ISRAEL'S IMMIGRATION STORY: WINNERS AND LOSERS[+]

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Abstract

The exodus of Soviet Jews to Israel in the 1990s was a unique event. The immigration wave was distinctive for its large high skilled cohort, its quick integration into the domestic labor market, and its unprecedented election participation rate. The wave of immigration changed the entire economic landscape: It raised productivity, underpinned by the information technology surge, and had a significant impact on income inequality. The extraordinary experience of Israel, which absorbed three-quarters of a million immigrants from the Former Soviet Union within a short time, is also relevant for the current debate about winners and losers from immigration. This paper provides evidence and a rigorous political-economy explanation for a potential link between the immigration wave and the markedly changed level of redistribution in Israel's welfare state.

1. INTRODUCTION

Globalization is currently facing some challenging political tests, to a greater extent than in past decades.[1]

Migration is at the core of the emerging economic nationalism, which threatens to roll back international integration developments. Jeff Sachs (2017) puts it succinctly when he says: "If people were told that they could move, no questions asked, probably a billion would shift around the planet within five years, with many coming to Europe and the US. No society would tolerate even a fraction of that flow. Any politician who says, 'Let's be generous,' without saying 'We're not going to let the doors stand wide open,' will lose."

[1] Anti-globalization sentiments have been rising, especially in Europe and the United States, with the increasingly integrated global economy blamed for domestic economic distress. In Razin (2018) I argue that Israel offers a counterexample to this view, showing decisively positive economic effects from globalized finance, trade, and immigration. The book offers a rigorous analysis of the role played by globalization in key episodes in the remarkable development of the Israeli economy. The book's findings may hold lessons for productivity-challenged advanced economies as well as for other countries such as China and India currently making the transition to fully developed economies.

The core of the wall-building coalition in the United States consists of white males with low educational attainment. Low-income citizens were also far more likely to support Brexit in the United Kingdom. Evidently, rational and generous policy that also resonates politically will not eliminate national borders altogether. Rather, immigration policy may elicit socioeconomic arguments for limiting the flow of immigrants. The argument for a "points-based" immigration system is an explicit call to increase the skill composition of UK immigrants. However, because Israel's Law of Return imposes no barriers, Israel not only enables free immigration but also grants Jewish immigrants immediate citizenship, regardless of origin or skill.[2] For an economist, it is like a laboratory experiment of how free migration can function without severe social frictions and anti-migration sentiments that drive barriers for immigration.

Throughout history, demographic trends have often shifted the balance of politics among ethnic groups, economic classes and age groups. In Israel, the assimilation of immigrants in the electoral system has been relatively robust, and the change in the political balance was therefore substantial. Immigrants' voting patterns are a key factor in the political-economy mechanism that determines income distribution and redistribution (see Razin, Sadka and Swagel (2002a; b). One of their effects is that, relative to the aging native-born population, immigrants tilt the composition of voters toward younger age groups, thereby strengthening the policy preferences of younger populations (see Razin, Sadka, and Suwankiri (2011)). In other words, immigrants influence the size of the welfare state directly through the electoral system, and indirectly through their effect on market-based inequality.

The organization of the paper is as follows: Section 2 provides a background to Israel's unique immigration story; Section 3 discusses the high-skill characteristics of the immigrants; Section 4 addresses the unique assimilation story of the immigrants from the Former Soviet Union (FSU); Section 5 develops a political-economic theory to shed light on the inequality consequences of the immigration from the FSU; and Section 6 concludes.

2. HISTORICAL BACKGROUND

Immigration has far-reaching economic and social consequences. These include the labor market, international trade, economic growth, the social and political structure, and more (for example, Lucas (2014) provides a recent treatise on the issue). Between 1990 and 2012, almost 20 million people moved from central, eastern and southeastern Europe to wealthier countries in western Europe, accounting for about 8 percent of the population of Europe. This east-west migration accelerated after 2004 when eight eastern European countries, including Poland, the Czech Republic and Hungary, joined the EU. At the same time, Israel received almost 1 million immigrants, about 20 percent of Israel's population. In both episodes, immigration and border restrictions were eased. Both in the Israeli case

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[2] The Law of Return applies only to Jews or those descended from at least one Jewish grandparent. All other immigrants are subject to temporary status of a few years before being allowed to apply for citizenship.

and within the EU's borders there is free movement of people tied to the free movement of trade and capital. However, in addition to the relative size of the flow of immigrants, there are key differences between the two episodes in the skill levels of the immigrants and the immigrant-absorption policies that the receiving countries embraced.

In terms of continuing the globalization effort, Israel's unique experience is vastly different, not only from the recent experience in Europe, but also from the US experience. The core of the "wall-building" coalition in the US is comprised of white males with low educational attainment. In the UK, those with low incomes were far more likely to support Brexit. The call for a "points-based" immigration system from the Brexit campaign was an explicit call to increase the skill composition of UK immigrants.

A simple argument to explain the recent anti-immigration sentiment is that low-skilled immigrants compete for jobs with low-skilled native-born workers, depressing their wages. Furthermore, low-skilled immigrants are more likely to be net beneficiaries from the typically generous welfare state—the burden of which low-skilled workers share. In contrast, high-skilled immigrants may increase the productivity of the low-skilled population and are net fiscal contributors, making them a more attractive form of immigration. Therefore, net fiscal burden underpins the discontent with immigration, and tilts the preference for the composition of immigration toward high-skilled workers.

Other groups are more likely to gain from low-skilled immigration. Low-skilled immigrants increase the wages of high-skilled workers by increasing their productivity and do not necessarily impose a fiscal burden on retirees, who no longer fund the welfare state. Therefore, high-skilled workers support the globalization course that advanced economies have taken until the most recent wave of anti-immigration sentiment. In Israel, as we will see, the major political-economic effect of immigration in the 1990s and early 2000s is on income inequality through the downsizing of the welfare state. However, partly because of the successful integration, no significant anti-immigration sentiments emerged.

The exodus of Soviet Jews to Israel in the 1990s, especially its impacts on income inequality and the political balance of power, vivifies Lucas's findings.[3] Israel is well known for the unique ways in which it absorbs immigrants, who in turn tend to arrive in waves triggered by external shocks. Each wave has its unique origin, distribution of skills, and often socio-economic characteristics. Thus, the exodus of Soviet Jews in the 1990s adds useful insights into this ongoing experiment.

The importance of the Soviet Jewish exodus is best appreciated when one thinks in historical perspective. Immigration to pre-state Palestine and to the State of Israel came in waves from the late 19th century onwards.[4] During the pre-state era (prior to 1948),

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[3] Benhabib and Jovanovich (2012) consider the world-welfare perspective. My analysis focuses on an individual state. See also Razin (2018) for the various ways that Israel benefitted from being a part of the post-World War II globalization wave, with capital, finance, and goods mobility at its core.

[4] See Razin and Sadka (1993).

immigration was at times restricted by the British rulers.[5] However, the Law of Return, passed in 1950, opened, and even encouraged, immigration to all Jews. Table 1 suggests that, at times, immigration accounted for about 20 percent of the established population, especially in the early years of statehood and during the last wave of immigration from the FSU.
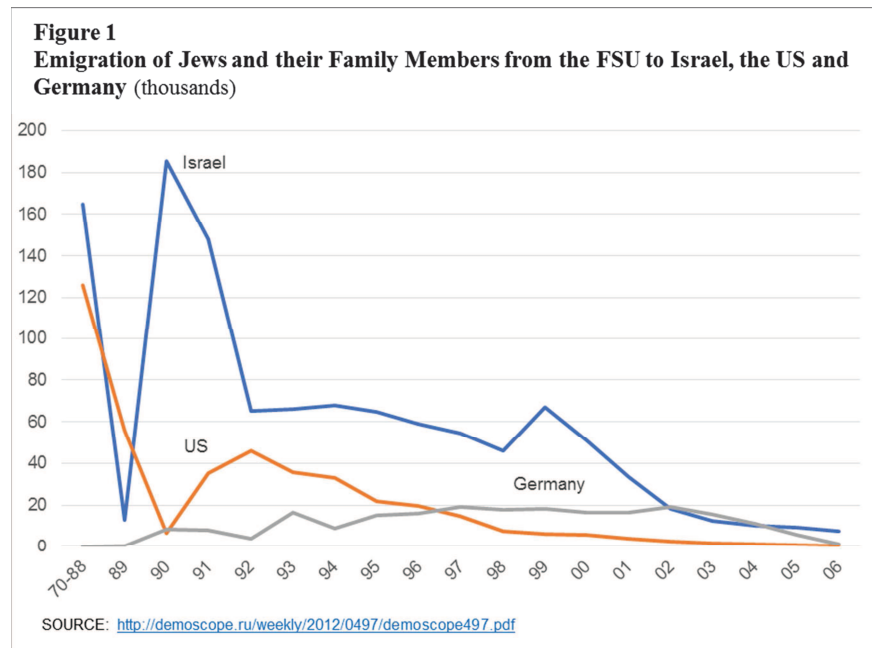
Table 1
Immigration, 1922–2001

Period	Immigrants as a Percentage of Established Population	Annual Percentage Growth Rate of Population
1922-32	8.2	8.0
1932-47	6.4	8.4
1947-50	19.8	21.9
1950-51	13.2	20.0
1951-64	2.2	4.0
1964-72	1.3	3.0
1972-82	0.9	2.1
1982-89	0.4	1.8
1989-2001	19.0	-

Source: Ben-Porath (1985) for the years 1922–1982; Central Bureau of Statistics (1992) and Bank of Israel (1991b) for the years 1982–2001.

