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Reinterpreting social pacts: theory an evidence

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Reinterpreting social pacts: theory and evidence

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Abstract

Economists have largely neglected the analysis of the relevant factors that induce policymakers and trade unions to sign social pacts, despite their clear implications for economic policies and the functioning of labour markets. In this paper we fill this gap. We build a simple theoretical framework that models social pacts as the outcome of a bargaining process, where the probability of observing a pact is essentially determined by politico-economic factors. Then we test the model using a new and original data set that documents the features of social pacts implemented in advanced economies over the last 30 years.

JEL: J50, E63
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1 Introduction

During the last three decades governments of several advanced economies have resorted to "social pacts" in order to implement policy changes and even radical reforms in the fiscal and labour market domains. According to descriptive analyses (Regini, 1997; Visser, 2002), social pacts involve a political exchange, based on mutual commitment among peak-level trade union federations and governments. Formally, social pacts are defined as publicly announced policy contracts between the government and the unions (and employers in some cases), that define policy issues and targets, means to achieve them, and tasks and responsibilities of the signatories (Avdagic et. al., 2010). Typically, pacts contain agreements over wage dynamics, inflation, welfare reform, labour market regulation. In addition to continental Europe, where trade unions still play a non-negligible role, pacts have also been signed in countries like Australia, South Korea and South Africa (Ahlquist, 2008; Baccaro and Lim, 2007; Fraile 2010). It is also interesting to note that, despite a generalised downward trend in the political influence of trade unions, at the beginning of the 21st century social pacts appear to be as frequent as they were in the '70s (figure 1 below). More recently ILO (2009) has taken a formal stance in favour of social pacts as a mean to promote employment in the aftermath of the 2008 financial crisis.

The political sciences literature sees social pacts as the archetype of policy reform negotiated outside parliaments (Avdagic, 2010). A strong distinction is made between first- and second-generation pacts. The social pacts of the 1970s and early 1980s are reckoned as cooperation episodes between ideologically affine labour unions and left-wing governments, who traded wage moderation for higher welfare expenditure or lower inflation. The social pacts of the last twenty years are thought to differ from earlier ones in two important aspects. First, in several cases they have been signed by right-wing governments. Second, they have established reductions – rather than increases – in public expenditure and government action to protect employment and labour rights (Regini, 1997; Visser, 2002). A number of authors has associated social pacts with a high "problem load" such as inflation, unemployment, public sector debt and, more in particular, the Maastricht convergence criteria for membership of the Economic and Monetary Union (Fajertag and Pochet, 2000; Hancké and Rhodes, 2005; Pochet et al, 2010); others highlight differences in labour market and wage bargaining institutions (Hassel, 2006), or in electoral pressures, political institutions and government strength (Baccaro and Lim, 2007; Hamann and Kelly, 2008). Based on a rigourous comparative analysis, using a qualitative methodology, Avdagic (2006) finds that social pacts in Europe in the 1990s have always a combination of economic and political or institutional causes. Despite the richness of the theoretical arguments, most studies in this field are descriptive, based on a limited set of case studies and use a qualitative methodology.

Economists have largely neglected the analysis of the relevant factors that induce

policymakers and trade unions to sign social pacts, despite their clear implications for economic policies and the functioning of labour markets.

In this paper we fill this gap. We build a simple theoretical framework that models social pacts as the outcome of a bargaining process, where the probability of observing a pact is essentially determined by politico-economic factors. Then we test the model using a new and original data set that documents the features of social pacts implemented in advanced economies over the last 30 years.

Our approach brings together research fields and methods which are apparently quite distinct, ranging from the analysis of unionised labour markets, to the political economics literature, to the popularity and voting functions developed by political scientists, that emphasise the importance of macroeconomic conditions to explain policymakers' approval rates. In a nutshell, our empirical results confirm that pacts are more likely when the cost of a conflict with the trade unions is relatively higher. Such a cost depends on standard macroeconomic variables. It is also crucially affected by measures of social conflict such as industrial disputes and socio-political risk. In addition, it depends on the ability of trade-unions peak-level associations to act as representatives of both unionised and non unionised workers. In fact pacts are more likely when coverage of negotiated agreements is broader. By contrast, pacts are relatively less likely when government expected tenure in office is longer, in line with a standard result in bargaining games under imperfect information: players willingness to stand conflict is positively related to their discount factor. Finally, our results suggest that governments ability to resist unions' requests - a key factor in determining whether pacts are observed - crucially depends on voters' attitudes towards redistribution. In fact we find the probability of observing a pact is negatively linked to the degree of ethnic heterogeneity, a strong indicator of society's propensity to redistributive policies (Glaeser, 2005 Alesina and La Ferrara 2005).

The remainder of the paper is organised as follows: section 2 sets up the theoretical model; section 3 specifies the social, economic and political variables; section 4 illustrate the data set and the methodology used in the empirical section; section 5 shows the empirical results; section 6 concludes. The appendix contains the technical proofs of the theoretical model and a detailed description of the sources of the variables.

2   The model

In our view, the rationale behind social pacts is that the government sees benefits from "reforms" and exploits preventive agreement with trade unions to overcome political difficulties in changing legislation. The resulting political exchange behind social pacts implies that reform benefits must therefore be shared with trade unions.

These considerations pave the way for our approach which is based on four key

Figure 1: Frequency of social pacts
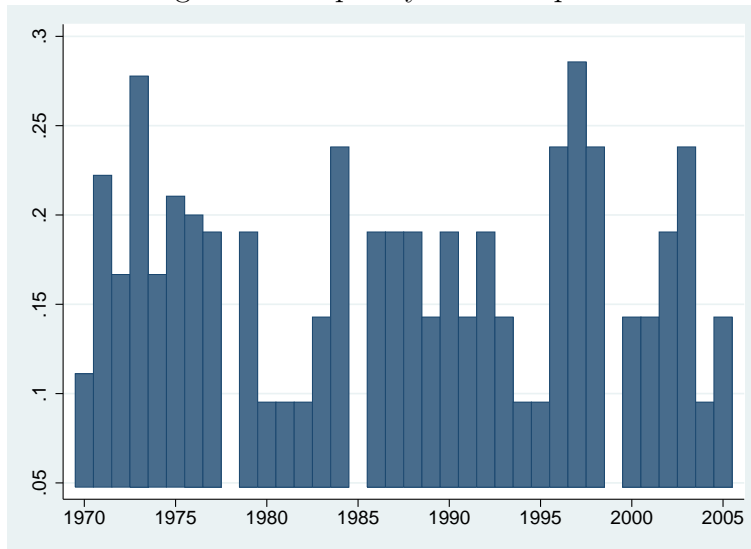
ingredients. First, social pacts are episodes occurring in the context of a potentially continuous interaction between policymakers and trade unions.[1] We model this as a repeated bargaining game of asymmetric information. For our purposes, it is sufficient to assume that trade union preferences are private information, so that "weak unions" have an incentive to build a reputation for toughness. Second, social pacts should not be dismissed as just another case of special interests politics (Grossman and Helpman, 2001), where trade unions seek to sway political outcomes to benefit their members. In fact, pacts are highly publicised agreements, and their features are openly scrutinised. In a sense, the (implicitly favourable) public-opinion reaction and the ensuing political support are a key reward policymakers expect to enjoy when a pact is signed. Such political consensus allows policymakers to induce parliaments to back the agreements contemplated in the pacts. Third, securing trade unions consensus requires that negotiated reforms bend towards their objectives. This, in turn, limits the efficiency gains from reforms negotiated through social pacts. Fourth, disagreement or open conflict with trade unions may involve a political cost for governments. The higher such a cost is, the more likely the government is to seek agreement with trade unions, and the more frequent social pacts will be. In our model, governments are more vulnerable to conflict with trade unions when macroeconomic and social fundamentals are adverse, the political system is fragmented, the executive is unstable and/or short-lived.

