing government. Both these effects are strictly dependent on the degree of unionization, the corporatist level of the economy, and the central bank's degree of conservativeness. We have identified and studied the condition that permits to the left-wing government to achieve a better (or worse) performance than that of the right-wing government.

By analyzing the effects of the degree of corporatism and partisan preferences, we have achieved an innovative conclusion. The right-wing government's economic performance improves when the degree of corporatism increases. The more workers perceive low inflation as a public good, the higher are the chances for a right-wing government to obtain better performance than that of a left-wing government. This occurs because an increase in the degree of corporatism reduces the LWE, but it does not affect the RWE. The increase of the degree of corporatism supports the right government under the condition that the preferences of the right government are the closest to those of the central bank.

Finally, after having described the traditional Calmfors and Driffill's hump-shaped relationship in our context, we have found an alternative interpretation of the empiric hump-shaped relationship by using the Alesina-Hibbs' assumption of partisanship. In our model, a low corporatist system can achieve a better economic performance than a more corporatist one, when two conditions apply. First, either in low corporatist systems the government is a left-wing one or in high corporatist system the government is a right-wing one. Second, in the high corporatist system the positive effect of corporatism does not compensate the positive effect for the left-wing government of political influence (that the left party has on unions) in the low corporatist system.

Our finding opens an interesting new angle in the analysis of the Calmfors and Driffill's hump-shaped relationship and the analysis of labor market performance. However, it should be also noted that our interpretation is based on players' different preferences. Hence, it is an alternative to the traditional interpretation proposed in the literature, but – as we have shown – it is not incompatible with this. More in general, we have shown how it is possible to derive an empirical hump-shaped performance curve *à la* Calmfors and Driffill in various ways.

Our aim has been to build a simple model, consistent with several empirical findings, to underline the complexity of the relationship between the economic performance and the institution interplay effects on it. We can conclude by asserting that the factors that influence the economic performance through industrial relations are many and interrelated. The interactions among political variables, labor market structures, degrees of cooperation, and social preferences soundly contribute to explain the economic performance. Therefore, any analysis, which takes them into account only partially, might lead to misunderstand the economic result determinants by ignoring part of the complex interrelations among the above concepts.

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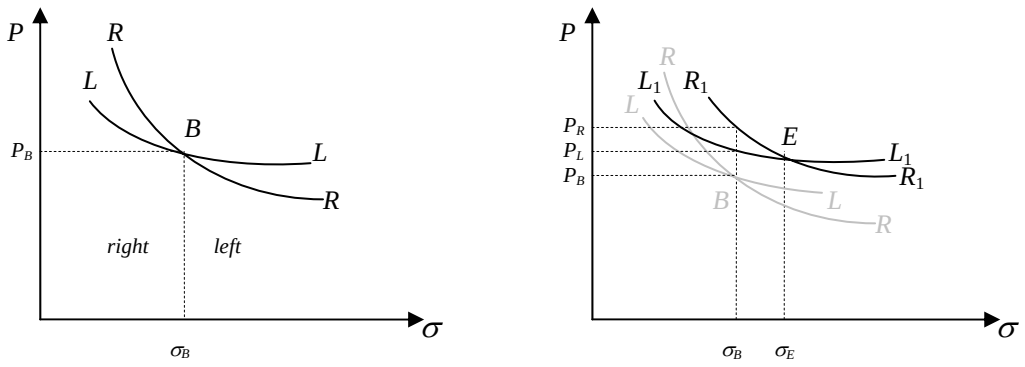
Table and figures

Table 1 – Summary of the parameters effects

	inflation	unemployment	performance
degree of conservativeness (β)	–	+	?
degree of unionization (σ)	+	+	–
Labor market rigidities (α)	+	+	–
corporatism (Σ)	–	–	+
partisanship (Ω) for a left-wing government only	–	–	+
government's bargaining power (δ)	–	–	+
government's inflation-aversion degree (γ)	–	–	+

Figure 1 – Government performance curves (P, σ)



(a) (b)

Figure 2 – Government performance curves (P, Σ)

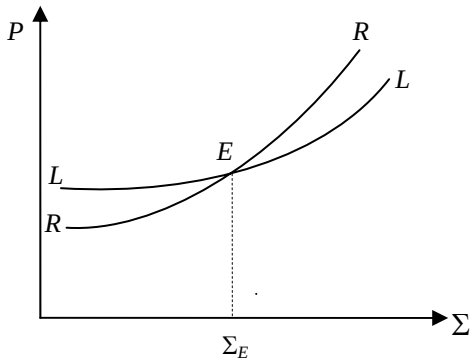
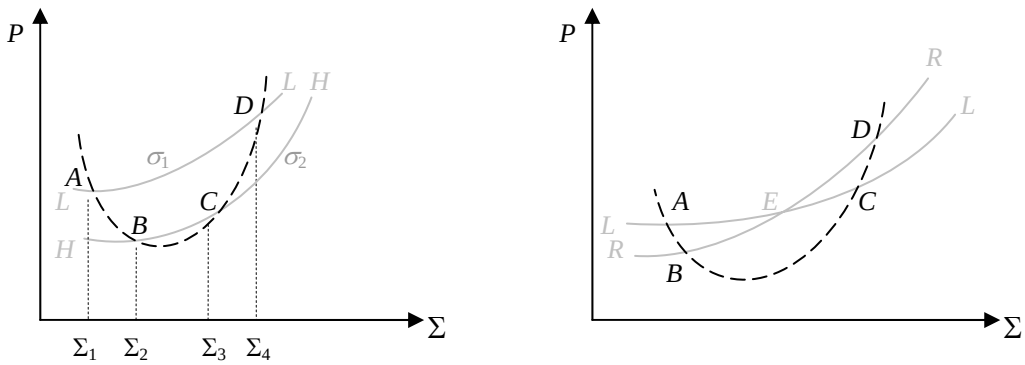


Figure 3 – Reverse hump-shaped relationships



(a) (b)