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## ABSTRACT

### Do Interest Groups Affect Immigration?\*

While anecdotal evidence suggests that interest groups play a key role in shaping immigration, there is no systematic empirical evidence on this issue. To motivate our analysis, we develop a simple theoretical model where migration policy is the result of the interaction between organized groups with conflicting interests towards labor flows. We evaluate the key predictions of the model using a new, industry-level dataset from the United States that we construct by combining information on the total number of immigrants and H1B visas with data on lobbying expenditures associated with immigration. We find robust evidence that both pro- and anti-immigration interest groups play a statistically significant and economically relevant role in shaping migration across sectors. Barriers to migration are lower in sectors in which business lobbies incur larger lobbying expenditures and higher in sectors where labor unions are more important.

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*“Immigration policy today is driven by businesses that need more workers — skilled and unskilled, legal and illegal [...] During the annual debate on H1B visas two years ago, Silicon Valley executives trooped before Congress, warning of a Y2K computer disaster unless the number of H1B visas was increased.”* Goldsborough (2000)

## 1 Introduction

On May 1, 2006, over a million demonstrators filled US TV screens. They were mainly Latinos, who marched peacefully through America’s cities in the hope that Congress would finally introduce legislations to overhaul the country’s immigration policy. A year later, an innovative, bipartisan legislation was proposed by Senators Ted Kennedy and John Kyl, but since it was unveiled, “it has been stoned from all sides ”(The Economist, May 24, 2007). President Bush, referring to this proposal, has proclaimed that “I view this as an historic opportunity for Congress to act, for Congress to replace a system that is not working with one that we believe will work a lot better,”(White House, June 26, 2007). Even though many observers have deemed the status quo unacceptable, no measures have been voted yet.

What determines US immigration policy today? In particular, are political-economy factors important in shaping immigration to the United States? Do these drivers work along sector (industry) lines, that is do sector-specific factors with greater political influence succeed in changing migration policy towards their benefit? In particular, what is the role played by industry-specific interest groups? In this paper, we address these issues by analyzing the impact of political organization by business lobbies and workers’ associations on the structure of migration to the U.S. across sectors between 1998 and 2005. This paper represents, to the best of our knowledge, the first study to provide systematic *empirical* evidence on the political-economy determinants of immigration to the U.S. and, in particular, on the role played by interest groups.

A vast theoretical and empirical literature considers the political-economy determinants of *trade* policy trying to explain the political constraints that work against free trade. In contrast, the literature on the political economy of migration policy and outcomes is very thin and mainly theoretical. So far, in analyzing the determinants of international labor flows, the migration literature has mostly focused on supply factors, i.e. factors which affect the willingness of workers to move across borders. On the other hand, the analysis of the drivers of the demand side of international migration, the most important being migration policies

in developed countries, has not received as much attention.<sup>1</sup> This is in spite of the fact that, as trade restrictions have been drastically reduced, the benefits from the elimination of existing trade barriers are much smaller than the gains that could be achieved by freeing international migration.<sup>2</sup> This gap in the literature is very surprising and can be partly explained by the unavailability of data. The purpose of this paper is to offer a contribution towards filling this gap.

There exists abundant anecdotal evidence which suggests that political-economy factors and, in particular, interest groups play a key role in shaping U.S. immigration. Starting from the very birth of organized labor and for most of their history, unions have been actively engaged in efforts to limit inflows of foreign workers. The enactment of the first legislative measure to systematically limit immigration from a specific country — the Chinese Exclusion Act of 1882 — was the result of the efforts of the newly founded Federation of Organized Trade and Labor Unions. Similarly, the American Federation of Labor (AFL) played an important role in the introduction of the Literacy Test provision in the 1917 Immigration Act, with the explicit intent to “screen and reduce the inflow of unskilled workers in the U.S labor force” (Briggs (1998), page 125). More recently, the AFL-CIO supported measures to reduce illegal immigration, that culminated in the 1986 Immigration Reform and Control Act.

At the same time, complementarities among production factors are fundamental in understanding the behavior of pressure groups. In the past, active subsidization of immigration has been demanded and obtained by business associations in many labor-scarce countries, as has been extensively documented by Timmer and Williamson (1996). The importance of business lobbies is also consistent with more recent anecdotal evidence. For instance, in the aftermath of the 2006 midterm elections, the vice-president of Technet, a lobbying group for technology companies, stressed once again that the main goal of the reforms proposed by her group is the relaxation of migration policy constraints.<sup>3</sup>

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<sup>1</sup>For example, Borjas (1994) points out that “the literature does not yet provide a systematic analysis of the factors that generate the host country demand function for immigrants.” (page 1693). See section 2 for a discussion of the related literature.

<sup>2</sup>A recent World Bank study estimates that the benefits to poor countries of rich countries allowing only a 3 percent rise in their labor force by relaxing migration restrictions is US\$300 billion per year (Pritchett 2006). For similar results see also Hamilton and Whalley (1984).

<sup>3</sup>In particular, the proposed reforms are aimed at “...increasing the number of H1B visas granted annually to foreign workers employed temporarily at U.S. companies; granting employment-based visas to workers whose H1B visas are about to expire but whose application for lawful permanent residency (commonly known as a “green card”) is backlogged; and allowing foreign workers who earn advanced degrees at U.S. colleges and universities to stay and work in the United States once they graduate.” CIO, December 19 2006. Available at <http://www.cio.com/article/27581/>.

The paper starts by developing a simple theoretical model that motivates our empirical analysis. We consider a multi-sector, small open economy in which migration policy is the result of the interaction between organized groups with conflicting interests over international labor movements. In particular, in each sector, there are two complementary factors - labor (which is internationally mobile), and capital (which is fixed). The owners of each factor are modeled as investing resources to influence the determination of policy towards labor mobility. We show that in equilibrium, in a given sector, the amount of protection afforded to labor – i.e., the restrictiveness of the migration policy adopted by the government – depends on both the lobbying expenditures made by organized labor, as well as on the expenditures made by capital (which is its complement). In particular, if labor in a sector spends larger amounts, this will *ceteris paribus* imply higher levels of protection from foreign inflows of workers and, hence, lower the equilibrium number of immigrants. At the same time, if organized business owners spend higher amounts, this will *ceteris paribus* make migration policy in that sector less restrictive and, therefore, increase the number of immigrants.

Next, we evaluate the predictions of the model using a new, U.S. industry-level dataset that we create by combining information on the total number of immigrants and H1B visas with data on the political activities of organized groups, both in favor and against an increase in migration. We take advantage of a novel dataset developed by the Center for Responsive Politics, that allows us to identify lobbying expenditures, by targeted policy area, for the period between 1998 and 2005. We are thus able to use information on business lobbying expenditures that are specifically channeled towards shaping immigration policy. This represents a substantial improvement in the quality of the data relative to the existing international economics literature which has used, instead, political action committees (PAC) contributions. First, PAC contributions represent only a small fraction (10%) of targeted political activity, the remainder being made up by lobbying expenditures. Second, PAC contributions cannot be disaggregated by issue and thus, cannot be easily linked to a particular policy. Finally, in order to proxy for the political organization of anti-migration lobbying groups, we use data on workers' union membership rates across sectors, from the Current Population Survey.

Our findings are consistent with the predictions of the theoretical model. In particular, we show that both pro- and anti-migration interest groups play a statistically significant and economically relevant role in shaping migration across sectors. We find that barriers to migration are – *ceteris paribus* – higher in sectors where labor unions are more important, and lower in those sectors in which business lobbies are more active. Our preferred esti-

mates suggest that a 10% increase in the size of lobbying expenditures by business groups is associated with a 1.8% larger number of immigrants, while a one-percentage-point increase in union density – for example, moving from 10 to 11 percentage points, which amounts to a 10% increase in union membership rate – reduces it by 1.3%. The results are robust to the introduction, in the estimating equation, of a number of industry-level control variables (e.g. output, prices, origin country effects, etc.) and to addressing endogeneity issues with an instrumental-variable estimation strategy.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature. Section 3 presents the theoretical model, while section 4 describes the data on lobbying expenditure, in particular in relation to PAC contributions data. Section 5 provides a description of the other data used in the empirical analysis, while the results of our empirical analysis are reported in section 6. Section 7 concludes the paper.

## 2 Literature

While a large body of theoretical and empirical literature is devoted to understanding the political economy of protection in international trade, there are only few studies that analyze the politics of distortions in international factor movements. Furthermore, while in international trade the protection for sale model of Grossman and Helpman (1994) has emerged as the leading framework to understand the commercial policy formation process, a unified framework to understand migration policy has yet to emerge.<sup>4</sup> In what follows, we first review the existing theoretical literature on the political economy of migration policy, starting with direct democracy models and turning next to settings in which the lobbying activities of organized groups play a key role. Second, we discuss the (scarce) empirical evidence on these issues.

In a seminal contribution, Benhabib (1996) considers the human capital requirements that would be imposed on potential immigrants by an income-maximizing polity under majority voting. Output is modeled using a constant returns to scale production function combining labor with human (or physical) capital. The median voter chooses to admit individuals who supply a set of factors that are complementary to her own endowment. As a result, if the median voter is unskilled, he will choose a policy that sets a lower bound on the skill level of the immigrants, that is only skilled foreigners will be admitted. On the other

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<sup>4</sup>For an overview of this literature, see the surveys by Rodrik (1995), Helpman (1997), and Gawande and Krishna (2003). Facchini (2004) surveys instead the literature on political economy models of trade and factor mobility.

hand, if the median voter is highly educated, he will set an upper bound on the skill level of the immigrants, and thus will be in favor of admitting only individuals with low levels of education. The main shortcoming of this analysis is that the optimal policy does not identify the actual size of the inflows. This is clearly at odds with the policies followed by countries all around the world. In our model the presence of a fixed factor will instead allow us to determine the politically optimal number of immigrants to be admitted.

A different solution to this problem has been proposed by Ortega (2005), who extends Benhabib's model to a dynamic setting to explore the trade off between the short run economic impact of immigration and its medium to long run political effect. In particular, while immigration affects only the labor market in the current period, in the future it also influences the political balance of the destination country, as the descendants of migrants gain the right to vote. As a result, on the one hand, skilled natives prefer an immigration policy that admits unskilled foreign workers since, due to complementarities in production, this policy will increase the skilled wage. On the other, the arrival of unskilled immigrants and the persistency of skill levels across generations can give rise to a situation in which unskilled workers gain the political majority and, therefore, vote for policies that benefit them as a group. Thus, through the political channel, skilled natives prefer an immigration policy that admits skilled foreign workers. The interplay between these two forces allows Ortega to characterize under which conditions an equilibrium migration quota might arise, i.e. to derive a prediction in terms of the size of the migration inflows.<sup>5</sup>

The paper in the migration literature that is most closely related to our work is Facchini and Willmann (2005). Using the menu auction framework pioneered by Bernheim and Whinston (1986), the authors model the determination of policies towards international factor mobility as the result of the interaction between organized groups and an elected politician. Using a one-good multiple factors framework, Facchini and Willmann (2005) find that policies depend on both whether a production factor is represented or not by a lobby and on the degree of substitutability/complementarity between factors. Our model differs from their work in two ways. On the one hand, we explicitly link equilibrium policies to actual lobbying expenditures. Secondly, we consider a multi-sector environment, which enables us to exploit the newly available data *by industry* on lobbying expenditures.<sup>6</sup>

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<sup>5</sup>The median voter approach has also been used in the large literature analyzing the impact of immigration on the recipient country's welfare system. Among the many papers see Mazza and van Winden (1996), Razin, Sadka, and Swagel (2002), Scholten and Thum (1996), Razin and Sadka (1999) and the literature surveyed in the recent volume by Krieger (2005).

<sup>6</sup>Recently, a small theoretical literature has emerged explicitly modeling the role played by organized groups in shaping migration policy in a setting with imperfectly competitive factor markets. Amegashie



The economics literature lacks a systematic empirical analysis of the political-economy factors that affect contemporary migration.<sup>7</sup> While the empirical literature on individual attitudes towards immigrants is closely related to the topic,<sup>8</sup> it does not examine how attitudes translate into migration (policy) outcomes. The only empirical work we could find that indirectly looks at the political-economy determinants of migration policy/outcomes is Hanson and Spilimbergo (2001). This paper focuses on U.S. border enforcement and shows that enforcement softens when sectors using illegal immigrants expand. The authors suggest that “sectors that benefit greatly from lower border enforcement lobby politicians on the issue, while sectors that benefit modestly are less politically active.” The main purpose of this paper is to evaluate this conjecture – that lobbying affects immigration policy – though in the broader context of overall immigration to the United States.

### 3 Theoretical model

Consider a small open economy consisting of  $n + 1$  sectors, populated by a unit mass of individuals. The output of sector zero is the numeraire and is produced using labor according to an identity production function, i.e.  $X_0 = L_0$ . The output of all other sectors is produced using sector specific labor, which we assume to be internationally mobile.<sup>9</sup> The production technology in each sector exhibits diminishing returns to labor, and we denote by  $\omega_i$  the domestic return to labor in sector  $i$ . As usual, diminishing returns can be attributed to the presence of a fixed factor in each sector (Dixit and Norman 1980). We will call this factor capital and denote the aggregate reward to the specific factor employed in sector  $i$  by  $\pi_i$ .

For simplicity, we assume that free trade in goods prevails and we normalize the international price for each commodity, setting it equal to one. Similarly, we assume that the return in the international market to each type of labor is also equal to one. Any difference between the domestic factor return  $\omega_i$  and the international return will be explained by the policies implemented by the domestic government.

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(2004) and Bellettini and Berti Ceroni (2006) are examples of this approach. Our analysis will instead be based on competitive factor markets, where no unemployment occurs in equilibrium.

<sup>7</sup>The literature offers *historical* accounts of the political economy of immigration restrictions between the end of the XIX century and the beginning of the XX century (Goldin 1994, Timmer and Williamson 1996).

<sup>8</sup>See, for example, Scheve and Slaughter (2001), Mayda (2006), O’Rourke and Sinnott (2004), Hanson, Scheve, and Slaughter (2007), Facchini and Mayda (2006).

<sup>9</sup>There is substantial evidence supporting this view. For instance Friedberg (2001), among others, finds a significant positive relationship between source and destination country sector employment for Russian immigrants to Israel in the nineties.

Consumers are characterized by a separable, quasi-linear utility function that takes the following form:

$$u(\mathbf{x}) = x_0 + \sum_{i=1}^n u_i(x_i) \quad (1)$$

An individual maximizing this utility given an income  $I$  will have a demand  $d_i(p_i)$  for each non-numeraire good, while the demand for the numeraire good is given by  $d_0 = I - \sum_{i=1}^n p_i d_i(p_i)$ . The indirect utility of our representative consumer is thus given by  $V = I + \sum_i s_i(p_i)$ , where  $\sum_i s_i(p_i) = \sum_i u_i(d_i(p_i)) - p_i d_i(p_i)$  is the consumer surplus. Notice that, by assuming a small open economy that trades freely in final goods, the consumer surplus of each agent is not going to be affected by changes in factor returns brought about by government policies (i.e., changes in factor returns do not affect goods' prices).

Let  $\ell_i$  denote the total domestic supply of labor of type  $i$ ,  $i \in \{0, 1, \dots, n\}$  available in the economy, while  $L_i(\omega_i)$  is the demand for this factor. Restrictions<sup>10</sup> to the physical relocation of people across countries often take the form of a (binding) quota, accompanied by a tax (i.e., a differential fiscal treatment for immigrants vis a vis natives<sup>11</sup>), resulting in the immigrant retaining part of the surplus associated with the relocation (i.e., the difference between the wage prevailing in the country of destination and the country of origin). As a result, the fiscal revenues associated with the presence of binding quotas  $q_i$  in sectors  $i \in \{1, \dots, n\}$  are equal to

$$T(\mathbf{q}) = \sum_i \gamma_i (\omega_i(q_i) - 1) (L_i(\omega_i(q_i)) - \ell_i) \quad (2)$$

where  $\omega_i(q_i)$  is the wage that prevails in the Host country as a result of the introduction of a binding quota, and  $L_i(\omega(q_i))$  is the corresponding employment level. The parameter  $\gamma_i \in [0, 1]$  represents instead the share of the rent associated with the immigration quota that is captured by the government of the receiving country, while  $(1 - \gamma_i)$  is the fraction of the wage premium  $(\omega_i(q_i) - 1)$  associated with migration that is retained by the relocating migrant.

