

## Migration-Induced Redistribution with and without Migrants' Voting

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We are motivated by the unique migration experience of Israel, of a supply-side shock triggering skilled immigration and the concurrent decline in welfare-state redistribution. This paper develops a model that can provide an explanation for the mechanism through which a supply-side shock, triggering high-skill migration, can also reshape the political-economy balance and the redistributive policies. The paper highlights the differences in the political-economy-based redistribution policies between the cases in which migrants participate in the electoral system and the case in which they do not. When migrants are allowed to vote, and take advantage of this right, then, all income groups gain (in their net income), except the low-skilled immigrants, who lose. However, when migrants are not allowed to vote, or choose not to participate in elections, all income groups gain, except the skilled migrants who lose.

*Keywords:* immigration episode as a "natural experiment", majority voting, progressivity of the welfare state, gainers and losers

*JEL classification:* F 22, H 24, H 55

### 1. Introduction

Following the collapse of the Soviet Union some three decades ago, large numbers of immigrants (about 20 % of the Israeli population at the time) went to Israel. Relative to the native-born Israelis, these immigrants were poor in wealth, but rich in skills.<sup>1</sup>

In history, immigrants often shift the balance of politics among ethnic groups, economic classes, and age groups, so that they could generate political backlash. In Israel, however, the political backlash has been moderate, whereas the change in the political balance has been substantial. Israel's Law of Return grants returnees immediate citizenship and consequently vot-

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<sup>1</sup> See Razin (2017).

ing rights. Immigrants' voting is key to understanding the political-economy mechanism that determines income distribution and redistribution (see Razin, Sadka, and Swagel, 2002a,b). An early study by Avner (1975) found that the voter turnout rate of new immigrants was markedly lower than that of the established population. This would mean that immigrants did not fully exercise their voting rights and therefore did not influence the political-economy equilibrium in Israel as much as the established population.<sup>2</sup> However, a later study conducted by Arian and Shamir (2002) about voter turnout patterns of new immigrants to Israel in the 2001 elections reverses the earlier finding. The new immigrants in this study were predominantly from the former Soviet Union (FSU). Arian and Shamir find no marked difference in voter turnout rates between the new immigrants and the established population.

Migration differs from the movement of other factors of production (such as capital) in one fundamental way. Migrants become part of the society of the receiving country, including its evolving culture and politics.<sup>3</sup> A highly developed social welfare system in the receiving country may greatly complicate matters, as emphasized by Razin, Sadka, and Swagel (2002b).<sup>4</sup> While high-skilled and therefore high-wage migrants may be net contributors to the fiscal system, low-skilled migrants are likely to be net recipients, thereby imposing an indirect tax on the taxpayers of the receiving country. A sizeable wave of migrants may shift the balance of politics among ethnic groups, economic classes, or age groups, and reshape the distribution of wealth and disposable income. That is, immigrants could influence the size of the welfare state directly through the electoral system, and indirectly through their effect on market-based inequality.

Figure 1 depicts the standard Gini coefficients of the distribution of gross income and disposable income (the two upper graphs). The bottom graph, which is the difference between them, measures the degree of redistribution; a higher graph indicates redistribution that is more intensive.

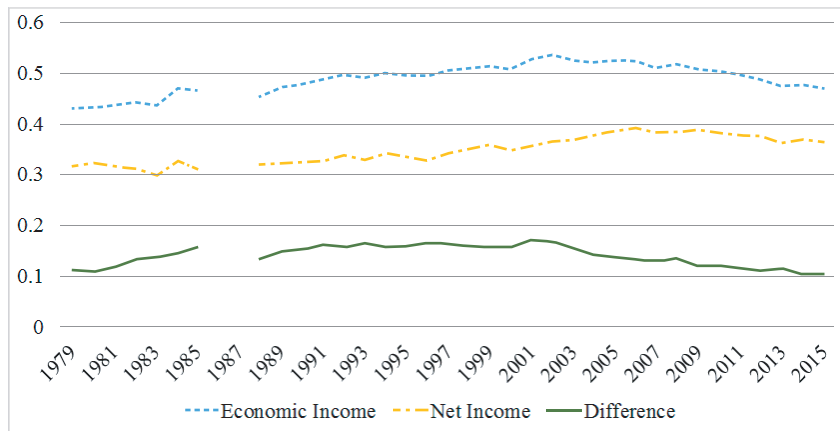
Figure 1 demonstrates a marked decline in economic income inequality, starting at the beginning of the present century, and a noticeable decline in redistribution, resulting in a rather moderate rise in net income inequality. We suggest that these trends are driven by the influx of immigrants from the FSU in the preceding decade. Thanks to high-skill migration the rising middle class lowered economic income inequality, but it reoriented the income redistribution policies.

