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Why Is America Different  
from Europe?

**Assaf Razin and  
Efraim Sadka**





## Migration States and Welfare States

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# Migration States and Welfare States: Why Is America Different from Europe?



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## Preface

In the era of the welfare state, it has become impossible to envisage a world of free migration. A welfare state is a magnet for migrants, especially the low-skilled, the poor, and the old. The birth of the welfare state was in Bismarck, Germany, in the late nineteenth century. Then in the twentieth century, following two world wars, most of the European countries – those that later were to form the European Union, developed their own model of the welfare state. The reconstruction of continental Europe (and of Germany and France in particular,) had exhausted the native-born labor force. So those countries encouraged guest workers to come from labor-rich countries in southern Europe, Turkey and North Africa, only to face the practical problems involved in developing an effective migration policy. Exceptionally, France had from the beginning a legal immigration policy that allowed the settlement of immigrant workers and their families from its colonies in North Africa. Germany, on the other hand, endeavored to maintain strict rotation policies aimed at not allowing the guest workers to settle in Germany. The US ceased freely admitting migrants after World War I, at the time when it also started to gradually develop welfare state systems (such as federal income tax, old age pension, and so on). These developed into the great social institutions of the 1960s (such as Medicare), and in the early twenty-first century have culminated in the affordable care legislation known as ObamaCare.

The aging of the population is a key factor affecting the generosity of the welfare state and its migration policy



through the changes in the balance of power among different interest groups; this ultimately shapes the generosity of the welfare state and thereby its migration policy. A society with a higher proportion of old people, for example, would naturally result in more political influence to the old, who typically opt for a more generous welfare state. However, the working young, who finance the welfare state, are naturally more reluctant to increase its generosity.

Over the years, two key policy differences have emerged between Europe and the USA: more generous welfare states, and more liberal migration policies, have been developed in Europe than in the USA.

This book attempts to provide a political-economy explanation for these key differences, based on the degree of coordination among member states of the economic union, and the different levels of aging in the population.

We aim at a broader readership than that of the specialized academic economist, who typically publish his or her scientific work in rigorously technical journals. We hope that we will not sacrifice any quality by writing for a more general audience, even though in so doing we will not explore the technical details so deeply, nor provide such rigorous analysis.

This work, which we co-authored over the last decade and a half, synthesizes our thinking on the key issues. Those analytical and empirical works are each small pieces of a more general puzzle, and in our work the loss of technical analysis will, we hope, be compensated by the bigger picture becoming clearly visible.

*Assaf Razin and Efraim Sadka*  
*Tel Aviv and Ithaca, September 5, 2014*

# 1

## Introduction

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Commodity prices vary across countries due to several reasons: different tax rates, market segmentation, different standards, transportation costs etc. However, the forces of free trade tend to narrow these differences. These forces are enhanced by multilateral trade agreements reached under the auspices of the World Trade Organization (WTO); by regional trade agreements, such as the North America Free Trade Agreement (NAFTA); or by other bilateral trade agreements, such as the one between Switzerland and the European Union (the EU), and the one between Norway and the EU.

In contrast, the wages for labor services of individuals with similar labor-market traits differ considerably across countries, especially between advanced and developing countries. Such high differences cannot persist under free migration; they exist mostly because sovereign states restrict migration. Among such states, there is no organization such as the WTO which can coordinate sustainable reductions in the administrative barriers to migration.

Restrictions on the international mobility of labor are arguably the single largest policy distortion that besets the international economy. A variety of studies suggests that even a small reduction in barriers to migration will result in large welfare benefits to the global economy.<sup>1</sup> Unlike international trade in goods or international financial flows, migration can change the decision-making policy in an economy. This is because the composition of the population in terms of income, age, etc., can alter the power balance between the native-born and the newcomers in a way that changes the political-economic policy of the state.

Nevertheless, despite the potentially large gains from the easing of restrictions on international labor mobility, countries do not pursue the liberalization of migration flows unilaterally, or through negotiations, in a way that international trade negotiations do.<sup>2</sup> Why is this? Because politicians face a backlash against immigration. Among several key explanations for this is the fiscal burden imposed by immigration on the native-born.

In this book, we focus on a central tension faced by policy makers in countries that receive migrants from lower-wage countries. The former countries are typically highly productive and capital rich. The resulting high wages attract both highly skilled and low-skilled migrants. Reinforcing this migration is the nature of the host country's welfare state: low-skilled migrants find a generous welfare state particularly

attractive. Such a welfare state may turn also to be a migration state. Low-skilled migration imposes a fiscal burden on the native-born. In addition, a generous welfare state may deter high-skilled migration because heavy redistributive taxes accompany them. Indeed, over the last half-century, Europe's generous social benefits have encouraged a massive surge of "welfare migration", that is, of low-skilled migrants. In contrast, over the same period, the US has attracted a major world portion of highly skilled migrants, boosting its innovative edge. While in the last two decades Europe ended up with 85 percent of all low-skilled migrants to developed countries, the US retains its innovative edge by attracting 55 percent of world-educated migrants. European migration thus exhibits a bias towards low-skilled workers, whereas the US attracts the majority of the world's skilled migrants. At the same time, the welfare system in Europe is more generous than that of the US. This book describes an analytical framework that can explain the reason for the existence of these differences. Whether the member states of a union compete or coordinate their policies has an impact on the skill composition of its migrants and the generosity of the welfare system. This is this book's main theme.

Another fundamental factor which is interrelated with migration and the generosity of the welfare state is the aging of the population. The old generally benefit from the generosity of the welfare state (for example, through its old age social security benefits and, in the US, Medicare). A welfare state is also keen to admit migrants, in particular highly skilled ones, as a way of alleviating its overstretched finances. On the other hand, the working young, who finance the welfare state through their payroll tax, are reluctant to support a generous welfare state. With respect to migration, the young are less keen on admitting migrants than are the old, because the young may be concerned about changes in the political balance in the future when they grow old, which could endanger the old-age benefits they expect to receive. It is interesting to note in this context that the current immigration debate in the US about "the path to citizenship" of the undocumented migrants is centered exactly on how they may tilt the political balance of power, once they become citizens, concerning the "role of government" (that is the generosity of the welfare state).

This aging factor is another source of difference between the US and the EU. In 2010, the proportion of people aged 65 and older constituted 13.1 percent in the US, whereas in the core EU countries it was

significantly larger: 20.8 percent in Germany, 20.3 percent in Italy, 16.8 percent in France, and 16.6 percent in the UK (United Nations, 2013).

Although the population in the US is getting older, and its numbers are growing more slowly, than in the past, the demographic future for the US is younger than that of the core EU countries. In particular, the US population is projected to grow faster and age more slowly than the populations of its major economic partners in Europe.

This Palgrave Pivot book explains two key policy differences between the US and the EU, two otherwise similar economic unions: (i) the higher generosity in the welfare-migration system in the EU relative to the US, (ii) the skill and the wealth bias in the migration to the US relative to the migration to the EU, the US receiving a higher proportion of the highly skilled and rich migrants.

This work claims that the looser nature of the economic union in the EU, relative to the US, and the relatively more aged population contribute a great deal to our understanding of the above-mentioned policy differences.

## Notes

- 1 See Bhagwati and Hanson (2009) for a broad discussion of this issue.
- 2 See Razin and Sadka (1997) for a review of the interaction between international trade and migration.

# 2

## Welfare State

**Abstract:** *In the EU there is no union-wide income tax, healthcare program such as Medicare or Affordable Care in the US, or social security scheme. Social expenditures in EU core countries and the US are significantly different: They are much lower in the US than in the EU.*



**Keywords:** Social expenditures; welfare state; different institutions

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The United States of America has, since gaining independence over 200 years ago, organized its various states as a federation. The large expenditures incurred by the pre-independence states during the War of Independence, and the consequent inability of those individual states to repay the ensuing debts, triggered both the need and the opportunity to establish an integrated federal fiscal system. Congress then transferred the authority to levy taxes from the states to the federal government, which then bailed out the states and effectively assumed their debts. The 1790 Congress empowered the federal government to raise enough revenue to service the large government debt.

Another wave of state fiscal crises in the mid of the nineteenth century strengthened the federal government's ability to take a leading role in financing infrastructure projects, allowing state governments to reduce their role. Following their debt crises, many states introduced some forms of balanced budget rules into their constitutions; see Sargent (2012); this increased the role of the federal government in the fiscal system. In the early 21st century, federal tax revenues constitute well over one-half of all the tax revenues (federal, state and local) in the US.

In contrast, at the time the European Union was formed, all the major constituent countries already had well-established solid fiscal systems, and none was at a risk of default. So the individual countries preserved their fiscal independence from the outset. Later on, treaties (such as the Maastricht Treaty of 1992) attempted to restrict the fiscal sovereignty of the individual countries; however, its restrictions applied merely to several aggregate variables, such as the budget deficit and the public debt, and each country was still free to set its total expenditure budget and their compositions. This means that each country effectively faced no restrictions on the level and composition of its social expenditures and taxes—key components of the welfare state. Furthermore, these treaties were not enforced, mainly because of the veto power granted to each country on important fiscal policies. In contrast to the US, there are no union-wide taxes or social programs in the EU—no EU-wide income tax, health care program (such as, in the US, Medicare, and Affordable Care), or social security payroll tax. The EU social expenditures budget amounts to no more than 1% of the GDP in the EU, but are significantly lower in the US, relative to the core EU member states. For example, in year 2000, total social expenditure amounted to USD 8618 in Denmark, USD 7583 in Germany, USD 8040 in France, and USD 8668 in Sweden, but only USD 5838 in the US (Data: OECD library).

# 3

## Migration State

**Abstract:** *Highly skilled immigrants are more attractive to destination countries than are low-skilled immigrants for a variety of reasons; for instance, highly skilled immigrants are expected to pay taxes in excess of the benefits provided to them.*



*Overall, and unlike the US migration, European migration exhibits a significant bias toward low-skilled migrants.*

**Keywords:** European Union; United States as a Union

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In setting up a migration policy, the skill composition of immigrants is a crucial factor. Naturally, highly skilled immigrants are more attractive to the destination countries than low-skilled, for a variety of reasons. For instance, highly skilled immigrants are expected to pay more in taxes to the Fisc than the Fisc provides them with, and in addition these immigrants are expected to boost the technological edge of their destination country. In contrast, low-skilled immigrants tend to depress the low-skill wages of the native-born, and they are also deemed to impose a burden on the fiscal system.

However, if a migration policy that favors the highly skilled is coupled with a generous family-unification policy, then an influx of low-skilled migration takes place too.

### 3.1 The US

It was migrants from Europe (the Old World) that created the United States (the New World). Naturally, migration to this new world was not restricted. Mass migration to the United States accelerated from 1840 and peaked on the eve of World War I. There were about 300,000 immigrants a year in the mid-nineteenth century, peaking to about 3,000,000 a year shortly before WWI.

That war signaled the end of free migration worldwide. The League of Nations, formed after WWI, failed to provide any support for international migration. Many countries, especially those of the British Empire, insisted on their rights to limit migration, contrary to the wishes of countries such as China, Japan, and India, who were, unsurprisingly, all in favor of labor mobility. In the US, the 1917 Immigration Act had already excluded Asian immigration, but after WWI it introduced a series of migration-restricting acts: the 1921 Emergency Quota Act, which limited migration to 350,000 a year, and the 1924 Johnson-Reed Act, which cut the quota to 150,000 a year.

Immigration into the US fell to mere 50,000 a year in the 1930s, during the Great Depression. The US then gradually cut the quota to that same 50,000; see Goldin, Camero and Balarajan (2011). In the latter part of the twentieth century, however, the US tilted its migration policy, in favor of highly skilled migrants; the 1990 US Immigration Act increased the number of temporary visas to highly skilled workers.

In addition during those decades, the US universities and research centers—funded, significantly, directly and indirectly by the US federal and state governments—attracted talented researchers from all over the world. Many of them remained in the US after completing their original term of education, training or research. Many became citizens. By the mid-1990s, 30% of documented immigrants to the US were high-skill.

### 3.2 Europe

The birth of the welfare state took place in Bismarck's Germany, in the late nineteenth century. In the twentieth century, after the two world wars, most European countries—those that later formed the European Union—demonstrated their own models of the welfare state. The reconstruction of continental Europe (Germany and France in particular) exhausted the native-born labor force. This induced continental Europe to invite guest workers from labor-rich countries in southern Europe, Turkey and North Africa. Exceptionally, France had introduced from the outset a legal immigration policy that permitted settlement of immigrant workers and their families from its colonies in North Africa. Germany, at the other extreme, always attempted to maintain strict rotation policies aimed at prohibiting its guest workers from settling in Germany; see Hollified (2004). However, the post-war family reunification arrangements throughout the core European countries eventually turned the guest workers into residents, effectively, of their host countries.

The removal of barriers to labor mobility within the EU within the framework of the European Single Market coincided with increased restrictions by the EU member countries on immigration from outside the EU, enabling them to retain their sovereignty over non-EU immigration policy. The collapse of the Soviet Bloc and the consequent extension of the EU to include central and eastern European countries brought additional immigrants into the core EU countries.

Overall—and dissimilar from the US—the European migration exhibited significant bias toward low-skill migrants; see Boeri, Hanson and McCormick (2002) and Boeri (2008, 2010). Table 3.1 compares the stocks of migrants, by educational attendance, between the EU-15 and the US; it is clear that more than 40% of the stock of migrants in the US have undergone tertiary education, whereas the corresponding figure for the EU-15 is less than 25 per cent. Similarly, as many as 48–59% of the migrants

**TABLE 3.1** *The stocks of migrants by education level, as percentages of the total for the EU-15 and the US, 1990 and 2000*

Education level	EU-15		US	
	1990	2000	1990	2000
Primary	59	48	26	22
Secondary	24	28	31	36
Tertiary	18	24	43	24
Total	100	100	100	100

*Source:* International Organization for Migration (IOM) and OECD.

in the EU-15 have only primary education, whereas the corresponding figures for the US are only 22–26%.

Data from the European Household Survey Panel reveals that in EU countries with high education and income levels, such as Denmark, France, Germany, and the Netherlands, the education levels of non-EU foreigners are significantly below those of the native-born. Furthermore, the average skill composition of non-EU foreigners is well below that of EU individuals who have moved from one EU country to another.

It is worth noting that the effect of migration on the fiscal burden is not particularly noticeable at the aggregate level of the fiscal system; the impact is mainly on the distribution of the burden between the highly skilled and the low-skilled, rich and poor, and old and young, and among the various regions.

# 4

## Free Versus Controlled Migration: Analytics

**Abstract:** *To address the interaction between the welfare state and the migration state in the interplay between free and controlled migration, this chapter provides a presentation of the simple analytics of free and controlled migration within the framework of a single union-member representative country.*

**Keywords:** Skill composition of migrants; fiscal burden

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A union typically has free migration among its member states. For example, the US constitution rules out any impediments to the free passage of goods, capital and people across states. Similarly in the EU, a series of agreements dealing with migration, commencing with the 1985 Schengen Agreement, opened intra-union borders to free migration.

However, a union or its member states may still control immigration from third-party countries; in the US such controls reside with the union itself (the federal government), whereas the EU's individual members have more control over immigration from non-union countries.

As a prelude to our analysis of the interaction between the welfare state and the migration state in the conjunction of free and controlled migration, we attempt to explain in this chapter the simple analytics of free and controlled migration in the framework of a single representative country. For this purpose, we present a parsimonious model of migration and welfare state.

#### 4.1 A parsimonious model of welfare and migration state

We consider an economy with a single good and individuals with two skill levels: high-skill (subscript “ $s$ ”) and low-skill (subscript “ $u$ ”). We assume that the good is produced by a Cobb–Douglas technology, exhibiting constant returns to scale and employing the two types of labor which are not perfect substitutes:

$$Y = AL_s^\alpha L_u^{1-\alpha}, \quad 0 < \alpha < 1 \quad (4.1)$$

where,  $Y$  is GDP,  $A$  denotes a Hicks-neutral productivity parameter, and  $L_i$  denotes the input of labor of skill level  $i$ , where  $i = s, u$  (high-skill, low-skill, respectively).

By the standard marginal productivity conditions, the competitive wages of high-skilled and low-skilled labor are:

$$w_s = \alpha Y / L_s \quad (4.2)$$

$$w_u = (1 - \alpha) Y / L_u$$

where  $w_i$  is the wage rate of an individual with a skill level  $i = s, u$ .

The aggregate labor supply, for highly skilled and low-skilled workers respectively, is:

$$L_s = (S + \sigma\mu)l_s \quad (4.3)$$

$$L_u = (1 - S + (1 - \sigma)\mu)l_u.$$

There is a continuum of workers. The number of native-born is normalized to 1;  $S$  denotes the share of the native-born highly skilled in the total native-born labor supply;  $\sigma$  denotes the share of highly skilled migrants in the total number of migrants;  $\mu$  denotes the total number of migrants; and  $l_i$  is the labor supply of an individual with skill level  $i = s, u$ .

We assume that the well-being of highly skilled and low-skilled migrants in the host country is high enough to generate  $\sigma\mu$  and  $(1 - \sigma)\mu$  highly skilled and low-skilled migrants, respectively.

The total population (native-born and migrants) is as follows

$$N = 1 + \mu \quad (4.4)$$

We specify a simple welfare state system which levies a proportional labor income tax at the rate  $\tau$  with the revenues redistributed equally to all residents (native-born and migrants alike) as a social benefit,  $b$ , per capita. This benefit captures not only a cash transfer, but may also capture outlays on public services such as education, health, and other provisions, that benefit all workers, regardless of their contribution to the finances of the system. Note that this benefit is accorded to all—native-born and migrants alike. This is plausible, as there is public and political support both in Europe and in the US to grant the key components of social benefits (such as public education) to migrants too. In the US it may also be unconstitutional to exclude migrants from social assistance programs.

The tax-benefit system employed here is progressive in the conventional sense. The net tax liability of an individual, namely the tax minus the benefit, as a fraction of gross income is:

$$(\tau w_i l_i - b) / w_i l_i = \tau - b / w_i l_i. \quad (4.5)$$

Clearly, this average net tax liability increases with gross income ( $w_i l_i$ ). That is, the highly skilled rich individual pays a higher proportion of their gross income in net taxes than the low-skilled individual. In fact, because the government budget must be balanced, the low-skilled individual is a net beneficiary of the welfare state, meaning that their net tax

liability, as in Equation (4.5), is negative, whereas the highly skilled individual is a net contributor to the welfare state, so their net tax liability, as in Equation (4.5), is positive.

Strictly speaking, this model is a one-period model, and the government must therefore balance its budget.<sup>1</sup> More generally, it is a parsimonious model, which may be viewed as a reduced form of a stationary state of a dynamic model.

The migrants in the welfare-migration state are entitled to all benefits and are subject to all its taxes. The balanced budget constraint is therefore given by

$$b = \frac{\tau(w_u l_u + w_s l_s)}{N} = \frac{\tau Y}{N} \tag{4.6}$$

That is, total benefits are equal to total tax revenues. Recall that GDP ( $Y$ ) is equal to national income, which consists of wage payments.

All individuals (native-born and migrants) have the same preferences, given by

$$u_i = c_i - \frac{\varepsilon}{1+\varepsilon} l_i^\varepsilon \tag{4.7}$$

where  $c_i$  ( $i = s, u$ ) denotes consumption of all types of goods (private goods, education, health services, etc.), and  $\varepsilon$  is a positive parameter.

The budget constraint of an individual with skill level  $i$  is

$$c_i = b + (1-\tau)l_i w_i, \quad i = s, u \tag{4.8}$$

Individual utility-maximization yields the following individual labor supply equation

$$l_i = ((1-\tau)w_i)^\varepsilon, \quad i = s, u \tag{4.9}$$

Note that the labor supply elasticity with respect to the wage rate is constant and is given by  $\varepsilon > 0$ .

In accordance with standard practice, by substituting  $c_i$  and  $l_i$  from Equations (4.8) and (4.9) respectively into Equation (4.7), we obtain the indirect utility function:

$$V_i = b + \frac{((1-\tau)w_i)^{1+\varepsilon}}{1+\varepsilon}, \quad i = u, s \tag{4.10}$$

There are two fiscal policy variables available to the government—the tax rate ( $\tau$ ) and the benefit per capita ( $b$ ). However, given that the government faces a balanced budget constraint, there is essentially only one policy variable available to the government. That is, once the government has chosen, for instance, benefit  $b$ , the tax rate must be determined at a level that balances the budget, and vice versa: choosing the tax rate  $\tau$  yields, through the budget constraint, the benefit level  $b$ . We henceforth suppress  $b$ .

In general, there are three independent policy variables in this model: the tax rate— $\tau$ ; the share of highly skilled migrants— $\sigma$ ; and the total number of migrants— $\mu$ . For each level of this policy triplet, we can find the equilibrium by equating supply and demand in the labor markets (for highly skilled and low-skilled) individuals. This yields the equilibrium wage rates.<sup>2</sup>

$$w_s = A(A\delta^\varepsilon \vartheta^{1-\alpha})^{\frac{1}{1+\varepsilon}}$$

$$w_u = A((1-\alpha)\delta^\varepsilon \vartheta^{-\alpha})^{\frac{1}{1+\varepsilon}} \quad (4.11)$$

$$\text{where } \delta \equiv \alpha^\alpha (1-\alpha)^{1-\alpha} \quad \text{and} \quad \vartheta \equiv \frac{1-S+(1-\sigma)\mu}{S+\sigma\mu}$$

The equilibrium levels of all the other endogenous variables— $c_p$ ,  $l_p$ ,  $L_p$ ,  $b$ ,  $N$  and  $Y$  (where  $i = s, u$ ), are calculated by substituting the equilibrium wage Equation (4.11) into Equations (4.1), (4.3), (4.4), (4.6), (4.8) and (4.9).

This general framework leads to two types of migration-policy regimes. One is controlled migration (analyzed in Section 4.3) in which  $\sigma$  and  $\mu$  are determined endogenously through an explicit upward-sloping supply function for the two types of migrants. We assume that the policy (with respect to fiscal and migration issues) is determined by majority vote before the arrival of migrants. Therefore, the migrants do not participate in the voting process.<sup>3</sup>

Note that there are only two types of identical individual voters: highly skilled and low-skilled. Therefore, the outcome of the voting is determined according to the preferences of the type that forms the majority.



## 4.2 Gains to the native-born from migration

As with international trade in goods, gains can also be made from opening national borders to labor mobility. A simple figure (Figure 4.1) will serve to illustrate the gains from migration in our model. For concreteness, we have illustrated the gains to the native-born from low-skilled migrants, and for simplicity we have assumed 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.<sup>4</sup>

In a closed economy with no migration, the equilibrium low-skill wage is  $\bar{w}_u$ . (Recall that there are  $1-S$  native-born low-skilled individuals.)

GDP is equal to the area  $OGAD$ , of which area  $HGA$  accrues to the native-born highly skilled and area  $OHAD$  to the native-born low-skilled.

Suppose the low-skilled migrants face a reservation wage of  $w_u^{FM}$  in their countries of origin, which is below the closed-economy wage rate  $\bar{w}_u$ . If we allow for free migration, then  $FM_u$  low-skilled migrants will come. The equilibrium wage will drop to  $w_u^{FM}$ .

GDP (produced by both native-born and migrants) increases, to area  $OGCF$ . The increase is measured by the area  $DACF$ . Part of this increase (area  $DKCF$ ) accrues to the low-skilled migrants, so that the aggregate

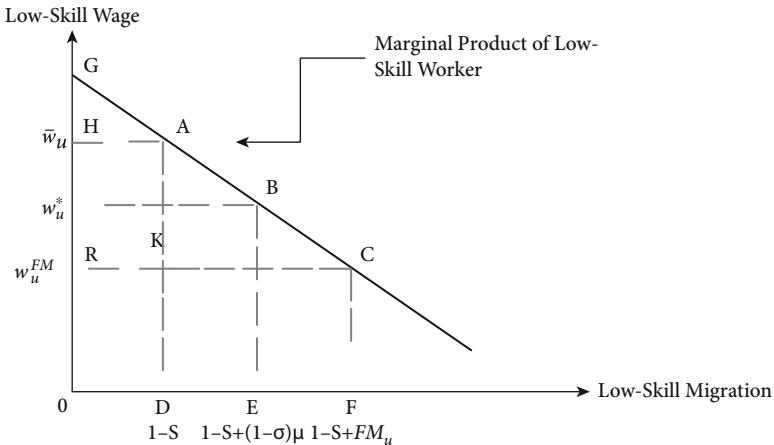


FIGURE 4.1 The gains from low-skilled migration

gains to all the native-born is the area AKC. Note, however, that not all native-born gain; the income of native-born low-skilled drops to area ORKD, so that they lose area HAKR. On the other hand, the income of the native-born highly skilled rises, to become area GRC, so that the gain (area RHAC) exceeds the loss to the native-born low-skilled.

Therefore, with a perfect, non-distortionary, system of redistribution (via lump sums), the native-born highly skilled can more than compensate the native-born low-skilled, so that all native-born can gain from migration. In our model, with a distortionary redistribution system (via wage taxation), the compensation possibilities are more limited, so that it is not always the case that all native-born gain from migration. A similar conclusion holds in the case of high-skilled migration. Therefore, as we will see in later chapters, the political power balance plays a major role in designing migration policies.

The above analysis referred to free migration. If migration of low-skilled individuals is limited to  $(1 - \sigma)\mu$  migrants, then similar qualitative conclusions hold, though to a lesser quantitative degree.

### 4.3 Controlled migration

Recall that we assume that in this case the host country can receive as many migrants as it wishes of each of the two skill types, so that the host country's migration policy is the sole determinant of migration flows.

Our focus in this treatise is the skill composition of migration. Therefore, we consider in the controlled migration regime the total volume of migration ( $\mu$ ) as given.<sup>5</sup> We then analyze how the controlled composition of migration responds to the controlled size or generosity of the welfare state ( $\tau$ ). Recall that once  $\tau$  and  $\sigma$  have been determined, the benefit  $b$  is also determined, and we therefore denote it by  $b(\sigma, \tau)$ .

Naturally, we assume that individuals vote on policy issues according to their own self-interest. That is, they vote to maximize their indirect utilities, as given in Equation (4.10). These utilities are also functions of  $\sigma$  and  $\tau$ :

$$V_i(\sigma, \tau) = b(\sigma, \tau) + \frac{((1-\tau)w_i(\sigma, \tau))^{1+\varepsilon}}{1+\varepsilon}, \quad i = u, s. \quad (4.12)$$

In order to find the attitude of the native-born regarding the skill composition of migration, we must first ascertain how this composition affects

their utilities. For this purpose, we partially differentiate the utility levels given in Equation (4.12) with respect to  $\sigma$ , to get:

$$\frac{dV_i(\sigma, \tau)}{d\sigma} = \frac{db(\sigma, \tau)}{d\sigma} + (1-\tau)l_i w_i(\sigma, \tau) \frac{dw_i(\sigma, \tau)}{d\sigma}, \quad i = s, u. \quad (4.13)$$

Equation (4.13) suggests that a change in the share of highly skilled migrants in the total number of migrants ( $\sigma$ ) affects utility levels through two channels. The first term on the right-hand side of Equation (4.13) captures the effect of  $\sigma$  on  $b$ . Naturally, an increase in the share of the highly skilled in the labor force raises the total labor productivity, and consequently the tax revenues. This, in turn, raises the benefit,  $b$ . The second term on the right-hand side of Equation (4.13) captures the effect of  $\sigma$  on wages. Naturally, an increase in the share of the highly skilled in the labor force depresses the skill premium in the labor market.

Recall that we have plausibly assumed that only the native-born population is eligible to vote on the migration policy, as the would-be migrants are not yet a part of the host country. If the decisive voter is a low-skilled individual, both of the above effects increase their utility. Thus, a low-skilled voter would like to set the skill composition of migrants at the maximal limit, that is  $\sigma$  is set at one, meaning that the share of the highly skilled migrants preferred by the decisive highly skilled voter would typically be lower than that preferred by the decisive low-skilled voter. On the one hand, the highly skilled would benefit from an increase in  $\sigma$  because it raises  $b$ . But on the other hand, an increase in  $\sigma$  depresses their wage  $w_s$ . Therefore, we plausibly assume that the decisive highly skilled voter would like to set  $\sigma$  at lower than one.

Defining  $\sigma_i^{CM}$  as the share of skilled immigrants most preferred by an individual with skill level  $i = s, u$  in the host country (keeping  $\tau$  constant), we get:

$$\sigma_s^{CM} < \sigma_u^{CM} = 1. \quad (4.14)$$

Our goal is to ascertain the effect of a change in the generosity of the welfare state on the migration policy concerning  $\sigma$ . The generosity of the welfare state, captured by the magnitude of the benefit  $b$ , depends positively on the tax rate,  $\tau$ . (We assume that economy is on the “correct side” of the Laffer curve.) We thus look for the effect of  $\tau$  on the change in the desired skill composition of the migrants,  $\sigma$ . It can be shown that<sup>6</sup>

$$\frac{d\sigma^u}{dt} = 0; \quad \frac{d\sigma^s}{dt} > 0. \quad (4.15)$$

This means that if the decisive voter is a low-skilled worker, then an exogenous increase in the tax rate,  $\tau$ , would leave the skill migration policy unchanged, because it is always set at the maximum possible limit. If, however, the decisive voter is a highly skilled worker, an exogenous increase in the tax rate,  $\tau$ , will change the policy concerning the skill composition of migrants towards a larger share of highly skilled migrants (and of course a lower share of low-skilled migrants). The reason for this is that when the tax rate is higher, the redistribution burden on a highly skilled decisive voter increases. Allowing additional highly skilled migrants can ease this rise in the fiscal burden, reducing the adverse effect on the high-skill wage.<sup>7</sup>

#### 4.4 Free migration

We now assume that no restrictions are placed on emigration in the origin country; the level of emigration depends entirely on the choice of potential emigrants. In choosing whether to emigrate or not, a potential emigrant of skill  $i$  compares their prospective utility,  $V_i$ , in the migration destination (our host country), to the reservation utility, denoted by  $\bar{u}^i$ , in the origin country. For each skill level  $i = s, u$ , we assume that there is a continuum of would-be migrants, differing with respect to the reservation utility level in the origin country. The heterogeneity of reservation utilities in the origin country could stem from different traits in the potential migrants (e.g., family size, age, moving costs, forms of portable pensions, housing, cultural ties, etc.). Thus, for each skill level  $i$  the destination country faces an upward-sloping supply curve,  $S^i(V_i)$ , of potential migrants from the origin country.

The proportion of highly skilled migrants,  $\sigma$ , is therefore given by

$$\sigma = \frac{\frac{m_s}{m_u}}{1 + \frac{m_s}{m_u}}. \quad (4.16)$$

where  $m_s$  is the number of highly skilled migrants, and  $m_u$  the number of low-skilled. The indirect utility function in the destination country

no longer depends on the policy variable  $\sigma$ , because  $\sigma$  itself is now an endogenous variable, which depends on  $\tau$ , and is determined in equilibrium. We thus have to add to the set of equations determining the equilibrium in the preceding section a set of new equations that, jointly with the first set, also determines the number of migrants of each type (and, consequently,  $\sigma$ ). The indirect utility function now becomes:

$$V_i(\tau) = b(\tau) + \frac{((1-\tau)w_i)^{1+\varepsilon}}{1+\varepsilon}. \tag{4.17}$$

The following equation determines, for each  $\tau$ , the cut-off levels of the reservation utilities,  $\bar{u}^s(\tau)$  and  $\bar{u}^u(\tau)$ , for a would-be migrant of skill  $i = s, u$ , respectively:

$$V_i(\tau) = \bar{u}^i(\tau), \quad i = s, u. \tag{4.18}$$

The number of migrants of each skill level,  $i = s, u$ , is then determined by the supply of migrants, that is:

$$m_i(\tau) = S^i(\bar{u}^i(\tau)), \quad i = s, u. \tag{4.19}$$

Having defined the new free-migration equilibrium, we can now investigate the effect of an exogenous change in the generosity of the welfare state on the desired skill mixture of the migrants ( $\sigma^{FM}$ ). The generosity of the welfare state is again measured by the tax rate  $\tau$ , as the benefit,  $b$ , depends positively on  $\tau$ .

It can be shown that<sup>8</sup>

$$\frac{d\sigma^{FM}}{d\tau} < 0. \tag{4.20}$$

That is, the generosity of the welfare state attracts relatively low-skilled migrants and discourages highly skilled migrants. The literature refers to the first effect as the “magnet effect” (see, e.g., Borjas 1999).

The rationale for this result is as follows. An increase in  $\tau$  raises the benefit,  $b$ , but lowers the net wages,  $(1-\tau)w_i$ . For highly skilled migrants, the fall in net wage outweighs the increase in the benefit. Thus, an increase in  $\tau$  reduces the cut-off reservation utility of the highly skilled migrants,  $\bar{u}^s(\tau)$ . As a result, those highly skilled migrants with reservation utilities between the old and the new (lower) cutoff levels will choose not to migrate; the opposite holds true for low-skilled migrants. Thus, an increase in the generosity of the welfare state operating a free immigration policy deters highly skilled immigrants and attracts low-skilled ones,

thereby tilting the skill composition of migration towards low-skilled immigrants.

Finally, by comparing Equations (4.15)–(4.20), we can unambiguously conclude that the generosity of the welfare state attracts relatively more highly skilled immigrants in a controlled-migration regime than in a free-migration regime.

## Notes

- 1 Razin, Sadka and Suwankiri (2011) analyze the dynamic interactions between the welfare and the migration state in an overlapping-generations model.
- 2 In order to ensure that the high-skill wage always exceeds the low-skill wage (that is,  $w_s > w_u$ ), we assume that  $\frac{\alpha(1-S+(1-\sigma)\mu)}{(1-\alpha)(S+\sigma\mu)} > 1$ .
- 3 See, for instance, Razin, Sadka and Swagel (2002b) for an analysis of the case where migrants do participate in the voting process in a similar model.
- 4 Note there is only one good in this economy, which also serves as a numeraire, so that the marginal product curve is also the value of the marginal product curve.
- 5 To simplify the notation, we suppress the variable  $\mu$ , whereby no confusion is created.
- 6 For a proof, see Cohen, Razin and Sadka (2009), and Razin, Sadka and Suwankiri (2011, pp. 36–39).
- 7 For a related study, see Krieger (2003).
- 8 For a proof, see Razin, Sadka and Suwankiri (2011, pp. 39–41).

# 5

## Free versus Controlled Migration: Evidence

**Abstract:** *This chapter provides evidence that the generosity of the welfare state attracts a skill composition of migrants which is tilted in the direction of highly skilled migrants when migration is controlled. When migration is free, however, the generosity of the welfare state acts as a magnet to low-skilled migrants, and as a result, the skill composition of migrants tilts in the direction of the low-skilled.*

**Keywords:** Identification; endogeneity; correction for quality of education

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In the preceding chapter we showed that when migration is controlled, the generosity of the welfare attracts a skill composition of migrants tilted in the direction of high-skill migrants. This is true no matter whether the decisive voter is highly skilled or low-skilled. However, when migration is free, then the generosity of the welfare state acts as a magnet to low-skilled migrants, so the skill composition of its immigrants tilts towards the low-skilled. In this chapter, we provide empirical evidence in support of these conclusions.

## 5.1 Brief review of early literature

There are a number of studies which address the issue of how welfare state generosity works as a magnet to migrants—the welfare migration phenomenon.

Khoudour-Casetéras (2008), who studied nineteenth-century emigration in Europe, found that the social insurance legislation adopted by Bismarck in the 1880s reduced the incentives to risk-averse Germans to emigrate. