Can the union hurt the workers?

A positive analysis of immigration policy *

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Abstract

This paper studies the determinants of immigration policy in an economy with
entrepreneurs and workers where a trade union has market power over wages. The
presence of the union induces a social welfare maximizing government to implement a
high level of immigration, leading to a welfare loss not only from an aggregate point
of view, but also from the workers’ point of view. In the politico-economic equilibrium
where interest groups lobby for immigration policy, and where the ability of the workers
to influence the policymaker is strengthened by existence of the union, we show the
conditions under which workers may benefit from the presence of the union.

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1 Introduction

In recent years, large immigrants inflows put immigration at the center of the political debate in many OECD countries and concern arose in the general public. In the 1997 Eurobarometer survey, migration turns out to be one of the three most significant issues. According to the 1995 ISSP survey the average attitude is anti-immigration in most industrialized countries.

Immigration attitudes may reflect chauvinism, nationalistic sentiments, humanitarian reasons and political ideology, but the expected distributive consequences of immigration are also likely to be important. As immigrants generally have skill/education level below host country average and compete with native unskilled workers on the local labor market, immigration may hurt native unskilled workers by exerting downward pressure on the unskilled wage and by increasing competition for jobs. Instead, higher labor supply and declining wages will increase profits. Capital owners and native skilled workers will benefit from migration if the return to (physical and human) capital increases.

The expected impact on labor market returns and the distributional conflict between wage earners and employers is deemed crucial to explain immigration policy outcomes across countries and over time. Empirical estimates based on survey data (see, for example, Mayda [15], O’Rourke and Sinnot [16], Scheve and Slaughter [18]) suggest that labor-income determinants influence individual preferences towards migration and that hostility towards immigrants is concentrated among the unskilled. In an historical perspective, Williamson and coauthors have often argued (see, for example, Williamson [20], Hatton and Williamson [14] and Timmer and Williamson [19]) that restrictive policies adopted by immigration countries in the beginning of the 20th century were the result of a combination of factors including public assessment of the impact of immigration on the labor market and increased political participation of those impacted due to suffrage extension.\footnote{For example, Hatton and Williamson [14] attribute the divergent experience of the US, where restrictions were introduced, and Latin American countries, where free immigration policies were maintained, to the emergence of different political coalitions reflecting the relative political strength of native workers: in the US restrictions were introduced when north-eastern urban labor turned decidedly against migration due to increased wage competition from immigrants, while in Latin America the urban capitalists and land owners}
Turning to nowadays examples, Hanson [11] suggests that business lobbying for freer migration may explain the current situation in the US, where existing restrictions on permanent legal migration are undone by temporary work visas and less intense enforcement of illegal entry. A similar point is made by Freeman [9] who argues that US immigration policy is still expansionary overall, as new and old business groups (high-tech industries, agricultural growers) successfully pled the government for higher quotas while no real constituency developed against legal migration.

As the above examples suggest, employers have a clear stake in migration policy and will organize into action to support liberalization. Their ability to curb intervention in their favor will depend on institutional factors that determine the permeability of government to lobbies and the voice of workers. When the government is relatively insulated, immigration can be seen as a *regulatory* sphere with policies implemented in the national interest. In many instances, however, existing political institutions do not grant the policy-maker autonomy with respect to vested interests and *interest groups politics* prevails where social groups strive to influence the policy outcome in their favor.2

We argue that, in the latter case, the representation of workers’ interests in policymaking will crucially depend on the presence and power of trade unions. In an historical perspective, increased voice of unskilled workers may not be related only to suffrage extension, as discussed above, but also to higher union power, as workers movements progressively acquired strength at the beginning of the 20th century3. Moreover, even if unions rarely take explicit anti-immigration positions nowadays4, we may expect to observe more pro-worker policies (less liberal migration policies) being implemented in countries where owners elite supported liberal admissions against the interest of domestic workers.

2For a discussion of these issues, from a political science perspective, see Freeman [9] and references therein.

3Using historical data for the US, Briggs [5] documents a negative association between union power (measured by union density) and immigration (measured by percentage of the population which is foreign born). This finding, which he interprets in the opposite direction as evidence that immigration reduces union effectiveness and therefore its appeal to workers, is also consistent with our idea.

4Although, for example, this is what they systematically did in the US until the change in position in the 90’s.
unions are more powerful and (unskilled) workers stances are clearly present to the policy-maker.

To formalize these ideas we study an economy where a monopoly trade union sets the wage, employment is determined by firms and the government regulates migration by imposing restrictions on the number of immigrants (quotas). As the union pushes the wage above market clearing level, unemployment occurs in equilibrium. Unemployed agents receive an unemployment benefit which is financed by contributory taxes and is proportional to the wage level. Entrepreneurs support migration as this reduces wages and increases employment and profits while (unskilled) workers would rather restrict immigrants inflows\(^5\).

We first investigate the situation where the quota is determined by a benevolent government to maximize natives’ welfare (regulatory politics). The presence of the union in wage determination leads the government to implement a level of immigration higher than the one which would arise with a competitive labor market. This is due to the fact that, anticipating that the union will generate an efficiency loss by pushing wages above the market clearing level, the government increases the immigration level in order to reduce wages, raise employment and profits and increase aggregate welfare. The optimal response of the government to the union’s behavior generates an interesting result in terms of welfare. In particular, we show that the presence of the union induces a welfare loss not only from an aggregate point of view, but even from the point of view of workers who would be better off in a competitive labor market.

