Policy by Contract:
electoral cycles, parties and social pacts, 1974-2000

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Abstract

Persistent cross-national differences in the economic performance among rich democracies flies in the face of both neo-classical macroeconomics, which sees no positive role for government, and the lack of evidence for political business cycles in economic outcomes. To provide a more nuanced understanding of how elections, parties, and interest groups interact to produce policies, I examine “social pacts”: formal policy-for-concession bargains between governments, union federations, and employers. I propose a model in which in which pacts are attempts to make policy promises credible to voters. The model predicts that pact emergence should follow the electoral cycle and respond to the partisanship of government. Using an original data set of social pacts, this paper investigates the model’s predictions along with both domestic and international variables purported to be associated with pact onset. While the findings confirm the importance of economic conditions, especially unemployment, in determining the onset of pacts, political considerations are also important. The electoral cycle and partisan concerns have a strong influence on the timing of pacts. The findings point to one avenue through which electoral cycles affect macroeconomic policy.

Keywords: economic policy, political business cycle, wage bargaining, social pacts, event history models
Beginning with the stagflation of the 1970s and continuing through the subsequent process of increased economic integration, rich democracies confronted economic challenges that traditional Keynesian demand management is not well-prepared to address. Policy approaches to these problems have varied across time and space. Policy makers have, at times, turned to interest rate policies to dampen inflation at the cost of high unemployment and severe economic downturns. Governments have legislated directly over wages and prices. Others have drastically overhauled their entire political-economic institutional structure. Some attempted negotiated agreements with peak associations of labor and capital—social pacts—in an attempt to liberalize labor markets or gain control of wage demands, prices, and government budgets. Neoclassical economic theory, with its reliance on assumptions of rational expectations and perfectly competitive labor and product markets, has little so say about government actions of this sort; government policy can only induce temporary fluctuations that are ultimately detrimental. The new Keynesian macroeconomics, however, relaxes the assumption of perfectly competitive labor markets, opening a channel for policy-makers and wage bargaining agents to affect the real economy (Iversen and Soskice, 2006; Soskice, 2000). With inflation fears returning and severe economic problems again looming large, understanding the conditions under which governments and economic actors can come to an agreement undergirding good economic performance is critical. These pacts are therefore of special interest.

A parallel literature on the “political business cycle” also emerged, though it took scant interest in unions or wage bargaining (Alesina, Roubini and Cohen, 1997; Clark, 2003; Clark and Hallerberg, 2000; Franzese, 2002b; Hibbs, 1977; MacRae, 1977; Nordhaus, 1975). Based on the simple premise that office-seeking politicians have every incentive to manipulate fiscal and/or monetary policy to improve their electoral chances, a series of theoretical arguments emerged, each more complex than the last in an effort to explain the persistent lack of empirical support for the simpler arguments. Suffice to say the empirical literature has
identified an (weak) electoral cycle in policies, but none for economic outcomes; partisan
cycles in which Left parties inflate and spend more than Right parties in an effort to achieve
full employment have proven even more elusive (Franzese, 2002a).

I follow Clark (2003) in arguing that without specifying the mechanisms through which
partisan politicians can influence policy and voter expectations it will be impossible to link
these two literatures. But rather than concentrate on the Mundell-Fleming conditions¹, my
approach is to focus on parties’ abilities to work with peak associations of economic actors
to implement policy, particularly relating to wage/price bargaining. I argue that pacts are a
way in which political parties, typically of the Left, can manage their relationships with peak
associates to credibly promise low inflation and unemployment outcomes to voters. Pacts
can turn the electoral liability of strong party-union linkages into an asset. I then examine
the theory’s implications using an original dataset of social pacts in 20 OECD countries from
1974-2000, finding evidence that the emergence of pacts is strongly affected by both electoral
cycles and partisanship. In so doing, I cast some doubt on Clark’s neo-Downsian model in
which all survival-maximizing parties pursue the same policies in equilibrium, conditional
on the policy levers at their disposal.

Even though pacts have been a regular part of policy making in several OECD countries
in recent decades, they still occupy a stepchild position in the larger comparative political
economy literature. I argue that social pacts are worth understanding for two reasons.
First, they can, under some circumstances, be shown to influence important macroeconomic
outcomes. Second, I use pacts as an empirical lever to pry apart important theoretical
issues: electoral cycles in economic policymaking and persistent cross-national differences
in economic performance. I situate the research on social pacts within the larger literature
on the political control of the economy and the new Keynesian macroeconomics. Social

¹The Mundell-Fleming conditions (the so-called “iron triangle” of open economy macroeconomics) stip-
ulate that a country can simultaneously maintain at most two of the following three policy options: an
independent monetary policy, fixed exchange rates, and fully mobile capital.
pacts provide a window into how the electoral concerns of partisan actors interact with the interests of their core constituencies to affect both economic policy.

The argument is organized into five parts. The next section provides background. Section two sketches a simple model of electorally-driven social pacts. Section three describes the data collected to evaluate the theory while section four presents statistical models of pact onset and discusses the models’ findings and limitations. Section five concludes. The appendix provides additional detail on the pacts data set and the covariates in the models.

1 Background

Most rich democracies have attempted some form of negotiated policymaking with major economic actors at one point or another. While bi- and tripartite policy agreements have differed substantially in their content, timing, and durability, they most commonly embody some form of exchange in which unions pull their punches in wage negotiation or assent to changes in labor market regulations in exchange for social spending, taxation, or other policies they prefer. Some pacts (e.g., in Ireland) have proven so resilient that observers consider the pacts to be institutionalized. Other agreements, such as the 1979 National Accord in the USA or the 1990 Growth Agreement in New Zealand, were still born. Still others had more modest goals involving the implementation of specific policies (e.g., in Spain).

To facilitate systematic quantitative work, I propose the following definition: a social pact is a written, formally articulated, policy contract in which specific policy domains are identified, policy targets set, and the responsibilities of the signatories enumerated. A pact is time-bound, either explicitly or implicitly. A pact is signed by a labor peak association and at least one of \{employer peak association, government/executive\}. To be considered a pact

\footnote{For example, a pact may be with a particular political party, implying that it is void once the party loses office.}
pact, the government or prospective government must either be a pact signatory or the pact must have clauses which require government action and the government publicly declares its support for the agreement and its intention to take the required actions.

Other scholars (Avdagic, Rhodes and Visser, 2005; Baccaro and Simoni, 2006) have spent a great deal of effort defining and categorizing pacts in a more granular fashion, identifying general policy areas or arguing for a typology of pacts. This is surely valuable work, especially when it comes to examining the eventual impact pacts may have on specific policy outcomes. Since my central purpose is to explore the onset of social pacts, I take a broader view and do not disaggregate pacts in this way. As made clear below, pacts’ chief attribute of analytic interest is as public declarations of policy agreements by government and peak associations. Other attributes, while important, are of secondary concern here.

The degree of employer support and participation in social pacts has varied considerably. Some scholars have argued that employer participation is necessary for pacts to survive for extended periods (Baccaro, 2006; Baccaro and Simoni, 2006; Baccaro and Lim, forthcoming; Culpepper, 2008). While this may be true in the most recent periods, other pacts have occurred in the absence of employer support or even in places where employers were too fragmented to formulate any coherent response whatever (e.g., in Australia). In any event, the provisions of pacts generally involve union concessions that will be to the benefit of employers, even if the pact process is not necessarily employers’ most preferred method of policy making. Employers, therefore, have little incentive to actively undermine a pact if union cooperation can be sustained. I therefore formally model the emergence of pacts as if unions and governments are the only parties involved. I defer continued investigation of the role of employers, especially for pact renegotiation and survival, for future work.

Note that pacts are distinct from collectively bargained employment contracts, whether private or public sector. While governments (or agencies thereof) routinely act in the role of employer and negotiate contracts with unionized public sector workers, these are narrow
in scope and restricted only to a subset of unions. Social pacts, however, are agreements with union peak associations that affect public policy goals while also setting bargaining parameters across the entire economy. In a pact, the government negotiates in its role as policy maker, not as public employer.

