The Rent Seeking Cost of Immigration Restrictions

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ABSTRACT

Many studies use a Harberger triangle method to estimate the immigration surplus to the native born population and conclude that the benefit of immigration is very small in proportion to the size of the U.S. economy. However this calculation method leaves out the rent seeking costs that the U.S. economy bears when immigration policy is politically determined. This study estimates the rent seeking losses that the U.S. economy could suffer if immigration policy were reformed to further close the borders. The rent seeking losses from 2005 U.S. House of Representatives and 2006 Senate immigration bills are also estimated.

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1. Introduction

Immigration reform resurfaced as a major U.S. political issue in the first decade of the 21st century. President Bush and backers of a McCain-Kennedy Senate bill favored varying forms of increased guest worker programs and a path to citizenship for an estimated 11 to 12 million illegal immigrants already in the U.S. House of Representative Republicans backed a bill requiring current illegal immigrants to leave the U.S. and that would increase border security while not guaranteeing any increased legal channel of immigration. Response in favor of and against stricter immigration requirements was dramatic. News media have given the issue tremendous coverage, numerous think tanks and lobbyist have produced immigration studies, and protests were organized. The result has been a political stalemate that will not likely break until a new president takes office in 2009 or perhaps even longer. The recent political battle over immigration highlights an important shortcoming in the academic research on the economics of immigration. Scholars have not taken political rent seeking costs into account when estimating immigration's impact on the U.S. economy.

Two separate strands of literature study the economics of immigration. In one strand numerous articles estimate the impact of immigration on the economy. These articles estimate the impact of immigration on the wages and employment opportunities of the native born population, the fiscal costs and benefits of immigration, how immigration and trade interact, immigrations impact on long run growth, and the size of the immigration surplus created for native citizens.[1] The estimates of the immigration surplus are of the most relevance for this study. The immigration surplus literature was

[1] See Friedberg and Hunt (1995), Ghatak, Levine, and Wheatley-Price (1996), Schiff (1996) and Commander, Kangasniem, and Winters (2003) for surveys of the various aspects of the literature on economics and immigration.

surveyed in Drinkwater, Levine, and Lotti (2002). The immigration surplus is the net benefit that accrues to the native born population. because of immigration. It is estimated as the size of the gains to capital owners and consumers who benefit from the services provided by immigrant labor net of the cost in terms of lower wages to the native born whom immigrants substitute for.[2] George Borjas pioneered the immigration surplus literature and often uses this approach to measure the gains to the U.S. economy from immigration (1995, 1999, 2008).[3] His most recent estimate is that immigration increases the real income of the native born by about 0.2 percent, or $22 billion per year in 2003 dollars (Borjas 2008: 256). Though Borjas is a critic of immigration, even economists who support more open immigration often agree that while the net surplus from immigration is positive, it is also relatively small compared to the size of the U.S. economy.[4] However, calculations of the immigration surplus have ignored the literature on the political determinants of immigration policy.

The political economy literature has examined how immigration will effect income redistribution (Mayr 2007), how it will impact constitutional consent (Josten and Zimmermann 2005), and how fiscal spending can influence immigration in an open labor market as exists between many E.U. countries (Thum 2004) but most of the literature uses median voter or interest group models to explain why particular immigration policies are adopted. Median voter models typically explain the adoption of immigration policies as determined by the distribution of ownership of capital. Benhabib (1996)

[2] Whether immigrants depress the wages of the native born population is a controversial topic. See Card (1990), Borjas (2003), and Card (2005) for some of the key papers in the debate.
[3] Bauer and Zimmermann (1999) employ the Borjas's approach to measure the impact of immigration on the E.U. economy.
[4] See, for instance, the Independent Institute's "Open Letter on Immigration" signed by more than 500 economists which states, "Overall, immigration has been a net gain for American citizens, though a modest one in proportion to the size of our 12 trillion-dollar economy."
http://www.independent.org/newsroom/article.asp?id=1727

shows that when capital poor voters are in the majority restrictive immigration policies will be favored but that in countries where the capital-rich are in the majority more open immigration policies will be favored. Similarly, Flores (1997) uses a median voter model to demonstrate that immigration policy will be determined by the distribution of ownership of the factors of production.

Other public choice economists have modeled the determination of immigration policy as the outcome of special interest group competition. These studies typically model the divergent interests of skilled workers, unskilled workers, and capital owners. Sollner (1999) develops and interest group model and shows that immigration increases the income of capital owners and skilled workers while it decreases the income of unskilled workers. Scheve and Slaughter (2001) empirically demonstrate that low skilled workers are tend to prefer restrictive immigration policies while capital owners like more open policies. Haus (1995) explains how transnational interest groups can create more open immigration policies than just domestic interest groups. Shughart et al. (1986) have modeled the interest group pressure applied by laborers and producers and found that a government regulator would tend to favor labor during recessions and capital owners during economic expansions. Amegashie (2004) comes to a similar conclusion. Kaempfer et al. (2004) model interest groups with differences in political effectiveness lobbying for immigration. They find that if groups were all equally effective open immigration policies would be adopted. However, because labor interests are organized by unions they are able to surmount the collective action costs of organizing and avoid free riding better than consumers or capital owners, so socially inefficient immigration restrictions are adopted. Facchini, Razin, and Willmann (2004) complement this model

in an empirical study of ten Western European countries where they find that a ten percentage point increase in union density leads to a one percentage point decrease in the share of immigrants in the population. Facchini, Mayda, and Mishra (2007) empirically examine lobbying activity and H1B visas in the U.S. They find, that both pro- and anti-immigration lobbying groups have a statistically and economically significant impact in determining the number of H1B visas issued across industries. Finally, Chau (2003) shows how politicians can bundle reform proposals to include both employer sanctions and amnesty for the existing illegal immigrants as a way to capture rents by reducing the deadweight costs employer sanctions would entail.

Although much work has been done by public choice economists to study the political dynamics that determine immigration policy their work has not influenced how the immigration surplus is calculated. If immigration policy is determined by rent seeking interest groups then rent seeking costs will impact the size of the immigration surplus resulting from any policy change. When the size of the deadweight costs of the restrictions in the last major immigration reform bill were calculated (Reynolds and McCleery 1988) rent seeking costs were left out. Discussions of the recent House and Senate Reform bills also fail to take account of these costs when they imply that a more restrictive policy will only risk losing the relatively modest immigration surplus we currently enjoy.

The immigration surplus literature is in a situation similar to economists' estimates of the deadweight costs of monopoly up until the late 1960s. Harberger's (1954) influential paper estimated that the deadweight cost of monopolies in the U.S. was only 0.1 percent of GNP. Estimates of this magnitude went unchallenged until Tullock

(1967) showed that the true costs of politically determined monopolies were not just the lost gains from trade between suppliers and consumers but also the resources that were spent trying to secure permission for the monopoly from the government. Immigration policy is politically determined and is the object of rent seeking by labor, business, and consumer interests so the current immigration surplus calculations are not accurate estimates of the losses our economy will suffer if the U.S. moves to a more restrictive immigration policy.

This paper employs public choice insights to better estimate the deadweight cost of further immigration restrictions in the U.S. Section 2 follows the standard method of calculating the immigration surplus. The potential size of rent seeking losses caused by immigration policy is estimated in section 3. Section 4 estimates the deadweight losses from the 2005/2006 House and Senate immigration reform bills. Section 5 concludes.

