

Organized Labor and the Political Economy of Product Market Distortions

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Why are economic reforms reversed through strikes and demonstrations in some countries, but backed by the labor movement in other countries? Why do product and labor market distortions differ so much across countries? This article addresses these questions by means of a simple, heuristic model of the economy that replicates in an integrated manner several independent results from the recent political economy literature. Unlike most of this literature, however, the model focuses on the role played by organized labor, rather than by rent-seeking firms and guilds. A two-stage game between the government and organized labor determines the level of product market distortions (for example, import tariffs). In the first stage, the players may undertake costly actions, such as redistributing income or striking, in order to increase their bargaining power. In the second stage, they negotiate over product market distortions and wages. Under very general assumptions, several policy regimes exist: Changes in the key parameters of the economy may trigger a switch in the strategy of trade unions from confrontation to cooperation and hence change the policy regime. Cross-country data highlight that, in spite of its simplicity, the model reproduces some observed empirical regularities.

Since the early 1980s, removing product market distortions has been at the core of economic policy, both in industrial and in developing countries. Industrial countries have made efforts at fostering competition based on the deregulation of the markets for goods and services. Developing countries have implemented structural and sectoral adjustment programs, usually with the support of the World Bank. These reform programs include liberalizing foreign trade, probably the most frequent goal, as well as curtailing subsidies, suppressing legal monopolies, and eliminating the direct allocation of credit and foreign exchange.

Overall, these reforms have been positive, although a few disturbing facts remain. First, recidivism appears to be a widespread problem. Some countries that had begun the process of liberalizing eventually built up new distortions that represented a major departure from the initial program. The reinforcement

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of Australia's antidumping legislation provides a clear example of this shift. In other countries, like Nigeria and Venezuela, street riots and political turmoil led to a reversal of the reform program. In the Ukraine, strikes by coal miners forced the government to put an approved plan of pit closures on hold. In Zambia, the reform program derailed because of opposition by trade unions.

Equally disturbing, some countries launched significant economic reforms amid the worst conceivable scenario, in spite of the likely adjustment costs. In Mexico, for example, during the 1980s, the price of oil exports collapsed, access to foreign lending vanished, interest rates on foreign debt soared, and the country suffered one of the worst earthquakes in the century. Yet the country undertook an ambitious liberalization program. On top of this, it backed up the program with a series of explicit agreements (known as the *Pacto*) between the government and the main social partners, including organized labor.

Last but not least, the welfare costs of economic reform were often higher and more long-lasting than expected. In Chile, for instance, unemployment jumped to two-digit rates for an entire decade after trade liberalization. In the European Union, the fear of high unemployment has deterred the removal of product market distortions in sectors such as steel, automobiles, and textiles. In some developing countries, those who criticize structural adjustment on the grounds of its high social cost may actually have a point. By and large, the welfare costs of reform have made the expression "adjustment fatigue" a meaningful description of reality.

An obvious explanation for these anomalies is that the reforms under consideration focused mainly on product market distortions but did little to eliminate labor market distortions. For instance, far fewer structural adjustment loans have attached conditionality to labor market deregulation than to trade liberalization. Distortions such as mandatory minimum wages and indexation clauses could therefore be responsible for real wage stickiness in formerly distorted sectors. Similarly, hiring and firing restrictions could be to blame for insufficient labor reallocation to the competitive sectors of the economy. As a result, the welfare costs from the reform would be higher than expected. The appearance that the costs exceed the discounted benefits provides a rationale for recidivism.

Based on this explanation, success would require the removal of policy-induced distortions in *both* product and labor markets. However, labor market rigidities cannot easily explain why governments undertook reforms under severe adverse shocks, as was the case in Mexico. Furthermore, this explanation cannot deal with a more fundamental problem: the clearly suboptimal regulation of product markets prior to reform. What trapped so many countries, both industrial and developing, in such wild distortions to competition?

Within the Pigouvian framework, welfare-maximizing governments unilaterally decide economic policies. Thus, perhaps policymakers around the world had a wrong (say, populist) model of the economy. This answer is appealing in the case of formerly planned economies. But for other countries, the political

economy approach provides a more promising answer. Within this approach, economic policies are the endogenous outcome of a distributive conflict, shaped by the institutional setting in which decisionmaking occurs.

In this article, I adopt the political economy approach to account for product market distortions as well as for the reported anomalies in the reform process. I develop a simple, heuristic model of the economy to articulate in a consistent fashion some of the main messages from the recent political economy literature. However, unlike this literature, the model gives a prominent role to labor market policies and institutions, which have so far been conspicuously missing from the debate (see, for instance, the surveys by Rodrik 1995 and Helpman 1995). The contribution of this article is therefore to extract the labor market implications of the political economy approach in an intuitive manner, still backed by the more rigorous analysis in the original models in this literature.

The heuristic model belongs to the bargaining variety of model in the political economy literature. Product market distortions result from a policy game between a benevolent government, representing all society, and organized labor, representing some of the workers. Note that organized labor is not the only economic agent to benefit from product market distortions. The literature has given a much more prominent role to individual firms and sectoral guilds. However, by focusing on organized labor the model can explain the incidence of labor market features in product market distortions and, therefore, in the success or failure of economic reforms.

This bargaining model involves two stages. In the first one, players have to decide whether to undertake actions that are to some extent indivisible, such as redistributing income or striking. These actions entail a cost, but they also increase the players' bargaining power. In the second stage, the players bargain over the level of product market distortions and wages in the distorted sector. Their net payoffs thus depend on parameters such as the costs of striking and redistributing income but also on the determinants of gains and losses from distortions, which include the elasticity of labor demand, the deadweight loss created by the distortions, and the size of the sector they affect.

Even though the structure of the model may seem unrealistically simple, it captures some of the regularities observed in practice. An empirical section of the article shows that countries differ significantly in the extent to which governments redistribute income and organized labor strikes. More important, these differences are correlated with distortions in product and labor markets in the way predicted by the model. Of course, I do not interpret the empirical evidence presented here as a real test of the model. But the data show that in spite of the criticism that some of the model's assumptions may raise, particularly regarding the choice of players and nature of the game, the model provides useful insights into the design of economic reforms.

Three main messages emerge from the exercise. First, different levels of product and labor market distortions characterize several policy regimes. The policy regime in which organized labor strikes and the government does not redistrib-

ute income (called Latin American, for short) has higher product market distortions and sectoral wage differentials than the regime with income redistribution and no strikes (Scandinavian). The regimes with strikes and income redistribution (European) or no strikes and no income redistribution (East Asian) occupy an intermediate position. A successful economic reform therefore requires a change in the policy regime rather than a mere change in the level of some policy instrument within a given regime.

Second, removing product market distortions reduces welfare as long as the players have no incentive to switch their strategies. The very fact that the initial (distorted) situation was an equilibrium means that it was not in the interest of any of the players to deviate from it, given the actions undertaken by the other player. Particularly, government would settle for high tariffs because other means of appeasing unions, such as redistributing income, were even more costly. Therefore, the welfare cost associated with product market reforms is not necessarily the result of labor market rigidities (for example, minimum wages or hiring and firing costs), but rather the outcome of strategic interaction between the players.

Third, changes in some key parameters of the economy may trigger a switch in the strategy of organized labor from confrontation to cooperation and, therefore, a reduction in the equilibrium level of distortions. In the discussion of these changes, the model reproduces some interesting results of the recent political economy literature, applied now to labor issues in developing countries. In particular, I analyze how income redistribution, the flexibility of labor demand, the severity of macroeconomic shocks, and the scope of the reforms undertaken may all affect the equilibrium level of product market distortions.