I do not view social pacts as merely some intermediate point on a wage-bargaining continuum with completely centralized bargaining at one extreme and atomistic workers and firms on the other. Rather, I consider pacts as a tactic useful for both governments and unions. Pacts are, at best, a path leading from one institutional arrangement to another; at worst they are cheap talk. Although pacts often induce centralized bargaining for a time, they differ from codified institutional arrangements in several important ways. First, the agreements are time-bound, with definite dates of inception and termination. Second, they are explicit agreements over specific policy domains. Third, they almost always have specific policy targets (inflation levels, wage increases, etc.). Fourth, they must be self-enforcing as they are not legally binding in any meaningful sense.

While pacts are related to the more generic notion of “policy concertation”, they differ in an important way. If concertation is taken to mean governments threatening, cajoling, or paying off various social groups to induce them to implement the government’s preferred policies then pacts are, at best, a subset of the tools at the government’s disposal. Alternatively, if concertation is taken to mean collaborative design of regulatory (as opposed to redistributive) policy (Iversen, 2005; Iversen and Soskice, 2007; Iversen and Stephens, 2008), then pacts straddle a boundary. They clearly appear to be collaborative in the sense of unions, governments and employers agreeing on the basic parameters of effective economic management. But they also frequently implicate highly redistributive policies such as taxation, retirement and pensions, health care, and unemployment while also affecting labor market regulations and the structure of union representation.

Pacts are also something different from simple lobbying. Unions and employers lobby
governments all the time. Labor federations maintain significant political alliances even where they are weak and fragmented. I argue that pacts differ from lobbying and implicit contracts between economic interest groups and parties in that pacts are very policy-specific and very public. Indeed, pacts are trumpeted loudly within unions and in the press more broadly. While, on some level, pacts might be viewed through the lens of common agency and lobbying, I argue that the public nature of pacts begs for an explanation not captured in these standard models.\(^3\) It is the public, contractual nature of pacts that makes them distinct from all the other ways government and major interest groups pressure one another. The public nature of pacts is the link between pacts, policy, and elections.

And what of pacts' actual effects on policy and outcomes? As might be expected, without an appropriate understanding of what determines pact onset, it is nearly impossible to evaluate their effectiveness on a systematic, cross-national basis. Their idiosyncratic contents makes identifying “success” across pacts a non-trivial exercise. Nevertheless, there is some prima facie evidence that pacts have had effects on policy, elections, and outcomes in specific cases. In Australia, there is evidence that the Accord of the 1980s-90s lowered strike activity (Beggs and Chapman, 1987; Chapman, 1998), compressed wages, and reduced real wage growth and unemployment (Chapman, 2000; Chapman et al., 1991). It seems likely that the Accord was effective in helping Labor win the 1983 and 1986 Australian federal elections (Ahlquist, 2007; Singleton, 1990). Observers of Ireland and Italy have credited pacts there with stabilizing wage bargaining relationships (Baccaro and Lim, forthcoming; Culpepper, 2008; Teague, 1995). In Spain and Portugal, pacts do seem to have smoothed the implementation of controversial policies.

In sum, pacts occupy an uncomfortable theoretical purgatory in the existing thinking about economic policy making, wage-price bargaining, concertation, and interest group in-

\(^3\)It is also worth mentioning that the literature on concertation generally ignores the highly public nature of pacts.
fluence. But their high public profile and frequency of use cries out for an explanation. I argue that pacts provide a way for us to link models of political control of the economy with an understanding of electoral and partisan cycles in policy making.

2 Pacts and elections: a model

This section develops a model to show how pacts can actually be related to the electoral cycle. I discuss pacts using the language of wage bargaining, but this is purely for convenience; the basic argument follows for any set of concessions by unions in one domain in exchange for policy favors in another. The model here builds on Iversen (1999:ch.2) and Adolph (2006:ch.7). Levi and Schott (1986) first propose viewing pacts as repeated games.

2.1 Players

In the model, there are four classes of strategic players:

1. a set of $n$ equally sized unions, $L^i (i = 1 \ldots n)$, who choose nominal wage increases for their bargaining areas;

2. an incumbent party, $P$, who controls tax and transfer at some cost;

3. a representative citizen, $C$, who chooses either the incumbent or the challenger in periodic elections. $C$ is assumed not to be a union member (or at least does not vote as if she were);

4. a monetary authority, $M$, with control over the inflation rate.
Each union is assumed to value real wages, employment, and the “social wage”. Specifically, each union’s utility at time $t$ is

$$V^L_{it} = S_t + \alpha(w^i_t - \pi_t) - (1 - \alpha)\bar{U}_t U^i_t$$

(1)

where $\pi$ is the inflation rate; $w^i_t$ is the nominal wage increase set by union $i$; $U^i_t$ is the unemployment rate amongst members of union $i$ and $\bar{U}$ is the average unemployment rate in the economy; $\alpha \in [0, 1]$ is a parameter governing the relative importance of wages and unemployment; and $S$ is the “social wage” or, alternatively, the government policies that benefit unions. I combine all non-policy terms of the unions’ objective function into $W^L_{it}(w^i_t)$

The decisive citizen also cares about wages and unemployment. Her utility at $t$ is given by

$$V^C_{it} = -\frac{1}{2} \beta \pi_t^2 - \frac{1}{2} (1 - \beta)\bar{U}_t^2 - \tau_t$$

(2)

where $\beta \in [0, 1]$ describes her relative aversion to unemployment and $\tau$ is a non-negative tax that can be used to finance the social wage. For simplicity, funding for the social wage enters the citizen’s utility function negatively. One way to interpret $S$, then, is as a transfer from $C$ to $L$ by way of $P$; $C$ is buying wage restraint from the unions.\footnote{A more complicated version of the model might include a full continuum of voters ordered by income in which taxes and transfers are lump sum, a la Meltzer and Richard (1981). In this richer formulation, so long as the income for the median union member is below that of the decisive voter, $\tau$ can be thought of as the additional transfers that the unionized workers are able to extract beyond what the median voter prefers, even if the median voter prefers some positive tax rate based on her position in the income distribution.}
The incumbent party cares only about gaining and remaining in office, so its objective function will be induced by the citizen’s voting decision rule. The party does control taxation and transfers. Specifically, the party can set \( \tau \) and \( S \) subject to the budget constraint

\[
S_t \leq \tau_t - \epsilon
\]  

(3)

where \( \epsilon \) describes the slippage between the amount of taxes collected and the delivery of transfers to union members. This slippage can take on many interpretations (e.g., transaction costs). Here I discuss \( \epsilon \) as in indicator of “partisanship”, i.e., the incumbent’s disutility for working with unions in policymaking.

The monetary authority is assumed to care about aggregate price levels and unemployment. \( M \) chooses the inflation rate to maximize

\[
V^M_t = -\frac{1}{2}\iota(\pi_t)^2 - (1 - \iota)(\bar{U}_t)^2
\]

(4)

The parameter \( \iota \) describes the relative weight the monetary authority places on price stability versus unemployment.

### 2.2 Economic Assumptions

Rather than posit a full model of the economy, I import Iversen’s specification of the labor market and expectations-augmented Phillips curve. Specifically, I assume that unions set nominal wage increases.\(^5\) The effect of nominal wages on prices and unemployment flows through two channels: a relative price effect and an aggregate price effect.\(^6\) The relative effect for union \( i \) is given by \( cw^i \), where \( c = 1/n \) is a measure of the centralization of unions.

\(^5\)Obviously wage increases are the result of union-employer bargaining. This simplification is equivalent to models in which the union sets the wage rate and the employer sets employment levels, given the union wage.