This result is overturn when we consider the case where the government is permeable to pressure from interest groups (interest group politics). We formalize the lobbying process by the common agency framework pioneered by Bernheim and Whinston [3], and applied to different economic problems by authors such as Bellettini and Ottaviano [2], Dixit, Grossman and Helpman [6], Grossman and Helpman [10], Persson [17].

Following the above discussion, we assume that employers, who are a smaller group

\(^5\)In our analysis we abstract altogether from the role of fiscal considerations in determining attitudes towards migration and policy outcomes. For a discussion of these issues see, for example, Boeri et al. [4], Hanson et al [13], and Hatton and Williamson [14].
and benefit concretely from migration, are able to overcome obstacles to organization more effectively than workers and that the influence of the latter is fostered by the union. Solving for the Truthful Perfect Equilibrium of the lobbying game between the government, the lobby of entrepreneurs and the lobby of workers, we characterize the equilibrium level of immigration chosen by the government. In this framework we show that workers’ welfare may be higher in the presence of the union, notwithstanding the optimal response of the government which may set a higher migration quota than in the competitive case, as they receive a larger relative weight in the government objective function.

To the best of our knowledge, our paper is the first one to study how the redistributive conflict between workers and entrepreneurs shapes immigration policy when agents lobby for policy and the labor market is unionized. Although it is widely recognized that immigration policy is the result of the composition of different interests, only Amegashie [1], Epstein and Nitzan [7], and Facchini and Willmann [8] have developed a positive analysis of immigration policy taking into account explicitly the influence of pressure groups on government’s behavior. In these contributions, however, no attention is paid to the role of the union in the process of wage determination and in policy making and to the strategic interaction between the union and the government, which is the focus of our analysis.

The remaining of the paper is organized as follows. Section 2 introduces the economic model. Section 3 studies the regulatory case and compares the optimal level of immigration in presence of the union with the level that would be chosen in a competitive labor market. Section 4 analyzes the interest groups politics case and the politico-economic equilibrium with lobbies. Section 5 concludes.

2 The model

Consider a one-good economy populated by three types of agents. First, there is a continuum of domestic entrepreneurs with mass $H > 0$. Each of them owns a firm endowed with identical technology:

$$ y = l^\alpha $$

(1)
where \( l \) and \( y \) represent employment and output in each firm, and \( \alpha \in (0, 1) \). Second, there is a continuum of domestic workers (which may include foreign permanent residents), with mass \( N > H \). Finally, a mass \( I \geq 0 \) of new immigrant workers may enter the domestic labor market. Workers differ solely in terms of their country of origin.

At the national level, a monopolistic union sets the level of wage \( w \) which is applied uniformly to all firms. Employment at the firm level is determined by labor demand of each firm, given the unionized wage. If unemployed, workers receive unemployment benefit \( b \), which is proportional to wage with replacement rate \( \eta < 1 \), i.e. \( b = \eta w \). Unemployment benefits are financed through contributory taxes on wage income.

Government’s budget constraint requires that:

\[
\tau L \geq \eta U
\]

(2)

where \( L \) denotes total employment, \( U \) denotes total unemployment and \( \tau \) is the tax rate. We assume that \( 1 - \tau > \eta \), which ensures that, ceteris paribus, workers would rather being employed than unemployed.

In this paper, we are not interested in the fiscal costs and benefits associated to immigration. Thus, to keep the model simple, we assume that the government surplus (if any) is wasted and does not affect the maximization problem of the agents.

Each agent derives utility from consumption according to a CRRA utility function:

\[
u(c) = \frac{c^{1-\delta}}{1-\delta}
\]

(3)

where \( \delta \) is the coefficient of relative risk aversion. As we will see below, the second order condition of the government’s maximization problem will be satisfied if and only if \( \delta > 1 \), which we will henceforth assume. Denoting firm’s profits (in the unionized labor market) with \( \pi \), we have \( c = \{ \pi, w(1-\tau), b \} \) for entrepreneurs, employed and unemployed workers respectively.

The equilibrium level of immigration, wages and employment will be the outcome of a two-stage game where:

1. In the first stage, the government sets the immigration level \( I \) to maximize a weighted average of the welfare of domestic entrepreneurs \( H \) and domestic workers \( N \), antici-
pating how the union will set the wage rate and employment will be determined by each firm in the subsequent stage.

2. In the second stage, given $I$, the union sets the wage rate and employment is determined by labor demand of each firm.

As usual, the game will be solved by backward induction.

3 Equilibrium 1: the regulatory case

Stage 2

We assume that the union, given the level of immigration chosen by the government in the previous stage, which determines total available labor supply, sets the wage according to the following reduced-form policy:

$$w = \Delta w_{-u}$$

where $\Delta > 1$ and $w_{-u}$ is the market-clearing wage. In words, the monopolistic union exploits its bargaining power to impose a mark-up over the level which would prevail were the wage free to adjust to clear the labor market$^6$.