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[1]Employers associations, although in some cases signatories of social pacts, here are secondary to the actual bargaining process modeled as a game between the government and the unions. See Avdagic et al. (2010), ch.3.

Consider a government and a union which bargain repeatedly over a surplus b in each period t over a time horizon of T periods $(T \to \infty)$.[2] We extend the interaction to an infinite horizon because we are considering two stable institutions where there is always a positive probability that their relationship will continue the next period, in spite of elections and leaders turn-over.

The game can be described as follows. In each period the government and the trade union simultaneously make an offer, w_g and w_u. Only if $w_g \geqq w_u$ a social pact is observed. If $w_g < w_u$ a "dispute" arises, where the union is able to inflict the government a reputational cost $(x > 0)$. The government has an outside option (y_0) that values the alternatives of either "doing nothing" or pushing reforms through parliament. The outside option (y_0) and the reputational cost (x) also define $w^* = b - (y_0 - x)$ as the maximum transfer to the union in the event of agreement. Similarly, the union outside option (w_0) defines $y^* = b - w_0$, i.e. the maximum government payoff in case of agreement.[3] Offers w_g and w_u belong to the interval $W = [w_0, w^*]$

Both players discount the future at a rate $\delta_i < 1$ where $i = g, u$ (government or union) and their overall payoff at time t is given by:

$$V_i^t = \sum_{\tau=t}^{\infty} \delta_i^{\tau-t} g_i^\tau$$

where σ_u) denotes the payoff function of each player given the mixed strategies σ_i.

Let us now define the Stackelberg action, i.e. the action that gives each player the highest possible payoff given that the opponent plays his best response. Thus a Stackelberg action for the government would be "offer w_0" if the union plays as best response "demand w_0", yielding a payoff to the government of $y^* = b - w_0$. The Stackelberg action for the union would be "demand w^*" provided that the government plays as best response "offer w^*".[4]

In the model disagreement occurs whenever one of the two players plays a non-best response against the Stackelberg action of the opponent. To obtain this, we introduce a simple form of incomplete information. The union can be of two types: a "normal" type, and a "tough" type which has as dominant strategy its Stackelberg action.[5] A way of rationalising this feature is to assume that there is uncertainty about the true preferences of the union (i.e. "militant" vs "moderate" unions, as described in Baccaro and Lim, 2007). Under asymmetric information the "normal"

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[2]We closely follow Calabuig and Olcina (2000).

[3]The outside option of each player determines his minmax payoff, i.e. the worst payoff that can be obtained in any agreement.

[4]Note that the Stackelberg action of one player implies that the opponent is held at his outside option (worst agreement). The model here has the same structure as the two-sided conflicting interests game of Schmidt (1993)

[5]This is as the "commitment type" of Fudenberg and Levine (1989)

union has an incentive to build a reputation for toughness by refusing all offers lower than w^*. The government, in turn, understands the normal union incentive and, by offering $w_g < w^*$, exploits disputes as a screening device. Both reputation building and screening are costly. In fact disagreement yields to each party a payoff which is lower than the worst payoff in case of agreement. Such a cost necessarily constrains the maximum number of disputes that can be observed in equilibrium and determines the frequency of disputes (and conversely of agreements). The main result is summarised in the following proposition.[6]

Proposition 1 *Let $G^T(\mu_u^*)$ be a perturbed repeated bargaining game, where μ_u^* defines the probability that the union is tough. Let $\mu_u^* > 0$. Consider any Nash equilibrium $(\hat{\sigma}_g, \hat{\sigma}_u)$ of the repeated game, and any history consistent with this equilibrium where the union has always demanded w^*. Suppose that in $t+1$ the government offers $w_g < w^*$, then*

a) the government must assign a probability of at least η that the union will not demand w^* in at least one of the periods $t+1, t+2, ..., t+M$ where M is arbitrary and:[7]

$$\eta = \frac{x - \delta \frac{b-w_0}{1-\delta}}{\frac{1-\delta^M}{1-\delta} \frac{b-w_0}{1-\delta} + x}$$

b) there exists an upper bound N on the number of periods in which the government offers $w_g < w^*$ and on the frequency of disputes, $\frac{N}{M}$.

$$\frac{N}{M} = \frac{\ln \mu_u^*}{\ln(1-\eta)} = N \left(\begin{array}{ccccc} \mu_u, & b, & \delta, & w_0, & x \\ - & + & + & - & - \end{array} \right) \tag{1}$$

Proof: see the Appendix

The underlying intuition is as follows. Until time t the history of the game has shown that the union has never accepted any wage offer lower than w^*. This obviously affects the government's prior μ_u^*. At time $t+1$ the government's decision to offer $w_g < w^*$ depends on the evaluation of expected payoffs. In each period these amount to: the cost x if the union refuses and the dispute continues, y^* if the "normal" union capitulates, y_0 if the government gives in. The reputational cost x is paid until the union capitulates. Since then the government can play his

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[6]We set $y_0 = 0$, so that $w^* = b$. It is important to stress that this assumptions is without loss of generality. In fact, all is needed for the results to go through is an ordering of payoffs such that, for each party, the Stackelberg payoff is greater than the outside option which, in turn, is greater than the outcome in case of disagreement.

[7]¿From now on we will omit subscripts on the discount factor since only the government's one matters. Therefore $\delta = \delta_g$.