\(^6\)See Iversen (1999:38-46) for a detailed discussion and derivation of the relative and aggregate effects.
The relative effect for all other unions is given by $cw^o$. The aggregate effect for $i$ is $c^2 w^i$ while for all other unions it is $c(1 - c) w^o$. If $M$ were to set inflation below the price increases implied by the nominal wage demands $w^i$ and $w^o$, there would be an effect on unemployment. These disequilibrium conditions simplify to

$$
\Delta U^i = w^i (c^2 - c + 1) + w^o c (1 - c) - \pi \tag{5}
$$

$$
\Delta \bar{U} = cw^i + (1 - c) w^o - \pi \tag{6}
$$

### 2.3 Sequence of play and information

The game is played in discrete time from $t = 0, \ldots, \infty$. The value of $\epsilon$ is common knowledge and assumed constant for all periods. At $t = 0$, $P$ and $L$ can bargain over a contract of the form $\langle S'_\infty, w^i'_\infty \rangle$, where the subscript denotes an infinite sequence of vectors $(S'_t, w^i'_t)$. I assume that, if possible, $P$ and $L$ reach a Nash bargaining solution in setting contract terms. If a contract is signed, then the contract’s existence is announced to $C$, along with the values $\langle S'_\infty, w^i'_\infty \rangle$. $C$ then either appoints $P$ or some challenger as policy maker. If the challenger is selected then $\tau_t = 0 \ \forall \ t$ and $L^i$ sets nominal wages accordingly. If $P$ is installed in office, $P$ and $L^i$ implement $\tau_t$, $S_t$, and $w^i_t$, which need not be those announced under a pact. $M$ sets $\pi_t$ and the stage ends. In subsequent periods, play proceeds identically only there is no possibility for a pact.
2.4 Equilibria

2.4.1 A one period game

I first consider the equilibria for a single period of the game. Given equations 1, 5, and 6 and suppressing subscripts for time, I can reformulate $M$’s optimization problem as

$$\max_{\pi} \pi - \iota \pi^2 - (1 - \iota)(\overline{U} + \Delta \overline{U})^2$$

$$= \max_{\pi} \pi - \iota \pi^2 - (1 - \iota)(\overline{U} + cw^i + (1 - c)w^o - \pi)^2$$

yielding exactly Iversen’s sufficient condition for a maximum

$$\pi^*(w^i) = (1 - \iota)(\overline{U} + cw^i + (1 - c)w^o) = (1 - \iota)(\overline{U} + w)$$  

(7)

with the far right equation resulting from the fact that $w^i = w^o$ in equilibrium. Note that $\frac{\partial \pi^*}{\partial w^i} \to 0$ as $c \to 0$, that is as bargaining units become smaller or, equivalently, less coordinated, each unit’s wage settlement has a smaller impact on the monetary authority’s decision.

Let us now consider what the unions will demand in the absence of any pact. Given $M$’s best response, $L^i$ faces the following maximization problem:

$$\max_{w^i} \alpha (w^i - \pi^*(w^i)) - (1 - \alpha)(\overline{U}^i + \Delta \overline{U}^i)(\overline{U} + \Delta \overline{U})$$

Using the fact that $w_o = w_i$ and $U^i = \overline{U}$ in equilibrium, the unions’ optimal wage demand is given by

$$\hat{w} = \hat{w}^i = \frac{\alpha(1 - c + \alpha)(1 - \alpha)i\overline{U}(c^2 + 2c(\iota - 1) + 1)}{(1 - \alpha)(c^2 + 2c(\iota - 1) + 1)i}$$  

(8)

once again, equivalent to Iversen’s expression. We can also now specify $\frac{\partial W^i}{\partial w^i}$ and $\frac{\partial W^C}{\partial w^i}$, two expressions that will be useful later:
\[
\frac{\partial W^L}{\partial w^i} = \alpha (1 - c + \alpha \iota) - (1 - \alpha) \iota (\bar{U} + w^i)[(c - 1)^2 + 2\alpha \iota] \\
\frac{\partial W^C}{\partial w^i} = 2c(-\iota^2 + 2\beta \iota - \beta)(\bar{U} + w)
\] (9) (10)

A bunch of tedious algebra shows that \(\frac{\partial W^L}{\partial w^i} > 0\) for \(w^i < \hat{w}\) and that \(\frac{\partial W^C}{\partial w^i} < 0\) \(\forall \beta, \iota \in [0, 1]\).

In words, the non-policy portion of the unions’ utility is increasing in its wage up to \(\hat{w}\) whereas the citizen’s utility is decreasing in the unions’ wage demands. This relationship is fundamental to a pact; unions and voters make an agreement whereby unions are compensated for giving up wages and the gain for the citizen is worth the policy price.

Having established the monetary authority’s and union’s best responses to one another in the absence of a pact we can now consider equilibrium in the one shot game. Working backwards, it is clear that \(M\) will set inflation to minimize its loss, as expressed above. Next, consider the case in which some pact was signed prior to the election and \(C\) installed \(P\). Suppose further that \(S'\) and \(w'\) are such that both \(C\) and \(L^i\) are better off under the pact than without one (the conditions for this will be elaborated below). In this case, the unions have an incentive to deviate from whatever the pact demanded and set \(w^i = \hat{w}\). Similarly, \(P\) has no incentive to implement \(\tau\) and \(S'\). In the one shot game no contract signed by \(L^i\) and \(P\) is credible. As a result, \(C\) will disregard any pact and install \(P\) with probability 1/2 since \(P\) and the challenger are indistinguishable in terms of expected policy. This discussion yields the equilibrium result:

**Proposition 1 (equilibrium in the one shot game)** The subgame perfect Nash equilibria in the one shot game are as follows:

- \(M\) sets \(\pi = \pi^*(\hat{w})\)

- \(L^i\) signs any pact offered with probability 1/2; \(L^i\) sets \(w^i = \hat{w}^i \forall i\).
• P’s set of contract offers is unrestricted P; P sets $\tau = 0$

• C votes for P with probability $1/2$.

While pacts are possible in the equilibrium they are not worth the paper they are printed on; they are not credible. Substantively, this result formalizes an intuition about pacts held by many: pacts are just cheap talk with no bearing on policy. There are some examples of pacts that appear to correspond to this characterization. The 1979 National Accord signed by the Carter Administration and the AFL-CIO was an attempt to deflect criticism of the Democrats’ handling of inflation in the run up to the 1980 Presidential election (Flanagan, 1980).

2.4.2 The repeated game

For a pact to be politically useful it must be credible in the eyes of the electorate. Since no agent can coerce the government into compliance ex post, a pact must be self-enforcing which requires repeated play. As the game is played through time I assume that all players hold the common discount factor $\delta$.

As with all repeated games, there are an infinite number of equilibria including an infinite repetition of the equilibria described in proposition 1 (Fudenberg and Maskin, 1986). I am interested in characterizing equilibria in which pacts that are proposed are signed, both $L^i$ and $P$ implement the pact’s provisions, and $C$ appoints $P$ in every period after having seen a pact. Put another way, the pact is both credible and self-enforcing. To construct the equilibrium, I posit a trigger strategy. Specifically I consider the conditions under which the following strategy profile constitutes an equilibrium:

• $M$ sets monetary policy in each period as above

• $L^i$ sign a pact and set $w^i_t = w^i_t \forall i$, provided that 1) $P$ is in office at $t$; 2) $P$ has set $S_r = S'_r \forall r < t$; 3) $w^o_r = w'^o_r \forall o \neq i \forall r < t$. Otherwise $w^i_t = \hat{w}$.
• $P$ signs a pact and sets $\tau = S_t' + \epsilon$ and $S_t = S_t'$ provided that 1) $P$ is in office at $t$; 2) $w^i_r = w^i_r \forall i \forall r < t$. Otherwise $\tau_t = S_t = 0$.

• $C$ installs $P$ in office in every period provided that 1) a pact was signed at $t = 0$; 2) $P$ was in office at $t - 1$ or $t = 0$; and 3) $W^C_r > W^C(\hat{w}) \forall r < t$. Otherwise install the challenger.

• $P$ and $L^i$ set $w^i'$ and $S'$ according to Nash bargaining.

Let $\sigma$ denote this strategy profile. Note that $\sigma$ requires both vertical and horizontal accountability: All unions defect if $P$ fails to deliver or if one of the other unions fails to cooperate in wage restraint.

Stationarity

In the model the state of the economy is fully determined and realized every period. This has implications for the strategies I must consider. First, the monetary authority has no need to take into account future (or past) wage demands when setting the inflation rate. In the multi-period game, $M$’s best response correspondence remains the same as in (7). Similarly, the unions have no incentive to take the future into account in the absence of a pact so $\hat{w}_t^i$ is given by (8), with the $\bar{U}$ and $U^i$ parameters subscripted for $t$. Finally, I can restrict my attention to contracts in which $S_t' = S_{t+1}'$ and $w^i_t' = w^i_{t+1}'$ for all $t$ without loss of generality.

Participation Constraints

In a self-enforcing pact, participation by $P$, $L^i$, and $C$ must be incentive compatible. For $P$ this is not a problem. All $P$ values is holding office and neither proposing nor signing a pact is costly so $P$ will propose, sign, and implement any pact provided it believes $L^i$, $M$, and $C$ are playing $\sigma$. 