<sup>2</sup> Messina (2007) and Bird (2011) report a similar low voter turnout pattern for migrants for Western Europe.

<sup>3</sup> The Swiss playwright Max Frisch put it poetically: "We asked for workers. We got people".

<sup>4</sup> A related issue is the implications of aging population for the size of the welfare state; see Razin, Sadka, and Suwankiri (2011).

**Figure 1**  
*Gini Coefficients: Gross Economic Income, Net Income, and Redistribution\* – 1979–2015\*\**



Notes: \* Redistribution is measured by the difference between economic and net (disposable) income standard, Gini coefficients. \*\* The break in the data is in the source. Source: Dahan (2017).

The literature has addressed several issues in the political economics of immigration. For instance, Gradstein and Schiff (2006) deal with redistribution between the majority native-born and the minority immigrants. Mayda, Peri, and Steingress (2015) study empirically how immigrants shape political party voting in the U.S. The novelty of our paper is in analyzing simultaneously how immigration affects the nationwide income redistribution, and how redistribution affects the volume and the skill mix of immigration. Specifically, the paper aims at developing formally a political-economy mechanism that may explain the aforementioned conflicting effects on income inequality and the skill mix of immigration driven by an immigration supply shock. We develop an analytical model in which immigrants' voting is key for the explanation of the migration cum redistribution trends.

The organization of the paper is as follows. Section 2 describes the model, and section 3 presents the political-economy equilibrium. In section 4, we discuss the redistribution with and without migrants' voting. Section 5 provides concluding remarks.

## 2. The Model

The basic ingredients of the model are as follows.

## 2.1. Human-Capital Investment

There are just two types of workers: *skilled* (with symbol  $S$ ) and *unskilled* (with symbol  $U$ ). The wage per unit of labor of a skilled worker is  $w$ , whereas that of an unskilled worker is  $\rho w$ , where  $\rho < 1$ . All native-born (with symbol  $N$ ) are initially unskilled. However, a native-born can acquire education at some cost ( $c$ ) and become skilled. Individuals differ from one another through their cost of education: there is a continuum of native-born individuals, distinguished only by their cost of education. For notational simplicity, we normalize the number of native-born individuals to one. An individual is identified by her cost of education, so that an individual with a cost of  $c$  is termed a  $c$ -individual. We assume for simplicity that the cost of education is uniformly distributed over the interval  $[0, \bar{c}]$ .

All native-born individuals are endowed with  $E$  units of a composite good, the single good in this economy<sup>5</sup>. All individual inelastically supply one unit of labor. If a  $c$ -individual acquires education and becomes skilled, her income<sup>6</sup> (denoted by  $I_S^N$ ) is

$$I_S^N(c) = (1-t)w + b + (E-c)(1+r), \quad (1)$$

where  $t$  is a flat wage tax rate,  $b$  is a uniform (lump sum) per capita social benefit, and  $r$  is the interest rate – the return to capital. If a  $c$ -individual decides not to acquire education and remain unskilled, her income (denoted by  $I_U^N$ ) is

$$I_U^N = (1-t)\rho w + b + E(1+r). \quad (2)$$

(Note that  $I_S^N(c)$  depends on  $c$ , whereas  $I_U^N$  does not.)