Stackelberg action gaining y^*. Such a gain should not occur too far in the future since the expected payoff from union's capitulation cannot fall short of the present value of the government's minimum payoff for the rest of the game (i.e. the outside option which is gained if the government gives in in $t+1$). η defines the threshold probability of union capitulation in the future, such that the government expected payoff from playing $w_g < w^*$ in $t+1$ is positive.

As disputes continue, η is revised following a standard Bayesian updating process. By definition η has an upper bound at 1, and this implicitly defines an upper bound on the updating process and on the number of times (N) the government will offer $w_g < w^*$. N defines the maximum number of future disputes the government is prepared to bear. After that, the government will always concede w^*. For any arbitrary horizon M of the game, the ratio N/M in (1) defines the frequency of disputes.

The sign of the derivatives of the variables affecting N in (1) can be explained as follows.

- Consistently with standard bargaining models, dispute frequency increases in the surplus b. This is because a larger surplus raises both the normal union incentive to building a reputation for toughness, and the government incentive to unveil the reputation game of the union .

- The higher screening cost x, the more likely the government is to concede w^*.

- Disputes are more frequent the more patient is the government (higher δ).

- The government is more likely to concede w^* the higher his prior (μ_u) about the probability of confronting a tough union.

3 Economic and socio-political determinants of social pacts

In this section we show how the model can be tested by relating b, δ, x, μ_u to a set of variables describing macroeconomic conditions, institutional and labour market features, measures of socio-political instability.[8]

Macroeconomic conditions. If welfare losses are proportionally increasing in the the distance between the current state of the economy and the first-best, adverse macroeconomic conditions should increase the expected benefits from reforms, i.e. raise b. As a result, the probability of observing a pact should be lower, because incentives increase for both parties not to give in. This is in sharp contrast with the

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[8]See the appendix for data description and sources.

view that pacts are typically associated with "crises".[9] It should be noted, however, that governments are likely to become more vulnerable to open conflict with trade unions when the economic climate deteriorates.[10] In other words, the screening cost x is likely to increase in "bad" times. This latter effect is akin to the beneficial role of crises for economic reform outlined in Drazen and Grilli (2003). The overall effect of macroeconomic conditions on the frequency of disputes is therefore ambiguous. We measure macroeconomic conditions with the growth rate of Gdp, inflation and unemployment.[11]

Labour market institutions. These affect government screening costs (x) and mimicking incentives for weak trade unions. Variable *Govint* measures government intervention in the wage setting process.[12] Greater government intervention in wage bargaining between firms and trade unions suggests that the government holds more political responsibility for unionised workers' income and welfare. This, in turn, means that disagreement with the unions is more costly to the government when the *Govint* score is higher. Thus *Govint* should be positively related to the probability of observing a Pact. Variable *Conf Power*[13] measures the degree of centralisation of the union confederation. A highly centralised union is a strong political actor capable of generating higher political costs (x) for the government in case of dispute.

We include also more conventional measures such as union density and coverage. In our setting measures of union militancy such as union density should be negatively correlated with the likelihood of observing an agreement since a higher density reflects popular support to the unions, which increases the incentive for the normal type of union of mimicking the tough type. The government will then respond with

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[9]Avdagic et al. (2010) criticise this "crisis" view as too simplistic. They stress that social pacts are explained by the joint interplay of the state of the economy, and of the specific features of the government and of the unions.

[10]Political scientists have shown that popularity and vote functions are crucially affected by inflation and unemployment outcomes (Feld and Kirchgassner, 2000; Fox and Phillips, 2003; Jordahl, 2006; Lewis-Beck, 2000; Veiga and Veiga, 2004).

[11]We also experimented with fiscal variables that did not add any explanatory power to the model but caused a substantial loss of observations.

[12]*Govint* is taken from the ICTWSS data-set and takes values from 1 to 5 with higher values reflecting higher government involvement.

[13]*Conf Power* is constructed by computing the first principal component of several dimensions of the relationship between trade union confederation (peak-level association) and trade-union affiliates as described by the ICTWSS data-set. In particular it is the first principal component of the following variables: a) Cfrep: measures whether the confederation represents the affiliates politically, through lobbying or membership in tri- or bipartite bodies and councils; b) Cfappt: measures the confederal (political) control over appointment of leaders of affiliates; c) Cfagr: measures confederal involvement in wage agreements negotiated by its affiliate unions; d) Cffund: measures the existence of a confederal or joint strike fund from which member unions are reimbursed. All the above mentioned variables take can take 3 values ranging from 0 to 2, higher values meaning higher power of the confederation.

more screening resulting in more disputes.[14] Union coverage should have a similar effect to confederation power: the higher the coverage, the more costly it is for the government failing to reach an agreement with the union.

Political institutions. Here we borrow from the literature that has explored the impact of political institutions on macroeconomic outcomes. Longer government tenure in office (*yearsoffice*) is associated with a higher probability of observing a government change in the near future and is typically considered a measure of government fragility (Carmignani, 2002). It is natural to link this variable to the government discount factor δ: the shorter the expected duration in office, the less patient and more prone to compromise the government is. Another measure of the government discount factor is the dummy *Election*, taking value 1 in electoral years and zero otherwise. We expect screening costs x to be higher in election years. Political constraints that hinder the executive's operational capability should also raise the government cost of a dispute with trade unions. The variable measuring such constraints (*Polconstr*) is obtained as the first principal component of three measures quantifying the number of veto players and hurdles in decision rules.[15] A higher *Polconstr* score should therefore positively affect x. Finally, we consider the dummy *Left* taking value 1 when left-wing governments are in office, zero otherwise. We expect left-wing governments to be more sensitive to conflict with trade unions.

Macroeconomic and socio-political instability. A more volatile environment should reduce political consensus for the government and raise the cost of a dispute. We use three measures of instability. The first is the standard deviation of Gdp growth over the previous 4 years (*Econvol*). The second is a measure of sociopolitical risk (*Sprisk*) defined as the principal component of several measures of social instability.[16] Finally, following a well known argument (see Rodrik, 1998) we include a measure of trade openness to capture the risks implied in the globalisation process. In fact several contributions see social pacts as a reaction to the growing internationalisation of markets (Hassel, 2009). We see a strong counterargument about the effects of trade openness. In more open economies domestic firms are subject to stronger external competition and unions are generally weaker and less militant[17] In our framework this implies that, ceteris paribus, the government prior

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[14]In the model this could be conceptualised by assuming that a higher density reduces the prior μ^* that the government assigns to the union being of the though type.