15
Given the strategies of $L^i$ and $P$, it is in $C$’s interest to appoint $P$ iff

$$\frac{\delta}{1-\delta} V^C(w', \tau') \geq \frac{\delta}{1-\delta} V^C(\hat{w}, \tau = 0)$$

(11)

where $\tau' = S' + \epsilon$. Note that since $C$ acts every period to select the government, the discount factors cancel and condition 11 is equivalent to ensuring that the value to $C$ of a pact is at least as good as having no pact in every period.

For a pact to be in the interest of the unions in the repeated game, it must be the case that the (discounted) benefits of the pact exceed the forgone wages. Formally, for a pact to be an equilibrium outcome the value to the unions of a one-time deviation cannot outweigh the punishment inflicted by $P$ and $C$, i.e., reverting to the no-pact state for the rest of the game:

$$\sum_{t=r}^{\infty} [W^L_i(w') + \tau_t - \epsilon_t] \geq W^L_i(\hat{w}) + \tau - \epsilon + \sum_{t=r+1}^{\infty} W^L_i(\hat{w})$$

$$\Downarrow$$

$$\frac{\delta}{1-\delta} [W^L_i(w') + \tau - \epsilon] \geq \tau - \epsilon + \frac{\delta}{1-\delta} W^L_i(\hat{w})$$

(12)

Condition 12 emphasizes the standard result in the theory of repeated games: equilibria supported by trigger strategies require that the players do not discount the future too heavily. Note, however, that so long as voters find the pact credible only the unions’ discount rate matters. The other players’ payoffs are determined within a single election cycle. Formally, $\delta$ must be greater than $\delta^*$ where

$$\delta^* \equiv \frac{\epsilon - \tau}{W^L_i(\hat{w}) - W^L_i(w') + 2\epsilon - 2\tau}$$

Voters

While I assume that the actual values of $w'$ and $S'$ are the result of a Nash bargaining
process, to characterize equilibria we need to find the values that will make the players exactly indifferent between a pact and no pact. First, consider the $C$’s decision. The best contract the decisive voter can hope for is the one that makes $L^i$ indifferent between signing and not, assuming that the pact is implemented in equilibrium. The values for this contract are given by the solution to

$$\max_{\tau, w} \quad W^C(w) - \tau$$

s.t.

$$\tau \geq \frac{\delta}{2\delta - 1} [W^{L^i}(\hat{w}) - W^{L^i}(w)] + \epsilon$$

$$\tau, w \geq 0$$

where the first inequality is the unions’ participation constraint derived by solving (12) for $\tau$. The constraint will bind, giving the first order condition that implicitly defines $w^i = w^o = \underline{w}$, the smallest wage increase a pact can induce or, equivalently, the maximum amount of wage restraint that any pact can secure:

$$\frac{\delta}{2\delta - 1} \frac{\partial W^{L^i}(w)}{\partial w} + \frac{\partial W^C(w)}{\partial w} = 0 \quad (13)$$

Substituting in the appropriate derivatives and simplifying yields

$$\underline{w} = \frac{\delta}{2\delta - 1} \frac{\alpha(-\iota c + c - 1)}{2\beta c(2\iota - 1) + \iota((\alpha - 1)(c - 1)^2 + 2(\alpha - 2)c\iota) - \bar{U}} \quad (14)$$

Note that this is strictly decreasing in the average unemployment rate, i.e., best-case pact for the citizen gets better the higher the unemployment rate. Let $\tau$ and $S$ be the values of $\tau$ and $S$ defined by $\underline{w}$ and the union’s participation constraint.

For some values of $\epsilon$, condition 11 will not hold, making a pact impossible. Specifically, substituting $\underline{w}$ into (11), canceling the discounting terms, and using the derivation of $\underline{w}$ and
the unions’ participation constraint yields the following claim:

**Claim 1** *A pact can emerge in equilibrium only if*

\[
\epsilon \leq [W_c^C(w) - W_c^C(\hat{w})] + \frac{\delta}{2\delta - 1}[W_{L'}^C(w) - W_{L'}^C(\hat{w})]
\]  

(15)

Let \( \bar{\epsilon} \) denote the value of \( \epsilon \) for which the expression 15 holds with equality. The claim says that if the party is sufficiently averse to working with unions in policy making then no concessions can be purchased from the unions.

**The Incumbent Party, Unions, & Nash Bargaining**

The incumbent in this model only values holding office. As such it has no incentive to deviate from the posited equilibrium, given that all other players are playing \( \sigma \). Specifically, given that \( \epsilon \leq \bar{\epsilon} \), \( P \) can discontinuously increase its chances of holding office by signing a pact so long as \( \underline{w} \leq w' \leq \hat{w} \). Once in office under a pact, if \( P \) fails to deliver the agreed \( S' \) it will lose office next period. Overtaxing \( C \) beyond what is needed to fund \( S' \) yields \( P \) no gain whatever.

Unions bargain with government to maximize their wage/employment/transfer payoff. Given a bargaining outcome that is at least as good as the outcome from \( \hat{w} \), the unions cannot gain by unilateral defection, provided \( \delta \geq \delta^* \).

To fix the actual value of \( w' \) and \( S' \) in equilibrium, I assume that \( P \) and \( C \) engage in Nash bargaining in which \( P \)'s bargaining objective is exactly \( C \)'s objective function. The surplus is split between the two based on their relative bargaining power. This is an attractive solution as their is no *a priori* reason to believe that one party will be able to dictate terms to the other. Note, however, that while \( C \)'s preferences partially determine the division of the surplus, the *size* of the total surplus is dictated by \( \epsilon \). As \( \epsilon \uparrow \bar{\epsilon} \), the surplus goes to 0; as the partisanship of the incumbent moves further to the Right, the bargaining space shrinks.
Proposition 2 (pacts-as-equilibrium in the infinitely repeated game) There exists a set of Nash equilibria in the infinitely repeated pacting game under strategy profile $\sigma$ provided that $\epsilon < \bar{\epsilon}$ and $\delta \geq \delta^*$

2.5 Discussion and implications

In the model, pacts can emerge in equilibrium in two ways: in the first, the pact is not credible. While a pact may be signed it is not implemented. In the second, the pact is implemented and sustained with trigger strategies. The primary role of the pact in inducing cooperative behavior among unions and policymakers in equilibrium is information dissemination. The pact is the public statement specifying the focal point for trigger strategy implementation off the equilibrium path in a situation involving many unions and voters. Without this coordination and public agreement there is no way for the trigger strategies to exist and no way for the voters to evaluate the policy statements of the incumbent.

In either case, impending elections and the voters’ desire for credible policy promises about economic management motivate the emergence of pacts. Ultimately, elections are both the reason for policy promises and the mechanism that induces compliance by the unions and the government. The incumbent party’s aversion to cooperating with unions, which I interpret as partisanship, affects the size of the surplus over which the actors bargain (Claim 1 and Proposition 2).

The model’s depiction of the political process most closely approximates politics in systems with two large, dominant parties. In a two-party system, we would expect pacts to occur prior to elections since either one party or the other will control the executive with
certainty. In contrast, in a more fragmented party system the identity of the pivotal voter is unclear (Austen-Smith, 2000) and there is little incentive for a union or employer federation to sign a public pact with any particular party prior to an election since the exact composition of the government will not be known until after the election.

The model therefore yields the following empirical hypotheses:

H1: Pacts will be more likely to occur close to elections;

H2: The greater the Left party participation in government, the more likely is a pact;

H3: Pre-electoral pacts will be more likely in 2-party systems.

3 Data

This section outlines the data used in subsequent analyses, especially the outcome variable of social pacts. To date, the study of pacts has been mainly through means of case studies of particular countries or pacts. The lack of cross-nationally comparable data on pacts has precluded more systematic approaches. One of the major contributions of this paper is the introduction of a comprehensive data set encoding the signing of pacts in twenty developed democracies for the periods 1974-2000. The countries in the sample are: Australia, Canada, the EU15 (without Luxembourg), Norway, New Zealand, Switzerland, and the USA.\(^7\) The overall structure of the dataset is an unbalanced panel time series. Detailed definitions and sources for all variables are described in the appendix.