The disintegration of the Soviet Union and the fall of communism in the USSR between 1987 and 1991 triggered the wave of Soviet Jewish emigration (Figure 1) to various parts of the world, including Israel. The Soviet Jewish immigration of the 1990s stands out from previous waves both because of its sheer volume and because of its economic motivation. The choice, albeit limited by immigration restrictions in the advanced western countries such as Australia, Canada, and Germany, was between Israel and the rest, and the US. In fact, for a portion of would be immigrants, Israel was a second choice.

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[5] After World War I the League of Nations granted Great Britain a mandate over the whole of Palestine. It ended in May 1948, when Israel gained its independence.

Figure 1
Emigration of Jews and their Family Members from the FSU to Israel, the US and Germany (thousands)

SOURCE: http://demoscope.ru/weekly/2012/0497/demoscope497.pdf

Every receiving country, except Israel, imposes quotas on the number of immigrants. The Law of Return provides for open immigration of Jews into Israel. Non-Jewish immigration is not subject to any quotas in Israel, but is subject to a citizenship application that is preceded by temporary status of a few years.

The primary driver of the Jewish exodus from Russia between 1990 and 1996 was the Soviet Union's—and subsequently Russia's—economic collapse, often-dubbed "Katastroika". The Jewish community sensed the pain, anticipated the danger, and fled for this compelling reason, but also due to the twin threats of a military *coup d'etat* and civil war. In macroeconomic jargon, both the demise of the Soviet Union and the following exodus are supply side shocks that triggered sizeable migration flows. The communist regime inaugurated a liberalization ("glasnost") campaign in the political ("demokratizatsiya"), economic ("perestroika"), social, and international spheres ("novoe myshlenie") that expanded opportunities for many, including the Soviet Jews to increase their well-being.[6] However, they were legally barred from leaving the country until the

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[6] The first hint came in the enterprise reform law of January 1988, which allowed state enterprise managers to use company funds at their discretion instead of complying strictly with central plans ("tekhpromfinplans"). Soon thereafter, central plans ceased being obligatory. The stated intention of the enterprise reform law was to give managers more latitude in dealing with day-to-day operations, but the opportunity to divert funds from operations and investment to personal consumption and round-a-about insider privatization ("kleptostroika") was not missed.

complete demise of the regime. The prospect of a brighter future in more stable and advanced countries was reinforced by mounting political, social and economic turmoil that raised the risk of civil war, created the specter of a military *coup d'etat*, and threatened economic collapse.

The Soviet economy stopped growing in 1989, and then plummeted by nearly 10 percent in 1990 as enterprise managers focused on privatizing state assets to themselves ("spontaneous privatization"), liquidating them and transferring balances abroad instead of dedicating them to current operations. Inter-industry supply chains, the backbone of modern economies, were shattered because managers ignored their contractual obligations to intermediate input users.

This was shock therapy in action without Sachs's conditionality.[7] In theory, Soviet managers who had no experience designing and marketing products to satisfy consumer demand were expected to transform themselves into efficient competitors under duress. However, they could not do it. The reality was an economic depression that caused GDP to fall between 37 and 50 percent between 1989 and 1998.[8] Full economic recovery was not achieved until 2006.

The Soviet Union's crumbling sphere of influence in central Europe and East Germany, together with the successful secession of the Baltic states alerted the Russian Jewish community to the wisdom of carpe diem. A window of opportunity had opened, and Jewish emigres of the 1990s chose to seize the day.

a.   Migration waves and growth: A bird's eye view

One of the most distinctive features associated with the waves of *Aliyah* (Jewish immigration to Israel) is the high rates of economic growth (Table 2).[9]

Table 2 indicates that *Aliyah* produced massive investments, both in residential structures and in non-residential capital. These investments were so substantial that they increased the capital to labor ratio and facilitated economic growth, in some cases further aided by the remarkable human capital brought by the *olim* (new Jewish immigrants). With the exception of the *olim* who came during the major wave of *Aliyah* immediately after the birth of the state of Israel, the education level of the *olim* generally exceeded that of the established population and thus contributed remarkably to overall productivity. It is also noteworthy that, in general, the massive investments in physical capital and infrastructures were financed by capital imports (reflected in a persistent current account deficit), as the *olim* themselves fled their former homes almost penniless and credit constrained so that they hardly saved. For instance, Table 2 shows that during the years 1922–31, when the

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[7] Sachs (2012).

[8] Rosefielde and Hedlund (2009).

[9] Although the table alludes to simple correlation between immigration and growth, the immigration-wave shocks are considered to be an exogenous variable; a migration-push factor triggered by forces in the country of origin. See Neuman (1999).

average number of *olim* each year was about 9.5 percent of the established population, output increased at the whopping rate of about 16.4 percent per annum, so that per capita output increased by a remarkable 7.8 percent per annum. Similarly, during the years 1950–51, when the percentage of *olim* each year averaged about 26.1 percent of the established population, output increased by about 10 percent per annum. During the years 1952–63, when the percentage of *olim* each year averaged about 19.4 percent, per capita output growth was steady, at 4.9 percent per anuum. In this period, the growth rate of capital stock was 12.8 percent, while housing stock grew by 11.6 percent—a whopping investment boom. In contrast, during the years 1972–82, when the percentage of *olim* each year amounted to about 7.6 percent, per capita output increased by the meager rate of 0.8 % per annum (obviously, the oil price shock following the Yom Kippur War depressed output growth). In the 1990s, the trend of output growth declined. While the percentage of *olim* each year averaged 16.5 percent, per capita output growth was meager a 2.5 percent per anuum.

Obviously, Table 2 is only suggestive of the role played by immigration, and the massive investment that accompanied its big waves, in growing the economy. Evidently, the statistics in Table 2 reflect the effects of business cycle fluctuations, external shocks, military conflicts, and the like, in addition to the immigration waves.

Table 2
Aliyah and Growth, 1922–2015 (average annual growth rates, percent)

Period	*Olim* as a percentage of established population	Population Growth rate	Growth rate of capital stock (excluding housing)	Growth rate of housing stock	Growth rate of per capita output (not cyclically adjusted)
1922-1931	9.5	8.0	---	---	7.8
1932-1946	15.6	8.4	---	---	3.0
1947-1949	37.7	21.9	---	---	---
1950-1951	26.1	20.0	---	---	10.0
1952-1963	19.4	4.0	12.8	11.6	4.9
1964-1971	8.3	3.0	8.7	7.7	5.5
1972-1982	7.6	2.1	6.1	7.7	0.8
1983-1989	2.7	1.8	3.1	4.0	3.1
1990-2001	16.5	3.0	7.0	4.7	2.5
2002-2007	1.9	1.8	2.4	2.5	1.9
2008-2015	1.8	2.0	3.4	3.2	1.3

Source: Ben Porath (1985) for the years 1922–82; Central Bureau of Statistics (2016) and Bank of Israel (2016).

3. MIGRANT CHARACTERISTICS

The professional, social, attitudinal and behavioral characteristics of the 1990s Jewish exodus cohort proved to be distinctive. Immigrants came mostly from urban areas, with advanced education systems. Their skill (education) composition was heavily skewed towards high education levels, with skewness in their relatively high labor income (see Table 3). Their proportion of the population was sizable, at 14.5 percent. Their average family size (2.32 standard persons) was lower than the national average (2.64 standard persons). This indicates fewer dependents. Most important was their higher education level and consequently their higher labor income. The average number of schooling years of the new immigrants was 14.0, compared to the national average of only 13.3.

Table 3
The Skill, Age and Income of Immigrants from the FSU and the National Average, 1990–2011

	Immigrants from the FSU	National Average[a]
Proportion of total population (%)	14.5	100
Household size (number of standard persons)	2.32	2.74
Years of schooling of head of household	14	13.3
Heads of household with a bachelor degree (%)	41.1	29.5
Gross monthly labor income per standard person (NIS, 2011 prices)	4,351	4,139

[a] Including immigrants.
Source: Eilam (2014).

Even more striking was the percentage of heads of households with bachelor degrees: 41.1 percent among the new immigrants, compared to a national average of just 29.5 percent. The higher education level and the lower family size can presumably explain the income gap: The average labor income per standard person of the new immigrants was NIS 4,351, compared to a national average of only NIS 4,139. It is worth noting that this gap existed even though the new immigrants had less work seniority than the established population.

The educational achievement figures of the immigrants from the FSU are impressive compared to the EU-15. Relying on data from the International Organization for Migration (IOM) and the OECD, Razin and Sadka (2014) report that only 18 percent of the stock of immigrants in the EU-15 in 1990 and 24 percent in 2000 had tertiary education.