[15]The variables are: a) Xconst (source Polity IV): a measure of regulation of executive recruitment; b) Polconv (source Henisz), an index of political constraint; and c) Checks (source DPI): number of veto players.

[16]More precisely *Sprisk* is the first principal component of variables quantifying: a) Political assassinations, b) General strikes, c) Guerrilla warfare, d) Purges, e) Revolutionary attempts, f) Anti-government demostrations (source CNTS). When measures of strikes are added to the regression, we recompute *Sprisk* excluding variable b) in the principal component.

[17]Baccaro (2008) shows that globalisation is associated to a weaker cross country correlation between the degree of unionisation and redistributive actions such as wage compression

about μ is lower and the the frequency of disputes, $\frac{N}{M}$, is correspondingly higher. The prevailing effect of openness will ultimately be an empirical issue.

4 Data and methodology

4.1 Data

The data set contains information of the existence and the nature of social pacts on a yearly basis for a set of 21 OECD countries (see table 6) from 1970 to 2005. The source is the ICTWSS database, a newly created and original database which covers four key elements of modern political economies in advanced societies: trade unionism, wage setting, state intervention and social pacts. Economic variables are taken from usual sources (World Bank OECD etc.), political and institutional variables are taken from the most important and known data sources such as CNTS archive, the Polity IV and the DPI dataset.[18]

The country composition of the sample allows a good variability of labour market institutions (different wage setting mechanisms, trade unionism etc.). The data set contains a detailed description of social pacts. Our dependent variable is dichotomous taking value 1 if a social pact is signed, zero otherwise.[19]

4.2 Methodology

The estimation method is a panel logit with robust standard errors. Time dummies account for time effects. All variables are lagged to avoid endogeneity problems. The panel structure of the sample allows us in principle to fully control for unobserved heterogeneity by running a fixed-effect model. However this model has well-known shortcomings in the presence of a dummy dependent variable; in particular fixed effect models would disregard all the information deriving from countries that did not undertake any social pact, causing a sample selection bias that would distort our findings. Moreover fixed effects inefficiently estimate the role of variables that display low variability over time (such as polito-institutional variables). We therefore opted for a random effect logit model that allows to account for both the unobserved heterogeneity and for time invariant variables, leaving the fixed effect model as a robustness check (section 5.3).

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[18]The Appendix provides a more precise description of the ICTWSS database, and of all the relevant variables.

[19]Since we measure the decision to sign a social pact from its outcome (i.e. the actual signing) we need to take into account the possibility that social pacts were not signed simply because there was a previous pact still into force. We therefore excluded the observations when there was no social pact signed because a previous one was in place.

5 Results

Given the relatively large number of regressors, to facilitate discussion we present our estimates in stages (See table 1 for the first set of results).

Macroeconomic fundamentals. For all the three variables (growth, inflation and unemployment) the coefficient is positive but only for inflation it is statistically significant. The strong significance of inflation should not come as a surprise since a large number of social pacts contemplate inflation control as the main macroeconomic objective. What is surprising is the absence of statistical significance in growth and unemployment. The findings on growth are confirmed even when a cyclical measure is used (deviations from HP filtered trend), or when the growth rate of Gdp per capita is used instead of the standard growth rate of Gdp. In the next section we present some refinements in our analysis that allow to better qualify the estimated impact of an unemployment increase on the likelihood of observing a pact.

Labour market institutions. In line with the predictions of the theoretical model, both greater government intervention in the wage setting process and stronger confederation power increase the likelihood of signing a pact.

Political institutions. Both *yrsoffice* and *polconstr* are positive and significant. Thus pacts are more likely to be signed when the executive is relatively weak, either due to structural factors (*polconstr*) or because government turnover becomes more likely (*yrsoffice*). In apparent contrast with this latter result, the elections dummy is not statistically significant.[20] As expected, pacts are more likely when left-wing governments hold power.[21]

Macroeconomic and socio-political instability. Both economic and social instability (*econvol* and *sprisk*) raise the chances of observing a pact. By contrast, the coefficient on openness is negative suggesting that pacts become less likely when unions are subject to greater competition.

5.1 Social pacts and unemployment

The evidence provided so far suggest that high inflation is associated to a higher probability of observing a pact, thus supporting the view that adverse macroeconomic conditions increase governments' vulnerability to open conflict with trade unions. Then, how can a politically sensitive variable like unemployment not enter in the determination of social pacts? A possible rationalisation of this result is that

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[20]The result on elections is robust to different lag specifications of the dummy: lag 0 (same year as pact signature), lag -1 (year before signing the pact). We also constructed a variable capturing government crises obtaining the same result.

[21]The statistical significance of this variable is generally very weak, while it will become stronger when time splits will be analysed (see below).

for some reason governments are less willing to compromise with trade unions despite a relatively high unemployment rate, i.e. there is some missing explanatory variable in our regression. In our framework, social pacts involve a redistribution of benefits towards trade-unions targeted interests. Thus, it could be that, despite high unemployment rates, governments are relatively less prone to seek agreements with trade unions in societies where voters are relatively averse to redistribution. Measures of ethnic fractionalisation can proxy for voters' attitudes towards redistribution. In fact there is compelling evidence that ethnic heterogeneity is inversely related to redistribution (Glaeser, 2005; Alesina and La Ferrara, 2005). In addition, since ethnic minorities are typically overrepresented in the pool of unemployed workers (Lindley, 2005; Heath and Yi Cheung, 2007)), it could be that in our regression the unemployment rate cannot capture the cost of disputes unless one controls for ethnic heterogeneity. In table 2 we therefore introduce a measure of ethnic fractionalisation to capture the degree of heterogeneity present in the society. Not only is the variable highly significant, with the expected negative sign, but also the coefficient of unemployment becomes strongly significant while the other results are unchanged. As the table shows, the result is very robust to the use of different measures of fractionalisation.[22] We experimented also with a measure of income inequality obtaining similar results. We prefer the measure of fractionalisation because it better captures preferences of the society for redistributive policies. Inequality, being a measure of outcome, is less suited for this role.

