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Heterogeneous capital ownership, partial democracy and political support for immigration

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Abstract

This paper analyzes and compares equilibrium immigration levels of some popular political economy models in the context of unequal capital holdings. We show that immigration rises (falls) with inequality in a limited (inclusive) democracy where only a small (large) fraction of the population has voting rights. Furthermore, we highlight the similarities between a campaign contributions model and a partial democracy model in terms of their predictions about immigration policy. In particular, we show that extension of voting rights in a partial democracy has qualitatively similar implications on immigration policy as reducing the relative weight on campaign contributions.

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1. Introduction[1]

Immigration policy involves a balancing act of efficiency and equity considerations. In reality, legal immigration levels are determined by a government which is subject to both lobbying pressures (as in Grossman and Helpman, 1994, for trade policy, henceforth referred to as GH) and voter/constituents' pressures (as in the case of Mayer, 1984, also for trade policy). In addition, it is possible that a nation does not extend voting rights to the entire population and therefore is a *partial democracy*, where voters may not be fully representative of the population. There is a long history of the existence of partial democracies. For example, in the 1700s voting was restricted by some US states to white males with property, and black men were not allowed to vote until the 15th. Amendment was ratified in 1870. Although voting rights were extended in the US to women and minorities through various subsequent constitutional amendments, many barriers still remain. Many modern-day democracies, including even developed countries, are characterized by some degree of voter suppression and hence are *de facto* partial democracies. Voters that are suppressed are mainly the poor, including those with relatively low levels of education. How does the inequality of capital holding affect support for immigration in such partial democracies? We use a simple framework to address some elements of this broad question and thereby complement the rich extant literature on the political economy of immigration.

Along the lines of Mayer (1984), we first show that if the median voter holds less than the per capita level of capital, then the median voter's desired immigration level is lower than the purely efficiency driven optimal immigration level. Given that inequality is typically associated with low median voter holding of wealth/capital, our findings are consistent with recent reservations about immigration in various political parties/platforms in spite of the potential for aggregate efficiency gains.

Next, we consider a partial democracy where a subset of the richest members of the population constitutes the voting population. We show that the effect of inequality on immigration critically depends on the position of the median voter of the partial democracy relative to the median individual of the entire population.

Finally, we consider a GH type campaign contributions model and show that it shares some similarities with the partial democracy model in terms of predictions about equilibrium immigration. This is not surprising because large sums of money get spent directly as campaign contributions as well as hundreds of millions of dollars in direct campaigning by billionaires to get around legal caps on campaign contributions. These funds provided by the super-rich are aimed at making poorer and less educated people vote in accordance with those billionaires' preferences, rather than their own, which, at a deeper level, is not too different than a partial democracy. As a result, we see in our theory the convergence between outcomes of a campaign contributions model and the partial democracy model.

[1] We thank an anonymous referee for helpful comments. The usual disclaimer applies.

2. Model

A nation is populated by N individuals, with each individual $i \in [0, N]$ possessing a unit of labor. In addition, each individual possesses a share $s(i)$ of the aggregate capital endowment $\bar{K}$ of the economy, where $s(i) \geq 0$, such that an individual's capital endowment is $s(i)\bar{K}$. Potential immigrants in this economy hold no capital. A single numeraire good X is produced in this economy with labor (L) and capital (K) using a constant-returns-to-scale (CRS) technology

$$X = F(L,K),\ F_L > 0,\ F_K > 0,\ F_{LL} < 0 \text{ and } F_{KK} < 0. \tag{1}$$

The nation's technology and endowments are such that at full employment the wage rate w exceeds the wage rate in a source nation, such that the nation can choose its desired immigration level.