2. Calculating the Immigration Surplus

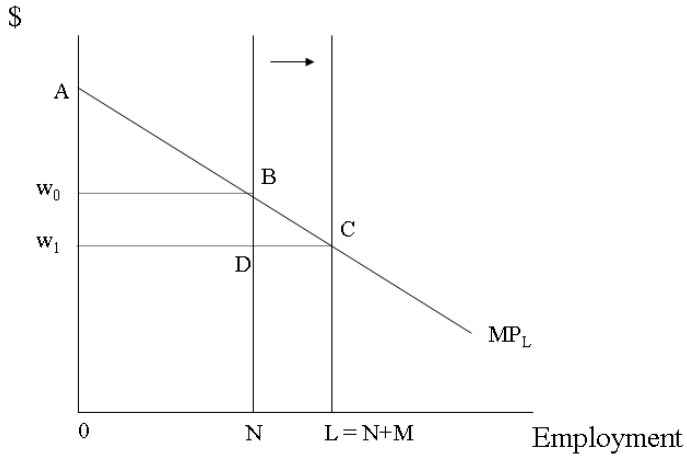
Borjas's (1995, 1999, 2008) base method of calculating the immigration surplus uses a competitive market clearing model with no externalities. He explicitly recognizes that he is following the standard Harberger methodology, "Using a well-known formula in economics (a variation on the theme of the so-called Harberger triangle), we can estimate that immigration increase the real income of natives, but only by about 0.2 percent" (2008: 256). Borjas relaxes some assumptions to estimate how the immigration surplus will vary under other conditions including, when immigrants also increase the capital stock (1999: 94) (1995: 9), if they don't lower the wages of natives (1999: 96) (1995: 10), if they generate externalities (1999: 96) (1995: 11-12), and if they have skills different than the native born population (1999: 98-103) (1995: 12-14). However, neither

Borjas nor other economists who estimate the immigration surplus incorporate rent seeking costs into their estimate of the immigration surplus.

The base model of the standard immigration surplus calculation assumes that economic output is a function of capital and labor $Q = f(K, L)$ and that the capital stock is unaffected by immigration. Natives and foreigners are considered perfect substitutes so that the total labor force is $L = N + M$, where N is the number of native born workers and M is the number of immigrant workers. It is further assumed that the supply of capital and labor is perfectly inelastic and that the production function has constant returns to scale.

The economy is in equilibrium so factor prices equal their marginal products. Prior to the entrance of immigrants total native earnings are $Q_N = r_0K + w_0N$ where r_0 is the price of capital and w_0 is the price of labor. Figure 1 illustrates the initial equilibrium graphically where national income for the native born equal the trapezoid ABN0.

Figure 1.



When immigrants enter this economy they shift the supply of labor out and the equilibrium wage falls to w_1 so that total national income now equals ACL0. The net

immigration surplus to the native born population is given by the familiar Harberger triangle BCD or, $\frac{1}{2} \cdot (w_o - w_1) \cdot M$.

Rewriting the immigration surplus as a fraction of national income results in:

$(\Delta Q_N/Q) = -\frac{1}{2}\, sem^2$

Where s is the share of national incoming going to labor, e is the elasticity of the factor price for labor, and m is the fraction immigrants in the labor force. Labor's share of national income has been relatively stable and averaged 70.5 percent during the last 50 years (Pakko 2004). Hamermesh's (1993) widely cited survey of labor demand found the elasticity of the factor price of labor was -0.3. In 2007 there were approximately 24 million foreign born workers in the U.S. labor force comprising 15.7 percent of the total civilian labor force (BLS 2008). Solving the above equation for these values implies that immigration has raised the income of the native born population by approximately 0.26 percent. U.S. GDP was $13.8 trillion in 2007 so the income of the native born population was raised by approximately $35.9 billion because of immigration. Although using the Harberger triangle method of calculating the net surplus from immigration yields only a modest quarter of one percent of GDP there are sizable rents that changes in immigration policy can secure for labor or capital interests. If the rents become the object of rent seeking activity then the deadweight loss that a change in immigration policy would create could be substantially larger than the $36 billion dollar Harberger triangle surplus.

3. Estimating the Rent Seeking Costs

In the above model immigration creates a substantial income shift away from laborers and towards owners of capital. Drinkwater et. al.'s survey of the immigration

surplus literature followed Borjas in finding a "not-insignificant redistribution from labour to capital" (2002: 8). However restricting or eliminating immigration would create rents that laborers would lobby to secure and capital owners would lobby to prevent so they should not be estimated as a simple transfer.