Thus, there is a cutoff level of cost,  $c^*$ , so that all  $c$ -individuals with  $c \leq c^*$  will choose to become skilled, and all the others (with  $c \geq c^*$ ) will remain unskilled. This  $c^*$  is defined by

$$(1-t)w + b + (E-c^*)(1+r) = (1-t)\rho w + b + E(1+r).$$

The variable  $c^*$  is solved for from the equality between the return to education and its cost. A  $c^*$ -individual is just indifferent between acquiring education (and thereby becoming skilled) and staying unskilled. Upon further rearrangement,  $c^*$  is expressed by

$$c^* = \frac{(1-t)(1-\rho)w}{1+r}. \quad (3)$$

Note that  $c^*$  may well exceed  $E$ , which means that those  $c$ -individuals with  $c$  below but close to  $c^*$  (which is endogenous) actually *borrow* in order

<sup>5</sup> To simplify the analysis, we assume that  $E$  and  $c$  are uncorrelated. A possible extension of the model is to assume some distribution of  $E$ , which is negatively correlated with  $c$ , so that more capable individuals (with low  $c$ ) have possession of larger endowments (higher  $E$ ).

<sup>6</sup> Note that this specification assumes that capital does not depreciate at all.

to acquire education. Naturally, the payoff due to the higher wage will more than offset the borrowing cost. For those individuals  $E - c$  is negative.

Also, note that we are employing a static framework within which all economic and political processes occur simultaneously with no time dimension.<sup>7</sup> For instance, we do not distinguish between the time when the education is acquired and the time when the earnings occur. Similarly, capital earns its return  $r$  at the same time it is employed.

The number of  $c$ -individuals with  $c \leq c^*$  is the number of native-born skilled individuals. Denoting this number by  $n_S$ , it follows that

$$n_S = \frac{c^*}{\bar{c}}. \quad (4)$$

Then, the number of native-born unskilled individuals,  $n_U$ , is given by

$$n_U = 1 - n_S. \quad (5)$$

The aggregate investment in human capital (education), denoted by  $H$ , and is then given by

$$H = \int_0^{c^*} c \cdot \frac{1}{\bar{c}} dc = \frac{(c^*)^2}{2\bar{c}}. \quad (6)$$

Therefore, the aggregate stock of physical capital,  $K$ , is equal to

$$K = E - H. \quad (7)$$

There are also two types of migrants: the skilled, who can earn a wage  $w$  in the host country, and the unskilled, who earn a wage  $\rho w$  in the host country. None of them has any initial endowment. The migrants come to the host country after they have already made and implemented the decision whether to acquire or not acquire education.<sup>8</sup> Thus, it is exogenously determined who is skilled and who is unskilled. In other words, the economy benefits from the skilled migrants because it does not have to pay the cost of investment.

## 2.2. Income Groups

The income of skilled and unskilled migrants, respectively, is

$$I_S^M = (1 - t)w + b \quad (8)$$

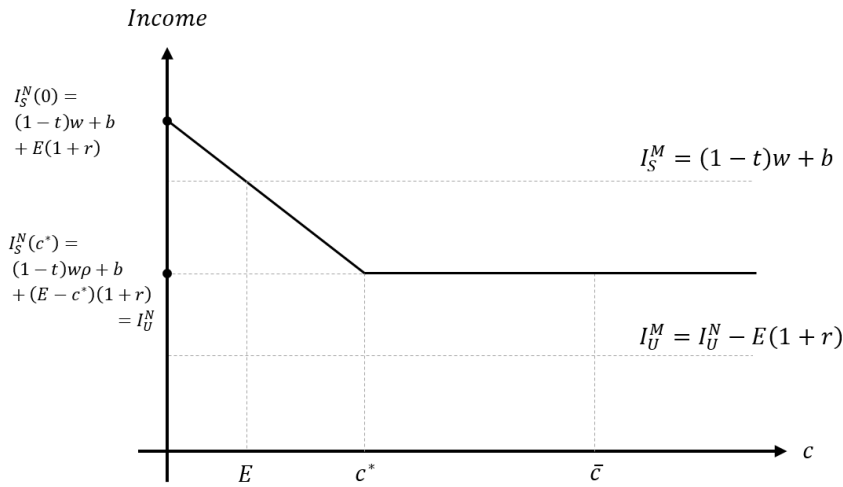
and

$$I_U^M = (1 - t)\rho w + b. \quad (9)$$

<sup>7</sup> Such a framework is akin to a steady state in a dynamic model with rational expectations.

<sup>8</sup> For simplicity we assume that migrants come with no initial endowment and no debt from abroad. That is, their  $E$  is zero.

