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## Inefficient Redistribution

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*There are many well-developed theories that explain why governments redistribute income, but very few can explain why this often is done in a socially inefficient form. In the theory we develop, compared to efficient methods, inefficient redistribution makes it more attractive to stay in or enter a group that receives subsidies. When political institutions cannot credibly commit to future policy, and when the political influence of a group depends on its size, inefficient redistribution is a tool to sustain political power. Our model may account for the choice of inefficient redistributive policies in agriculture, trade, and the labor market. It also implies that when factors of production are less specific to a sector, inefficient redistribution may be more prevalent.*

There are many normative and positive theories that explain why governments redistribute income. For example, most positive theories of politics typically involve a group that redistributes resources and income away from other groups to itself. Redistribution also may be undertaken for normative reasons; for example, the distribution of income and welfare generated by market outcomes may be judged unfair or undesirable by some ethical criterion. We lack a satisfactory understanding, however, of why redistribution often takes an inefficient form.<sup>1</sup>

A common example of income redistribution that takes an inefficient form is farmers' receiving price supports or input subsidies. Such policies distort relative prices and discourage the reallocation of productive resources away from agriculture and into other sectors, such as manufacturing, where they could be better used. Similarly, despite economists' conviction that free trade is typically efficient, domestic industries are often protected by tariffs and quotas. A particularly interesting and relatively neglected example in which the form of redistribution appears to be inefficient is labor market regulation. Although firing costs and such restrictive labor practices as closed shops are widespread in most countries, they are thought to be highly inefficient because they disrupt labor reallocation and cause unemployment.

In all these cases, it is difficult to argue that the particular form of the policy is correcting a market failure. Rather, it seems aimed simply at redistributing

income. For instance, no scholars appear to argue that price supports for farmers, which have the effect of increasing farm output, promote efficiency because without them there would be too few resources in agriculture. This might be the case if farm output generated positive externalities, but that seems implausible. Instead, it is widely agreed that price supports are simply a way to raise farmers' incomes. If this is correct, then they are Pareto inefficient in the sense that farm incomes could be maintained, and everyone else made better off, by a form of redistribution that did not involve resource misallocation. A simple transfer to raise the income of the farmers by as much as the inefficient policy yields would constitute an actual Pareto improvement.

We present a theory of inefficient redistribution that builds on two basic assumptions. First, the political system cannot commit today to future policies, since they will be determined by whomever has political power in the future. Second, at least over some range, political power increases with group size. Under these conditions, inefficient redistribution may arise as a way to expand or maintain the size of a group in order to guarantee its future political power.

Consider the example of price support for agriculture. Imagine that farmers have sufficient political influence to induce the government to redistribute income to them, and this can take the form of a simple money transfer to current farmers or a price subsidy. The latter is relatively inefficient as it potentially avoids the reallocation of resources to sectors in which they can be used more productively.<sup>2</sup> Our key observation is that the political equilibrium may nonetheless entail price subsidies because that form of redistribution affects the decision to remain in farming and encourages new agents to enter, in a way that lump-sum transfers would not. Everything else equal, farmers would not want to encourage newcomers, who increase competition both for transfers and in the marketplace, but if future political power and ability to extract

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<sup>1</sup> Rodrik (1996, 204) provides a detailed discussion of trade policy and notes that the prevalence of inefficient redistribution is a major puzzle in need of an explanation: "Saying that trade policy exists because it serves to transfer income to favored groups is a bit like saying Sir Edmund Hillary had to climb Mt. Everest because he wanted to get some fresh air. There was surely an easier way of accomplishing that objective!"

<sup>2</sup> Notice, however, that in a dynamic world the expectation of future lump-sum transfers also makes farming a more attractive profession and may inefficiently keep resources there. Nevertheless, other types of redistribution keep more resources in farming and therefore are more inefficient.

further redistribution depends on the number of farmers, price subsidies may be preferred.

In some sense, our analysis extends Becker's (1985, 338) insight that "a satisfactory analysis of the choice of method must consider whether the influence function itself depends on the methods used." In our example, to ensure future transfers it is necessary for farmers to retain their political power, and they achieve this by choosing a relatively inefficient method of redistribution; it discourages farmers from changing sectors and encourages new agents to enter agriculture. The same argument may apply to other instances of inefficient redistribution, such as trade policy and labor market regulation, and suggests that inefficient methods in those groups also may be chosen to preserve the constituencies who favor the redistributive policies.

It is useful to distinguish between two categories of inefficient redistributive policies. The first type, "inefficient targeting," is our main focus. An example is subsidies to farmers who have been in farming for a specified period rather than subsidies to current farmers. This policy is inefficient because it encourages people to enter a sector where their productivity is likely to be low. Inefficient targeting affects the extensive margin. The second type, of "inefficient conditioning," distorts the intensive margin—the marginal production decision of agents. An example is price subsidies rather than a constant transfer to every farmer who remains in farming; price subsidies encourage production beyond an efficient amount.

We are primarily concerned with inefficient targeting, but our theory also provides a rationale for inefficient conditioning. Although farmers do not want their numbers to shrink, they also do not want many more people to enter the sector and reduce per-capita transfers. If the redistributive policy gives a constant transfer to every farmer, many additional people may claim to be farmers or may enter farming. Policies that condition redistribution on production, such as acreage controls, may be a way to prevent excess entry.

In addition to explaining the choice of inefficient methods of redistribution, our analysis leads to a number of interesting comparative static results. First, inefficient redistribution is more likely to arise when the political power of influential groups is contested, for example, when an industry and its voting power are declining. This result is consistent with evidence that declining industries receive the most distortionary transfers (Baldwin 1985; Rodrik 1996). Second, and most important, when factors of production are less specific to a sector, there may be more inefficient redistribution. This result is intuitive: The rationale for inefficient redistribution is to prevent marginal agents from leaving the sector (as well as encourage new entrants). When there is less specificity, redistribution needs to be more inefficient to convince marginal agents to stay. This contrasts with theories that suggest specificity of factors should increase lobbying and rent-seeking behavior (e.g., Alt et al. 1996; Brainard and Verdier 1994; Coate and Morris 1999). Although these theories do not explain why redistribution is made inefficiently, they suggest that redistribution, and

hence inefficient redistribution, should be more prevalent when factors are more specific. Yet, in many of the common examples of inefficient policies, there appears to be, if anything, less specificity than in other sectors. A case in point is consumer goods industries, such as textiles, which often receive more trade protection than other industries (e.g., Ray 1991; Rodrik 1996). This pattern is consistent with our comparative static result.

The two basic assumptions of our analysis are plausible and receive empirical support. First, the fact that the political system today cannot commit to future redistribution policy seems to be an intrinsic feature of democracy, although it can be ameliorated to some extent. Constitutions place restrictions on some types of policies, but they seldom constrain taxes and subsidies. A large literature in political science has noted, however, that aspects of the U.S. Congress and of democratic institutions more generally may foster commitment to certain types of policies. This is implicit in ideas stemming from work on "structure-induced equilibrium" initiated by Shepsle (1979). For example, Marshall and Weingast (1988) discuss ways in which many congressional institutions help mitigate future commitment problems. (See Weingast 1998 for a fascinating study of how political institutions aided commitment in the nineteenth century.) Other important instances are independent central banks (Cukierman 1992), long-lived political parties (Alesina and Spear 1988; Jones, True, and Baumgartner 1997), executive and legislative interaction (Martin 2000), and regulatory commissions (Lowi 1969). This literature suggests that certain forms of commitment problems can be overcome, but it also attests to the importance of those problems in democratic politics.