The fiscal revenues associated with the quota *cum* tax introduced by the government

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<sup>10</sup>Of course, policies could also be used to promote immigration. This has been for instance the case in many labor-scarce economies in the nineteenth century like Brazil and Argentina, as Timmer and Williamson (1996) have pointed out. Within the framework of the model, policies of this type would take the form of immigration subsidies. For simplicity we will not model this type of instruments explicitly as in the recent U.S. experience they have hardly been used.

<sup>11</sup>The US tax code for instance configures a differential treatment between residents and non residents.

are lump sum rebated to all citizens of the country we are considering. Each domestic citizen supplies one unit of labor specific to the numeraire sector and at most one unit of a factor (capital or labor) specific to any non-numeraire sector. Since the size of the domestic population is normalized to one, the welfare of the agents supplying labor in sector  $i$  is equal to

$$V_{iL} = \omega_i(q_i)\ell_i + \alpha_{iL}[1 + T(\mathbf{q}) + \sum_i s_i(p_i)], \quad (3)$$

where the first term is the return to sector  $i$  specific labor,  $\alpha_{iL}$  is the share of the population that owns labor used in the production of output  $i$  and, finally, 1 is the return to labor in the numeraire sector. The welfare of agents supplying the fixed factor (capital) is instead given by

$$V_{iK} = \pi_i(q_i) + \alpha_{iK}[1 + T(\mathbf{q}) + \sum_i s_i(p_i)], \quad (4)$$

where  $\pi_i(q_i)$  is the return to capital in sector  $i$  and  $\alpha_{iK}$  is the share of the population that owns sector  $i$  specific capital. The first best policy in this model is obtained by maximizing the welfare of all natives, i.e.

$$W(\mathbf{q}) = \sum_i (V_{iK} + V_{iL}) \quad (5)$$

and, as can be easily shown, this involves free labor mobility. Intuitively, starting from a scenario with less than free labor mobility, immigration reduces wages, but the loss to domestic workers is less than the gains to domestic capital owners (see Borjas 1995 for a graphical exposition). Hence, it is optimal to admit all foreign workers willing to relocate to the country. In other words, the first-best quota  $q_i^*$  set by the government is such that

$$q_i^* \geq m_i(1, p_i) = L_i(1, p_i) - \ell_i \quad (6)$$

If we bring in directly the quantities of the specific factors in the production structure and let  $k_i$  be the amount of specific factor employed in sector  $i$ , the first best number of migrants  $m_i(1, k_i, p_i)$  is *ceteris paribus* an increasing function of the stock of capital  $k_i$  available in sector  $i$ . Similarly, an increase in the relative price of the good produced in sector  $i$  leads to an increase in the first best number of migrants in the sector. In both cases, the increase in the number of migrants is brought about by an outward shift in the labor demand curve in the sector.

Recent rational choice analyses have pointed out how interest groups can directly participate in the political process in at least two ways. On the one hand, they provide substantive information to policy makers; on the other, at least in the United States, they offer financial incentives: this setting postulates a simple “*quid pro quo*” view of the relationship between an elected politician and the interest group. In the international economics literature the most influential approach, pioneered by Grossman and Helpman (1994), has emphasized the second view and in particular the role of direct campaign contributions in shaping policies.<sup>12</sup> Formally, Grossman and Helpman (1994) have proposed an analytical foundation for a political support function that is based on the politician including pressure groups’ campaign contributions directly in its objective function. While this approach has been very successful and can be thought of as the current paradigm in the endogenous trade literature, an important feature of this model is that “the *existence* of a lobby matters in equilibrium, and not its actual contribution level...” (Eicher and Osang 2002).<sup>13</sup> Furthermore, the Grossman and Helpman (1994) model ignores the important informational channel through which lobbies can also influence policy and the data shows that, if anything, businesses might perceive “informational” lobbying to be at least as important as campaign contributions.<sup>14</sup> To characterize the link between equilibrium policy outcomes and contributions and to allow for a more general role of lobbies, we have decided to use a “protection formation function” approach. According to this view, government policy is simply a function of the expenditures undertaken by pro and anti-immigration groups, and we refrain from spelling out more in detail how interest groups actually affect the political process. Inspired by the pioneering contributions of Findlay and Wellisz (1982), we model measures towards labor mobility in

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<sup>12</sup>More generally, our view is that the reward to a politician for a political favor might take much more complicated forms than direct campaign contributions. For instance, politicians at the end of their career become themselves active lobbyists and, in some cases, are able to earn substantial rewards for carrying out their activities in this role. According to the CRP website, <http://www.opensecrets.org/>, “Lobbying firms were still able to find 129 former members of Congress willing to lobby on everything from postal rates to defense appropriations. Former Rep. Bob Livingston (R-La.), who was once days away from becoming Speaker of the House, drummed up \$1.14 million in business in his first year as an independent lobbyist.”

<sup>13</sup>Technically, one can show that the equilibrium contributions paid by the lobbies to the government are a function of the bargaining power of the agents vis a vis the principal. As Grossman and Helpman (1994) point out, if there is only one lobby interacting with the elected politician, the lobby will capture all the surplus from the relationship, keeping the policy maker at the same welfare level as in a world with free trade and no payments carried out by the lobby. On the other hand, if all sectors are organized, the policy implemented will be free trade - thus no favor will be received by any lobby in the political equilibrium - and the government will capture all the surplus from the relationship (page 845–847). For more on this important issue, see also Goldberg and Maggi (1999) and Dixit, Grossman, and Helpman (1997).

<sup>14</sup>See Milyo, Primo, and Groseclose (2000) and the discussion contained in section 4. For recent contributions theoretical models of informational lobbying, see Bennedsen and Feldman (2006), Dahm and Porteiro (2004) and Lohmann (1995).

each sector as the result of expenditures by a pro-migration lobby (made up by capital owners) and by an anti-migration lobby (made up by workers). In particular, we will carry out our analysis assuming that  $\omega_i(q_i) - 1 = \lambda(E_{iL})^2 - (1 - \lambda)(E_{iK})^2$ , where  $\lambda$  represents the weight of labor in the protection function and  $(1 - \lambda)$  the weight of capital. Notice that the protection function is increasing in the expenditures of organized workers and decreasing with the expenditures undertaken by the owners of capital. Furthermore, we assume increasing returns to lobbying, to reflect the real world observation that larger donors command disproportionately greater influence (Eicher and Osang 2002). The two lobby then play a non-cooperative game where they choose the amount to pay in order to maximize their net welfare, given by

$$\begin{aligned}\Omega_{iK}(q_i) &= V_{iK}(q_i) - E_{iK} \\ \Omega_{iL}(q_i) &= V_{iL}(q_i) - E_{iL}\end{aligned}$$

Assuming for simplicity that  $\gamma_i = 1$  for all  $i$ ,<sup>15</sup> the two first-order conditions are given by

$$\left[ -L_i + \alpha_{iK} \frac{\partial T(\omega(\mathbf{q}))}{\partial \omega_i} \right] \frac{\partial \omega_i}{\partial q_i} \frac{\partial q_i}{\partial E_{iK}} = 1 \quad (7)$$

$$\left[ \ell_i + \alpha_{iL} \frac{\partial T(\omega(\mathbf{q}))}{\partial \omega_i} \right] \frac{\partial \omega_i}{\partial q_i} \frac{\partial q_i}{\partial E_{iL}} = 1 \quad (8)$$

To interpret equations (7) and (8), notice that the first term on the left hand side – in brackets – represents the impact of a change in the return to labor on the welfare of the lobby, and the product of the second and third terms represents the marginal effect of one dollar of expenditure on the return to labor. Thus, the left hand side equals the marginal benefit brought about to the lobby by a dollar of expenditure, and that has to be equal to the marginal cost 1 in the right hand side. Assume that the domestic labor demand is linear, i.e. that it takes the form

$$L_i = L - b\omega_i \quad (9)$$

and that, for simplicity, the ownership of capital in the population is highly concentrated ( $\alpha_{iK} = 0$  for all  $i$ ).<sup>16</sup> Solving simultaneously the system of equations given by (7) and (8),

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<sup>15</sup>Assuming impartial rent capturing, i.e.  $\gamma_i < 1$ , complicates the algebra without changing the main result. For an analysis that includes imperfect capturing, see Facchini and Willmann (2005) and Facchini and Testa (2006).

<sup>16</sup>Formally, we are assuming that the production function in each sector takes the form  $y_i = \frac{L}{b}L_i - \frac{1}{2b}L_i^2$ , where  $L, b > 0$ . The corresponding profit function (return to the specific factor) is then given by  $\pi = \frac{L^2}{2b} + \frac{b}{2}\omega_i^2 - L\omega_i$ .

the quota chosen by the domestic government is equal to

$$q_i = \frac{L - b}{2} - \frac{\ell_i}{2} \left[ \frac{\alpha_{iL} + 1}{\alpha_{iL}} \right] + \frac{1}{2\alpha_{iL}} \left[ \frac{1 - \lambda E_{iK}}{\lambda E_{iL}} \right] \quad (10)$$

Thus, *ceteris paribus*, sectors in which unions are more active and spend larger amounts have higher protection (i.e., smaller quotas) granted to domestic labor, while sectors where capital's expenditures are higher will have less restrictive migration policies, i.e. larger quotas.

How likely is it that the observed number of migrants is the result of the working of the political-economy forces we have modeled? In other words, could it be the case that the actual number of migrants is the result of shocks occurring on the supply side of migration, rather than of the policy actually implemented by the Host country? To answer this question, consider the possibility that, after a restrictive quota has been introduced, a supply shock occurs in the international market, that increases the wage prevailing in the rest of the world from 1 to  $w'$  (Figure 1). This could be, for example, the result of a technological improvement in the source country that lifts the average wage individuals can earn by staying put. Better opportunities in the rest of the world imply that the potential migrant will need to re-evaluate his decision to relocate. In particular, in our simple model he will be moving only if the wage he can earn in the destination country is higher than the wage he can fetch in the rest of the world. Thus, as a result of the upward shift in the international labor supply (from  $L_w^S$  to  $L_w^{S'}$ ) two possible scenarios can arise. They are illustrated in panel (a) and (b) of Figure 1 where  $L^d$  and  $l^S$  are, respectively, the labor demand and the domestic labor supply in the destination country, and  $q$  is the quota set by the government.

Panel (a) describes the case in which the original quota set by the Host country continues to be binding after the shock. In this situation, the wage  $w_q$  determined by the quota is still above the wage prevailing in the rest of the world after the shock, and the number of migrants effectively admitted to the Host country continues to be determined by the Host country's restrictive policy. In panel (b) instead, the shock to the international factor price is substantial and the wage prevailing in the international market is above  $w_q$ , the quota determined wage. As a result, the quota is no longer binding, and the number of migrants actually willing to relocate to the Host country is lower than the one set by the quota and equal to  $L^d(\omega') - l^S$ , while the equilibrium wage prevailing in the destination country is given by  $\omega'$ . In this case, the political economy forces no longer play a role in shaping the volume of migrants, which is instead purely determined by market forces, i.e. by the intersection between domestic labor demand and international labor supply. Therefore, it is important

to point out that, for the supply side considerations to play a role in shaping the equilibrium outcome in this simple model, a very large shock must occur, that makes the policy choice of the host government irrelevant. Whether supply side considerations play a role is thus an empirical matter, which will be addressed in section 6.

## 4 Lobbying expenditures

In the United States, special interest groups can legally influence the policy formation process through two main channels. On the one hand, they can offer campaign finance contributions, while on the other they can carry out lobbying activities. Campaign finance contributions and, in particular, contributions by political action committees (PAC) have been the focus of the literature (see for example Snyder 1990, Goldberg and Maggi 1999, Gawande and Bandyopadhyay 2000). Yet PAC contributions are not the only route by which interest groups' money might be able to influence policy makers and, given the existing limits on the size of PAC contributions (see Milyo, Primo and Groseclose, 2000 for details), it is likely that they are not the most important one. It has been pointed out that lobbying expenditures are of "... an order of magnitude greater than total PAC expenditure" (Milyo, Primo, and Groseclose 2000). Hence, it is surprising that so few empirical papers have looked at the effectiveness of lobbying activities in shaping policy outcomes. To the best of our knowledge, only a recent article by de Figueiredo and Silverman (2006) has taken a close look at this issue.<sup>17</sup>

One important reason for this relative lack of interest is that, while PAC contributions data has been readily available and PACs can be linked to a corporate or industry sponsor, only with the introduction of the Lobbying Disclosure Act of 1995, individuals and organizations have been required to provide a substantial amount of information on their lobbying activities. Starting from 1996, all lobbyists must now file semi-annual reports to the Secretary of the Senate's Office of Public Records (SOPR), listing the name of each client (firm) and the total income they have received from each of them. At the same time, all firms with in-house lobbying departments or hired lobbyists are required to file similar reports stating the dollar amount they have spent.<sup>18</sup> Importantly, legislation requires the disclosure not only

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<sup>17</sup>In particular, the authors find that for a university with representation in the House or Senate appropriations committees, a 10% increase in lobbying yields a 3 to 4% increase in earmark grants obtained by the university.

<sup>18</sup>A firm could be a subsidiary of a parent firm or the parent firm itself if there are no subsidiaries. In the former (latter) case, CRP provides lobbying expenditures data at the subsidiary (parent-firm) level. Notice

of the dollar amounts actually received/spent, but also of the issues for which lobbying is carried out (Table A1 shows a list of 76 issues at least one of which has to be entered by the filer). Finally, the reports must also state which chamber of Congress and which executive departments or agencies were contacted. A sample lobbying report filed by Microsoft for its lobbying activities between January - June, 2005 is shown in Table A2. Thus, the new legislation provides access to a wealth of new information, and the purpose of this paper is to use this information to assess how lobbying influences migration policy and outcomes.

The data on lobbying expenditures is compiled by the Center for Responsive Politics (CRP) in Washington D.C., using the semi-annual lobbying disclosure reports, which are posted in its website. The reports analyzed by CRP cover lobbying activity that took place from 1998 through 2006 (due to unavailability of data on other variables, we restrict the empirical analysis in this paper to the period 1998-2005). Annual lobbying expenditures and incomes (of lobbying firms) are calculated by adding mid-year totals and year-end totals. Whenever there is a discrepancy between data on income and expenditures, CRP uses information from lobbying reports on expenditure. CRP also matches each firm to an industry (Table A3 shows the list of about 90 industries used by CRP). Further details about the data on lobbying expenditures are discussed in the Data Appendix.

We define “overall” or “total” lobbying expenditures in an industry as the sum of lobbying expenditures by all firms in that industry *on any issue*. The lobbying expenditures for immigration-related issues in an industry are calculated using a three-step procedure. First, only those firms are considered which list “immigration” as an issue in their lobbying report. The lobbying dataset comprises an unbalanced panel of a total of about 15,000 firms, out of which about 700 list immigration as an issue in at least one year. Second, the total expenditure of these firms is split *equally* between the issues they lobbied for. Finally, these firm-level expenditures on immigration are aggregated for all firms within that industry.

As shown in Table 1, between 1999 and 2004, interest groups have spent on average about 3.8 billion U.S. dollars per political cycle on targeted political activity, which includes PAC campaign contributions and lobbying expenditures.<sup>19</sup> Lobbying expenditures represent by far the bulk of all interest groups money (close to ninety percent). Therefore, the focus of the

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that different subsidiaries of the same parent firm can be associated with different industries. Finally, the list of firms includes associations of firms.