Section I presents the main argument in an intuitive way, under the form of a heuristic model of the economy, and discusses how this model fits in the political economy literature. It shows, under very general assumptions, that several policy regimes exist. Section II makes more specific assumptions concerning the structure of the economy and identifies how changes in key parameters trigger a switch in the strategies of the players. The section gives only the results of this more elaborate version of the model; the appendix provides their derivation. Section III presents cross-country evidence from the 1980s to suggest that the model is empirically relevant. The data indicate that the model correctly predicts the relationship between income redistribution and labor conflict, on the one hand, and the level of product and labor market distortions, on the other hand. Section IV draws the main policy implications of the analysis and shows how they mimic some of the recent results of the political economy literature, while introducing the labor dimension that is too often missing. Section V concludes.

I. THE ARGUMENT

Several approaches in the literature account for distortive economic policies. A relevant difference among them concerns the role played by the government. At one end of the spectrum, the *rent-seeking approach*, pioneered by Tullock

(1967) and Krueger (1974), assumes that the government unilaterally sets distortive policies. Given these policies, interest groups compete for appropriation of the ensuing rents. At the other end, the *war-of-attrition model*, first analyzed by Alesina and Drazen (1991), assumes no government at all. Economic policies, distortive or otherwise, merely reflect the nature of the equilibrium between rival interest groups. In between these two extremes, the *bargaining model* introduced by Barro and Gordon (1983) and the *common agency approach* used by Grossman and Helpman (1994) assume some form of interaction between the government and the private sector.

To explain why I use a bargaining model, I first summarize some key features of the other approaches. The main contribution of the rent-seeking approach has been to show the potential magnitude of the waste of resources triggered by distortive economic policies. The rent-seeking approach usually assumes a competitive labor market. Rama (forthcoming) evaluates the social costs of distortions when workers are unionized. However, this approach often takes distortive policies as given. In this respect, there is a similarity with the Pigouvian approach to economic policy, except that in the rent-seeking approach government policies reduce, rather than increase, welfare. Attempts at introducing pressures from interest groups into policymaking (as in Magee, Brock, and Young 1989 and Hillman 1989) have been quite insightful, but the mechanisms at work vary substantially depending on the policy issue.

Assuming that there is no government at all is, from the policy perspective, as extreme as assuming that the government unilaterally implements distortive policies. In the war-of-attrition approach, each of the interest groups in conflict has to choose between different economic policies from a totally exogenous policy menu. Faced with an unexpected negative shock, interest groups can either favor a permanent adjustment based on nondistortionary taxation or a temporary adjustment resorting to distortionary instruments. Such groups would prefer a temporary adjustment if the first group to sign on for permanent adjustment most likely would bear a disproportionate share of the new, nondistortionary taxes. No doubt, the analysis of this dilemma has produced very interesting results, some of which I replicate in an intuitive manner within the bargaining approach (see section IV).

The bargaining model and the common agency approach both include a government that controls the policy instruments and has a well-defined objective function. If this government does not adopt an optimal policy, it is because the private sector confronts it with costs (in the case of the bargaining approach) or contributions (in the case of the common agency approach) that make distortionary policy a more attractive alternative. These two approaches thus can be used to analyze how changes in the key parameters of the economy affect the value of the costs or contributions facing the government, hence the level at which the government sets policy instruments.

The common agency approach has provided solid microeconomic foundations to suboptimal policymaking. Rama and Tabellini (1997) analyze the implica-

tions of this approach when organized labor tries to influence government decisions. In the model in that paper, factors of production in the formal sector of the economy are organized in interest groups, while workers in the informal sector are not. The paper shows that in spite of the conflict of interests between organized labor and capital, product and labor market distortions move in the same direction in response to changes in the key economic and political parameters of the model. It also shows that policy conditionality by multilateral institutions should target product market distortions, not labor market distortions.

In this article I explore the potential of the bargaining model to yield new insights. The approach I use follows up on the simple but insightful model by Rodrik (1992). In that model, economic policies result from a game between the government and an interest group, with one of the players behaving as the leader and the other as a subordinate. In Rodrik's interpretation, better economic performance occurs in East Asia, where interest groups are subordinate, compared with Latin America, where they are not. Rather than assuming that the condition of leader is exogenously given, however, the model I use here goes one step further and makes leadership endogenous.

The political economy literature also includes a *voting* variety, in which some heterogeneity of the citizens leads, through the majority rule, to suboptimal policy choices. One of the most obvious heterogeneities is in endowments: the wealth of the median voter is usually lower than the average wealth indeed. This citizen may hence favor redistribution, even if it entails some inefficiency (see Persson and Tabellini 1990). Heterogeneity may also concern information: some individuals do not know whether they will be winners or losers from the reforms. In this case, a status-quo bias may emerge in which a majority of the population does not support the reforms, even when everybody knows that they will increase aggregate income (see Fernández and Rodrik 1991).

Although the literature on voting has provided very interesting results, it is not well suited to the analysis of interest groups and their influence on economic policies. Influence implies that some individuals carry more weight than others in the decisionmaking process. This asymmetry between individuals, in turn, conflicts with the very idea of majority rule. Moreover, in many developing countries the assumption that decisionmaking is based on majority rule is clearly unrealistic. For these reasons, the model in this article will not draw from the voting variety of the new political economy literature.

The Rules of the Game

Product and labor market distortions result from a full-information two-stage game between the government and organized labor. The government is modeled as in the Pigouvian approach to economic policy, that is, as a benevolent social planner whose objective is to maximize national income (the size of the pie). Therefore, if only the government got involved in the policymaking process, no product market distortions would occur. The model implicitly assumes that there are no externalities in production or consumption nor any departures from per-

fect competition that would make the distortion of product markets a second-best policy. (For an analysis of the case with market imperfections, see Rama 1997.) A difference with the Pigouvian approach arises, however, because the game involves interaction between the government and an agent that benefits from the distortions and that aims to maximize its own income (its slice of the pie).

Organized labor is not the only group to benefit from product market distortions. Firms also likely gain from these distortions. Thus, firms play a crucial role in the rent-seeking and the common agency approaches. In the model in this article firms are supposed to be passive. This choice, aimed at analytical tractability, is also consistent with a widespread practice in the wage bargaining literature. The most popular model in this literature, namely the monopoly union model, assumes indeed that firms have no strategic power beyond the "right to manage," which implies that they always operate on their labor demand curve (see Oswald 1985). By contrast, most of the political economy literature, which often assumes perfect competition in factor markets, conspicuously excludes organized labor. Papers dealing with macroeconomic policies, such as those by Horn and Persson (1988), Holden (1991), Driffill and Schultz (1992), and Forteza (forthcoming), are exceptions to this rule.

The control variables of the players differ in the two stages of the game. In the second stage, the government and organized labor negotiate over sectoral wages and product market distortions. In the first stage, they aim at building up bargaining power for the negotiation. As in the war-of-attrition model, the players have to decide whether to undertake a costly indivisible action. More specifically, I assume that in the first stage organized labor has to decide whether to strike, while the government has to decide whether to redistribute income. Both players have perfect information on what the other player does. Note that imperfect information is not a necessary condition for strikes (or other costly actions) to be decided by the players, as shown by Fernández and Glazer (1991).

Because both the government and organized labor can choose between two different strategies, there are four potential outcomes or policy regimes. Each of them leads, in the second stage of the game, to an equilibrium level of the product market distortion and the sectoral wage. Table 1 defines the labels used here to identify the four policy regimes. The labels capture the idea that labor markets have distinct features in different regions of the world (see Nelson 1991) and that these differences may be large enough to think in terms of clusters, rather than in terms of a continuous distribution.

Table 1. *A Typology of Policy Regimes*

<i>Government</i>	<i>Organized labor</i>	
	<i>Strikes</i>	<i>Does not strike</i>
Redistributes income	European	Scandinavian
Does not redistribute income	Latin American	East Asian

The labels should not be taken literally. For instance, a complete lack of income redistribution in the Latin American and East Asian policy regimes does not describe reality. Moreover, the chosen geographical regions are not actually homogeneous in terms of their labor market features. For example, Austria should belong to the Scandinavian rather than the European type of regime. In addition, other countries and regions fit the cases in table 1. Thus the label United States could replace the East Asian label. Section III presents a more careful assessment of the validity of this kind of clustering.