Second, the notion that group size, at least over some range, increases political power is consistent with the empirical evidence. Olson (1965) emphasizes that free-rider problems affect the political organization of large groups, and it is possible to build models in which small groups are more powerful (Lohmann 1998). Nevertheless, Olson's analysis does not imply that small groups have more power; rather, they find it easier to solve the collective action problem. But if large groups can solve the collective action problem, by creating private goods or other specific incentives to induce potential members to join,<sup>3</sup> then they may well be more powerful.

For our theory to apply, size must be an asset in the sense that it can be used to increase the per-capita welfare of a group, at least over some range, for groups that solve the collective action problem. Evidence from

<sup>3</sup> Moe (1980) discusses various ways in which large groups can circumvent free-riding by providing different sorts of incentives. An interesting idea developed by Arnold (1990) and Wittman (1995) is that political entrepreneurs have an incentive to solve the collective action problem of large groups, and there are many examples of this. To mention just one, Bates (1997) shows that the national association of coffee growers in Colombia was created in the 1920s as a result of political entrepreneurship; it overcame the considerable collective action problems faced by coffee growers, who were mostly smallholders, and gave them significant political power.

democratic societies supports this assumption.<sup>4</sup> Although some studies find that smaller groups receive larger transfers, the majority of empirical work finds size to be an asset (e.g., Becker 1986; Kristov, Lindert, and McClelland 1995; Sloof 1998). The history of some notable interest groups supports this conclusion. Both the National Rifle Association (NRA) and the Christian Coalition became powerful national forces after increasing their membership significantly. In the NRA case, Davidson (1993, 49) shows that this occurred under Harlon Carter, when membership rose rapidly from one million in 1977 to 2.6 million in 1983, precisely when it obtained national influence. "The advertising campaign was just one part of an all out NRA effort to boost membership." Davidson (p. 49) quotes John Aquilino, NRA director of public information for ten years: "Harlon saw that power is in numbers."

The consensus among political scientists seems to support the view that size is an asset in political conflict. For example, Cameron (1988, 572) writes: "Size represents an important resource in the struggle and conflict amongst groups . . . Individuals may have more incentive to form groups if the potential membership is large and thus allows them to anticipate greater power and hence greater collective rewards." In the farming context scholars continually stress this point. Hansen (1991, 7) argues that "the farm lobby [in the United States] as a whole . . . suffered a marked setback in the sixties, seventies and eighties. As people migrated away from farms, the agricultural organizations represented fewer and fewer constituents . . . , and the responsiveness of the Agriculture Committee and the Congress declined." Kindleberger (1951) and Tracy (1989) suggest that the greater numbers of voters in farming groups in France and Germany as compared to Britain explains why farmers in those two countries obtained tariff protection in the 1880s but British farmers did not. The success of the large Scandinavian unions and the relative failure of the smaller U.S. and British unions is also consistent with the hypothesis that size matters for political power.<sup>5</sup>

Three arguments that may account for inefficient redistribution have been suggested in the literature. The first, which to our knowledge has not been formalized, is that inefficient methods may be harder to reverse; thus, when the political system cannot directly commit to future decisions, inefficient methods serve in effect as commitment. In the United States, for example, congressional appropriations expire after two years, but tariffs and regulations persist until the statute that created them is repealed.<sup>6</sup> Our theory develops

this line of reasoning by endogenously linking the persistence of a policy to its form.

The second argument, implicit in the work of Buchanan and Tullock (1962) and formalized by Rodrik (1986), Wilson (1990), and Becker and Mulligan (1998), is that if the amount of redistribution is endogenous, then politicians may want to use inefficient methods in order to reduce total redistribution (see also Dixit, Grossman, and Helpman 1997; Grossman and Helpman 1994; and Staiger and Tabellini 1987 for models with related results). This theory rests, however, on the arbitrary assumption that politicians can commit to the form of redistribution but not to the level. The frequent changes in the composition of taxes in the United States go against this assumption.

Coate and Morris (1995), partially building on an argument by Tullock (1983), offer a third explanation: Politicians who care about a certain group exploit voters' uncertainty regarding which policies are efficient. Whereas a lump-sum redistribution to farmers would reveal that a politician cares about that group at the expense of others, a price subsidy can be disguised as a Pigouvian subsidy aimed at correcting some market failure.<sup>7</sup> There are two potential problems with this interesting explanation. First, only those inefficient policies that might in some circumstances be considered efficient can be used; otherwise, voters would see through them (see Austen-Smith 1991). Second, it must be the case that neither the party in power nor a rival can tax farmers after giving the price subsidy, which would reveal that they are redistributing truly for efficiency reasons, not because they care about farmers.

In other related work, Dixit and Londregan (1995) construct a model in which the inability of politicians to commit to future transfers prevents efficient reallocation of agents: Farmers who currently receive transfers—perhaps because they are the swing voters—realize that if they switch to manufacturing they will lose these transfers. The model explains why redistribution may lead to inefficiencies but not why the form of redistribution is inefficient. In the same spirit, Alt and colleagues (1996) argue that when policy is endogenous, agents can take actions (e.g., specific investments) that induce future redistribution, thus preventing exit from a declining industry. Saint-Paul (1992) notes that workers who currently have secure jobs (so-called insiders) may oppose two-tier wage systems that would remove firing costs for newcomers, anticipating that this will reduce future political support for firing costs, but he does not pursue this idea to develop an explanation for inefficient redistribution. A number of researchers analyze the trade-off between lobbying and campaign contributions as methods of influencing policy (e.g., Austen-Smith 1995; Lohmann 1995) but focus neither on the economic efficiency of the methods nor the influence of policy on future political power.

Our article is organized as follows. We first outline a

<sup>4</sup> In contrast, in undemocratic societies, size may be a liability because large groups provide potential tax revenues for the rulers. The large number of farmers in Soviet Russia and some African countries may explain why they have been heavily taxed (see Bates 1981).

<sup>5</sup> This evidence is consistent with our hypothesis but, of course, is not definitive since the direction of causality is uncertain. We thank a referee for pointing out this important caveat.

<sup>6</sup> We are grateful to a referee for providing this example.

<sup>7</sup> Such a subsidy, as first argued by A.C. Pigou, would be the standard government policy prescription in the case of a positive externality (see Green, Mas-Colel, and Whinston 1995, 355).

simple two-period model in which inefficient redistribution is a political equilibrium. The next section reveals that the extent of inefficient redistribution may increase when a sector requires less specific skills and investments. We then discuss a range of real-world redistributive policies and argue that inefficient methods arise, at least in part, because of the reasons emphasized in our model.

## THE BASIC MODEL

We chose a simple reduced-form model of interest group behavior (along the lines of Becker 1983) to highlight the major trade-offs because the same type of interactions arise in a variety of settings. What is important is that the two key assumptions—size of political group matters over a certain range and no commitment to future political decisions—apply.

Consider a two-period economy (periods 0 and 1) with a single consumption good produced by one of two sectors, farming and manufacturing. They can be thought of as producing different goods that are perfect substitutes.<sup>8</sup> In the first period there are  $1 - \delta$  agents, with a fraction  $n_0$  in farming and  $1 - n_0$  in manufacturing. These agents cannot change sector. All are risk neutral and discount the second period by a factor  $\beta \in (0,1)$ . In each period, a farmer produces output  $B$ , and a manufacturer produces output  $A$ , with  $A > B$ . We assume that farmers cannot be taxed (i.e., they can hide their output costlessly), but manufacturers can be taxed a maximum of  $T$  (i.e., they can hide their output at a cost of  $T$ ), where  $T < A$ .<sup>9</sup> At the beginning of period 0,  $\delta$  new agents arrive and choose which sector to enter. This decision is irreversible. There are no new agents in period 1.