<sup>19</sup>We follow here the literature that excludes from targeted-political-activity figures “soft money” contributions, which went to parties for general party-building activities not directly related to Federal campaigns; in addition, soft money contributions were not subject to any limits and cannot be associated with any particular interest or issue (see Milyo, Primo and Groseclose, 2000 and Tripathi, Ansolabehere, and Snyder 2002). Soft money contributions have been banned by the 2002 Bipartisan Campaign Reform Act.



international economics literature on the role of PAC contributions in shaping policies might be limiting for at least two reasons. On the one hand, PAC contributions represent only a tiny fraction of interest groups' targeted political activity (10 percent), and any analysis of the role of lobbies in shaping policy based on only these figures could be misleading. Second, linking campaign contributions to particular policy issues is very difficult and often requires some ad-hoc assumption. For instance, in their pioneering work on the estimation of Grossman and Helpman (1994) protection for sale model, Goldberg and Maggi (1999) have used minimum PAC expenditure thresholds to identify whether a sector was organized or not *from the point of view of trade policy determination*. The availability of direct information on the main purposes of the lobbying activity provides a clear advantage in linking lobbying expenditures to actual outcomes.

The importance of doing so is shown in Figure 2 (on average over three election cycles), where on the top panel we have scatter plots of overall lobbying expenditures and PAC contributions, while on the bottom panel we have a plot of lobbying expenditures associated with immigration policy and PAC contributions. We find a very high correlation between total lobbying expenditures and PAC contributions across sectors. The correlations (not shown) are qualitatively similar when we look year-by-year. This result is consistent with the political science literature and may suggest that PAC contributions are integral to groups' lobbying efforts and even buy access. (Tripathi, Ansolabehere, and Snyder 2002). In contrast, the very low correlation between PAC contributions and lobbying expenses for migration policy is striking. It suggests that, if we were to use the data on PAC contributions – assuming they are associated with immigration – we might obtain misleading results; hence the use of our new dataset is fundamental in order to clearly identify how lobbying affects migration policy.

## 5 Other Data

The information on lobbying expenditures is merged with data from the Integrated Public Use Microdata Series - Current Population Survey (IPUMS-CPS) for the years between 1998 and 2005. The IPUMS-CPS data set is based on the March Annual Demographic File and Income Supplement to the Current Population Survey (CPS). It contains individual-level information on a range of socio-economic characteristics, such as: education level; industry; employment status; birthplace; year of immigration; nativity (foreign-born vs. native-born); union membership; wages and salary income.

The analysis is restricted to individuals aged 18-64 who participate in the civilian labor force. Natives are defined as native-born respondents, regardless of whether their parents are native-born or foreign-born. Immigrants are defined as foreign-born individuals, either naturalized or non-citizens. Respondents born abroad who are citizens only by virtue of being born to U.S. parents are excluded from both groups. Following the theoretical model, the workers are differentiated according to their industry of employment. The variable `ind1950` in the IPUMS-CPS is used to obtain information on the industry in which the worker performs or performed – in his most recent job, if unemployed at the time of the survey – his or her primary occupation. This variable uses the 1950 Census Bureau industrial classification system consistently across the years. The list of CPS industries is shown in Table A4.<sup>20</sup>

The IPUMS-CPS data set contains information at the individual level. The following variables are constructed by aggregating the individual-level data to the industry level – total number of immigrants, total number of natives, fraction of union members, fraction of unemployed, and mean weekly earnings. To construct the latter three variables, we restrict the sample to natives. The fraction of natives who are union members in each industry represents our measure of political organization of labor in that industry. The weekly earnings are deflated using the U.S. GDP deflator from the IMF. All the variables are constructed using sampling weights as recommended by the IPUMS-CPS.

We also gather data on other control variables at the industry level. The data on output, price and (inward) foreign direct investment (FDI) at the industry level is from the Bureau of Economic Analysis. Gross output represents the market value of an industry’s production in current dollars, and the price index is based on year 2000 = 100. The data on domestic capital (in millions of current dollars) by industry is from the Annual Capital Expenditures Survey (ACES) carried out by the U.S. Census Bureau. Gross output, prices and FDI are available for all years between 1998 and 2005, but the capital data is not yet available for 2005. The data on output, price, FDI and domestic capital is defined for industries according to the 1997 North American Industrial Classification System (NAICS).

Finally, we collect data on two additional variables to measure push factors for migrants in source countries. First, we construct a measure of shocks in source countries, which is industry specific. We use information on developing country-years in which there was a shock as captured by a war, earthquake, wind storm or drought. The data on wars is from a database compiled by the Heidelberg Institute for International Conflict Research and the

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<sup>20</sup>In the census bureau classification, non-profit membership organizations (or unions) are treated as a separate industry (CPS code = 897). We drop these, since unions are assumed to be anti-migration in the model and are analyzed separately from pro-business lobbies.

World Bank; the data on other shocks is from Ramcharan (2007). In particular, the industry-specific measure of shocks is equal to a weighted average of the shocks in each origin country, with weights equal to the share of immigrants in that industry from each origin country. The second measure of push factors in source countries is the average (monthly) earnings in Mexico which, in the period considered in our sample, is by far the most important country of origin of U.S. immigrants.<sup>21</sup> The data on Mexican earnings is taken from the monthly industrial surveys for 205 manufacturing industries (Encuesta Industrial Mensual 2).

As for the dependent variable of our analysis, in addition to using information on the number of immigrants, we also use data on the number of visas at the industry level, which is a more direct measure of immigration policy. The only type of visas for which information is available at the industry level is the employment-based H1B visas. The data is obtained from the United States Citizenship and Immigration Services (USCIS), which is part of the Department of Homeland Security (DHS). Under the H1B program, “specialty” workers are permitted to be employed for up to three years with the possibility of an extension not exceeding three more years. In order to sponsor a foreign worker under the H1B program, an employer must first file an application with the Department of Labor. Once the Department of Labor certifies the application, U.S. employers file a petition with the USCIS to sponsor the foreign worker for an H1B visa. The data from the USCIS is, thus, based on the total number of petitions which have been approved. The petition may be filed to sponsor the foreign worker for an initial period of H1B employment or to extend the authorized stay. The data on H1B petitions approved at the firm level is aggregated by the USCIS at the industry level according to the NAICS classification.

In order to match the CPS data with that on lobbying expenditures and on the other variables and create an industry-level dataset, we construct separate concordances of (i) CRP, (ii) NAICS and (iii) Encuesta Industrial Mensual 2 classifications to the 1950 Census Bureau industrial classification. Concordances are complicated by the fact that there is not always a one-to-one correspondence between two sectors in any two classifications. In the case where there are, for example, multiple CPS industries corresponding to a given CRP industry, the lobbying expenditures are divided among CPS industries according to the share of natives in each CPS industry. Next, in order to take into account the cases where one CPS industry is matched to many CRP industries (which is often the case), the data is summed and collapsed at the CPS industry level. Similar procedures are adopted for

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<sup>21</sup>In 2004, the 10.5 million Mexican immigrants living in the United States were 31 percent of the U.S. foreign-born population (Hanson 2006).

matching the data on output, price, FDI, domestic capital and the number of H1B visas to the CPS dataset. Using the number of immigrants as the dependent variable, our dataset covers about 130 3-digit industries. The sample with the number of visas is slightly smaller and includes approximately 120 observations.

## 5.1 Summary statistics

Figure 3 presents the evolution of real lobbying expenditures over time. The nominal expenditures are deflated using the U.S. GDP deflator constructed by the IMF. The left scale shows the overall expenditures and the right scale shows the expenditures for issues related to immigration. While the overall real lobbying expenditure has grown by over 40 percent from US\$1.4 bn to US\$2.1 bn between 1998 and 2005, the expenditure for immigration-related issues has grown by only about 10 percent from US\$19 to 21 mn over the same period. The share of immigration in overall lobbying expenditures has been roughly constant at about 1%. In comparison, expenditures on trade comprise 4-5% of overall lobbying expenditures.

On average, an industry spent US\$16 mn in 1998 on lobbying activities, an amount which increased to US\$23 mn in 2005. For immigration, the average expenditure by an industry was approximately constant at US\$0.3 mn throughout the period (Table 2).

Figure 4 shows the top 10 industries according to expenditures on lobbying for immigration in 2005, according to the CRP industry classification. Hospital & Nursing Homes and Computers/Internet are the top spenders on lobbying for immigration. Among the top 10 spenders we also find Agricultural Services/Products and Education. Figure 5 shows instead the top 10 sectors (by the Census Bureau classification) with the highest number of immigrants in 2005. Construction, Eating and Drinking Places and Business Services are, not surprisingly, at the top of the list, with a stock of 2.5, 1.7 and 1.2 million immigrants respectively in 2005. Medical and Other Health Services, Hospitals and Agriculture also appear at the top of the list. It is interesting to note that at least four industries with very high expenditures on immigration (agriculture, education, business services and hospitals) are also among those with the highest number of immigrants.

Before proceeding to the regression analysis, it is instructive to document bivariate relationships between key variables using simple scatter plots. Figure 6 suggests a positive correlation between lobbying expenditures for immigration and the number of immigrants (both variables are, in this graph, averaged across the years 1998-2005). We find very similar evidence year by year, between 1998 and 2005 (not shown). Thus, these basic scatter plots suggest that sectors with larger lobbying expenditures on immigration are characterized by a

higher number of immigrants. The relationship between union membership rates and number of immigrants is instead negative, that is sectors with higher union densities have fewer immigrants, both on average over the period (Figure 7) and year by year, between 1998 and 2005 (not shown).

Finally, the cross-sectional relationship between the lobbying expenditures / union membership rates and the number of H1B visas approved by the Department of Homeland Security (DHS) are shown in Figures 8 and 9. The simple correlations indicate that industries with higher lobbying expenditures on immigration have a larger number of visas approved by the DHS. In addition, industries with lower union membership rates have a larger number of visas approved by the DHS. Of course, the scatter plots are only suggestive, and the purpose of the remainder of the paper is to examine the robustness of the simple correlations.

## 6 Empirical analysis

The model in Section 3 shows that barriers to migration are a function of the lobbying expenditures of the two factors of production in each industry – labor and capital. *Ceteris paribus*, in sectors where labor is more politically organized and therefore spends more in lobbying activity, native workers receive higher protection, that is the number of immigrants is lower. However, *ceteris paribus*, in sectors where capital is more politically active and therefore invests more in lobbying expenditures, native workers receive lower protection, that is the number of immigrants is higher. We bring the theoretical predictions of the model to the data using a reduced-form approach. In particular, we make use of the rich dataset on business lobbying expenditures and union membership rates to ask the following question: are sectors with a higher degree of organization of labor (capital) associated with lower (higher) immigration?

The theoretical model is based on a short-run view of the economy in which factors are sector-specific or, in other words, labor markets are segmented by industry. Therefore, in order to evaluate the predictions of the model, we investigate the variation in the number of immigrants *across industries*. In addition, the theoretical model assumes that migration policy is set at the sectoral level. While we recognize that U.S. policy is not characterized by explicit migration quotas by industry,<sup>22</sup> we hypothesize that *implicitly* policymakers set

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<sup>22</sup>By quotas we mean the number of immigrants (or visas) that policymakers set *ex ante*. Quotas are published at an aggregate level. For example, the US Immigration Act of 1990 set a flexible cap for US legal admissions at 675,000 individuals of which 480,000 are to be family based, 140,000 are to be employment based, and 55,000 are to be diversity immigrants. (Hanson, 2006). There are also ex-ante caps for some of

migration policy along sectoral lines. This is consistent with anecdotal evidence. For example, visas for highly skilled workers – i.e. those following for example in the H1B or L1 categories – are allocated to specific firms and, therefore, are industry-specific. Whether the above two assumptions are true or not is what we test in the empirical analysis. Finally, since the theoretical model – which is static – focuses on cross-industry differences in protection rates of workers, we use data which is averaged over the eight years between 1998 and 2005, that is we only exploit the cross-sector variation in the data. This empirical strategy is consistent with the fact that most of the variation in lobbying expenditures is across sectors rather than over time.

The predictions of the theoretical model pertain to migration restrictions. However, as the dependent variable of our empirical analysis, we use the (log) number of immigrants to the U.S. by industry, i.e. an equilibrium outcome. Obviously, this is not the most direct measure of migration restrictions. Ideally, we should use a policy measure – such as migration quotas – which is independent of supply-side factors. There are three key reasons why we use the number of immigrants rather than a direct measure of immigration restrictions. First, there is substantial anecdotal evidence that quotas are binding in the United States and this implies that changes in the number of migrants coincide with policy changes. For instance, it is well known that the H1B visa quotas are regularly filled within the first few months of each calendar year. Similarly, to obtain a permanent resident permit, the standard waiting time is more than 3 years even if the candidate fulfills all the necessary requirements. The second important advantage of using the (log) number of immigrants as our dependent variable is that this is a comprehensive measure of the number of immigrants who enter the U.S., either legally or illegally, temporarily or permanently. Thus, the total number of immigrants to the U.S. is a reasonable proxy for a broader migration-policy variable. Finally, as mentioned above, migration quotas which are publicly announced by policy makers are not at a disaggregate level, hence we do not have data on a direct policy measure at the industry level.

The two key explanatory variables of our empirical analysis are the  $\log(\textit{lobbying exp})$ , which measures the extent of political organization of capital and the  $\textit{union membership rate}$ , which measures the extent of political organization of labor. Thus, while we have direct information on the lobbying expenditures by capital owners (identified by firms in the lobbying dataset), our measure of lobbying expenditures by workers is only indirect. In

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the visa letters. The annual ceiling on H1B petitions valid for initial employment was increased from 65,000 to 115,000 in fiscal years 1999 and 2000, and to 195,000 in 2001, 2002 and 2003. Since 2004, the ceiling has been reduced to 65,000.

particular, we assume that in sectors where the union membership rate is higher, the free-rider problem associated with lobbying is less pronounced. That is, in those sectors there exist fewer non-union members (free-riders) who benefit from policies brought about by the lobbying activity and, therefore, the contributions by labor associations and worker unions tend to be higher. The remainder of the section presents our results.

## 6.1 Main results

Table 3 presents the main results of the empirical analysis and provides evidence which is consistent with the theoretical predictions. In Table 3, as well as in all the other tables, standard errors are *robust* to account for heteroscedasticity. In regressions (1)-(2), we find a positive and significant (at the 1% level) coefficient on  $\log(\textit{lobbying exp})$ , and a negative and significant (at the 1% level) coefficient on *union membership rate*. These results suggest that barriers to migration are lower in those sectors in which business lobbies are more active, and higher in sectors where labor unions are more important. The two key variables of the empirical analysis explain 35% of the variation in the number of immigrants across sectors (regression (2)). In fact,  $\log(\textit{lobbying exp})$  alone explains 30% of the variation. The magnitude of the coefficients (0.428 for  $\log(\textit{lobbying exp})$  and  $-3.207$  for *union membership rate* in regression (2)) implies that a 10% increase in the size of the industry's lobbying expenditures raises the number of immigrants to that industry by 4.3%, while a one-percentage-point increase in union density – for example, moving from 10 to 11 percentage points, which amounts to a 10% increase in union membership rate – reduces it by 3.2%. We test the robustness of these results in columns (3)-(10) where we introduce a number of industry-level control variables.

Our first concern is that our estimates might be driven by differences in sizes of sectors: bigger sectors both employ a higher number of workers – both native and immigrant ones – and can spend larger sums on lobbying activity, which would create an upward bias in our estimate of the coefficient on  $\log(\textit{lobbying exp})$ . Therefore, in regression (3), we control for the value of output produced in each industry, which positively and significantly affects the number of immigrants. The lower estimated coefficient on  $\log(\textit{lobbying exp})$ , after introducing the control variable  $\log(\textit{output})$ , is indeed consistent with the hypothesized positive omitted variable bias.<sup>23</sup>

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<sup>23</sup>In addition, we obtain very similar results when we control for the number of natives (see Table A5). We do not control for the number of natives in the basic specification due to multicollinearity issues (the correlation between output and number of natives is about 0.8 in the data).