The actions undertaken in the first stage have an incidence on the bargaining power of the players in the second stage, when they decide about wages and product market distortions. If the government redistributes income and workers do not strike (the Scandinavian case), I assume that the government is the Stackelberg leader in the second stage. This corresponds to an autonomous state, in terms of Rodrik's (1992) analysis of development policy. If, on the contrary, the government does not redistribute income and workers do strike (the Latin American case), then organized labor is the Stackelberg leader. This reflects a subordinate state, according to Rodrik's terminology. As regards the two other cases (European and East Asian), both players achieve a similar bargaining power. Thus a Cournot equilibrium characterizes the second stage of the game.

The Players' Strategies

To ensure that decisions by the players are consistent over time, the game has to be solved backwards. In the second stage, product market distortions and the wage differential between the distorted sector and the rest of the economy lead to a loss Y_i for the government, where i indicates the prevailing policy regime ($i = EU$ for European, SN for Scandinavian, LA for Latin American, or EA for East Asian). Departures from the Walrasian equilibrium also imply a gain of Z_i for organized workers. The assumptions concerning the bargaining power of the players in the second stage of the game can be summarized as follows:

$$(1) \quad Y_{EA} > Y_{SN}, Y_{LA} > Y_{EU}, Z_{EU} > Z_{SN}, Z_{LA} > Z_{EA}.$$

However, the loss Y_i and the gain Z_i are not yet the appropriate measures for the sizes of the pie and the slice, respectively. The costs of strikes and income redistribution during the first stage of the game also need to be taken into account.

The cost of income redistribution comes from the inefficiencies associated with transfers. Even with redistribution based on nondistortionary taxation, losses associated with revenue collection, resource administration, and the like would occur. The weaker the administrative capabilities of the government, the more significant these losses are. Assume that loss Y_i is multiplied by a factor $\phi > 1$ when the government redistributes income. Parameter ϕ is an indicator of the inefficiency of the state. When ϕ is close to 1, income redistribution resembles textbook compensatory payments, but as it increases, the waste component of income redistribution becomes more important. At the same time, redistribution increases the gain Z_i of union members by a factor $\phi' > 1$.

The unions' decisions also affect the gain by union members. Assume that Z_i is multiplied by a factor $\Theta < 1$ when organized labor strikes. The cost $1 - \Theta$ may be associated with workdays lost, with casualties in union ranks during demonstrations, or with the harassment, imprisonment, or death of union members. Parameter Θ is thus an indicator of union rights. When Θ is close to 1, strikes do not entail any significant losses for union members, but as it decreases, confrontation becomes more costly. Strikes increase the government's loss Y_i by a factor $\Theta' > 1$. Parameter Θ' measures the disruption of economic activity created by labor conflicts.

Consider the case where organized labor strikes. The government faces a loss equal to $\phi\Theta'Y_{EU}$ if it redistributes income and equal to $\Theta'Y_{LA}$ if it does not. Therefore, it is indifferent between the two strategies for a level ϕ_s of state inefficiency such that

$$(2) \quad \phi_s = \frac{Y_{LA}}{Y_{EU}}.$$

For a higher level of state inefficiency ($\phi > \phi_s$), the government prefers not to redistribute income, even if the second-stage outcome is worse in terms of sectoral wage differentials and product market distortions.

Similarly, when organized labor does not strike, the government faces a loss equal to ϕY_{SN} if it redistributes income and equal to Y_{EA} if it does not. The inefficiency of the state ϕ_0 for which the government is indifferent between the two strategies verifies that

$$(3) \quad \phi_0 = \frac{Y_{EA}}{Y_{SN}}.$$

As before, for higher levels of state inefficiency ($\phi > \phi_0$), the government prefers not to redistribute income.

From the point of view of organized labor, when there is income redistribution the gain from striking is $\phi'\Theta Z_{EU}$, while the gain from not striking is $\phi'Z_{SN}$. At some level Θ_R of union rights, the labor movement is indifferent between the two strategies. This level satisfies

$$(4) \quad \Theta_R = \frac{Z_{SN}}{Z_{EU}}.$$

If union rights are below Θ_R , then unions prefer not to strike.

Finally, in the case with no income redistribution, the gains for union members are ΘZ_{LA} and Z_{EA} , depending on whether they strike. At the critical value Θ_0 , the labor movement is indifferent between the two strategies:

$$(5) \quad \Theta_0 = \frac{Z_{EA}}{Z_{LA}}.$$

If union rights are below Θ_0 , the labor movement prefers not to strike.

The Policy Regimes

The prevailing policy regime depends on the relationship between the actual values of parameters ϕ and Θ and the critical thresholds ϕ_S , ϕ_0 , Θ_R , and Θ_0 . Table 2 shows that under the very general assumptions adopted so far, all four regimes can be sustained as subgame perfect equilibriums in pure strategies. There is, however, no one-to-one mapping from the level of parameters ϕ and Θ to the equilibrium policy regime. Multiple equilibriums characterize cases 5 and 6 in table 2. Case 6, particularly, implies that the same levels of inefficiency of the state and of union rights may be associated with either an autonomous or a subordinate government. The existence of an equilibrium in mixed strategies (case 7) reinforces the idea that the same level of parameters ϕ and Θ may lead to different policy regimes. However, in this article I deal with equilibriums in pure strategies only, as a way to account for stable levels of distortions in product and labor markets.

Starting from a given policy regime, can the economy switch to a regime characterized by a lower loss for the government, that is, by a larger size of the pie? The discussion above made clear that larger welfare losses characterize regimes where the labor movement chooses to confront than those where it prefers to cooperate. What could induce a shift in the strategy of the labor movement from confrontation to cooperation? To analyze this issue requires a more detailed

Table 2. *Feasible Policy Regimes*

<i>Case</i>	<i>Parameter thresholds for inefficiency of the state, ϕ, and union rights, Θ</i>	<i>Policy regime with Nash equilibrium</i>
1	$\phi < \min \{ \phi_0, \phi_S \}$ and $\Theta > \Theta_R$ or $\Theta > \min \{ \Theta_0, \Theta_R \}$ and $\phi < \phi_S$	European
2	$\phi < \min \{ \phi_0, \phi_S \}$ and $\Theta < \Theta_R$ or $\Theta < \max \{ \Theta_0, \Theta_R \}$ and $\phi < \phi_0$	Scandinavian
3	$\phi > \max \{ \phi_0, \phi_S \}$ and $\Theta > \Theta_0$ or $\Theta > \min \{ \Theta_0, \Theta_R \}$ and $\phi > \phi_S$	Latin American
4	$\phi > \max \{ \phi_0, \phi_S \}$ and $\Theta < \Theta_0$ or $\Theta < \max \{ \Theta_0, \Theta_R \}$ and $\phi > \phi_0$	East Asian
5	$\phi_0 < \phi < \phi_S$ and $\Theta_R < \Theta < \Theta_0$	East Asian and European
6	$\phi_S < \phi < \phi_0$ and $\Theta_0 < \Theta < \Theta_R$	Latin American and Scandinavian
7	$\phi_S < \phi < \phi_0$ and $\Theta_R < \Theta < \Theta_0$ or $\phi_0 < \phi < \phi_S$ and $\Theta_0 < \Theta < \Theta_R$	No equilibrium in pure strategies

Note: The level of inefficiency of the state at which the government is indifferent about redistributing income is ϕ_0 when organized labor does not strike and ϕ_S when organized labor strikes. The level of union rights at which the labor movement is indifferent about striking is Θ_0 when government does not redistribute income and Θ_R when government redistributes income.

model. Thus section II presents an example in which a few additional assumptions on the second stage of the game make the functions Y_i and Z_i depend on meaningful parameters, such as the flexibility of labor demand, the prevailing macroeconomic conditions, or the size of the sector affected by product market distortions.