By definition, the market-clearing wage is a function of total labor supply and therefore of the level of immigration $I$, that is:

$$w_{-u}(I) = \alpha \left( \frac{N + I}{H} \right)^{\alpha - 1}$$

Clearly, $w_{-u}$ is also the wage level when there is no union and the labor market is competitive. Putting together equations 4 and 5 we can write:

$$w(I) = \Delta \alpha \left( \frac{N + I}{H} \right)^{\alpha - 1}$$

In many models of union behavior, the unionized wage is a fixed mark-up over an exogenous alternative income (typically, the unemployment benefit) so that the unionized

$^6$There are several ways of providing a microfoundation for our assumption. For example, in a right-to-manage framework, a union objective function of the form $(w - w_{-u})^\nu (HI(w))^{1-\nu}$ would yield equation 4 as the optimal wage policy with $\Delta = (1 - \nu) / (\sigma (1 - \nu) - \nu) (1 - \alpha)$. 

6
wage is constant and independent of labor supply (and thus of immigration levels). In our framework, to formalize the conflict of interests between workers and capitalists, we need a negative relationship between the unionized wage and the level of immigration, which goes through the negative effect of immigration on the market-clearing wage.

Employment is determined by firms according to labor demand. Given union’s wage policy, employment at the firm level is given by:

\[ l = \Delta^{-\sigma} \left( \frac{N + I}{H} \right) \]  

(7)

where \( \sigma = (1 - \alpha)^{-1} \) denotes the elasticity of labor demand. Aggregate employment \( L \) is thus given by \( HL = \Delta^{-\sigma} (N + I) \).

Firm profits can be written as \( \pi = (1 - \alpha) \left( \frac{w}{\alpha} \right)^{-\alpha \sigma} \) or equivalently as \( \Delta^{-\alpha \sigma} \pi_{-u} \) where \( \pi_{-u} = (1 - \alpha) \left( \frac{w_{-u}}{\alpha} \right)^{-\alpha \sigma} \) is the level of profit when the labor market clears. As \( \Delta > 1, \pi < \pi_{-u} \).

Union’s behavior generates unemployment. The level of unemployment \( U \) is equal to \( (1 - \Delta^{-\sigma}) (N + I) \), while the employment and unemployment rates are equal to \( \Delta^{-\sigma} \) and \( (1 - \Delta^{-\sigma}) \) respectively, and do not depend on total labor supply and on the level of immigration.

In general, higher \( \Delta \) has ambiguous effects on the expected utility of workers’, which is given by:

\[ v(w; \Delta, \tau, \eta) = \Delta^{-\sigma} u(w(1 - \tau)) + (1 - \Delta^{-\sigma}) u(b) \]  

(8)

For a given level of immigration, the wage level is increasing with \( \Delta \) according to (6). However, higher \( \Delta \) increases the probability of being unemployed. In the following analysis, we will focus on the more interesting case where, given the level of immigration, workers always benefit from union’s behavior. Appendix 1 shows that a sufficient condition is:

\[(A1): \ (1 - \tau) > \eta \left( \frac{\alpha}{\sigma + \alpha - 1} \right)^{\frac{1}{\sigma + \alpha - 1}}.\]

Summing up, for a given level of immigration, the presence of the union determines a reduction in employment and production and a redistribution of income from entrepreneurs toward workers. Higher immigration tends to offset these effects as it implies higher employment and production and a redistribution of income from workers toward entrepreneurs.
Stage 1

In the determination of migration restrictions the government will consider the conflicting interests of workers and entrepreneurs which emerge through the effect of immigration on wages, employment and profits. As the unemployment rate does not depend on the immigration level in our model, workers oppose migration due to its negative impact on the wage level. Instead, entrepreneurs favor migration for its positive impact on employment and profits.

Formally, we assume that the government chooses immigration to solve the following problem:

$$\max_I W(I; \Delta, \tau, \eta) = [\gamma N v(w; \Delta, \tau, \eta) + (1 - \gamma) H u(\pi)]$$

(9)

where $w$ and $\pi$ are functions of the immigration level $I$, as shown above.\(^7\). Although the size of the two groups positively influences the consideration they receive by the government, the interests of the larger group (workers) are not the only ones that are represented. Instead, the government will weight workers interests relative to those of the entrepreneurs according to the parameter $\gamma \in (0, 1)$. Defining $\lambda \equiv \gamma/(1 - \gamma)$, when $\lambda = 1$, each agent receives the same consideration and the government maximizes a Benthamite-type social welfare function. Values of $\lambda$ different from one reflect the “ideology” of the incumbent government, who may take into consideration the preferences of its electoral constituencies. Using this notation the government maximization problem can equivalently be written as:

$$\max_I W(I; \Delta, \tau, \eta) = \lambda N v(w; \Delta, \tau, \eta) + H u(\pi)$$

(10)

The degree of independence of the government in policy-making is determined by political institutions, such as the level at which immigration policy is implemented (administration, cabinet, parliament), the license of courts to repeal government decisions, and the existence of formal or informal requirements to consult social parties.\(^8\). If the government is insulated from pressure by organized interest groups, migration policy can be seen as falling into

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\(^7\)Notice that our welfare function implies that the government considers only the interests of current residents (natives and immigrants), neglecting those of foreign workers who have not yet entered the country.