3.1 Social pacts

The response variable in the analysis below relies on coding the timing of pacts, based on the definition given above. I coded the occurrence and death of pacts at the quarterly level. As

\(^7\)Greece, Portugal, and Spain do not enter the risk set until the first election after the reintroduction of democracy.
the model implies, pacts can have varying durations. Some can persist for long periods while others may never live long enough to be implemented. It seems plausible that the variables likely to affect the duration of pacts (e.g., economic performance, employer participation, the actual results of elections) are endogenous to both pact emergence and one another. These endogeneity problems in pact duration substantially complicate empirical analysis. As a result, this paper focuses exclusively on pact onset; it is not currently possible to estimate a model for the entire pact lifecycle without serious violations of independence assumptions.

Many pacts, especially the most durable, are renegotiated several times. For example, the Australian Accord was renegotiated six separate times between 1983 and 1996. The Irish Programme for National Recovery was renegotiated (and renamed) three separate times between 1987 and 2003. Both my model and the literature have fewer claims to make about pact renegotiation relative to initial onset. Fitting models for renegotiated pacts suffers from the same endogeneity problems for models of the full lifecycle of a pact. I therefore consider only “new pacts”, excluding renegotiated versions of previously existing pacts. All findings are therefore restricted in scope; it may be that variables I find to be unrelated to pact onset in fact affect pact longevity or renegotiation.\(^8\) To determine what is new versus renegotiated, I rely on an empirical coding rule: a new pact occurs in a quarter when there is no pact in effect in any of the last three quarters. Further details on the data sources employed, coding rules, and pacts included in the analysis are collected in the appendix.

I should note one consequence of my coding and analysis decisions. By my definition and coding scheme the 1982 Wassenaar and 1994 “New Course” agreements in the Netherlands fail to qualify as pacts, even though there are several observers who treat both as important social pacts (Hamann and Kelly, 2007; Hemerijck, Van der Meer and Visser, 2000; International Labour Organization, 2005; Pochet and Fajertag, 2000; Visser, 1998). I just-

\(^{8}\) Re-running the basic models on the datasets including both new and renegotiated pacts as “failures” (see fn 15) does not alter the findings for either the electoral cycle or partisanship.
tify this decision on the grounds that there was no evidence that government made public statements of support for either accord; indeed, both agreements were concluded under government threats of unilateral legislation (EIRR, various; International Labour Organization, 2005; Visser, 1998). Neither accord made demands on the government. Although there is a consensus that the government was deeply involved in brokering these Dutch deals, this is distinct from the logic of publicly contracting over policy that I argue is the sine qua non of a social pact. In any event, re-running the analysis below including both of these cases does not alter the substantive interpretation of the statistical findings below, though the magnitude of some coefficients alters.

3.2 Covariates

3.2.1 elections

Addressing the central concern of electoral cycles is nontrivial. I employ several variables to model this relationship. First, we must account for cross-national differences in election cycles. Following Kayser (2005), I use the time since the last election as proportion of the constitutional interelection period, TSLE/CIEP, as a cross-country measure of both the proximity to previous elections and latent pressure to hold elections. As this value increases we are both more distant in time from the last election and closer to the next.

As a check on the appropriateness of TSLE/CIEP and to account for the fact that elections can be set endogenously in several countries, I also use two dummy variables. The first takes on the value of 1 if an election will be held in any of the subsequent six quarters and 0 otherwise. The second takes on the value 1 only if an election has been held in any of the previous six quarters.

---

9If we were to code all the union-employer deals brokered in the shadow of threatened government involvement, then it becomes nearly impossible to tell what is not a pact.

10The direction of this alteration was not consistent across model specifications.
3.2.2 governments and partisanship

I am hardly the first to posit that pacts have a political component. Earlier work (Regini, 1995) conjectures that pacts are a way for governments to share the blame as they alter welfare spending regimes. Virtually every case study of a pact makes some connection between pacts and politicians’ concerns with elections. More recently Baccarro and his co-authors (Baccaro, 2006; Baccaro and Simoni, 2006; Baccaro and Lim, forthcoming; Hamann and Kelly, 2007) hypothesized that pacts are most likely during periods of minority or caretaker government. I therefore include a dummy variable taking on value of 1 for all periods in which the government controls a majority of the lower house and 0 otherwise.

Partisanship of government is measured using the proportion of government seats controlled by Left parties. I account for the fragmentation of the party system using the (log) effective number of parliamentary parties.\textsuperscript{11}

3.2.3 economic conditions and crisis

The most common idea running through the literature on social pacts is the notion of a “crisis”, frequently framed as exogenous, as inducing a publicly negotiated policy response. The debate has largely centered around what constitutes a meaningful or sufficient “crisis”. Several possibilities have been proposed. I mention each in turn and include the necessary covariates to account for these possible relationships.

Poor economic conditions, especially high unemployment and inflation, are the most commonly cited sources of crisis. This makes intuitive sense since unions’ wage bargaining activities lie at the nexus of the two in highly unionized economies. Unions are more willing to turn to politics when their ability to win gains via industrial action is attenuated by economic conditions. From an empirical point of view, virtually every case study of pacts mentions both unemployment and inflation as highly salient problems. I account for these

\textsuperscript{11}results below are unchanged if I substitute median district magnitude for effective parties.
arguments by including unemployment, inflation, and per capita GDP growth.

Rhodes (2001) argues that pacts are a response to the pressures of “globalization”, specifically the need to ensure export competitiveness and macroeconomic stability. He argues that pacts are more likely as countries become more exposed to the international economy, especially through trade. Since smaller countries tend to be more trade exposed on average and also tend to have more highly centralized wage bargaining (Ahlquist, 2008; Katzenstein, 1985) I use the Hiscox and Kastner (2006) measure of trade distortion rather than rely on the standard openness variable. Smaller values of this variable represent a smaller deviation from expected trade.¹² Other fiscal and macroeconomic variables hypothesized to matter are the government deficit and the current account balance. All these variables, save unemployment, are available only at annual levels, so I interpolate quarterly values using cubic splines.

The literature on social pacts has a strong European focus, so it is unsurprising that several authors have argued that the EMU convergence criteria induce pacts (Fajertag and Pochet, 2000, 1997; Hancké and Rhodes, 2005; Hassel, 2003; Regini, 1995). Specifically, Maastricht signatory countries are required to address deficits and inflation simultaneously without recourse to devaluation, purportedly inducing them to enlist the cooperation of non-governmental actors. Baccaro and Simoni (2006) invoke Kitschelt (2001)’s “problem load” terminology, arguing that some countries faced greater struggles to comply with convergence criteria than others. I code a dummy variable as 1 for all Maastricht signatories for each quarter after 1991 or the first quarter of Maastricht adoption.

¹²Results are unchanged using the standard openness measure.
4 Models and results

I model pact milestones as an event history process. In each quarter a country not currently under a pact is considered to be at risk. The probability of “failure”, i.e., a pact, is governed by a baseline hazard rate which is then modified through time as a function of covariates. Since countries can (and do) experience repeated spells under pacts and all covariates are time-varying, each country contributes numerous observations which are clearly not independent of one another. To address this dependence across observations, I employ a so-called frailty model in which different clusters are assumed to be more or less prone to failure due to some unobserved heterogeneity. This is achieved by including a random effects term in the linear predictor. Formally, in the Cox frailty model each individual \( i \in \{1, \ldots, n\} \) is a member of one and only one group \( j = 1, \ldots, q \). In this application, each \( j \) represents one of the 20 countries in the sample. Each \( i \) is an observation of a country-quarter. The hazard for \( i \) at time \( t \) is

\[
\lambda_i(t) = \lambda_o(t) \exp(X_i(t)\beta + Z_i\omega)
\]

where \( \lambda_o(t) \) is the unspecified baseline hazard rate, a function of time, and \( X_i \) is vector of covariates with associated coefficient vector \( \beta \). \( Z \) is matrix of dummy variables encoding whether \( i \) is a member of \( j \) and \( \omega \) is a vector of the to-be-estimated random effects. To identify the model we assume \( \exp(\omega_j) \) are distributed as i.i.d. Gamma or Gaussian, both with unit mean and estimated variance \( \theta \). As \( \theta \to 0 \) we approach the standard Cox model.

---

13 All analysis was conducted in R 2.4.0 (R Core Development Team, 2006) using the MASS, splines, and survival libraries.