**Figure 2**  
*Income Groups and Cost of Education*



The income of the native-born as a function of  $c$  is depicted in Figure 2. Note that  $I_S^N(c)$  declines in a straight line until it reaches  $c^*$ , where

$$I_S^N(c^*) = (1-t)w + b + (E - c^*)(1+r)$$

$$= (1-t)\rho w + b + E(1+r) = I_U^N.$$

The labor income of the unskilled native-born and the unskilled migrants is the same, but the total income of an unskilled migrant, which is  $(1-t)\rho w + b$ , is definitely below the income of an unskilled native-born, the difference being the capital income enjoyed by the unskilled native-born, namely  $E(1+r)$ . The total income of a skilled migrant is definitely higher than the total income of the unskilled migrant, because of the higher wage earned by the skilled, whereas neither has any other income. The income of the skilled migrants exceeds the income of the skilled native-born with  $c > E$ , but falls short of the income of the skilled native-born with  $c < E$ .

The income of a skilled migrant is  $I_S^M = (1-t)w + b$ , whereas the income of a skilled  $c$ -individual is  $(1-t)w + b + (E - c)(1+r)$ . Therefore, as long as  $E - c$  is positive (i.e., the  $c$ -individual does not borrow in order to invest in human capital), then  $I_S^N(c) > I_S^M$ . However, if  $E - c < 0$  (i.e., the individual borrows in order to invest in human capital), then the income of the skilled migrant ( $I_S^M$ ) is greater than the income of the skilled native-born ( $I_S^N$ ). In sum, we have the following ranking of incomes:

$$I_U^M < I_U^N = I_S^N(c = c^*) < I_S^N(c > E) < I_S^N(c = E) = I_S^M < I_S^N(c < E).$$

### 2.3. Supply of Immigrants

Recall that the country has an unrestricted migration policy. We envisage an economy that allows any migrant to come. Thus, the decision whether to immigrate or not rests solely with the migrant. Each potential migrant has some reservation income, so that she will migrate if and only if she will be accorded a higher income in the destination country.

Due to various factors (skill, family ties, age, etc.), this reservation income is not the same for all, but there is rather a continuum of reservation incomes. Distinguishing between the two skill groups, we then assume that there is an upward-sloping supply function for each skill group, depending on the income accorded to immigrants in the destination country. Denoting the number of skilled migrants by  $m_S$ , the supply function of skilled migrants is given by an isoelastic function:

$$m_S = B_S (I_S^M)^{\sigma_S}, \quad (10)$$

where  $B_S$  and  $\sigma_S$  are positive parameters. Similarly, the supply function of unskilled migrants is given by

$$m_U = B_U (I_U^M)^{\sigma_U}, \quad (11)$$

where  $m_U$  is the number of unskilled migrants and  $B_U$  and  $\sigma_U$  are positive parameters.

### 2.4. Production and Factor Prices

We employ a Cobb–Douglas production function

$$Y = AK^\alpha L^{1-\alpha}, \quad A > 0, \quad 0 < \alpha < 1, \quad (12)$$

where  $Y$  is the gross domestic product,  $A$  is a total factor productivity (TFP) parameter, and  $\alpha$  is the capital-share parameter (with  $1 - \alpha$  the labor-share parameter).  $L$  is the total labor supply in efficiency units and is given by

$$L = n_S + \rho n_U + m_S + \rho m_U. \quad (13)$$

The competitive wage per efficiency unit of labor ( $w$ ) and the competitive interest rate ( $r$ ) are given by the marginal productivity conditions

$$w = (1 - \alpha)A \left( \frac{K}{L} \right)^\alpha \quad (14)$$

and

$$r = \alpha A \left( \frac{K}{L} \right)^{1-\alpha}. \quad (15)$$

We assume that capital is immobile across countries. This is meant to say that there is some immobile, nontradable factor, such as land or housing, whose returns are determined in the confines of the domestic economy, and are affected by immigration.

## 2.5. The Redistribution System

We employ a simple system of redistribution. Wages are taxed at a flat rate of  $t$ . The revenues are redistributed by a uniform per capita transfer  $b$ .