Let  $\tau_0$  and  $\tau_1$  denote the tax on manufacturers in periods 0 and 1, respectively, where  $\tau_t \in [0, T]$ , for  $t = 0, 1$ . The tax revenue, if any, can be redistributed to farmers in two distinct forms. The first is a transfer to agents who are farming at the beginning of the period, denoted by  $\theta_t \geq 0$ , for  $t = 0, 1$ . The second is a general price subsidy for all farmers, denoted by  $\mu_t \geq 0$ .<sup>10</sup> The difference between  $\mu_0$  and  $\theta_0$  is that only those farming at  $t = 0$  receive  $\theta_0$ , whereas  $\mu_0$  is also paid out to agents who enter farming at time  $t = 0$ .  $\theta_0$  therefore approximates an efficient transfer, as it is conditioned on characteristics outside the agent's control. In contrast, because  $\mu_0$  subsidizes farm output and encourages new agents to enter farming, it is an inefficient method of

redistribution. ( $\mu_1$  will be redundant, since only in period 0 is there a distinction between current farmers and potential entrants, so we ignore it in the rest of our analysis.)

It is clear that, ignoring political economy considerations, existing farmers prefer  $\theta$  transfers to  $\mu$  transfers, because they do not have to share the former with new arrivals. Our key endeavor in this section is to demonstrate that political economy considerations may nonetheless encourage existing farmers to choose  $\mu$  transfers.

To discuss these issues in the simplest possible way, we assume a reduced-form political process that determines the current tax rate on manufacturers as a function of the number of farmers. More explicitly, the tax rates in the two periods are:

$$\tau_0 = \tau(n_0) \in [0, T],$$

$$\tau_1 = \tau(n_1) \in [0, T]. \quad (1)$$

The assumption  $\tau \geq 0$  incorporates the fact that farmers cannot be taxed. Notice that the tax rate in period  $t$  is a function of the fraction of the population in farming at the time. To simplify the discussion, we assume that the function  $\tau$  satisfies the following two conditions.

1. If  $n \leq n^-$  then  $\tau(n) = 0$ .
2. If  $n \geq n^+$  then  $\tau(n) = T$ .

The function that maps from the fraction of farmers into taxes on manufacturers,  $\tau(\cdot)$ , can be locally increasing or decreasing, although we assume that it takes a higher value at  $n^+$  than at  $n^-$ . This is reasonable because when there are very few farmers, they will not have the political power to impose taxes on manufacturers. Finally, we assume that the division of the tax revenue between  $\theta$  and  $\mu$  subsidies is decided only by farmers.

The timing of political and economic events is as follows. In period 0, the political economy process determines  $\tau_0$ , and the farmers decide  $\theta_0$  and  $\mu_0$ . Young agents are born, observe the policy vector, and decide which sector to enter. Production takes place, and the policy is implemented. At the beginning of period 1, the political process determines  $\tau_1$  and  $\theta_1$ . The model ends following production and implementation of the chosen policy. If we define  $x$  as the fraction of agents who enter farming at time  $t = 0$ , then the government budget constraints in the two periods can be written as:

$$(1 - \delta)(1 - n_0)\tau_0 = (1 - \delta)n_0(\theta_0 + \mu_0) + \delta\mu_0x; \quad (2)$$

$$(1 - n_1)\tau_1 = n_1\theta_1. \quad (3)$$

In equation 2,  $(1 - \delta)(1 - n_0)\tau_0$  is total tax revenue,  $(\theta_0 + \mu_0)$  is the total per-capita transfer to the  $(1 - \delta)n_0$  existing farmers, and  $\mu_0$  is the inefficient transfer received by the  $\delta x$  newcomers. In equation 3,  $(1 - n_1)\tau_1$  is total tax revenue, which is distributed among  $n_1$  farmers. Note that young agents who go into manufacturing are not taxed in period 0, and they also may not receive any transfers when they go into farming (i.e., if  $\mu_0 = 0$ ). Although the political process can discrimi-

<sup>8</sup> The case of imperfect substitutes does not alter our results but complicates the expressions.

<sup>9</sup> The assumption that farmers cannot be taxed is made for simplicity only and is not required for any of our results. If manufacturers could tax farmers, that would simply increase the desire of farmers to maintain their power and, thus, their incentives to use inefficient methods of redistribution. All we require is that farmers receive per-capita net benefits from the political system that, at least over some range, increase with the number of farmers.

<sup>10</sup> In the model, output per farmer is exogenous, so a per-capita subsidy to all farmers, new and old, is the same as a price subsidy. More generally, in a model with variable production, there would also be a difference between price subsidies and per-capita subsidies to all farmers.

nate between young and old farmers in period 0, this is not possible in period 1.<sup>11</sup>

Let  $V^f$  and  $V^m$  be the expected utilities (at time 0) of old farmers and manufacturers, respectively. Let  $W^f$  and  $W^m$  be the expected utilities (at time 0) of new agents who choose farming and manufacturing, respectively. Then,

$$V^f(\theta_0, \mu_0, \theta_1) = B + \theta_0 + \mu_0 + \beta[B + \theta_1], \quad (4)$$

$$V^m(\tau_0, \tau_1) = A - \tau_0 + \beta[A - \tau_1], \quad (5)$$

$$W^m(\tau_1) = (1 + \beta)A - \beta\tau_1, \quad (6)$$

$$W^f(\mu_0, \theta_1) = (1 + \beta)B + \mu_0 + \beta\theta_1. \quad (7)$$

Newcomers make their occupational choice after observing  $\mu_0$ , a variable relevant for their payoffs. Their strategy is therefore conditioned on  $\mu_0$ , and we write the fraction of new agents who go into farming when the subsidy is  $\mu$  as  $x(\mu)$ . Then, the optimal sectoral choice of new agents in period 0 is:

$$\begin{aligned} x(\mu) &= 0 \quad \text{if } W^m(\tau_1) > W^f(\mu, \theta_1), \\ x(\mu) &= 1 \quad \text{if } W^m(\tau_1) < W^f(\mu, \theta_1), \text{ and} \\ x(\mu) &\in [0, 1] \quad \text{if } W^m(\tau_1) = W^f(\mu, \theta_1). \end{aligned} \quad (8)$$

$x(\mu)$  defines the best response function (correspondence) of newcomers for all possible levels of subsidy. Observe in particular that this function determines their best response not only for the level of subsidy along the equilibrium path,  $\mu_0$ , but also for all  $\mu$ , and it helps us determine optimal behavior off the equilibrium path.

The fraction of farmers in the population at time  $t = 1$  is then

$$n_1 = (1 - \delta)n_0 + \delta x, \quad (9)$$

A pure strategy subgame perfect Nash equilibrium is a tuple,  $\{x(\mu), n_1, \tau_0, \theta_0, \mu_0, \tau_1, \theta_1\}$ , such that equations 2, 3, and 9 hold;  $\tau_0 = \tau(n_0)$  and  $\tau_1 = \tau(n_1)$ ; the function  $x(\mu)$  is defined by equation 8; and  $\{\theta_0, \mu_0\}$  maximizes  $V^f$ .

The fact that  $\tau_1 = \tau(n_1)$  at time 1 builds in the assumption that the political system cannot commit to future redistribution. This is a crucial ingredient in our explanation, because it provides a reason for farmers to increase their numbers in period 1 to achieve greater political power.