Specifically workers stand to gain the area w_0BDw_1 in figure 1 and capital owners (and other consumers of immigrant services) stand to lose that area plus the triangle BCD by moving from current policy to a closed border policy. Expressed as a percent of national income the gain to laborers by going from current levels of immigration to no immigration leads to:

(Change in Native Labor Earnings/Q) = $sem(1 - m)$

and capital owners lose that amount plus the surplus:

(Change in Income of Capitalists/Q) = $-sem(1 - \frac{1}{2}m)$

In the U.S. today that means laborers stand to gain 2.8 percent of GDP, or $386 billion. Owners of capital would stand to lose that transfer plus the immigration surplus triangle, approximately 3 percent of GDP, or $422 billion.

The $386 billion are usually assumed to be a transfer between workers and capitalists and consumers. If we expect that future immigration flows would roughly maintain the same proportion of foreign born workers in the economy if policy were unchanged and closing the border would result in eventually having no foreign born citizens in the U.S. workforce, the implication of prior immigration surplus literature is that closing the U.S. borders to any further immigration would only cost the U.S. the Harberger triangle of $36 billion per year. However since this is a political decision and $386 billion of rents are at stake we can expect both organized labor, business interests,

and consumer groups to organize to try to capture these rents. The resulting deadweight loss could transform much of the $386 billion that has been previously assumed to be a transfer into further deadweight costs of immigration restrictions.[5]

How much of the $386 billion will become a deadweight loss from rent seeking? Public choice scholars have devised numerous models to estimate how much of a rent will be dissipated through rent seeking activity.[6] In the case of a complete immigration restriction there are not multiple competing interest groups trying to secure the rent. Either the restriction will be enacted and labor interests benefit or the restriction is rejected and capital interests benefit. So we can model the rent seeking game with a fixed number of $n = 2$ players where there can be diminishing, constant, or increasing returns to rent seeking investments as $r < 1, r = 1, r > 1$. If all rent seekers are risk neutral they will choose the investment in rent seeking *I* to maximize their expected gain *E(G)*,

$$E(G) = (\frac{I^r}{I^r + T})R - I$$

where R is the total rent that can be captured and *T* is the impact of the total rent seeking expenditures by the other *n*-1 rent seekers, $T = \sum_{j \neq i} I_j^r$. Assuming that other interest groups' rent seeking spending remains fixed (Cournot-Nash assumption) the FOC is given by:

$$\frac{rI^{r-1}R}{I^r + T} - \frac{rI^{r-1}I^r R}{(I^r + T)^2} - 1 = 0$$

Where if we assume a symmetric equilibrium a rent seeker will invest *I* such that

[5] It is likely that many non-economic factors also influence people's views on immigration policy and their willingness to lobby for policy changes. If this is the case then deadweight losses in addition to the lobbying of labor, capital, and consumer groups would also be created.
[6] See Mueller (2003: 333-358) for a summary of these models.

$$I = \frac{(n-1)}{n^2} rR$$

as long as when *I* is substituted into the expected gain equations above it results in a positive expected gain, otherwise a risk neutral rent seeker would not attempt to secure the rent. Multiplying the above by *n* we can solve for the total amount invested in rent seeking.

$$nI = \frac{n(n-1)}{n^2} rR = \frac{(n-1)}{n} rR$$

Total rent seeking as a fraction of rents sought is found by dividing by *R*.

$$\frac{nI}{R} = \frac{(n-1)}{n} r$$

Solving with just two competing interest groups, labor and capital owners, and constant returns to scale results in half of the rents being dissipated through rent seeking activity. In the case of the current U.S., closing the border completely and keeping it closed could be expected to result in a deadweight loss from rent seeking of $193 billion per year. Rent seeking losses would be more than five times the deadweight loss generated by the Harberger triangle alone. Total deadweight costs to the U.S. economy would equal $229 billion or 1.7 percent of GDP. Increasing or decreasing returns to rent seeking vary the estimates but under most plausible assumptions the deadweight cost of rent seeking is orders of magnitude higher than the Harberger triangle losses.[7]

U.S. immigration policy may slow the flow of immigrants to the country without completely closing the borders to potential immigrants. Policy makers could decide that they want to allow a flow of immigrants that would cut the proportion of the foreign born

