Program for the Study of Germany and Europe
Working Paper Series #5.3

Wage Bargaining, Monetary Regimes, and Economic Performance in Organized Market Economies: Theory and Evidence

by Torben Iversen*
Department of Government
Harvard University

Abstract

This paper explores the political and economic couplings between wage bargaining institutions and macroeconomic policy regimes. It is argued that, in advanced industrialized democracies with well-organized unions and employers' associations, macroeconomic performance (especially unemployment) is the outcome of an interaction between the centralization of the wage bargaining system and the monetary policy regime. Thus, a decentralizing bargaining system in which the government is credibly committed to a non-accommodating monetary policy rule poses an institutional alternative to a centralized mode of wage regulation where the government enjoys macroeconomic policy flexibility. Based on data from ten highly organized market economies, I show that both of these institutional "equilibria" produce superior macroeconomic performance, but also that the two systems are associated with very different distributional outcomes, and that they are supported by different coalitions of organized interests. In addition to predicting economic outcomes, the proposed model provides a theoretical framework for analyzing institutional change in wage bargaining systems and in macroeconomic policy regimes.

---

*This paper was originally prepared for the 1994 Meeting of the American Political Science Association in New York. A revised version was presented in the State and Capitalism Seminar at Harvard University, October 1994. I would like to thank William Bernhard, Geoffrey Garrett, Andrew Glyn, Andrew Graham, Peter Hall, Robert Hancke, Herbert Kitschelt, Peter Lange, Brian Loynd, Jonas Pontussen, Davis Soskice, Peter Swenson, Kathleen Thelen, and Sigurt Vitols for many helpful comments and discussions on this and a related paper. I am grateful to Thomas Cusack for providing some of the data used in this paper. I also gratefully acknowledge financial support from the National Science Foundation, the Social Science Research Council, and Wissenschaftzentrum Berlin für Sozialforschung.

INTRODUCTION

Over the past decade there has been a surge in the political enthusiasm for independent central banks and for "hard currency" regimes as solutions to macro-economic problems. This enthusiasm is matched by recent economic models and econometrics evidence supporting the notion that monetary policies that are institutionally tied to a strict non-accommodating policy rule produce superior macro-economic outcomes -- especially low inflation -- compared to more flexible policy regimes (eg. Cukierman 1993; Alesina and Summers 1993; Alesina and Grilli 1992; Lohman 1992; Grilli, Masciandaro, and Tabellini 1991; Burdekin and Willett 1991; Rogoff 1985). According to this view, freely operating markets are inherently efficient if permitted to work in a stable and predictable macro-economic environment.

The focus on independent central banks as a cure-all for economic ills presents a significant departure in the debate over appropriate economic policies and institutions. Less than a decade ago the attention in the political economy literature was almost exclusively directed at "corporatist" institutions and economic policy-making practices. A large number of studies provided theoretical and empirical support for the idea that centralized labor market institutions coupled with flexible government economic policies (including Keynesian demand management) produced superior macro-economic performance. Instead of the government tying its hands in economic policies, this literature suggested that capacity for flexible policy adjustment was crucial in facilitating cooperation between organized labor and capital and to adapt to a changing international economy (eg. Katzenstein 1985; Lange and Garrett 1985; Cameron 1984; Schmidt 1983; Przeworski and Wallerstein 1982).

Considering that both approaches are concerned with economic performance, yet reach conflicting conclusions about the institutions and policies that may bring about desirable outcomes, it is surprising how little intellectual engagement there has been between the proponents of the two approaches. As always, there are a few notable exceptions including Hall (1994), Streeck (1993), Scharpf (1990), and Havrilevski and Granato (1993), but both the theory and the evidence remain incomplete and sometimes conflicting. This paper is a contribution to this emerging literature that seeks to develop a more general argument and to devise a systematic empirical test of this argument.

More specifically, the model of economic policy-making and bargaining institutions proposed in this paper implies that both a restrictive macro-economic policy regime with a credible commitment to low inflation, and a flexible economic policy regime aimed at maintaining full employment are elements of distinct institutional equilibria. I argue that both of these equilibria produce superior macro-economic performance (especially low unemployment), but also that they are associated with very different distributional consequences and therefore are supported by distinct alliances of partisan governments and sectors of workers and employers. The proposed model of contested economic institutions is tested against data from ten advanced industrialized countries where the assumptions of the model are reasonably well satisfied.

The paper is organized into four main sections. In the first, I spell out the logic of the argument and the assumptions upon which it is based. In the second I explain the choice of statistical model, and details how this model is specified to reflect the nature of data. The third section discusses the main findings and relates these to theoretical debates in the political economy literature on economic performance. The concluding section summarizes the argument and discusses its implications for understanding institutional design and re-design..

THE ARGUMENT

In countries that are highly exposed to changing international markets, adaptation is the *modus operandi* of any successful economic strategy. As Peter Katzenstein has pointed out, in an increasingly interdependent world even large countries "must learn how to tap-dance rather than trample" (1985, 22). According to Katzenstein, these lessons are learned during periods of great international pressures when adversarial societal interests are brought together in search of mutually beneficial compromises. Yet, contrary to the functionalist overtones of Katzenstein's argument, there is more than one way to tap dance, and a quick step can move you just as fast and elegantly. The problem of successful adaptation is not so much to find consensus that adjustment and sacrifice is necessary, but rather to determine who needs to make the most adaptations and the most sacrifices. Because "it takes two to tango" participants

must agree not only on the need for adaptation, but also on the political-institutional form that such adaptation should take.

Yet, Katzenstein is right to imply that when efficient institutions do emerge from historical moments of fundamental political-institutional change, they tend to be stable and characterized by incremental compromising for as long as the underlying balance of power between the players who gave birth to the institutions do not change radically. It is useful to describe such periods of institutional stability in terms of game-theoretic equilibrium concepts because such concepts draw attention to the behavioral foundations for the institutions, and therefore to the conditions for their continued stability. In abstract terms, the existence of institutional equilibria presuppose that players possess strategic rationality in the sense that they anticipate the decisions of others, and then make the choices that maximize their own welfare (see Elster 1983, 77).[1] A related concept that is essential for specifying the behavioral mechanisms producing any particular equilibrium is strategic capacity which refers to a state of the world where the decisions of strategically rational players have predictable and discernable effects on the welfare and decisions of other players.[2]

For reasons that will become more evident below, I limit my discussion to political economies where it is reasonable to assume that main economic actors possess strategic capacity in addition to strategic rationality. In particular, I assume that the organization of unions and employers is such that their price-wage behavior has real and anticipated effects on the welfare of others. I refer to cases where this assumption is reasonably well satisfied as Organized Market Economies, while political economies where such strategic capacity is lacking are called Liberal Market Economies. In practice, the first type refers to Northern Europe and Japan and assumes that employers and workers are organized into industry- or sector-wide organizations that bargain wages and working conditions on behalf of their members. This classification very closely follows the conceptualization proposed by Soskice (1990, 1992, 1994) whose label for Organized Market Economies is "Coordinated Market Economies." I prefer the term Organized Market Economies so that organizational and institutional variables are clearly separated from behavioral outcomes ("coordination").

Among organized market economies I make two additional distinctions: (i) between those in which wages (and prices) are determined through centralized peak-level bargaining, and those in which wages are determined though decentralized sector- or industry-level bargaining;[3] and (ii) between those in which macro-economic policies are subject to flexible adjustment to changing economic circumstances by the government, and those in which macro-economic policies are institutionally constrained by a non-accommodating policy rule. A non-accommodating policy rule implies that inflationary pressures in the economy are always met with deflationary monetary policies, while a flexible policy regime permits measured policy responses that may be determined by the nature of the inflationary impulse, its severity, or simply political expediency.

With these distinctions in mind, I argue that there exist two macro-institutional equilibria that both facilitate successful economic adaptation: flexible centralization and non-accommodating decentralization. In the former, adaptation is made possible through a coordinated adjustment between government macro-economic policies and the wage-price behavior of encompassing peak-level organizations of unions and employers. In the latter system, adaptation is achieved when industry-level organizations of unions and employers adjust their behavior to the anticipated policy responces of monetary policy authorities who are institutionally committed to a non-accommodating policy rule. Both outcomes are superior, and preferred by both governments and privately organized players, to situations in which either centralization is coupled with a non-accommodating policy regime, or decentralization is coupled with a flexible policy regime. However, because the distributive consequences of the two systems are different, workers, employers, and governments who are differently affected by these distributional effects will have different institutional preferences. For this reason, I refer to the argument as a model of contested economic institutions.

Flexible-centralized systems roughly correspond to the concept of "corporatist concertation," although this term is sometimes applied to countries that I classify in the non-accommodating, decentralized category. The distinctive features of these systems are the extreme dependency of all institutionalized actors on one another: the choices of one agent have immediate effects on the others, and there is no possibility for any agents to "externalize"

the costs of unilateral behavior to other actors. Particular attention has been accorded in much of the neo-corporatist literature to the interaction between macro-economic policies and wage militancy. Thus, following Olson (1965, 1982), it has been argued that if an "encompassing" union confederation is reassured about its long-term welfare and does not discount the future too heavily, it has a self-interest in exercising restraint (Calmfors & Driffill, 1988; Cameron, 1984; Lange, 1984; Przeworski & Wallerstein, 1982). This contrasts to a situation where a large number of unions rationally pursue non-cooperative strategies without regard for the collective good.

The neo-corporatist literature argues that under international economic uncertainty, the ability of the government flexibly to adjust its policies to a changing economic environment is crucial in facilitating mutually beneficial cooperation between organized labor and capital (eg. Katzenstein 1985; Lange and Garrett 1985; Alvarez, Garrett and Lange 1991; Cameron 1984; Schmidt 1983).[4] Through counter-cyclical macro-economic policies, and public sector employment expansion, the government can act as a "guarantor" for full employment and thereby reassure labor about its future welfare. Such reassurances encourage cooperative behavior, especially when they are offered as contingent bargains.

In addition to adaptive capacity, I wish to emphasize another reason that policy flexibility is crucial for the functioning of a centralized bargaining system. Flexible monetary policies facilitate the reconciliation of conflicting interests within the confederal union structure during periods of low economic growth. What is sometimes overlooked in the neo-corporatist literature is that a centralized bargaining system is based on a coalition of interests, and that the internal dynamics of the system depend on the successful reconciliation of these diverse interests. In particular, the confederal leadership has to work out a distributive compromise between high-wage unions and low-wage unions through negotiation. Such intra-organizational bargaining tends to result in egalitarian wage policies because low-wage unions can veto any proposal that does not distribute wage increases "fairly" between members. In a decentralized bargaining system, by contrast, weak unions lack veto power over distributive outcomes, and will be more vulnerable to slack labor market conditions. In the jargon of

bargaining theory, the "inside options" of low-wage unions therefore tend to be superior to their "outside options", leading to a gradual compression of wages (see Wallerstein 1991).

The question of wage structure complicates the relationship between centralization and wage restraint. The reason is related to the fact that even in highly centralized bargaining systems some wage increases are always the result of locally generated "wage drift." Because such drift primarily benefits high-wage groups, it undermines the distributive terms of the centralized wage bargain. Yet, as long as wage drift is not a high proportion of total wage increases, it can be viewed with deference by the confederation as an integral part of the way the centralized system works, or even as an indispensable market signalling device. But wage drift poses a real political problem when it becomes the dominant component in total wage increases; something that happens as bargained wage increases approach zero. Under these circumstances, low wage unions are prone to push for bargained wage increases that exceed the scope for real wage increases in the economy in order to continue to benefit from the politically sanctioned policy of solidarity. Solidaristic wage policies, in a manner of speaking, "spill over" into wage-push policies.

When the scope for real wage growth in the economy is very limited, the confederal leadership will thus find it politically difficult to offer nominal-wage restraint at a level that is consistent with stable prices. It can, however, offer real-wage restraint if the government is able to accommodate higher nominal wages through an expansion of demand and higher inflation. Only if the government lacks such flexibility will higher nominal wage demands be equivalent to higher real wages, and hence cause industrial disputes and unemployment to rise.[5] As Walter Korpi notes, "[i]f the government cannot settle the distributive conflicts, at least temporarily, say, by increasing the money supply, they will appear in other forms, such as severe industrial disputes" (1983, 228). Since full employment and labor market quiescence is an important political asset in the electoral arena, the government has a strong incentive to try to retain policy flexibility; and the higher the degree of centralization, the greater the need for policy flexibility in order to maintain full employment during low growth periods.

In a decentralized bargaining system, on the other hand, policy flexibility can turn into a liability for a government seeking to maintain full employment. The reason is that it can no

longer count on the full cooperation of unions and employers (Scharpf 1991, ch. 9). Thus, if unions and employers can anticipate that wage increases will be accommodated by the government through expansionary monetary and fiscal policies, firms and workers in sheltered sectors of the economy can raise wages and prices while benefitting in real terms from cheaper imports and goods produced in the import-competing sectors (see Carlin and Soskice 1990, ch.11). Employers and workers in the export and import-competing sectors, on the other hand, will loose out because they cannot externalize higher factor prices and higher costs-of-living expenses in competitive international markets. The combined effect will be relatively higher real wages and profits in the sheltered sectors, and a fall in international competitiveness. Over the medium- to long-run, this shift in the "terms of trade between" between the traded and non-traded sectors will lead to current account deficits that can only be addressed through deflationary policies and rising unemployment.