5.2 Extensions

Table 3 presents some extensions to our baseline model; some additional variables that are typically considered in the empirical literature on unionised labour markets. *Union coverage* describes the effect of trade-union negotiated wage contracts on the salaries on workers who are not union members. The higher *Union coverage*, the more influential trade unions are. This, in turn, implies that it becomes more costly for the government to continue a dispute. *Union density*, a measure of militancy and workers' support for more aggressive unions' behaviour (Ball, 1995; Bowdler and Nunziata, 2007), has a twofold effect. On the one hand it should increase the mimicking incentive for the normal union and reduce the impact of ongoing disputes on the updating of the government's prior μ_u. On the other hand, by observing an increase in militancy the government will anticipate a longer sequence of disputes before the normal union eventually gives in. A similar trade-off should

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[22]In table 2 we have used measures of fractionalisation derived respectively from Alesina et al. (2003) [*Etfrac1*], Fearon (2003) [*Etfrac2*] and Easterly and Levine (1997)[*Etfrac3*]. These were integrated by a measure of plurality groups (*Plural*) and of cultural diversity (*Cultfrac*) from Fearon (2003). Note that *Plural* has to display the opposite sign with respect to the other measures of fractionalization.

emerge in relation to the variable *General strike activity*, which measures strikes that are organised by peak-level trade-union associations and, as such, are inherently political. In the previous paragraph we have introduced a measure of sociopolitical risk (*sprisk*). Here we control for another measure of instability, the number of industrial disputes normalised by the level of employment (*Ind disputes*), which measures firm- or sector-specific conflicts that occur independently from peak-level relations with the government.

We find that *Union coverage* and *Ind disputes* are associated with a higher probability of observing a Pact, whereas both *Union density* and *General strike activity* have the opposite effect. We offer the following interpretation for this result. Governments are wary of risking conflict with trade unions when these seem capable of intercepting the attitudes and interests of a relatively large number of workers, i.e. when either institutional features of the labour market or shop-floor attitudes induce the peak-level organisations to act as workers' "political representatives". By contrast, increased militancy[23] and top-down initiatives such as general strikes induce governments to "call the bluff".

5.3   Accounting for individual heterogeneity

As stated in section 4 the estimation method chosen (panel logit random effect) strikes a balance between the need of properly accounting for individual heterogeneity, the need of including countries that do not display variations in the dependent variable and the need of efficiently estimating institutional variables that show high persistence over time.

The random effect model does not fully account for individual unobserved heterogeneity; in this regard a fixed effect estimator would be more appropriate. However, in our setting, a fixed effect model has two drawbacks. First, it disregards observations for those countries where we do not observe any social pact causing a potential sample selection bias. Second, given that it exploits the within variation, it inefficiently estimates variables that display little variability over time. Since we have several variables that have such properties (generally institutional variables are very persistent), the loss of efficiency could be severe.

As both a refinement and a robustness check, in col. 1 of table 4 we run the fixed-effect model on our baseline regression. As expected there is a decrease in the number of observations and persistent variables (i.e. *govint* and *econvol*) are estimated less precisely. Nevertheless all the main results are confirmed. These results can also be used to reinforce our findings on the role of ethnic fractionalisation. If this variable were only a proxy for some unobserved fixed effect, unemployment should be

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[23]In this respect we draw a distinction between militancy and ability to represent workers at large (coverage).

significant also in the FE model. The fact that it is not suggests that fractionalisation is the crucial element that interacts with unemployment.

5.4 Analysing time splits

The time frame covered by the sample is quite long and includes periods characterised by diverse economic and social conditions. The seventies and the eighties were characterised by the oil shocks, high inflation and rising unemployment, and were followed by the important labour-market and welfare-state reforms implemented in the nineties. We therefore split the sample using 1989 as the threshold date.[24]

The results are extremely interesting. Inflation appears to be a mayor determinant only in the first part of the sample consistently with the view that pacts during the seventies and the eighties were mainly driven by concerns about price stability. Also government intervention is strongly significant only in the first part of the sample. The power of unions' confederation over its affiliates and the role of political constraints are significant in both periods. Interestingly, political risk (*yrsoffc*) appears to be a concern only in the second part of the sample. The role of sociopolitical risk is confirmed across sub-periods. By contrast other measures of risk (*econvol* and *openness*) loose significance in both sub-periods possibly due to the efficiency loss associated with the sample split.

6 Conclusions

The conclusion of a social pact is headline news. Arguably, the Dutch "Wassenaar" pact of 1982, the Irish pact of 1987 and the Italian pact of 1993 initiated a turnaround in the economic fortunes and international standing of these countries. In the early stage of the recent Greek *deconfiture* the government tried, and failed, to rally the unions behind its austerity plan. That failure proved costly. Faced with continued and militant union opposition, the already low credibility of Greece's government to deliver on its promises received another blow and fuelled the surge in the costs of refinancing government debt. In other cases the costs, or rewards, of the failure or success of a social pact are electoral and among the factors that may decide the fall or survival of the government. These examples show that the stakes of social pacts can be large. It is therefore important that we understand the determinants leading to the conclusion of a social pact. Most studies in this field are descriptive, based on a limited set of case studies or use a qualitative methodology . This paper is the first

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[24]The choice of this date is due in part to historical reasons - the fall of the Berlin wall sets the start of a new era for European countries - and in part to the need for having a significant number of observations in both periods. The results are however very robust to changes in the threshold date.

to apply a rigourous framework by developing a bargaining model and by testing its implications using a unique database on labour market institutions, wage setting and social pacts from 1970 to 2005 covering 21 advanced economies. We model social pacts as a repeated bargaining game with asymmetric information in which unions have an incentive to act or mimic as if they are tough and the government is under some time pressure. In signing a pact the union offers support for the government's policy, whereas the government concedes giving up some its influence over the direction or implementation of the policy. What do we find? Social pacts are more likely when the stakes are high, in times of economic adversity and high socio-political risk, when union coverage is high and the government is under time pressure. Under such conditions the bargaining parties' willingness to risk conflict is lower. Furthermore, we find that the likelihood of social pacts increases when the central union federations have power over their affiliates and the state is more interventionist in wage setting throughout the economy. We do not find that the probability of social pacts increases with a rise in union density and the occurrence of general, politically motivated general strikes. In contrast, the observance of social pacts is negatively related to the degree of ethic heterogeneity, which is taken as an indicator of the electorate's dislike for redistributive policies. This may indicate the government's unwillingness to make compromise offers to the unions. In fact, the degree to which unemployment increases the probability of a social pact crucially depends on heterogeneity and the preference for redistributive policies. Considering the years before and after 1989 separately, our findings are that only in the first period inflation was a strong determinant of social pacts, whereas in the second period political risks, indicated by the probability of a government change, is much more prominent. On the other hand the power of unions' confederation over its affiliates, the role of political constraints and sociopolitical risk maintain significance in both periods.

Appendix

Proof of Proposition 1

The proof follows closely Calabuig and Olcina (2000). With respect to their setting our framework differs because we assume that: a) the government payoff in case of disagreement (the reputational cost x) is negative instead of 0; b) the government outside option is 0 instead of being positive.

Part A.