In column (4), we introduce the industry-specific unemployment rate, which is likely to be correlated with both the demand for foreign workers in that sector and the union membership rate. The sign of the correlation between union density and the industry-specific unemployment rate is a priori ambiguous. On the one hand, in sectors with higher unemployment rates, workers feel a bigger threat of being fired, which increases their incentive to join unions. On the other, in sectors with higher unemployment rates, the bargaining power of unions is lower, which implies that union densities are lower as well. A possible interpretation of the positive coefficient on *unemployment rate* is that in sectors where labor market regulations play a bigger role and, therefore, unemployment rates are higher (Scarpetta (1996) and Elmeskov, Martin, and Scarpetta (2005)), firms may prefer to hire immigrants - who can be more easily fired, have lower reservation wages, do not need to be paid the minimum wage, etc.

Regression (5) controls for the price of the good produced in a sector. We expect a positive price shock in an industry to increase the marginal revenue product of labor, i.e. to raise the overall demand for workers in that sector (and hence the number of immigrants). In addition, in regressions (6) and (7) we control for the value of capital (domestic and foreign) used in each industry: since capital and labor are complements, sectors which use more capital should also be characterized by higher overall demand for workers and, hence, a larger number of immigrants. The results suggest that, output prices have an insignificant effect on immigration in most of the specifications. Furthermore, we find that while domestic capital and immigrant labor are complements, the same is not true for foreign capital. Sectors with higher FDI are associated with a lower number of immigrants. Our main findings survive all these robustness checks in columns (3) to (7). The magnitude of the estimated coefficients on lobbying expenditure and union membership rates are only marginally affected by the introduction of the control variables: they remain of the same sign and significance levels.

As mentioned above, we use the number of immigrants as a proxy for migration restrictions. This is justified by the fact that migration quotas are likely to be binding, for the most part, in the United States. However, to address the possibility that this assumption does not hold, we test the robustness of our results by including variables that affect the willingness of migrants to move and, therefore, the number of immigrants if migration quotas are not binding. First, in regression (8), we control for negative shocks – such as wars, earthquakes, windstorms or droughts – taking place in the origin countries of immigrants working in any given industry (*shocks*). The positive coefficient on *shocks* is as expected. Shocks create a push factor and increase the willingness of migrants to leave their origin countries. Sectors



with larger shocks supply a greater number of immigrants. In column (9), we account for pull factors by including the (log) U.S. lagged wages. Finally, in regression (10), we also control for push factors in the form of (log) Mexican wages.<sup>24</sup> Due to data unavailability, the inclusion of (log) Mexican wages reduces substantially the number of observations. Once again, we find that our results are robust to the introduction of these additional control variables. Regression (9) represents our preferred specification.

Although we have checked the robustness of our results to the introduction of a number of control variables, we are still concerned that our estimates might be driven by endogeneity and reverse causality. It is especially important to address endogeneity of our two key variables, as lobbying expenditures by capital and labor are endogenous in the theoretical model itself. It is not clear *ex ante* how reverse causality might affect the estimates. On the one hand, sectors with higher numbers of immigrants may already be close to their optimal levels, which would decrease their incentive to invest in lobbying expenditures. In this case, our estimates would be biased towards zero. On the other, sectors with higher numbers of immigrants might find it necessary to increase their lobbying activity in order to solve problems related to the large pool of immigrants they hire (such problems might include access of immigrant workers and their children to education, health, etc.). In this case, the estimate on lobbying expenditures would be biased upwards, i.e the true effect would be lower than the estimated effect. Similarly, it is possible that sectors with higher number of immigrants have either higher or lower union densities. The first case is possible if higher number of immigrants in a sector increase the threat felt by native workers in labor markets and, therefore, their incentive to join unions. On the other hand, in sectors with larger pools of immigrants, the bargaining power of unions might be lower, which means that union densities will be lower as well.

We address reverse causality and other sources of endogeneity by using an instrumental-variable estimation strategy. We use two instruments for  $\log(\textit{lobbying exp})$ . First, we construct an industry-level measure of lobbying expenditures by firms in each sector which do *not* list migration as an issue in their lobbying reports. Out of a total of about 15,000 firms in the lobbying dataset, the majority (95 percent) does not list immigration as an issue. We assume that these firms' lobbying expenditures on issues other than immigration

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<sup>24</sup>Both US and Mexican wages also affect the (economic) demand for workers in the destination and origin countries, which is relevant for the interpretation of their coefficients. The negative coefficient on the  $\log(\textit{lag US wages})$  is consistent with a demand-side interpretation rather than a supply-side one. In other words, industries in the U.S. where wages are higher (lower) demand fewer (more) immigrants. On the other hand, the estimated positive coefficient on Mexican wages (although insignificant) could mean that sectors with higher Mexican wages have lower demand for Mexican workers, and hence supply more immigrants.

do not affect migration directly (exclusion restriction). At the same time, it is likely that industry-level factors affect lobbying expenditures of all firms in a given sector, no matter what issues firms are interested in. For example, lobbying activity is in general determined by factors like the number of firms, the size distribution of firms within a sector, geographic concentration, etc. Therefore, we expect this instrument to be correlated with the lobbying expenditures of firms who lobby for migration (first stage).

As an additional instrument for lobbying expenditures on migration, we use a variable that measures the concentration of firms in a sector. In doing so, we follow the trade literature which uses traditional political economy variables to instrument for campaign contributions (Goldberg and Maggi 1999 and Gawande and Bandyopadhyay 2000). In particular, our measure of concentration is the variance of firm size (proxied by annual payroll) within a sector. The idea is that the more concentrated a sector is (the higher the variance in firms size), the easier it is for firms in that industry to overcome the collective action problem in forming a lobby, therefore the larger the lobbying expenditures (Olson 1965, Bombardini 2005). The data on annual payroll of firms is obtained from the US Census, County Business Patterns (<http://www.census.gov/csd/susb/defterm.html>).

Next, our instrument for the *union membership rate* uses data from the United Kingdom on union densities across industries. According to the literature, union membership rates are positively correlated across a wide set of industrialized countries (see Riley 1997, Blanchflower 2007) (first stage). Industries which exhibit a level of work standardization, and a clear distinction between managerial and operative tasks facilitate unionization, in that these working conditions lead to inter-group homogeneity as well as distinct group boundaries. Historical roots of collective bargaining in sectors such as manufacturing further strengthen the recruitment position of unions. The characteristics of union members show many similarities across countries, which are unlikely to be explained by country-specific institutional features. In addition, it is plausible to assume that UK union membership rates do not directly affect the number of immigrants in the U.S. (exclusion restriction).

The very high values of the two first-stage F statistics for the excluded instruments at the end of Table 4a suggest that the instruments are strong. In regression (1), Table 4a, in the first stage of  $\log(\textit{lobbying exp})$ , the F value of the excluded instruments is approximately equal to 133; in the first stage of *union membership rate*, the F value of the excluded instruments is approximately equal to 28. In Table 4b, the first stage regressions suggest that lobbying expenditures on immigration are positively and significantly correlated with expenditures on other issues and with the degree of concentration in the sector. In addi-

tion, union membership rates in the US are positively and significantly correlated with the corresponding rates in the UK. The Hansen's test for overidentifying restrictions is satisfied at the 1 percent significance level (i.e., we cannot reject the null hypothesis of zero correlation between the estimated residuals and the excluded instruments). In addition, and most importantly, the results in Table 4a from the IV regressions, with and without controls, confirm that the number of immigrants is higher in sectors where business lobbies are more active, and lower in sectors where labor unions are more important. The magnitude of the coefficients on both lobbying expenditures and union membership rates increase relative to Table 3 (columns (2) and (9)). The difference in the magnitudes possibly provide evidence for a negative correlation between lobbying expenditures and the unobserved component of immigration (i.e., sectors with a higher number of immigrants contribute less possibly because they are closer to their ideal number of immigrants); and also a positive correlation between union membership rates and the unobserved component of immigration (i.e., in sectors with a higher number of immigrants, natives feel a stronger threat, which increases their incentives to join unions). However, the difference between the magnitudes of the IV and OLS could also be explained by measurement error in the key explanatory variables leading to attenuation bias in the estimates.

To the extent that we do not have a clean natural experiment to identify the effects of lobbying on immigration, the instrumental variables' estimates should be interpreted with appropriate caution. For example, it might be the case that lobbying expenditures on policy issues other than immigration draw resources and policymakers' attention away from migration and, thus, directly influence (reduce) the number of immigrants. However, in that case, the IV estimate would be biased towards zero and, hence, represent a lower bound on the true effect.

To summarize, our estimates suggest that a 10% increase in the size of lobbying expenditures by business groups is associated with a 1 – 5 percent larger number of immigrants, while a one-percentage point increase in the union membership rate is associated with a 1 - 7 percent lower number of immigrants. The results are robust to the introduction, in the estimating equation, of a number of industry-level control variables and to using an instrumental variable strategy to address the endogeneity of lobbying expenditures and union membership rates.

## 6.2 Additional results

We next investigate how our previous results change when we consider alternative measures of migration. In Table 5, as the dependent variable, we use the (log) number of approved H1B petitions in the United States, averaged between 2001 and 2005. This is an important extension, as it can be argued that the number of H1B visas is more closely under the control of the policy maker than the actual number of migrants. In addition, while our theoretical model makes predictions in terms of the *stock* of immigrants – which is how we measure migration in Table 3 – it is important to verify the robustness of our results to using a *flow* measure of the number of immigrants, which is what the H1B measure is. For this same reason, in Table 6 we restrict the attention to recent immigrants who came to the United States only after 1990. Our estimates in Tables 5 and 6 are indeed remarkably similar to what we previously found in Table 3, and show that the results are robust to using stock or flow measures of immigration. The estimates in Table 5 (regression 2) suggest that sectors with 10 percent higher lobbying expenditures by business groups is associated with a 2.4 percent larger number of H1B visas approved by the DHS; while a one percentage point increase in the union membership rate is associated with 4 percent lower number of visas.

In Table 7, we explore whether we would have obtained similar results using an alternative measure of political organization of capital, namely campaign contributions from Political Action Committees (PAC). Data on PAC campaign contributions has been used extensively in the international economics literature, but does not allow us to disentangle the different purposes for which a contribution is made (see for example, Goldberg and Maggi 1999, and Gawande and Bandyopadhyay 2000). When we use this proxy for the political organization of capital, we find the estimates of the coefficient on  $\log(\text{campaign contributions})$  to be either marginally or not significant at conventional levels (see first two columns in Table 7). In addition, campaign contributions explain a very small fraction of the variation in number of immigrants across sectors (about 3 percent). The data on campaign contributions by PACs is compiled by two-year election cycles. For comparison, we also look at the impact of  $\log(\text{lobbying exp})$  using data on lobbying expenditures which is aggregated over two-year periods, covering the three election cycles 1999-2000, 2001-02 and 2003-04. The coefficient on  $\log(\text{lobbying exp})$  is very similar to what we found in Table 3. In addition, the last two columns in Table 7 – where we introduce both measures of political organization of capital – clearly show that it is lobbying expenditures on migration, rather than campaign contributions, that positively affect the number of immigrants. The results are striking and cast doubt on the use of PAC campaign contributions data as an appropriate indicator to

examine the effect on policy outcomes.

In Table 8 we investigate whether the estimated effects of political organization of labor and capital differ depending on the skill-intensity of the sectors. Is it the case that lobbying is a more relevant channel to attract immigrants in sectors which are intensive in skilled workers? In addition, is it true that lobbying is a more relevant channel to attract skilled immigrants? In order to answer these questions, first we divide sectors into unskilled-intensive and skilled-intensive ones, based on whether the share of skilled workers is lower or higher than the median across sectors (skilled workers are defined as having a college graduate degree or higher), and run the regressions separately for the two groups. We do not find significant differences in terms of the impact of  $\log(\text{lobbying exp})$ . On the other hand, our estimates show that unions have a more negative impact on the number of immigrants in skilled-intensive sectors. This could possibly be due to the fact that unions are very powerful in skill-intensive sectors (lawyers, doctors, etc.<sup>25</sup>).<sup>26</sup> Finally, instead of splitting the sectors into skilled and unskilled-intensive ones, we divide the dependent variable, i.e. the total number of immigrants, into skilled and unskilled (skilled defined as having at least a college graduate degree) (Table A8). Again, although the impact of lobbying expenditures is similar for unskilled and skilled migration, the magnitude of the effect of unionization on immigration is higher for skilled migrants. In other words, unions are relatively more effective in deterring skilled immigration. In fact, the difference in the effectiveness of unions in deterring immigration is more prominent across unskilled vs. skilled intensive sectors, rather than across different types of migrants within the same sector (Table A9).

Our last set of results appears in Table 9. In all previous tables, we have used union membership rates as an indirect measure of lobbying expenditures by workers. However, this measure does not allow us to compare the magnitude of the coefficients on the two types of lobbying expenditures (labor vs. capital). To get around this problem, in Table 9 we use *total* lobbying expenditures by unions in the economy (which are available in the CRP data set)<sup>27</sup> and divide them by the number of sectors. Next, we scale up or down this average using the union membership rate in each sector relative to the average in the economy. The underlying assumption is that the higher the union membership rate in a sector, the less

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<sup>25</sup>See Glied and Sarkar (2005). For a discussion of the determinants of a union's bargaining power, see Boeri, Brugiavini, and Calmfors (2001).

<sup>26</sup>We find similar results when we use an alternative definition of skilled-intensive sectors based on average years of schooling (Table A6). The results (not shown) are similar when we use the mean, rather than the median, to create the cut-off for skilled-intensive sectors. In addition, the results of Table 3 survive when we drop one of the most unskilled sectors, the agricultural sector (see Table A7).

<sup>27</sup>CRP does not provide information on lobbying expenditures by unions at the sectoral level.

pronounced is the free-riding problem associated with lobbying and, therefore, the larger are the lobbying expenditures by unions. We find that both  $\log(\textit{capital lobbying exp})$  and  $\log(\textit{labor lobbying exp})$  are of the expected sign and significant at conventional levels. In addition, the magnitude of the estimates on the two key variables are not statistically different (p-value = 0.89 in regression (2)), which suggests capital and labor lobbying expenditures have opposite effects on immigration which are of similar magnitudes.

### 6.3 Robustness checks

We confirm the findings in Table 3 in a series of robustness checks in the Appendix tables. We estimate the same specifications as in Table 3: using pooled – as opposed to averaged – data (including year fixed effects) (see Table A10)<sup>28</sup>; constraining the sample of observations to be the same across regressions (see Table A11); including observations corresponding to sectors with zero lobbying expenditures (see Table A12)<sup>29</sup>; using data on the number of immigrants from the 2000 U.S. Census (Table A13). We find broadly similar evidence when we run the regressions year by year in Table A14 (though the coefficient on *union membership rate* is not always significant, possibly due to fewer observations and to the fact that some unions in the U.S. reversed their position towards immigration around 2000).<sup>30</sup>

Finally, we also use alternative measures of lobbying expenditures on immigration. As discussed above, in Table 3  $\log(\textit{lobbying exp})$  is calculated by dividing the total expenditure of a firm – that lists migration as an issue – by the total number of issues listed in the lobbying report (firm expenditures are then summed for each sector). In Table A15, instead, we consider firms which list “immigration” as an issue in their reports and take their total (as opposed to split) lobbying expenditure. Thus, this alternative measure represents an upper bound of the true lobbying expenditures on immigration. The estimated coefficient on lobbying expenditures is very similar and not statistically different from the basic estimates in Table 3.

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<sup>28</sup>We also estimate the pooled regressions including industry (and year) fixed effects. The coefficient on *log(lobbying expenditure)* remains positive and significant while the coefficient on *union membership rate* is not significant. This is not surprising given that, in the fixed-effects specification, we are only exploiting the within industry time variation and, over time, some unions in the U.S. reversed their position towards immigration (Briggs 2001).