Of course, the government could conceivably prevent such outcomes by adhering to a well-publicized, non-accommodating policy that "punishes" militant wage-price behavior. Because traditional sheltered sectors such as construction and retail are highly vulnerable to rising interest rates (and to falls in domestic consumption), and because the government directly control wages and spending in the public sector, unions and employers would have an incentive to take into account such policy-responces. The trouble is that the success of a non-accommodating policy depends on threats that are not necessarily perceived by private agents to be credible. As emphasized in the business cycle literature, governments always have a short-term interest in boosting demand and employment, even though the economic costs over the medium- to long-run may outweigh the benefits (Cukierman 1993; Alesina 1989; Alesina, Cohen and Roubini, 1992). Moreover, even if the government stuck to an anti-inflationary policy, it would be difficult to convince unions and private employers that it was serious about this policy, precisely because of its "perverse" short-term incentive structure. As a result, inflation expectations would be likely to "outrun" the inflation targets set by the government, resulting in a self-fulfilling prophesy of wage pressure and inflation. Eventually the government would be "forced" to respond with very harsh anti-inflationary policies, causing

an overall increase in unemployment. Such stop-go policies, and their underlying causes, are known in new classical economics as the time-inconsistency problem.

The core issue from this perspective is how credibly to commit to a non-accommodating monetary policy rule, and the solution that has been proposed is to institutionalize such a rule in the form of an independent agency (especially an independent bank) with extensive powers over monetary policy-making, and with a high degree of political autonomy (Cukierman 1991, Lohman 1992; Rogoff 1985; Fischer 1980). According to this view, abdication of authority over monetary policy-making to an inflation-adverse independent agency improves the credibility of a government's commitment to low inflation with salutary effects on overall economic performance. Even governments that care deeply about unemployment will be better off in this institutional setting (Alesina and Summers 1993; Havrilevski and Granato 1993; Alesina and Grilli 1992; Lohman 1992; Grilli, Masciandaro, and Tabellini 1991; Burdekin and Willett 1991; Eichengreen 1990).

In terms of our discussion, if unions and employers can anticipate with great certainty that militant strategies will lead to a deflationary response by the government, strategic behavior dictates self-restraint.[6] Specifically, large sheltered unions whose decisions have non-negligible effects on the economy will have an incentive to moderate their wage demands in order to prevent rising unemployment, while employer associations will have an incentive to increase their resolve against excessive wage demands since price increases are known not to be accommodated by a rise in effective domestic demand. When industry- or sector-based unions and employer organizations adapt their behavior to a credible monetary policy rule in this fashion, the outcome corresponds to what I have referred to as a non-accommodating, decentralized equilibrium. More generally, because of the deterrence effects of a non-accommodating policy regime, we expect unemployment in decentralized bargaining systems to be lower the higher the degree of central bank independence. The relationship between policy flexibility and unemployment is thus reversed in a decentralized system compared to a centralized system.

It should be emphasized that while the logic I have spelled out for intermediately centralized bargaining systems is consistent with the central bank independence

literature, it relies on a very different micro logic. What makes a non-accommodating monetary regime effective is the capacity of economic agents to anticipate the decisions of monetary authorities, and then make the choice that maximizes their own welfare. Precisely because beneficial deterrence effects presuppose strategic capacity, the logic does not extend to highly fragmented bargaining systems ("Liberal Market Economies"). Regardless of how well-publicized and credible a non-accommodating policy may be in such a system, the only moderating influence on union policies is the actual (as opposed to anticipated) risk and severity of unemployment.[7] Similarly to prices in perfectly competitive markets, even if all unions realize that their collective interest is best served by wage moderation, and even if the government's deflationary policy rule is common knowledge, it is always in the self-interest of unions to push for higher wages to the point where unemployment undermines any incentive to raise wages even further.[8]

Table 1 summarizes the empirical predictions of the model of contested institutions. With respect to unemployment, the effect of the two theoretical variables is predicted to be non-linear. Thus, the best unemployment performance occurs when either the wage bargaining system is centralized and the monetary regime is flexible, or when the bargaining system is decentralized and the monetary regime is non-accommodating. In the former case, it is possible to develop a virtuous and sustainable coordination of wage, price and employment policies between unions, employers and the government. In the latter case, the credibility of the government's commitment to low inflation will deter union militancy and increase employer resolve.

*** Table 1 about here ***

The poorest employment performance is predicted for situations in which either the bargaining system is decentralized while the monetary system is flexible, or in which the bargaining system is centralized while the monetary system is institutionally tied to a non-accommodating policy. In the former situation, unions (especially in the sheltered sectors) are likely to press for higher wages while the government will be unable to retain full employment

levels over the medium term. In the latter case, the government will find it difficult to meet its responsibility for retaining full employment when economic conditions unexpectedly deteriorate. Perhaps more crucially, with little flexibility in the government's economic policies, the leadership of the union confederation will find it hard to reconcile the need for downward real wage flexibility with the political goal of wage redistribution. As in the decentralized-flexible scenario, the result is likely to be high real wage pressure and unemployment.

The best inflation performance is expected to be exhibited in countries that combine a decentralized bargaining system with a non-accommodating policy regime. In this situation, low inflation targets will not be constantly challenged by militant unions precisely because the targets are perceived to be credible. The situation is very different in a decentralized system with a flexible monetary regime because the government will not be well-positioned to deter aggressive wage and price policies, and, when it encounters such militancy, is predisposed to give in. In political economies with centralized wage bargaining, unions have an incentive to exercise real wage restraint, but, as discussed above, during low growth periods nominal wage restraint will be incompatible with solidaristic wage policies. In a flexible monetary system, the government will therefore be predisposed to accommodate higher nominal wage growth, leading to "excess" inflation. If the monetary regime is non-accommodating, the monetary authorities will set inflation targets that are bound to clash with union wage strategies, and the result is likely to be inflation levels somewhere between the centralized-flexible and the decentralized-non-accommodating scenarios.

Finally, wage compression is predicted to be closely associated with centralization so that compression rises with higher degrees of centralization. The reason, as discussed above, is that democratic decision-making processes within the union confederation are "biased" to favor the bargaining power of low wage unions (their "inside options") when compared to their power in a decentralized labor market (their "outside options").

MODEL SPECIFICATION AND ESTIMATION

There are ten major OECD countries that are reasonably viewed as belonging to the group of organized market economies: Austria, Belgium, Denmark, Finland, Germany, Japan, Netherlands, Norway, Sweden, and Switzerland. The following analysis is based on time series data for these countries covering the period from the beginning of the first oil crisis (1973) to the most recent data point (1991).

Operationalization of Variables

The independent institutional variables are the (de-)centralization of wage bargaining, and the degree to which the monetary regime is non-accommodating. I operationalize the decentralization-centralization variable using a measure that I call the effective number of bargaining units. This is a concept adopted from the political party literature which is based on the number, and relative size, of unions or employers' associations with authority to bargain wages.[9] The smaller the number of bargaining units, and the more uneven their size, the higher the degree of centralization. Where several bargaining levels are involved (the national and industry levels, for example) the effective number of bargaining units at each level is weighted by the authority over the wage-setting process of that level. The definition of the resulting implied effective number of bargaining agents (N) is:

$$N = \frac{1}{\sum_{ij} w_i p_{ij}^2} \qquad \textbf{(1)}$$

where w_i is the weight accorded to each bargaining level i ($\sum w_i = 1$), and p_{ij} is the share of workers covered by union (or federation) j at level i.[10]

N can be thought of as equivalent to the number of equal-sized units that would have the same effect on fractionalization as have the actual differently-sized number of units, assuming that there was only one bargaining level. N is a useful definition of the bargaining system because it has a very simple interpretation in terms of Olson's theory of collective action: the higher the number of bargaining agents, the less likely decision-makers are to act in the collective interest. It is also in good agreement with most measures of centralization which,

in one form or another, combine an assessment of hierarchical authority relations with a measure of the degree of concentration of union membership (see, for example, Calmfors and Driffill 1988; Cameron 1984; Visser 1990; Crouch 1993).

The actual measurement of N is based on (i) a classification of bargaining rounds in each country according to the weight of three different bargaining levels: the national level, the industry/sectoral level, and the local/plant level, and (ii) a calculation of the degree of concentration of union membership at each level based on union membership data. Appendix A details the classification of bargaining rounds in the ten countries between 1973 and 1991, while Appendix B shows the values for the composite index of N for each national bargaining round in this period. The averages for two sub-periods (1973-1983 and 1984-1991) are shown in Table 2, which also includes the corresponding ranking of countries according to the degree of centralization of wage bargaining. The widely used ranking by Calmfors and Driffill (1988) is shown for reference. Note that their ranking of the ten countries corresponds very closely to mine, especially in the first period when their results are probably more applicable (the Calmfors and Driffill study was published in 1988, but it has no precise time reference).[11]

*** Table 2 about here ***

The operationalization of the character of the monetary regime is based on two measures. The first is adopted from Cukierman's (1993) detailed and comprehensive classification of central banks according to their independence. Although other indexes of central bank independence exist (see especially Grilli, Masciandaro and Tabellini 1992; Alesina and Summers 1993; Bade and Parkin 1982), the Cukierman index is by far the most detailed in terms of the data used, as well as the most comprehensive in terms of the number of indicators that it incorporates. Broadly speaking, the index is constructed to take into account (i) the policy goals of the central bank, (ii) the institutional insulation of the bank from political influence over policy formulation (or their capacity to not to compromise their policy objectives), and (iii) the power that the bank enjoys over monetary policy instruments (or their capacity to implement a certain policy). For example, a bank that (i) is charged exclusively

with maintaining price stability, (ii) is directed by a governor and a board that have a much longer tenure than most governments, and (iii) has exclusive control over monetary policy instruments (including the determination of the amounts and terms for government borrowing), is accorded a high score on the independence index. Conversely a central bank that (i) must pay attention to several socio-economic goals simultaneously (eg. employment and social peace), (ii) is directed by a governor with a short or discretionary tenure and a board with a strong representation of government officials, and (iii) has to share control over monetary policy instruments with the government, is accorded a low score.

The Cukierman independence index can vary between 0 (low independence) to 1 (high independence), and scores have been listed for the ten cases in Table 2. Because Cukierman's classification is by decades it does not allow for either an annual tracking of central bank independence, nor for a period classification that mirrors the one used in Table 2. The problem is minor, however, because the institutional stability of the central banks in our ten cases is very high (there is no change from the 1970s to the 1980s in nine of the ten cases, and only a minor change in the remaining case -- Switzerland). For our purposes, a more important limitation of the index is that it does not capture the actual (as opposed to implied) degree of commitment in monetary policies. Granting a central bank a high level of independence is neither a necessary, nor a sufficient, condition for solving the time-inconsistency problem. When the bank is dependent, a credible commitment to a non-accommodating policy may be achieved through alternative institutional avenues (such as membership in international monetary institutions), or it may come about as a result of persistent policies by governments that are sufficiently secure in power to create a reputation for "toughness". Conversely, a government may try to "override" the policies of a relatively autonomous central bank (or cushion their effects) through a combination of expansionary fiscal policies, exhortation, and political pressure. Although such policies may ultimately fail, it is obvious that there is no perfect correlation between the institutional independence of the central bank and actual commitment to a non-accommodating policy regime. For both reasons, we need some additional indicator of policy commitment.

One often noted disciplinary device in macro-economic policies is to peg the value of a currency to one or more other currencies that are generally perceived to be anti-inflationary (eg. Collins 1988; Fischer 1987; Goodman 1992, 197-202). The most widely cited example is the exchange rate mechanism (ERM) in the European Monetary System (EMS) where it is argued that the dominant position of the German Mark lends credibility to the price-stabilizing policies of the member countries. This position may be supported by reference to the procedural rules that have to be adhered to within the ERM in order for a re-alignment of any currency to take place. Yet, such arguments have to be carefully qualified. While membership in the ERM helps to set a standard against which the success and failure of a government's economic policies can, and often will, be measured, membership is necessarily an act of political will. Besides, the actual operation of the ERM has enabled considerable, while by no means total, flexibility in national exchange rate policies. For example, Weber (1991) has detected a "strong" and a "weak" currency block within the ERM (the former organized around the German DM, the latter around the French Franc), suggesting considerable institutional malleability to national economic policy goals. This argument holds with even greater force in the case of the predecessor to the ERM, the European currency "Snake", which allowed for frequent and often large currency realignments. Moreover, membership in the ERM is by no means a prerequisite for a credible commitment to a hard currency policy. Austria, Switzerland and Japan, for example, have all adhered to strong currency policies (in the case of Austria through the pegging of the Shilling to the German DM) while at the same time remaining outside any formal international institutional arrangements.

For all these reasons, it is unsatisfactory to measure the "monetarist bias" of national exchange rate regimes through ERM membership, as it has occasionally been suggested and done (eg. Grilli, Masciandaro and Tabellini 1992, 372). It would seem more sensible to use economic history as a guide to national policy regimes. Thus, if there exists a persistent monetarist bias in the government's exchange rate policies, it is bound to show up in the evolution of actual exchange rates. More specifically, a continuous commitment to anti-inflationary policies will reveal itself in the form of a strong and (relatively) appreciating

currency. Of course, the reverse is true if devaluations are used as a policy instrument to stimulate exports and employment.

An obvious check on the validity of this argument is to examine the relationship between the value of the currency and central bank independence. After all, if independent banks tend to be associated with more restrictive monetary policies, and if such policies are associated with an appreciating currency, then we would expect an empirical linkage between central bank independence and the value of the currency. Using growth in the nominal effective exchange rate for each sub-period as an indicator, Figure 1 shows that such a linkage does indeed exist for our ten cases (which are named in the figure), as well as for a larger sample of cases including the other major OECD countries (indicated by dots).

*** Figure 1 about here ***

On the other hand, it is also apparent from the figure that some countries are outliers. Thus, Japan is a strong positive outlier in both periods while Switzerland is a positive outlier in the first period (1973-1983). Sweden and Denmark are strong negative outliers in the first period, but then fall back on the regression line (which is estimated without the outliers). Other countries also exhibit deviations, although they are less pronounced. An obvious measure of government commitment to a hard currency regime is therefore the deviation of effective exchange rates from the regression line. If the deviation is positive it suggests that the government is committed -- whether through the ERM or otherwise -- to a hard-currency policy that imposes additional constraint on macro-economic policies over and above those implied by the independence of the central bank. If the deviation is negative the opposite conclusion holds.

