

UNEMPLOYMENT AND LABOR-MARKET  
REFORM:  
A CONTRACT THEORETIC APPROACH\*

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## UNEMPLOYMENT AND LABOR-MARKET REFORM: A CONTRACT THEORETIC APPROACH

**Abstract** Why do many democracies fail to reform their labor market institutions? We study the feasibility of reforms that include the compensation of the insiders for the removal of labor market regulations. In our model workers differ in their ability to perform well on a liberalized labor market. The workers' ability is unobservable for the government. This informational asymmetry generates additional costs for a government that wants to implement a compensation package together with a labor market reform. Under asymmetric information, a reformer who wants to buy the approval of voters has to pay them an informational rent in addition to the pure costs of compensation that would arise under symmetric information. In this setting unemployment may be constrained Pareto-efficient. Consequently, no reform is accepted unanimously by voters. We show that this result can further be strengthened: under majority voting labor market reforms may fail politically because there exists no reform package that gets the approval of a majority of voters. Our model explains the emergence of political deadlocks where low rates of unemployment can be removed in the political process while high rates of unemployment tend to be politically stable. The paper also discusses the role of capital taxation in a reform program.

**Keywords:** Unemployment, labor market reform, political deadlocks.

**JEL N.:** D 70, E61, J68.

# 1 Introduction

High unemployment is considered as the major economic and political problem in many societies. There is an unanimous agreement that high rates of unemployment are bad and that governments should try to reduce them. A reason for this consensus may be that involuntary unemployment is apparently Pareto-inefficient. Loosely speaking: if everybody worked, the size of the pie would be larger and everybody could be made better off. In the light of this argument it is surprising that unemployment is not easily removed in the political process. Why do some democracies fail to reduce unemployment? A recent politico-economic literature has begun to address this important question. In particular some attempts have been made to analyze the chance of labor market reform programs to survive the political process.<sup>1</sup> The main argument of this literature is that the labor market reforms that are discussed are not Pareto-improving moves. Instead, they redistribute income from employed insiders to the unemployed (outsiders). This point has been put forward by Saint Paul (1996a) who argues that "many of the reforms that would reduce unemployment are unpopular because they would remove regulations that benefit the insiders". Given that insiders number out the outsiders, it is plausible that reforms fail politically. Although this view contributes to our understanding of the failure of reforms, one key question remains open: Why do democracies not select programs for labor market reform that do make everybody better off? Or, stated in more technical terms: if only full employment is Pareto-optimal, then why do politicians not propose and implement Pareto-improving reforms?

This paper addresses this question. Our proposed answer is that asymmetric in-

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<sup>1</sup>c.f. Saint Paul (1995, 96a,b, 97) and Olson (1997). Coe and Snower (1997) argue that the failure of reforms may be due to the fact that complementarities among different labor market reforms often remain unexploited.

formation about the gains and losses from a reform may make it impossible to design a Pareto-improving reform package. Under asymmetric information, a reformer who wants to "buy" the approval of voters has to pay them an informational rent in addition to the pure costs of compensation that would arise under symmetric information. This is why a reformer may be unable to design a balanced-budget compensation scheme for all the losers of a reform. If this is the case then unemployment is constrained Pareto-efficient. This means that a planner who is subject to informational constraints cannot propose a mechanism to the population that makes everybody better off. The fact that unemployment may be constrained Pareto-efficient explains why it cannot be removed without political conflict. In this paper we show that this result can further be strengthened: under certain conditions no reform-package exists that gets the approval of a majority of the voters. A labor market reform may be non-implementable because even the compensation of a majority of voters is too costly.

We address these issues in a stylized model of a labor market with asymmetric information. Our main assumption is that the losers from a labor market reform can be grouped into different categories according to their ability to cope with the liberalized system. Some high-ability workers do not suffer significantly from a labor market reform because they can easily adjust to the more competitive conditions while a second group of agents incurs significant losses even if these agents provide additional effort. These agents are the biggest losers from an uncompensated labor market reform.

The status-quo of our economy is characterized by real wages above the market clearing level. For this reason there is unemployment. We consider a situation where policymakers know what type of reform they have to implement in order to reduce unemployment. A labor market reform leads to lower wages and lower unemployment and it increases the aggregate payoff of workers. With full information a reform

that is combined with appropriate side-payments from outsiders to insiders can make everybody better off. In a world with asymmetric information additional costs for the government arise. This is why a reform may become non-implementable. Our model exhibits the interesting feature that low rates of unemployment can be removed more easily than high ones. An economy may get politically deadlocked in a situation with high-unemployment and low acceptance for reforms.