<sup>29</sup>The log specification in Table 3 drops the sectors with zero contributions. However, this is not a serious issue as there are only 5 such sectors. In Table A12, the zero lobbying expenditures are replaced by the minimum value of lobbying expenditures in the sample.

<sup>30</sup>In addition, the data best fits a log specification (as opposed to one in levels). Also, there is not much evidence of non-linear effects in  $\lg(\textit{lobbying exp})$  and *union membership rate* (results not shown).

## 7 Conclusions

To the best of our knowledge, this paper represents the first study that attempts to provide systematic empirical evidence on the political-economy determinants of US immigration, focusing in particular on the role played by interest groups. To this end, we have started our analysis developing a simple model that links migration policy outcomes to the intensity of the lobbying activities carried out by pro and anti-immigration pressure groups. We have then evaluated the predictions of the model using a new, industry-level dataset on lobbying expenditures by organized groups, combining it with information on the number of immigrants and visas and on union membership rates. The analysis provides strong evidence that both pro- and anti-immigration interest groups play a statistically significant and economically relevant role in shaping migration across sectors. Barriers to migration are higher in sectors where labor unions are more important, and lower in those sectors in which business lobbies are more active. The estimates suggest that a 10% increase in the size of lobbying expenditures by business groups is associated with a 1 – 5 percent larger number of immigrants, while a one-percentage point increase in the union membership rate (assumed to be a proxy for lobbying expenditures by labor groups) is associated with a 1 - 7 percent lower number of immigrants. The results are robust to the introduction, in the estimating equation, of a number of industry-level control variables and to using an instrumental variable strategy to address the endogeneity of lobbying expenditures and union membership rates. The empirical results suggest that, although the US government does not explicitly set migration quotas at a sectoral level, there does exist an implicit allocation of immigrants across sectors. Moreover, political-economy forces play a quantitatively important role in determining the cross-sectoral allocation of immigrants.

This paper focuses largely on the determinants of overall immigration (or skilled vs unskilled immigration) across sectors. The analysis is based mainly on data from the CPS (or the US Census), which defines an immigrant only by the country of birth. Further empirical work could explore other sources of data to analyze the variation in alternative measures of immigration – legal vs illegal, temporary vs permanent, etc. In addition, the paper could also be extended to examine the variation in immigration policy and outcomes along occupation and geographical dimensions (for example, across U.S. states).

Finally, firm-level data on lobbying expenditures can be exploited to study the importance of political-economy forces in the determination of policies other than immigration – e.g. trade, environment, taxes etc.

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**Table 1. Targeted Political Activity**  
**(in millions of US dollars)**

Election cycle	1999-2000	2001-02	2003-04
Contributions from PACs	326	348	461
Overall lobbying exp	2949	3330	4048
<i>Of which</i> exp for immigration	32	24	33
Total targeted political activity	3275	3678	4509

Source. Center for Responsive Politics

**Table 2. Average (per industry) Real Lobbying Expenditures Over Time**  
**(in millions of US dollars)**

	Overall	Immigration Issue
1998	16.0	0.3
1999	16.1	0.3
2000	17.1	0.3
2001	17.1	0.2
2002	18.7	0.2
2003	20.5	0.2
2004	21.2	0.3
2005	22.8	0.3

Source. Center for Responsive Politics

**Table 3. Estimated Effect of Politics on Migration, OLS**

Dependent variable	log (number of immigrants)									
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
log (lobbying exp)	0.399*** [0.047]	0.428*** [0.049]	0.192*** [0.063]	0.194*** [0.059]	0.188*** [0.060]	0.132** [0.059]	0.154*** [0.058]	0.138** [0.058]	0.175*** [0.051]	0.231** [0.108]
union membership rate		-3.207*** [0.794]	-3.058*** [0.754]	-2.579*** [0.771]	-2.312*** [0.703]	-2.582*** [0.710]	-2.259*** [0.706]	-2.497*** [0.726]	-1.294** [0.631]	-2.034** [0.941]
lg (output)			0.589*** [0.094]	0.653*** [0.091]	0.667*** [0.091]	0.492*** [0.118]	0.536*** [0.112]	0.510*** [0.107]	0.441*** [0.096]	0.126 [0.130]
unemployment rate				11.758*** [4.346]	12.030*** [4.285]	12.337*** [3.861]	12.962*** [3.851]	10.346*** [3.819]	5.018 [3.996]	10.982** [4.262]
log (price)					-3.029 [2.856]	-3.933 [2.580]	-3.639 [2.525]	-3.617 [2.332]	-3.643* [1.978]	-7.391*** [1.403]
log (capital)						0.273** [0.107]	0.323*** [0.107]	0.343*** [0.103]	0.305*** [0.092]	0.719*** [0.182]
log (FDI)							-0.130*** [0.045]	-0.138*** [0.044]	-0.030 [0.042]	-0.173** [0.073]
shocks								3.993** [1.963]	3.322* [1.716]	-0.116 [1.679]
log (lag US wages)									-10.119*** [2.465]	-13.003*** [3.949]
log (lag Mexican wages)										0.151 [0.120]
N	137	136	136	136	136	132	130	130	130	53
R-squared	0.297	0.350	0.517	0.550	0.556	0.602	0.626	0.642	0.702	0.761

All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table 4a. Estimated Effect of Politics on Migration,  
Instrumental Variables**

Dependent variable	log (number of immigrants)	
	[1]	[2]
log (lobbying exp)	0.526*** [0.057]	0.189*** [0.055]
union membership rate	-6.685*** [1.709]	-2.864** [1.246]
lg (output)		0.373*** [0.118]
unemployment rate		5.489 [3.899]
log (price)		-3.358* [1.882]
log (capital)		0.458*** [0.104]
log (FDI)		-0.07 [0.045]
shocks		4.152** [1.740]
log (lag US wages)		-9.874*** [2.199]
First-stage F for lobbying exp	133	70
First-stage F for union membership	28	13
Hansen's J-statistic (p-value)	0.677	0.842
N	117	114
R-squared	0.336	0.761

Lobbying expenditures on issues other than immigration, variance of firm size and union membership rates in the UK are used as instruments for the two endogenous variables -- lobbying expenditures and union membership rates. All data are averaged over 1998-2004. Standard errors are corrected for heteroskedasticity and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table 4b. Estimated Effect of Politics on Migration,  
Instrumental Variables -- First Stage**

Dependent variable	log (lobbying exp on immigration)		union membership rate in the US	
	[1]	[2]	[3]	[4]
log (lobbying exp on other issues)	0.956*** [0.049]	0.897*** [0.063]	-0.001 [0.004]	0.001 [0.005]
log (variance of firm size)	0.08* [0.049]	0.01 [0.056]	0.009* [0.005]	0.003 [0.006]
union membership rate in the UK	-1.425** [0.697]	-0.595 [0.725]	0.495*** [0.096]	0.461*** [0.103]
lg (output)		0.149 [0.136]		-0.017* [0.010]
unemployment rate		-3.856 [4.353]		-0.29 [0.314]
log (price)		-3.483** [1.632]		-0.059 [0.243]
log (capital)		-0.08 [0.110]		0.012 [0.009]
log (FDI)		-0.002 [0.056]		0.002 [0.005]
shocks		3.792** [1.768]		0.386** [0.158]
log (lag US wages)		2.674 [2.275]		0.26 [0.179]
N	117	114	122	118
R-squared	0.806	0.825	0.544	0.587

This table shows the first stage regression corresponding to Table 4a. All data are averaged over 1998-2004. Standard errors are corrected for heteroskedasticity and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table 5. Estimated Effect of Politics on Migration,  
H1B Visas**

Dependent variable	log (number of H1B visas)	
	[1]	[2]
log (lobbying exp)	0.458*** [0.057]	0.242*** [0.069]
union membership rate	-2.903** [1.269]	-4.034*** [1.486]
lg (output)		0.143 [0.164]
unemployment rate		1.535 [3.692]
log (price)		-0.155 [2.266]
log (capital)		0.306** [0.131]
log (FDI)		0.098 [0.075]
shocks		-3.59 [2.774]
log (lag US wages)		6.752* [3.426]
N	126	120
R-squared	0.317	0.497

All data are averaged over 2001-2005. Standard errors are corrected for heteroskedasticity and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.



**Table 6. Estimated Effect of Politics on Migration,  
New Immigrants**

Dependent variable →	log (number of new immigrants)	
	[1]	[2]
log (lobbying exp)	0.384*** [0.043]	0.164*** [0.043]
union membership rate	-3.491*** [0.699]	-1.678*** [0.566]
lg (output)		0.446*** [0.082]
unemployment rate		9.022** [3.620]
log (price)		-1.809 [1.923]
log (capital)		0.269*** [0.081]
log (FDI)		-0.046 [0.042]
shocks		1.925 [1.556]
log (lag US wages)		-8.233*** [2.383]
N	136	130
R-squared	0.346	0.693

New immigrants are defined as those who first entered the United States in 1990 or later. All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table 7. Estimated Effect of Politics on Migration,  
Campaign Contributions from PAC vs Lobbying Expenditures**

Dependent variable	→ log (number of immigrants)					
	[1]	[2]	[3]	[4]	[5]	[6]
log (PAC contribution)	0.230* [0.131]	-0.014 [0.132]			0.006 [0.174]	0.029 [0.222]
log (lobbying exp)			0.323*** [0.047]	0.142*** [0.045]	0.322*** [0.050]	0.141*** [0.047]
union membership rate	-1.365 [1.010]	-0.633 [0.716]	-3.245*** [1.023]	-0.911 [0.829]	-3.182*** [1.086]	-0.884 [0.853]
lg (output)		0.601*** [0.115]		0.563*** [0.124]		0.567*** [0.128]
unemployment rate		1.278 [3.106]		2.055 [3.282]		2.068 [3.403]
log (price)		0.369 [2.611]		0.691 [2.573]		0.758 [2.676]
log (capital)		0.264** [0.116]		0.206** [0.095]		0.203* [0.113]
log (FDI)		-0.031 [0.046]		-0.063 [0.041]		-0.067 [0.043]
shocks		3.771** [1.766]		3.518* [1.809]		3.479** [1.739]
log (lag US wages)		-8.764*** [2.728]		-9.656*** [2.890]		-9.635*** [2.929]
_cons	7.827*** [2.004]	16.601 [14.660]	8.425*** [0.472]	16.252 [13.914]	8.327*** [2.607]	15.476 [16.391]
N	134	128	124	118	123	117
R-squared	0.035	0.618	0.246	0.648	0.246	0.645

Standard errors are corrected for heteroskedasticity and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively. PACs stand for political action committees. The contributions by PACs is averaged over election cycles 1999-2000, 2001-02 and 2003-04. For comparison, data on lobbying expenditures is averaged over the same period.

**Table 8. Estimated Effect of Politics on Migration,  
Split Samples by Skill Intensity**

Dependent variable	→ log (number of immigrants)			
	Unskilled-intensive sectors		Skilled-intensive sectors	
	[1]	[2]	[3]	[4]
log (lobbying exp)	0.469*** [0.076]	0.202*** [0.069]	0.422*** [0.065]	0.135* [0.079]
union membership rate	-2.661** [1.064]	-1.105 [1.098]	-3.925*** [1.225]	-2.165** [0.847]
lg (output)		0.305* [0.157]		0.576*** [0.134]
unemployment rate		6.32 [6.404]		4.713 [5.567]
log (price)		-2.366 [4.662]		-3.838* [2.156]
log (capital)		0.365*** [0.136]		0.258** [0.127]
log (FDI)		-0.003 [0.081]		-0.051 [0.056]
shocks		3.653 [3.044]		1.914 [2.566]
log (lag US wages)		-8.492* [4.890]		-10.744*** [2.606]
N	68	66	68	64
R-squared	0.287	0.662	0.428	0.766

Skill-intensive sector is defined as one with share of skilled workers (defined as having a college degree or higher) being greater than the median. All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table 9. Estimated Effect of Politics on Migration, Labor Contributions**

Dependent variable	log (number of immigrants)									
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
log (capital lobbying exp)	0.399*** [0.047]	0.411*** [0.052]	0.205*** [0.064]	0.215*** [0.060]	0.209*** [0.061]	0.150** [0.060]	0.168*** [0.059]	0.161*** [0.057]	0.189*** [0.050]	0.235** [0.103]
log (labor lobbying exp)		-0.430*** [0.108]	-0.379*** [0.094]	-0.337*** [0.090]	-0.307*** [0.085]	-0.296*** [0.082]	-0.258*** [0.081]	-0.284*** [0.082]	-0.112 [0.076]	-0.135 [0.101]
lg (output)			0.591*** [0.105]	0.671*** [0.100]	0.684*** [0.101]	0.491*** [0.128]	0.550*** [0.132]	0.549*** [0.128]	0.478*** [0.116]	0.13 [0.135]
unemployment rate				14.348*** [4.595]	14.720*** [4.561]	16.300*** [4.185]	16.291*** [4.269]	13.001*** [4.316]	8.009* [4.282]	13.119** [4.938]
log (price)					-2.686 [2.980]	-3.895 [2.752]	-3.69 [2.704]	-3.347 [2.484]	-3.726* [2.079]	-8.000*** [1.552]
log (capital)						0.298** [0.120]	0.316** [0.122]	0.321*** [0.119]	0.303*** [0.105]	0.757*** [0.181]
log (FDI)							-0.113** [0.047]	-0.126*** [0.046]	-0.014 [0.041]	-0.151* [0.076]
shocks								4.365** [2.036]	3.610** [1.795]	-0.224 [1.823]
log (lag US wages)									-10.487*** [2.425]	-13.668*** [4.250]
log (lag Mexican wages)										0.059 [0.108]
N	137	130	130	130	130	126	124	124	124	51
R-squared	0.297	0.330	0.493	0.540	0.545	0.591	0.609	0.627	0.693	0.739

Lobbying expenditures by labor groups is measured by taking the total contributions by unions from CRP and splitting them across sectors using union membership rates. All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table A1. List of Issues**

<b>Code</b>	<b>Issue</b>
ACC	Accounting
ADV	Advertising
AER	Aerospace
AGR	Agriculture
ALC	Alcohol & Drug Abuse
ANI	Animals
APP	Apparel/Clothing Industry/Textiles
ART	Arts/Entertainment
AUT	Automotive Industry
AVI	Aviation/Aircraft/ Airlines
BAN	Banking
BNK	Bankruptcy
BEV	Beverage Industry
BUD	Budget/Appropriations
CHM	Chemicals/Chemical Industry
CIV	Civil Rights/Civil Liberties
CAW	Clean Air & Water (Quality)
CDT	Commodities (Big Ticket)
COM	Communications/ Broadcasting/ Radio/TV
CPI	Computer Industry
CSP	Consumer Issues/Safety/ Protection
CON	Constitution
CPT	Copyright/Patent/ Trademark
DEF	Defense
DOC	District of Columbia
DIS	Disaster Planning/Emergencies
ECN	Economics/Economic Development
EDU	Education
ENG	Energy/Nuclear
ENV	Environmental/Superfund
FAM	Family Issues/Abortion/ Adoption
FIR	Firearms/Guns/ Ammunition
FIN	Financial Institutions/Investments/ Securities
FOO	Food Industry (Safety, Labeling, etc.)
FOR	Foreign Relations
FUE	Fuel/Gas/Oil
GAM	Gaming/Gambling/ Casino
GOV	Government Issues
HCR	Health Issues
HOU	Housing
IMM	Immigration
IND	Indian/Native American Affairs
INS	Insurance
LBR	Labor Issues/Antitrust/ Workplace
LAW	Law Enforcement/Crime/ Criminal Justice
MAN	Manufacturing
MAR	Marine/Maritime/ Boating/Fisheries
MIA	Media (Information/ Publishing)
MED	Medical/Disease Research/ Clinical Labs
MMM	Medicare/Medicaid
MON	Minting/Money/ Gold Standard
NAT	Natural Resources
PHA	Pharmacy
POS	Postal
RRR	Railroads
RES	Real Estate/Land Use/Conservation
REL	Religion
RET	Retirement
ROD	Roads/Highway
SCI	Science/Technology
SMB	Small Business
SPO	Sports/Athletics
TAX	Taxation/Internal Revenue Code
TEC	Telecommunications
TOB	Tobacco
TOR	Torts
TRD	Trade (Domestic & Foreign)
TRA	Transportation
TOU	Travel/Tourism
TRU	Trucking/Shipping
URB	Urban Development/ Municipalities
UNM	Unemployment
UTI	Utilities
VET	Veterans
WAS	Waste (hazardous/ solid/ interstate/ nuclear)
WEL	Welfare