We assume that the migrants qualify for all the benefits of the welfare state, and they are subject to the state taxes. Therefore, the government budget constraint is as follows:

$$twL = b(1 + m_S + m_U), \quad (16)$$

assuming that the government has no other revenue needs than for redistribution.<sup>9</sup> Note that it follows from equation (16) that  $t$  and  $b$  must be of the same sign. A positive wage tax ( $t$ ) allows the government to accord a positive transfer ( $b$ ) to all. A subsidy to wages (namely, a negative  $t$ ) requires the government to impose a lump-sum tax (namely, a negative  $b$ ) on all. When  $t$  and  $b$  are positive, the tax-transfer system is progressive. When they are negative, the system is regressive.

## 3. Equilibrium

With unrestricted migration, the flows of migrants  $m_S$  and  $m_U$  are determined by the migrants themselves according to their reservation incomes (embedded in the supply functions (10) and (11)) and the incomes available to them in the host country. There are therefore only two policy variables – the tax rate  $t$  and the social benefit  $b$ . However, as the government is constrained by a balanced budget (the condition (16)), it follows that there is essentially only one policy variable; once  $t$  is chosen, all the other economic variables are determined in equilibrium, including the tax revenue ( $twL$ ), the numbers of migrants ( $m_S$  and  $m_U$ ), and  $b$ . Or, alternatively, once  $b$  is chosen, all the other economic variables are determined in equilibrium.

Choosing  $t$  as the single policy variable, we note that there remain 15 endogenous variables:

$$w, b, r, c^*, I_S^M, I_U^M, n_S, n_U, I_U^N, m_S, m_U, H, K, Y, L.$$

There are also 15 equations in the model, (2)–(16), which are solved for the endogenous variables. In addition, the income of the skilled native-born, which depends on their education cost, is given by the function defined in (1).

<sup>9</sup> One may wonder why there is no tax on the initial endowment  $E$ , which could be taken to be nondistortive. However, in a dynamic setting, which we have preferred to transform into a static framework,  $E$  represents accumulated savings, and taxing it would be distortive. Furthermore, because all native-born possess the same initial endowment, taxing it in our static model would not distribute income across native-born income groups, but rather would amount to transferring income from the native-born to the migrants.



#### 4. Redistribution with and without Migrants' Voting

As explained in the introduction, we aim at studying the effect of migration on the progressivity of the welfare state, and the resulting distribution of disposable income. This depends on the skill composition of migrants and the extent of their integration in the political system, that is, whether or not they participate in the electoral process. We consider the extreme cases: case (a) when migrants do not participate in elections, and case (b) when they do so fully. For each of these two cases, we also study how a skilled migration shock affects the political-economy equilibrium and the ensuing functional and size distribution of income. For this, we resort to numerical simulations.

The policy variable is chosen by a natural (and plausible) version of majority voting, as described below.

*Case (a): Migrants do not vote.* In this case, the political equilibrium is rather straightforward. Note that if a  $c_0$ -individual would like to raise  $t$ , then all  $c$ -individuals with  $c \geq c_0$  (whether skilled or unskilled) would certainly support such a move. This means that the distribution of the voters over the most preferred  $t$  is single-peaked. Hence, the  $t$  that will be chosen in equilibrium is the median voter's most preferred  $t$ .

Note that the story of the immigration to Israel from the former Soviet Union, described in the introduction, is characterized by the immigrants being on average more skilled than the native-born. To focus on this feature we considered the case where

$$\frac{\bar{c}}{2} > c^*,$$

that is, the median native born is unskilled.

Then the median voter is also an unskilled native-born (for  $\rho$  sufficiently large, this will indeed be the case). Then the equilibrium  $t$  will be at the (endogenously determined) Laffer point. The equilibrium is described in row (a)(1) in table 1, and in figure 2(a,b).

Now suppose that there is a skilled migration supply shock. In order to generate a marked structural change in the political-economy equilibrium, we specifically let  $B_s$  rise exogenously from 1.2 to 8.2, whereas  $B_u$  is kept unchanged. Note that as immigrants do not vote, the identity of the median voter does not change. As expected, the wage per efficiency unit falls, and the interest rate rises. The policy becomes more progressive. Both  $t$  and  $b$  rise. Note that the skilled-migration shock is strong, and the number of skilled migrants ( $m_s$ ) rises sharply even though their income ( $I_s^M$ ) falls. The fall in their income stems from an increase in the tax ( $t$ ), which is somewhat offset by the rise in the transfer ( $b$ ).