II. AN EXAMPLE

Import tariffs provide a useful example of a product market distortion. By making foreign goods more expensive, they shift domestic demand toward home-produced substitutes. Labor demand in the import-substitution sector increases, which allows firms in this sector to hire a larger number of workers, to pay incumbent workers more than their alternative wage, or both. Organized labor can therefore benefit from the tariffs. But two well-known welfare costs arise in the process. First, employment in the import-substitution sector typically increases, causing an inefficient allocation of labor. And second, consumption decisions, based on distorted relative prices, cause a loss of consumer surplus.

Although these two welfare costs are neat in the case of tariffs, they also obtain for other product market distortions. Output or export subsidies, cheap inputs from publicly owned firms, or any other policy that shifts up labor demand in some specific sector lead to the same kind of inefficiency in labor allocation as an import tariff. Moreover, all of these transfers have to be financed in one way or another, thus giving rise to a tax burden. The loss of consumer surplus mentioned above is just a particular case of the tax burden. But some deadweight loss exists whatever the tax base. For instance, if the government finances the transfer by printing money, then the welfare cost comes from the drop in the demand for real balances.

The appendix works out the analytical expression of the functions Y_i and Z_i in the chosen example, provided that three simplifying assumptions hold. First, I assume that a linear function of the product and labor market distortions approximates demand for labor, L , in the distorted sector:

$$(6) \quad L = 1 - \alpha(W - D - 1)$$

with $\alpha > 0$. In this expression, W is the level of the sectoral wage, and D is the level of the product market distortion (say, the tariff rate). Wages in the rest of the economy are normalized to 1, so that if there were no distortions in product and labor markets, L would equal 1.

With the chosen specification, parameter α measures labor market flexibility. The level of α is an upward function of the wage elasticity of labor demand indeed (they both coincide for $L = 1$). The more stringent the hiring and firing restrictions facing the firm, the lower is α . In terms of this simple example, a deregulation of the labor market would lead to an increase in the value of parameter α , which thus captures the labor market rigidity stemming from the labor market policies and institutions in force.

Second, I assume that the tax burden associated with the product market distortions is a quadratic function of the level of the distortion. This assumption corresponds to the case in which the tax base is a downward linear function of the tax rate. Consider the import tariff example again. If the domestic demand, C , for goods had the form $C = C_0 - \beta D$, where D denotes the tariff rate, then the loss of consumer surplus would amount to $\beta D^2 / 2$, the area of the corresponding Harberger triangle. The calculation would be similar if C were money demand and D were the additional inflation tax required to finance the transfer, in which case β would measure the decline in demand as the inflation rate increases.

The inflation tax example suggests that parameter β depends on macroeconomic conditions. Indeed, the elasticity of a tax base with respect to the corresponding tax rate is likely to increase with fiscal pressure. For instance, announcing a 1 percent increase in public expenditures could have little impact on the demand for real balances if the initial budget was in equilibrium but could lead to its collapse if the country was on the verge of hyperinflation. Hereafter, I assume that adverse shocks such as a deterioration in the terms of trade, an increase in the debt service burden, or a natural disaster lead to a higher value of parameter β , which in effect summarizes the prevailing macroeconomic conditions.

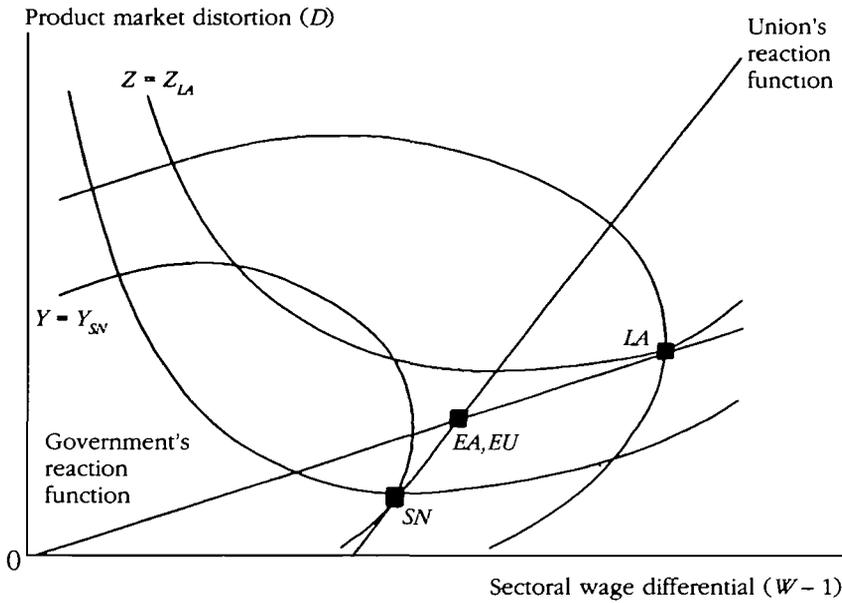
Third, I assume that workers in the protected sector bear only a fraction σ of the social cost resulting from product and labor market distortions. If the social cost were uniformly distributed across all the population, the fraction σ would boil down to the percentage of the labor force employed in that sector. Assuming that these workers are unionized, σ would also measure the size of the trade union with which the government has to deal. But from a policy perspective, it is convenient to interpret parameter σ as the scope of the product market reforms under consideration. An attempt to liberalize trade across the board is thus associated with a larger value of σ than a reduction of import tariffs in a narrowly defined sector.

A Diagrammatical Representation

Figure 1 depicts the objective functions Y and Z in the plane $(W - 1, D)$ of sectoral wage differentials and product market distortions. The appendix provides the derivation of this figure. Curves like $Y = Y_{SN}$ in figure 1 represent the combinations of distortions $W - 1$ and D that achieve a constant welfare loss in the second stage of the game. The closer these curves are to the origin, the lower are the distortions and, therefore, the lower is the welfare loss. Curves like $Y = Y_{SN}$ become vertical at the intersection with the upward-sloping line labeled "government's reaction function." This line indicates the lowest welfare loss the government can achieve through the product market distortion, D , for a given wage differential, $W - 1$. It consequently represents the best policy response of a subordinate government to the wage decisions made by a trade union that behaves as a leader.

Similarly, curves like $Z = Z_{LA}$ in figure 1 represent the combinations of distortions $W - 1$ and D that secure a constant gain Z to union members in the second

Figure 1. *Product and Labor Market Distortions*



stage of the game. The farther is this curve from the origin, the larger are the market distortions and, therefore, the higher is the gain to organized labor. Curves like $Z = Z_{LA}$ become horizontal at the intersection with the upward-sloping line labeled “union’s reaction function.” This line indicates the maximum gain the labor movement can achieve through the labor market distortion, $W - 1$, for a given product market distortion, D . It consequently represents the best reply of a subordinate labor movement to the policy decisions made by a government that behaves as a leader.

Equilibrium Distortions

Based on figure 1, it is relatively straightforward to characterize the different policy regimes allowed by the model. When both players have similar bargaining power in the second stage of the game (that is, in the East Asian and European regimes), the equilibrium distortions lie at the intersection of the corresponding reaction curves. The level of the labor market distortion therefore maximizes the gain for trade union members given the level of the tariff set by the government, while the level of the tariff minimizes the welfare loss given the sectoral wage differential created by union activities. Note, however, that aggregate welfare in the East Asian regime exceeds that in the European regime, because the former regime does not entail deadweight losses from income redistribution and labor conflicts.

When one of the players is strong enough to behave as the leader, it can take advantage of the fact that its own decisions affect the decisions made by the

other player. For instance, a government behaving as a leader (the Scandinavian regime) does not treat the sectoral wage differential $W - 1$ as given. It rather incorporates in its decisionmaking process the way organized labor adjusts this wage differential to changes in the product market distortion D . The government therefore sets the level of D so as to pick up the point of the union's reaction function that minimizes the welfare loss Y . In figure 1, that point is SN .