Most of the paper concentrates on a labor market reform where transfers have to be financed by workers alone, i.e. changes in capital income are neglected. In the end of the paper we discuss whether taxing away increases in capital income is sufficient to finance a reform. The answer to this question depends upon the specific modelling framework chosen. It turns out that in the setup of the paper capital taxation does the job. More generally however, capital taxation need not help to buy the political support of the insiders. Section 6 presents a model where costs that ensue from a reform are not related to increases in worker productivity. In such a setting, the taxation of capital income may not be enough to finance a reform.

The present paper is related to recent work that studied the welfare properties of states with under-employment or unemployment [Guesnerie and Roberts, 1987, Dreze and Gollier, 1993, Marceau and Boadway, 1994, Maderner and Rocher, 1995]. Guesnerie and Roberts have shown that welfare may be maximized in a state with under-employment when workers have private information. Marceau and Boadway have a similar result on unemployment. Dreze and Gollier proof the constrained optimality of unemployment in a different setting with uncertainty and missing insurance markets. The main contribution of the present analysis is that we show that labor market reform may fail even when only the majority of the population has to be made better off.<sup>2</sup>

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<sup>2</sup>Besides this the present paper has a different specification of the informational environment than

The paper is also related to a growing number of contributions that study the political viability of policy reforms. It is most closely related to the seminal work of Fernandez and Rodrik (1991) who discuss the viability of a reform when individuals are uncertain about whether they are among the winners or the losers of the reform. In their paper individuals and politicians are symmetrically uninformed about the individual consequences of a reform. The present paper takes an orthogonal view, granting the individuals an informational advantage with respect to the government's agencies.

In Section 2 we present our model. In Section 3 we study in detail the allocative efficiency of states with unemployment and in Section 4 we provide an example where neither a compensated nor an uncompensated reform is politically implementable. Section 5 studies how changes in the unemployment rate affect the political equilibrium. In Section 6 we study under which conditions the taxation of increased capital income may suffice to finance the reform.

## 2 The Model

### 2.1 Agents and Information Structure

We consider a voting population consisting exclusively of workers of total mass one. A worker can be more or less productive when he is employed in a firm. His productivity is either high ( $H$ ) or low ( $L$ ). Workers differ in their ability. The ability of a worker may take two values: high  $h$ , and low  $l$ . We denote the share of agents with ability  $j$  by

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Guesnerie and Roberts (1987) and Marceau and Boadway (1994). Guesnerie and Roberts assume that the government cannot observe wages while it can verify whether a wage is above the minimum wage. In Marceau and Boadway (1994), income is observable but not individual wage rates or labor supply. The present paper does not use such a mixed-observability assumption.

$\mu_j > 0$ ,  $j = h, l$ . A worker's productivity depends upon his effort. The productivity is high if and only if the worker provides effort. Effort comes at a finite cost  $c_j$  ( $j = h, l$ ) which is measured in monetary units. We assume that  $c_l > c_h > 0$ . A worker's productivity (or equivalently his effort) is verifiable and contractible for firms and for the government. A worker's ability is his private information.

## 2.2 Sequence of Events

The model has two stages, in both stages firms employ labor and produce output. At date 1 labor market institutions are such that all firms must pay all their employed workers the same excessive wage  $w^+$ . We will refer to this situation as the status-quo. At the wage  $w^+$  the labor market does not clear; hence, at date 1 the working population consists of a share of  $1 - u$  employed and  $u$  unemployed workers,  $1 > u > 0$ .<sup>3</sup>

The employment status of an agent at date 1 is indexed with  $I = E, U$ . A worker is characterized by his employment status at date 1 and by his ability. We denote the share of agents with employment status  $I$  and ability  $j$  by  $\mu_j^I$ . We assume for simplicity that at date 1 the abilities are distributed in the same way among the employed and the unemployed<sup>4</sup>, i.e.:

$$\mu_j = \frac{\mu_j^U}{u} = \frac{\mu_j^E}{1 - u}, \quad j = h, l. \quad (1)$$

We normalize unemployment benefits to zero; adding positive unemployment benefits

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<sup>3</sup>In the appendix we have a microfoundation of the labour demand schedule. The labour demand schedule is derived from a technology with decreasing marginal returns in labor. This explains why, with an excess wage there is unemployment.