Individuals derive unit marginal utility from their consumption $x(i)$ of the numeraire good and incur an immigration assimilation cost $a(I)$, which is non-decreasing and convex in the immigration level I [with $a'(I) > 0$ when $I > 0$].[2] Under these assumptions, individual i's s utility function is:

$$u(i) = x(i) - a(I). \tag{2}$$

Denoting r to be the rental rate on capital, the income of individual i is:

$$y(i) = w + s(i)r\bar{K}. \tag{3}$$

The individual's budget constraint dictates that $x(i) = y(i)$, such that Eq. (2) reduces to:

$$u(i) = w + s(i)r\bar{K} - a(I). \tag{4}$$

Let us arrange $i \in [0, N]$ in increasing order of capital share, such that $s'(i) \geq 0$.[3] At immigration level I, aggregate labor supply is $L = N + I$, such that full employment and firm

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[2] The immigration assimilation cost here can be thought of as a per capita congestion cost on natives, insignificant at low levels of immigration but rising rapidly beyond a certain immigration level, such that $a(I=0) = a'(I=0) = a''(I=0) = 0$. We note that since we focus on host nation's voters' preferences, we have abstracted here from assimilation costs that immigrants (who are not voters) may bear.

[3] For simplicity of exposition, we assume that individuals with some capital have distinct capital endowments.

profit maximization imply $w = F_L\left(N+I,\bar{K}\right) = w(I)$, where $w'(I) = F_{LL}\left(N+I,\bar{K}\right) < 0$. In addition, noting that the production function is CRS, we get $r\bar{K} = F\left(L,\bar{K}\right) - wL$, which, noting that $L = N + I$ and $w = F_L$, implies that $r = r(I)$, with $r'(I) = -\dfrac{Lw'(I)}{\bar{K}} > 0$. Thus, Eq. (4) reduces to:

$$u(I;i) = w(I) + s(i)r(I)\bar{K} - a(I). \tag{5}$$

Notice that for an individual without any capital holding [i.e., $s(i) = 0$], any immigration is undesirable because $w'(I) < 0$ and because assimilation costs can only add to the individual's welfare loss. Among capital holders who support some immigration, differentiating Eq. (5) and using $r'(I) = -\dfrac{Lw'(I)}{\bar{K}} > 0$, we get the most desired immigration level of an individual as:

$$u_I(I;i) = w'(I)\left(1 - s(i)L\right) - a'(I) = 0,\ I^i = I\left(s(i)\right);\ I'\left(s(i)\right) = \frac{w'(I)L}{u_{II}} > 0, \tag{6}$$

where sufficient convexity is assumed in the assimilation cost function to ensure that $u_{II} < 0$.[4] Thus, the desired immigration level for all capital holders who benefit from some immigration is increasing in their share of the nation's capital endowment.

2.1 Utilitarian Government Objective Function

Aggregate utility of the residents is:

$$U(I) = \int_0^N u(i)di = w(I)N + r(I)\bar{K} - Na(I). \tag{7}$$

Recalling that $\bar{K}r'(I) = -Lw'(I)$ and $L = N + I$, the government's utilitarian optimal immigration level I^* is defined by the first order condition:

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[4] Because $u_{II}(I=0;i) = w''(I=0)\left(1 - s(i)N\right) - sw'$ can be positive, $u_I(I=0;i) = 0$ does not necessarily imply an optimum of zero desired immigration. For example, if $s(i) = 1/N$, then $u_I(I=0;i) = 0$. However, this is a local minimum because $u_{II}(I=0;i) = -w'/N > 0$.

$$U'(I) = -Iw'(I) - Na'(I) = 0.^{5} \tag{8}$$

The first term on the right-hand-side of Eq. (8) is the aggregate gains for citizens from a lower wage bill that has to be paid to immigrants, while the second term is the aggregate assimilation cost. At the optimal immigration level, the aggregate marginal gain is exactly balanced by the aggregate marginal assimilation cost.

Notice that the utilitarian optimum abstracts from distributional considerations, with some citizens without capital being strictly worse off after any immigration.

2.2 The Median Voter Model with Full Democracy

The median voter's ideal immigration level is given by Eq. (6). How does this immigration level compare with the immigration level at the utilitarian optimum? Assuming that the median voter holds some capital and using Eq. (8),

$$u_I\left(I;\frac{N}{2}\right)_{\Big|I=I^*} = w'\left(I^*\right)\left(1 - s\left(\frac{N}{2}\right)\left(I^* + N\right) + \frac{I^*}{N}\right) \geq 0 \Leftrightarrow s\left(\frac{N}{2}\right) \geq \frac{1}{N}. \tag{9}$$

Eq. (9) establishes that if the median voter has exactly the average amount of capital $\bar{K} / N$, then the median voter's desired optimum and the utilitarian optimum converge, otherwise the median voter's desired optimum is less (greater) than the utilitarian optimum depending on whether the median voter's share is less (greater) than the per capita level. We discuss next the effect of inequality on support for immigration in a median voter context using a partial democracy model, where the case of full democracy is nested in the analysis.