The analysis is symmetrical when organized labor behaves as the leader. In this case, the trade union can take advantage of the fact that the government tries to minimize the welfare loss from a sectoral wage differential, $W - 1$, by adjusting the level of the product market distortion, D . The optimal wage differential, from the point of view of organized labor, corresponds to the point of the government's reaction function that maximizes the gain, Z . In figure 1, that point is LA .

More specifically, the appendix shows that

$$(7) \quad 0 < D_{SN} < D_{EA} = D_{EU} < D_{LA}, \quad 1 < W_{SN} < W_{EA} = W_{EU} < W_{LA}.$$

The biggest product market distortion is therefore associated with the Latin American case and the smallest one with the Scandinavian case, whereas the European and East Asian cases occupy an intermediate position. Similarly, wage differentials are narrow in Scandinavia and wide in Latin America. Again, Europe and East Asia lie between these two extremes.

Although the ranking of product and labor market distortions was derived under simplifying assumptions, its validity is more general. Equation 7 holds true provided that aggregate welfare decreases in line with distortions, while the well-being of union members increases. Indeed, none of the players can be worse off by taking advantage of the way the other player makes its decisions. This additional bargaining power could be irrelevant, but never harmful. In general, it allows the player who gets it to attain a higher value of its objective function. If the government gets this extra power, it can reduce the aggregate welfare loss, which in turn amounts to reducing the size of product and labor market distortions. By contrast, if unionized workers get it, they can secure a larger slice of the pie, and this in turn requires that product and labor market distortions increase. In more formal terms, the ranking of distortions summarized in equation 7 is verified provided that the reaction functions of the two players are upward sloping, which is likely.

III. SOME EMPIRICAL EVIDENCE

In spite of its simplicity, the model in this article reproduces quite well some regularities observed in practice. Table 3 reports interesting data in this respect. These data, arranged under the form of six variables, refer to income redistribution, labor conflicts, and market distortions in different regions of the world. All the countries in the table belong to one of the four regions considered in the model (EU , SN , LA , and EA). Regions are not always defined in the conven-

tional way though, as shown by the inclusion of Austria in Scandinavia and the exclusion of Denmark, Finland, Greece, Sweden, and Portugal from Europe. Also, table 3 excludes countries with missing data for three or more of the six variables. Table 3 reports regional averages for all variables. These averages suggest that regions differ by more than a matter of degrees.

Column A in table 3 reports expenditure on social sectors, measured as a fraction of total expenditure by the central government. Social sectors include education, health, social security, and housing, whereas total expenditure includes defense. I use population weights to calculate regional averages. Column A shows that social expenditures represent around two-thirds of the budget in Europe and Scandinavia, but only one-third in most countries in East Asia and Latin America. The exceptions are Indonesia, where the fraction of social expenditures is even lower (about one-fifth of total expenditures), and Costa Rica and Uruguay, where the fraction is much closer to the European and Scandinavian figures. Except for Costa Rica and Uruguay, it is fair to conclude that income redistribution by the government is not a salient feature of the two regions in the South.

Labor conflicts, by contrast, occur both in the North and in the South. Many countries in Europe and Latin America were characterized by a significant number of strikes in the second half of the 1980s. Column B in table 3 shows that roughly 10 percent of nonagricultural workers in these two regions participated in strikes. The figures in column C suggest that the resulting economic cost was far from trivial: more than half a day per worker was lost in Europe every year and one full day was lost in Latin America. At the other end of the spectrum, Scandinavia and East Asia display very peaceful labor markets. Only in Finland and the Republic of Korea is the number of days lost significant, although it is still much lower than the European and Latin American averages.

The regional ranking in terms of labor market distortions matches the one predicted by the model. Column D of table 3 reports the ratio between the legal minimum wage and gross domestic product (GDP) per capita, a useful indicator of labor market distortions. Based on this ratio, Latin America has the most distorted labor markets, and Scandinavia has the least distorted ones, with East Asia and Europe lying between these two extremes. Although the regional averages suggest little difference between Europe and Scandinavia, the similarity is mostly due to one country (Sweden) driving up the Scandinavian average.

The very existence of a nationwide legal minimum wage provides yet another way to confirm that the model correctly predicts the regional ranking of labor market distortions. All Latin American countries for which there are data have a legal minimum wage, and the variance in the ratios between the minimum and GDP per capita across countries is quite narrow. At the other end, no country in Scandinavia, except Sweden, has a legal minimum wage. The picture is mixed in East Asia and Europe.

Table 3 reports two different measures of product market distortions. Column E reports the trade intensity ratio constructed by Pritchett (1993). This is

Table 3. *Indicators of Policy Regimes across Countries, 1980s*

<i>Country</i>	<i>Government expenditure on social sectors^a (percent)</i> A	<i>Workers involved in strikes^b (per 100 workers)</i> B	<i>Worker-days lost to strikes^c (per 100 workers)</i> C	<i>Minimum wage^d (percentage of GDP per capita)</i> D	<i>Trade intensity ratio^e (residual)</i> E	<i>Average tariff rate^f (unweighted)</i> F
<i>East Asia</i>						
Indonesia	0.12	0.1	0.4	34.5	19.7	14
Japan	—	0.2	0.5	28.1	-40.0	—
Korea, Rep. of	0.28	1.5	19.1	40.5	0.9	23
Malaysia	0.33	0.3	1.1	0.0	24.1	14
Singapore	0.34	—	—	0.0	145.9	0
Thailand	0.30	0.1	1.0	79.2	-10.4	31
East Asian average	0.19	0.3	2.5	37.4	-30.4	20
<i>Europe</i>						
Belgium	0.58	0.6	3.6	63.8	62.5	5
France	0.69	0.8	5.3	52.7	-27.3	5
Germany	0.69	—	—	0.0	-17.1	5
Ireland	0.54	3.7	26.1	—	70.9	5
Italy	0.53	24.1	191.0	0.0	-19.2	5
Netherlands	0.63	0.4	1.4	72.4	30.9	5
Spain	0.64	15.5	36.2	31.1	—	5
United Kingdom	0.49	3.4	23.5	0.0	-19.4	5
European average	0.61	9.5	59.4	18.8	-14.0	5
<i>Latin America</i>						
Argentina	0.43	—	—	—	-35.9	27
Bolivia	0.45	—	—	37.6	—	20

Brazil	0.39	19.2	142.1	34.0	-2.0	55
Colombia	0.49	0.4	0.1	80.0	-34.5	38
Costa Rica	0.62	2.0	15.1	87.7	0.2	24
Ecuador	—	1.1	22.7	59.9	3.0	38
Guatemala	—	—	—	58.6	-29.1	24
Mexico	0.26	0.5	9.7	40.9	-23.0	30
Peru	0.22	10.8	440.7	—	-24.7	36
Uruguay	0.62	—	—	31.2	-38.0	31
Venezuela	0.38	0.3	4.7	53.7	-12.6	30
Latin American average	0.36	9.9	99.6	43.9	-16.7	39
<i>Scandinavia</i>						
Austria	0.70	0.2	0.2	0.0	—	12
Denmark	0.52	3.9	13.0	0.0	-12.2	5
Finland	0.58	12.5	33.7	0.0	-17.0	9
Norway	0.56	1.8	10.1	0.0	2.0	5
Sweden	0.60	—	—	60.7	-8.7	4
Scandinavian average	0.60	4.1	12.6	16.9	-8.8	7.4

— Not available.

a. Percentage of total central government expenditure, including defense, for all available years in the 1980s. The numerator includes central government expenditures on education, health, social security and welfare, and housing and community amenities. Regional averages were obtained using population weights.

b. Percentage of the nonagricultural labor force in the 1980s. Regional averages were obtained using population weights.

c. Values are for the nonagricultural labor force in the 1980s. Regional averages were obtained using population weights.

d. Values are for 1985–89. Regional averages were obtained using population weights.

e. The trade intensity ratio is the residual obtained upon regressing the ratio of total merchandise trade to GDP on population, area, GDP per capita, GDP per capita squared, the transport costs, and a dummy for oil-exporting countries. Regional averages were obtained using the 1985 GDP in U.S. dollars as weights.

f. For Europe and Scandinavia, these are pre-Uruguay round average most favored nation rates. Regional averages were obtained using imports from all countries except free trade areas (for Europe and Scandinavia) and 1985 GDP in U.S. dollars (for East Asia and Latin America) as weights.