4. ASSIMILATION STORY: CATCHING UP

Cohen and Hsieh (2001) show that the average effective wages of native Israelis fell and the return on capital increased during the height of the influx in 1990 and 1991. By 1997, however, both average wages and the return on capital had returned to pre-immigration levels due to an investment boom induced by the initial increase in the return on capital. As predicted by the standard intertemporal model of the current account,[10] the investment boom was largely financed by external borrowing. Furthermore, despite the high educational levels of the Russian immigrants, the Russian influx did not lower the skill-premium of native Israelis. They explain this effect by the rise in total factor productivity during the 1990s relative to the stunningly low productivity increase through much of the 1970s and 1980s. Eckstein and Weiss (2004) develop a descriptive methodology for the analysis of immigrant wage growth that is based on human capital theory. The sources of the wage growth are (1) the increase in the return on imported human capital, (2) the impact of accumulated experience in the receiving country, and (3) the mobility up the occupational ladder in the receiving country. Using data on established Israelis and immigrants to Israel from the former Soviet Union, they estimate Mincer-type wage equations jointly for the two groups. They find that in the ten years following arrival, wages of highly skilled immigrants grow at 8 percent a year. This is accounted for by a rising return on skills (3.4 percent), occupational transitions (1.1 percent), accumulated experience in Israel (1.5 percent), and an economy-wide rise in wages (1.5 percent). They do not reject the hypothesis that the return for experience converges to that of natives and that immigrants receive a higher return for their unmeasured skills. We find that there is some downgrading in the occupational distribution of immigrants relative to that of the established labor force.

The second generation of Jews, whose parents immigrated from the FSU, experienced significantly greater upward mobility than all other ethnic groups. As documented by Aloni (2017), although the general association with parents' incomes within the FSU group is not very different than that of the general population, their mobility relative to the national distribution is high, and the second generation finds its way even to the top percentiles. Table 4 shows the estimated probability of the second generation outranking the first generation in the full sample, and the convergence rates of the groups' relative income rank. Having a higher probability of outranking parents depends greatly on the relative income position of the group in the population's income distribution. For example, Ethiopian and Arab children exhibit a high level of upward mobility. However, controlling for their initial position, FSU immigrants to Israel experienced the highest pace of upward mobility, while other groups converged to the slower mean.

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[10] See Razin (1995).

a. Intergenerational Mobility

Table 4
Intergenerational Mobility Indicators by Israeli Ethnic Groups

	Israel	Asia / N. Africa	Europe / America	FSU	Ethiopia	Arab
Probability of outranking parents	40%	49%	37%	58%	75%	59%
Rank shift pace, controlling for initial family position	-0.22 (0.17)	-0.02 (0.15)	- -	2.69^{***} (0.16)	-4.58^{***} (0.49)	-6.92^{***} (0.16)

Notes: The first row is the child's probability of reaching a higher percentile in income distribution in his or her generation than the parents' average percentile in their income distribution. The second row is the regression results of child-rank on the population groups' dummies, controlling for parents' income rank using 100 percentile dummies. Base group is of families with Asian / North African origins. The sample is of children born between 1979 and 1982 matched to parents using administrative data.
Standard errors in parentheses; upper asterisks indicate: *** $p<0.01$; ** $p<0.05$; * $p<0.1$.
SOURCE: Aloni (2017).

Upward mobility is also indicated in Figure 2. The Figure shows the distribution of children of parents from the bottom decile. Comparing the FSU immigrants and the general population, the former experienced greater upward mobility, with children reaching higher earning ranks, dispersing more evenly across the deciles.

Figure 2
Earning Deciles of Children Born to the Bottom-Decile Parents
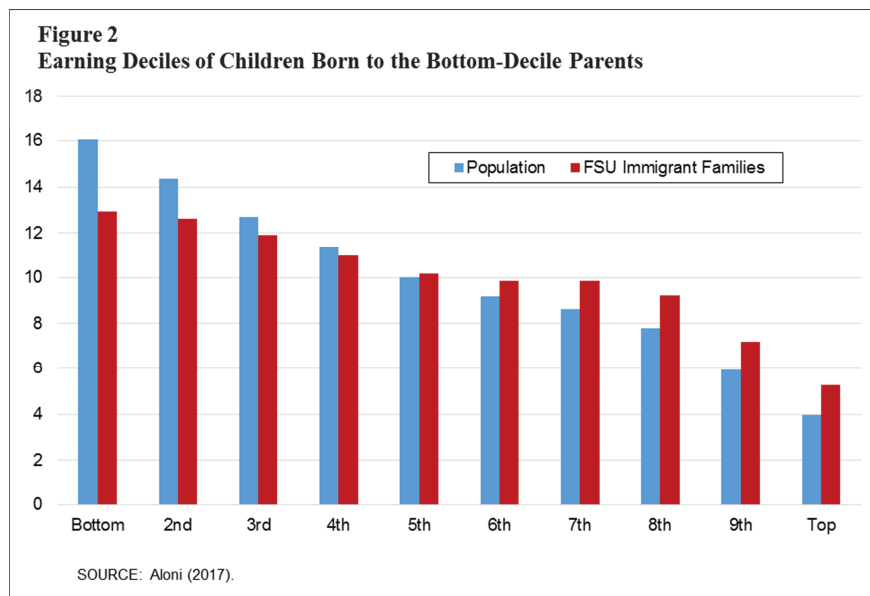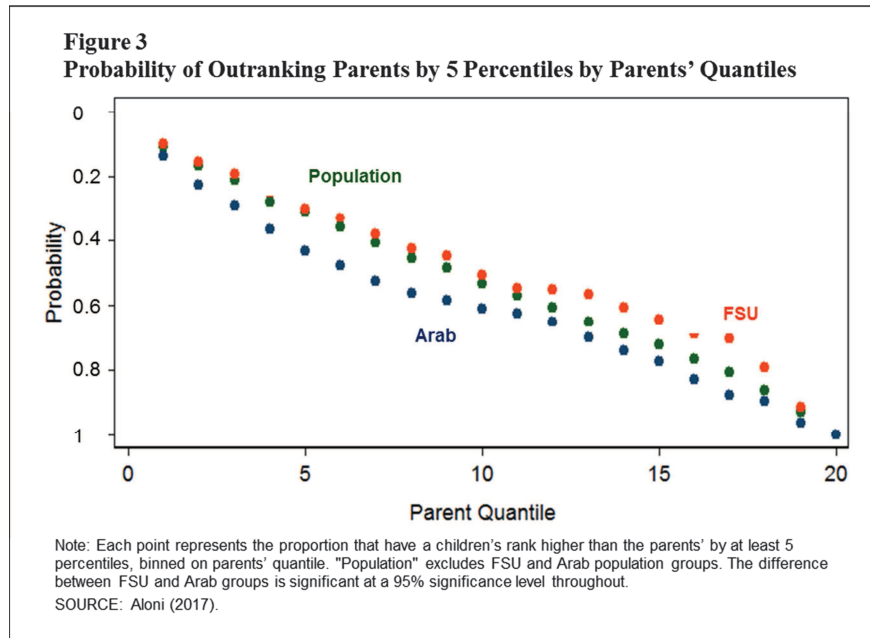
SOURCE: Aloni (2017).

Figure 3 shows the probability of outranking parents by 5 percentiles, as a function of parents' rank.   Comparing these two groups to the general population suggests an increasing polarization.

Figure 3
Probability of Outranking Parents by 5 Percentiles by Parents' Quantiles

Note: Each point represents the proportion that have a children's rank higher than the parents' by at least 5 percentiles, binned on parents' quantile. "Population" excludes FSU and Arab population groups. The difference between FSU and Arab groups is significant at a 95% significance level throughout.
SOURCE: Aloni (2017).

The greater upward mobility of the FSU group, along with the slower upward mobility of the Israeli-Arab group, may increase inequality. This is because the first generation FSU immigrants' income is high compared to the general population, while Israeli-Arab families have a lower mean income.

b. Inequality

Israel's rapid development, facilitated by its integration into the world economy and the inflow of high-skilled immigrants, came at the cost of growing income inequality, measured by both market-based and redistribution-based Gini coefficients. Currently, Israel has one of the top three levels of inequality as generated by market forces, and it does less than other OECD countries to reduce inequality through the redistribution of income (Figure 4).[11]

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[11] See Gornick and Jantti (2014) for a comprehensive report on income inequality and redistribution among wealthy countries. Krugman (2006) argues that to the extent that globalization explains rising income inequality in the United States, it is through the effect of international trade on the "skill premium",