To simplify the discussion, we make the following assumption.

ASSUMPTION 1.  $(1 + \beta)(A - B) > 2\beta T$ .

This implies that the maximum tax rate is small relative to the productivity differential between the two sectors and ensures that it is not worthwhile to go into farming only to receive future transfers.

Let us start with the case in which  $n_0 \leq n^-$ , so that  $\tau_0 = 0$ , hence  $\theta_0 = \mu_0 = 0$ . In this case, there are too few farmers at  $t = 0$  for them to have any power, so

there is no redistribution. As a result, there exists a unique equilibrium in which all young agents go into manufacturing. Specifically, with  $\tau_0 = 0$ ,  $\mu_0 = 0$ , assumption 1 ensures that  $W^f(\mu_0 = 0) \leq (1 + \beta)B + \beta T < (1 + \beta)A - \beta T \leq W^m(\tau_0 = 0)$ . Therefore, we have:

PROPOSITION 1. *Suppose assumption 1 holds and  $n_0 < n^-$ ; there then exists a unique equilibrium with  $n_1 = (1 - \delta)n_0$ ,  $\tau_0 = \tau_1 = \theta_0 = \theta_1 = \mu_0 = 0$ , and  $x(\mu_0 = 0)$ .*

Next, consider the case in which  $n_0 > n^+/(1 - \delta)$ . Farmers are numerous enough so that even when  $x = 0$ , they retain maximal power. Therefore, they choose  $\tau_0, \tau_1, \theta_0, \theta_1$ , and  $\mu_0$  to maximize  $V^f$ , which gives  $\tau_0 = \tau_1 = T$ ,  $\mu_0 = 0$ , and  $\theta_t = (1 - n_t)T/n_t$ , for  $t = 0, 1$ . To characterize an equilibrium completely, we only have to determine  $x$  and  $n_1$ . Notice that in this case

$$W^f = (1 + \beta)B + \beta \left[ \frac{(1 - n_1)T}{n_1} \right], \text{ and}$$

$$W^m = (1 + \beta)A - \beta T.$$

Assumption 1 implies that  $W^m > W^f$ , and  $x(\mu = 0) = 0$  (although in this case,  $x(\mu)$  would be positive for  $\mu$  sufficiently large).

PROPOSITION 2. *Suppose assumption 1 holds and  $n_0 > n^+/(1 - \delta)$ ; there then exists a unique equilibrium such that  $\tau_0 = \tau_1 = T$ ,  $\mu_0 = 0$ ,  $\theta_0 = (1 - n_0)T/n_0$ ,  $x(\mu_0 = 0) = 0$ ,  $n_1 = (1 - \delta)n_0$ , and  $\theta_1 = (1 - (1 - \delta)n_0)T/(1 - \delta)n_0$ .*

In both propositions 1 and 2, the equilibrium maximizes output, and the form of redistribution is efficient. Although there is redistribution, no production or occupational decisions are distorted. The reason for this efficiency is that political power is not contested. When  $n_0 < n^-$ , manufacturers have total political power, and this can never be transferred to farmers. Similarly, when  $n_0 > n^+/(1 - \delta)$ , farmers have maximal political power and always retain it, even if all newcomers go into manufacturing. This highlights the main conclusion of our analysis that inefficient redistribution will arise in order to control political power.

Now consider the most important case for our analysis:  $n^- < n_0 < n^+/(1 - \delta)$ . Farmers have some political power in period 0, and the extent of their political power at period 1 depends on the actions of newcomers. It is straightforward from the analysis in proposition 2 that if  $\mu_0 = 0$ , newcomers will prefer to enter manufacturing. Therefore, farmers may want to use  $\mu_0 > 0$ , that is, inefficient redistribution, in order to attract newcomers into farming and increase their political power.

Substituting from equations 2 and 3 into equation 4, the utility of old farmers can be written as

$$V^f = (1 + \beta)B + \theta_0 + \mu_0 + \beta\phi(n_1), \quad (10)$$

<sup>11</sup> In period 0, the system discriminates between incumbents and newcomers. In period 1, there are no newcomers, and all farmers are incumbents.

where

$$\begin{aligned}\phi(n_1) &\equiv \frac{\tau(n_1)(1 - n_1)}{n_1} \\ &\equiv \frac{\tau((1 - \delta)n_0 + \delta x)(1 - (1 - \delta)n_0 - \delta x)}{(1 - \delta)n_0 + \delta x}\end{aligned}\quad (11)$$

is per-capita redistribution at  $t = 1$ .

To attract newcomers, farmers need to provide them with at least as much utility in farming as in manufacturing, hence

$$W^f \geq W^m,$$

where  $W^m$  and  $W^f$  are given by equations 6 and 7. Let us now define

$$U^f(x) = (1 + \beta)B + \beta\phi(n_1) = W^f - \mu_0$$

as the utility of an agent who enters farming when a fraction  $x$  of newcomers enter farming and there is no inefficient redistribution (i.e.,  $\mu_0 = 0$ ). Also, define  $U^m(x) = W^m$  as the utility of an agent who enters manufacturing when a fraction  $x$  of newcomers enter farming. Now  $x > 0$  requires that  $\mu_0 \geq U^m(x) - U^f(x)$  so as to convince newcomers to enter farming. Moreover, existing farmers would never want to pay more than necessary to newcomers, so we first start with the following case.<sup>12</sup>

$$\mu_0 = U^m(x) - U^f(x) = (1 + \beta)(A - B) - \beta(\phi(n_1) + \tau(n_1)).$$

Solving equation 2 for  $\theta_0 + \mu_0$ , we can write the return to old farmers when they ensure that a fraction  $x$  of newcomers enter farming,  $\hat{V}^f(x)$ , as

$$\begin{aligned}\hat{V}^f(x) &= (1 + \beta)B + \beta\phi(n_1) \\ &+ \frac{(1 - \delta)(1 - n_0)\tau_0 - \delta x[U^m(x) - U^f(x)]}{(1 - \delta)n_0}.\end{aligned}\quad (12)$$

Let  $\tilde{V}^f$  be their utility when  $\mu_0 = 0$ . Notice that  $\hat{V}^f(x = 0) = \tilde{V}^f$  because when  $\mu_0 = 0$  and no new agents are entering farming,  $x = 0$ , so the fact that  $\mu_0 = U^m(x) - U^f(x)$  does not matter. Whether farmers prefer to use inefficient methods of redistribution and so attract newcomers depends on

$$\begin{aligned}&\frac{d\hat{V}^f(x = 0)}{dx} \\ &= \delta\left(\beta\phi'((1 - \delta)n_0) - \frac{U^m(x = 0) - U^f(x = 0)}{(1 - \delta)n_0}\right).\end{aligned}\quad (13)$$

The first term in parenthesis is the benefit of attracting some of the newcomers, and the second term is the cost of doing so per existing farmer. If expression 13, is positive, then the utility of old farmers can be increased by attracting some newcomers. In this case farmers will design the redistribution system to be inefficient specifically to increase their numbers.

This expression also makes it clear that farmers will only want to use inefficient redistribution when an increase in their numbers leads to larger per-capita transfers,  $\phi(n_1)$ . This implies that taxes imposed on manufacturers should increase sufficiently in  $n_1$  to ensure larger transfers to farmers.

We can now state a key result.