\(^8\)For an extensive discussion of these issues, see Freeman [9] and references therein.
a *regulatory* sphere, where the government pursues a somehow defined social interest. Otherwise, *interest groups politics* will prevail. In the remaining of this Section we analyze the former case, which we model as a situation where the parameter $\lambda$ in the government objective function is *exogenous*, and in particular it does not depend on the labor market institutional settings.

The solution of problem (10) yields:

$$
\frac{N + I_u}{H} = \frac{N + I_{-u}}{H} \frac{\Delta^\sigma}{1 - \tau} \left[ \Delta^{-\sigma}(1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma})\eta^{1-\delta} \right] \overset{\text{\scriptsize (11)}}{=} 
$$

where $I_u$ denotes the level of immigration chosen by the government in the presence of an unionized labor market and $I_{-u}$ denotes the level of immigration that the government chooses when the labor market is competitive.\(^9\)

Formally, $I_{-u}$ is the solution to the following problem:

$$
\max_I \left[ \lambda N (1 - \tau)^{1-\delta} \frac{w_{-u}^{1-\delta}}{1 - \delta} + H \frac{\pi_{-u}^{1-\delta}}{1 - \delta} \right] \overset{\text{\scriptsize (12)}}{=} 
$$

so that:

$$
\frac{N + I_{-u}}{H} = \left( \frac{\alpha}{1 - \alpha} \right)^{1-\delta} \left( \frac{H}{N\lambda} \right) \overset{\text{\scriptsize (13)}}{=} (1 - \tau)
$$

When considering an increase in $I$, the government trades the welfare loss of native workers, due to the decrease of $w$, with the gain of entrepreneurs, due to higher $\pi$. The higher is $\alpha$, the higher is $w$ relative to $\pi$ and the higher are $I_{-u}$ and $I_u$. Instead, higher $N$, higher $\lambda$ and lower $H$ imply lower $I_{-u}$ and $I_u$ as the relative weight of workers in the social welfare function increases.

As equation (11) makes clear, the government reacts to the presence of the union ($\Delta > 1$) by changing the level of immigration relative to the one that it would set in the competitive case (equivalent to $\Delta = 1$). We can then establish the following result:

**Proposition 1** *The level of immigration is higher in the presence of the union than with a competitive labor market, that is $I_u > I_{-u}$.*

\(^9\)As we have already mentioned, the second order condition for a maximum is satisfied if and only if $\delta > 1$. 
Proof. \( I_u > I_{-u} \) if and only if \( \Delta^\sigma \left[ \Delta^{-\sigma} (1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma}) \eta^{1-\delta} \right] \frac{1}{1 - \delta} > (1 - \tau) \). As (A1) implies \( \Delta^{-\sigma} (1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma}) \eta^{1-\delta} \frac{1}{1 - \delta} \Delta > (1 - \tau) \) and \( \sigma > 1 \), this concludes the proof. ■

The intuition for this proposition can be given as follows. Consider the case of a competitive labor market and the resulting optimal level of immigration \( I_{-u} \). Starting from this equilibrium, the introduction of the union, holding the immigration level constant, determines an increase in wages and a reduction of employment, production and profits, implying a welfare gain for workers and a welfare loss for entrepreneurs.

How will the government react? Increasing the immigration level will raise employment, production and profits and reduce the equilibrium wage, implying a redistribution from workers to entrepreneurs. Proposition 2 shows that this is the optimal reaction as the marginal social loss (of workers) from an increase in \( I \) is lower than the marginal social gain (of entrepreneurs), calculated at \( I_{-u} \).

Formally, note that the maximization problem of the government in the unionized case is equivalent to the following:

\[
\max_I \left[ \Delta^\sigma (1-\delta) \left[ \Delta^{-\sigma} (1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma}) \eta^{1-\delta} \right] \lambda N \frac{w^{1-\delta}}{1 - \delta} + H \frac{x^{1-\delta}}{1 - \delta} \right] \tag{14}
\]

which is the same as in the competitive case, except that the workers’ weight \( \lambda \) is multiplied by the term \( \Delta^\sigma (1-\delta) \left[ \Delta^{-\sigma} (1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma}) \eta^{1-\delta} \right] \) in equation (14), while it is multiplied by \( (1 - \tau)^{1-\delta} \) in equation (12). Since the former term is smaller than the latter by (A1), the government behaves as if it were less pro-worker in the presence of the union.

Anticipating that the union will set the wage above the competitive level, the government increases immigration relative to the level she would set in the competitive case. Immigration is thus a sort of anti-union policy which is used by the government to compensate for the distortions generated by the union and to redistribute income from workers to entrepreneurs in order to increase social welfare.

We now turn to the investigation of the welfare properties of the equilibrium. The following Proposition establishes the main result of this section.

**Proposition 2** The expected utility of the representative domestic worker (or equivalently
the utility of domestic workers as a group) is lower in the presence of the union than in the competitive case.