[7] With decreasing returns and a *r* value of .5 deadweight losses would be $97 billion, with increasing returns and a *r* value of 1.5 deadweight losses are $290 billion and rents are fully dissipated at an *r* value of 2, after which no pure strategy exists for higher *r* values.

in half over time. If the proportion of foreign born workers in the economy is cut in half the immigration surplus sinks to just under $9 billion, resulting in a Harberger triangle deadweight loss of $27 billion compared to the status quo. The size of the rent U.S. workers stand to gain compared to the status quo would be $175 billion. However, unlike a move to completely closed borders it is no longer reasonable to assume a fixed two player rent seeking game. Since some workers will be let in and others will be kept out not all capital owning interests are the same and not all labor interests are the same. High skill labor interests have an incentive to make sure it is high skilled immigrants prevented from migrating while low skilled immigrants are allowed and low skilled domestic workers have precisely the opposite interests. Various business interests have demands for different types of foreign labor and each has an incentive to make sure its desired immigrants are the ones who are allowed in. The rent seeking game would now have more than two competing rent seeking groups resulting in a higher proportion of the total rents dissipated by rent seeking activity. If, for example, there were only 10 competing interest groups trying to get in (or prevent) their favored (disfavored) group of immigrants at the expense of others, and there were constant returns to rent seeking activity, the above equation implies that 90 percent of the rent would be dissipated leading to $158 billion of rent seeking deadweight losses. Total deadweight losses from cutting the proportion of immigrants in the economy in half would equal approximately $185 billion, or nearly 80 percent of the total deadweight loss that would be experienced from completely closing the border. As the number of interest groups approaches infinity the entire monopoly rent that workers can gain becomes a deadweight loss. The key assumption driving this result is that when immigration policy is not a corner solution of

completely closed or completely open borders not all labor and capital interests are aligned so competition between them leads to a more complete dissipation of rents.

The above deadweight loss estimates compare more restrictive policies to the existing status quo. We are essentially estimating only increased rent seeking costs of further policy restrictions. However, current immigration policy already creates significant deadweight losses compared to a completely open border policy. Deriving theoretic estimates of the deadweight loss of current policy is not straightforward because to compare it to an open border policy we would have to know the percentage of foreign born workers in our labor force that would result from such a policy. The relevant counterfactual is unavailable. However, given the substantial income difference between the U.S. and much of the world it is likely that many immigrants would like to come and many employers would like to hire their services, so total rent seeking losses from current restrictions are likely substantial.

4. Model Applied to 2005 and 2006 Immigration Reform Bills

In December of 2005 the U.S. House of Representatives passed H.R. 4437, the Border Protection, Antiterrorism, and Illegal Immigration Control Act of 2005. The bill, among other things, would have made illegal immigrants felons, increased penalties on employers who hire illegal immigrants and would have erected a fence along much of the U.S. Mexican border. The bill offered no path towards permanent citizenship for the current illegal immigrants and no guest worker program for future immigrants. The goal of the bill was to move the current illegal immigrant population out of the U.S. In contrast the U.S. Senate passed S.2611, the Comprehensive Immigration Reform Act of 2006, otherwise known as the McCain-Kennedy immigration reform bill, in May. This

bill would have provided a path to citizenship for many illegal immigrants residing in the U.S. and would have created a guest worker program that would allow approximately 200,000 more migrant workers into the U.S. each year.

Compared to the policy changes estimated in the previous section the adoption of either of these competing bills would have a more modest impact on the immigration surplus and rents to be secured. Yet the debate surrounding the passage and reconciliation between these two bills was passionate and wide-spread.

The House and Senate immigration reforms bills were essentially opposites of each other. The House bill ultimately aimed at removing current illegal immigrants from the U.S. while the Senate bill would have created a new "Y" visa that would have allowed current illegal residents of the U.S. the ability to stay legally for the rest of their lives. The Senate bill also contained a guest worker program that would have allowed 200,000 guest workers in per year until the program expired five years after being implemented. Although there was much debate about the guest worker program, with only one million total workers included and an end to the program after five years, the immigration surplus and rents created by the guest worker program would have been relatively small compared to the impact created by removing or legalizing the existing 11 million illegal immigrants. From here forward we estimate the surplus and rents ignoring the effects of the guest worker program. If the guest worker program were included our estimates would be marginally higher.