For presentational purposes, I employ a somewhat different operationalization that yields identical results in the regression analysis. Thus, by regressing the central bank independence index against the growth in the effective exchange rate for both sub-periods (excluding again the outliers), it is possible to measure the level of commitment to a non-accommodating policy regime by simply using the predicted value of central bank

independence. The advantage of this method is that it yields an empirical measure that is similar to the central bank independence index. The results have been listed in Table 2 above (referred to as the hard currency index). When both indexes of monetary policy are included in the same regression analysis, the hard currency index will "pick up" any variance in the dependent variable that is attributable to monetary policy commitment, yet is not accounted for by (formal) central bank independence. If indeed both indexes measure such commitment, their effects on the dependent performance variables should obviously be similar.

The Statistical Model

The inevitable problem of testing the model of contested institutions through the use of statistics is that there is only a limited number of historical cases (Austria, Belgium, Denmark, Finland, Germany, Japan, Netherlands, Norway, Sweden and Switzerland). In order to remedy this small N problem I adopted a pooled time series design that covers the period from 1973 (the onset of the first oil crisis) to 1991 (the most recent data point). The model has the following general form (see for example Judge et. al. 1982, 477):

$$y_{it} = \alpha + \sum_{k=2}^{k} \beta_k x_{kit} + u_{it} \qquad (2)$$

where y_{it} is an observation on the dependent variable for the *ith* cross-sectional unit and *tth* time period, x_{kit} is an observation for the k*th* explanatory variable for the *ith* case and the *tth* time period, u_{it} is an error term for the *ith* case and *tth* time period, b_k is the slope for the k*th* regressor, and α is the intercept.

A number of different estimation specifications of this model have been proposed, some of which are more appropriate for the data at hand than others.[12] The first issue to be addressed is the specification of the intercept term. In the OLS covariance model (or "dummy variable model"), an intercept term is estimated for each cross section (in this case countries). By allowing such "fixed effects" in the model, conditions that may be unique to each case are being "controlled" for. The covariance model has the virtue of being simple, and it rids the analysis of stationary unit effects in the disturbance term. Unfortunately, it often leads to fixed effect coefficients that are difficult to interpret, and for which no reliable significance tests

exists. More importantly, the model is inappropriate for the present data because of the presence of institutional variables that are relatively fixed in time (this is especially true for the Cukierman independence index). As Balestra notes: "[W]hen constant individual variables are explicitly introduced into the regression equation there is no room for dummy variables" (1992b, 40). Hence, in order not to contaminate the effects from the time-invariant theoretical variables, country dummies are not used in the regression.

A simple alternative to the covariance model is to apply OLS regression to the whole pooled sample, assuming that the dependent variable is homogeneous with respect to the units (ie. that there is only one unique intercept). The problem with this approach is that the residuals are almost certain not to meet the OLS assumptions about independent error terms and homogeneity. Especially in situations with a large number of time points, and where the theoretical variables are better designed to explain relatively stable differences in the level of the dependent variable, serially correlated errors are likely to be a real problem. Since autocorrelation can lead to misleading estimators and significance levels (Neter, Wasserman and Kutner 1983, 445-448), the data should be corrected for this contamination through the application of GLS-ARMA regression techniques (see Kmenta 1971, ch. 12).

There is still the problem that what appears as autocorrelation in the residuals for each cross section may in fact be due to unit effects. If such effects are present in a model that assumes units to be homogeneous on y, they will "show up" in the error term, and if they are large they can seriously distort the OLS estimators. The route that I follow here is inspired by Stimson's (1985) "iterative specification-respecification modelling procedure" which, in turn, is based on Kmenta's (1971) time-wise autoregressive model. But instead of a selective fitting of unit dummy variables to the GLS-ARMA model -- as suggested by Stimson, but problematic for the present data -- I initially adopt a Jack-Knife approach in order to detect any strong unit effects. I then diagnose the residuals when the model is adapted to take into account strong unit effects, and then arrive at a reasonably well-behaved specification of the model.

Model Specification and Estimation

The basic model for the rate of unemployment has the following form:

$$UN_{it} = a_i + b_1 PER_{it} + b_2 UN_t + b_3 UNITS_{it} + b_4 CBI + b_5 UNITS_{it}*CBI_{it} + b_6 CUR_{it} + b_7 UNITS*CUR + b_8 CAB + e_i \quad (3)$$

where,

UN_{it} is the standardized unemployment rate.

PER_{it} is a dummy variable that takes on the value 0 for the 1973-1983 period and 1 for the 1983-1991 period. It is designed to capture any changes in the general level of unemployment from the world crisis to the period of (slow) recovery.

UN_t is the average rate of unemployment across OECD countries at any given point in time. It is included to remove any international diffusion effects from a general change in the level of employment.

$UNITS_{it}$ is the implied effective number of bargaining units.

CBI_{it} is Cukierman's central bank independence index.

CUR_{it} is the hard currency index.

$UNITS_{it}*CBI_{it}$ and $UNITS_{it}*CUR_{it}$ are multiplicative terms designed to capture any interaction effects that may exist between the bargaining system and the monetary regime.

The first step in the specification of the model is to apply OLS regression to the pooled sample, excluding one country at a time, and then examine the residual variance for obvious unit effects. The most salient results from this procedure is shown in Table 3. For each country in the sample, the first line shows the mean value of the residuals from the OLS

analysis, the summed variance of the residuals, the Durbin-Watson test statistic for autocorrelation, and the pattern of autocorrelation when the residuals are lagged. Because Austria turned out to be an outlier, the residual diagnostics in each case have been reported when Austria is both included and excluded from the analysis. In interpreting the results, it should be kept in mind that in the absence of unit effects, the mean should approximate zero, the summed residual variance should be fairly homogeneous across cases (and preferably small), and the serial correlation should be stationary (Stimson 1985, 939).

*** Table 3 about here ***

Based on these criteria, it is evident from the first set of residual diagnostics in Table 3 (ie. when Austria is included) that we cannot rule out substantial unit effects in the errors. Thus, the mean residual is about two percentage points (or more) different from zero in the cases of the Austria, Denmark, the Netherlands, Sweden and Switzerland, and the residual variance in these cases is also substantially higher than in the other cases. In addition, the pattern of timewise autocorrelation is flat in Austria, Japan, Switzerland and Sweden.

However, when Austria is removed from the analysis, the picture changes substantially.[13] The deviations from the mean are now significantly smaller in all the "trouble cases" (although deviations persist in the 1.2-2.0 percent range in Japan, the Netherlands, and Sweden), and summed residual variance is brought within a much lower and narrow band (although residuals continue to be relatively high in Sweden and Switzerland). The pattern of decay remains flat in Switzerland, Japan, and Sweden, but, on balance, the residuals from a regression analysis without Austria conform much better to the pattern we would expect in the presence of inherent serial correlation, than the pattern produced by strong unit effects. Autocorrelation is in most cases decaying (and it is decaying for the whole sample), and deviations of the mean residuals from zero must be judged small (a mean of less than one percentage point) when measured against the actual range of unemployment rates of over 13 percent. To the extent that unit effects are present in the sample, they would thus appear to be quite small.[14]

Yet, even when Austria is excluded, autocorrelation is a persistent problem: in only two cases (Denmark and Finland) is it not possible to reject the null hypothesis of zero autocorrelation. In order to alleviate this problem the data was transformed to correct for first-order autocorrelation, and then an OLS regression was fitted to the transformed data (see Kmenta 1971, ch. 12 for details). The resulting GLS regression equation is:

$$\begin{aligned} UN_{it} = {} & \underset{(-7.6)}{-9.3} - \underset{(-3.7)}{.81}\, PER_{it} + \underset{(3.1)}{.38}\, UN_t + \underset{(24)}{1.53}\, UNITS_{it} + \underset{(11)}{17.5}\, CBI \\ & - \underset{(15)}{1.85}\, UNITS_{it}{*}CBI_{it} + \underset{(12)}{15.3}\, CUR_{it} - \underset{(-21)}{1.80}\, UNITS{*}CUR + e_i \end{aligned} \qquad \textbf{(4)}$$

$$R^2 = .85 \qquad N = 171$$

Note that the fit of this time-wise autoregressive GLS model is good ($R^2 = .85$), and that the t-scores for all parameters are highly significant. The residual diagnosis presented in Table 3 (included in the second line of the country entries) is equally clear: the mean residuals are in all cross sections only marginally different from zero, the residual variance is much lower than before (note in particular what happens in the cases of Germany, Switzerland and Japan), and for the sample as a whole, it is no longer possible to reject the null-hypothesis of zero autocorrelation. In the Swedish case, and possibly also in the Japanese and Swish cases, it may still be reasonable to speak of unit effects, but considering the small magnitude of the deviations of the mean residual from zero (between .24 and 1.3 percentage points), the model is hardly seriously mis-specified. In view of the inherently autocorrelated nature of the data, the alternative of using an error component model to correct the data for unit effects would not seem justified. Rather, the continued tendency for the autocorrelation to be decaying indicates the presence of higher-order serial correlation. At this point, however, additional modifications of the model yield sharply diminishing returns, producing almost identical parameters with only slightly reduced standard errors.[15] Instead, I consider the specification of the GLS model in equation (4) to be a reasonably accurate rendering of the theory and the data, and I will proceed to explore its implications in more detail.

Interpretation of Results

Begin by noting that the effects of the institutional variables are precisely as prescribed in the theory: The combination of either a highly centralized wage bargaining system and a flexible monetary policy regime, or a decentralized bargaining system combined with a non-accommodating policy regime, produce low levels of unemployment, while "disequilibrium" couplings of the bargaining system and the monetary policy regime produce high unemployment.[16] Figure 2 details this relationship by showing the estimated effect of the effective number of bargaining units on the level of unemployment contingent on the monetary regime. A flexible monetary regime is operationalized as one in which the central bank and the exchange rate regime are both one standard deviation more "dependent" than the mean; a non-accommodating policy regime is operationalized as one in which the central bank and the exchange rate regime are both one standard deviation more independent than the mean. In addition, I have plotted the ten cases for two time periods (1973-82 and 1983-91) on the basis of their average unemployment rates and number of bargaining units. Countries that score above average on the CBI and CUR variables combined (ie., that have relatively non-accommodating policy regimes) have been *italicized* in the figure.

Note that the model discriminates very sharply between political economies with different institutional setups in terms of the dependent variable. For example, the predicted level of unemployment in a (hypothetical) country which combines a "typical" non-accommodating policy regime (in terms of being one standard deviation above the average) with a "typical" decentralized bargaining system (in terms of being one standard deviation below the mean) is about 8 percent higher than in a country in which either institutional condition does not hold. In substantive terms -- and not merely in statistical terms -- the model thus produces very significant results. Unsurprisingly, however, there are few empirical examples of stable disequilibrium cases. Instead, countries tend to fall in a reversed V pattern along the regression line for the monetary system that yields the lowest unemployment levels, given the nature of the wage bargaining system.

*** Figure 2 about here ***

It is interesting to relate this result to the debate over the Calmfors-Driffill (1988) model of unemployment, because the detected relationship resembles their finding of a hump-shaped association between centralization and unemployment. Calmfors and Driffill argued that unlike unions organized at the company level (decentralized systems), or at the level of the entire economy (centralized systems), unions organized at an industry or sectoral level could (partly) externalize the cost of militancy, and were therefore likely to produce real wages that would be incompatible with full employment. Soskice (1990) convincingly criticized the Calmfors-Driffill model on the grounds that it mis-specified the effect of decentralized bargaining on militancy ("wage competition"), and that two important cases, Switzerland and Japan, had been mis-classified as highly fragmented. In addition, some countries that were moderately centralized (such as Germany) were nevertheless able to achieve an effective economy-wide coordination of wages. Soskice's reclassification of the cases (re-)established a linear relationship between centralization and unemployment, but at the expense of a poorer model fit. One of the implications of Soskice's critique was therefore that a more complex model was needed in order to account for the observed cross--national variance in unemployment.

The argument advanced in this paper is (partly) designed to add such complexity, while simultaneously retaining a high level of theoretical parsimony. Thus, it has been hypothesized that unemployment can be explained as the result of the interaction between the bargaining system and the monetary policy regime. In particular, in decentralized bargaining systems the wage leadership of the exposed sector is facilitated by a non-accommodating monetary regime that induces restraint among sheltered sector unions. At least for organized market economies (and accepting Soskice's reclassification of Switzerland and Japan), the argument implies a hump-shaped relationship between centralization and unemployment, whenever economic institutions are in equilibrium. In a sense we have thus come full circle in this debate: while endorsing Soskice's critique of the Calmfors-Driffill model of unemployment, the model proposed here retains some of the elements of the original C-D model (especially that centralization helps to contain real wage cost pressure) while incorporating a new theoretical mechanism and institutional variable (government commitment to a non-accommodating policy

rule), thereby re-establishing a hump-shaped relationship between centralization and unemployment in equilibrium. In the process we retained important elements of both the Calmfors-Driffill and Soskice arguments, while adding new theoretical insights and empirical implications.

In Table 4 the analysis has been broadened to show the effects of the institutional variables on inflation and wage dispersion. As expected, inflation is negatively related to the rigidity of the monetary regime, while wage dispersion is a positive function of the effective number of bargaining units (or decentralization). Considering the focus on inflation performance in the literature on central banks, it is somewhat surprising that the inverse relationship between inflation and central bank independence is so weak. Yet, here one should keep in mind that the capacity of central banks to maintain stable inflation is at least as important as the ability to produce low levels of inflation. And on that measure, the five countries with the most independent banks exhibit only half the level of inflation variance over time as the five countries with the most dependent banks. Real variables such as unemployment are therefore better measures of success than nominal variables such as inflation.