**Proof.** Let $v_u$ denote the expected utility of a representative worker when the immigration level chosen by the government is $I_u$ and $v_{-u}$ denote the worker’s utility when the immigration level is $I_{-u}$. Using equations 11 and 13, we can write:

$$v_u \leq v_{-u} \Leftrightarrow \left[ \Delta^{-\sigma}(1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma})\eta^{1-\delta} \right] \geq (1 - \tau)^{1-\delta}$$

which is always satisfied. ■

Our findings highlight the important consequences of considering the level of immigration $I$ as optimally chosen by the government. Indeed, a very different result arises if, starting from the competitive equilibrium ($\Delta = 1$), a union is introduced while keeping the level of immigration fixed at $I_{-u}$. In this case, the union pushes wages above the market-clearing level and this raises workers’ welfare at the expense of entrepreneurs. Instead, if the government responds optimally to the presence of the union, the immigration level will be increased to $I_u$. The resulting fall in wages hurt workers who would be better off without the union.\(^{10}\)

To further illustrate our result, let us denote with $\hat{I}$ the level of immigration such that workers are just indifferent to the existence of the union. Clearly $\hat{I} > I_{-u}$, as union behavior benefits workers for a given level of immigration. Proposition 2 implies that $\hat{I} < I_u$. As discussed above, in presence of the union the government will redistribute from workers to entrepreneurs and increase social welfare by raising the level of immigration above $I_{-u}$. When $\hat{I}$ is reached, workers’ welfare is back to the level they would achieve in a competitive labor market. However, the government will push the immigration level further up as the marginal loss for workers from an increase in $I$ is still lower than the marginal gain for entrepreneurs at $\hat{I}$.

10It should be noted that the introduction of fiscal considerations, which we left aside in our analysis, may reinforce this result. In fact, it can be shown that the budget surplus (per worker) is decreasing with $\Delta$, so that, if it were rebated to contributors (workers) in a lump-sum fashion, the utility of workers in presence of the union would decrease even more relative to the level achieved in a perfectly competitive environment.
Notice that, notwithstanding the increase in immigration, the union wage associated to \( I_u \) is higher than the market-clearing (competitive) wage associated to the immigration level \( I-u \). The ratio between the two wages can be written as:

\[
\frac{w(I_u)}{w(I-u)} = \frac{\Delta w-u(I_u)}{w(I-u)} = (1-\tau)^{\frac{1}{\sigma}} \left[ \Delta^{-\sigma}(1-\tau)^{1-\delta} + (1-\Delta^{-\sigma})\eta^{1-\delta} \right]^{\frac{1}{1-\delta}}
\] (16)

which is larger than one. As the equilibrium wage is higher, also employment, production and profits will be lower in the unionized labor market. We can thus conclude that entrepreneurs’ welfare and (using Proposition 2) aggregate welfare will also be lower in the presence of the union.\(^{11}\) Formally, we can write the following:

**Corollary 1** Both the welfare of entrepreneurs and the aggregate expected welfare are lower in the presence of the union than in the competitive case.

**Proof.** Take equation (16). As \( w(I_u) > w(I-u) \), it follows that \( \pi(I_u) < \pi(I-u) \), so that entrepreneurs are worse off with the union. By Proposition 2, we can conclude that both groups of agents (workers and entrepreneurs) are worse off with the union. \( \blacksquare \)

The government responds to the presence of the union by increasing immigration. This reaction partially offsets the negative effect of the union on social welfare which, however, remains below the level that would be attained in the competitive case. Migration can thus be seen as an instrument to achieve a second-best outcome and be used as a covert anti-union policy when the government is unable or unwilling to implement a labor market reform to eliminate the union wage premium. Both entrepreneurs and workers are hurt by the presence of the union. The former lose because employment and profits in the unionized labor market are below competitive level, the latter because the increase in wage is not large enough to compensate them from the risk of unemployment, given the optimal response of the government in terms of immigration.\(^{12}\)

\(^{11}\)Notice that the government may restore the competitive level of wage, employment, production and profits by setting the immigration level at a sufficiently high level \( \bar{I} > I_u \). This would not be socially optimal, however, as the marginal gain for workers from a reduction in the level of immigration is larger than the marginal loss to entrepreneurs at \( \bar{I} \).

\(^{12}\)Two assumptions play a crucial role for our results, namely that the union wage is a fixed mark up over the market-clearing wage and that labor demand is isoelastic.
4 Equilibrium 2: Interest groups politics

The welfare loss of workers due to the presence of the union raises the natural question of why workers would deliberately accept membership and provide support for it, rather than get rid of the union and enjoy a higher level of welfare. This section tackles this issue, by considering immigration policy as the outcome of a political process between the government and social groups.

As we discussed in the Introduction, when political institutions make the government permeable to pressure from groups with a stake in migration, policy will tend to reflect the position of most influential groups and migration policy will pertain to the realm of interest group politics.

In our model, we will assume that the entrepreneurs, who belong to a smaller group, find it easier to coordinate into action to influence policy making. The ability of workers to contrast the ensuing tendency to liberalization will instead crucially depend on the existence of the trade union, which increases the representation of workers stances at the government level.

To formalize these ideas, we let the workers’ weight in the government objective function to be higher in presence of the union. In particular, denoting with $\lambda_u$ the workers’ weight in presence of the union, with $\lambda_{-u}$ the weight in absence of the union, and with $\Lambda$ the ratio $\lambda_{-u}/\lambda_u$, our assumption can be written as:

(A2): $\Lambda \leq 1$.