In 2005 there were approximately 11 million illegal immigrants residing in the U.S. (Passel 2006). About 7.2 million of these illegal immigrants were employed and they accounted for approximately 4.9 percent of the total civilian labor force (Passel

2006). The Bureau of Labor Statistics estimates that, including both legal and illegal immigrants to the U.S., 14.8 percent of the total civilian labor force was foreign born in 2005 (BLS 2006). Assuming the House bill's enforcement provisions would have prevented further illegal immigrants from entering the U.S. these competing bills were essentially a fight over whether 14.8 percent or 9.9 percent of the U.S. work force should be foreign born.

Following our methodology from Section 2 we can estimate the immigration surplus and the potential rents accruing from these two alternative bills. If the Senate bill became law the proportion of immigrants in the economy would remain the same and the immigration surplus would equal almost $29 billion with workers losing a transfer to capital owners of $331 billion compared to a situation with no foreign born workers. If the House bill were passed and the proportion of the foreign born in the work force would be reduced to 9.9 percent the immigration surplus would shrink to $13 billion and workers would lose a transfer to capital owners of $234 billion compared to a situation with no foreign born workers. Capital and labor interests were fighting over a rent of $97 billion depending on whether the Senate or House bill became law. Using our model from section 3 with constant returns from rent seeking activity between $48.5 billion and the full $97 billion would be dissipated by rent seeking activity depending on the number of competing interest groups involved.

5. Conclusion

Although public choice scholars have modeled the formation of immigration policy as the outcome of lobbying by competing interest groups this insight had not been incorporated into the literature calculating the net benefit of immigration to the U.S.

economy. Following Borjas (1995) the standard methodology has been to utilize a Harberger triangle estimation of the surplus while also showing a significant wealth transfer between laborers and capitalists. Scholars have erroneously concluded that if immigration policy were restricted the U.S. would only lose the relatively small Harberger triangle. This paper has shown that much of what economists have previously assumed to be a transfer will become deadweight losses because immigration policy is politically determined and interest groups will invest in securing the transfers. We find that the potential rent seeking losses from further immigration restrictions are orders of magnitude larger than the standard Harberger triangle deadweight loss estimates. A policy of completely closing U.S. borders would cause total rent seeking losses of $193 billion – more than five times the Harberger immigration surplus of $36 billion. The 2005 House of Representatives immigration bill that would have required moving 11 million illegal immigrants out of the U.S. would have reduced the U.S. immigration surplus by $16 billion but could have generated as much as $96 billion in rent seeking losses.[8]

This article has merged the rent seeking literature with the literature that calculates immigration's net benefit to the native born in the U.S. economy. Much work remains to be done. Future research could consider how rent seeking would impact the gains from immigration when capital is allowed to vary with immigration, when immigration generates positive or negative externalities, and when immigrants have skill sets different than the native born population. Estimates of the welfare losses from rent

[8] There would have also been significant enforcement deadweight costs associated with removing the illegal immigrants and making sure they do not return in addition to the rent seeking costs modeled in this paper. See Levine (1999) for a general model that incorporates enforcement deadweight costs of immigration restrictions when estimating the immigration surplus.

seeking divide themselves into two groups, one set that proxies losses by measuring profit rectangles and employs formal models and a second group that tries to add up actual expenditures on lobbying and political activity. Future research could try to document the actual lobbying expenditures centered around the 2005 and 2006 immigration reform bills. This could include expenditures by ideological groups who do not have a direct economic stake in immigration reform. Such a task will be messy and will necessarily require many ad hoc and subjective assumptions. Finally, future studies could also attempt to document many of the other deadweight enforcement costs of barriers to immigration. Obviously the more restrictive the immigration policy the greater the amount of resources that will be needed to enforce it.

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