Consider a history h^t of the game such that up to t the union has always played its Stackelberg action w_u^s. Define $\lambda^\tau = prob(s_u^\tau = w_u^s \mid h^{\tau-1})$ i.e. the probability that in a given period $\tau \in \{t+1, t+2, ..., t+M\}$ the strategy of the union is to play w_u^s

given the history of the game up to $\tau - 1$.

Suppose that in $t+1$ the government chooses s_g^{t+1}, for instance offering w_0 instead of w^*. The expected government payoff from $t+1$ onwards, $V_g^{t+1}(\sigma_g, \sigma_u)$, is given by the sum of expressions (2) and (3) below. If the union plays w_u^s in all next M periods, the government expected payoff is:

$$\lambda^{t+1} g_g(s_g^{t+1}, w_u^s) + \sum_{\tau=t+2}^{t+M} \left(\prod_{i=t+1}^{\tau} \lambda^i \right) \delta^{\tau-t-1} g_g(\sigma_g^\tau, w_u^s) + \prod_{\tau=t+1}^{t+M} (\lambda^\tau) \delta^M V_g^{t+M} \quad (2)$$

where:

i) $\lambda^{t+1} g_g(s_g^{t+1}, w_u^s)$ is the expected payoff from a dispute in $t+1$ $\left(g_g(s_g^{t+1}, w_u^s) = -x < 0 \right)$;

ii) $\sum_{\tau=t+2}^{t+M} \left(\prod_{i=t+1}^{\tau} \lambda^i \right) \delta^{\tau-t-1} g_g(\sigma_g^\tau, w_u^s)$ is the expected payoff if the government concedes $w_g = w^*$ in $t + \tau$ after having observed w_u^s until then;[25]

iii) $\prod_{\tau=t+1}^{t+M} (\lambda^\tau) \delta^M V_g^{t+M}$ defines the continuation payoff at τ when the union plays w_u^s and the government plays a strategy other than σ_g^τ.

If the union does not play w_u^s in *at least one* of the next M periods the government expected payoff is:

$$(1 - \lambda^{t+1}) V_g^{t+1} + \sum_{i=1}^{M-1} \left(\prod_{\tau=t+1}^{t+i} \lambda^\tau \right) (1 - \lambda^{t+i+1}) \delta^i V_g^{t+i+1} \quad (3)$$

where:

i) $(1 - \lambda^{t+1}) V_g^{t+1}$ is the expected payoff when the union demands w_0 in $t+1$;

ii) $\sum_{i=1}^{M-1} \left(\prod_{\tau=t+1}^{t+i} \lambda^\tau \right) (1 - \lambda^{t+i+1}) \delta^i V_g^{t+i+1}$ defines the continuation payoff at $t+i+1$ when the union demands w_0 after a history of w_u^s until $t+i$.

The proof will show that s_g^{t+1} cannot be an equilibrium if $\lambda^\tau > 1 - \eta$, where η is defined in Proposition 1, because the government would get less than its minmax payoff (outside option). The proof will use some upper bounds on the values of the probabilities and payoffs in equation (2) and (3) in order to obtain a contradiction.

Since the maximum payoff the government can get is $y^* = b - w_0$, it follows that $V_g^{t+1}(\sigma_g^{t+1}, w_u) \leq \frac{b-w_0}{1-\delta}$ and $V_g^{t+M+1} \leq \frac{b-w_0}{1-\delta}$. Therefore expression 2 can be at most:

$$\delta^M \frac{b - w_0}{1 - \delta} - \lambda^{t+1} x \quad (4)$$

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[25]Note that $\prod_{i=t+1}^{\tau} \lambda^i \leq 1$ and $\prod_{\tau=t+1}^{t+M} (\lambda^\tau) \leq 1$ because $\lambda^i \leq 1$. In addition, $y_0 = 0$ is the maximum payoff that the government can obtain by playing $\sigma_g = w^*$, when the union plays w_u^s.

Assuming $(1 - \lambda^\tau) < \eta$ and using the fact that $\left(\prod_{\tau=t+1}^{t+i} \lambda^\tau \right) \leq 1$, expression 3, is at most:

$$\eta(1 + \delta + \delta^2 + ... + \delta^{M-1}) \frac{b - w_0}{1 - \delta} = \eta \frac{1 - \delta^M}{1 - \delta} \frac{b - w_0}{1 - \delta}$$

Putting the two upper bounds together and assuming that $\lambda^{t+1} = (1 - \eta)$ we obtain:

$$V_g^{t+1}(\sigma_g, \sigma_u) < \delta^M \frac{b - w_0}{1 - \delta} - (1 - \eta)x + \eta \frac{1 - \delta^M}{1 - \delta} \frac{b - w_0}{1 - \delta} \tag{5}$$

which defines a maximum value for the overall payoff of the government. Note that proposition 1 defines η such that the r.h.s. of (5) equals to 0. Therefore we have that $V_g^{t+1}(\sigma_g, \sigma_u) < 0$ which is a contradiction since 0 is the government minmax payoff.

Part B

Consider the strategy where the *normal* union of mimicks the tough union by playing w_u^s. By *part A* above we know that if the government offers $w_t < w^*$, then there is at least one period (τ_1) among the next M periods, where the probability that the union plays w_u^s is smaller than $(1 - \eta)$. Therefore $\lambda^{\tau_1} < (1 - \eta) = \bar{\lambda}$. Fudenberg and Levine (1989) [Lemma 1] show that, if w_u^s has always been played, there is a fixed finite bound on the number of periods in which the government will believe that w_u^s is unlikely to be played. More precisely the probability that the union takes its commitment action cannot be smaller than $\bar{\lambda}$ in more than $\ln \mu_u^* / \ln \bar{\lambda}$ periods. Therefore the government cannot offer $w_t < w^*$ more often than

$$N = M \frac{\ln \mu_u^*}{\ln(1 - \eta)}$$

times. Substituting for η we get the formula in Proposition 1.

Dataset on social pacts

The dataset on social pacts was developed in the framework of the NEWGOV project, financed under the EU FP7 research framework, on "Distributive Politics, Learning and Reform: National Social Pacts", directed by Sabina Avdagic, Martin Rhodes and Jelle Visser. The ICTWSS database contains information on the negotiation and signing of pacts, the actor combinations involved, whether these were wage pacts or dealing with other issues, whether they were broad or single-issue pacts, dealing with emergencies or deeply routed in standard operating procedures. In addition the database covers the existence of bipartite and tripartite councils or bodies for social economic policy making, advice and forecasting. All data are

newly collected based on data from the project and from various national sources and comparative studies.