PROPOSITION 3. *If*

$$\phi'((1 - \delta)n_0) > \frac{1}{\beta(1 - \delta)n_0} [U^m(x = 0) - U^f(x = 0)] \quad (14)$$

*then there will be inefficient redistribution, that is,  $\mu_0 > 0$ . In equilibrium,*

$$\mu_0 = U^m(x^*) - U^f(x^*),$$

*and a fraction  $x^*$  of newcomers will enter farming such that*

$$\begin{aligned}&\beta((1 - \delta)n_0 + \delta x^*)\phi'((1 - \delta)n_0 + \delta x^*) \\ &- \mu_0 + \beta\delta x^*\tau'((1 - \delta)n_0 + \delta x^*) = 0,\end{aligned}\quad (15)$$

*or  $x^* = 1$  if equation 15  $> 0$  when evaluated at  $x^* = 1$ .*

The first part of this proposition is proved in the text. The second part follows by noting that  $(\mu_0, x^*)$  are chosen to maximize equation 12. Substituting for  $\mu_0 = U^m(x^*) - U^f(x^*)$ ,  $dU^m(x^*)/dx = -\beta\tau'(n_1)$ , and  $dU^f(x^*)/dx = \beta\phi'(n_1)$ , and simplifying, we obtain equation 15.

This proposition implies that, for a range of parameter values, redistribution takes an inefficient form (in the sense of inefficient targeting). The underlying reason is that farmers are attempting to maintain political power and realize this can be achieved only by attracting new farmers in order to remain a large group. Inefficient redistribution achieves this because it rewards potential entrants, not just those already engaged in farming.<sup>13</sup> Expressed differently, because  $\theta_0$  in our model is a lump-sum transfer, it does not distort the decision of marginal agents. Precisely for this reason, however, the political process may choose to redistribute via  $\mu_0$  not  $\theta_0$ .

It is interesting that newcomers who enter farming are exerting a negative externality on manufacturers. To see this in a simple way, notice that as more newcomers enter farming, aggregate output falls, since these agents would have been more productive in manufacturing. Newcomers are indifferent between the two sectors. Moreover, farmers benefit from entry by construction, since they are encouraging newcomers, so the whole cost falls on manufacturers, who pay sufficiently high taxes to subsidize farmers.

It is important that commitment to future redistribution is impossible. An intuition based on the Coase

<sup>12</sup> If  $\mu_0$  is greater than  $U^m(x) - U^f(x)$ , all newcomers will enter farming. We discuss this case below.

<sup>13</sup> Notice that the redistributive policy adopted actually leads to a Pareto-dominated outcome. If all new agents go into manufacturing, and farmers are still paid  $\phi(n^*_1)$  in period  $t = 1$ , all agents will be made better off. The problem is that the promise of a subsidy of  $\phi(n^*_1)$  is not credible if all newcomers enter manufacturing.

theorem suggests that this type of inefficient redistribution should not arise as there are gains to (political) trade (see, e.g., Whitman 1989). That would be true in this economy if all existing agents could jointly commit to  $\tau_1$  and  $\theta_1$  at time  $t = 0$ . Such an arrangement is not possible, however, because of the constraints imposed by political economy considerations. Since the political system cannot commit to future redistribution, the only way farmers can ensure future transfers is to maintain their political power. They achieve this by remaining a large group, and inefficient redistribution is the instrument they use for this purpose. Later we will discuss a number of examples in which the concern of various groups to maintain political power seems to be a factor in the choice of inefficient methods of redistribution, which suggests that the forces highlighted by our analysis may be important in a variety of circumstances.

When condition 14 is satisfied, there does not exist an equilibrium without inefficient redistribution. To see this, notice that condition 14 ensures  $d\hat{V}^f(x=0)/dx > 0$ , so farmers can always choose a level of price subsidy,  $\mu_0$ , to attract some newcomers. Therefore, the situation with  $x = 0$  cannot be an equilibrium.

In contrast, when condition 14 does not hold, there can be multiple equilibria. Such multiplicity arises when there exists a level of  $x$ , say  $x'$ , such that when a fraction  $x'$  of newcomers enter farming, farmers are better off, even though  $d\hat{V}^f(x=0)/dx < 0$ , that is,

$$\begin{aligned}\hat{V}^f(x') &= (1 + \beta)B + \beta\phi((1 - \delta)n_0 + \delta x') \\ &+ \frac{(1 - \delta)(1 - n_0)\tau_0 - \delta x'[U^m(x') - U^f(x')]}{(1 - \delta)n_0} \\ &> \hat{V}^f(x=0) = (1 + \beta)B + \beta\phi((1 - \delta)n_0) \\ &+ \frac{(1 - \delta)(1 - n_0)\tau_0}{(1 - \delta)n_0}.\end{aligned}\quad (16)$$

The reason for the multiplicity is the nonmonotonicity of per-capita transfers to farmers. For example, when transfers are determined by voting, farmers will have enough power if they have a certain fraction, say  $n'$ . When newcomers enter but the number of farmers does not reach  $n'$ , per-capita transfers decrease (i.e.,  $\tau_1$  remains constant, but per-capita transfers  $\phi(n_1)$ , decrease). In contrast, when enough newcomers enter to raise the number of farmers above  $n'$ , per-capita transfers increase. In this case a natural multiplicity of equilibria arises. When newcomers expect others to enter farming so that the group will be of sufficient size, returns to farming are high because of the resulting transfers, and newcomers are willing to enter farming. Because condition 14 is not satisfied, however, there also always exists an equilibrium in which all newcomers expect others not to enter farming, and they themselves do not do so for any level of the transfer  $\mu_0$ .

Interestingly, there may also exist equilibria with different levels of inefficient redistribution. When we have

$$\hat{V}^f(x = \delta) > \hat{V}^f(x = 0),$$

farmers will be better off if all newcomers enter farming than if no newcomers do so. In this case, the following strategy for newcomers supports an equilibrium:  $x(\mu) = 0$  for all  $\mu < \mu'$ , and  $x(\mu') = \delta$ . That is, newcomers enter only when the price subsidy is high enough, say, at some level  $\mu' \geq U^m(x = \delta) - U^f(x = \delta)$ . Their actions are best responses because when others do not enter, each newcomer prefers not to enter.

The fact that future political power depends on the coordinated actions of newcomers causes the multiplicity of equilibria. This multiplicity is of some interest, as it highlights that the amount of inefficient redistribution can be quite large, in particular, larger than the amount farmers would prefer in order to maximize their per-capita transfers. Among the multiple equilibria with inefficient redistribution, farmers prefer those with lower  $x$ , that is, those that attract fewer newcomers, so they may have an incentive to limit entry, for example, by methods such as acreage controls. This again highlights that existing farmers have nonmonotonic preferences over entry; they want a sufficient number of newcomers to increase or maintain their political power, but not so many that their revenues are diluted.

Our model so far explains inefficient targeting—why subsidies are targeted to newborn agents, thus distorting their productive choices—but our analysis also suggests why inefficient conditioning may be useful to farmers. First, inefficient conditioning or other methods of entry restriction, such as acreage controls, may help farmers select the most favorable option among multiple equilibria. Second, even in the absence of multiple equilibria, there may be a role for inefficient conditioning. To see this, suppose that agents working in manufacturing can claim to be farmers by buying a very small plot of land. In this case, there would be no net redistribution to farmers, since all agents would receive the subsidy. Farmers might want to use inefficient conditioning, by making the subsidy conditional on farming output via price subsidies, as a way to prevent nonfarmers from claiming the subsidy.