Source: Senate's Office of Public Records (SOPR)

Table A2. Sample Lobbying Report

00000343475

Clerk of the House of Representatives  
Legislative Resource Center  
B-106 Cannon Building  
Washington, DC 20515

Secretary of the Senate  
Office of Public Records  
232 Hart Building  
Washington, DC 20510

RECEIVED  
SECRETARY OF THE SENATE  
PUBLIC RECORDS  
05 AUG 15 PM 12: 53

00000343475

**LOBBYING REPORT**

Lobbying Disclosure Act of 1995 (Section 5) - All Filers Are Required to Complete This Page

1. Registrant Name <b>Microsoft Corporation</b>			
2. Registrant Address <input type="checkbox"/> Check if different than previously reported Address <b>1401 Eye Street, NW Suite 500</b> City <b>Washington</b> State/Zip (or Country) <b>DC 20005</b>			
3. Principal Place of Business (if different from line 2) City <b>Redmond</b> State/Zip (or Country) <b>WA 98052</b>			
4. Contact Name <b>Karin Gess</b>	Telephone <b>(202) 263-5900</b>	E-mail (optional) <b>kgess@microsoft.com</b>	5. Senate ID # <b>25204-12</b>
7. Client Name <input checked="" type="checkbox"/> Self			6. House ID # <b>31174000</b>

**TYPE OF REPORT** 8. Year 2005 Midyear (January 1-June 30)  OR Year End (July 1-December 31)

9. Check if this filing amends a previously filed version of this report

10. Check if this is a Termination Report  >> Termination Date \_\_\_\_\_ 11. No Lobbying Activity

<b>INCOME OR EXPENSES - Complete Either Line 12 OR Line 13</b>	
<p><b>12. Lobbying Firms</b></p> <p>INCOME relating to lobbying activities for this reporting period was:</p> <p>Less than \$10,000 <input type="checkbox"/></p> <p>\$10,000 or more <input type="checkbox"/> &gt;&gt; \$ _____ <small>(Income (nearest \$20,000))</small></p> <p>Provide a good faith estimate, rounded to the nearest \$20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).</p>	<p><b>13. Organizations</b></p> <p>EXPENSES relating to lobbying activities for this reporting period were:</p> <p>Less than \$10,000 <input type="checkbox"/></p> <p>\$10,000 or more <input checked="" type="checkbox"/> &gt;&gt; \$ <u>\$4,540,000.00</u> <small>Expenses (nearest \$20,000)</small></p> <p><b>14. REPORTING METHOD.</b> Check box to indicate expense accounting method. See instructions for description of options.</p> <p><input type="checkbox"/> Method A. Reporting amounts using LDA definitions only</p> <p><input type="checkbox"/> Method B. Reporting amounts under section 6033(b)(8) of the Internal Revenue Code</p> <p><input checked="" type="checkbox"/> Method C. Reporting amounts under section 162(e) of the Internal Revenue Code</p>

Signature \_\_\_\_\_ Date 8/12/2005

Printed Name and Title Jack Krumholz - Managing Dir. of Federal Gov't Affairs Page 1 of 19

00000343484

Registrant Name: Microsoft Corporation

Client Name: Microsoft Corporation

**LOBBYING ACTIVITY.** Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

- 15. General issue area code IMM (one per page)
- 16. Specific Lobbying issues
  - H-1B visas
  - L-1 visas
  - Program Electronic Review Management System (PERM) regulations

- 17. House(s) of Congress and Federal agencies contacted  Check if None
  - Department of Commerce
  - Department of Labor
  - Executive Office of the President
  - House of Representatives
  - Senate

00000343484

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Buckner, Marland		No
Corley, Scott		Yes
Gelman, Matt		No
Houton, James		No
Ingle, Ed	White House	No
Krumholtz, Jack		No
Orta, Lori	Senate Republican Policy Committee	No

19. Interest of each foreign entity in the specific issues listed on line 16 above  Check if None

Signature \_\_\_\_\_ Date 8/12/2005  
 Printed Name and Title Jack Krumholtz - Managing Dir. of Federal Gov't Affairs Page 10 of 19

00000343492

Registrant Name: Microsoft Corporation  
 Client Name: Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code TRIP (one per page)

16. Specific Lobbying issues  
**H.R.3045, Dominican Republic-Central America-United States Free Trade Agreement Implementation Act, Special 301**  
 Intellectual property provisions of free trade agreements with the South Africa Customs Union, Bahrain, Panama, Thailand, and Morocco  
 Software piracy and procurement issues in China  
 Interpretation and enforcement of the WTO Agreement on Trade-Related Aspects of Intellectual Property (TRIPS)  
 Agenda for further negotiations in Doha Development Round of WTO talks  
 European Commission investigation of competition in the software industry  
 Korean Fair Trade Commission's investigation of competition in the software industry

17. House(s) of Congress and Federal agencies contacted  Check if None

- Department of Commerce
- Department of Justice
- Department of State
- Department of Treasury
- Executive Office of the President
- Federal Trade Commission
- House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Brady, Betsy		No
Buckner, Marland		No
Corley, Scott		Yes
Gelman, Matt		No
Houton, James		No
Ingle, Ed	White House	No
Krumholtz, Jack		No

19. Interest of each foreign entity in the specific issues listed on line 16 above  Check if None

Signature Jack Krumholtz Date 8/12/2005  
 Printed Name and Title Jack Krumholtz - Managing Dir. of Federal Gov't Affairs Page 18 of 19

**Table A3. List of CRP Industries**

CRP Industry Code	CRP Industry Name
1	Abortion Policy/Pro-Choice
2	Abortion Policy/Pro-Life
3	Accountants
4	Agricultural Services & Products
5	Air Transport
6	Automotive
7	Beer, Wine & Liquor
8	Building Materials & Equipment
9	Building Trade Unions
10	Business Associations
11	Business Services
12	Casinos / Gambling
13	Chemical & Related Manufacturing
14	Civil Servants/Public Officials
15	Clergy & Religious Organizations
16	Commercial Banks
17	Computers/Internet
18	Construction Services
19	Credit Unions
20	Crop Production & Basic Processing
21	Dairy
23	Defense Aerospace
24	Defense Electronics
25	Democratic/Liberal
26	Education
27	Electric Utilities
28	Electronics Mfg & Services
29	Environment
30	Environmental Svcs/Equipment
31	Finance / Credit Companies
32	Fisheries & Wildlife
33	Food & Beverage
34	Food Processing & Sales
35	Foreign & Defense Policy
36	Forestry & Forest Products
37	General Contractors
38	Gun Control
39	Gun Rights
40	Health Professionals
41	Health Services/HMOs
42	Home Builders
43	Hospitals & Nursing Homes
44	Human Rights
45	Industrial Unions
46	Insurance
47	Lawyers / Law Firms
48	Livestock
49	Lobbyists
50	Lodging / Tourism
51	Mining
52	Misc Agriculture
53	Misc Business
54	Misc Communications/Electronics
55	Miscellaneous Defense
56	Misc Energy
57	Misc Finance
58	Misc Health
59	Misc Issues
60	Misc Manufacturing & Distributing
61	Miscellaneous Services
62	Misc Transport
63	Misc Unions
64	Non-profits, Foundations & Philanthropists
65	Oil & Gas
66	Other-Other
67	Pharmaceuticals / Health Products
68	Poultry & Eggs
69	Printing & Publishing
70	Pro-Israel
71	Public Sector Unions
72	Railroads
73	Real Estate
74	Recreation / Live Entertainment
75	Republican/Conservative
76	Retail Sales
77	Savings & Loans
78	Sea Transport
79	Securities & Investment
80	Special Trade Contractors
81	Steel Production
82	Telecom Services & Equipment
83	Telephone Utilities
84	Textiles
85	Tobacco
86	Transportation Unions
87	Trucking
88	TV / Movies / Music
89	Waste Management
90	Women's Issues
96	Retired
97	Leadership PACs
98	Alternative Energy Production & Services
99	Candidate Committees



**Table A4. List of CPS Industries**

CPS Industry Code	CPS Industry Name	CPS Industry Code	CPS Industry Name
105	Agriculture	567	Petroleum and gasoline pipe lines
116	Forestry	568	Services incidental to transportation
126	Fisheries	578	Telephone
206	Metal mining	579	Telegraph
216	Coal mining	586	Electric light and power
226	Crude petroleum and natural gas extraction	587	Gas and steam supply systems
236	Nonmetallic mining and quarrying, except fuel	588	Electric-gas utilities
246	Construction	596	Water supply
306	Logging	597	Sanitary services
307	Sawmills, planing mills, and millwork	598	Other and not specified utilities
308	Misc wood products	606	Motor vehicles and equipment
309	Furniture and fixtures	607	Drugs, chemicals, and allied products
316	Glass and glass products	608	Dry goods apparel
317	Cement, concrete, gypsum and plaster products	609	Food and related products
318	Structural clay products	616	Electrical goods, hardware, and plumbing equipment
319	Pottery and related products	617	Machinery, equipment, and supplies
326	Miscellaneous nonmetallic mineral and stone products	618	Petroleum products
336	Blast furnaces, steel works, & rolling mills	619	Farm products--raw materials
337	Other primary iron and steel industries	626	Miscellaneous wholesale trade
338	Primary nonferrous industries	627	Not specified wholesale trade
346	Fabricated steel products	636	Food stores, except dairy products
347	Fabricated nonferrous metal products	637	Dairy products stores and milk retailing
348	Not specified metal industries	646	General merchandise stores
356	Agricultural machinery and tractors	647	Five and ten cent stores
357	Office and store machines and devices	656	Apparel and accessories stores, except shoe
358	Miscellaneous machinery	657	Shoe stores
367	Electrical machinery, equipment, and supplies	658	Furniture and house furnishing stores
376	Motor vehicles and motor vehicle equipment	659	Household appliance and radio stores
377	Aircraft and parts	667	Motor vehicles and accessories retailing
378	Ship and boat building and repairing	668	Gasoline service stations
379	Railroad and miscellaneous transportation equipmen	669	Drug stores
386	Professional equipment and supplies	679	Eating and drinking places
387	Photographic equipment and supplies	686	Hardware and farm implement stores
388	Watches, clocks, and clockwork-operated devices	687	Lumber and building material retailing
399	Miscellaneous manufacturing industries	688	Liquor stores
406	Meat products	689	Retail florists
407	Dairy products	696	Jewelry stores
408	Canning and preserving fruits, vegetables, and seafoods	697	Fuel and ice retailing
409	Grain-mill products	698	Miscellaneous retail stores
416	Bakery products	699	Not specified retail trade
417	Confectionery and related products	716	Banking and credit agencies
418	Beverage industries	726	Security and commodity brokerage and investment companies
419	Miscellaneous food preparations and kindred products	736	Insurance
426	Not specified food industries	746	Real estate
429	Tobacco manufactures	806	Advertising
436	Knitting mills	807	Accounting, auditing, and bookkeeping services
437	Dyeing and finishing textiles, except knit goods	808	Miscellaneous business services
438	Carpets, rugs, and other floor coverings	816	Auto repair services and garages
439	Yarn, thread, and fabric mills	817	Miscellaneous repair services
446	Miscellaneous textile mill products	826	Private households
448	Apparel and accessories	836	Hotels and lodging places
449	Miscellaneous fabricated textile products	846	Laundrying, cleaning, and dyeing services
456	Pulp, paper, and paperboard mills	847	Dressmaking shops
457	Paperboard containers and boxes	848	Shoe repair shops
458	Miscellaneous paper and pulp products	849	Miscellaneous personal services
459	Printing, publishing, and allied industries	856	Radio broadcasting and television
466	Synthetic fibers	857	Theaters and motion pictures
467	Drugs and medicines	858	Bowling alleys, and billiard and pool parlors
468	Paints, varnishes, and related products	859	Miscellaneous entertainment and recreation services
469	Miscellaneous chemicals and allied products	868	Medical and other health services, except hospitals
476	Petroleum refining	869	Hospitals
477	Miscellaneous petroleum and coal products	879	Legal services
478	Rubber products	888	Educational services
487	Leather: tanned, curried, and finished	896	Welfare and religious services
488	Footwear, except rubber	897	Nonprofit membership organizations
489	Leather products, except footwear	898	Engineering and architectural services
499	Not specified manufacturing industries	899	Miscellaneous professional and related services
506	Railroads and railway express service	906	Postal service
516	Street railways and bus lines	916	Federal public administration
526	Trucking service	926	State public administration
527	Warehousing and storage	936	Local public administration
536	Taxicab service		
546	Water transportation		
556	Air transportation		

Source: Census Population Survey (www.ipums.org)

**Table A5. Estimated Effect of Politics on Migration,  
Controlling for Number of Natives**

Dependent variable	→	log(Total number of immigrants)	log(H1B visas)
log (lobbying exp)		0.118** [0.046]	0.181*** [0.059]
union membership rate		-1.344** [0.593]	-4.291*** [1.352]
Number of natives		0.000*** [0.000]	0.000*** [0.000]
N		130	120
R-squared			

The regressions control for output, unemployment, price, capital, FDI, shocks and US wages. All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table A6. Estimated Effect of Politics on Migration,  
Alternative Definition of Skill Intensity Based on Years of Schooling**

Dependent variable	log (number of immigrants)			
	Unskilled-intensive sectors		Skilled-intensive sectors	
	[1]	[2]	[3]	[4]
log (lobbying exp)	0.560*** [0.077]	0.251*** [0.080]	0.349*** [0.060]	0.122* [0.064]
union membership rate	-2.669** [1.154]	-0.512 [0.942]	-3.854*** [1.099]	-1.978** [0.779]
lg (output)		0.337** [0.129]		0.622*** [0.156]
log (unemployment)		5.629 [5.249]		4.517 [8.066]
log (price)		-4.745 [2.960]		-3.361 [2.832]
log (capital)		0.325** [0.130]		0.255* [0.137]
log (FDI)		-0.041 [0.074]		-0.043 [0.061]
shocks		3.878 [2.585]		1.723 [2.913]
log (lag US wages)		-8.938* [5.304]		-10.998*** [2.951]
_cons	5.499*** [0.674]	39.410*** [12.958]	7.648*** [0.561]	36.200** [15.122]
N	68	66	68	64
R-squared	0.368	0.693	0.348	0.737

Skill-intensive sector is defined as one with average years of schooling of workers in the sector being greater than the median. All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table A7. Estimated Effect of Politics on Migration,  
Drop Agriculture**

Dependent variable →	log (number of immigrants)	
	[1]	[2]
log (lobbying exp)	0.421*** [0.049]	0.171*** [0.052]
union membership rate	-3.115*** [0.796]	-1.269** [0.632]
lg (output)		0.437*** [0.096]
log (unemployment)		5.096 [3.989]
log (price)		-3.734* [1.977]
log (capital)		0.313*** [0.093]
log (FDI)		-0.031 [0.042]
shocks		3.183* [1.735]
log (lag US wages)		-9.945*** [2.505]
_cons	6.812*** [0.454]	36.576*** [9.526]
N	135	129
R-squared	0.338	0.695

CPS industry code 105 is dropped from the regressions. All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table A8. Estimated Effect of Politics on Skilled and Unskilled Migration**