The data on union or bargaining coverage are from various national and comparative sources, including Traxler (1994), OECD (2004), EIRO (2002), Visser (2004), survey data for the US, Canada, New Zealand, the UK, Germany and the Netherlands, as well as historical estimates from Ochel, 2001.

Wage coordination variable has been constructed updating and elaborating data from Kenworthy (2001) and Hassel (2006).

Government intervention variable includes the existence of a national minimum wage; the way in which minimum wage decisions are taken, in particular the role of tripartite bodies and social pacts; the existence of a provision for extending collective agreements to non-organised employers, and provisions for wage indexation. Sources on these issues are from the OECD, EIRO, the IMF, and research at AIAS on minimum wage decision making.

The index for union centralisation follows the methodology proposed by Iversen (1999) and combines data on the concentration or fragmentation of trade unions with information on the division of authority in the union movement between confederations (or peak associations), affiliated unions, and local or workplace branches (Visser, 1990; Windmuller, 1975).

The main source on union concentration are Ebbinghaus and Visser (2000) for Western Europe; EIRO (2003) and the database of the Institut des Sciences du Travail of the Université Catholique du Louvain on "Partenaires sociaux en Europe", developed for the European Commission (http://www.trav.ucl.ac.be/recherche) for Eastern Europe, and Golden, Lange and Wallerstein (2006).

The data for the two five-point scales for confederal and union authority are mainly from Visser (1990) for Western Europe and the national (unpublished) reports for the DUES Handbook (Ebbinghaus and Visser, 2000) and from Golden, Lange and Wallerstein (2006) for non-European OECD Countries. The data for Central and Eastern Europe is from the UCL files and several national and comparative sources.

Data on trade union membership and union density comes from Ebbinghaus and Visser (2000), Visser, (1991, 1992, 1993 and 2006), combined with recent administrative data on union organisation and membership from the Dublin Foundation for the Improvement of Living and Working Conditions (Carley, 2004) and from the European Social Survey (waves of 2002 and 2004). Sources and methodologies are described in Visser (2006).

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Table 1: Determinants of social pacts: baseline

	(1)	(2)	(3)	(4)
Gdp growth	0.044	0.008	-0.004	0.070
	(0.08)	(0.09)	(0.10)	(0.11)
Inflation	0.110**	0.146***	0.189***	0.174***
	(0.05)	(0.06)	(0.06)	(0.06)
Unemp	0.004	0.006	0.045	0.057
	(0.06)	(0.07)	(0.07)	(0.07)
Conf Power		1.102***	0.969***	1.251***
		(0.34)	(0.32)	(0.34)
Govint		0.558***	0.436**	0.486**
		(0.17)	(0.19)	(0.21)
Yrsoffice			0.141**	0.160**
			(0.07)	(0.07)
Polconstr			1.442**	2.000***
			(0.61)	(0.71)
Election			0.253	0.124
			(0.38)	(0.39)
Left			0.007	0.009*
			(0.00)	(0.01)
Econvol				0.451*
				(0.25)
Open				-4.407*
				(2.32)
Sprisk				0.381**
				(0.15)
No. of obs.	594	591	512	512
No. of countries	21	21	21	21

Note: dependent variable is a dummy for social pacts, all explanatory variables are lagged by 1 period. Estimation is panel random effects, standard errors reported in parentheses. ***,**,* denote significance at the 1, 5 and 10 percent levels respectively. Time dummies are included but not reported.

Table 2: Determinants of social pacts: the role of ethnic fractionalization

	(1)	(2)	(3)	(4)	(5)	(6)
Gdp growth	0.070	0.091	0.111	0.122	0.104	0.098
	(0.11)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Inflation	0.174***	0.179***	0.156***	0.168***	0.163***	0.153***
	(0.06)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Unemp	0.057	0.205***	0.179***	0.187***	0.181***	0.160***
	(0.07)	(0.06)	(0.05)	(0.06)	(0.05)	(0.05)
Conf Power	1.251***	1.056***	0.878***	1.006***	0.923***	0.848***
	(0.34)	(0.23)	(0.22)	(0.23)	(0.22)	(0.22)
Govint	0.486**	0.513***	0.474**	0.553***	0.496***	0.507***
	(0.21)	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)
Yrsoffice	0.160**	0.208***	0.202***	0.188***	0.200***	0.188***
	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Polconstr	2.000***	2.561***	2.244***	2.584***	2.385***	2.724***
	(0.71)	(0.58)	(0.52)	(0.60)	(0.55)	(0.63)
Election	0.124	0.038	0.077	0.059	0.070	0.074
	(0.39)	(0.39)	(0.38)	(0.38)	(0.39)	(0.39)
Left	0.009	0.004	0.008*	0.006	0.007	0.008*
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Econvol	0.451*	0.388*	0.364	0.376	0.379	0.421*
	(0.25)	(0.23)	(0.23)	(0.24)	(0.23)	(0.24)
Open	-4.407*	-2.527*	-1.963	-2.435*	-1.828	-0.888
	(2.32)	(1.48)	(1.51)	(1.47)	(1.50)	(1.56)
Sprisk	0.381**	0.477***	0.523***	0.487***	0.520***	0.471***
	(0.15)	(0.13)	(0.14)	(0.13)	(0.13)	(0.13)
Etfrac1		-7.541***				
		(1.89)				
Etfrac2			-6.328***			
			(1.43)			
Etfrac3				-10.686***		
				(2.56)		
Plural					9.207***	
					(2.05)	
Cultfrac						-10.789***
						(2.39)
No. of obs.	512	512	512	512	512	512
No. of countries	21	21	21	21	21	21

Note: dependent variable is a dummy for social pacts, all explanatory variables are lagged by 1 period. Estimation is panel random effects, standard errors reported in parentheses. ***,**,* denote significance at the 1, 5 and 10 percent levels respectively. Time dummies are included but not reported.