Source: For column A, International Monetary Fund (various years); for columns B and C, International Labour Organisation (various years); for column D, World Bank data; for column E, Pritchett (1993); and for column F, Erzan and others (1989).

the residual of a cross-country regression explaining the openness coefficient of the economy as a function of an array of country characteristics, including total population, the level of development, geographic area, transport costs, and whether the country is an oil exporter. The more negative the residual, the more closed the economy. It seems thus natural to assume that the country deviation from its predicted openness reflects, at least to some extent, the trade orientation of government policies. The more negative the deviation, the stronger the antitrade bias. The regional ranking of product market distortions derived from this indicator is mostly in accordance with the predictions of the model. The exception is East Asia, which appears to be the least open to trade. But the result is due exclusively to the case of Japan, a country characterized by a strong antitrade bias and a significant weight at the regional level. The antitrade bias of Japan is not surpassed by that of any other country in table 3.

Column F in table 3 reports the other measure of product market distortions, the average tariff rate. Based on this measure, Latin America emerges as the region with the most distorted product markets (at least in the 1980s), whereas Scandinavia and Europe have the least distorted product markets. As predicted, East Asia stands in an intermediate position. The only aspect in which the figures in this column do not fit the predictions of the model is the observed similarity between Europe and Scandinavia. Nontariff barriers, which are common in Europe but much less so in Scandinavia, suggest that this similarity may be fictitious.

All things considered, the data reported in table 3 show that the simple, heuristic model presented above reproduces quite well some important empirical regularities. Of course, these data do not provide a real test of the model. They only illustrate the plausibility of the story told by the model, which makes its policy implications worth analyzing. The next section shows that these implications are consistent with previous results from the new political economy literature. The evidence reported in this section implies that they could also be relevant in practice.

IV. THE POLICY IMPLICATIONS

The example developed in section II shows that all feasible regimes have strictly positive product market distortions and sectoral wage differentials. Product and labor market distortions do not occur because policymakers have a wrong model of the economy; the government aims at maximizing national income and correctly identifies the way market distortions affect the size of the pie. The reason for bad policies is the strategic interaction between the government and an economic agent trying to get a larger slice of the pie. This interaction accounts for one of the anomalies reported in the introduction, namely the pervasiveness of market distortions across countries.

The largest distortions and wage differentials obtain in the Latin American case, where there is no income redistribution. This result is consistent with the

findings by Sachs (1989), who argues that high income inequality in Latin America contributes to intense political pressure to raise the incomes of lower-income groups, which in turn contributes to populist policies and weak economic performance. To the extent that large market distortions reduce the growth rate of the economy, the result is also consistent with the findings by Alesina and Rodrik (1994) and Persson and Tabellini (1994) on the negative relationship between inequality and long-run growth.

However, these results do not imply that income redistribution will alleviate market distortions. In the model, government decides to redistribute income in an effort to maximize national income. The government might prefer not to redistribute (as in the Latin American case) because of the high inefficiency of the state, which implies that the deadweight losses from redistribution surpass the deadweight losses from large product market distortions and sectoral wage differentials. Therefore, as long as the efficiency of the state remains unchanged, trying to reduce distortions by redistributing income would only decrease welfare.

Removing Distortions versus Changing the Policy Regime

The equilibrium level of product and labor market distortions maximizes each player's payoff, given the actions undertaken by the other player. The exact level of these distortions depends on the values of parameters such as α , β , and σ . It also depends, for any given value of these parameters, on the prevailing policy regime, that is, on the players' bargaining power in the second stage of the game. But as long as neither the policy regime nor the level of these parameters is modified, removing the product market distortion necessarily reduces the players' payoffs.

The government being benevolent, a drop in its payoff equals a reduction in the welfare level of the representative individual. The model can therefore account for two of the anomalies reported in the introduction, namely the unexpectedly high costs of economic reforms and widespread recidivism. A government with a naive view of policymaking would assume that product market distortions reduce welfare and go ahead with economic reform. But this naive government would also realize *ex post* that welfare is reduced and would prefer to withdraw the reform.

In the model, the only sustainable changes in the level of product market distortions and sectoral wage differentials come from changes in parameters ϕ , Θ , α , β , and σ . Modifying the first two seems out of the reach of policymakers, at least within the time frame usually considered in discussing economic reforms. The inefficiency of the state is better seen as a constraint in the short run. And union rights are usually shaped by historical and cultural factors. Therefore, the rest of the discussion deals with the consequences of changes in parameters α , β , and σ .

These changes have two effects. As long as the feasible policy regime is not affected, they produce smooth variations in the equilibrium level of the endog-

Table 4. *Comparative Statics by Policy Regime*
(change in parameter)

<i>Type of policy regime and variable</i>	<i>Labor market flexibility, α</i>	<i>Macroeconomic conditions, β</i>	<i>Scope of product market reforms, σ</i>
<i>East Asian and European policy regimes</i>			
Product market distortion, D	–	–	–
Sectoral wage differential, $W - 1$	–	–	–
Welfare loss, Y	–	+	–
<i>Scandinavian policy regime</i>			
Product market distortion, D	–	–	–
Sectoral wage differential, $W - 1$	–	–	–
Welfare loss, Y	–	+	–
<i>Latin American policy regime</i>			
Product market distortion, D	0	–	–
Sectoral wage differential, $W - 1$	–	–	–
Welfare loss, Y	–	–	–

Note: – indicates a negative, + indicates a positive, and 0 indicates a zero value for the partial derivative of the market distortion or welfare loss with respect to the parameter.

Source: Author's calculations.

enous variables of the model. Table 4 summarizes these variations. It shows the sign of the partial derivatives of the market distortions D and $W - 1$ and of the welfare loss Y , with respect to α , β , and σ in each of the policy regimes. After some threshold, however, changes in parameters α , β , and σ may also lead to a regime switch and, therefore, to a jump in the equilibrium level of D , $W - 1$, and Y . These parameters have an incidence on the critical values ϕ_S , ϕ_0 , Θ_R , and Θ_0 that determine the strategy of the players in the first stage of the game.¹

Discontinuities in the equilibrium level of the endogenous variables can be used to account for policy reforms. The rest of this section deals with economic reform in countries in the South, focusing on the switch from the Latin American to the East Asian policy regime. As a necessary condition for this switch, workers must prefer not to strike in the first stage of the game. This requires an increase in the critical threshold Θ_0 for any given level Θ of union rights. Because the threshold depends on parameters α , β , and σ , it is possible to assess how labor demand flexibility, macroeconomic conditions, and the size of the protected sector affect the final outcome in terms of product and labor market distortions.

The Scope of the Reforms

Parameter σ is higher the larger the share of the labor force employed in the protected sector. Consequently, its level is an indication of both the scope of the

1. The distinction between changes within a regime and changes in the prevailing regime is reminiscent of the fixed-price equilibrium theory (see, particularly, Malinvaud 1977 and Benassy 1982). However, the existence of several regimes results here from the indivisibility of the choices the players face in the first stage of the game, not from any price rigidity. Particularly, wages are endogenous in the model in this article, while they are exogenously determined in the fixed-price equilibrium theory.

reforms under consideration and the size of the labor movement with which the government has to deal. The appendix shows that

$$(8) \quad \frac{d\Theta_0}{d\sigma} > 0$$

which means that the labor movement is less willing to confront as σ increases. This is because union members are consumers too. As workers, they stand to gain from higher import tariffs in their own sector of activity, regardless of what the tariff level is for other sectors. But as consumers, they are better off if tariffs for all other sectors are low. Unions will thus favor a higher protection rate when the issue is the tariff rate for a specific sector, but not necessarily when the general import tariff is at stake.