Figure 4
Income Inequality and Redistribution

SOURCE: Gornick and Jantti (2014).
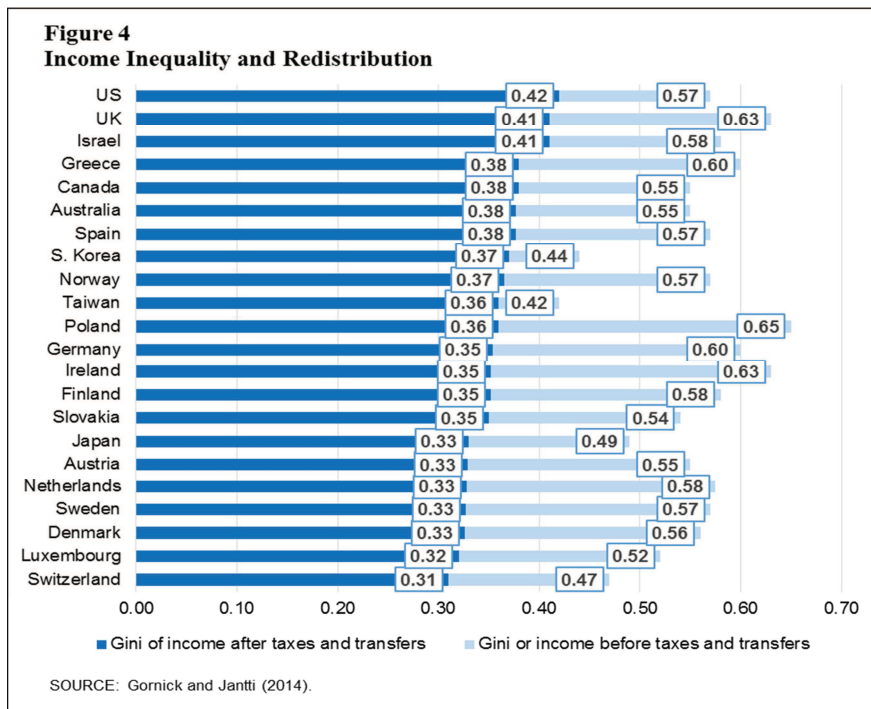
To gauge the size of income redistribution, one can subtract the market-based Gini coefficient from the disposable income Gini coefficient. Israel is not an outlier among the OECD countries with respect to market-driven (pre-tax-and-transfer) income inequality. Israel's relatively high market-based inequality coefficient, shown in Figure 4, is driven by the large, and increasing, proportion of two relatively poor minority groups in the population: Ultra-Orthodox Israeli Jews (primarily males), and Israeli Arabs (primarily females[12]), tend to stay out of the labor force. The rise in the proportion of these groups in

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the gap between the incomes of college-educated workers and those without a college degree. What we know, however, is that rising inequality is not mainly about the rising skill premium. Only around one- third of the rise in US inequality over the past generation is associated with a rising premium for education. Economic estimates indicate that the widening of the skill premium itself is more a result of "skill-biased technological change", a growing demand for highly educated workers due to the rising importance of information technology, than a result of globalization.

[12] Yashiv and Kasir (2011) write: "The most prominent phenomenon among Arab women is the high level of variation in the rate of participation. Its source apparently lies in the differences between "modern" and "traditional" women from the point of view of education, family status, number of children and proficiency in various skills (such as knowledge of English and the use of a computer). There appears to be a dichotomy or some type of dual market, in which "traditional" women almost never participate. This can explain the low rate of participation in comparison to other countries. "Modern" women have quite a high rate of participation, which also explains the simultaneous increase in participation and levels of education over time, together with additional cultural changes. The finding that participation rates among Arab

the total population is because the fertility rates among these minorities are much higher than in the other groups in the population.[13] In addition, the emergence of a large, highly educated, economically active group of Israelis, reinforced by the high-skilled immigration of Soviet Jews, made the upper tail of the distribution thicker.

However, Figure 5 indicates the time dimension of inequality. Disposable-income inequality in Israel was roughly stable until the beginning of the 1990s, and rose sharply thereafter even though no such change occurred with respect to market-generated inequality. Israel's level of income redistribution falls short of many other OECD countries.

A partial resolution of the issue, proposed by Razin, Sadka, and Swagel (2002), hinges on the political-economy effects of a rise in the dependency ratio. A higher dependency ratio means a larger pro-tax coalition, as the low–income groups are net-beneficiaries of the transfers from those who actively participate in the labor market. However, a higher dependency ratio puts a higher tax burden on the median voter, since it is necessary to finance transfers to a larger share of the population. People for whom the costs of higher taxes outweigh benefits shift to the anti-tax coalition. Hence, the second factor dominates in many of the wealthier countries. That is, the political-economy equilibrium-tax rate declines when the dependency ratio rises. This would be the case until society ages enough so that the median voter is retired, at which point there is a discontinuous jump up in the tax rate and a corresponding increase in the share of transfers.

In other words, the increase of fiscal net-beneficiaries as a share of the population may have two opposing effects on redistribution policies. On the one hand, the political influence gained by low-income groups is persistently on the rise. This means that the median voter's preferences shift over time in the direction of a more generous welfare state.[14] On the other hand, if the median voter, plausibly, does not belong to the low-skill and non-working groups (as is probably also the case in Israel) then the increased proportion of the non-workers and low-skilled workers in the population may well lead policy-makers to lower taxes and transfers, because the resulting increased fiscal burden of the large proportion of "net beneficiaries" adversely affects the median voter (who is a net contributor to the welfare system). Consequently, the entire redistribution system contracts. The latter effect is dominant in Israel.

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women are very different from those observed in Western countries and among Jewish women in Israel, though not significantly different from rates in Moslem countries, reinforces the conclusion that cultural forces are at play here".

[13] Dahan (2007) explores the main factors behind the steep decline in the participation rate of Israeli men. He observes four factors responsible for the decline between 1980 and 2001: increases in the student (21 percent), ultra-Orthodox (21 percent), disabled (32 percent), and discouraged workers (25 percent) groups.

[14] Regarding the voting right franchise in the US in the 1930s, Meltzer and Richard (1981) conclude: "In recent years, the proportion of voters receiving social security has increased, raising the number of voters favoring taxes on wage and salary income to finance redistribution. In our analysis the increase in social security recipients has an effect similar to an extension of the franchise."

Figure 5
Disposable Income Inequality* in Israel and Selected EU Countries, 1973–2013

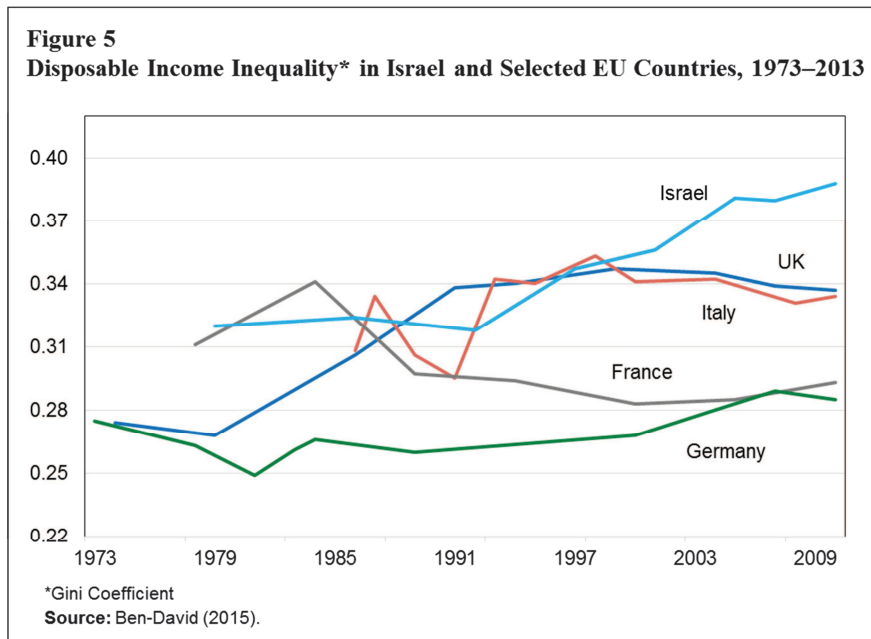*Gini Coefficient
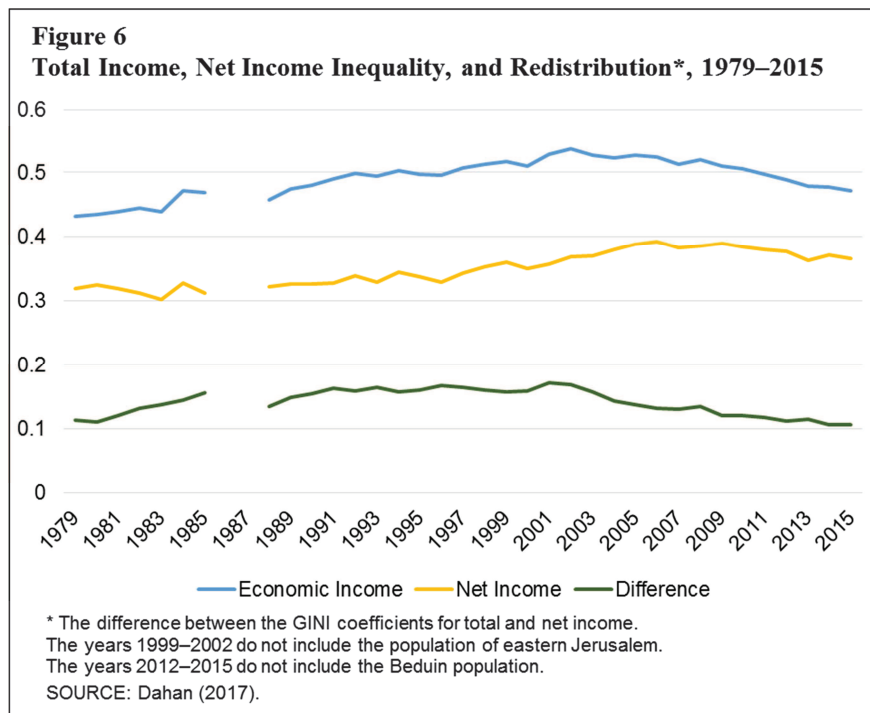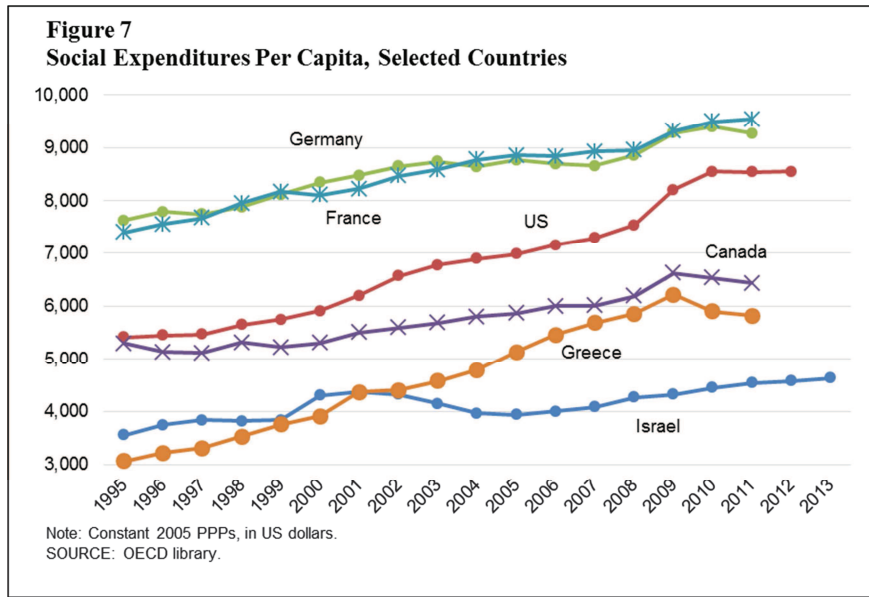**Source:** Ben-David (2015).