In fact, the median voter, who is an unskilled native-born and as such a net beneficiary of the welfare state, encourages an inflow of skilled migrants in

order to exploit these net fiscal contributors to the welfare state. Indeed, the tax rate is raised, and more importantly, the social benefit ( $b$ ) rises significantly. Interestingly, all skilled and unskilled native-born are better off as a result of this supply-side shock of skilled migrants. Note that the native-born unskilled benefit mainly both because the interest rate ( $r$ ) rises (and they save all of their initial endowment), and because the transfer ( $b$ ) is more generous.

Table 1(a) and figure 2 suggest also that the average income of the native-born skilled ( $\bar{T}_s^N$ ) rises. It is worth pointing out that *all* skilled native-born (regardless of their cost of education,  $c$ ) are better off. By revealed preferences, the income of every skilled native-born is at least as high as that of an unskilled native-born, because a skilled person could have chosen to stay unskilled.

*Case (b): Migrants vote.* Suppose now that migrants do vote. Formally, everything takes place at one point in time, as the model is static. That is, migration, education, and voting decisions, and the resulting factor incomes, are all made simultaneously with the voting decisions, so that voting decisions are made while taking into account the effects of the voting outcome on immigration and all other variables, and vice versa.<sup>10</sup>

Due to the lack of the single peakedness property, we assume a two-stage voting system. First, the majority determines whether the system is progressive or regressive. Second, the largest subgroup determines the parameter values of  $t$  and  $b$ .

Upon observation, we can see from equations (2) and (9) that the direct effect of the tax-transfer policy on the incomes of the unskilled native-born and the unskilled migrants is the same, and works through the net wage income  $(1-t)\rho w + b$ . For the unskilled migrant this is the only effect of the tax-transfer system. However, for unskilled native-born, there is also an indirect effect through capital income  $E(1+r)$  (note that  $r$  depends on  $t$ ). However, our calculations indicate that this indirect effect is of second-order magnitude compared to the direct effect.

Similarly, upon observation of equations (1) and (2), we can see that the direct effect of the tax-transfer policy on the incomes of the skilled native-born and the skilled migrants is the same and works through the net wage income  $(1-t)w + b$ . Here again, there is also an indirect effect on the income of the skilled native-born (but not on the income of the skilled migrants) through the capital income  $(E-c)(1+r)$ . Again, our calculations suggest that the indirect effect is of second-order magnitude.

<sup>10</sup> We are essentially assuming perfect foresight. In a dynamic model, it is important to specify the sequencing of decisions. In our static model, the simultaneous determination of all variables may be viewed as a steady state of a dynamic setup.

Thus, all unskilled (both native-born and migrants) are affected by the tax-transfer policy mainly through  $(1-t)\rho w + b$ , whereas all skilled (both native-born and migrants) are affected mainly through  $(1-t)w + b$ . It is therefore natural that all the unskilled, whose wage is only  $\rho w$ , would prefer to tax wage income and take advantage of all the skilled, whose wage,  $w$ , is higher. Thus, the most preferred policy of the unskilled entails a positive tax and a positive transfer. Therefore, if the unskilled (both native-born and migrants) constitute a majority, then the political-economy equilibrium tax and transfer will be positive – a progressive tax-transfer system. However, due to the indirect effect, which applies only to the unskilled native-born, the most preferred tax and transfer policy is not necessarily the same for the unskilled native-born and the unskilled migrants. Therefore, the tax-transfer policy chosen is the policy most preferred by the larger of the two subgroups (the unskilled native-born or the unskilled migrants), because the smaller subgroup will naturally support the larger subgroup.<sup>11</sup>

Similarly, the skilled (both native-born, and migrants whose wage is higher than that of the unskilled) would opt to grant a subsidy to the wage, financed by a lump-sum tax. That is, they opt for negative  $t$  and  $b$  – a regressive tax-transfer policy. In this case too, there is also an indirect effect that applies only to the skilled native-born. Thus, the most preferred tax-transfer policy is not the same for the two subgroups of skilled native-born and skilled migrants. In this case too, we postulate that the political-economy tax-transfer policy is the most preferred policy of the larger subgroup.