<sup>4</sup>Assuming instead that the distributions differ would not affect any of our results.

would not add affect any of our results on informational rents<sup>5</sup>. Hence, a worker's payoff is  $w^+$  if he is employed and zero otherwise.

At date 1 the government may propose a labor market reform to the agents. The reform gets implemented at date 2 if a majority of the working population (employed and unemployed) votes in favor of it. Otherwise the status quo prevails. If there is no reform then the wage remains fixed at  $w^+$ . Moreover, all agents keep their employment status from date 1.<sup>6</sup>

On a liberalized labor market there are no legal restrictions on the contracts between a worker and a firm. Hence, it is possible to link a worker's salary to his productivity. We assume that on a liberalized labor market all workers are employed. After a labor market reform all productive workers receive a wage of  $w_H$ , and all unproductive workers receive a wage of  $w_L < w_H$ . Throughout the paper we take the wages  $w_L$ ,  $w_H$  as well as the initial wage and unemployment rate as exogenously given. We show in the appendix of the paper how one can derive the values of  $w_H$  and  $w_L$  as well as the relationship between  $w^+$  and  $u$  endogenously from a production technology with decreasing returns to labor. With the fixed excessive wage  $w^+$  no one provides effort and there is excess labor supply.<sup>78</sup>

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<sup>5</sup>The main point of this paper is that information rents may make political reform impossible. Unemployment benefits may increase incentives for the insiders who pay for these benefits to support reform. However, the point on information rents would not be affected by this.

<sup>6</sup>Note that this assumption is justified when labor turnover costs are high.

<sup>7</sup>Assuming instead that  $w^+$  is a minimum wage would not affect any of our results, but it would complicate the analysis slightly. Under a minimum wage, the status quo (date 1) may be characterized by contracts that link the wage to a worker's productivity. A low-productivity worker would have to be paid  $w^+$  while a high-productivity worker could be paid more. A political reform could then condition transfers on date 1 productivity. However, informational rents would still accrue to workers in this setting and this would raise the cost of compensation.

<sup>8</sup>Decreasing returns are necessary in order to obtain unemployment - but not zero employment



The costs of effort are such that for all agents providing effort yields a higher surplus than shirking:

$$w_H - c_h > w_H - c_l > w_L. \quad (2)$$

Besides disutility from providing effort there is no disutility from work. All agents maximize expected date 2 income minus their cost of effort.

### 3 Reform Programs

#### 3.1 The Government's Budget Constraint

A policy is called a labor market reform if it includes the removal of the labor market regulations. A labor market reform may also include taxes on some agents' income and transfers to others. We require the transfers to be financed through taxes, i.e. the reform includes the way in which it is financed. Since workers' ability is unobservable, the taxes and transfers can only be made contingent on the employment status at date 1 and on the market wage of the agent at date 2.<sup>9</sup> We denote the transfer to an agent with employment status  $I$  and with wage  $w_J$  by  $t_J^I$  ( $J = H, L$ ). The vector of all transfers is denoted by  $t = (t_H^U, t_L^U, t_H^E, t_L^E)$ . Negative transfers are taxes.

At date 2 a reform induces the effort of type  $j$  agents with employment status  $I$  - at the high wage  $w^+$ . Note that with decreasing returns to labor the reform would yield higher returns on capital. In principle these additional returns could be used for a compensation of insiders aswell. Section 5 discusses this issue.

<sup>9</sup>The corresponding direct mechanism asks each worker for his type and assigns each type a monetary payoff (wage plus transfer) and an effort level. Obviously, such a mechanism is incentive compatible if and only if agents with identical employment status and effort level obtain the same monetary payoff. Otherwise some agents would not report their type truthfully.

if:

$$w_H + t_H^I - c_j \geq w_L + t_L^I \Leftrightarrow \quad (3)$$

$$s_j \quad : \quad = w_H - w_L - c_j \geq t_L^I - t_H^I. \quad (4)$$

This means that the surplus  $s_j$  that is generated by the effort of a type  $j$  agent must at least equal the transfer differential  $t_L^I - t_H^I$ . We may write the productivity of a worker of type  $(I, j)$  as a function of the transfer vector  $t$ :

$$e_j^I(t) = \begin{cases} 1 & \text{if } s_j \geq t_L^I - t_H^I \\ 0 & \text{otherwise.} \end{cases} \quad (5)$$

The budget constraint of the government is then:

$$\sum_I \sum_j \mu_j^I \left[ e_j^I(t) t_H^I + (1 - e_j^I(t)) t_L^I \right] = 0. \quad (6)$$

Transfers from capital owners to workers are excluded in this analysis. We will take them into account in section 5.