To facilitate the exposition, we will initially consider $\lambda_u$ and $\lambda_{-u}$ as exogenously given parameters. Below, we will show how they can be obtained from the solution of a lobbying game between the government and social groups.

Solving the maximization problem of the government defined by equations (10) and (12), where $\lambda$ is given by $\lambda_u$ and $\lambda_{-u}$ respectively, we obtain the following relationship

13Although we do not provide a microfoundation of union behavior in wage setting and policy making, our assumptions so far imply that: (i) given migration policy, the union is not against workers’ interests in wage setting (A1); the union increases the representation of worker’ interests in policy making (A2).
between $I_u$ and $I_{-u}$:

$$N + I_u = (N + I_{-u}) (\Lambda)^{\frac{1}{1-\sigma}} \frac{\Delta}{1-\tau} \left[ \Delta^{-\sigma} (1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma}) \eta^{1-\delta} \right]^{-\frac{1}{1-\sigma}}$$  \hspace{1cm} (17)

which is the analogous of equation (11). Notice that the higher is $\Lambda$, the higher is the ratio $I_u/I_{-u}$. Intuitively, when workers’ interests receive relative lower weight in the presence of the union, the government sets higher immigration quota in response to union’s market power.

By setting $I_u = I_{-u}$ in equation 17, we obtain the value of $\Lambda$ that would lead the government to implement the same level of immigration with or without the union. This value is given by:

$$\Lambda = \Delta^{\sigma(1-\delta)(1-\tau)^{\delta-1}} \left[ \Delta^{-\sigma} (1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma}) \eta^{1-\delta} \right]^{-\frac{1}{1-\sigma}}$$  \hspace{1cm} (18)

Contrary to what we had in the regulatory case, it may now be the case that the government sets a more restrictive migration policy in presence of the union than she otherwise would. This happens when $\lambda_{-u}$ is sufficiently small relative to $\lambda_u$ and $\Lambda$ falls below the value defined by equation 18.

We are now ready to establish the following result:

**Proposition 3** There exists $\Lambda \in (0, 1)$ such that, for any $\Lambda < \Lambda$, the expected utility of the representative domestic worker (or equivalently the utility of domestic workers as a group) is higher in the presence of the union than in the competitive case.

**Proof.** Consider equation (17). It is easily verified that $v_u \geq v_{-u}$ if and only if

$$\Lambda \leq (1 - \tau)^{(1-\delta)\alpha \sigma} \left[ \Delta^{-\sigma} (1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma}) \eta^{1-\delta} \right]^{-\alpha \sigma} \equiv \tilde{\Lambda}$$

As the right-hand side of the last inequality is strictly smaller than one, this concludes the proof. $\blacksquare$

If the representation of workers’ interests in the decision process leading to the determination of migration policy is lower in absence of the union, workers may benefit from
its existence. This happens when $\lambda_{-u}$ is sufficiently small relative to $\lambda_u$ so that $\Lambda$ takes a value below $\Lambda$.\footnote{Clearly, all results of the previous section can be replicated by setting $\Lambda = 1$.}

It can be verified that $\Lambda$ is larger than the value such that $I_u = I_{-u}$ defined by equation 18.\footnote{The condition $\Lambda > \Delta^{\nu(1-\delta)}(1-\tau)_3^{-1} \left[ \Delta^{-\sigma}(1-\tau)^{1-\delta} + (1-\Delta^{-\sigma})\eta^{1-\delta} \right] \rightarrow \Delta > (1-\tau)$ reduces to $[\Delta^{-\sigma}(1-\tau)^{1-\delta} + (1-\Delta^{-\sigma})\eta^{1-\delta}]^{\frac{1}{\nu(1-\delta)}} \Delta > (1-\tau)$ which is satisfied by (A1).} This implies that there are cases where workers benefit from the existence of the union even if the government uses migration as an anti-union policy, by setting $I_u > I_{-u}$. The reason is that the unionized wage associated to $I_u$ turns out to be sufficiently high to compensate workers from the risk of unemployment and to achieve a higher level of expected utility than they would by receiving the competitive wage associated to $I_{-u}$ with probability one, as they would in absence of the union. This possibility, which never arise in the case which we analyzed in the previous section, is due to the fact that the ratio $I_u/I_{-u}$ is now smaller as the weight of workers in the government objective function is larger in presence of the union, implying a higher ratio between the union and the no-union wage, which is given by equation (16) where the right-hand side is now multiplied by $\Lambda^{\frac{1}{\nu(1-\delta)}}$.

4.1 A political economy interpretation

The assumption that workers’ interests receive higher consideration by the government in presence of a trade union, that is $\lambda_u > \lambda_{-u}$, can be formalized in a political economy framework by considering migration restrictions as the outcome of a lobbying game between the government and the lobbies of entrepreneurs and workers.

Lobbies seek to influence the legislative process in their favor by offering contributions to the government. Once the immigration level has been set by the government, employers and the trade union bargain over wages and employment is determined.