Note that indirect effect of the tax-transfer policy, which works through the capital income  $(E - c)(1 + r)$ , is not the same for all members of the skilled native-born subgroup (because it depends on  $c$ ). In this case, we assume that the median voter within this group prevails.

As before, we start with  $B_S = 1.2$ , and parameter values that entail the unskilled (both native-born and migrants) as a majority:  $x_U + m_U > x_S + m_S$ . This is described in row (b)(1) of table 1, and in figure 2(b). As predicted, the political-economy tax-transfer policy is progressive:  $t$  and  $b$  are positive. Also, the unskilled native-born form a majority of the unskilled:  $x_U > m_U$ .

We then contemplate a skilled migration supply shock, that is, we keep all other parameter values constant and increase the value of  $B_S$  from 1.2 to 8.2 (as in case (a)). The results are described in figure 3(a) and in row (b)(2) of table 1. This supply-side shock triggers a wave of skilled migration. The results are shown in the second row of table 1. The number of migrants ( $m_S$ ) rose sharply. As a result, the skilled constitute now the majority:  $x_S + m_S > x_U + m_U$ . Also, the skilled migrants form the larger of the two skilled subgroups (i.e.,  $m_S > x_S$ ), and their most preferred tax transfer

<sup>11</sup> Note that we implicitly exclude bargaining between the two subgroups.

**Table 1**

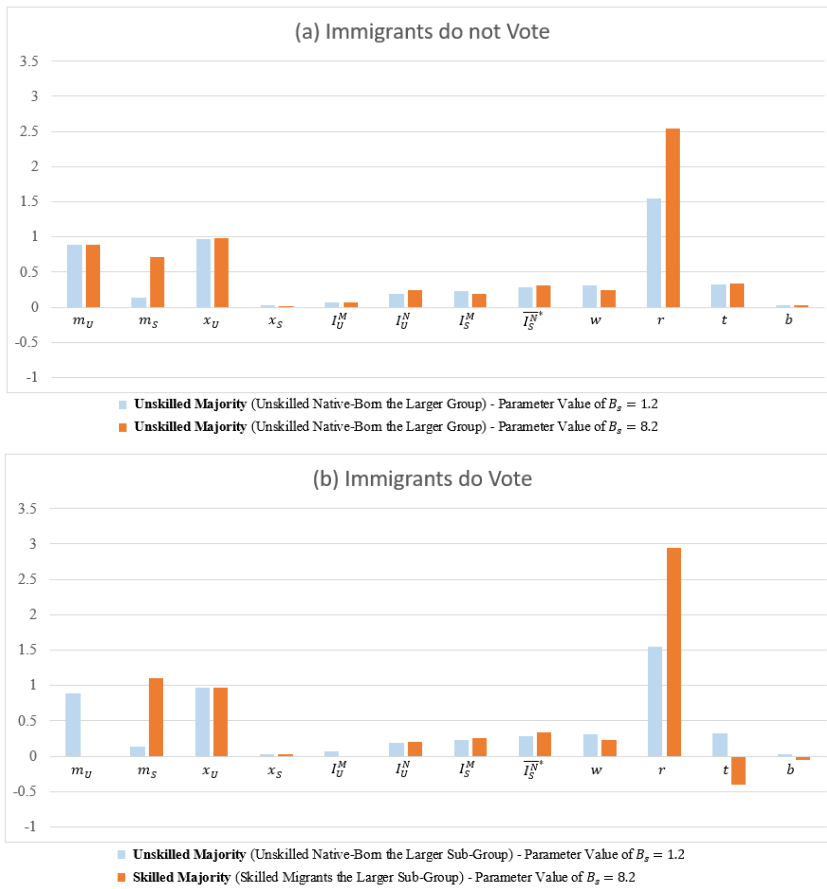
*The Effect of a Supply Shock of Skilled Migration: (a) Immigrants Do Not Vote, (b) Immigrants Do Vote*