### 3.2 Implementable Reforms

A reform gets the support of an employed agent of ability  $j$  if:

$$e_j^E(t) (w_H + t_H^E - c_j) + (1 - e_j^E(t)) (w_L + t_L^E) \geq w^+. \quad (7)$$

It gets the support of an unemployed agent if:

$$e_j^U(t) (w_H + t_H^U - c_j) + (1 - e_j^U(t)) (w_L + t_L^U) \geq 0. \quad (8)$$

We may define:

**Definition 1** *A reform is called implementable if it fulfills the government's budget constraint (6) and if it is supported by a majority of voters. A reform is called Pareto-improving if it fulfills the government's budget constraint and if it makes every voter better off, i.e. if (6), (7) and (8) hold for  $I = U, E$ ;  $j = h, l$ .*

## 4 The Impossibility of Reforms

### 4.1 Informational Rents of Winners and Losers

In the above framework reforms may not be implementable although the status-quo is Pareto-inefficient. A reformer faces two difficulties. The first problem is that under asymmetric information it is overly costly to compensate the insiders for the losses from a reform. To study this issue formally we denote the aggregate losses of insiders from a reform without compensation by

$$L^E := \mu_l^E (w^+ - (w_H - c_l)) + \mu_h^E (w^+ - (w_H - c_h)). \quad (9)$$

Our first proposition states that the costs of compensation of the insiders under imperfect information exceed those under perfect information.

**Proposition 1** *Consider a case where  $w^+ \geq w_H$ . It costs strictly more than  $L^E$  to compensate all insiders for the removal of labor market regulations.*

**PROOF** Consider first a transfer scheme that induces effort of low-ability workers. Such a scheme costs at least  $(1 - u)(w^+ - (w_H - c_l)) > L^E$ . Consider next the case where only high ability agents provide effort. The compensation of the low-ability insiders necessitates transfers of at least  $t_L^E = w^+ - w_L$ . Transfers must be  $t_H^E = w^+ - (w_H - c_h)$  to compensate high ability agents. The total cost in this case

is at least  $\mu_l^E (w^+ - w_L) + \mu_h^E (w^+ - (w_H - c_l)) > L^E$ . Finally, if no agent provides effort then cost are  $(1 - u) (w^+ - w_L) > L^E$ . Q.E.D.

The second problem concerns the unemployed. These agents gain from a labor market reform. Part of this gain could be used to compensate the insiders for their losses. However, under asymmetric information one cannot tax the high-ability unemployed more than the low-ability unemployed although they generate a higher surplus. We assume that no agent can be forced to get a payoff below zero. We denote the maximum amount that can be raised from the outsiders by  $T^{\max}$  and their gains from reform by

$$G^U := \mu_l^U (w_H - c_l) + \mu_h^U (w_H - c_h). \quad (10)$$

We have:

**Proposition 2** *It is impossible to extract all the gains from reform from the unemployed, i.e.  $T^{\max} < G^U$ .*

PROOF The entire surplus is extracted from the high ability agents only if  $t_H^U = -(w_H - c_h)$ . This is more than  $w_H - c_l$ . Hence, if this condition holds then low ability agents prefer not to work which yields a payoff of zero. Alternatively one can tax away less from those who were previously unemployed and now provide effort. However, in this case high ability agents work and keep a positive fraction of the surplus. Q.E.D.

## 4.2 Reforms

An immediate consequence of Proposition 1 and 2 is the following corollary.