14 In the models below, I use elapsed time (quarters since 1974:I) to measure the counting process rather than gap time, i.e., each [start,stop] interval cumulates for the whole observation period rather than restarting at start=0 in the first period in which a country re-enters the risk set after a spell under a pact. I am unwilling to make the assumption that the baseline hazard rate, \( \lambda_o(t) \), is independent of calendar time, as required if the counting process is structured as gap time. See Therneau and Grambsch (2000:ch. 8-9)

15 Event history (or survival) modeling has been most fully developed in the biostatistics and engineering literatures, hence the terminology of “risk”, “failure”, “survival”, and “hazard”. These terms are purely artifacts of the models’ origins and do not reflect any normative judgement. I continue to use them to maintain consistency with the technical definitions of hazard rate, survival curves, etc.
While there is little empirical or theoretical reason to prefer one over the other, it is known that inference can be sensitive to the choice of distribution. I initially explore both and then report only models using Gaussian frailty unless findings differ across model specifications or convergence considerations so warrant.

4.1 Pact onset

4.1.1 the Maastricht effect

Exploratory data work turned up a strong association between time periods in which a country is committed to the Maastricht criteria and the hazard of a pact. In figure 1, I plot the survival curves generated by simple Cox models with no covariates. In the upper panel, all countries are included whereas in the lower panel the model is stratified by the Maastricht indicator variable. There is a clear increase in the risk of a pact among Maastricht signatories after 1991; the downward slope of the survival curve is precipitous, particularly when compared to the rate of pacts in non-Maastricht country-periods. This association is so strong (no pacts after 1990 were in non-Maastricht countries) that the (penalized partial) maximum likelihood estimator regularly fails to converge in models including the Maastricht indicator variable.

Substantively, this finding demonstrates that the Maastricht criteria are strongly associated with the emergence of social pacts, especially during an era of otherwise relatively stable international economic conditions. Put another way, complying with the Maastricht criteria appears to have provoked a “crisis”. While this is an important finding in that it demonstrates an instance of international treaty obligations constraining domestic economic policy, Maastricht in itself is not sufficient for the emergence of a pact.

Methodologically, this relationship poses a conundrum: to find unbiased estimates for other parameters we would like a correctly specified model, i.e., one accounting for the
Figure 1: The Maastricht dummy variable is highly correlated with the baseline hazard. The upper survival curve is the result of a simple Cox model with no covariates. The lower panel comes from the same model stratified by Maastricht.

Maastricht effect, however the (more) correctly specified model is preventing convergence of the estimator. To get around this problem I stratify the models below on the Maastricht indicator variable. In so doing, country-quarters subject to the Maastricht agreement have a different baseline hazard rate than for those not under the treaty. While this strategy prevents us from directly recovering a coefficient estimate characterizing the magnitude of the Maastricht effect, that is not my primary goal with this analysis.
4.1.2 models

In table 1, I display the results from a series of baseline models using different frailty distributions. In these models, the Gamma and Gaussian frailty models seem to provide comparable fits to the data, as evidenced by the likelihood ratios and the fact that the both models recovered significant frailty variances.

Table 1: In Cox frailty models for pact onset stratified by Maastricht, unemployment, electoral cycles and Left government increase the hazard of a pact.

<table>
<thead>
<tr>
<th>Covariate</th>
<th>exp $\hat{\beta}$ [95% CI]</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>inflation</td>
<td>1.00 [0.82, 1.23]</td>
<td>0.99 [0.81, 1.22]</td>
<td></td>
</tr>
<tr>
<td>unemployment</td>
<td><strong>1.29</strong> [1.00, 1.68]</td>
<td><strong>1.25</strong> [1.01, 1.55]</td>
<td></td>
</tr>
<tr>
<td>deficit</td>
<td>1.16 [0.92, 1.45]</td>
<td>1.15 [0.93, 1.43]</td>
<td></td>
</tr>
<tr>
<td>curr. acct</td>
<td>0.92 [0.71, 1.20]</td>
<td>0.91 [0.70, 1.17]</td>
<td></td>
</tr>
<tr>
<td>growth</td>
<td>1.19 [0.80, 1.77]</td>
<td>1.16 [0.79, 1.71]</td>
<td></td>
</tr>
<tr>
<td>TSLE/CIEP</td>
<td><strong>1.02</strong> [1.00, 1.05]</td>
<td><strong>1.02</strong> [1.00, 1.05]</td>
<td></td>
</tr>
<tr>
<td>govt majority</td>
<td>1.65 [0.35, 7.60]</td>
<td>1.64 [0.39, 6.89]</td>
<td></td>
</tr>
<tr>
<td>Left gov.</td>
<td><strong>1.03</strong> [1.00, 1.06]</td>
<td><strong>1.02</strong> [0.99, 1.06]</td>
<td></td>
</tr>
<tr>
<td>No. parties</td>
<td>0.26 [0.02, 3.18]</td>
<td>0.31 [0.02, 3.52]</td>
<td></td>
</tr>
<tr>
<td>trade distortion</td>
<td>1.03 [0.90, 1.17]</td>
<td>1.03 [0.92, 1.17]</td>
<td></td>
</tr>
</tbody>
</table>

$N$ = 1737, 1737

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of countries</td>
<td>20</td>
</tr>
<tr>
<td>$\hat{\theta}$</td>
<td>0.64</td>
</tr>
<tr>
<td>Frailty dist</td>
<td>Gamma, Gaussian</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>$-33.8$, $-27.9$</td>
</tr>
<tr>
<td>LR $\chi^2$(df)</td>
<td><strong>36</strong>(12), <strong>34</strong>(11)</td>
</tr>
</tbody>
</table>

Note: All entries are exponentiated coefficients, i.e., they are hazard ratios. Values greater than one indicate an increase and those less than one indicate a decrease in the hazard of a pact. All economic variables are lagged one quarter. Entries in italics are significant at the 0.1 level while bolded values are significant at the 0.05 level or better using two-tailed tests. Models use the AIC maximization criterion to estimate $\theta$. See the appendix for details on all variables.

The coefficient estimates in the tables are in terms of hazard ratios and indicative of percentage increases (decreases) in the hazard rate for a pact for an instantaneous change in
values of the covariates.\textsuperscript{16} As an example, the estimated coefficient of 1.29 on unemployment implies that a 1% greater unemployment is linked with a 29% greater risk of a pact, all else constant.\textsuperscript{17}

For the economic covariates, only unemployment consistently appears as a significant predictor of pact onset across specifications. Inflation, deficits, the current account balance, growth, and trade have no significant impact here.

Political variables are also important. The electoral cycle, in particular, shows a strong influence on pact onset. As the pressure to hold elections increases, so does the risk of pact onset. Left party government is also significant and in the expected direction. A government with a Left parties controlling 1% more of the government-held seats, will increase its risk of a pact by about 3%, all else equal. Neither the majority status of the government nor the partisan fragmentation of the legislature seem to have any consistent effect on pact onset.

To get a better idea for the magnitude of the estimated relationships, I focus on TSLE/CIEP, government partisanship, unemployment and inflation and use parameter estimates from model 2. For TSLE/CIEP, I estimate the effect of going one additional quarter without an election (or a pact); on average this constitutes $1/16$ of an interelection period. For Left government I use the median change in the percentage of Left government seats across elections (4.3). For inflation and unemployment, I use the median quarter-on-quarter change. I plot the estimated percent change in the hazard of a pact for these changes in figure 2. It is immediately apparent that the electoral cycle and government partisanship are playing an important role in the onset of pacts.

To check the robustness of the electoral cycle finding and to gain more insight into the way elections affect pact onset, I fit a series of models replacing TSLE/CIEP with dummies

\textsuperscript{16}Most software report the $\hat{\beta}$, but these are on the difficult-to-interpret log hazard scale. For ease of interpretation, I report the exponentiated coefficient estimates with 95% confidence intervals.

\textsuperscript{17}It should be noted that a key part of the \textit{ceteris paribus} clause in event history models is that any change in a covariate is relative to all the countries currently in the risk set, i.e., also holding constant the values of all other countries currently at risk for a pact at time $t$. 