2.3 The Median Voter Model with Partial Democracy

We follow the approach of Milner and Kubota (2005) and Tavares (2008) and assume that in a partial democracy only the *d* richest people can vote. As we increase *d*, we extend the franchise bringing in more people into the fold of democracy. When *d* = *N*, we have full democracy. However, when $d < N$, we focus on the median voter of the subset of these richest voters. The median voter of this subset $i \in [N-d, N]$ is $i = N - \frac{d}{2}$, so an increase in *d* represents greater democracy or an extension of the franchise. Note that $\frac{\partial s\left(N - (d/2)\right)}{\partial d} = -\frac{1}{2}s'\left(N - (d/2)\right) < 0$, such that using Eq. (6) we conclude that an extension of the voting franchise must reduce the political economy driven immigration level in a partial democracy. We now turn our attention to

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[5] We assume that $a(I)$ is sufficiently convex at the optimal immigration level ($I > 0$) for the second-order-condition to be satisfied. In addition, note that $U'(I=0) = 0$, but $U''(I=0) = -w'(I=0) > 0$, therefore $I = 0$ here represents a minimum.

the effect of a change in inequality of capital holding on immigration policy.

Figure 1 maps capital shares in the population for a linear case using coordinates $\left(i, s\left(i\right)\right)$. The curves *OAB* and *OCD* represent two capital distribution profiles, with the latter curve representing more concentration of capital holding.[6] The positive horizontal intercepts reflect the fact that a fraction of the population does not hold any capital. To ensure that the shares corresponding to each capital distribution profile sum up to unity, the areas of triangles *ABN* and *CDN* must each equal unity.

Consider a high value of *d* such that the median voter $i = N - \frac{d}{2}$, is to the left of the horizontal coordinate of point *P*. Going from curve *OAB* to *OCD* for this median voter will involve a drop in capital share and hence a lower support for immigration. In this case, greater inequality reduces immigration. Now consider a low value of *d* such that the median voter is to the right of the horizontal coordinate of point *P*. In this case, the median voter's share rises and there is greater support for immigration. To summarize, when the democracy is more inclusive/complete, greater inequality tends to reduce immigration, while in a more limited democracy greater inequality is associated with increased support for immigration.[7] Finally, assume that the median voter (corresponding to both share profiles) is at point *P* and increase *d*. It is clear that $s\left(i\right)$ goes down more sharply in the more unequal economy, such that immigration reduction is more pronounced after extension of the franchise in the more unequal economy.

2.4 Political Contributions Model

Reflecting the fact that only a fraction of the population owns capital, we consider the case where $\lambda < N$ individuals hold some capital. Eq. (4) is revised to:

$$u\left(i\right) = w + s\left(i\right)r\bar{K} - a\left(I\right), \text{ for } i \in \lambda \text{; and } u\left(i\right) = w - a\left(I\right), \text{ for } i \notin \lambda \text{;} \tag{10}$$

where $i \in \left[0, N\right]$. Aggregate utility of the capitalists is:

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[6] It is easy to check that the Gini coefficient associated with curve *OAB* is lower than that associated with curve *OCD*.

[7] When $d = N$, such that we have a full democracy, the requirement that shares must add to one ensures that the median voter is to the left of the horizontal coordinate of point *P*, such that greater inequality must reduce immigration. Also, for multiple linear capital share profiles, a sufficient condition for immigration to go up (down) with an increase in inequality is that *d/2* is smaller (larger) than the horizontal coordinate (measured going left from point *N* in the figure) corresponding to the intersection point of the two profiles reflecting the greatest (least) inequality.