**Corollary 1** *There are wage levels  $w^+, w_H, w_L$ , costs  $c_j$ , unemployment rates  $u$ , and shares  $\mu_j$  such that (i) the status-quo is Pareto-inefficient and (ii) there is no Pareto-improving reform.*

To prove the corollary it suffices to consider any situation where the gains of outsiders are just sufficient to cover the losses from insiders, i.e.  $G^U = L^E + \varepsilon$ , where  $\varepsilon$  can be chosen arbitrarily small. It then immediately follows from Proposition 1 and 2 that there is no Pareto-improving transfer scheme.<sup>10</sup> The next proposition further strengthens this result. We show that there are cases where a reform cannot be implemented through majority voting despite the fact that the status quo is Pareto-inefficient.

**Proposition 3** *There are wage levels  $w^+ > w_H > w_L$ , costs  $c_j$ , unemployment rates  $u$ , and shares  $\mu_j$  such that simultaneously, (i) the status quo is inefficient, (ii) an uncompensated reform is opposed by all insiders, and (iii) any balanced-budget reform with compensation is rejected by a majority of voters.*

PROOF It suffices to provide an example. Consider the following situation where the unemployment rate is ten percent,  $u = 0.1$ . Table 1 displays the values of  $\mu_j^I$ .

**Table 1:**  $\mu_j^I$

$I \setminus j$	$l$	$h$
$E$	0.6	0.3
$U$	0.0666	0.0333

In this situation a policy reform is adopted if and only if it benefits the low-ability employed agents. We normalize  $w_L = 1$  and fix

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<sup>10</sup>Note that our explanation for the constrained efficiency of unemployment differs from the one provided in efficiency wage models such as Shapiro and Stiglitz (1984). In these models workers' effort is not perfectly observable for firms. If monetary incentives for workers are excluded then unemployment is needed as a worker discipline device. In the present model monetary incentives for workers are feasible. However, unemployment may be constrained efficient because worker's types are unobservable.

$$w^+ = 1.2, \quad (11)$$

$$w_H = 1.2, \quad (12)$$

$$c_l = 0.16 \quad (13)$$

Moreover, we fix  $c_h$  arbitrarily close to zero.

We first check whether the allocation without reform yields a lower total surplus to workers than the one with reform. The income of all agents without reform is

$$(1 - u) \cdot w^+ = 0.9 \cdot 1.2 = 1.08. \quad (14)$$

Note that no worker provides effort. After a reform there are 0.666 low ability workers, and 0.333 high-ability employed agents. Total surplus is

$$w_H - 0.666 \cdot 0.16 = 1.2 - 0.666 \cdot 0.16 = 1.0934. \quad (15)$$

The amount of taxes that can be raised from the unemployed is

$$u(w_H - c_l) = 0.1 \cdot 1.04 = .104. \quad (16)$$

if both types work and

$$u[0.3333(w_H - c_h) + 0.6666w_l] = 0.1[0.3333(1.2) + 0.6666] = .10666 \quad (17)$$

if only high ability agents work.

The sum that has to be paid to the insiders in order to compensate them for working is  $0.9 \cdot 0.16 = .144$ . The compensation for a low ability insider who does not provide effort is 0.2. A reform where low-ability insiders do not work therefore costs at least  $0.6 \cdot 0.2 = 0.12$ . Both values exceed the maximum amount of taxes that can be raised from the formerly unemployed. Q.E.D.

It is useful to discuss two properties of the example that was provided in this proof. It should first be noted that the total labor revenue is higher with unemployment than in a situation where all workers work and do not provide effort. With unemployment the workers total income is  $(1 - u) \cdot w^+ = 0.9 \cdot 1.2 = 1.08$ . When all workers work and do not provide effort the aggregate income is  $w_L = 1$ . Only if all workers work the income minus cost of effort is  $w_H - \mu_l^E \cdot c_l = 1.0934$ . In other words total labor income is not strictly increasing in the amount of labor that is employed. Reforms fail only if this non-monotonicity condition is fulfilled. Otherwise, ie. if  $w_L > (1 - u) \cdot w^+$ , a reform could be financed by workers alone. Such a reform could e.g. consist of transfers that do not induce effort of workers and compensate all insiders for the loss  $w^+ - w_L$ .

A second property of the above example is that the low-ability insiders constitute the majority of the population. It is easily verified that a reform would be feasible in the present example if the high-ability insiders were a majority instead. A compensation of insiders by the amount  $c_h$  would then suffice to buy their political support. Hence, labor market reform may be less likely if the fraction of low-skilled insider workers is larger.