*** Table 4 about here ***

Another somewhat surprising result is the negative relationship between the effective number of bargaining units and inflation. The poorest inflation performers are to be found among the countries with the most centralized bargaining systems[17] (which also tend to exhibit the greatest variability in inflation rates). This result supports the finding by Havrilevski and Granato (1993) that the most "corporatist" countries are poor inflation performers. The puzzle is that this category of political economies have generally been very successful in sustaining low levels of unemployment, implying that real wages have been effectively maintained at competitive levels.[18] The likely explanation, however, has already been suggested, and has to do with the role that solidaristic wage policies played in (most) highly centralized systems. Because wage drift (wage increases above those stipulated in the collective agreement) and

solidaristic wage policies have opposite distributive effects, wage redistribution is proportional to the relative weight of bargained wage increases over wage drift. In order to achieve real wage adjustment while the union confederation pursues solidaristic wage policies (which presupposes some bargained increases), the government must therefore permit a higher level of (stable) inflation.

This conjecture is consistent with the findings for wage dispersion. Thus, centralization has a strong and significant negative effect on wage dispersion while the sign of the effect for central bank independence is positive (but statistically insignificant).[19] As argued above, centralization of decisions over the wage formation process causes a "politicization" of the distribution of wages, which has a dampening effect on both inter-industry and inter-occupational wage differentials (see also Rowthorn 1992). As in the case of unemployment, the strength of the relationship is very sensitive to the inclusion or exclusion of Austria. Because wage dispersion is much greater in Austria than one would predict from the degree of centralization, the statistical relationship between centralization and dispersion is strengthened when we exclude Austria from the analysis. Because solidaristic wage policies are absent in the centralized Austrian bargaining system, it is easier for unions to consent to real wage adjustment that is compatible with full employment and low inflation.

It is conceivable that the association between economic institutions and the wage structure also holds for what is sometimes referred to as the "social wage" -- income transfers and services provided by the state. To the extent that centralized systems produced coordinated expansions of the social wage, we would expect this "wage" to reflect the underlying structure of power between different occupational groups. In centralized systems, therefore, the social wage would be expected to have a solidaristic or egalitarian structure, and help to reduce and share the risks of unemployment. Conversely, in decentralized systems we would expect the social wage to be more inegalitarian with less risk-sharing and risk-reduction, especially if the state operates within tight monetary and fiscal constraints.

Esping-Andersen (1990) has developed different measures of welfare benefits that are relevant for testing this proposition. Thus, his measure of decommodification indicates the

extent to which benefits reduce peoples' dependence on the labor market (and hence their exposure to risks), while his measures of benefit equality and universalism are designed to capture the distributive effects of such benefits. Since these measures are highly composite indexes of different indicators, I have simply ranked the ten organized market economies in terms of their index-scores, and then correlated these scores with the rank numbers for centralization, monetary regime, and wage equality. The resulting rank-order correlation coefficients are shown in Table 5. Note that all coefficients are positive as predicted by the model, and generally quite strong. The only factor that tends to weaken the results is (again) the outlier status of Austria on the centralization index. Once removed, the correlations between this variable and the others are nearly perfect (the inclusion or exclusion of Austria have no notable effects on the other results). Indeed, the findings presented in Table 5 bring out very clearly the linkages between economic institutions and outcomes that I have argued for in this study: centralization of bargaining is associated with flexible policy regimes and distributive equality; decentralization is associated with non-accommodating policy regimes and distributive inequality.

*** Table 5 about here ***

Table 6 summarizes the results in this section. It shows the predicted levels of unemployment, inflation and wage dispersion depending on the combination of bargaining structure and monetary regimes. The results conform well to the predictions of the model (refer back to Table 1), and the two hypothesized equilibrium outcomes present themselves quite clearly: a centralized bargaining system combined with a flexible monetary regime, and a decentralized bargaining system with a non-accommodating monetary regime.[20] It is my contention that this tight coupling between institutions and outcomes makes governments and (sectoral) economic agents keenly aware of their institutional interests, and determines their support for particular institutional designs.

*** Table 6 about here ***

More specifically, employers that are both cost sensitive and highly dependent on wage flexibility would find a decentralized bargaining system in the context of a non-accommodating policy regime quite amenable to their interests. Similarly, high-wage workers with scarce skills may conclude that a slightly greater risk of cyclical unemployment in such a system is well worth the greater spread in wages. Yet, both groups may support a centralized system if they know that the government is irreversibly committed to a flexible, full employment policy. Conversely, it is not difficult to understand why low-paid workers in weak market positions would support a centralized system in which they can influence the distribution of wages; at least if the government is willing to guarantee full employment. Similarly, cost-sensitive producers of standardized commodities, who are little concerned with wage flexibility, may find that centralization is an effective means to control costs. Finally, workers in sheltered sectors would tend to divide into two "camps": the first consists of a privileged segment of well-trained/-educated white- and blue-collar workers in the private sector, and be in support of a decentralized system regardless of the monetary regime; the second consists of lower grade white- and blue-collar workers, especially in the public sector, and would be in support of a centralized system coupled with solidaristic wage policies and accommodating government employment policies.

The institutional preferences of the government will, needless to say, vary with its ideological orientation and the electoral coalition upon which it depends for support. However, considering the centrality of government policies for economic and institutional outcomes, and in view of the centrality that the role of government partisanship on outcomes has assumed in the political science literature, I will elaborate on this topic.

The Role of Government Partisanship

The discussion so far has been exclusively focussed on the effect of institutions on outcomes. The presented results do not address the debate over whether, how, and under what circumstances partisan politics affect economic outcomes. To examine this question I

incorporated a variable into the analysis which measures the partisan composition of the government (CAB_{it}). The indicator varies from 1 (government completely dominated by left parties) to 4 (government completely dominated by right parties), and is based on the distribution of cabinet positions between parties weighted by these parties' position on an ideological LR-scale obtained from Castles and Mair (1984).[21] Since the most sophisticated models of partisan influences on economic outcomes (Alvarez, Garrett and Lange 1991; Lange and Garrett 1985, Schmidt 1982, 1983) are presented in a conditional form where left governments produce superior outcomes if unions are centrally organized (or "powerful"), while right governments produce better outcomes if the organization of labor is decentralized, I also included a multiplicative term between the cabinet composition variable (CAB) and the bargaining unit indicator (UNIT). The result of fitting the amended institutional model to the data is shown in the second column of Table 7. The result for the original institutional model is shown in the first column for easy reference.

*** Table 7 about here ***

As it turns out, the amended model is nearly indistinguishable from the original model. The new variables add only a meager one percent to the explained variance, they exert no significant effect on the dependent variable, and they do not change the relationship between any of the original institutional variables. Although my definition of the dependent variable is different from the one used in Lange and Garrett (1985) and in Alvarez, Garrett and Lange (1991) (I use the absolute unemployment rate where they use changes in the unemployment rate), and although the period and country coverage is somewhat different (my cases are a sub-set of theirs, while their time coverage is a subset of mine), the apparent absence of any partisan effects seems surprising, especially in view of the large body of literature that support the presence of such effects (eg. Cameron 1984; Alt 1985; Schmidt 1982; Hibbs 1977). Yet, the negative result cannot readily be attributed to the nature of the data or, for that matter, to any aberrations in the operationalization of variables or classifications of cases. On the other

hand, nor is the result necessarily in contradiction to the finding of partisan effects in other studies.

To see this, note what happens if the institutional variables are excluded from the regression equation (the third column in Table 7).[22] Now the Lange-Garrett-Alvarez result is reproduced in a very unambiguous way that leaves no doubt about statistical significance (although the explained variance has dropped considerably). In substantive terms the results imply that political economies that combine either a centralized bargaining system with a left-leaning government (again measured in terms of single standard deviations from the mean), or a decentralized bargaining system with a right-leaning government, have an expected unemployment rate that is 4-6 percent lower than in countries where neither condition obtains. Hence, if the institutional terms are eliminated from the analysis, the data supports an interpretation that is consistent with the government partisanship hypothesis. However, any conception of partisan effects must be able to account for the combination of results presented in Table 7, including the negative finding for partisanship in the amended institutional model.

Thus, the present results would seem to rule out the idea that left and right governments produce different (medium term) unemployment performance subject to an exogenously given set of equilibrium monetary and wage bargaining institutions. Since the "color" of the government changes more frequently than macro-economic institutions, if there were any lasting direct effects of partisanship, such changes would show up in the results for the amended model. That they do not excludes the possibility of direct partisan effects, and instead suggests one of three possibilities: (i) governments pursue different goals in economic policy, but within a particular institutional environment they adopt similar policies to achieve these goals; (ii) governments pursue different economic policies, but economic forces cause outcomes to converge over the medium term, (iii) governments pursue similar economic and political goals and hence adopt similar policies with similar results.

The latter interpretation has been argued from the perspective of the Downsian median voter result (Downs 1957). The idea is quite simply that electoral competition causes policy convergence around the position of the median voter, and that outcomes therefore tend to reflect the preferences of the median voter. The assumption is prevalent in much of the

American literature on political business cycles -- originating with Nordhaus (1975) and developed by Cukierman and Meltzer (1986), Rogoff (1987) and others -- and implies politically undifferentiated time effects (although politicians exploit short-term tradeoffs between inflation and unemployment). The convergence thesis has also been levied as a critique against the Lange-Garrett partisan model by Jackman (1986, 1987, 1989), who maintains that parties seeking to win government power must appeal to the median voter, and thus produce similar policies and outcomes.

In response to this critique, Garrett and Lange (1987, 1989) have rightly pointed out that when applied to multi-party systems (or to two-party systems with a threat of third party entry) the convergence argument fails on its own premises. Most recently Cox (1987, 1990) and Shepsle & Cohen (1990) have demonstrated that Downsian assumptions do not imply policy convergence in multi-party systems, and new theories and evidence predict even greater policy divergence than suggested by the "pure" spatial model (see Rabinowitz and Macdonald 1989; Przeworski and Sprague 1986; Iversen 1994).

If the absence of partisan effects on employment is not convergence of preferences, then we must attribute it to the constraints under which policies are made. This idea is consistent with economic theories that posit unique medium term equilibrium levels of unemployment such as rational expectations theory or the NAIRU model. In this category of explanations we find the partisan business cycle theory proposed by Alesina (1989) and Alesina and Sachs (1988), structural Marxist theories of economic policies (eg. Rowthorn 1977; Block 1977), as well as a more diverse set of case-oriented studies of economic policy failure. While partisan effects are possible in these models, they tend to be short-lived and often escape detection in annual panel data (the kind of data used here) where there are no measures of different points in the electoral business cycle.

Subject to the condition that economic institutions are exogenously given and in equilibrium, the model of contested institutions is consistent with this latter position. But unlike much of the literature written in concordance with modern economics, it does not imply that partisan politics have no effect on outcomes. To support such a view, one would additionally have to make the case that the association between the political orientation of the

government and economic outcomes (without institutional interaction terms) is spurious. In the rational expectations literature such an argument is not much of a stretch because the economy is conceptualized to support only one medium-term equilibrium: the unique natural rate of unemployment. To the extent that institutions, especially central banks, mediate the relationship between policies and outcomes they do so in an efficiency-enhancing or inhibiting way, but there are no obvious partisan gains to be made from designing particular institutions. In contrast, the model of contested institutions implies distinct equilibria with different distributional effects.

The controversy over the effects of partisan government policies on economic outcomes thus comes down to a question of how to conceptualize the causal relationship between institutions and government partisanship. If the statistical association between partisanship and unemployment is spurious, then the composition of the government must be a function of the institutional infrastructure of the economy. If, on the other hand, the institutions are the result of partisan politics, then the government can affect outcomes indirectly through the design of institutions.[23] In my view, the only defensible position is somewhere in the middle of these extremes: the government can affect institutional design, but it is constrained in this effort by the preferences and actions of organized societal interests over which the government can exert only limited power.

The government can affect institutional design mainly through the economic policy regime, provided that it can mobilize parliamentary majorities, and overcome potential opposition of organized interests that represent valuable resources to the government (investment capital, wage restraint, industrial peace, campaign support etc.). It has to be noted, however, that what is referred to here as a monetary regime ranges considerably in degree of institutionalization, if by institutionalization we mean a set of constraints on government policies that are politically difficult or costly to alter. For example, changing the laws governing the operation of the central bank is more difficult for a government than withdrawing from, or reneging on, the policy responsibilities of an international institution like the EMS. Yet, both actions, if successful, have similar reputation effects, and may meet with considerable opposition in the financial community. In both cases, successful commitment

involves more than simply policy declarations, or even genuine government convictions about proper economic policies. It is precisely the insight of the political business cycle literature, and the idea behind the time inconsistency problem, that economically sound policies are not always politically optimal.

Successful commitment will show up in a continuously appreciating currency, but the institutional mechanism is not always obvious. Japan is a case in point. The Japanese central bank is generally recognized as relatively dependent on the government, and it is coded as such by Cukierman.[24] Yet, Japanese monetary policies since the early 1970s have displayed a clear monetary bend, occasionally resulting in the imposition of considerable economic costs when price stability has been threatened.[25] In deeds, while not always in words, the Bank of Japan has followed a non-accommodating policy rule quite similar to that of the German Bundesbank (Friedman 1985). The institutional key to the Japanese monetary policies is the intimate organizational ties between the Bank of Japan and the Ministry of Finance. The Ministry, especially the powerful Budget Bureau, holds very strong formal powers in the budgetary process, it has a permanent appointee on the board of the central bank, and it fills many of the senior-level vacancies in the Bank (Pempel 1982, 61-62; Lincoln 1988, 179). In addition, the Ministry enjoys substantial autonomy in fiscal and monetary policy-making, and is widely known to be dominated by fiscal conservatives who believe that inflation is a threat to the Japanese economy and state, and indeed to their own long-term power in the bureaucracy.