Figure 6 shows that the Gini redistribution coefficient began to increase in 1989 and continued to rise until 2001. This long-term fall in income redistribution was concurrent with the immigration wave from the FSU. The Figure shows a strong rise in income inequality between 1990 and 2003, with declining market income inequality more than offset by a marked fall in redistribution. The influx of high-skilled immigrants can explain these two conflicting trends: a rising middle class and a rebalancing of political-economy-based income redistribution policy.

Figure 6
Total Income, Net Income Inequality, and Redistribution*, 1979–2015

Economic Income — Net Income — Difference

* The difference between the GINI coefficients for total and net income.
The years 1999–2002 do not include the population of eastern Jerusalem.
The years 2012–2015 do not include the Beduin population.
SOURCE: Dahan (2017).

Israel's unique position among OECD countries as a welfare state (Figure 7) highlights the country's low ranking in terms of its per capita provision of social services.[15] High defense expenditures may have crowded out social services to a greater extent than in the other OECD countries. However, even though defense expenditures as a share of GDP have followed a distinct downward trend over the last 35 years, Israel diverges down in the provision of social services relative to the other OECD countries. Figure 7 plots the per capita social expenditure for Israel against a selected group of countries. Israel is at the bottom of the group.[16]

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[15] Social expenditures temporarily increased during the immigration wave, thanks to a one-off absorption-type expenditure on new immigrants. They declined at the beginning of the 2000s.

[16] A significant change in re-distribution over time is potentially related to a reduction in income taxes. Income Tax fell from 30 percent of revenues in 2000 to 20.4 percent in 2015. At the same time, VAT increased from 24.9 percent of tax revenues to 30.1 percent. Child allowances were severely cut. See also Bank of Israel (2014), and Strawczynski (forthcoming).

Figure 7
Social Expenditures Per Capita, Selected Countries

Note: Constant 2005 PPPs, in US dollars.
SOURCE: OECD library.

5. IMMIGRANTS AND THE POLITICAL SYSTEM

Migration differs from the movement of other factor inputs (such as capital flows) in one fundamental way: Immigrants become part of the society of the receiving country, including its evolving culture and politics. (The Swiss writer Max Frisch ironically declared: "We asked for workers. We got people instead.") A highly developed social welfare system in the receiving country may greatly complicate coalition-building political-economy matters, as emphasized by Razin, Sadka and Swagel (2002b). While high-skilled, and therefore high-wage, immigrants may be net contributors to the fiscal system, low-skilled immigrants are likely to be net recipients, thereby imposing an indirect tax on the taxpayers of the receiving country. Immigrants may also change the nature of social interactions, with shifts in religion, ethnicity, and cultural practices.

In addition, immigrants may shift the balance of politics among ethnic groups, economic classes, or age groups, which may reshape the distribution of wealth and disposable income, and may generate a massive political backlash on the part of anti-immigration forces. In Israel, the political backlash has been moderate, whereas the change in political balance was substantial. Israel's Law of Return grants immigrants of Jewish descent immediate citizenship and, consequently, voting rights. An early study by Avner (1975) finds that the voter turnout rate of new immigrants was markedly lower than that of the established population. This means 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. A similar migrant low voting turnout pattern is reported also by Messina (2007) and Bird (2011) for Western Europe.

However, a later study about voter turnout patterns of new immigrants to Israel in the 2001 elections, conducted by Arian and Shamir (2002), reverses this finding. The new immigrants in this study were pre-dominantly from the FSU, and the study found no marked difference in the voter turnout rates between these new immigrants and the established population. This is indeed a unique feature of the 1989–2001 immigration wave from the FSU.

a. Political-Economy Theory[17]

To better understand the balance of the political-economic forces at play, one has to analyze them in a general-equilibrium setup. Razin and Sadka (2017) provide such a stylized general equilibrium model with free migration, where wages are endogenous and redistribution policy is determined by (endogenously determined) majority voting.[18] They address the issue of how immigration can reshape the political balance of power, especially between skilled and unskilled workers and between native-born and immigrant populations, and consequently the political-economic equilibrium redistribution policy of the welfare state. The general equilibrium model could provide insights into how in a "natural experiment" manner, an external supply-side shock triggers a wave of skilled migration. The shock can then lead to a change in wages, migration flows, and political coalitions, thereby reshaping the political-economy balance and the redistributive policies.

(1) Human Capital Investment

There are just two types of workers: "skilled" (S) and "unskilled" (U). The wage per unit of labor of a skilled worker is w, whereas an unskilled worker earns a wage of ρw per unit of labor, where $\rho < 1$.[19] All native-born individuals (N) are initially unskilled. However, a native-born individual can acquire education at some cost (c) and becomes 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-

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[17] Based on Razin and Sadka (2017).

[18] The model is based on Razin, Sadka and Swagel (2002a,b)

[19] The model assumes that the only difference between skilled and unskilled labor is the efficiency units of labor each worker possesses. This simplifying assumption is made in order to focus on the political economy aspects of the analysis. There could be more tension between skilled and unskilled workers, such that the two types are complements (e.g., Doepke and Zilibotti (2005)). In this case, an increase in the supply of one type is beneficial to the other (e.g., immigration of unskilled workers increases the marginal product of skilled workers). One can also assume that capital is more complementary to skilled workers than to unskilled (e.g., Krusell, Ohanian, Rios-Rull and Violante (2000)).

individual. We assume for simplicity that the cost of education is uniformly distributed over the interval $[o, \bar{c}]$.

(2) How relevant is the cost of education for income distribution?

Caplan (2018) calculates the returns on a university education and argues that the low graduation rates of marginal students, and the fact that, for a given level of qualification, those with higher skills tend to earn more, mean that the return on a four-year degree in the US ranges from 6.5 percent for excellent students to just 1 percent for the weakest ones. Zimmerman (2014) compares the earnings of high school graduates in Florida whose grades were close to the minimum for admission to a good state university. Those just above the cut-off were much more likely than those just below to start courses in good institutions. They graduated at a rate similar to that of the broader student population. They went on to earn considerably more than those just below the cut-off, and their return on investment was substantial. There is also the added consideration of the degrees are signaling devices. The education premium includes the income-boosting effects of personal characteristics that are more likely among those with degrees, not because they acquired them at university, but because they possessed them on admission. As degrees have become more common, their importance as signaling devices is rising. Recruiters, who pay none of the cost of jobseekers' higher education, are increasingly able to demand degrees in order to screen out the least motivated or competent.

Burrowes, et al (2014) found that companies routinely require applicants to have degrees, even though only a minority of those already working in similar positions have them. This increases the graduate premium—but by punishing non-graduates rather than boosting the absolute returns to degrees.

b. Endowments and income groups

All native-born individuals are endowed with E units of a composite good, the single good in this economy. All individuals inelastically supply one unit of labor. If a c-individual acquires education and becomes skilled, her income[20] is denoted by I_S^N.