## 5 Political Deadlocks

Some European countries that are characterized by increasing rates of unemployment do not make much progress in liberalizing labor markets. Does a deterioration of the situation on the labor markets increase chances for a labor market reform or are the two disconnected? Our model permits us to address this question. In order to study the issue formally we consider an economy where the competitive wages  $w_H$  and  $w_L$  and the shares  $\mu_i$  are given. So far we have taken both the rigid wage  $w^+$  and initial unemployment  $u$  as given. We now assume that they are linked through a labor demand schedule  $u(w^+)$ ; hence only the rigid wage or initial unemployment

is exogenous. We shall assume that full employment without effort can only be maintained when  $w^+ = w_L$ , i.e.:  $u(w_L) = 0$ .

We begin by characterizing the combinations of excessive wages  $w^+$  and unemployment  $u$  such that the status quo is Pareto-inefficient. Inefficiency requires that the aggregate wages in the status quo are less than wages minus costs of effort after a reform, i.e.:

$$(1 - u)w^+ < w_H - (\mu_l c_l + \mu_h c_h). \quad (18)$$

The inefficient combinations of  $w^+$  and  $u$  are depicted in Figure 1, they lie below the curve  $e(u)$ .

Next we characterize the combinations of  $w^+$  and  $u$  where unemployment is not removable in a reform. We consider a situation where the low-ability employed workers constitute a majority of the population when unemployment is not too large. First consider that a reform where all agents work is not implementable if:

$$(\mu_l^E + \mu_h^E) (w^+ - (w_H - c_l)) > u (w_H - c_l) \Leftrightarrow \quad (19)$$

$$(1 - u)w^+ > w_H - c_l. \quad (20)$$

A reform where former low ability insiders shirk while high-ability agents work is not implementable if

$$\mu_l^E (w^+ - w_l) + \mu_h^E (w^+ - (w_H - c_l)) > u (w_H - c_l) \Leftrightarrow \quad (21)$$

$$(1 - u)w^+ > \mu_l^E w_l + (\mu_h^E + u) (w_H - c_l). \quad (22)$$

A reform where all former insiders shirk is not implementable if



$$(1 - u)(w^+ - w_l) > u(w_H - c_l) \Leftrightarrow \quad (23)$$

$$(1 - u)w^+ > (1 - u)w_l + u(w_H - c_l). \quad (24)$$

Note that the right-hand side of (20) exceeds the right-hand sides of (22) and (24). In Figure 1 the status-quo situations above the curve  $r(u)$  are the ones where no reform is implementable, i.e. where (20) holds.

The labor demand schedule passes through point  $A$  in Figure 1 which lies below  $r(u)$  since  $w_L$  is smaller than the right-hand side of (20). At points on the labor demand schedule close to  $A$  a labor market reform is still feasible. However, if labor demand is not too elastic, an increase of  $w^+$  leads the economy into a political deadlock where Pareto-inefficient unemployment cannot be removed. Rising unemployment may therefore be associated with lower chances for political reform. Higher unemployment only increases the chances for a labor market reform if either (i) the demand schedule leaves the area between  $r(u)$  and  $e(u)$  or (ii) if unemployment is so high that the low-ability insiders no longer constitute a majority of voters.

Figure 1 also shows that the state of a political deadlock can only be obtained if total wages paid are increasing when there is unemployment. This is a direct consequence from the fact that point  $A$  in lies below the curve  $r(u)$ .

## 6 Does taxing capital help?

So far we have disregarded the side of capital completely. In this section we discuss whether taxing capital may help to overcome the problem discussed so far. An increase of employment may increase the revenues of capital owners. It may therefore be possible to tax away part of this increased income and to compensate the insiders.

In an open economy, tax competition imposes some limits on additional capital taxation. One should expect that capital flees the country if it does not receive the same net of taxes rate of return as before the reform. We therefore ask whether it is possible to use the increase of capital income that arises with a labor market reform in order to pay for the compensation of the insiders.

In the setup studied so far, such a policy is actually successful. To see why, note that one can always design transfers such that it benefits for no worker to provide effort after a reform. Moreover, total output is increased if all workers are employed - even if they do not provide effort. It is therefore possible to find a transfer scheme such that (i) capitalists receive their former revenue, (ii) insider workers receive their old wage  $w^+$  and (iii) some positive salary is given to the unemployed. Therefore the removal of unemployment is politically feasible in the setup that we have used so far, when increased capital income can be taxed away.