Of course, the autonomous powers of technocrats in the Ministry of Finance over monetary policies ultimately rests on political support. But there is little doubt that if the government were to challenge the position of the bureaucratic elite in the Finance Ministry, it would meet with open resistance, and it would send an unambiguous signal to markets that a shift in policy priorities had occurred. On the background of the proven record of policy competence by the Ministry, it is therefore unlikely that any government would challenge its position, except if it believed that a change would be accompanied by a more effective centralized regulation of the wage formation process. Although such a process of centralization has been under way with the merger of the main labor confederations in the late 1980s, and

while it would probably be spurred along by a shift in economic policy priorities, the highly inflationary bargaining rounds in the wake of the first oil crisis serves as a serious warning against a "politicization" of monetary policies.

The constraints on the government are even more obvious when it comes to affecting the wage bargaining system. While the government can intervene in the wage formation process through statutory income policies, price controls, tripartite accords, and various less formal methods (including wage guidelines and exhortation), these measures have rarely led to lasting changes in the bargaining system unless supported by pivotal sectors of employers and unions (Flanagan, Soskice, and Ulman 1983). The failure of the "Social Contract" between the British Labour government and the union confederation (TUC), culminating in the "Winter of Discontent", or the incapacity of the Belgian government in the 1970s to convince employers and unions to resume centralized bargaining, are cases in point. On the other hand, governments have occasionally played important facilitating roles in the implementation of reforms in the wage bargaining system through extensions of collective agreements to non-signatory parties, or through the implementation (or subsequent repeal) of supporting legislation, including wage indexation. Besides, through its economic policies, the government can place indirect pressure on different groups of employers and workers to accept more centralized forms of bargaining, or facilitate a shift towards decentralization. In the full employment environment of the Swedish economy in the 1980s, for example, it was difficult for different sectors of employers to agree on the desirability of a decentralized bargaining system (Pontussen and Swenson 1992; Iversen 1992).

The important point of this discussion is that partisan governments, while influencing economic outcomes indirectly through their power over especially the monetary regime, ultimately depend for their success on its ability to forge alliances with organized societal groups. In particular, because the institutionalization of collective bargaining is predominantly an outcome of sectoral coalitions of labor and capital, the capacity of partisan governments to shift the institutional equilibrium in a preferred direction is real but circumscribed. Broadly speaking, we may consider two ideal type situations. First, in the event that changes in the industrial relations system bring the system out of equilibrium -- decentralization in the context

of a flexible monetary regime, for example -- the government will, regardless of its own partisan preferences, come under pressure to reform the policy regime in order to prevent an unemployment-producing disequilibrium (refer back to Figure 2). This is the principal constraint on government action. On the other hand, by refusing to reform the policy regime, the government can have a disruptive effect on the interest-realization of private economic agents that may either deter their support for change, or reverse the direction of change. Secondly, and more proactively, the government may affect the institutional equilibrium by moving the monetary regime along a disequilibrium path in the expectation that this will trigger a sectoral realignment, and set off supporting changes in the bargaining system. This possibility bears resemblance to Przeworski and Wallerstein's (1982) concept of a "valley of transition", and it obviously presupposes that the government has a large stock of political capital, especially in the form of a secure electoral position (Garrett 1993).

Either way, through its influence over the monetary regime, the government is a more or less active player in the political game over economic macro-institutions, and in this sense the model of contested institutions supports the thesis that "who governs" matters for economic outcomes. Yet it does so by adding an essential institutional component into our understanding of the mechanisms by which partisan politics is translated into outcomes. In doing so, the model of contested institutions points to a more encompassing conception of politics in which partisan governments must be analyzed in the context of broader societal coalitions of interests.

CONCLUSIONS

When David Cameron and others in the early 1980s asked why some nations were more successful than others in maintaining full employment, their answer centered around the benefits of centralized wage bargaining and flexible neo-Keynesian economic policies. In the early 1990s the focus of many scholars had turned to explaining why some countries were more capable than others in containing inflation during the 1980s, and their answer zeroed in on the role played by independent central banks. While both perspectives provide important

insights into the workings of advanced capitalist democracies, there has been no systematic attempt to incorporate and test these insights in a synthesizing model.

The empirical results in this paper strongly suggest the utility of an integrated perspective. Unemployment in particular is closely linked to the interaction of monetary regimes and wage bargaining institutions. Conceptualized in this way, the effect of central bank independence on unemployment is in fact more pronounced than its effect on inflation. But the importance of the model of contested institutions is not merely that it helps us to account for variance in economic performance, but also that it offers new insights into the question of institutional choice. Thus, it has been suggested that within the group of organized market economies, monetary regimes and collective bargaining institutions are causally related: when they are in equilibrium they tend to be mutually reinforcing and stable; when they move out of equilibrium, political pressure is generated to reestablish an (old or new) equilibrium. When we examine the relationship between institutional variables over longer periods of time, we therefore expect the equilibrium outcomes to dominate in time and space. In the short to medium run, however, we may observe temporary disequilibria brought about by sectoral realignments or fundamental re-orientations of macro-economic policies. Figure 3 summarizes this argument in terms of the changing location of our ten cases on the two institutional variables.

*** Figure 3 about here ***

Note that the Nordic countries and Belgium used to belong to the centralized-flexible equilibrium, while Germany, Japan, and Switzerland fall into the decentralized/non-accommodating cell (the Netherlands is a borderline case). Austria is the only country that does not fit comfortably into the scheme. The mismatch is not merely that the country is positioned in an apparent disequilibrium, but that macro-economic performance in this country has equalled or surpassed that of any "equilibrium" country. Yet, once we recognize the importance of one unique institutional feature of the Austrian wage bargaining system -- ie. that it does not settle wage distributive issues at a centralized level -- the puzzle begins to

dissipate. In the absence of solidaristic wage policies, the need for extensive monetary policy flexibility in order to pursue counter-cyclical economic policies decline. Hence, if we measure flexibility against the need for such flexibility, one might well argue that Austria fits quite well in the centralized-flexible category.

When we look for institutional change over time, there are four cases of particular interest: Belgium, Denmark, Sweden, and Norway. The former three have all been moving from a centralized to a decentralized equilibrium, while the latter has left and then returned to the centralized "camp". Case-oriented studies of these changes suggest that the agents of change were both to be found among partisan governments (a particularly salient element in the Danish case), and especially among employers in the exposed engineering sector and high-wage unions who perceived their interests to be increasingly well served in a decentralized system (particularly salient in the Belgian and Swedish cases).[26] More precisely, the changes were the result of cross-class realignments that had their origin in the rise of new production technologies and work organization, and in the growing integration of capital markets. The big winners in this process of decentralization and abdication over monetary policies have been quality producers in the exposed sector, and relatively well-paid workers with marketable skills; the losers have primarily been in the lower echelons of the public sector and among low-skilled workers. The model of contested institutions would predict precisely that.

In the stable decentralized category, the German and Japanese systems stand out as two particularly important cases. In both countries, commitment to an anti-inflationary monetary regime was adopted early on as the preferred macro-economic strategy, and this commitment was an important precondition for the economy-wide coordination of wages led by firms and unions exposed to international competition. In Germany, the institutional prerequisites for this strategy were a powerful and politically independent bank and strong industry-based unions and employers' organizations (especially in the metalworking industry).[27] In Japan the institutional basis rested with the tight linkages between the Bank of Japan and the Ministry of Finance. Dominated by fiscal conservatives, and concerned with the long-term health of the economy as a basis for its own power within the state bureaucracy, the latter adopted a monetarist position after the turbulent events of the early 1970s.

This brief discussion of cases is meant only as an illustration of the type of analysis that the model of contested institutions invites. The statistical approach adopted in this paper is not a particularly sharp tool with which to analyze dynamic processes of institutional change because it fails to account for historically complex causal mechanisms. Instead, it helps us to detect systematic associations between variables, and to identify broad patterns of change and stability. For theories that purport to explain these patterns, this is the first test that must be passed. The second requires a delineation of causal mechanisms through detailed case studies.

ENDNOTES

1. Strictly speaking, it is also necessary to assume that rationality is common knowledge.

2. When this is not the case, such as in a finite multi-player PD game, all players have a dominant strategy, and their choices are unaffected by the choices of others.

3. Systems in which all bargaining takes place at the firm or plant level fall in to the Liberal Market Economy category. Perhaps it would therefore be more appropriate to speak of centralized and "semi-centralized" bargaining systems, but as long as the definitions are kept in mind it should be possible to avoid this more cumbersome terminology.

4. For example, Katzenstein argues that "[c]ontrol over wages and prices is particularly urgent in the small European states, which import inflation from the world markets" (1985, 95f), and he emphasizes the flexibility that these institutions enable through voluntary, informal, and continuous bargaining over wages, investment, and economic policies between the government and peak associations of labor and capital.

5. Under these circumstances, labor faces a "trilemma" in the terminology proposed by Peter Swenson (1989): by squeezing profits and raising real wages it is possible to pursue solidaristic wage policies, but only at the expense of employment. If wages are kept down to a level that is compatible with full employment, the goal of redistribution will be thwarted. Any "compromise" between these strategies -- depending on the shape of the employment-wage indifferent curves of different unions and the outcome of bargaining between these unions -- will lead to higher unemployment with some element of redistribution.

6. This logic follows very closely the idea of non-myopic equilibria proposed by Steven Brams (1990, 1994). In this highly pertinent game-theoretic formulation (called the Theory of Moves), players ask themselves before they act whether a change in their own behavior is likely to trigger retaliation by others, possibly leaving them worse off than in status quo. If this is the case, then gains that could be realized only if others stayed put (such as defection in a PD game) are effectively discounted. For this "non-myopic" logic to work, individual players' actions must have significant effects on the welfare of other players. In other words, players must possess strategic capacity.

7. Again, it is illuminating to recall Brams' (1990, 1994) theory of moves and how it contrasts with conventional game theory. If each player's behavior has negligible effects on other players' welfare and behavior, standard game theoretic solutions imply that the negative externalities of individual behavior is entirely discounted, and that other players' actions can be assumed constant. Elster (1985, 75) calls the logic underpinning such behavior "parametric" rationality, while Brams calls it "myopic". In contrast, when each player's behavior has non-negligible effects on the welfare of others, it is prudent of players to take into account the effect of their own choices on other players' choices before deciding to act. Non-myopic behavior of this type leads to different

outcomes because of the deterrence effect that anticipated retaliation can have on any player's choices.

8. One of the curious aspects of the new classical literature on central banks is that while it is committed to a rational expectations framework in which nominal variables are deemed unimportant, the benefits of central bank independence (which are considered important) are always stated in terms of a nominal variable: inflation. The free market assumption precludes the theory from explaining variance in important real variables such as unemployment. Instead, the theory has to assume a unique level of "natural" unemployment which is empirically untenable.

9. See Laakso & Taagepera (1979) for the original definition applied to parties.

10. The weighing of p by itself (p^2) insures that a very uneven distribution of members (ie., where a few unions are dominant) leads to a lower N than if the unions were equally sized).

11. This apparent agreement disguises a real disagreement over the proper classification of Japan and Switzerland. In the full Calmfors-Driffill ranking of all OECD countries, these cases are located in close proximity to Britain and the US -- systems that fall into my category of Liberal Market Economies. I have here fully accepted Soskice's (1990) critique of the Calmfors-Driffill classification of these cases; especially their insufficient attention to the role of powerful employers' organizations at the national and sectoral/industry levels (see also Crouch 1993). What is important for our purposes is that the highly structured Japanese and Swiss bargaining systems, and the strong industry and national organizations that underpin these systems, make it reasonable to categorize them in the Organized Market Economy group.

12. It should be noted that there is no agreement about the criteria determining the use of one model over the other. See Stimson (1985), Judge et. al. (1982) and Beck and Katz (1993) for good introductions to the issues.

13. I tested for the effects of other omissions, but only Austria had a clear impact on the results.

14. An examination of the regression results when Austria is included and excluded reveals that the immediate cause for the disturbance is that Austria combines low unemployment with a highly centralized bargaining system and a strictly non-accommodating economic policy regime (as measured by both central bank independence and exchange rate constraints). I discuss this phenomenon in more detail below.

15. There are also hints of heteroscedacity in the residuals (compare the summed residual variance for Switzerland and Japan with the other cases). Yet, it is not possible to separate this variance from the variance that may be generated by unit effects, and I have therefore refrained from correcting the data for heteroscedacity. Fortunately, even in its presence, it does not affect the unbiasedness or consistency of the estimators (Kmenta 1971, 250-54).

16. In interpreting the results, it is useful to bear in mind the theoretical predictions and how they relate to the signs of the parameters. In particular, if the bargaining system and the monetary policy regime interact in the manner prescribed in the theory, then the parameter estimates for UNITS, CBI and CUR should all be positive while the parameter estimates for the interactive terms, UNITS*CBI and UNITS*CUR, should be negative.

17. Of course, it should always be kept in mind that the analysis only covers the set of organized market economies, all of which have comparatively centralized forms of wage bargaining.

18. The coincidence of nominal wage inflation and real wage restraint in the Nordic economies during the 1980s is a stylized fact (see Calmfors and Nymoen 1990).

19. I only have data on wage dispersion that covers two years (1974 and 1984). It is measured as the variance in earnings across industries at the three-digit ISIC level, and is based on ILO labor statistics except for Switzerland which is based on US Bureau of Labor Statistics (of the data-collecting international agencies, ILO covers more of our cases (nine) than any other agency, and BLS is the only agency that has data for Switzerland). The used data does not directly capture inter-occupational wage dispersion for which little comparative statistics exist. However, for ten industrialized countries where such data does exist (OECD 1987), the correlation between inter-industry and inter-occupational dispersion is high ($r = .73$). Inter-industry leveling would therefore appear to be a good proxy for inter-occupational leveling.

20. It should be noted that the low unemployment estimate for the decentralization/non-accommodating cell may be slightly exaggerated because of the "buffer-effect" of migrating "guest workers" in Switzerland.