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

where t is a flat wage tax rate[21]; b is a uniform (lump-sum) per capita social benefit; and r is the interest rate—the return on capital. If a c-individual decides not to acquire education and remain unskilled, her income (denoted by I_U^N) is

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[20] This specification assumes that capital does not depreciate at all.
[21] In an unpublished version Razin and Sadka extended the tax to apply to capital income as well.

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

($I_S^N(c)$ 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

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

Upon some re-arrangement, the cutoff level of the cost of education, c^*, becomes:

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

That is, c^* is solved from the equality between the return on education and its cost. A c^*-individual is just indifferent between acquiring education (and thereby becoming skilled) or staying unskilled. Upon further re-arrangement, c^* is defined by

(2) $c^* = \dfrac{(1-t)(1-\rho)w}{(1+r)}.$

c^* may well exceed E, which means that those c-individuals with c below but close to c^* (which is endogenous) actually <u>borrow</u> in order to acquire education. Naturally, the payoff in terms of the higher wage would more than offset the borrowing cost. For those individuals $E - c$ is negative.

We employ a static framework within which all economic and political processes occur simultaneously with no time dimension.[22] For instance, we do not distinguish between the time in which 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

(3) $n_S = \dfrac{c^*}{\bar{c}}.$

Then, the number of native-born unskilled individuals, n_U, is thus given as

(4) $n_U = 1 - n_S.$

Aggregate investment in human capital (education), denoted by H, is then given as

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[22] Such a framework is akin to a steady state in a dynamic model with rational expectations.

$$(5) \qquad H = \int_0^{c^*} c \cdot \frac{1}{\bar{c}} \, dc = \frac{(c^*)^2}{2\bar{c}}.$$

Therefore, the aggregate stock of physical capital, K, is equal to[23]

$$(6) \qquad K = E - H.$$

There are also two types of immigrants: the skilled, who can earn a wage w in the receiving country, and the unskilled, who earn a wage of ρw in the host country. None of them has any initial endowment. The immigrants come to the receiving country after they have already made and implemented the decision whether to acquire or not acquire education. Thus, it is exogenously given who is skilled and who is unskilled. In other words, the economy benefits from the skilled immigrants because it does not have to pay for the cost of investment.

The income of skilled and unskilled immigrants, respectively, is:
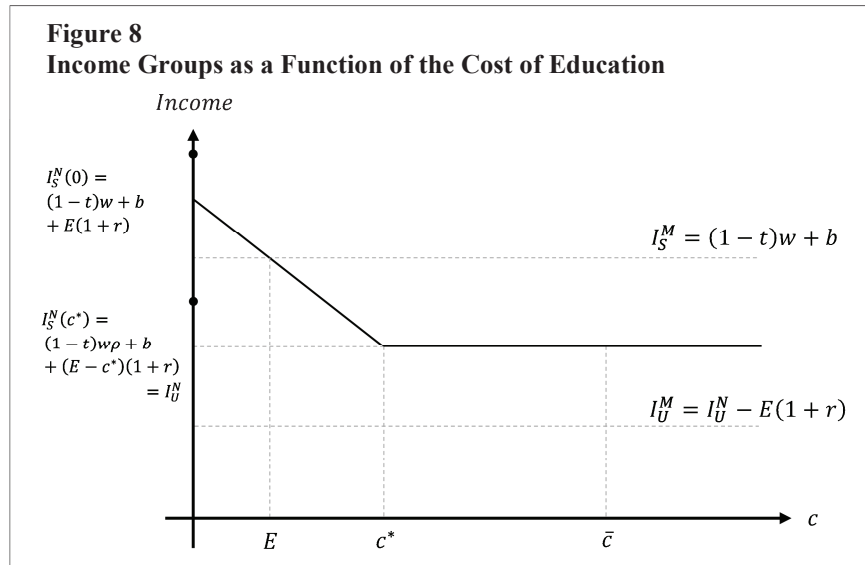
$$(7) \qquad I_S^M = (1 - t)w + b.$$

and

$$(8) \qquad I_U^M = (1 - t)\rho w + b..$$

The income of the native-born as a function of c is depicted in Figure 8. $I_S^N(c)$ 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 unskilled workers, both native-born and immigrants, is the same, but the total income of an unskilled immigrant, which is $(1 - t)\rho w + b$, is definitely below the income of an unskilled native-born individual, the difference being the capital income enjoyed by the unskilled native-born individual, namely $E(1 + r)$. The total income of a skilled immigrant is definitely higher than the total income of an unskilled immigrant, because of the higher wage earned by the skilled, whereas both have no other income. The income of the skilled immigrants exceeds the income of the skilled native-born individuals with $c > E$, but falls short of the income of the skilled native-born with $c < E$.

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[23] The reader will recognize the implicit assumption that the economy is not open to international trade. The effect of trade openness on inequality is therefore abstracted from the analysis.

Figure 8
Income Groups as a Function of the Cost of Education

Income

$I_S^N(0) =$
$(1-t)w + b$
$+ E(1+r)$

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

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

$I_U^M = I_U^N - E(1+r)$

E c^* $\bar{c}$ c

The income of a skilled immigrant 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 $E - c$ is negative (i.e. the individual borrows in order to invest in human capital), then the income of the skilled immigrant (I_S^M) is greater than the income of the skilled native-born individual (I_S^N). In sum, we have the following ranking of incomes:

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

c. Supply of Immigrants

In general, Israel employs an unrestricted immigration policy. We envisage an economy that allows any immigrants to come. Thus, the decision of whether or not to immigrate rests solely with the migrant. Each potential immigrant has some reservation income, so that he or she will migrate only if he or she will be accorded a higher income in the destination country.

Due to various factors (such as skill, family ties, age, etc.), this reservation income is not the same, but there is rather a continuum of such reservation incomes. Distinguishing between the two skills 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 receiving country. Denoting the number of skilled migrants by m_S, the supply function of skilled immigrants is given as an iso-elastic function:

(9) $m_S = B_S(I_S^M)^{\sigma_S}$

where B_S and σ_S are some positive parameters. Similarly, the supply function of unskilled immigrants is given as

(10) $m_U = B_U(I_U^M)^{\sigma_U}$

where m_U is the number of unskilled immigrants and B_U and σ_U are some positive parameters.

d. Production and Factor Prices

We employ a Cobb-Douglas production function

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

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

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

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

(13) $w = (1 - \alpha)A \left(\dfrac{K}{L}\right)^\alpha$

and

(14) $r = \alpha A \left(\dfrac{K}{L}\right)^{1-\alpha},$

where we assume for simplicity that capital does not depreciate.

The model exhibits the standard gains from trade argument. (See Appendix A, which reminds us who the gainers and losers are from the flow of skilled immigrants).

e. Income Redistribution System

We employ a very simple system of redistribution. Wages are taxed at a flat rate of t. The revenues are distributed by a uniform per-capita transfer, b.

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

(15) $twL = b(1 + m_S + m_U)$

assuming that the government has no other revenue needs, except for redistribution.[24] 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 wage subsidy (namely, a negative t) requires the government to impose a lump-sum tax (negative b) on all. When t and b are positive, the tax-transfer system is progressive. When they are negative, the system is regressive.

With unrestricted immigration the flows of immigrants m_S and m_U are determined by the immigrants themselves according to their reservation incomes (embedded in the supply functions, (11) and (12)), and the income accorded to them in the receiving country. There are therefore only two policy variables—the tax rate, and the social benefit b. However, as the government is constrained by a balanced budget (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 number of immigrants (m_S, and m_U), and b. 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

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

There are also 15 equations in the model—(2)-(9) and (10)-(16)—from which the endogenous variables are to be solved.[25]

The policy variable t is chosen by some natural and plausible version of a majority vote.[26]

There is a two-stage voting system as follows. In the first stage the regressivity/progressivity of the system is determined. If the tax rate, t, and the social benefit, b, are both positive, the system is progressive. If the tax rate, t, and the social benefit, b, are both negative, the system is regressive. The system's progressivity is chosen by the *majority* of the voters.

In the second stage the magnitudes of the tax system, t, and b, are chosen by the *largest sub-group* of the majority coalition.[27]

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[24] One may wonder why there is no tax on the initial endowment (E). However, in a dynamic setting which we mimic in a static framework, E represents accumulated savings, and taxing it will be distortive. Furthermore, because all native-born individuals possess the same initial endowment, taxing it in our static model does not distribute income across native-born income groups, but taxing E amounts to transferring income from the native-born individuals to the immigrants. In a static model such a tax is not distortive.

[25] In addition, Equation (1) defines I_S^N as a function of c.

[26] Since the composition of voters is endogenous, and the single-peak property of the voter preferences is not guaranteed, the median voter proposition is invalid.

Upon observation, we can see from Equations (2) and (3) that the direct effect of the tax-transfer policy on the incomes of unskilled native-born individuals and unskilled immigrants is the same, and works through the net wage income $(1 - t)\rho w + b$. For the unskilled immigrant this is the only effect of the tax-transfer system. However, for unskilled native-born individuals, there is also an indirect effect through capital income $I(1 + r)$ (r depends on t), but this indirect effect is of a second-order magnitude compared to the direct effect.