In general however, capital taxation need not be sufficient to finance a reform. To see why consider the following related but different setup in which workers do not have to make an effort decision. In this setup a cost emerges for some insiders which is not linked to any increase of productivity.

Technology is represented by an aggregate production function  $F(K, L)$  where  $L$  measures labor and capital  $K$  is fixed at  $K = 1$ . Full employment is reached at  $L = 1$ . Assume that after a reform everybody gets employed at an equilibrium wage  $w^* = F_L(1, 1) < w^+ = F_L(1, 1 - u)$ . Furthermore, assume that a group of employed insiders of size  $\mu_c < 1 - u$  suffers a loss  $c$  from reform. We assume that this cost is not related to productivity enhancing effort or to reduced wages. Instead, it ensues from other consequences of the removal of rigidities. Suppose that this fraction  $\mu_c$  exceeds 50 percent of the population. Then  $c$  can always be chosen such that (i) the status quo is not Pareto-optimal and (ii) a reform finds no support by a majority.

The former condition can be written:

$$\mu_c c < F(1, 1) - F(1, 1 - u). \quad (25)$$

The latter condition holds if the cost of paying  $c$  to all insiders exceeds the total output gain, i.e. if:

$$(1 - u)c > F(1, 1) - F(1, 1 - u). \quad (26)$$

If this condition holds, then capital taxation does not help to finance the payments to insiders. We have that  $(1 - u) > \mu_c$ . Hence, costs  $c$  can be chosen such that both conditions hold. Note that, in contrast to the model that we used in the rest of the paper, any production function which is increasing in its two arguments can be used to derive the result.

## 7 Conclusion

Three disenchanting conclusions can be drawn from our analysis. Firstly, blatant inefficiencies such as unemployment may be something a democratic society has to live with. Secondly, higher unemployment may adversely affect the chances of a political reform. Thirdly, unemployment may be constrained Pareto-efficient, i.e. the Pareto-criterion is not sufficient to identify unemployment as an undesirable state. Unemployment can only be coined as undesirable if one is willing to employ additional criteria of fairness.<sup>11</sup>

The result is different from most politico-economic explanations for failures to reform. These explanations often consider particular reforms and explain why these particular reforms are not undertaken. For example failure may be due to improper

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<sup>11</sup>One such criterion is the one according to which equal agents should be treated equally. Involuntary unemployment is certainly at odds with this basic criterion of justice.

sequencing of different steps of a reform programme when there are complementarities. Or particular reform programmes simply neglect powerful interest groups. Saint Paul (1995b) e.g. points out that some proposals for labor market reform are badly designed because they lack political support from insiders. However, he also argues that it is in principle possible to design a reform that finds the support of a majority. In the present paper we describe a case where it is impossible to find such a reform. Policy reforms may fail if winners and losers are better informed about their ability to adjust to the reform than the government. Asymmetric information generates additional costs for any reform package that is designed to compensate the losers. It also reduces the revenues that can be raised from those who gain from the reform.

In the present model the agents had an informational advantage concerning their ability to cope with the reform. Another source of informational rents that was not considered here is the agents' unknown ability to cope with the status quo in the future. In particular, one should expect that (un-) employed agents have an informational advantage concerning their future chances to become unemployed (find employment) if rigidities are not removed.

While our particular model was designed to show that asymmetric information may render a labor market reform impossible, our insights are of more general relevance. Many reforms such as removing subsidies to firms, trade liberalization, agricultural reform, etc. are likely to increase the size of the pie that can be distributed among agents. Under symmetric information, a government could easily design an appropriate compensation scheme for the losers from the reform. However, in all three cases it may be difficult to distinguish those who can easily adjust to a reform from the real losers who need a larger compensation. In such a situation a government faces difficulties to get the support of all the agents who are affected by a reform.