21. The index was constructed by Tom Cusack, and I am grateful to him for letting me use his data.

22. The variable UNIT is retained because it interacts with the variable CAB.

23. This problematic has a long history in the Marxist literature where the controversial concept is the "relative autonomy" of the state (see Jessop 1982 for an extensive review of this literature).

24. Yet, there is some disagreement about the coding of the Japanese central bank in terms of independence. For example, in the index developed by Bade and Parkin (1982), Japan share the third most independent bank with the U.S.

25. For example, when the second oil crisis hit in 1979, interest rates were immediately raised by a steep 5.5 percent over the course of one year to fend off any budding inflationary tendencies (Lincoln 1988, 218).

26. See, for example, Pontussen and Swenson (1992), Iversen (1992), and Hancke (1991).

27. See Scharpf (1991), Streeck (1993) and Hall (1994).

BIBLIOGRAPHY

Alesina, Alberto. 1989. "Politics and Business Cycles in Industrial Democracies." Economic Policy, 8, 58-98.

Alesina, Alberto, Gerald Cohen and Nouriel Roubini. 1992. "Macroeconomic policy and Elections in OECD Democracies". Economics and Politics, 4, 1-31.

Alesina, Alberto and Lawrence Summers. 1993. "Bank Independence and Macroeconomic Performance: Some Comparative Evidence". Journal of Money, Credit, and Banking, 256, 151-62.

Alesina, Alberto and Vittorio Grilli. 1993. "The European Central Bank: Reshaping Monetary Policy in Europe". Pp. 49-77 in Matthew Canzoneri, Vittorio Grilli, and Paul Masson (eds.), Establishing a Central Bank: Issues in Europe and Lessons from the United States, Cambridge: Cambridge University Press.

Alesina, Alberto and Jeffrey Sachs. 1988. "Political Parties and the Business Cycle in the United States, 1948-1984." Journal of Money, Credit, and Banking, 20, 63-82.

Alvarez, Michael, Geoffrey Garrett and Peter Lange. "Government Partisanship, Labor Organization, and Macroeconomic Performance". American Political Science Review, 85.

Alt, James. 1985. "Political Parties, World Demand, and Unemployment: Domestic and International Sources of Economic Activity." American Political Science Review, 79, 1016-40.

Bade, R. and M. Parkin. 1982. "Central Bank Laws and Inflation -- A comparative Analysis. Mimeo, University of Western Ontario.

Barro, Robert and David Gordon. 1983. "Rules, Discretion and Reputation in a Model of Monetary Policy." Journal of Monetary Economics, 12, 101-22.

Beck, Nathaniel and Jonathan Katz. 1993. Panel Data for Cross-National Data. Paper presented at the Ninth Annual Meeting of the Political Methodology Group, Tallahassee, FL.

Block, Fred. 1977. "The Ruling Class Does Not Rule: Notes on the Marxist Theory of the State." Socialist Review, 33, 6-28.

Brams, Stephen. 1990. Negotiation Games. New York: Routledge Press.

Brams, Stephen. 1994. Theory of Moves. Cambridge: Cambridge University Press.

Calmfors, Lars and John Driffill. 1988. "Centralization of Wage Bargaining." Economic Policy, 14-61.

Calmfors, Lars and Ragnar Nymoen. 1990. "Real Wage Adjustment and Employment Policies in the Nordic Countries." Economic Policy, 398-447.

Cameron, David. 1984. "Social Democracy, Corporatism, Labor Quiescence, and the Representation of Economic Interest in Advanced Capitalist Society." In John H. Goldthorpe (ed.), Order and Conflict in Contemporary Capitalism. New York: Oxford University Press.

Carlin, Wendy and David Soskice. 1990. Macroeconomics and the Wage Bargain. Oxford: Oxford University Press.

Castles, Francis and Peter Mair. 1984. "Left-Right Political Scales: Some 'Expert' Judgments." European Journal of Political Research, 12, 73-88.

Collins, Susan. 1988. "Inflation and the European Monetary System." Pp. 112-33 in Francesco Giavazzi, Stefano Micossi and Marcus Miller (eds.), The European Monetary System. Cambridge: Cambridge University Press.

Cox, Gary W. 1987. "Electoral Equilibrium under Alternative Voting Institutions." American Journal of Political Science 31, 82-108.

Cox, Gary W. 1990. "Centripetal and Centrifugal Incentives in Electoral Systems. American Journal of Political Science 34, 903-35.

Crouch, Colin. 1993. Industrial Relations and European State Traditions. Oxford: Claradon Press.

Cukierman, Alex and Alan H. Meltzer. 1986. "A Positive Theory of Discretionary Policy, the Costs of Democratic Government, and the Benefits of a Constitution." Economic Inquiry, 24, 367-88.

Cukierman, Alex. 1992. Central Bank Strategy, Credibility, and Independence. Cambridge: MIT Press.

Cukierman, Alex, Steven B. Web, and Bixin Neyapti. 1992. "Measuring the Independence of Central Banks." The World Bank Economic Review, 6, 353-98.

Due, Jesper, Jørgen Steen Madsen, Carsten Strøby Jensen and Lars Kjerulf Petersen. 1994. The Survival of the Danish Model. A Historical Sociological Analysis of the Danish System of Collective Bargaining. Copenhagen: DJOF.

Edgren, Gosta, Karl-Otto Faxen, and Clas-Erik Odhner. 1973. Wage Formation and the Economy. London: Allen and Unwin.

Elster, Jon. 1983. Explaining Technical Change. Cambridge: Cambridge University Press.

Markovits, Andrei S. 1986. The Politics of West German Trade Unions. Cambridge: Cambridge University Press.

Fischer, Stanley. 1987. "International Economic Policy Coordination." NBER Working Paper no 2344.

Flanagan, Robert J., David Soskice, and Lloyd Ulman. 1983. Unionism, Economic Stabilization, and Incomes Policies: European Experience. Washington D. C.: The Brookins Institution.

Garrett, Geoffrey. 1993. "The Politics of Structural Change: Swedish Social Democracy and Thatherism in Comparative Perspective." Comparative Political Studies, 25, 521-49.

Garrett, Geoffrey and Peter Lange. 1986. "Performance in a Hostile World: Economic Growth in Capitalist Democracies, 1974-1982": World Politics, 38, 517-45.

Garrett, Geoffrey and Peter Lange. 1989. "Government Partisanship and Economic Performance: When and How Does 'Who Governs' Matter? Journal of Politics, 51, 676-93.

Giavazzi, Francesco & Alberto Giovannini. 1989. Limiting Exchange Rate Flexibility: The European Monetary System. Cambridge: MIT Press.

Grilli, Vittorio, Donato Masciandoro and Guido Tabellini. 1991. "Political and Monetary Institutions and Public Financial Policies in the Industrialized Countries". Economic Policy, 13, 42-92.

Havrilevski, Thomas and James Granato. 1993. "Determinants of Inflationary Performance: Corporatist Structures vs. Central Bank Autonomy." Public Choice, 76, 249-61.

Hall, Peter A. 1994. "Central Bank Independence and Coordinated Wage Bargaining: Their Interaction in Germany and Europe." German Politics and society. Forthcoming.

Hibbs, Douglas. 1977. "Political Parties and Macroeconomic Policy." American Political Science Review, 71, 1467-87.

Iversen, Torben. 1992. "Power, Flexibility and the Breakdown of Centralized Wage Bargaining: The Cases of Denmark and Sweden in Comparative Perspective." Comparative Politics, [Forthcoming].

Iversen, Torben. 1994. "Political Leadership and Representation in West European Democracies: A Test of Three Models of Voting." American Journal of Political Science, 38, 45-74.

Jackman, Robert. 1986. 'Elections and the Democratic Class Struggle." World Politics, 39, 122-46.

Jackman, Robert. 1987. "The Politics of Economic Growth in Industrialized Democracies, 1974-1980." Journal of Politics, 49, 242-56.

Jackman, Robert. 1989. "The Politics of Economic Growth, Once Again." Journal of Politics, 51, 646-61.

Jessop, Bob. 1982. The Capitalist State. Oxford: Martin Robertson.

Judge, G., W. E. Griffiths, H. Lutkepohl, and T. Lee. 1982. On the Theory and Practice of Econometrics, New York: John Wilie.

Katzenstein, Peter. 1985. Small States in World Markets. Ithaca: Cornell University Press.

Kmenta, Jan. 1971. Elements of Econometrics. New York: Macmillan.

Korpi, Walter. 1983. The Democratic Class Struggle. London: Routledge & Kegan Paul.

Laakso, Markku and Rein Taagapera. 1979. "Effective Number of Parties: A Measure with Application to West Europe." Comparative Political Studies, 12, 3-29.

Lange, Peter. 1984. "Unions, Workers, and Wage Regulation: The Rational Bases of Consent." Pp. 98-123 in John Goldthorpe (ed.), Order and Conflict in Contemporary Capitalism. Oxford: Clarendon Press.

Lange, Peter and Geoffrey Garrett. 1985. "The Politics of Growth: Strategic Interaction and Economic Performance in the Advanced Industrial Democracies, 1974-1980." Journal of Politics 47, 792-827.

Lange, Peter and Geoffrey Garrett. 1987. "The Politics of Growth Reconsidered. Journal of Politics, 49, 257-74.

Lincoln, Edward. 1988. Japan Facing Economic Maturity. Washington D.C.: Brookins Institution.

Lohmann, Susanne. 1992. "Optimal of Commitment in Monetary Policy: Credibility versus Flexibility". The American Economic Review, 273-86.

Markovits, Andrei S. 1986. The Politics of West German Trade Unions. Cambridge: Cambridge University Press.

Nordhaus, William D. 1975. The Political Business Cycle. Review of Economic Studies, 42, 169-90.

Olson, Mancur. 1965. The Logic of Collective Action. Cambridge: Harvard University Press.

Olson, Mancur. 1982. The Rise and Decline of Nations. New Haven: Yale University Press.

Pempel, T. J. 1982. Policy and Politics in Japan: Creative Conservatism. Philadelphia: Temple University Press.

Pontussen, Jonas & Peter Swenson. 1992. "Markets, Production, Institutions, and Politics: Why Swedish Employers have Abandoned the Swedish Model." Paper presented at the Eighth International Conference of Europeanists, Council for European Studies, Chicago, March 27-29.

Przeworski, Adam and Michael Wallerstein. 1982. "The Structure of Class Conflict in Democratic Capitalist Societies." American Political Science Review, 76.

Przeworski and Sprague. 1986. Paper Stones. Chicago: Chicago University Press.

Rabinowitz, George and Stuart E. Macdonald. 1989. "A Directional Theory of Issue Voting." American Political Science Review, 83, 93-121.

Rogoff, Kenneth. 1985. "The Optimal Degree of Commitment to an Intermediate Monetary Target". Quarter Journal of Economics, 100, 1169-89.

Rowthorn, Robert. 1977. "Conflict, Inflation and Money." Cambridge Journal of Economics, 1, 215-39.

Rowthorn, Robert. 1992. "Corporatism and Labour Market Performance." Pp. 44-81 in Jukka Pekkarinen, Matti Pohjola, and Bob Rowthorn (eds.), Social Corporatism. Oxford: Clarendon Press.

Scharpf, Fritz. 1991. Crisis and Choice in European Social Democracy. Ithaca: Cornell University Press.

Schmidt, Manfred G. 1982. "Does Corporatism Matter? Economic Crisis, Politics and Rates of Unemployment in Capitalist Democracies in the 1970s." In Gerhard Lehmbruch & Phillipe Schmitter (eds.), Patterns of Corporatist Policy-Making, Beverly Hills: Sage.

Schmidt, Manfred G. 1983. "The Welfare State and the Economy in Periods of Economic Crisis: A Comparative Study of Twenty-Three OECD Nations. European Journal of Political Research, 11, 1-26.

Shepsle, Kenneth A. and R. N. Cohen. 1990. "Multiparty Competition, Entry, and Entry Deterrence in Spatial Models of Elections. Pp. 12-45 in James M. Enelow and Melvin J. Hinich (eds.). Advances in the Spatial Theory of Voting. Cambridge: Cambridge University Press.

Shirai, Taishiro. 1984. "Recent Trends in Collective Bargaining in Japan". Pp. 242-52 in Windmuller (ed), Collective Bargaining in Industrialized Economies: A Reappraisal. Geneva: International Labour Office.

Shirai, Taishiro. 1987. "Japan". Pp. 242-52 in Windmuller (1987).

Soskice, David. 1990. "Wage Determination: The Changing Role of Institutions in Advanced Industrialized Countries." Oxford Review of Economic Policy, 6, 36-61.

Soskice, David. 1992. "The German Apprenticeship System: Reconciling Markets and Institutions." In Lisa Lynch (ed.), International Comparisons of Private Sector Training. NBER Conference Volume. Chicago: University of Chicago Press.

Soskice, David. 1994. "Innovation Strategies of Companies: A Comparative Institutional Explanation of Cross-Country Differences." Typescript.

Stimson, James A. 1985. "Regression in Space and Time: A Statistical Essay." American Journal of Political Science, 29, 914-47.

Streeck, Wolfgang. 1993. "Wage Restraint without Incomes Policy". Typescript.

Swenson, Peter. 1989. Fair Shares: Unions, Pay, and Politics in Sweden and Germany. Cornell: Cornell University Press.

Visser, Jelle. 1989. European Trade Unions in Figures. Deventer/Netherlands: Kluwer Law and Taxation Publishers.

Visser, Jelle. 1990. In search of Inclusive Unionism. Boston: Kluwer Law and Taxation Publishers.

Wallerstein, Michael. 1990. "Centralized Bargaining and Wage Restraint." American Journal of Political Science, 34, 982-1004.

Weber, Axel. 1991. "European Economic and Monetary Union and Asymmetries and Adjustment Problems in the European Monetary System: Some Empirical Evidence." European Economy (Special Edition), 187-207.

Windmuller, John P. 1987. Collective Bargaining in Industrialized Market Economies: A Reappraisal. Geneva: ILO.