Similarly, the direct effect of the tax-transfer policy on the incomes of skilled native-born individuals and skilled immigrants 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 skilled native-born individuals (but not on the income of skilled immigrants) through the capital income $(E - c)(1 + r)$. Here again the indirect effect is of second-order magnitude.

Thus, all unskilled workers (both native-born individuals and immigrants) are affected by the tax-transfer policy mainly through $(1 - t)\rho w + b$, whereas all skilled workers (both native-born individuals and immigrants) are affected mainly by $(1 - t)w + b$. It is therefore natural that all the unskilled individuals, whose wages are only ρw, would prefer to tax wage income and take advantage of all the skilled workers, whose wages are higher – w. Thus, unskilled workers prefer a policy that entails a positive tax and a positive transfer. Therefore, if the unskilled workers (both native-born individuals and immigrants) 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 unskilled native-born individuals, the preferred tax and transfer policy is not necessarily the same for the unskilled native-born individuals and unskilled immigrants. We then postulate that when the unskilled form a majority, the tax-transfer policy chosen is the preferred policy by the larger of the two sub-groups (unskilled native-born workers or unskilled immigrants).

Similarly, the skilled (both native-born individuals and immigrants, whose wage is higher than the unskilled) would opt to grant a wage subsidy, 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 which applies only to the skilled native-born individuals. Thus, the skilled native-born individuals and skilled immigrants do not have the same preferred tax-transfer policy. In this case too, we postulate that the political-economy tax-transfer policy is the preferred policy of the larger sub-group.

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

If we keep all other parameter values constant and increase only the parameter value of B_S, we can isolate the effect of a supply side shock. That is, we give a positive shock to

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[27] See also Lee et al. (2004).

the supply of skilled immigrants. We find that number of skilled immigrants (m_S) rises sharply. Skilled workers now constitute the majority $x_S + m_S > x_U + m_U$. As predicted, the political-economy tax-transfer policy now becomes regressive: t and b are negative. That is, there is a wage subsidy financed by a lump sum tax. In addition, the skilled immigrants form the larger of the two skilled sub-groups, (i.e. $m_S > x_S$) and their preferred tax-transfer policy now becomes the political-equilibrium tax-transfer policy. Furthermore, the politically dominant sub-group of skilled immigrants drives out all unskilled immigrants ($m_U = 0$), by according them zero disposable income ($I_U^M = 0$).

It is worth noting that the unskilled native-born group was initially the politically dominant sub-group and dictated its preferred progressive tax-transfer. Following the supply-side shock of skilled immigration, the unskilled native-born group lost its dominance to the skilled immigrants, who are now dictating their preferred regressive tax-transfer policy. Nevertheless, the unskilled native-born individuals are better off, because the return on their capital income (namely r) rises sharply (in units of the all-purpose composite good). Even though the wage per efficiency unit falls, the sharp rise in the interest rate (from 1.55 to 2.94) more than compensates the native-born unskilled workers for the decline in wages. For the same reason, the skilled workers (native-born and immigrants) are all better off. Thus, except for the unskilled immigrants, who are driven out, all other income groups gain from the skilled-immigration supply shock.

The influx of skilled labor raises the overall productivity of the labor force. Consequently, it also raises the tax revenue needed for shouldering the pre-existing redistribution policy. This force works towards more generous redistribution, because it is fiscally less burdensome. Counteracting this pro-distribution force, however, is the rebalancing of the political coalition triggered by the increased share of higher-income skilled workers in the voting population. The result is that the emerging decisive voter *reverses* the pre-existing redistribution regime.[28]

It is worth explaining the model-specific forces that totally drive out the unskilled immigrants in the wake of the skilled-immigration supply shock. The model assumes perfect substitutability between skilled and unskilled labor in production: Each unit of an unskilled worker's time is equivalent to ρ units of a skilled worker's time. Thus, unskilled immigrants provide no productivity benefits to skilled workers, while constituting a fiscal burden. Therefore, the new skilled-dominant coalition drives them out altogether by pushing their disposable income all the way to zero. The assumed perfect substitutability in production does serve to highlight the anti-unskilled-immigration forces within the ruling skilled coalition. The perfect labor substitutability assumption overstates market-based inequality in the model. If the supply elasticity of skilled immigrants is greater than that of unskilled immigrants, it will reinforce the inflows of skilled immigrants and the outflows of unskilled immigrants because of the immigration shock. In a steady state of standard dynamic models, in general, there is more labor substitutability than during the transition-

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[28] For numerical simulation, see Appendix B.

dynamic state. This provides plausibility to our perfect substitutability assumption. If one introduces Heckscher-Ohlin elements of the traded-non traded sectoral structure into the analysis, it will serve in our model to understate market-based income inequality in our one-sector model, because these elements tend to mitigate the decline in wages following the migration shock.[29]

6. THE MIGRATION-INEQUALITY MODEL'S PREDICTIONS

The model attempts to rationalize the sharp rise in income inequality following the Russian Jewish exodus shock, based on unusual electoral participation by the new immigrants. It allows us to explore how a migration supply-side shock alters immigration patterns while reshaping the political-economy balance. We develop a stylized political-economy model with free immigration.

There are important political-economy mechanisms are at work. First, the influx of skilled immigrants depresses the incentives for unskilled immigrants to flow in, though they are still free to do so. Second, the fiscal burden of redistribution policies diminishes from the viewpoint of the decisive voter. That is, the influx of skilled labor raises the overall productivity of the labor force. Consequently, it also raises the tax revenue needed for shouldering a redistribution policy. However, counteracting this pro-distribution force is the rebalancing of the political coalition due to the increased share of skilled workers in the population. Therefore, the emerging decisive voter reverses the pre-existing redistribution regime, notwithstanding the decline in the fiscal burden. Third, unskilled native-born individuals may nevertheless become well off, even though they lose their political influence.

To sum up, the model's predictions are as follows: First, there is reduced incentive for unskilled immigration; second, the tax-transfer system becomes more regressive; and third, all native-born income groups are better off thank to the rise in the return on their capital.

These positive economic predictions seem to be consistent with data. The theory is motivated by Israel's unique immigration experience 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 such a shock can also reshape the political-economy balance and redistributive policies.

The paper highlights the differences in the political-economy induced redistribution policies between the cases in which immigrants participate in the electoral system and those where they do not. When immigrants are allowed to vote, and they take advantage of this right, then following the shock, all income groups gain except low-skilled immigrants, who lose. When immigrants are not allowed to vote, or choose not to participate in elections, all income groups gain except the high-skilled immigrants, who lose.

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[29] See Burstein et al. (2017).

7. CONCLUSION

The paper describes the unique experience of Israel. Within a short time period in the early 1990s, Israel received hundreds of thousands of immigrants from the FSU. The distinctive feature of this massive wave of immigration was the immigrants' high skill level. Following the immigration wave, the political-economy balance shifted towards a more regressive government policy. Such a significant change in redistribution over time is underpinned by a permanent reduction in income taxes. Income tax fell from 30 percent of revenues in 2000 to 20.4 percent in 2015. At the same time, VAT increased from 24.9 percent of tax revenues to 30.1 percent. These factors caused a sharp new upward trend of disposable income inequality but without a parallel change in market income inequality. That is, the welfare state took a sharp regressive turn. The model developed in this paper helps explain what is shown Figure 6: a moderate rise in net income inequality after 2000, due to a combination of declining market income inequality, and an offsetting decline in income redistribution. The influx of high-skilled immigrants can explain both a rising middle class and a rebalanced political economy equilibrium.

This underscores the role played by the post-migration political balance in triggering lower redistribution.

Appendix A: Gains to native-born individuals from immigration

Like international trade in goods, there are gains and losses from the opening of national borders to labor mobility. A simple figure (Figure A) can serve to illustrate the gains from immigration in our model. For concreteness, we illustrate the gains to the native-born population from low-skilled immigration. For simplicity, we assume that there are no taxes or benefits.

The downward-sloping curve in this figure is the marginal product of low-skilled labor. This curve is also the demand for this type of labor.

There are S native-born high-skill laborers. The number of high skilled immigrants under fee immigration is FM_S.

In a closed economy with no immigration, the equilibrium high-skilled wage is w_S.

GDP is equal to the area OGAD, of which the area HGA goes to the high-skill native-born population, and the area OHAD goes to the low-skill native-born population.