Dependent variable	log (number of immigrants)			
	Unskilled immigrants		Skilled immigrants	
	[1]	[2]	[3]	[4]
log (lobbying exp)	0.379*** [0.046]	0.176*** [0.046]	0.422*** [0.048]	0.167*** [0.050]
union membership rate	-3.315*** [0.831]	-0.975 [0.615]	-2.966*** [0.738]	-1.944*** [0.653]
lg (output)		0.454*** [0.093]		0.366*** [0.101]
log (unemployment)		7.264* [3.830]		4.893 [4.919]
log (price)		-3.390* [1.893]		-1.849 [2.009]
log (capital)		0.216** [0.085]		0.359*** [0.102]
log (FDI)		-0.029 [0.040]		-0.016 [0.048]
shocks		4.376*** [1.596]		-2.383 [1.874]
log (lag US wages)		-12.122*** [2.506]		-4.816* [2.466]
_cons	6.867*** [0.427]	38.674*** [9.397]	5.724*** [0.456]	19.022* [9.774]
N	136	130	133	127
R-squared	0.301	0.698	0.380	0.658

Skilled migrants are defined as having a college degree or higher. All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table A9. Estimated Effect of Politics on Skilled and Unskilled Migration, 1998-2005**

Dependent variable	log (number of immigrants)			
	Unskilled-intensive sectors		Skilled-intensive sectors	
	Unskilled immigrants	Skilled immigrants	Unskilled immigrants	Skilled immigrants
log (lobbying exp)	0.201*** [0.072]	0.137** [0.060]	0.152** [0.064]	0.141* [0.079]
union membership rate	-1.625 [1.080]	-0.889 [1.046]	-1.567* [0.915]	-3.146*** [0.878]
lg (output)	0.359** [0.164]	0.164 [0.138]	0.538*** [0.114]	0.530*** [0.150]
log (unemployment)	7.541 [6.400]	6.613 [6.773]	6.819 [4.380]	6.872 [7.725]
log (price)	-1.821 [4.221]	-2.711 [3.174]	-3.984** [1.986]	-0.31 [2.786]
log (capital)	0.301** [0.135]	0.362** [0.154]	0.188* [0.105]	0.329** [0.144]
log (FDI)	0.004 [0.082]	0.069 [0.080]	-0.023 [0.052]	-0.128* [0.066]
shocks	4.2 [3.057]	-0.493 [2.853]	2.117 [2.164]	-2.372 [2.999]
log (lag US wages)	-7.786 [5.000]	-7.950* [4.044]	-13.583*** [2.534]	-3.228 [2.947]
_cons	23.726 [21.221]	29.607* [15.252]	44.046*** [10.073]	8.824 [13.211]
N	66	64	64	63
R-squared	0.663	0.629	0.776	0.717

Skill-intensive sector is defined as one with the share of skilled workers in the sector being greater than the median. Skilled migrants are defined as having a college degree or higher. All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table A10. Estimated Effect of Politics on Migration, Pooled OLS, 1998-2005**

Dependent variable	log (number of immigrants)									
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
log (lobbying exp)	0.388*** [0.023]	0.403*** [0.024]	0.176*** [0.029]	0.181*** [0.028]	0.180*** [0.029]	0.133*** [0.029]	0.150*** [0.029]	0.150*** [0.029]	0.170*** [0.027]	0.215** [0.086]
union membership rate		-1.795*** [0.326]	-1.532*** [0.323]	-1.340*** [0.329]	-1.300*** [0.327]	-1.245*** [0.352]	-1.051*** [0.357]	-1.047*** [0.361]	-0.728* [0.380]	-2.095*** [0.618]
lg (output)			0.612*** [0.048]	0.637*** [0.047]	0.640*** [0.047]	0.504*** [0.071]	0.564*** [0.071]	0.564*** [0.071]	0.511*** [0.071]	0.108 [0.133]
unemployment rate				5.545*** [1.515]	5.530*** [1.497]	5.440*** [1.497]	5.932*** [1.480]	5.947*** [1.527]	4.044** [1.594]	9.930** [4.075]
log (price)					-0.754 [0.664]	-0.379 [0.716]	-0.221 [0.715]	-0.221 [0.714]	-0.328 [0.647]	-2.107 [1.322]
log (capital)						0.207*** [0.061]	0.240*** [0.062]	0.240*** [0.062]	0.258*** [0.061]	0.441*** [0.138]
log (FDI)							-0.121*** [0.025]	-0.121*** [0.025]	-0.063** [0.026]	-0.086 [0.085]
shocks								-0.069 [1.069]	-0.36 [1.043]	-3.522*** [1.215]
log (lag US wages)									-6.218*** [1.276]	-4.981** [2.405]
log (lag Mexican wages)										0.218** [0.106]
N	762	748	748	748	748	622	598	598	591	105
R-squared	0.273	0.282	0.446	0.461	0.462	0.476	0.495	0.495	0.538	0.601

This table uses pooled data from 1998-2005. Year dummies are included in all the regressions. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table A11. Estimated Effect of Politics on Migration OLS,  
Balanced Number of Observations**

Dependent variable	log (number of immigrants)								
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
log (lobbying exp)	0.394*** [0.049]	0.424*** [0.050]	0.180*** [0.064]	0.179*** [0.060]	0.169*** [0.062]	0.130** [0.060]	0.154*** [0.058]	0.138** [0.058]	0.175*** [0.051]
union membership rate		-3.307*** [0.819]	-3.115*** [0.782]	-2.654*** [0.801]	-2.289*** [0.725]	-2.515*** [0.711]	-2.259*** [0.706]	-2.497*** [0.726]	-1.294** [0.631]
lg (output)			0.608*** [0.095]	0.671*** [0.091]	0.692*** [0.093]	0.494*** [0.118]	0.536*** [0.112]	0.510*** [0.107]	0.441*** [0.096]
unemployment rate				11.870*** [4.372]	12.370*** [4.326]	12.616*** [3.894]	12.962*** [3.851]	10.346*** [3.819]	5.018 [3.996]
log (price)					-4.099 [2.732]	-4.015 [2.583]	-3.639 [2.525]	-3.617 [2.332]	-3.643* [1.978]
log (capital)						0.272** [0.107]	0.323*** [0.107]	0.343*** [0.103]	0.305*** [0.092]
log (FDI)							-0.130*** [0.045]	-0.138*** [0.044]	-0.03 [0.042]
shocks								3.993** [1.963]	3.322* [1.716]
log (lag US wages)									-10.119*** [2.465]
_cons	6.653*** [0.464]	6.789*** [0.461]	2.575*** [0.676]	1.21 [0.809]	19.984 [12.587]	20.012* [11.910]	18.072 [11.602]	17.617 [10.716]	36.415*** [9.558]
N	130	130	130	130	130	130	130	130	130
R-squared	0.290	0.348	0.530	0.564	0.575	0.603	0.626	0.642	0.702

This table restricts the number of observations to be the same across all regressions. All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.



**Table A12. Estimated Effect of Politics on Migration OLS,  
Include Sectors with Zero Lobbying Expenditures**

Dependent variable	log (number of immigrants)									
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
log (lobbying exp)	0.289*** [0.055]	0.292*** [0.059]	0.092* [0.052]	0.091* [0.052]	0.090* [0.052]	0.077* [0.044]	0.080* [0.045]	0.062 [0.045]	0.088** [0.044]	0.075 [0.078]
union membership rate		-1.852* [1.074]	-2.156*** [0.811]	-1.667** [0.828]	-1.358* [0.784]	-2.376*** [0.705]	-2.049*** [0.701]	-2.284*** [0.718]	-1.125* [0.642]	-2.414** [0.929]
lg (output)			0.674*** [0.082]	0.733*** [0.080]	0.745*** [0.080]	0.498*** [0.112]	0.545*** [0.110]	0.525*** [0.102]	0.475*** [0.093]	0.174 [0.161]
unemployment rate				10.746** [4.495]	11.115** [4.386]	12.055*** [3.807]	12.643*** [3.797]	10.144*** [3.752]	5.282 [3.997]	12.272** [4.923]
log (price)					-3.777 [2.930]	-4.419* [2.550]	-4.322* [2.500]	-4.307* [2.324]	-4.410** [1.980]	-7.702*** [1.404]
log (capital)						0.320*** [0.100]	0.367*** [0.102]	0.381*** [0.097]	0.339*** [0.089]	0.800*** [0.181]
log (FDI)							-0.107** [0.045]	-0.114** [0.044]	-0.007 [0.043]	-0.162** [0.064]
shocks								3.942** [1.950]	3.154* [1.751]	-2.091 [1.660]
log (lag US wages)									-9.622*** [2.468]	-11.846*** [4.166]
log (lag Mexican wages)										0.230* [0.119]
_cons	7.759*** [0.535]	7.980*** [0.547]	2.663*** [0.673]	1.406* [0.795]	18.714 [13.522]	22.025* [11.758]	21.365* [11.500]	20.927* [10.678]	39.127*** [9.615]	58.142*** [9.841]
N	142	141	141	141	141	136	134	134	134	55
R-squared	0.200	0.219	0.484	0.511	0.520	0.596	0.613	0.629	0.684	0.727

This table includes 5 industries with zero lobbying expenditures by replacing log (0) with logs of the minimum values. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table A13. Estimated Effect of Politics on Migration, Census Data**

Dependent variable	log (number of immigrants)									
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
log (lobbying exp)	0.359*** [0.053]	0.400*** [0.052]	0.178*** [0.068]	0.185*** [0.068]	0.184*** [0.068]	0.149** [0.060]	0.166*** [0.060]	0.170*** [0.061]	0.164*** [0.051]	0.312*** [0.071]
union membership rate		-3.389*** [0.786]	-2.801*** [0.752]	-2.605*** [0.764]	-2.551*** [0.694]	-2.896*** [0.708]	-2.649*** [0.702]	-2.850*** [0.765]	-1.572** [0.670]	-0.99 [0.913]
lg (output)			0.535*** [0.104]	0.548*** [0.100]	0.551*** [0.100]	0.335** [0.145]	0.384** [0.148]	0.365** [0.146]	0.215* [0.120]	0.118 [0.117]
unemployment rate				5.619 [5.215]	5.617 [5.257]	7.979 [5.132]	7.306 [5.254]	6.566 [5.280]	-3.032 [5.142]	-7.542 [5.709]
log (price)					-0.712 [3.154]	-2.643 [2.924]	-2.462 [2.863]	-2.651 [2.821]	-2.014 [2.168]	-2.795 [1.893]
log (capital)						0.278* [0.143]	0.299** [0.149]	0.322** [0.146]	0.477*** [0.116]	0.387** [0.179]
log (FDI)							-0.097* [0.052]	-0.114** [0.050]	-0.057 [0.049]	-0.155* [0.081]
shocks								3.113 [2.642]	4.329* [2.344]	-0.267 [1.755]
log (lag US wages)									-3.582*** [0.859]	-5.395*** [1.048]
log (lag Mexican wages)										0.062 [0.141]
_cons	7.153*** [0.540]	7.172*** [0.521]	3.522*** [0.769]	2.998*** [0.808]	6.264 [14.528]	15.586 [13.481]	14.586 [13.195]	14.92 [12.858]	19.551* [10.237]	28.614*** [9.202]
N	120	120	120	120	120	116	114	114	114	46
R-squared	0.264	0.339	0.497	0.504	0.504	0.543	0.559	0.569	0.673	0.780

Lobbying expenditures are averaged over 1999 and 2000. The data on the number of immigrants, unemployment rate and US wages are from the 2000 US Census (all other tables are based on data from the CPS). Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Table A.14. Estimated Effect of Politics on Migration, 1998-2005**

Dependent variable	log (number of immigrants)														
	1998	1999	2000	2001	2002	2003	2004	2005							
log (lobbying exp)	0.387*** [0.057]	0.659*** [0.068]	0.434*** [0.104]	0.334*** [0.050]	0.168*** [0.061]	0.573*** [0.085]	0.227 [0.136]	0.225*** [0.054]	0.075* [0.040]	0.572*** [0.084]	0.336*** [0.125]	0.391*** [0.067]	0.174** [0.075]	0.531*** [0.060]	0.274*** [0.088]
union membership rate	-1.489* [0.812]	-1.580** [0.738]	-0.676 [0.793]	-2.718*** [0.848]	-0.872 [0.754]	-1.136 [0.916]	-1.829*** [0.893]	-0.848 [1.168]	0.162 [0.897]	-0.914 [0.736]	0.202 [0.980]	-1.206 [1.002]	-0.602 [0.806]	-2.921** [1.225]	-2.397*** [0.979]
log (output)	0.596*** [0.190]	0.324 [0.200]	0.573*** [0.202]	0.296 [0.216]	0.726*** [0.156]	0.296 [0.216]	0.296 [0.216]	0.296 [0.216]	0.726*** [0.156]	0.296 [0.216]	0.352 [0.222]	0.352 [0.222]	0.405** [0.158]	0.721*** [0.170]	0.721*** [0.170]
log (unemployment)	6.677 [4.786]	8.61 [5.805]	6.313 [4.600]	7.786 [6.443]	4.614* [2.507]	4.614* [2.507]	4.614* [2.507]	4.614* [2.507]	4.614* [2.507]	4.614* [2.507]	3.002 [4.395]	3.002 [4.395]	-2.467 [3.282]	4.394 [4.625]	4.394 [4.625]
log (price)	-0.501 [1.516]	0.239 [0.835]	-1.426 [1.485]	-2.354 [2.515]	-0.553 [1.154]	-0.553 [1.154]	-0.553 [1.154]	-0.553 [1.154]	-0.553 [1.154]	-0.553 [1.154]	0.035 [1.573]	0.035 [1.573]	-0.371 [3.109]	-4.802*** [1.301]	-4.802*** [1.301]
log (capital)	0.333** [0.160]	0.163 [0.178]	0.249 [0.166]	0.286 [0.172]	0.219* [0.127]	0.219* [0.127]	0.219* [0.127]	0.219* [0.127]	0.219* [0.127]	0.219* [0.127]	0.053 [0.238]	0.053 [0.238]	0.297** [0.128]	0.297** [0.128]	0.297** [0.128]
log (FDI)	-0.175** [0.084]	-0.065 [0.078]	0.022 [0.074]	-0.013 [0.095]	-0.086** [0.042]	-0.086** [0.042]	-0.086** [0.042]	-0.086** [0.042]	-0.086** [0.042]	-0.086** [0.042]	0.027 [0.080]	0.027 [0.080]	-0.02 [0.065]	-0.073 [0.068]	-0.073 [0.068]
shocks	-0.003 [2.676]	-2.102 [2.608]	-0.278 [3.279]	-4.407 [2.684]	3.074 [2.647]	3.074 [2.647]	3.074 [2.647]	3.074 [2.647]	3.074 [2.647]	3.074 [2.647]	-0.721 [2.819]	-0.721 [2.819]	2.167 [2.401]	2.842 [2.010]	2.842 [2.010]
log (log US wages)	-3.923** [1.625]	-2.444 [3.280]	-7.358*** [2.348]	-9.429*** [3.962]	-11.470*** [1.887]	-11.470*** [1.887]	-11.470*** [1.887]	-11.470*** [1.887]	-11.470*** [1.887]	-11.470*** [1.887]	-8.435** [3.386]	-8.435** [3.386]	-9.200*** [1.948]	-7.769*** [2.607]	-7.769*** [2.607]
_cons	6.844*** [0.620]	4.176*** [0.720]	5.495 [6.459]	7.790*** [0.534]	20.493** [8.886]	4.824*** [0.896]	32.191** [13.479]	8.751*** [0.524]	23.625*** [6.859]	4.887*** [0.928]	18.135* [9.763]	6.971*** [0.697]	20.683 [13.847]	5.526*** [0.639]	36.329*** [7.005]
N	109	85	75	77	104	98	67	104	98	71	64	104	95	103	97
R-squared	0.244	0.518	0.621	0.376	0.128	0.635	0.603	0.128	0.635	0.448	0.558	0.237	0.604	0.415	0.664

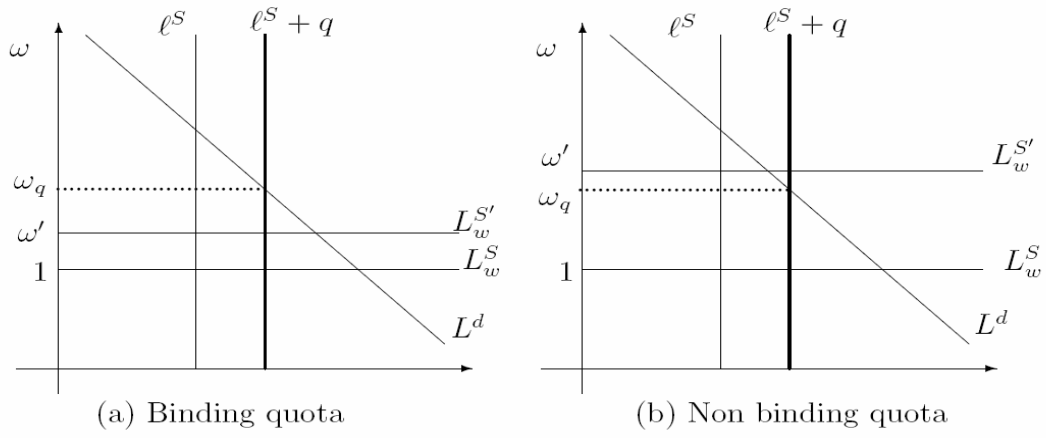
Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\*, \* and \* denote significance at 1, 5 and 10 percent respectively.