APPENDIX A: CLASSIFICATION OF BARGAINING AUTHORITY

Visser (1990, 156-65) has identified various components of centralization of authority that I have employed in the below table to weigh the significance of different bargaining levels in each bargaining round. Visser emphasizes the level of bargaining and the power in terms of sanctions and strike decision-making authority that higher-level union organizations enjoy over their members. Because the organization of employers is equally important in determining the locus of bargaining authority, I have also paid attention to the authority over the wage formation process exercised by different levels of employer associations -- especially the power to call lockouts.

In addition to power over lockout and strike decisions, different degrees of enforceability of agreements have been used as a criteria in the classification scheme. Enforceable agreements are associated with centralized control over strike and lockout funds, and is backed by a legal system of labor courts and fines for non-compliance. Fines are also sometimes used more informally by employers, and occasionally by the government, to enforce agreements or statutory incomes policies. Semi-enforceable agreements refer to situations where the higher-level organizations lack direct means of enforcement mechanisms (such as fines), but where these organizations can nevertheless impose costs on members for non-compliance. Such "semi-enforceability" is particularly important in the Japanese case where a dense network of employer organizations and business associations is coupled with close linkages between large horizontally integrated companies and their sub-contractors (Soskice 1990). Non-enforceable targets refer to peak-level wage recommendations that may serve as "focal points" for lower level bargaining, yet are not accompanied by any credible threats in the event of non-compliance.

The classification table presented below is not logically exhaustive in terms of the various criteria, but rather reflects the range of authority relations that are actually observed in different bargaining rounds in the ten cases. In particular, it mirrors the division between centralized and decentralized bargaining systems (indicated by a dashed line). In carrying out the coding, the monthly monitoring of bargaining in the European Industrial Relations Review has been an invaluable source for information about particular bargaining rounds. This information has been supplemented with information from a number of other sources, including Markovits 1986; Due et. al. 1994; Edgren, Faxén and Odhner 1973; Crouch 1993; and chapters on national systems in Flanagan, Soskice, and Ulman 1983; Windmuller 1987, and in Ferner & Hyman 1992. In the case of Japan (which is not covered by the EIRR), the classification is based on Soskice (1990), Shirai (1984; 1987) and news reports in the Japan Labor Bulletin.

Table A1. Classification Scheme for Centralization of Authority (above the dashed line: "centralized" systems; below: "decentralized" systems).

Weights	Definitions
.9, 0, .1	National associations monopolize wage bargaining and strike/lockout decisions, and agreements are enforceable. Lower-level bargaining is banned (Norway 1988-1989).
.7, .1, .2	National associations monopolize bargaining and strike/lockout decisions, and agreements are enforceable. Lower-level bargaining is permitted subject to peak-level approval. (Austria 1973-1991).
.7, 0, .3	National associations monopolize bargaining and strike/lockout decisions and agreements are enforceable. Local bargaining is permitted subject to a peace clause. (Belgium 1974-75[a]; Denmark 1973-1979, 1983-1985; Finland 1973-79, 1981, 1984[a], 1986, 1987[b], 1989, 1990[a], 1991[a]; Norway 1976-1980, 1983, 1985, 1990-1991; Netherlands 1973; Sweden 1973-1982, 1983[a], 1985[a], 1989[a]).
.1, .7, .2	National associations and/or the government set non-enforceable targets for lower-level bargaining, but industry-level organizations retain rights to bargain and to call strikes/lockouts. Local bargaining is permitted subject to a peace clause. (Belgium 1981-86, 1989-91; Denmark 1987, 1989, 1991; Finland 1980, 1983, 1988; Germany 1967-1977; Netherlands 1974-79[cd], 1985-91; Norway 1974, 1982, 1984, 1986; Sweden 1984, 1991).
0, .8, .2	Industry-level organizations monopolize bargaining and strike/lockout decisions, and agreements are enforceable. Local bargaining is permitted subject to a peace clause. (Belgium 1976-1980, 1987; Denmark 1981; Germany 1978-1991; Norway 1986; Sweden 1988; Switzerland 1973-1991).
.4, 0, .6	National-level federations and confederations set semi-enforceable targets for lower-level bargaining, but local-level organizations retain rights to bargain and to call strikes/lockouts. (Japan 1973-1991[e])

Notes: [a] In these instances bargaining is simultaneously carried out by peak-level organizations and by industry organizations depending on the bargaining area. For simplicity all bargaining is considered to take place at the peak level, while the calculation of the centralization score takes into account the coincidence of industry- and peak-level agreements.

The exceptional bargaining rounds are: Finland: (1984) separate agreement in the retail and wholesale sector, commercial employees' union, (1990) separate agreement in the banking sector, (1991) separate agreement in the hotel and catering sector; Sweden: (1983, 1985, 1989) separate agreements in the metalworking sector.

[b] Early in the year, wage agreements are reached at the sectoral level, but they are superseded by a centralized agreement later in the year.

[c] In 1976 the two main federations, NVV and CNV (and its member unions) merged to form the Dutch Federation of Trade Unions (FNV).

[d] In 1979 the white-collar union MHP is formed.

[e] In 1987 the four major confederations -- Sohyo, Shinsanbetsu, Churitsuroren and Domei -- merged to form a single confederation, Rengo.

APPENDIX B: CALCULATING THE EFFECTIVE NUMBER OF BARGAINING UNITS

The information in the following table is based on the classification of centralization of wage bargaining provided in Appendix A, and on information about the distribution of union membership across confederations and industry unions. The definition of the (implied) effective number of bargaining units provided in Equation (1) is used to convert this information into a number for each bargaining round.

For example, in Austria in 1973 there was a single labor confederation organizing both blue- and white-collar workers (ÖGB), and 16 industry unions with the following shares of total union membership (in order of magnitude): .183, .180, .129, .095, .092, .074, .046, .045, .041, .031, .018, .017, .016, .013, .011, .009. Based on the extensive authority exerted by the Subcommittee on Prices and Wages of the Parity Commission and by the ÖGB over bargaining at lower levels, the distribution of bargaining authority at the peak, industry, and local level was coded to be .7, .1 and .2 respectively. Substituting this information into Equation (1) yields the following figure for the effective number of bargaining units:

$$1/[.7*1^2 + .1*(.183^2+.180^2+.129^2+.095^2+.092^2+.074^2+.046^2+.045^2+ .041^2+.031^2+.018^2+.017^2+.016^2+.013^2+.011^2+.009^2) +.2*(0.00^2)] = 1.41.$$

Note that the share of membership by any single union at the local level is assumed to be negligible; an assumption that is practically always satisfied, and that greatly facilitates the computations.

Table B1. The Effective Number of Bargaining Units in Ten Countries (1973-1991).

	Country									
Year	Aus	Bel	Den	Fin	Ger	Jap	NL	Nor	Swe	Swi
1973	**1.41**	**3.1**	**2.6**	**3.0**	**6.3**	**14**	**3.7**	3.4	2.9	**16**
1974	**1.41**	3.1	2.6	3.1	**6.3**	**14**	4.3	**6.7**	**2.9**	**16**
1975	**1.41**	**3.1**	**2.6**	**3.1**	**6.3**	**14**	**5.3**	4.5	**2.9**	**16**
1976	**1.41**	5.6	2.6	3.1	**6.3**	**14**	6.3	**2.3**	2.9	**16**
1977	**1.41**	**21**	**2.6**	**3.1**	**6.3**	**14**	**7.7**	2.4	**2.9**	**16**
1978	**1.41**	21	2.7	3.2	**6.3**	**14**	7.7	**2.4**	**3.0**	**16**
1979	**1.41**	**21**	**2.7**	**3.2**	**6.3**	**14**	**8.3**	2.5	3.1	**16**
1980	**1.41**	15	7.9	**12**	**10**	**14**	5.3	**2.6**	**3.1**	**16**
1981	**1.41**	**11**	**13**	**3.2**	**10**	**14**	**4.0**	5.2	**4.3**	**16**
1982	**1.41**	7.1	9.7	7.6	**10**	**14**	4.0	**7.7**	3.7	**16**
1983	**1.41**	**5.3**	**6.3**	**12**	**10**	**14**	**4.0**	**2.8**	**3.1**	**16**
1984	**1.41**	5.3	4.5	**5.3**	**10**	**14**	5.6	**7.7**	**17**	**16**
1985	**1.41**	**5.3**	**2.7**	4.5	**10**	**14**	**8.3**	**2.9**	**4.0**	**16**
1986	**1.41**	7.1	6.4	**3.6**	**10**	**14**	7.7	**7.7**	**3.1**	**16**
1987	**1.41**	**12**	**10**	7.8	**10**	**15**	**7.1**	5.2	11	**16**
1988	**1.41**	12	10	**12**	**10**	**15**	7.1	**2.6**	**18**	**16**
1989	**1.41**	**12**	**10**	**4.0**	**10**	**7**	**6.7**	3.0	**4.2**	**16**
1990	**1.41**	12	10	**4.0**	**10**	**7**	6.7	**3.4**	7.6	**16**
1991	**1.41**	**12**	**10**	**4.2**	**10**	**7**	**6.7**	**3.4**	**11**	**16**

Note: The definition of the effective number of bargaining units is supplied in the text (in Equation (1)). The measure is based on: (i) the weights of bargaining authority that are detailed in Appendix A (corresponding to w_i in the theoretical definition), and (ii) the concentration of union membership at different bargaining levels (corresponding to p_{ij}^2 in the theoretical definition). Bolded entries indicate that a collective bargaining round took place in this year (in some cases, eg. the Netherlands, two-year agreements are concluded in different years, making this procedure somewhat arbitrary). All other entries are found by linear interpolation.

Sources: Data on the concentration of union membership was obtained from the following national statistical sources (various years): ÖGB, Tatigkeitsbericht (Austria); Statistisk Årbog (Denmark),

Statistisches Jahrbuch (Germany), Statistisk Årbok (Norway), Statistisk Årsboke (Sweden), Japan Labor Bulletin (Japan), Suomen Tilastollinen Vuosikirja (Finland), Sociale Maandstatistiek (continued in Sociaal-economische Maandstatistiek) (Netherlands), Tatigkeitsbericht (Switzerland). In the case of Belgium, union membership figures are not recorded in any official statistics. At the confederal level figures for some years are reported in Bain (1988, 159); figures for other years have been estimated by interpolation. Considering the relative stability of fragmentation at this level, this poses no serious problems. Figures at the industry/sector level are based on information about the number of affiliated unions, and the membership in unions with more than 100,000 members in 1985 (Hutsebaut 1987). For unions with less than 100,000 members, it has been assumed that membership is evenly distributed. Since smaller unions only comprise 29 percent of the total number of union members, the implications of this assumption for the centralization index are marginal. The reliance on only one year (1985) probably slightly underestimates the degree of fragmentation in the 1970s, and slightly overestimates it in the 1980s due to a gradual process of union mergers.

TABLES

Table 1. The Predicted Effects of the Wage Bargaining System and the Monetary Policy Regime on Economic Outcomes.

	Monetary Policy Regime	
Bargaining System	**Flexible**	**Non-Accommodating**
Centralized	Low unemployment High inflation Wage compression	Medium unemployment Low to medium inflation Wage compression
Decentralized	High unemployment High inflation Wage dispersion	Low unemployment Low inflation Wage dispersion

Table 2. The Effective Number of Bargaining Units, Central Bank Independence and Exchange Rate Regimes, 1973-1983 and 1984-1991.

	Centralization Rank			Effective Number of Bargaining Units		Central Bank Independence Index		Hard Currency Index	
	1973-83	1984-91	C&D[a]	1973-83	1984-91	1973-83	1984-91	1973-83	1984-91
Aus	1	1	1	1.4	1.4	.61	.61	.57	.44
Nor	3	3	2	3.6	4.3	.17	.17	.13	.28
Swe	2	4	3	3.1	6.7	.29	.29	.00	.26
Den	4	6	4	4.6	7.6	.49	.49	.10	.41
Fin	5	2	5	4.9	4.0	.27	.27	.19	.37
NL	6	5	7	6.1	7.0	.69	.69	.72	.53
Ger	7	7	6	8.0	10.0	.42	.42	.50	.48
Bel	8	8	8	11.1	12.8	.16	.16	.25	.45
Jap	10	9	9	18.7	15.6	.18	.18	.95	.98
Swi	9	10	10	16.2	16.4	.52	.59	1.06	.43

[a] Reproduced from Calmfors and Driffill (1988, 18).

Table 3. Residual Diagnosis for Different Specifications of the Regression Model. (In the second line in each cell the data has been corrected for first-order autocorrelation).

	Mean residual		Sum of residual variance		Durbin-Watson test score[a)]		Pattern of auto-correlation[b)]	
	Incl. Aus	Excl. Aus	Incl. Aus	Excl Aus	Incl. Aus	Excl. Aus	Incl. Aus	Excl. Aus
Aus	-2.6		142		.02		Flat	
Bel	1.53	.96 .25	102	116 20	.17	.15 .91*	Decay	Decay Decay
Den	2.46	1.00 1.46	142	58 74	.31	.74* .72*	Decay	Decay* Decay
Fin	.37	.06 .23	36	36 25	.84*	1.07* .84*	Decay	Decay* Decay*
Ger	1.42	-.49 -1.02	96	129 30	.21	.16 .54*	Decay	Decay Decay
Jap	-1.1	-1.51 -.59	37	66 4	.02	.01 .24	Flat	Flat Decay
NL	2.69	1.21 .38	211	89 17	.13	.30 1.49*	Decay	Decay Decay*
Nor	-1.05	-.46 -.10	66	57 14	.11	.13 .55*	Decay	Decay Decay
Swe	-2.06	-1.97 -1.33	118	126 38	.05	.05 .19	Flat	Flat Flat
Swi	-1.87	-.07 .24	249	116 7	.00	.01 .22	Flat	Flat Decay
ALL (avg)	1.44[c]	.97 .66	113	88 26	.22	.27 .66*	Decay	Decay Decay

[a] A Durbin-Watson statistic that is marked with a "*" means that the null-hypothesis of no autocorrelation cannot be rejected.