Figure A:
The Gains from High-Skill Immigration
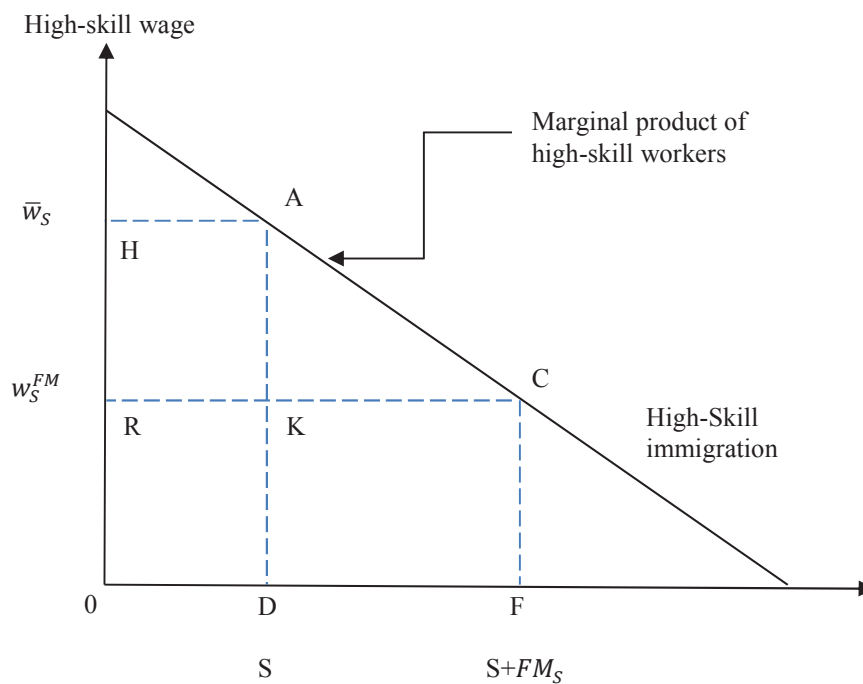
Suppose the high-skill immigrants face a reservation wage of w_S^{FM} in their countries of origin, which is below the threshold $\overline{w_S}$. If we allow for free immigration then FM_S high-skilled immigrants will come. The equilibrium wage will be: w_S^{FM}. GDP increases to OGCF (for both native-born individuals and immigrants).

The increase is measured by the area DACF.

A part of this increase (the area DKCF) goes to the low-skilled immigrants, so that the total gains to the entire native-born population is the area AKC. However, not all native-born individuals gain. The income of the high-skill native-born population drops to the area ORKD, so that they lose the area HAKR. On the other hand, the income of the high-skill native-born group exceeds the loss to the low-skill native-born group.

Therefore, with a perfect, non-distortionary system of redistribution (via lump sums), the high-skilled native-born group can more than compensate the low-skilled native-born group so that the entire native-born population can gain from immigration.

In addition, if the immigration of high-skill individuals triggers either productivity gains (through external effects) or an increase in infrastructure investment (through policy effects), the marginal productivity curve would shift outward. Therefore, the wage of the high-skill group under free immigration need not fall.

Because a redistribution system (via wage taxation) is distortionary, the compensation possibilities are limited. It is not always the case that all native-born individuals gain from immigration. A similar conclusion holds in the case of high-skilled immigration.

A striking result in Chapter 2 is that the immigration supply shock benefits all income groups despite the distortionary redistribution system, and driven by political-economy forces.

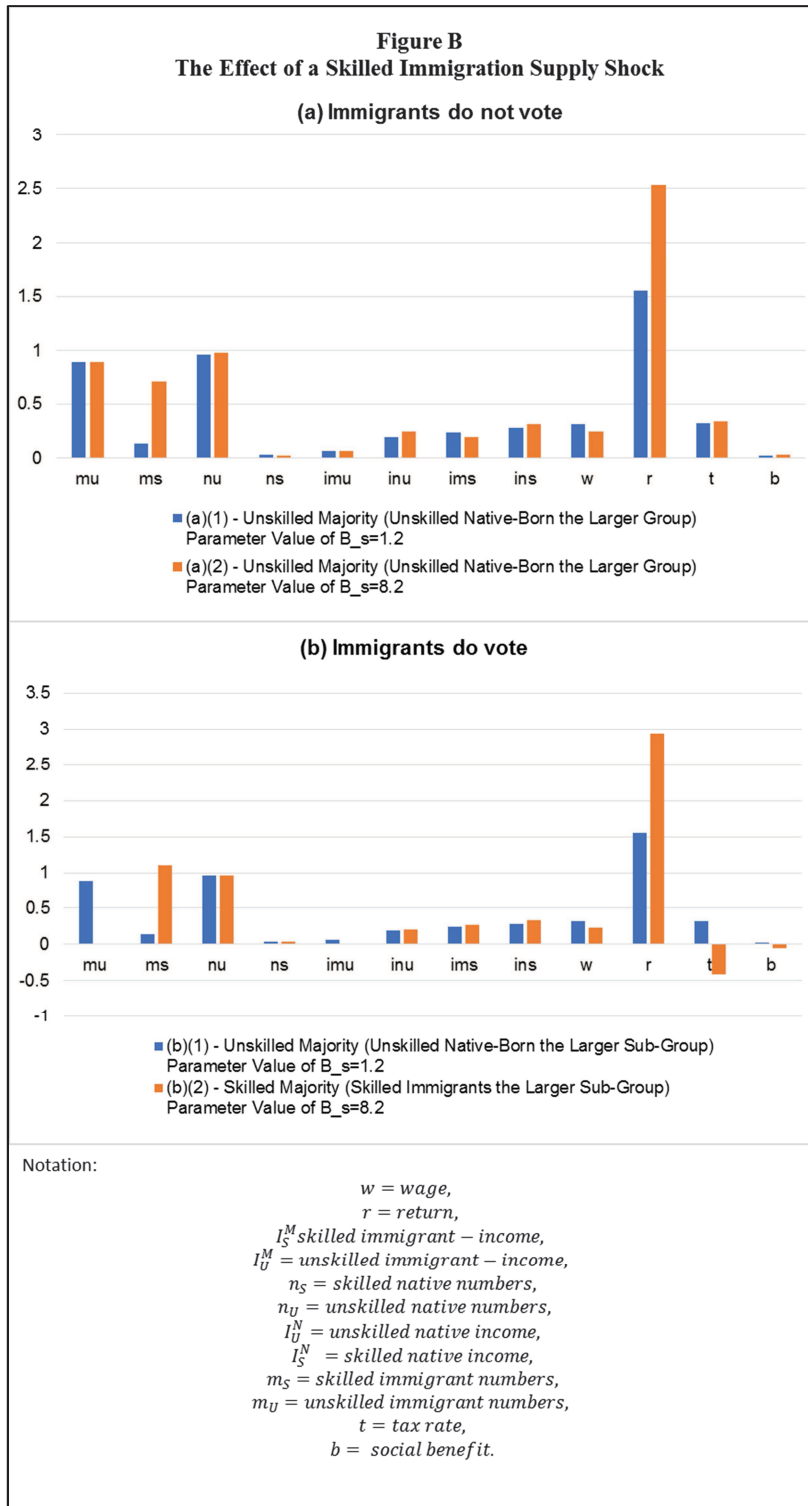**Appendix B: Immigrants who vote vs. Immigrants who do not vote**

The immigration-inequality model, motivated by the Israeli experience with the wave of skilled immigration from the FSU, simulates the effects of a supply shock of skilled immigration on the political economy equilibrium tax-transfer policy. To highlight the role of electoral participation by immigrants, we compare two political regimes. In the first one immigrants do not vote, and in the second they do.

We start with parameter values that entail the unskilled (both native-born and immigrants) as a majority. This case is described Figure B (a) and (b). As predicted, the political-economy tax-transfer policy is progressive: t and b are positive. Also, native-born individuals form a majority of the unskilled population. We then contemplate a skilled immigration supply shock. That is, we keep all other parameter values constant and increase the skilled immigration parameter value. Following the supply-side shock of skilled immigration, in part (a), the unskilled native-born population does not lose its political dominance to the skilled immigrants. Their preferred progressive tax-transfer policy is unchanged. Nevertheless, the unskilled native-born population is better off because the return on its capital income (r) rises.

Following the supply-side shock of skilled immigration, in part (b), the unskilled native-born population loses its dominance to the skilled immigrants who are now dictating their preferred regressive tax-transfer policy. Nevertheless, the unskilled native-born population is better off because the return on their capital income rises (Figure B (a), (b)).

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

The model therefore helps explain what is shown Figure 1 for the Israeli episode: a rise in income inequality between 1990 and 2003, due to a combination of declining market income inequality and a more than offsetting fall in redistribution. The influx of high-skilled immigrants can explain both: A rising middle class and a rebalanced political-economy-based income redistribution policy.

Figure B
The Effect of a Skilled Immigration Supply Shock

(a) Immigrants do not vote

■ (a)(1) - Unskilled Majority (Unskilled Native-Born the Larger Group)
Parameter Value of B_s=1.2

■ (a)(2) - Unskilled Majority (Unskilled Native-Born the Larger Group)
Parameter Value of B_s=8.2

(b) Immigrants do vote

■ (b)(1) - Unskilled Majority (Unskilled Native-Born the Larger Sub-Group)
Parameter Value of B_s=1.2

■ (b)(2) - Skilled Majority (Skilled Immigrants the Larger Sub-Group)
Parameter Value of B_s=8.2

Notation:

$$w = wage,$$
$$r = return,$$
$$I_S^M \ skilled \ immigrant - income,$$
$$I_U^M = unskilled \ immigrant - income,$$
$$n_S = skilled \ native \ numbers,$$
$$n_U = unskilled \ native \ numbers,$$
$$I_U^N = unskilled \ native \ income,$$
$$I_S^N \ = skilled \ native \ income,$$
$$m_S = skilled \ immigrant \ numbers,$$
$$m_U = unskilled \ immigrant \ numbers,$$
$$t = tax \ rate,$$
$$b = \ social \ benefit.$$

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