More precisely, the politico-economic equilibrium can be described as follows:

1. The lobbies of entrepreneurs and workers offer contributions to the government conditional on the immigration policy.
2. The government sets the immigration level $I$ taking into account the contributions of the lobbies of entrepreneurs and workers and anticipating how the wage rate will be determined on the labor market.

3. The union sets the wage rate taking $I$ as given and employment is determined by labor demand.

Following our previous discussion, we assume that organization costs are prohibitive for the larger group and that the lobby of workers is influential only in presence of a trade union. In other words, when there is no union, workers’ contributions are equal to zero.

We model the lobbying game as a menu auction game à la Bernheim and Whinston [3] where players use globally truthful contributions.

In the first stage, the lobby $j \in \{e, w\}$ -where $e$ denotes entrepreneurs and $w$ workers-offers contributions schedule $C^j$ which is globally truthful, so that we can write:

$$C^j(I) = \max\{0, V^j(I) - s^j\}$$ (19)

where $V^j$ is the objective function of lobby $j$ and $s^j$ is a scalar optimally set by each lobby $j$. From our previous analysis, the objective functions of the lobby of workers and entrepreneurs are given by:

$$V^w = \frac{N}{1 - \delta} \left[ \Delta^{-\sigma} (1 - \tau)^{1-\delta} w^{1-\delta} + (1 - \Delta^{-\sigma}) b^{1-\delta} \right]$$ (20)

$$V^e = \frac{H}{1 - \delta} \pi^{1-\delta}$$ (21)

In the second stage, government chooses $I$ to maximize a weighted average of social welfare and contributions:

$$I^* = \arg\max \left[ \mu W(I) + (1 - \mu) \sum_j C_j \right]$$ (22)

with $\mu \in (0, 1)$ and where $W(I)$ is given by equation (10).

Finally, in the third stage, the union sets the wage according to equation (6), given the number of immigrants $I$ chosen by the government in the previous stage, and firms determine employment.
The existence of a Truthful Perfect Equilibrium (TPE) of the game that we have just described has been established by Bernheim and Whinston [3]. As for the characterization of our TPE, note that, given the assumption of global truthfulness, the maximization problem of the government reduces to:

\[ I_u = \arg \max \left\{ \left( \frac{\mu \gamma + 1 - \mu}{1 - \mu \gamma} \right) N \left[ \Delta^{-\sigma} u(w(1 - \tau)) + \left( 1 - \Delta^{-\sigma} \right) u(b) + H u(\pi) \right] \right\} \quad (23) \]

when both lobbies of workers and entrepreneurs are actively contributing and:

\[ I_{-u} = \arg \max \left\{ \left( \frac{\mu \gamma}{1 - \mu \gamma} \right) N [u(w_{-u}(1 - \tau))] + H u(\pi_{-u}) \right\} \quad (24) \]

when there is no union and only entrepreneurs are contributing. Following our notation, we can write:

\[ \lambda_u = \frac{\mu \gamma + 1 - \mu}{1 - \mu \gamma} \quad (25) \]
\[ \lambda_{-u} = \frac{\mu \gamma}{1 - \mu \gamma} \quad (26) \]

so that \( \lambda_u > \lambda_{-u} \) and, in particular, equation (17) applies.

As workers try to influence government’s migration policy by paying contributions, the result on workers’ welfare stated in Proposition 3 has to be reconsidered accordingly. Taking explicitly into account contributions expenditures in the calculation of the utility of workers, we can write the following:

**Proposition 4** There exists \( \tilde{\Lambda} < \Lambda \) such that, for any \( \Lambda < \tilde{\Lambda} \), the expected utility of the representative domestic worker (or equivalently the utility of domestic workers as a group) is higher in the TPE with positive contributions by both groups than in the TPE where only entrepreneurs contribute.

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16Seminal contributions on the characterization of the TPE and applications to various economic problems can be found in Dixit, Grossman and Helpman [6] and Grossman and Helpman [10].

17Our framework differs from the traditional framework à la Grossman-Helpman [10] insofar as the two social groups may have different weights in the social welfare function. Thus, even when both lobbies contribute, the TPE equilibrium may differ from the regulatory equilibrium. Clearly, we could replicate their results by setting \( \gamma = 1/2 \) (that is, \( \lambda = 1 \)).
Proof. See Appendix 2. ■

Since workers pay contributions, the threshold value of the ratio $\frac{\lambda - u}{\lambda u}$ which ensures that workers find it worthwhile to exert pressure on the government to set immigration quota to $I_u$ rather than $I_{-u}$ is lower than in the previous case, where workers’ weight in the government objective function was exogenous and independent of lobbying activity.

Notice that the ratio $\frac{\lambda - u}{\lambda u}$ is increasing with $\mu$. This implies that $\Lambda$ decreases when the government attaches relatively higher weight to contributions ($\mu$ decreases), making it more likely that it falls below the threshold value such that workers benefit from the union.

5 Conclusions

This paper develops a positive analysis of immigration policy when the labor market is non-competitive due to the presence of a trade union and two distinct groups (entrepreneurs and workers) have conflicting interests over this policy.

Our main result is that the bargaining power of the union in the labor market induces a social welfare maximizing government to increase immigration above the level which would be optimal with a competitive labor market. The most important consequence is that workers end up being hurt by the union.