The policy implication is that ambitious economic reforms, aimed at removing product market distortions across the board, may get more support from workers than reforms characterized by a narrow sectoral focus. This conclusion resonates with the messages from the literature on the virtues of corporatism (see Bruno and Sachs 1985, Freeman 1988, and Rama 1994, among others). In this literature, an encompassing labor movement internalizes to a larger extent the aggregate effects of its decisions than a set of smaller and uncoordinated trade unions. As a result, this larger labor movement is also more likely to favor cooperation and wage moderation. Cooperation may take the form of a social pact. But the argument holds even in the absence of an explicit agreement. A reform of many sectors at a time may indeed replicate, for each of the sectoral unions, the benefits that would be internalized by an encompassing labor movement.

At the same time, this argument provides a warning against ambitious reform programs that are not backed by an explicit negotiation with the involved social partners. Although sectoral unions are expected to internalize a larger share of the benefits from the reform when the reform affects many sectors at once, the share might not be large enough to induce the unions to cooperate. In analytical terms, Θ would remain above Θ_0 for each of the individual unions, so that all of them would choose simultaneously to incur the costs of striking. This possibility corresponds to a scenario of widespread unrest and resistance to economic reform.

The Benefit of Adverse Shocks for Economic Reform

Intuitively, adverse shocks, such as a deterioration in the terms of trade, an increase in the debt service burden, or a natural disaster, reduce welfare. However, such shocks might increase welfare because of the strategic interaction between the players. The economy is not in the first-best equilibrium in any of the policy regimes. Accordingly, changes in the value of the parameters that would reduce welfare in the absence of any pecuniary externalities can actually improve welfare in their presence. In the new political economy literature, this paradox has been illustrated by Drazen and Grilli (1993).

Adverse shocks reduce welfare by increasing the value of parameter β and, consequently, the marginal tax burden associated with product market distortions. But adverse shocks also modify the incentives facing the players. Because product market distortions become more costly, the equilibrium levels of both D and $W - 1$ decrease in all of the regimes (see table 4). The net effect of a higher β on aggregate welfare thus reflects two opposite forces. On the one hand, the inefficiency associated with any given level of the product market distortion is higher. On the other hand, the equilibrium levels of both the product market distortion and the sectoral wages are lower. Under the assumptions of the model, the first effect dominates in all regions, except the Latin American case.

Adverse shocks may, however, trigger economic reform. In terms of the model, the critical threshold Θ_0 verifies

$$(9) \quad \frac{d\Theta_0}{d\beta} > 0$$

(see the appendix). Therefore, organized labor is less likely to strike the more severe are the shocks suffered by the economy. Confrontation becomes a costly way to secure a higher level of product and labor market distortions, and the net payoff from these distortions falls as β increases.

Significant reforms may be launched in bad times and, furthermore, be supported by trade unions in the distorted sectors. Thus the model accounts for yet another of the anomalies reported in the introduction. This relationship between adverse shocks and successful reforms, however, raises the issue of whether reforms may survive once the shocks recede. In this sense, labor market reforms may be crucial.

The Role of Labor Flexibility

Lower hiring and firing restrictions increase the value of parameter α . As a result, changes in the level of either the product market distortion or the sectoral wage differential have larger effects on sectoral employment. From the point of view of trade unions, the higher flexibility of labor demand leads to a lower monopoly power, so that the optimal sectoral wage associated with any given level of the product market distortion decreases. From the government's point of view, the higher flexibility of sectoral labor demand increases allocation costs, so that the optimal product market distortion associated with any given level of the sectoral wage differential increases.

The fall in the equilibrium wage differential is large enough to lead to a decrease in the equilibrium tariff, despite the greater willingness of the government to distort product markets. Under the assumptions of the model, tariffs remain unchanged only in the Latin American policy regime. The equilibrium level of D is a decreasing function of parameter α in all of the other policy regimes. Because $W - 1$ is a decreasing function of α in all of the regimes, the welfare loss Y

is unambiguously reduced as labor demand becomes more flexible. Put differently, within any given regime aggregate welfare is higher the higher the flexibility of the labor market.

However, increased labor market flexibility may also trigger a switch in the economic regime. The appendix shows that

$$(10) \quad \frac{d\Theta_0}{d\alpha} < 0$$

which means that, other things being equal, organized labor is more likely to cooperate the less flexible is labor demand. This is because incumbent workers lose from a higher labor demand flexibility both in the Latin American and the East Asian cases, but the loss is larger in the latter than in the former.

The possibility that reform will fail because of increased labor market flexibility questions the intuitive explanation discussed in the introduction, according to which labor market rigidities were to blame for recidivism and bad economic performance. In terms of the model, this explanation makes sense only as long as the policy regime remains unchanged. It cannot be applied to regime switches, that is, to discontinuous jumps in the level of product market distortions. Equation 10 provides some support to Freeman's (1993) idea that labor market interventions should be considered as a basic ingredient in the political economy of reforms. Interventions that are costly and distortive at first glance can influence the strategy of those who stand to lose from reforms.

V. CONCLUSIONS

Most economists acknowledge that first-best policies are seldom implemented because of politics. Yet politics are absent from the standard tools of the trade. Economists tend to evaluate the merits and demerits of different policies assuming that factor markets are perfectly competitive and governments are in full control of the policy instruments. Although many agree that these are not realistic assumptions, they fear that introducing political considerations could undermine analytical rigor. Basing policy advice on first-best solutions and then having policymakers struggle with the real-world pressures to drop them therefore appears to be a safer alternative. The problem is that this alternative may not even lead to a second-best outcome.

The main contribution of the recent political economy literature has been to bring these real-world pressures into the picture, without compromising analytical rigor. The key in this respect is to evaluate what different groups stand to gain or to lose from the policies under consideration and to link their actions to these gains and losses. Utility maximization by rational individuals remains the cornerstone of the analysis, but the control variables are not restricted to prices and quantities anymore. Moreover, because the number of active groups is much

smaller than the number of consumers or producers, optimal decisions by each of them may depend on what the other groups do.

Although I adopt the political economy approach in this article, my ambition is deliberately modest. I present no new technique or analytical breakthrough. Instead I highlight the role of organized labor as an active interest group and derive some implications for economic reform. Organized labor has played a very minor role indeed in the new political economy literature. Although the literature has explained some macroeconomic policies based on the interaction between the government and trade unions, it usually has analyzed microeconomic distortions under the assumption of perfectly competitive factor markets. Yet policymakers across the world would agree that organized labor is one of the most relevant interest groups they have to face.

The simple, heuristic model of the economy presented here can reproduce within a unified framework a series of results derived elsewhere in a more rigorous way, but with no reference to organized labor. Some of these results, such as the existence of several policy regimes and the need to induce a regime switch to have a successful reform, obtain under very general assumptions. I introduce more specific assumptions to analyze the links between the key parameters of the economy and the equilibrium level of product and labor market distortions. But even these more specific assumptions are fairly plausible, thus suggesting a general validity of the results.

The model accounts in an intuitive way for some of the anomalies observed in the process of economic reform, both in industrial and in developing countries. Reforms that seem unambiguously welfare-improving from a Pigouvian perspective may actually entail large social costs if the policy regime remains unchanged. These unexpected costs, in turn, may account for widespread recidivism. Conversely, adverse shocks that would be expected to reduce welfare may actually increase it, by triggering a change in the strategy of organized labor from confrontation to cooperation. Hence explicit or implicit social pacts emerge under unfavorable circumstances.