Next, notice that when  $U^m(x) - U^f(x)$  is smaller, condition 14 is more likely to be satisfied, so inefficient redistribution,  $\mu_0 > 0$ , is more likely to arise. Yet, conditional on there being inefficient redistribution, a greater  $U^m(x) - U^f(x)$  will imply a larger amount of inefficient redistribution, since  $\mu_0 = U^m(x) - U^f(x)$ . A number of comparative static results follow from this observation. A range of variables that increase  $U^m(x) - U^f(x)$  make inefficient redistribution less likely, but they increase the amount of inefficient redistribution when there is any. For example, an increase in the amount of redistribution in period  $t = 1$ , caused by a shift in  $\tau(n_1)$ , will reduce the gap between  $U^m(x)$  and  $U^f(x)$ , which makes inefficient redistribution more likely. Similarly, a decrease in  $A - B$  will make inefficient redistribution more likely.

A natural and more important comparative static is that inefficient redistribution is more likely when  $\phi'(n_1)$  is larger. This implies that a given increase in the number of farmers will translate into larger per-capita

transfers. This is intuitive since the point of inefficient redistribution is to attract newcomers in order to protect political power and per-capita transfers. Empirically,  $\phi'(n_1)$  could be related to such issues as the geographical concentration of farmers and whether marginal changes in their number affect electoral outcomes, as well as the seniority of farming constituency representatives and whether they have powerful positions, such as the chairmanship of key committees. This comparative static also implies that in practice we should see inefficient redistribution when political power depends crucially on group size. We discuss some examples later.

It is most interesting that redistribution is likely to be inefficient when the political power of an influential group is contested, that is, when  $n^- < n_0 < n^+/(1 - \delta)$ . This is because the purpose of the inefficiency is to prevent the loss of influence. Many examples of inefficient redistribution are from declining industries (e.g., Baldwin 1985; Rodrik 1994), which is consistent with this implication.

It is worth discussing the robustness of our results to changes in the structure of the model. We have used a reduced form of a more fully specified political model, but we could instead determine the policy by majority voting and assume there are more agents in farming than in manufacturing. In a setting of two-party Downsian political competition, the equilibrium policy would be that preferred by the median voter, a farmer. This policy would involve inefficient redistribution since the median voter would take into account its anticipated effect on the identity of the future median voter, and thus the equilibrium policy, in the second period. Although the policy space is three dimensional, the median voter theorem applies because there are only two types of agent, so heterogeneity is very limited.

We also could cast the analysis in terms of a probabilistic voting model (e.g., Dixit and Londregan 1996; Lindbeck and Weibull 1987). The equilibrium policy offered by political parties would depend not simply on the bliss point of the median voter but on other characteristics that determine the political power of different groups. One such characteristic is size. Again, our results would hold. A large group would influence the equilibrium policy because parties would tailor their platforms to gain its support. To the extent that the group anticipates a decline in its size and future political power, it would prefer inefficient methods of redistribution. To attract these voters, political parties would offer such policies. The model could be extended by introducing interest groups (e.g., Persson and Tabellini 2000, sec. 3.5), and as long as size is a political asset, our results could be replicated.

Our two-period model may seem restrictive, but our results are robust in an infinite horizon repeated game, with new agents entering sequentially in each period. In this case, there exist equilibria in which farmers initially have power but all newcomers enter manufacturing. Overtime, therefore, the relative power of farmers declines until at some point they choose inefficient redistribution. Such dynamic paths would have a very

similar interpretation to the results here. The complication, however, is that in addition to such equilibria there are many more that depend on expectations about the behavior of future agents. Many different sets of expectations could be self-fulfilling and thus qualify as equilibria. While this kind of behavior may generate empirically interesting phenomena, the two-period model allows us to focus on the issues that appear most likely to be of first-order importance.

## SPECIFIC FACTORS

In this section, we show how our framework may account for a potentially puzzling pattern in the political economy of redistribution. The literature suggests that when skills and investments are specific to a given sector, agents have more to lose from relocating, and their incentives to lobby for protection are greater (e.g., Alt et al. 1996; Becker 1985; see also the formalizations of Brainard and Verdier 1994 and Coate and Morris 1999).<sup>14</sup> It is difficult to see the importance of specific factors, however, in many of the most pronounced cases of trade protection, such as textiles or farming, which are commonly viewed as sectors with limited specific investments by capital and labor.<sup>15</sup> Similarly, labor market policy often involves protection for workers with limited specific skills. Contrary to conventional wisdom, our model predicts that sectors with less specific factors may be more prone to inefficient redistribution.

Consider a modified version of the economy described in the previous section. There are no young agents ( $\delta = 0$ ), but in period 0 a fraction  $\gamma$  of the farmers can switch to manufacturing at some cost  $C$ . A high level of  $C$  means that switchers fail to employ their skills effectively in manufacturing, which implies that farming uses highly specific factors. We continue to assume that those who switch produce  $A$  in the other sector. To focus on the case in which it is still socially efficient to reallocate agents into manufacturing, we assume that  $(1 + \beta)(A - B) > C$ .

The timing of events is as follows. Taxes are determined as in equation 1, and at this point farmers do not know whether they will have the opportunity to switch. Next, farmers find out whether they have this opportunity and make their decision (if they switch, they do not pay taxes until period 1). In period 1, taxes are

<sup>14</sup> This idea is commonplace in the literature on the political economy of trade policy. Alt et al. (1996, 700) argue: "A crucial determinant of the incentives of an economic agent to seek trade protection (or, more broadly subsidies) for his or her economic activity is the degree to which the agent's assets are specific to this activity." Similarly, Baldwin (1989, 124) claims: "One also expects vigorous efforts to secure protection in the face of significantly increased import competition by those industries [with] substantial . . . industry specific physical and human capital."

<sup>15</sup> The empirical literature on trade finds that labor-intensive and low-skill industries tend to receive more protection (see Rodrik 1994 for a succinct overview; also see Baldwin 1985; Ray 1981, 1991). Moreover, consumer goods industries receive more protection than intermediate goods industries (Ray 1991), but consumer goods (e.g., textiles, apparel, furniture and fixtures, toys, and sporting goods) are thought to have relatively unspecific factors of production.

determined as in equation 1 (but no switching occurs), and the world ends. The difference between  $\theta_0$  and  $\mu_0$  now is that farmers who decide to switch in period 0 still obtain  $\theta_0$ , but since they no longer farm, they do not receive the price subsidy  $\mu_0$ . Therefore, once again,  $\theta_0$  is a nondistortionary transfer, whereas  $\mu_0$  is an inefficient form of redistribution because it encourages agents to stay in the less productive sector.

Equation 3 still determines  $\tau_1$ , but equation 2 is now modified to

$$(1 - n_0)\tau_0 = n_0\theta_0 + ((1 - \gamma) + \gamma x)n_0\mu_0. \quad (17)$$

That is, at  $t = 0$ , there are  $n_0$  farmers and  $1 - n_0$  agents in manufacturing; a fraction  $(1 - \gamma + \gamma x)$  of farmers receive both types of transfer, but the fraction  $\gamma(1 - x)$  who quit only receive the efficient transfer,  $\theta_0$ .