Notwithstanding this negative effect on workers’ welfare, a political economy extension of the basic model, where the government is influenced by the lobbying activity of (lobbies of) workers and entrepreneurs, allows us to formalize a possible explanation of why workers may still be interested in supporting the union. More specifically, we show that when the government is prone to pressure by interest groups, workers may be better off with the union if this sufficiently increases the weight their interests receive in the policy formation process.

Our research could be extended along several dimensions. First, it would be interesting to study the effect of a (exogenous) reduction of the union’s power in wage setting (which would be captured in our model by a fall in $\Delta$) on migration policy. This would allow us to establish empirical implications regarding the association between union power and mi-
igration restrictions and to derive new insights on the relationship between de-unionization and globalization. Second, in a richer setting, our model may be used to rationalize observed union’s self-restraint on the wage side, coupled with its increasingly large role on the political side, as a way to maintain workers’ support in integrated economies. Finally, the model could incorporate a dynamic analysis which could shed light on the relationship between trade unions, immigration policy and economic growth. This analysis could be carried out using a OLG model, where the young (workers) oppose immigration while the old (owners of the firms) are in favor of it.

References


APPENDIX 1

The expected utility of the representative domestic worker, given by equation (8), can be written as follows:

\[ v(w; \Delta, \tau, \eta) = \zeta(\Delta, \tau, \eta) \frac{w^{1-\delta}}{1-\delta} \]  

(27)

where:

\[ \zeta(\Delta, \tau, \eta) = \left[ \Delta^{-\sigma}(1-\tau)^{1-\delta} + (1-\Delta^{-\sigma})\eta^{1-\delta} \right] \Delta^{1-\delta} \]

For a given level of immigration \( \bar{I} \), the market clearing wage is also given. As \( \delta > 1 \), the expected utility of the worker will be increasing with \( \Delta \) if and only if \( \frac{\delta \zeta}{\delta \Delta} < 0 \). Now notice that:

\[ \frac{\delta \zeta}{\delta \Delta} = \left[ \delta + \sigma - 1 + (1 - \delta)\Delta^{\sigma} + (1 - \delta - \sigma) \left[ \frac{(1 - \tau)}{\eta} \right]^{1-\delta} \right] \]

(28)

which is negative whenever:

\[ \Delta^{\sigma} > \frac{(1 - \delta - \sigma)}{1 - \delta} \left[ 1 - \left( \frac{1 - \tau}{\eta} \right)^{1-\delta} \right] \]

(29)

Sufficient condition for the last inequality to hold is:

\[ \frac{(1 - \delta - \sigma)}{1 - \delta} \left[ 1 - \left( \frac{1 - \tau}{\eta} \right)^{1-\delta} \right] < 1 \]

(30)

which, after some algebra, yields:

\[ (1 - \tau) > \eta \left( \frac{\sigma}{\sigma + \delta - 1} \right)^{1-\delta} \]

(31)

QED.

APPENDIX 2

Given the definition of truthful contributions (see equation (19)), the net utility of workers \( s^w \) can be found by the following equation: \(^{18}\)

\[ \mu[\gamma V^w(I_u) + (1 - \gamma)V^c(I_u)] + (1 - \mu)[V^w(I_u) - s^w + V^c(I_u) - s^e] = \mu[\gamma V^w(I-u) + (1 - \gamma)V^c(I-u)] + (1 - \mu)[V^c(I-u) - s^e] \]

\(^{18}\)Detailed explanations of the calculation of net utilities and contributions can be found in Grossman and Helpman [10]
which yields:

\[ s^w \geq 0 \iff \lambda_u[V^w(I_u) - V^w(I_{-u})] + V^e(I_u) - V^e(I_{-u}) \geq 0 \quad (33) \]

where \( \lambda_u \) is given by equation (25). Using equations (17), (20), and (21), after some algebra we get:

\[ s^w \geq 0 \iff \left[ \Delta^{-\sigma}(1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma})\eta^{1-\delta} \right] \alpha (1 - \tau) \alpha(\delta - 1) \Lambda^{-\alpha} - \alpha \Lambda^{-1} + \alpha - 1 \leq 0 \quad (34) \]

Let \( \left[ \Delta^{-\sigma}(1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma})\eta^{1-\delta} \right] \alpha (1 - \tau) \alpha(\delta - 1) \Lambda^{-\alpha} - \alpha \Lambda^{-1} + \alpha - 1 \equiv f(\Lambda) \). It can be easily verified that, for \( \Lambda \to 0 \), \( f(\Lambda) \to -\infty \) and for \( \Lambda \to 1 \), \( f(\Lambda) \to \left[ \Delta^{-\sigma}(1 - \tau)^{1-\delta} + (1 - \Delta^{-\sigma})\eta^{1-\delta} \right] \alpha (1 - \tau) \alpha(\delta - 1) - 1 \) which is positive as \( (1 - \tau) > \eta \). Moreover, \( f(\Lambda) \) has a unique maximum at \( \Lambda = \Lambda_0 \) so that we can conclude that there exists \( \tilde{\Lambda} \in (0, \Lambda_0) \) such that \( s^w \geq 0 \iff \Lambda \leq \tilde{\Lambda} \).