	$m_U$	$m_S$	$x_U$	$x_S$	$I_U^M$	$I_U^N$	$I_S^M$	$\bar{I}_S^N$ *	$w$	$r$	$t$	$b$
<b>Immigrants do not Vote</b>												
Case (a)												
(1) Unskilled Majority (Unskilled Native-Born the Larger Group); Parameter Value $B_i = 1.2$	0.8909	0.1380	0.9660	0.0339	0.0632	0.194	0.236	0.281	0.312	1.553	0.3234	0.0252
(2) Unskilled Majority (Unskilled Native-Born the Larger Group); Parameter Value $B_i = 8.2$	0.8917	0.7138	0.9811	0.0188	0.0633	0.244	0.196	0.311	0.245	2.537	0.3382	0.0341
<b>Immigrants Vote</b>												
Case(b)												
(1) Unskilled Majority (Unskilled Native-Born the Larger Subgroup); Parameter Value $B_i = 1.2$	0.8909	0.1380	0.9660	0.0339	0.0632	0.194	0.236	0.281	0.312	1.553	0.3234	0.0252
(2) Skilled Majority (Skilled Migrants the Larger Subgroup); Parameter Value $B_i = 8.2$	0	1.1059	0.9666	0.0333	0	0.202	0.262	0.334	0.228	2.940	-0.4058	-0.0577

Note: In both case (a)(1) and case (b)(1) the unskilled native-born is the decisive voter; in case (b)(2) the skilled migrant is the decisive voter; in case (a)(2) the unskilled native-born is the decisive voter. Since the income of the native skilled population is not constant but a linear function of an individual's  $c$ , we report this group's average income. Other (common) parameter values:  $B_U = 56$ ,  $\rho = 0.18$ ,  $\bar{c} = 2$ ,  $E = 0.05$ ,  $\alpha = 0.33$ ,  $\sigma_S = \sigma_U = 1.5$ ,  $A = 1$ .

now becomes the political-equilibrium tax-transfer policy. As predicted, the political-economy tax-transfer policy becomes now regressive:  $t$  and  $b$  are negative. Furthermore, the politically dominant subgroup of skilled migrants drives out all unskilled migrants ( $m_U = 0$ ), by according them zero income ( $I_U^M = 0$ ). As skilled labor is assumed a perfect substitute for unskilled labor, the group of skilled migrants have no need for the unskilled migrants, who pose a fiscal burden, and therefore the former drive the number and income of the latter to zero. It is noteworthy that the unskilled native-born were initially the politically dominant subgroup and dictated their most preferred progressive tax transfer. Following the supply-side shock of skilled migration, the unskilled native-born lose their dominance to the skilled migrants, who are now dictating their most preferred regressive tax-transfer policy. Nevertheless, the unskilled native-born are better off, because the return to their capital income (namely,  $r$ ) rises.

**Figure 3**  
*The Effect of a Supply Shock of Skilled Migration*



The comparison between the two cases is insightful. When not given the right to vote, the supply-side shock of skilled migration (case (a)) renders the fiscal system more progressive. By contrast, when the migrants have the right to vote (which they fully exercise), they cause the fiscal system to be regressive. Notably, when they are not allowed to vote, the skilled migrants lose and all other income groups gain. When they are allowed to vote, it is the unskilled migrants who lose, and all other income groups gain.

Note that among the model's parameters, there are two crucial ones:  $\rho$  and  $E$ . The former determines the income gap between skilled and unskilled (both native-born and immigrants). The second determines the income

gap between native born and immigrants. If the skilled–unskilled productivity parameter  $\rho$  rises, the income gap between skilled and unskilled labor shrinks. If the native-born endowment parameter  $E$  rises, the income gap between immigrants and native-born rises. As long as  $\rho$  deviates significantly below one (so that there is a marked premium to investment in education), and as long as  $E$  is sizable (so that the native-born are in general richer than immigrants are), our qualitative results are likely to hold.

The model helps explain what is shown figure 1: a moderate rise in net income inequality after 2000, which is a combination of declining market income inequality and an offsetting fall in income redistribution. The influx of high-skilled immigrants can explain both: a rising middle class and a rebalanced political-economy equilibrium.

## 5. Concluding Remarks

This paper develops a model that can explain the mechanism through which a supply-side shock of skilled immigration substantially alters political-economy-based policies. In particular, we show that when migrants do not vote, the fiscal system becomes more progressive. When they do vote, the fiscal system becomes less progressive. In both cases, the native-born gain in net income.

The paper assumes a static model. The dynamics of the interactions between immigration and income redistribution are left for future research.

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