The labor market implications of this simple model provide qualified support to the prevalent view in the development community. The World Bank (1995) argues in favor of limited government intervention in labor markets and more reliance on collective bargaining between workers and employers. In terms of the model, less stringent hiring and firing restrictions (that is, a higher value of α) and a larger percentage of the labor force enrolled in trade unions (that is, a higher value of σ) are associated with lower levels of distortions in every policy regime. A higher level of union membership may also make organized labor more willing to cooperate, hence facilitating a favorable switch in the policy regime. More flexible labor demand may trigger confrontation, though, thus reducing the chances of successful economic reform.

APPENDIX. DERIVATION OF THE RESULTS OF THE MODEL

The social cost Y of product and labor market distortions can be calculated based on the assumptions that the labor demand schedule is linear and the tax burden is quadratic. The linearity of labor demand, L , implies that the Harberger triangle measuring the loss of producer surplus can be approximated as $[(L - 1)(1 - X)] / 2$, with X being the marginal productivity of labor in the distorted sector. (In analytical terms, $X = W - D$ is the wage level for which L would remain unchanged, if the distortion were removed.) The quadratic nature of the tax burden means the loss of consumer surplus equals $\beta D^2 / 2$. The loss function Y can therefore be written as

$$(A-1) \quad Y = \alpha(1 - W - D)^2 / 2 + \beta D^2 / 2$$

with $Y \geq 0$, and $Y = 0$ when there are no sectoral wage differentials and the product market is not distorted.² In equation A-1, α is a parameter that measures labor market flexibility, W is the level of the sectoral wage, D is the level of the product market distortion, and β is a parameter that summarizes the prevailing macroeconomic conditions.

The rent that the sectoral trade union extracts by pushing wages up equals $L(W - 1)$. But product and labor market distortions entail a loss σY for union members (σ is a parameter that measures the scope of the product market reforms under consideration). Using equations 6 and A-1, the gain function Z can be written as follows:

$$(A-2) \quad Z = [1 + \alpha(1 - W + D)](W - 1) - \sigma[\alpha(1 - W + D)^2 / 2 + \beta D^2 / 2].$$

Economically meaningful equilibriums are characterized by levels of W and D such that $Z \geq 0$, with $Z = 0$ when the product market is not distorted and wages are equal across sectors.

The combinations of $W - 1$ and D for which the loss function Y remains constant verify

$$(A-3) \quad \frac{dD}{dY} = \frac{\alpha[D - (W - 1)]}{(\alpha + \beta)D - \alpha(W - 1)}.$$

Equation A-3 corresponds to curves like $Y = Y_{SN}$ in figure 1. These curves are vertical for

$$(A-4) \quad D = \frac{\alpha}{\alpha + \beta}(W - 1).$$

Equation A-4 represents the government's reaction function in the second stage of the game. It indicates the level of the product market distortion D that mini-

2. Note that when the distortion is a trade barrier, it may be feasible to put some numbers in equation A-1. If wages were equal across sectors, then the loss of producer surplus would be equal to $\alpha D^2 / 2$. Because the loss of consumer surplus is $\beta D^2 / 2$, the ratio between the two welfare losses (usually calculated when assessing the costs of protection) provides an estimate of the ratio α / β .

mizes the loss Y for a given level of the sectoral wage differential $W - 1$. By contrast, the curves are horizontal when

$$(A-5) \quad D = W - 1.$$

The closer these curves are to the origin, the lower is the loss Y .

The combinations of $W - 1$ and D for which the gain function Z of the labor movement is constant, in turn, verify

$$(A-6) \quad \frac{dD}{dY} = \frac{\alpha(2 + \sigma)(W - 1) - 1 - \alpha(1 + \sigma)D}{\alpha(1 + \sigma)(W - 1) - (\alpha + \beta)\sigma D}.$$

Equation A-6 corresponds to curves like $Z = Z_{LA}$ in figure 1. These curves are horizontal when

$$(A-7) \quad W - 1 = \frac{1 + \alpha(1 + \sigma)D}{\alpha(2 + \sigma)}.$$

Equation A-7 represents the union's reaction function in the second stage of the game. It indicates the level of the sectoral wage differential $W - 1$, which maximizes Z for a given level of the product market distortion D . The constant-gain curves become vertical for

$$(A-8) \quad D = \frac{\alpha(1 + \sigma)}{(\alpha + \beta)\sigma}(W - 1).$$

The farther these curves are from the origin, the larger is the union's gain.

In the Scandinavian policy regime (*SN*), the government behaves as a Stackelberg leader. It therefore minimizes the welfare loss Y , given by equation A-1, under the constraint represented by the union's reaction function, given by equation A-7. It follows that

$$(A-9) \quad D_{SN} = \frac{1}{\alpha + \beta(2 + \sigma)^2}, \quad W_{SN} = 1 + \frac{\alpha + \beta(2 + \sigma)}{\alpha[\alpha + \beta(2 + \sigma)^2]}.$$

In the Latin American policy regime (*LA*), organized labor is the Stackelberg leader. It takes the government's reaction function, given by equation A-4, as a constraint in the maximization of its objective function Z , given by equation A-2. The solutions to this problem verify

$$(A-10) \quad D_{LA} = \frac{1}{\beta(2 + \sigma)}, \quad W_{LA} = 1 + \frac{\alpha + \beta}{\alpha\beta(2 + \sigma)}.$$

Finally, in the European and East Asian policy regimes (*EU* and *EA*, respectively), a Cournot equilibrium emerges. The latter corresponds to the intersec-

tion of the reaction curves represented by equations A-4 and A-7. The market distortions are

$$(A-11) \quad D_{EA} = D_{EU} = \frac{1}{\alpha + \beta(2 + \sigma)}, \quad W_{EA} = W_{EU} = 1 + \frac{\alpha + \beta}{\alpha[\alpha + \beta(2 + \sigma)]}.$$

Having solved for the equilibrium levels of sectoral wage differentials and product market distortions, it is possible to determine the critical thresholds of parameters ϕ and Θ (the efficiency of the state and the cost of unions striking, respectively) in the first stage of the game. When organized labor strikes, the level ϕ_s of the inefficiency of the state for which the government is indifferent regarding income redistribution is

$$(A-12) \quad \phi_s = \frac{[\alpha + \beta(2 + \sigma)]^2}{\beta^2(2 + \sigma)^2}$$

(see equations 2, A-1, A-10, and A-11). When the union does not strike, the critical threshold becomes ϕ_0 , with:

$$(A-13) \quad \phi_0 = \frac{(\alpha + \beta)[\alpha + \beta(2 + \sigma)^2]}{[\alpha + \beta(2 + \sigma)]^2}$$

(see equations 3, A-1, A-9, and A-11).

Similarly, when the government redistributes income, the critical threshold Θ_R of labor movement rights for which the trade union is indifferent regarding strikes is given by

$$(A-14) \quad \Theta_R = \frac{[\alpha + \beta(2 + \sigma)]^2[\beta(2 + \sigma)^3 + 2\alpha\beta(2 + \sigma)^2 + \alpha(2\alpha - \beta\sigma)]}{(\alpha + \beta)[2\alpha + \beta(2 + \sigma)][\alpha + \beta(2 + \sigma)^2]^2}$$

(see equations 4, A-2, A-9, and A-11). When there is no income redistribution, the critical threshold becomes Θ_0 , with

$$(A-15) \quad \Theta_0 = \frac{\beta(2 + \sigma)[2\alpha + \beta(2 + \sigma)]}{[\alpha + \beta(2 + \sigma)]^2}$$

(see equations 5, A-2, A-10, and A-11).

Equations A-12 and A-13 imply $\phi_s > \phi_0$, which means that case 6 in table 2 cannot take place. In other words, there is no combination of the inefficiency of the state and union rights such that the government could be indistinctly subordinate or autonomous. However, case 5 still holds. Therefore, the example confirms that there is no one-to-one relationship between the efficiency of the state and union rights, on the one hand, and the policy regime, on the other hand.

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