29
Figure 2: The effects of meaningful increases in key covariates on the hazard of a pact indicating proximity to elections. In table 2 I report results. All models use Gaussian frailty. I omit variables not appearing as significant in the previous analysis. Including these variables or changing the frailty distribution does not alter interpretation.\footnote{Hancké (2002), Harcourt and Wood (2003), and Hassel (2003), all argue that the centralization of wage bargaining affects pacts’ attractiveness as a policy instrument. I fit models (not reported here for space considerations) including union density, central bank independence, and level of wage bargaining centralization as additional covariates, finding that pacts are most likely at moderate levels of bargaining centralization. But using these variables prevents the inclusion of several cases in which pacts occurred (Greece, Ireland, New Zealand, Portugal, and Spain), making inference about the relationship between bargaining institutions and pacts suspect. Substantive findings for elections and partisanship remain, however.}

Findings from these models largely confirm what we observed using TSLE/CIEP. Looking at models three and four, we see that pacts are markedly more likely in the quarters immediately prior to a pact but much less likely in the quarters afterwards, though this latter finding does not attain significance. These effects cancel each other out if they are not specified separately as in, e.g., a model (not reported here) using dummy indicating whether
Table 2: Cox frailty models for pact onset (stratified by Maastricht) point to electoral signalling in pacts. This relationship is attenuated in multi-party systems.

<table>
<thead>
<tr>
<th>Covariate</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>unemployment</td>
<td><strong>1.15</strong></td>
<td><strong>1.14</strong></td>
<td><strong>1.13</strong></td>
<td><strong>1.12</strong></td>
</tr>
<tr>
<td></td>
<td>[1.00,1.32]</td>
<td>[0.99,1.31]</td>
<td>[0.97,1.32]</td>
<td>[0.96,1.32]</td>
</tr>
<tr>
<td>deficit</td>
<td>1.13</td>
<td>1.14</td>
<td><strong>1.19</strong></td>
<td>1.16</td>
</tr>
<tr>
<td></td>
<td>[0.95,1.34]</td>
<td>[0.96,1.35]</td>
<td>[0.98,1.47]</td>
<td>[0.96,1.41]</td>
</tr>
<tr>
<td>curr. acct.</td>
<td>0.86</td>
<td>0.87</td>
<td>0.86</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>[0.72,1.03]</td>
<td>[0.73,1.04]</td>
<td>[0.69,1.08]</td>
<td>[0.73,1.13]</td>
</tr>
<tr>
<td>elec in next 6Q</td>
<td><strong>2.33</strong></td>
<td></td>
<td><strong>62.73</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.85,6.42]</td>
<td></td>
<td>[1.24,3170.33]</td>
<td></td>
</tr>
<tr>
<td>elec in prev 6Q</td>
<td>0.49</td>
<td></td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.16,1.47]</td>
<td></td>
<td>[0.00,2.08]</td>
<td></td>
</tr>
<tr>
<td>No. parties</td>
<td>2.16</td>
<td></td>
<td>0.23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.21,21.89]</td>
<td></td>
<td>[0.02,2.50]</td>
<td></td>
</tr>
<tr>
<td>parties×elec in next 6Q</td>
<td><strong>0.06</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.00,1.50]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parties×elec in prev 6Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left gov.</td>
<td>1.01</td>
<td>1.01</td>
<td><strong>1.02</strong></td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td>[0.99,1.04]</td>
<td>[0.99,1.04]</td>
<td>[0.99,1.05]</td>
<td>[0.99,1.04]</td>
</tr>
<tr>
<td>N</td>
<td>1747</td>
<td>1747</td>
<td>1743</td>
<td>1743</td>
</tr>
<tr>
<td>No. of countries</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Frailty dist</td>
<td>Gaussian</td>
<td>Gaussian</td>
<td>Gaussian</td>
<td>Gaussian</td>
</tr>
<tr>
<td>θ</td>
<td>0.06</td>
<td>0.06</td>
<td>0.10</td>
<td>0.14</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>−38.7</td>
<td>−39.1</td>
<td>−36.3</td>
<td>−37.0</td>
</tr>
<tr>
<td>LR χ²(df)</td>
<td><strong>19.2</strong>(5.4)</td>
<td><strong>17.3</strong>(5.5)</td>
<td><strong>22.9</strong>(7.7)</td>
<td><strong>21.4</strong>(8.0)</td>
</tr>
</tbody>
</table>

Note: All entries are exponentiated coefficients, i.e., they are hazard ratios. Values greater than one indicate an increase and those less than one indicate a decrease in the hazard of a pact. All economic variables are lagged one quarter. Entries in italics are significant at the 0.1 level while bolded values are significant at the 0.05 level or better using two-tailed tests. All models with Gaussian frailty using the AIC maximization criterion to estimate θ. See the appendix for details on all variables.

an election occurs within three quarters before or after the current one. This finding is consistent with the notion that pacts are an attempt to make policy promises credible to voters.
Models five and six explore the party system hypotheses. I find some support for the argument that a more fragmented party system affects the timing of pacts. Specifically, the coefficient on the number of parties \( \times \) forthcoming election term is significantly less than one; pre-electoral pacts are less likely in multi-party systems. There is little evidence that post-electoral pacts are more likely in multi-party systems. To get an idea of the magnitude and significance of these interaction effects, figure 3 plots the difference in the hazard rate between a country with 2.3 effective parliamentary parties and one with to 4.3 (the sample interquartile range), given that the country is in the six quarters leading up to an election (top) or after an election (bottom). We can see that the greater the number of parties is associated with a decline in the hazard of a pact by about 75%, given that we are in the six quarters leading up to an election.

![Figure 3](image)

Figure 3: Interpreting interaction effects of party system and election timing. Pre-electoral pacts are less likely in multi-party systems.

*Note:* The effective number of parliamentary parties is increased from 2.3 to 4.3 (the sample interquartile range). Bars represent 90% confidence intervals; points represent 100 \( \times \) (median hazard ratio-1). The plot is skewed because hazard ratios are distributed log normally.

Overall, the results in this table are striking. Not only do we have additional evidence
of an electoral cycle in pacts, but we can say more. Specifically, pacts are more likely before elections and when parties are most worried about the electorates perception of their policy making ability.

Across specifications of models I find strong and consistent evidence for both economic and political determinants of pacts. On the economic side, pacts are more likely during times of high unemployment and in countries aspiring to comply with the Maastricht criteria. For political variables, there is consistent evidence that pacts are related to the electoral cycle. As the pressure for elections builds, pacts become more likely. There is also some evidence that differing party systems provide different incentives for pact timing. Pacts are more likely to occur before an election in two-party systems. Finally, there is a significant if modest partisan effect in pact emergence. Pacts are more likely when the Left makes up more of the governing coalition.

5 Conclusion

In this paper I presented a model of government policy contracting with peak associations of economic actors. Consistent with the model, I find evidence that pacts are politically driven. Unemployment, electoral cycles, government partisanship, and Maastricht are the most important predictors of pact onset amongst 20 OECD countries, 1974-2000. The fragmentation of the party system affects the timing of pacts. They are more likely to occur immediately prior to elections when the number of parties competing is smaller.

Just as important as the covariates associated with pacts are those found not to have an impact. Inflation and economic growth never show a relationship distinguishable from zero; findings for current account balance and budget deficit are mixed and contradictory. The forces of “globalization”, as measured by increased trade openness, show no direct relationship with pact onset. The majority status of the government showed no influence
whatever and was consistently signed in the opposite direction of what the literature expects.

This paper firmly situates the literature on social pacts in the larger literature on political business cycles and macroeconomic policy-making in the absence of perfectly competitive labor markets. The findings here provide some insight into the disconnect between evidence linking partisanship and bargaining centralization with economic performance on the one hand and the dearth of empirical support for the partisan cycles on the other. Governments may not need or want to rely on inflationary policies or deficit spending when they can bargain over policy directly with interest groups and garner the same electoral benefits. Parties capable of working effectively with peak associations can use formal agreements with union federations to make policy promises credible to voters without having to directly manipulate policy for short-term gain. What’s more, if pacts are successfully implemented in equilibrium—which I argue they can be—we may avoid some undesirable macroeconomic outcomes that are assumed to go along with the Left’s policy preferences (e.g., increased inflation). To the extent Left-Labor parties are not equal in their ability to manage union-driven wage demands, we should not expect to see partisan cycles in macroeconomic outcomes even if lower-level policy making still follows both a partisan and electoral logic. The logic employed here is but an example of the direction future research can take in exploring the relationship between the political calendar and economic cycles: look for evidence of electoral cycles in specific policy making venues.