The number of farmers in period  $t = 1$  is then given by

$$n_1 = ((1 - \gamma) + \gamma x)n_0.$$

Let  $W^f$  and  $W^m$  denote the expected utilities of potential switchers, and  $V^f$  and  $V^m$  denote the utilities of immobile agents. As before, we have

$$W^f = V^f = (1 + \beta)B + \theta_0 + \mu_0 + \beta\theta_1, \quad (18)$$

$$W^m = (1 + \beta)A - C + \theta_0 - \beta\tau(n_1). \quad (19)$$

Also, define  $U^f(x) = W^f - \mu_0$  as the utility of an agent who can switch but chooses not to, when a fraction  $x$  of potential switchers stay in farming and when  $\mu_0 = 0$ . Define  $U^m(x) = W^m$  as the utility of an agent who does switch when a fraction  $x$  of potential switchers stay in farming.

We denote the fraction of farmers who switch sectors by  $1 - x$ . We concentrate on the part of the parameter space of most interest, namely, where  $n_0 \in (n^-, n^+/(1 - \delta))$ . We also make the analogous assumption to assumption 1, which ensures that it is not worthwhile for a potential switcher to stay in farming just to get future redistribution.

ASSUMPTION 2.  $2\beta T < (1 + \beta)(A - B) - C$ .

This condition ensures that if  $\mu_0 = 0$ , potential switchers would all go to manufacturing. As in the previous section, to increase their political power, or prevent it from declining, farmers therefore need to set  $\mu_0 > 0$ .

Consider the utility of an old farmer before he knows whether he will have the opportunity to switch. His ex ante expected utility is

$$V^A = (1 - \gamma)V^f + \gamma \max\{W^f, W^m\}.$$

Since farmers decide the form of redistribution at this stage,  $\mu_0$  and  $\tau_0$  simply maximize ex ante expected utility. Now notice that if  $W^f > W^m$ , then  $x = 1$ , and if  $W^f < W^m$ , then  $x = 0$ . Our interest is to see under what circumstances  $x = 0$  will not be in equilibrium, that is, under what circumstances farmers will use  $\mu_0 > 0$ , resulting in inefficient redistribution. Suppose that  $W^f \leq W^m$ , in which case we can write

$$V^A = (1 - \gamma)V^f + \gamma W^m$$

$$= (1 - \gamma)((1 + \beta)B + \beta\phi(n_1)) + \gamma((1 + \beta)A - C - \beta\tau(n_1)) + \theta_0 + (1 - \gamma)\mu_0,$$

where the second line is derived by substituting from equations 18 and 19.

Now solving equation 17 for  $\theta_0 + (1 - \gamma)\mu_0$ , and substituting, we have

$$V^A(x) = (1 - \gamma)((1 + \beta)B + \beta\phi(n_1)) + \gamma((1 + \beta)A - C - \beta\tau(n_1)) + \frac{(1 - n_0)\tau_0}{n_0} - \gamma x \mu_0. \quad (20)$$

As in the previous section, suppose that  $\mu_0 = U^m(x) - U^f(x)$ , and substitute from equations 18 and 19 to obtain

$$\mu_0 = (1 + \beta)(A - B) - C - \beta(\phi(n_1) + \tau(n_1)). \quad (21)$$

Differentiating equation 20, evaluating it at  $x = 0$ , and substituting for equation 21, we obtain that there will be inefficient redistribution, that is,  $\mu_0 > 0$ , if

$$\frac{dV^A(x=0)}{dx} - \gamma\mu_0 + \beta\gamma n_0\{(1 - \gamma)\phi'((1 - \gamma)n_0) - \gamma\tau'((1 - \gamma)n_0)\} > 0. \quad (22)$$

Intuitively, if  $dV^A(x=0)/dx > 0$ , a small increase in  $x$  will raise the ex ante expected utility of farmers. This expression highlights once again that for inefficient redistribution to arise  $\phi'$  and  $\tau'$  need to be positive. If  $\tau'((1 - \gamma)n_0) \leq 0$ , then keeping some of the potential switchers will reduce taxes, so  $\phi' < 0$ , and  $dV^A(x=0)/dx < 0$ . Therefore,  $\tau' > 0$  is necessary—but not sufficient—for inefficient redistribution. Also, notice that potential switchers always prefer ex post not to have implemented a policy of inefficient redistribution to keep farmers in political power (they would prefer to move to manufacturing and not be taxed).

The novel comparative static result here is with respect to  $C$ . Recall that when  $C$  is high, farming skills are more specific. When  $C$  is high, equation 22 is more likely to be positive, so inefficient redistribution is more likely to arise. Yet, conditional on there being inefficient redistribution, a smaller  $C$  implies more inefficiency. Intuitively, when  $C$  is lower, the skills of potential switchers are less specific to farming, so they are more willing to move into manufacturing. This implies that farmers need to choose a more inefficient mix of redistributive policies to convince potential switchers to stay. Contrary to conventional wisdom, therefore, our model, which derives inefficient redistribution from micro foundations, implies that a lower degree of specificity may increase the extent of inefficient redistribution.

## APPLICATIONS OF THE MODEL

### Agricultural Policy

The first application we discuss is farming subsidies. Gisser (1993, 584) argues that "most economists have by now abandoned the belief that the main purpose of regulation is to correct for failures in private markets. The U.S. farm commodities program is no exception since it is designed to transfer income from taxpayers, and sometimes from consumers to farmers." There is a consensus that farm policy cannot be explained as correcting market failures. Although a number of authors maintain that the form of redistribution to farmers is relatively efficient (see Gardner 1987; Gisser 1993), it is difficult to believe that more efficient methods than price supports and quantity controls do not exist. For example, most economists consider the Common Agricultural Policy in Europe highly inefficient, and it is argued that direct subsidies could save considerable resources (e.g., Moyer and Josling 1990).

Most studies of agricultural subsidies take it for granted that lump-sum redistribution cannot be used. Our theory suggests that this is due to the desire to keep a critical mass of farmers in the industry. Wright (1995, 14) echoes this view: "Making farming permanently more attractive to the young by means of price supports . . . is a goal that appears embodied explicitly or implicitly in the farm policies of most developed economies."

In the early 1960s the French government attempted to reduce farm prices and promote the consolidation and modernization of small farms, but there was substantial opposition from the larger and more powerful farmers who controlled the *Fédération Nationale des Syndicats d'Exploitants Agricoles* (FNSEA). Franklin (1969, 103) explains why: "On the one hand, by supporting such price [subsidy] policies they [capitalist farmers] achieved an apparent common purpose with the large mass of the peasantry; on the other, any success such policies might register, by helping to maintain the peasantry rather than diminish them, would, at the same time, help to sustain the peasants' electoral importance, and by extension increase the pressure which the capitalist-led federations might bring to bear upon various governments." It appears that farmers in France were aware that the form of transfers would influence their numbers and their future political power, so they may have preferred inefficient methods of redistribution.

The same considerations appear to be important today. Following the McSharry reforms to the Common Agricultural Policy in 1992, pressure by French farmers induced the government to pass the *Loi de Modernisation de l'Agriculture* in January 1995. Part of this law was to introduce the goal of establishing 15,000 young farmers per year and, in general, lower the costs of doing business as a farmer to encourage entry (see Coleman, Atkinson, and Monpetit 1997). The reaction to agricultural reforms was quite similar in Germany and the United States. The Mansholt plan was defeated by German farming interests in 1968 on

identical grounds (Averyt 1977, 16–7), and the Brannan Plan in 1958 was defeated by the American Farm Bureau for similar reasons (Christenson 1959; Hansen 1991).

Overall, on a number of occasions farmers have campaigned for inefficient redistribution policies. Our model suggests that this is because they want to encourage newcomers in order to maintain future political power.