Table 3: Determinants of social pacts: additions

	(1)	(2)	(3)	(4)
Gdp growth	0.091	0.139	0.136	0.241*
	(0.10)	(0.10)	(0.11)	(0.13)
Inflation	0.179***	0.212***	0.203***	0.224***
	(0.05)	(0.06)	(0.06)	(0.06)
Unemp	0.205***	0.197***	0.179***	0.161**
	(0.06)	(0.06)	(0.06)	(0.08)
Conf Power	1.056***	1.366***	1.305***	1.202***
	(0.23)	(0.28)	(0.29)	(0.31)
Govint	0.513***	0.572***	0.567**	0.615**
	(0.19)	(0.22)	(0.23)	(0.25)
Yrsoffice	0.208***	0.198***	0.149*	0.144*
	(0.06)	(0.08)	(0.08)	(0.08)
Polconstr	2.561***	2.552***	2.670***	2.603***
	(0.58)	(0.69)	(0.71)	(0.69)
Election	0.038	-0.052	-0.075	0.212
	(0.39)	(0.42)	(0.43)	(0.45)
Left	0.004	0.003	0.005	0.006
	(0.00)	(0.01)	(0.01)	(0.01)
Econvol	0.388*	0.501**	0.581**	0.504*
	(0.23)	(0.25)	(0.27)	(0.29)
Open	-2.527*	-2.280	-1.263	-1.349
	(1.48)	(1.54)	(1.66)	(2.13)
Sprisk	0.477***	0.624***	0.605***	0.685***
	(0.13)	(0.14)	(0.14)	(0.16)
Etfrac1	-7.541***	-6.864***	-7.314***	-7.911***
	(1.89)	(2.06)	(2.10)	(2.59)
Ind. disputes		3.724***	3.985***	3.801***
		(1.38)	(1.39)	(1.47)
Gen. strike activity		-7.482*	-7.755*	-6.680
		(4.21)	(4.42)	(4.38)
Union Den			-0.025*	-0.029**
			(0.01)	(0.01)
Coverage				0.043*
				(0.02)
No. of obs.	512	481	478	460
No. of countries	21	20	20	19

Note: dependent variable is a dummy for social pacts, all explanatory variables are lagged by 1 period. Estimation is panel random effects, standard errors reported in parentheses. ***,**,* denote significance at the 1, 5 and 10 percent levels respectively. Time dummies are included but not reported.

Table 4: Determinants of social pacts: splitting time periods and fixed effects

	FE	1970-1989	1990-2005
Gdp growth	0.055	0.164	0.240
	(0.12)	(0.15)	(0.24)
Inflation	0.141**	0.164**	0.179
	(0.07)	(0.07)	(0.16)
Unemp	-0.029	0.167**	0.254**
	(0.09)	(0.08)	(0.13)
Conf Power	1.675***	0.503*	2.323***
	(0.47)	(0.31)	(0.79)
Govint	0.316	0.681**	0.109
	(0.24)	(0.28)	(0.36)
Yrsoffice	0.155**	-0.102	0.319***
	(0.08)	(0.17)	(0.10)
Polconstr	3.022*	3.393***	3.910**
	(1.75)	(0.95)	(1.78)
Election	0.305	0.161	-0.006
	(0.41)	(0.59)	(0.61)
Left	0.011*	0.014*	0.009
	(0.01)	(0.01)	(0.01)
Econvol	0.438	0.380	0.888
	(0.28)	(0.30)	(0.61)
Open	-7.370	1.080	-6.608
	(5.17)	(2.55)	(4.13)
Sprisk	0.393**	0.509***	0.900**
	(0.17)	(0.16)	(0.44)
Etfrac1		-7.371***	-10.575**
		(2.65)	(4.66)
No. of obs.	316	257	255
No. of countries	14	21	21

Note: dependent variable is a dummy for social pacts, all explanatory variables are lagged by 1 period. Estimation is panel random effects, standard errors reported in parentheses. ***,**,* denote significance at the 1, 5 and 10 percent levels respectively. Time dummies are included but not reported.

Table 5: Descriptive statistics

Variable	Mean	Std. Dev.	Obs
Growth	2.81	2.40	712
Inflation	6.45	5.44	692
Unemployment	6.48	4.06	756
Conf Power	0.00	1.26	738
Govint	2.63	1.27	738
Yrsoffice	3.60	2.76	629
Polconstr	-0.04	1.29	756
Gov Left	35.67	39.00	739
Econvol	1.67	1.07	733
Open	0.31	0.16	756
Sprisk	0.00	1.44	756
Strike	0.03	0.10	756
Ind. Disputes	0.09	0.14	673
Union Density	41.72	19.52	733
Coverage	67.66	22.25	697
Etfrac 1	0.22	0.20	756
Etfrac2	0.24	0.19	756
Etfrac3	0.13	0.11	756
Plural	0.85	0.14	756
Cultfrac	0.19	0.14	756

Table 6: Country list

Australia	Germany	Norway
Austria	Greece	Portugal
Belgium	Ireland	Spain
Canada	Italy	Sweden
Denmark	Japan	Switzerland
Finland	Netherlands	United Kingdom
France	New Zealand	United States

Economic and institutional variables

Variable	Description	Source
Inflation	Annual inflation rate	WDI
Growth	Real GDP growth	WDI
Econvol	standard deviation of GDP growth in the previous 4 years	Authors' calculation
Unemployment	unemployment rate	OECD
Open	import + export as percentage of GDP	WDI
Yrsoffc	Duration in office of the government (years)	DPI
Ass	Assassinations	CNTS archive
Genstr	General Strikes	CNTS archive
Guerwar	Guerrilla Warfare	CNTS archive
Purg	Purges	CNTS archive
Riots	Riots	CNTS archive
Revol	Revolutions	CNTS archive
Agdem	Anti-Government Demonstrations	CNTS archive
Gov left	Cabinet composition: centre parties in percentage of total cabinet posts, weighted by days	Comparative Political Data Set
Sprisk	index of socio political risk, first principal component of: Ass, Genstr, Guerwar, Purg, Riots, Revol, Agdem	Authors' calculation
Xconst	Regulation of executive recruitment	POLITY IV
Polcon	Political constraint index	Witold Henisz
Checks	Number of veto players	DPI
Polconstr	index of political constraints, first principal component of: polcon, xconst checks	Authors' calculations
Etfrac1	Measure of ethnic fraction.	Alesina et. al (2003),
Etfrac2	Measure of ethnic fraction.	Fearon (2003)
Etfrac3	Measure of ethnic fraction.	Easterly and Levine (1997)
Cultfrac	Measure of cultural diversity	Fearon (2003)
Plural	Plurality groups (share of population of the largest ethnic group)	Fearon (2003)

Variables ICTWSS Database

Variable	Description
Wcoord	Coordination of wage bargaining
Govint	government intervention in wage bargaining
Conf Frag	Effective Number of Confederations
Union den	Union Density, net union membership as a proportion wage and salary earners in employment
Conf conc	Membership concentration at central or confederal level (Herfindahl index)
Coverage	Bargaining (or Union) Coverage, adjusted
Cfrep	confederation represents the affiliates politically
Cfappt	confederal (political) control over appointment of leaders of affiliates
Cfagr	confederal involvement in wage agreements negotiated by its affiliate unions
Cffund	confederal or joint strike fund from which member unions are reimbursed
Conf Power	First principal component of cfrep cfappt cfagr and cffund