$$\pi(I) = \int_{N-\lambda}^{N} u(i)di = \lambda w(I) + r(I)\bar{K} - \lambda a(I), \tag{11}$$

because $\int_{N-\lambda}^{N} s(i)\,di = 1$. Capitalists can pay a surplus, $H(I) = \pi(I) - Z$, as political contribution to the government for an immigration level *I* chosen by the government.[8] As in GH, *Z* is decided so as to ensure that the government's payoff is at least as large as the government's zero-contribution payoff. The government's payoff is:

$$G(I) = H(I) + \alpha U(I), \tag{12}$$

where $U(I)$ is the utilitarian national welfare function defined in Eq. (7) and $\alpha > 0$ is a measure of the weight attached to aggregate utility relative to campaign contributions. Substituting $H(I) = \pi(I) - Z$ in Eq. (12) and rearranging terms we get:

$$G(I) = (\lambda - N)\left[w(I) - a(I)\right] - Z + (1+\alpha)U(I). \tag{13}$$

The first-order condition for the government's desired immigration level is:

$$G'(I) = (\lambda - N)\left[w'(I) - a'(I)\right] + (1+\alpha)U'(I) = 0. \tag{14}$$

Eq. (14) implicitly defines a GH type political contributions' determined immigration level $I = I^{GH}(\lambda)$. It is straightforward to show that maximizing (13) is equivalent to maximizing the utility of a person who has a share $\frac{1+\alpha}{\lambda+\alpha N} \geq \frac{1}{N}$ of the economy's total capital stock. As $\alpha \to \infty$, $\frac{1+\alpha}{\lambda+\alpha N} \to \frac{1}{N}$. Also, clearly, this share falls with α. This share could be that of the voter with the median capital stock within the set of voters in a limited democracy as described earlier (since the capital share of this person is greater than the simple economywide average share, which is greater than the economywide median in the presence of inequality). Clearly, increasing α in this framework is equivalent to an extension of the franchise within our median-voter model of a partial democracy, but the upper bound in this case is less than a full democracy. Notice that the utilitarian optimum immigration level I^* is defined by $U'(I) = 0$, which, when substituted in Eq. (14) yields

$$\left[G'(I)\right]_{|I=I^*} = (\lambda - N)\left[w'(I^*) - a'(I^*)\right] > 0, \tag{15}$$

because $\lambda < N$. Thus, political contributions will push the immigration level above I^* (i.e.,

[8] We assume that the group of capitalists coordinates and uses transfers in such a way that all capital holders have at least as much payoff as they have without immigration.

$I^{GH} > I^{*}$). Furthermore, it is easy to check using Eq. (14) that the smaller the extensive margin of capital holding (i.e., λ), the higher the level of I^{GH}. This finding has an Olsonian collective action flavor, that greater concentration of capital holding leads to more lobbying by special interest groups (in this case the lobby of the capitalists). The result is also similar to the impact of an increase in inequality (reduction in λ) in a median voter model under a limited democracy.[9]

3. Conclusion

De facto immigration policy in a fully inclusive democracy is based on both political factors and economic efficiency factors. We show that among the political factors, voter interests will generally tend to oppose immigration, while campaign contributions will tend to favor immigration. If efficiency considerations are paramount for the government (i.e., where political factors or distribution concerns are ignored), it will follow the strategy of choosing a utilitarian optimum, where the limits to immigration are applied by assimilation costs.

Turning to non-inclusive democracies, we show that an extension of the voting franchise in a partial democracy increases opposition to immigration. However, greater inequality can either raise or reduce support for immigration depending on the inclusiveness of the democracy in terms of voting rights. It is important here to note that, as elaborated earlier, robust partial democracies have historically existed in the developed world, while, effectively, modern democracies are, to a certain extent, also partial.

We find that concentration of capital holding raises immigration through lobbying, mirroring immigration expansion in the face of greater inequality in a very limited democracy. Since the former is a way in which the rich buy the votes of the poor to vote in accordance with the preferences of the former rather than those of their own, this convergence result makes logical sense.

References

Grossman, G. M., and Helpman E. (1994). "Protection for sale." *American Economic Review* 84(4), 833–850.

Mayer, W. (1984). "Endogenous Tariff Formation." *American Economic Review* 74(5), 970-985.