Having established the existence of a relationship between the electoral cycle and policy contract with unions, the big question now outstanding is the extent to which this translates into outcomes. But what are the important outcomes? If the pact-as-commitment-mechanism approach is correct, then it seems the appropriate outcome variable of immediate interest is an electoral one: to what extent do pacts affect voters’ beliefs, and, ultimately, voting behavior? What conditions this relationship? The other obvious area for work is gauging the extent to which pacts affect economic outcomes like unemployment, inflation,
and labor costs. While there is some evidence that they have made a difference in particular cases, more general statements await a model of pact onset and duration.

When pacts cannot be reached with unions, we can expect incumbents to turn to other forms of electioneering. The findings here thus provide additional guidance as to where we might look for partisan cycles as they have been defined in the literature: countries with two-party systems, strong-yet-fragmented labor movements, and politically dependent central banks. The UK prior to the John Major period and New Zealand prior to 1984 both fit this description.

Finally, the findings here provide oblique policy implications that may prove increasingly relevant as governments attempt to navigate the current economic turmoil. To the extent managing wage demands and domestic product prices are important components of successful economic management in the current environment, governments seeking a bargained approach must recognize the iterated nature of their interactions and provide voters and social partners with sufficient information to make any pact more than just cheap talk. In any event, policy responses to the current economic crisis offer political economists a productive laboratory to explore the dynamics of crisis-induced economic policy making.

Appendix: Data definitions and sources

Details on the pacts dataset

Data on social pacts are coded from several sources. Data for all European countries comes from monthly issues of the *European Industrial Relations Review* while data for Australia, Canada, New Zealand, and the USA come from secondary sources. For Australia, I relied on Singleton (1990), Peetz (1998), and Hawke and Wooden (1998). For Canada I looked to Archer (1990). For New Zealand I looked to Kelsey (1997), Bray and Walsh (1998), Conway (2002), and especially Evans et al. (1996). For the United States, I relied on Flanagan (1980) and Lichtenstein (2002). Codings for all countries were checked for omissions using a search of news items in Lexis-Nexis. I searched the Lexis-Nexis Academic databases in the world news and business news categories using European, North and South American, and Asia/Pacific news sources. I used the following search protocols: “labor” within ten words of “agreement” within ten words of “inflation” in the headline or lead paragraph; the same,
replacing “labor” with “union”; the same replacing “agreement” with “pact”, “social pact”, “accord”, and “social contract”. All searches cover 1974-2003. These Lexis-Nexis searches yielded no evidence of pacts in the countries in the sample not already captured through other sources.

Pacts were coded as union-government, union-employer, or tripartite. I also coded whether there was evidence of the government publicly supporting the pacts. For an agreement to be considered a pact for the purposes of this analysis presented in this study, this last condition must obtain.

I code a pact as occurring in a quarter when:

1. There is evidence of a public announcement that an agreement has been formally accepted\(^\text{19}\) by the a union confederation and at least one of the following: employer peak association or government/executive.

2. If the government is not a signatory to the document, the agreement must make demands of the government and there must be evidence that the government declares its support for the agreement and intention to take the required actions.

I code a pact as a new pact if a pact occurs in a quarter and there is no pact in effect in any of the last three quarters. Otherwise a pact will be coded as a renegotiated pact. A pact is considered to be in effect until one of the following occurs:

1. There is evidence of one of the signatories withdrawing from the pact

2. There is a change of government and the new government fails to declare its support for a pact.

3. The agreed expiration date for a pact passes with no pact taking its place for one quarter.

4. If a pact is for a one-off change in policy (i.e., not requiring ongoing commitments from the signatories), I code the pact as living for one period.

Pacts were also coded based on their expected duration. Pacts were coded as having an expected duration if they specifically mention an end date or term of applicability. Pacts were coded as “unspecified” if they had no explicit expiration date. “One-off” pacts were deals made over specific policy items that did not require ongoing commitments on the part of the unions (e.g., Spain’s 1998 part-time employment pact). I consider one-off pacts that occur during the span of an existing pact to be a form of renegotiation.

\(^{19}\)In some circumstances this entails a vote of ratification by the peak association’s affiliates whereas in others it does not. Where ratification is required I code the pact in the quarter in which all parties have ratified.
Table 3: New pacts in the dataset

<table>
<thead>
<tr>
<th>Country</th>
<th>Onset</th>
<th>End</th>
<th>Initial Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>1974Q1</td>
<td>1977Q2</td>
<td>Social Contract</td>
</tr>
<tr>
<td>Spain</td>
<td>1977Q4</td>
<td>1978Q4</td>
<td>Pactos de la Moncloa</td>
</tr>
<tr>
<td>Ireland</td>
<td>1979Q3</td>
<td>1982Q1</td>
<td>National Understanding</td>
</tr>
<tr>
<td>USA</td>
<td>1979Q4</td>
<td>1980Q4</td>
<td>National Accord</td>
</tr>
<tr>
<td>Spain</td>
<td>1981Q2</td>
<td>1982Q4</td>
<td>National Employment Agreement</td>
</tr>
<tr>
<td>Australia</td>
<td>1983Q1</td>
<td>1996Q1</td>
<td>Accord</td>
</tr>
<tr>
<td>Italy</td>
<td>1983Q1</td>
<td>1985Q2</td>
<td>Labor Costs Protocol</td>
</tr>
<tr>
<td>Spain</td>
<td>1984Q4</td>
<td>1986Q4</td>
<td>AES</td>
</tr>
<tr>
<td>Ireland</td>
<td>1987Q4</td>
<td></td>
<td>Programme for Growth</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1990Q1</td>
<td>1990Q3</td>
<td>Growth Agreement</td>
</tr>
<tr>
<td>Portugal</td>
<td>1990Q4</td>
<td>1993Q1</td>
<td>Economic &amp; Social Agreement</td>
</tr>
<tr>
<td>Italy</td>
<td>1991Q4</td>
<td>1992Q2</td>
<td>Scala Mobile Pact</td>
</tr>
<tr>
<td>Spain</td>
<td>1993Q1</td>
<td>1993Q2</td>
<td>National Agreement on Continuing Training</td>
</tr>
<tr>
<td>Italy</td>
<td>1993Q4</td>
<td>1995Q4</td>
<td>July Agreement</td>
</tr>
<tr>
<td>Finland</td>
<td>1995Q3</td>
<td></td>
<td>Incomes Policy Agreement</td>
</tr>
<tr>
<td>Spain</td>
<td>1996Q1</td>
<td>1996Q2</td>
<td>Agreement on the rationalization of social security</td>
</tr>
<tr>
<td>Italy</td>
<td>1996Q3</td>
<td>1997Q4</td>
<td>Pact for Labor</td>
</tr>
<tr>
<td>Portugal</td>
<td>1996Q4</td>
<td></td>
<td>Strategic Social Pact</td>
</tr>
<tr>
<td>Austria</td>
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<td>1998Q1</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>1997Q4</td>
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<td>Christmas pact</td>
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<td>Spain</td>
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<td>1991Q1</td>
<td>Part-time employment pact</td>
</tr>
<tr>
<td>Germany</td>
<td>1999Q3</td>
<td></td>
<td>Alliance for Jobs</td>
</tr>
</tbody>
</table>

Note: pacts still in effect as of 2000Q1 have no end date entered here.

data

current account Current account balance as %GDP from, World Development Indicators (World Bank, 2006), henceforth WDI. Interpolated to the quarterly level.

deficit $-1 \times$ overall government budget balance, taken from the WDI.

election in next 6 Q Takes on value of 1 if an election occurs in any of the subsequent three quarters and 0 otherwise. Dates for elections come from data provided by Kayser and supplemented with Wikipedia (2007).

election in previous 6 Q Takes on value of 1 if an election occurs in any of the previous three quarters and 0 otherwise. Dates for elections come from data provided by Kayser and supplemented with Wikipedia (2007).
growth Growth in real per capita GDP from the Penn World Tables (Heston, Summers and Aten, 2006), henceforth PWT. Interpolated to the quarterly level.

Left government Proportion of the total number of legislative seats controlled by the government parties that are due to Left parties taken from Swank (1999)

No. parties Effective number of parliamentary parties from Golder (2005)

inflation GDP deflator from the WDI. Interpolated to the quarterly level.


TSLE/CIEP Time since last election to the lower legislative house as proportion of the constitutional interelection period for such elections. Data from Kayser supplemented with data from Wikipedia (2007).

unemployment Quarterly standardized unemployment rate taken from OECD (2005).
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