**Table A15. Estimated Effect of Politics on Migration  
Alternative Measure of Lobbying Expenditures**

	[1]	[2]
log (lobbying exp_upper bound)	0.367*** [0.047]	0.143*** [0.048]
union membership rate	-2.999*** [0.814]	-1.245* [0.636]
lg (output)		0.464*** [0.094]
unemployment rate		5.395 [4.066]
log (price)		-3.553* [2.019]
log (capital)		0.318*** [0.091]
log (FDI)		-0.037 [0.043]
shocks		3.463** [1.711]
log (lag US wages)		-9.917*** [2.482]
_cons	6.513*** [0.535]	35.277*** [9.690]
N	136	130
R-squared	0.300	0.696

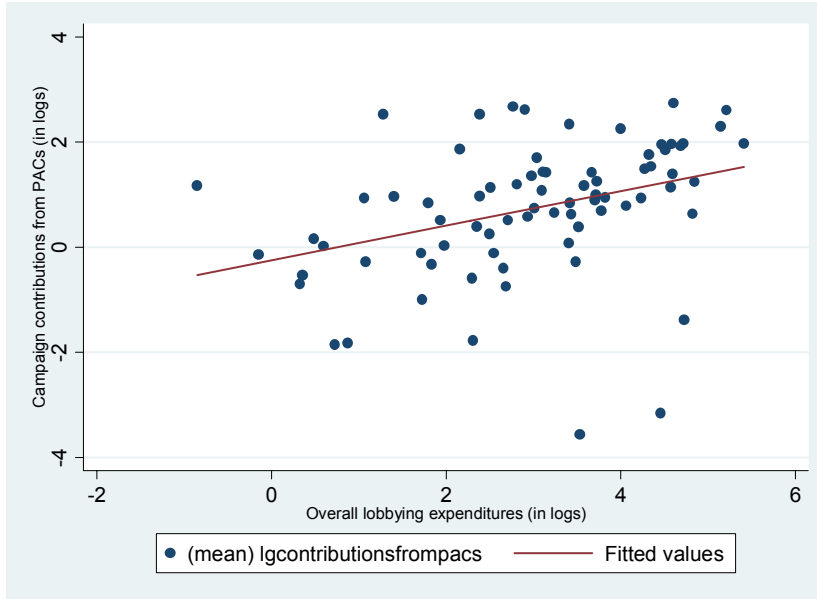
lobbying exp\_upper bound represents the total lobbying expenditures by firms within a sector which list immigration as an issue. All data are averaged over 1998-2005. Standard errors are corrected for heteroskedasticity, and denoted in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent respectively.

**Figure 1. The Effects of a Migration Quota**

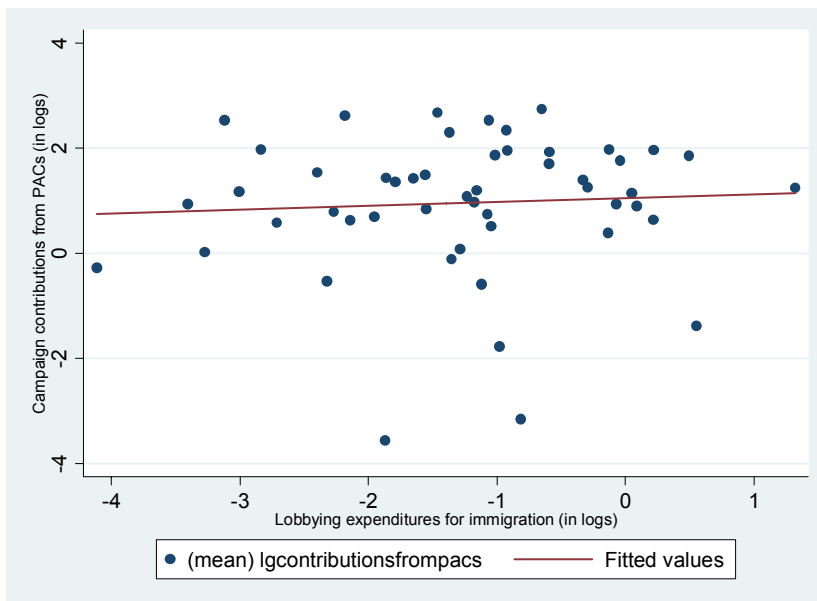


**Figure 2. Scatter Plots between Lobbying Expenditures and Campaign Contributions from Political Action Committees (PACs)**

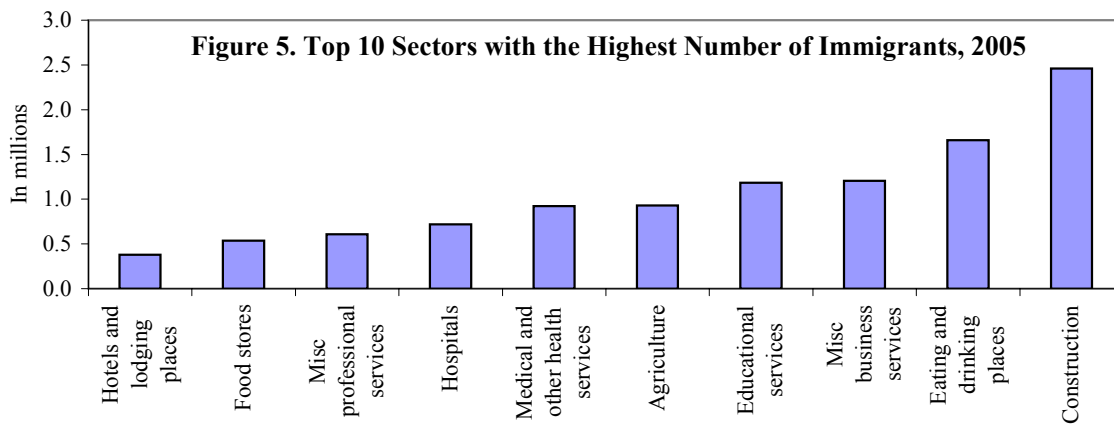
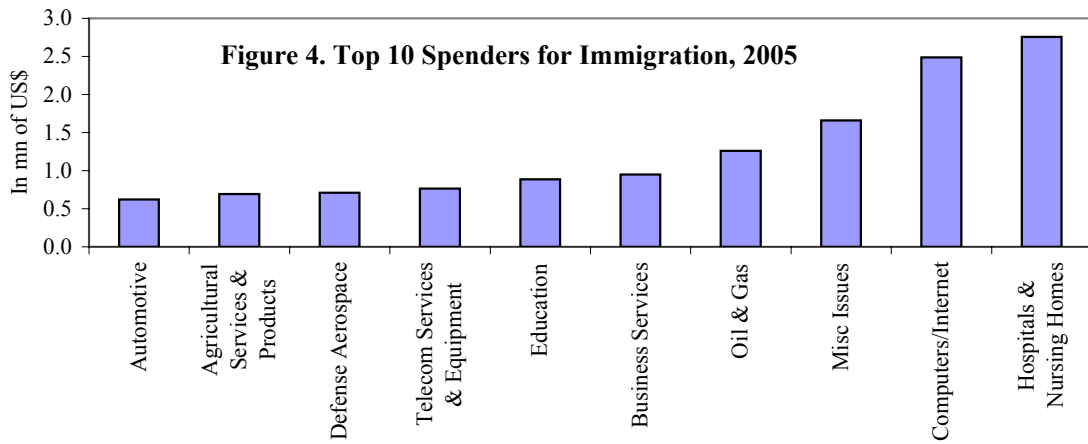
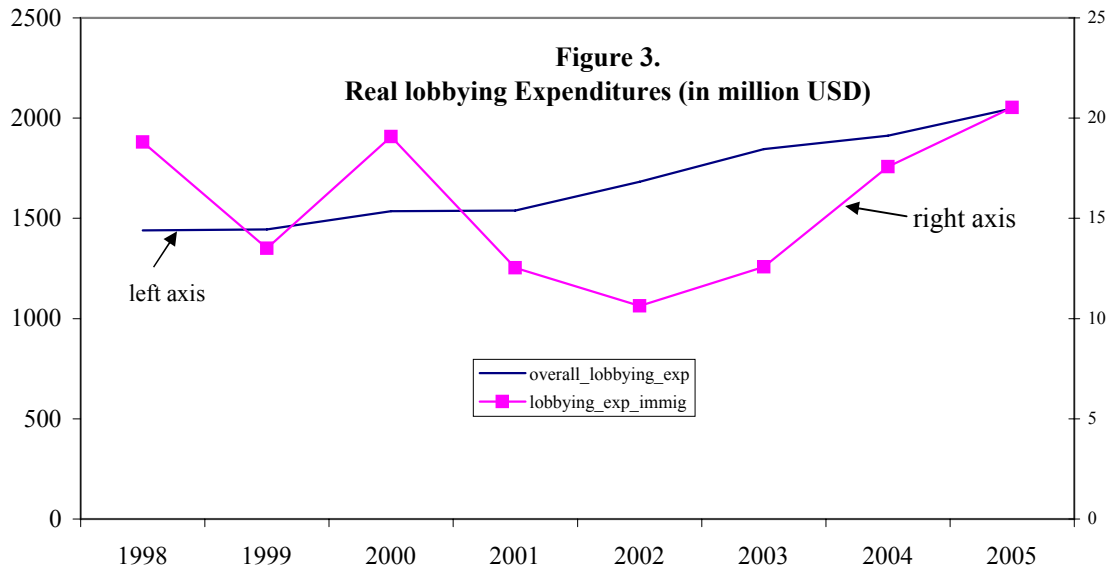
Campaign contributions from PACs and overall lobbying expenditures  
(in millions of US\$)



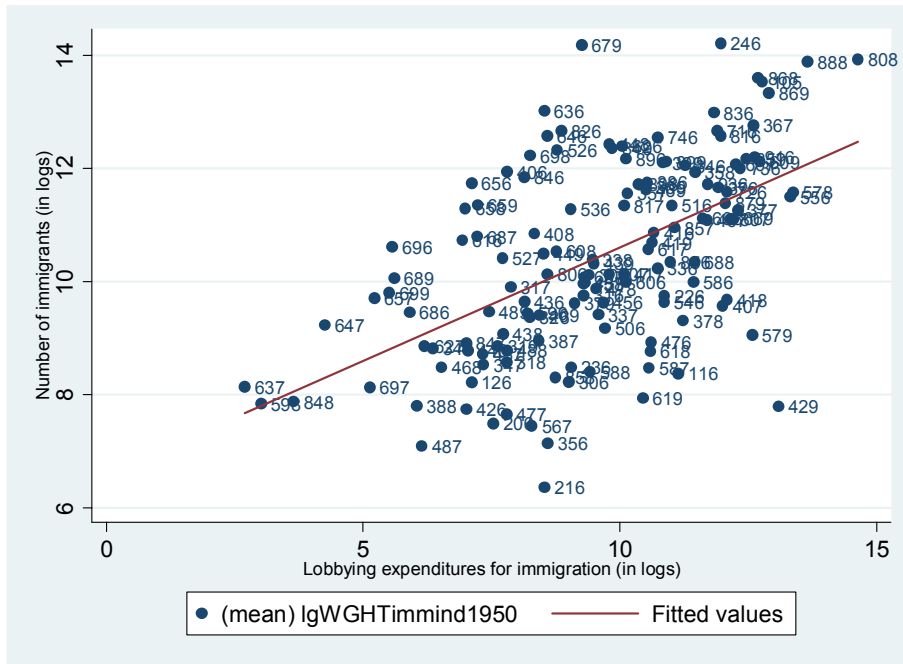
Campaign contributions from PACs and lobbying expenditures on immigration  
(in millions of US\$)



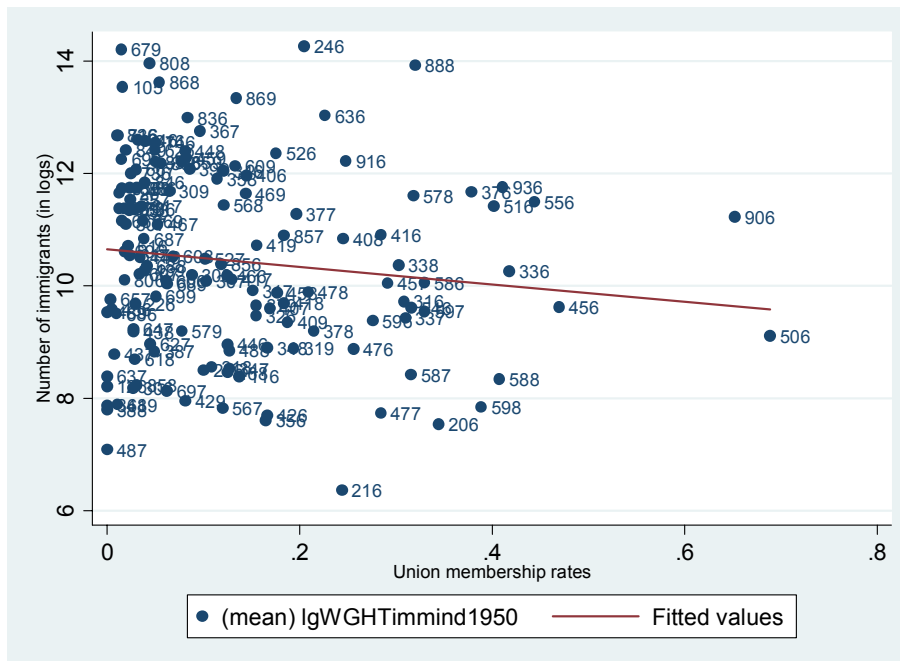
Notes. The data on campaign contributions and lobbying expenditures are averaged over three election cycles -- 1999-2000, 2001-02 and 2003-04. The correlation between (log) contributions from PACs and (log) overall lobbying expenditures (top panel) is 0.328 (robust standard error=0.099; p-value=0.000); the correlation between (log) contributions from PACs and (log) lobbying expenditures for immigration is 0.074 (robust standard error=0.132; p-value=0.580).



**Figure 6. Scatter Plot - Lobbying Expenditures for Immigration and Number of Immigrants**



**Figure 7. Scatter plot - Union Membership Rates and Number of Immigrants**



Notes. All data are averaged over 1998-2005. The correlation between (log) lobbying expenditures for immigration and (log) number of immigrants (top panel) is 0.399 (robust standard error=0.047; p-value=0.000); the correlation between union membership rates and (log) number of immigrants is -1.543 (robust standard error=0.977; p-value=0.117).