## 8 Appendix

This appendix provides a microfoundation for the values  $w_H$  and  $w_L$  and for the labor demand schedule. We normalize the number of workers to one. An unproductive worker generates one unit of productive labor and a productive worker generates  $1 + a$  units,  $a > 0$ . The economy produces with a technology  $Y = F(K, L)$  where  $L$  measures productive labor and  $K = 1$ . We assume that  $F_{KK}, F_{LL} < 0$ . We denote the average productivity of all employed workers by  $\phi$ , hence  $L = (1 - u)\phi$ . In the status-quo the wage is  $w^+$ . The expected productivity of a worker is 1 since no worker provides effort when employed at the fixed wage  $w^+$ . Firms are price takers, hence aggregate labor demand satisfies:

$$F'(1 - u) = w^+. \quad (27)$$

On a liberalized market *an equilibrium* is characterized by a wage for productive and unproductive workers,  $w_H$  and  $w_L$  and by effort decisions of all workers such that

(i) the effort decision of each worker is optimal given the wages and the transfer scheme  $t$ ,

(ii) the wages of the two types of labor equal their marginal product,

(iii) there is full employment.

As a consequence of (ii) the equilibrium wages must satisfy:

$$w_H = (1 + a)w_L. \quad (28)$$

We first consider a possible equilibrium where high- and low ability workers provide effort. In this case  $1 + a$  units of productive labor are employed. The wage  $w_L$  equals the marginal product of efficient labor:

$$w_L = F'(1 + a). \quad (29)$$

Next consider a possible equilibrium where only high-ability workers provide effort. The wage  $w_L$  equals the marginal product of efficient labor:

$$w_L = F'(1 + \mu_h a). \quad (30)$$

Our example from Proposition 3 can be derived from any technology that satisfies  $a = 0.2$ ,  $F'(0.9) = 1.2$  and  $1.2 \cdot F'(1.2) = 1.2$  or  $F'(1.2) = 1$ . In the body of the paper we assumed for simplicity that the wages  $w_H$ ,  $w_L$  do not change if low-ability workers do not provide effort. This requires that  $F'(L)$  is close to 1 on  $L \in (0.9, 1.2]$ . These three conditions are satisfied by an infinity of concave production functions.

**Figure 1**

## REFERENCES

- Coe,-David-T.; Dennis-J. Snower (1997) "Policy Complementarities: The Case for Fundamental Labor Market Reform" *International-Monetary-Fund-Staff-Papers* 44, 1-35.
- Dreze, Jacques and Christian Gollier (1993) "Risk Sharing on the Labor Market and Second-Best Wage Rigidities", *European-Economic-Review*, 37, 1457-1482.
- Fernandez, Raquel and Dani Rodrik (1991) "Resistance To Reform: Status Quo Bias in the Presence of Individual Specific Uncertainty", *American Economic Review*, 81, 1146-55.
- Guesnerie, Roger and Kevin Roberts (1987) "Minimum Wage Legislation as a Second-Best Policy", *European-Economic-Review*, 31, 490-498.
- Maderner, Nina and Jean-Charles Rochet (1995) "Is it Legitimate to Encourage Work Sharing?", *Scandinavian Journal of Economics*, 97, 621-633.
- Olson, Mancur (1997) "The secular Increase in European Unemployment Rates", *European-Economic-Review*, 39, 593-600.
- Saint-Paul,-Gilles, (1994) "Do Labor Market Rigidities Fulfill Distributive Objectives? Searching for the Virtues of the European Model" *International-Monetary-Fund-Staff-Papers*; 4, 624-42.
- Saint-Paul,-Gilles, (1995a) "The High Unemployment Trap", *Quarterly-Journal-of-Economics*", 110, 527-50.
- Saint-Paul,-Gilles, (1995b) "Some Political Aspects of Unemployment, *European-Economic-Review*", 39, 575-82.



- Saint-Paul, Gilles, (1996a) "Exploring the Political Economy of Labor Market Institutions", *Economic-Policy:-A-European-Forum*; 263-300.
- Saint-Paul, Gilles, (1996b) "Labor Market Institutions and the Cohesion of the Middle Class", *International-Tax-and-Public-Finance*; 3, 385-95.
- Saint-Paul, Gilles, (1997) "The Rise and Persistence of Rigidities", *American-Economic-Review*; 87, 290-94.
- Shapiro and Stiglitz (1984) "Unemployment as a Worker Discipline Device", *American-Economic-Review*; 74, 433-444.
- Marceau, Nicolas and Robin Boadway (1994) "Minimum Wage Legislation and Unemployment Insurance as Instruments for Redistribution", *Scandinavian Journal of Economics*, 96, 67-81.