### Labor Market Policy

Most European labor markets are heavily regulated and characterized by such institutions as firing costs, which make it prohibitively expensive to lay off workers (e.g., Lazear 1990). Although severance pay may be useful, as it provides insurance to workers who otherwise would remain uninsured, the majority of the costs incurred by firms are administrative and do not benefit workers. Therefore, these policies appear highly inefficient. It is often argued that their main role is to increase insiders' bargaining power and wages (e.g., Lindbeck and Snower 1988; Saint-Paul 1996). Within this category are many pieces of legislation that enhance the ability of workers to unionize and engage in collective action to raise wages (e.g., closed shop agreements). Many economists believe that these policies are designed to give workers market power and also are responsible for high unemployment. It is argued that it would be much cheaper and more efficient to make direct transfers to insiders and allow the necessary worker and job reallocation. The prevalence of firing costs and legislation that increases the ability of workers to combine and engage in collective action in Europe is therefore quite puzzling from a theoretical perspective.<sup>16</sup>

Our model provides a simple answer. Suppose  $n_0$  of workers are in a high-wage sector, such as manufacturing, and wages are determined by union-firm bargaining. There is a critical mass of workers  $\bar{n}$ , such that for all  $n < \bar{n}$ , the union loses its ability to push for higher wages. Suppose also that a fraction  $\gamma$  of the workers in the sector are in loss-making firms. In the absence of firing costs, these firms will lay off workers ( $\gamma n_0$  of them), and many of these workers will find jobs in other sectors, which will reduce union membership to  $n_1 < \bar{n}$ . The union and manufacturing workers will therefore campaign for firing costs in order to prevent their numbers from shrinking. Even though other methods of redistribution are more efficient, only firing costs and similar restrictive work practices ensure that unions maintain their power in the future.<sup>17</sup>

There is a body of evidence suggesting that our

<sup>16</sup> It is argued that these labor market interventions increase the incentives of workers to invest in human capital (see, e.g., Acemoglu and Pischke 1999; Robinson n.d.). Yet, other labor market interventions can do this much more efficiently than administrative firing costs and closed shop arrangements.

<sup>17</sup> Moreover, firing costs reduce turnover and stabilize the composition of the workforce, which makes it easier for unions to mobilize workers. A similar argument can be developed to account for pronoun legislation: Unions will support the policies that sustain

approach is along the right lines, that is, the form of welfare state intervention is often inefficient, precisely because it is motivated by a desire to maintain future political power and sustain the ability of workers to engage in collective action. Many authors point out that labor market institutions are designed to ensure their political sustainability. Esping-Andersen (1990, 16) writes: "The social rights, income security, equalization and eradication of poverty that a universalistic welfare state pursues are necessary preconditions for the strength and unity that collective power mobilization demands" (see also Esping-Anderson 1985). He further argues that universalistic welfare states dynamically sustain the political coalitions that create them in a way that means-tested systems, which create divisions within workers, do not.

Rothstein (1985, 1992) shows that a central factor in explaining the cross-country strength of trade union movements is whether they manage the national unemployment insurance scheme. When they do, as in Belgium and Scandinavia, except Norway, they can reinforce and sustain their bargaining power by determining the criteria under which unemployed people must accept jobs. This allows them, for example, to prevent the unemployed from undercutting their bargaining power. Pontusson (1992, 28) points out that there are "instances in which welfare reforms directly strengthened union organization. Most notably, the public unemployment insurance system introduced by the Swedish Social Democratic Party in 1934 subsidized union administered unemployment funds and thereby provided a direct incentive for wage earners to join unions."

The same issues manifest themselves in unions' regulating job losses. Golden (1997, 4–5) argues:

Even unions that appear radically to resist market forces accept that there are circumstances in which the enterprise must reduce the size of its labor force. But what no union can accept . . . is that the firm take advantage of such a situation to break the union itself. If too many shop floor union representatives are included amongst those to be let go, or if so much of the union's membership is slotted for expulsion as to jeopardize the very future of the union as an organization . . . the union responds with industrial action. The aim of such action is to restore the union organization, not to prevent job loss. Strikes over workforce reductions . . . are rational, self-interested responses on the part of labor organizations to threats to trade unionism.

In the same vein, Slichter (1941, 17) notes: "If the union has no closed shop, restrictions on the employer's freedom to lay off may be a matter of self-preservation, because if union members are always the first to be dropped, the men will not remain in the organization."

As with agricultural and trade policies, it appears that a number of redistributive labor market policies are chosen to be inefficient, at least in part, to preserve

their constituency. In this way, they ensure continuity in the political power of the policies' beneficiaries.

## International Trade Policy

Most countries use tariffs and quotas to protect domestic industries. This is sometimes justified by infant industry protection arguments or similar externalities. Most economists, however, view tariffs and quotas as inefficient methods of transferring resources to special interest groups, in this case firms and workers in sectors that are subject to foreign competition.

To apply our analysis to the case of international trade policy, it is useful to consider two sectors, manufacturing and farming, as producing imperfect substitutes, and all consumers as having the utility function  $y_m^\alpha y_f^{1-\alpha}$ , with  $\alpha \in (0,1)$ . The world relative price of farming output in terms of manufactures is  $p$ , so  $pB$  replaces  $B$ .  $\theta$  is still equivalent to a lump-sum transfer by current farmers, and  $\mu$  can now be interpreted as a tariff at the rate of  $s = p\mu/B$ . So a  $\mu$  transfer increases the return to farming to  $pB(1 + \mu)$ ,<sup>18</sup> but it also distorts relative prices. This inefficient method may be preferred to a  $\theta$  transfer, however, precisely because it attracts newcomers, who would be more productive in manufacturing, to this sector.

We do not have direct evidence that the mechanism we propose is an important factor in the choice of inefficient trade policies, but various authors suggest that numbers are important in securing trade protection. Caves (1976) claims that the number of votes an industry can mobilize increases trade protection. Tosini and Tower (1987) found that the proportion of textile and apparel workers in the workforce of a congressional district or state was the most significant determinant of the pattern of voting on the 1985 textile bill. Baldwin (1985) presents other evidence of the importance of voting in the determination of U.S. trade policy, and Harper and Aldrich (1991) provide similar evidence on legislation affecting the sugar industry.

## CONCLUSION

We have developed the idea that the dynamics of group power is crucial in political systems that lack the ability to make commitments to future policy. Groups wish to take actions not just to raise their welfare today; they want to sustain their power so that they will be able to influence policy in the future. In order to do this, they may take current actions that would not be optimal if there were no concern for the future. Inefficient methods of redistribution may be precisely such an action when the political influence of a group depends on its size, a natural assumption, in democratic systems. This is because inefficient redistribution makes staying in, or joining a group, relatively more attractive to marginal agents than efficient methods of redistribution do. We argue that this explanation is consistent with a variety of evidence on the political

their future influence, which rests on their ability to organize collective action.

<sup>18</sup> Or the actual return is  $pB(1 + \mu)/(p(1 + \mu))^{1-\alpha} = Bp^\alpha(1 + \mu)^\alpha$ , since the prices of farming goods increase for farmers, too.

economy of redistribution in agricultural, trade, and labor market policy.

Our model focuses mostly on inefficient targeting, that is, on why subsidies are aimed at groups whose behavior will be distorted. It also can explain efficient conditioning, that is, why redistribution will be conditioned on the intensive margin of actions. For example, in the farming case, inefficient redistribution (targeting) maintains the political power of farmers, but it may attract more newcomers to the sector than are required to maintain group power. This dilutes the wealth of group members. Therefore, subsidies conditional on production or acreage controls may be useful to limit excessive entry. We leave a detailed analysis of this issue to future research.

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