[b)] The following rules were applied in characterizing the pattern of autocorrelated errors. If the Durbin-Watson statistic for one of the first three lags allows the null-hypothesis of no autocorrelation to be accepted at a 5 percent significance level, then it is indicated as "decay*". If the autocorrelation is decaying and the null-hypothesis of no serial correlation cannot be rejected at a 5 percent significance level in one of the first three lags, it is labelled as "decaying". If the null-hypothesis of no autocorrelation is rejected at a 5 percent significance level in each of the first three lags, the pattern is labelled "flat".

[c)] Figures in this cell are the average of the absolute deviations.

Table 4. The Effect of Institutional Variables and Rates on the Rate of Inflation and Wage Dispersion.

	Regression estimates and t-statistics			
	Dependent Variable: Inflation		Dependent Variable: Wage Dispersion	
	Excluding Austria	Including Austria	Excluding Austria	Including Austria
a	4.37 (2.0)	4.69 (2.3)	7.33 (3.38)	1.05 (.31)
PER_{it}	.91 (1.6)	.74 (1.4)	-1.55 (1.23)	-.56 (.36)
UN_t	.85 (6.1)	.84 (6.6)		
$UNITS_{it}$	-.34 (-3.1)	-.35 (-3.3)	1.31 (4.02)	1.82 (4.65)
CBI_{it}	-2.9 (-1.2)	-4.1 (-2.0)	4.54 (.51)	28.4 (3.5)
$CBI*UNITS_{it}$	-.15 (-.68)	.24 (1.48)	-1.30 (1.46)	-3.44 (3.86)
CUR_{it}	-10.1 (-5.6)	-10.0 (-6.1)		
$CUR*UNITS_{it}$	.49 (3.7)	-.47 (-3.7)		
R-squared	.56	.57	.76	.60
N	171	190	18	20

Note: GLS regression was used for inflation. OLS regression was used for wage dispersion where data is only available for two time points: 1974 and 1984. Because the variables CUR and CUR*UNITS had virtually no effects, they were excluded from the regression in order to save on the degrees of freedom.

Table 5. The Rank-Order Correlations between Different Measures of Economic Institutions and Distributional Effects (Figures in parenthesis are excluding Austria).

	Central-ization of Wage Bargaining[a]	Flexibility of the Monetary Regime[b]	Wage Equality[c]	Decommod-ification[d]	Benefit Equality/ univers-alism[e]
Central-ization	1				
Flexibility	.40 (.78)	1			
Wage Equality	.55 (.98)	.77 (.72)	1		
Decom-modif.	.64 (.79)	.64 (.67)	.79 (.84)	1	
Benefit Equality	.47 (.87)	.76 (.71)	.88 (.85)	.79 (.84)	1

Sources and Notes:

[a] Based on the index of centralization for the period 1973-1983.

[b] Based on the average of the index of central bank independence and the hard currency index for the period 1973-1983.

[c] Wage equality is measured as the log of inter-industry variance of earnings for the year 1975 (source: OECD).

[d] Decommodification refers to the ease by which a person can opt out of the market, and the coverage of the various social security programs that makes this possible. It is based on an assessment of pensions, health care, and unemployment cash benefits, and is adopted from Esping-Andersen (1990, Table 2.2, p. 52).

[e] Based on an average of universality of sickness benefits, unemployment benefits and pensions, and on the equality of such benefits as measured by the differential between the basic and maximum of such benefits (source: Esping-Andersen 1990, Table 3.1., p.70).

Table 6. The Estimated Effects of the Wage Bargaining System and the Monetary Policy Regime on Economic Outcomes.

	Monetary Policy Regime	
Bargaining System	**Flexible**	**Non-Accommodating**
Centralized	Unemployment: 2.8 Inflation: 8.4 Dispersion: -38	Unemployment: 10.7 Inflation: 4.5 Dispersion: -8
Decentralized	Unemployment: 11.7 Inflation: 5.9 Dispersion: 31	Unemployment: 3.2 Inflation: 3.7 Dispersion: 34

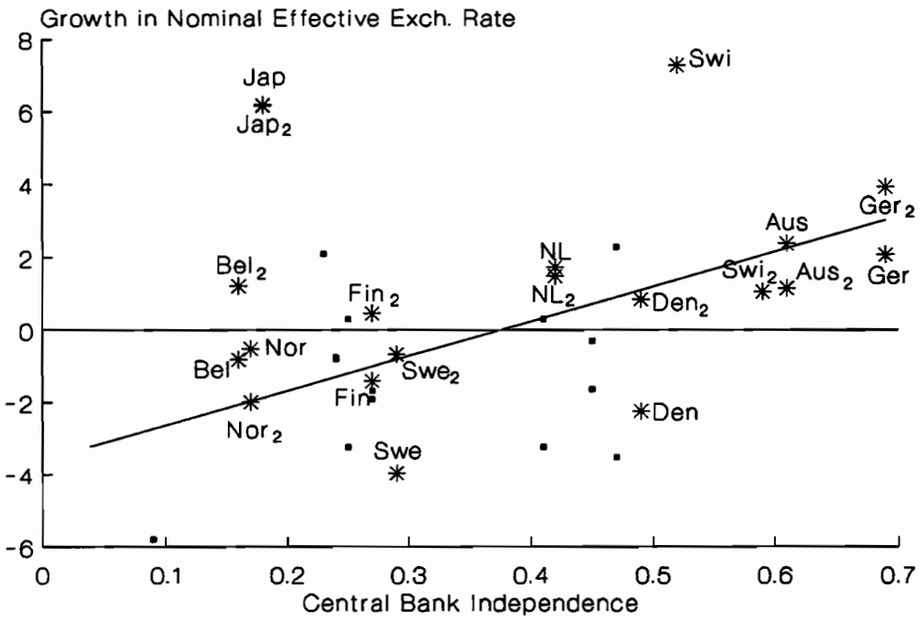
Note: Unemployment and inflation are in percentage points. Wage dispersion is the percentage deviation from the mean dispersion.

Table 7. Three Timewise Autoregressive GLS Models of the Determinants of Rates of Unemployment.

	GLS-ARMA estimates and standard errors		
	Basic institutional model	**Amended model with government partisanship variable**	**Reduced model without institutional terms**
a	-9.3 (-7.6)	-10.9 (-9.1)	-11.2 (-4.3)
PER_{it}	-.81 (-3.7)	-.98 (-4.7)	-.89 (-1.9)
UN^{t}	.38 (3.1)	.70 (4.8)	.47 (1.7)
$UNITS_{it}$	1.53 (24)	1.36 (7.0)	1.63 (6.0)
CBI_{it}	17.5 (11)	15.6 (9.4)	
CBI_{it}*$UNITS_{it}$	-1.85 (-15)	-1.67 (-11.4)	
CUR_{it}	15.3 (12)	16.3 (12.6)	
CUR_{it}*$UNITS_{it}$	-1.80 (-21)	-1.96 (-15.8)	
CAB_{it}		-.21 (-.59)	4.6 (7.5)
CAB_{it}*$UNITS_{it}$		.09 (1.41)	-.54 (-7.1)
R-squared	.85	.86	.31
N	171	171	171

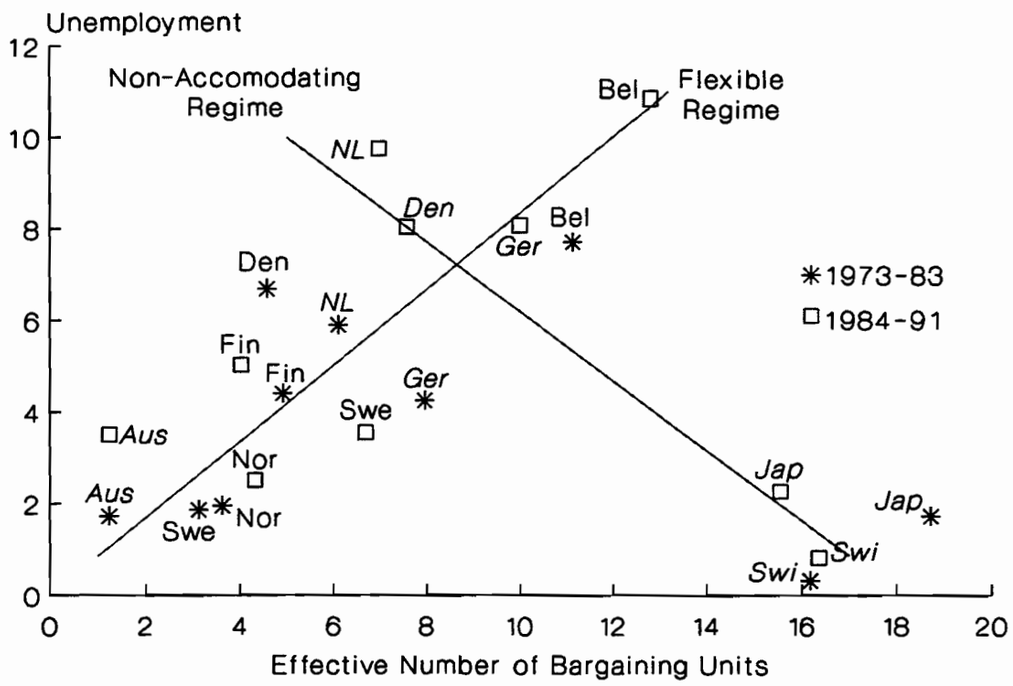
FIGURES

Figure 1. The Relationship between Central Bank Independence and Nominal Effective Exchange Rates.



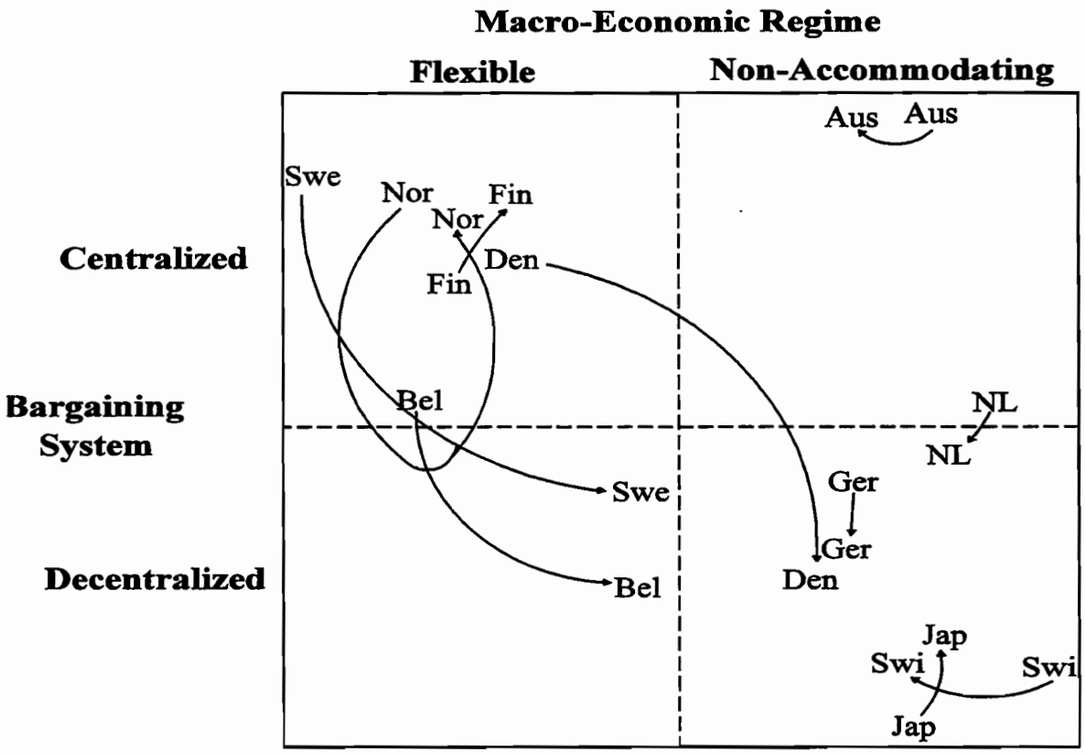
Note: Entries with the subscript ·$_2$· refer to the period 1984-91. The rest refer to the period 1973-1983.

Figure 2. The Actual and Estimated Relationship between the Effective Number of Bargaining Units and Unemployment Depending on the Type of Monetary Regime.



Note: Italicized entries means that the monetary regime is relatively non-accommodating.

Figure 3. The Changing Location of Organized Market Economies on Two Economic-Institutional Dimensions.*



* Arrows indicate direction of change.

The Minda de Gunzburg Center for European Studies

The Minda de Gunzburg Center for European Studies is an interdisciplinary program organized within the Harvard Faculty of Arts and Sciences and designed to promote the study of Europe. The Center's governing committees represent the major social science departments at Harvard and the Massachusetts Institute of Technology.

Since its establishment in 1969, the Center has tried to orient students towards questions that have been neglected both about past developments in eighteenth- and nineteenth-century European societies and about the present. The Center's approach is comparative and interdisciplinary, with a strong emphasis on the historical and cultural sources which shape a country's political and economic policies and social structures. Major interests of Center members include elements common to industrial societies: the role of the state in the political economy of each country, political behavior, social movements, parties and elections, trade unions, intellectuals, labor markets and the crisis of industrialization, science policy, and the interconnections between a country's culture and politics.

For a complete list of Center publications (Working Paper Series, Program for the Study of Germany and Europe Working Paper Series, Program on Central and Eastern Europe Working Paper Series, and *French Politics and Society*, a quarterly journal) please contact the Publications Department, 27 Kirkland St, Cambridge MA 02138. Additional copies can be purchased for $4. A monthly calendar of events at the Center is also available at no cost.