Milner, Helen V. and Keiko Kubota (2005). "Why the Move to Free Trade? Democracy and Trade Policy in the Developing Countries." *International Organization* 59(1), 107- 143.

Tavares, Jose (2008). "Trade, Factor Proportions, and Political Rights." *The Review of Economics and Statistics* 90(1), 163-168.

[9] Recall that in Figure 1 a rise in inequality requires a fall in λ.

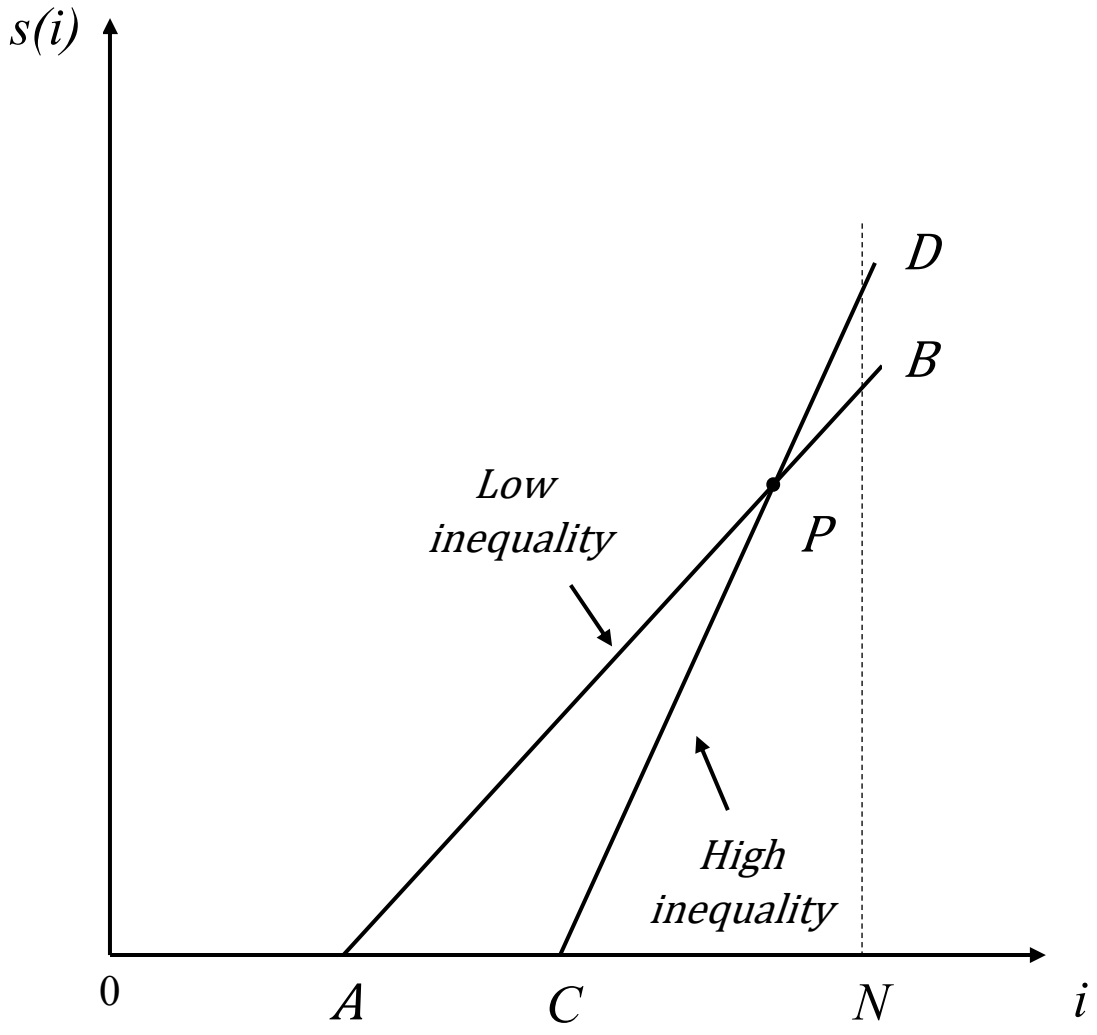

Figure 1 Capital Holding Profiles for Different Inequality Levels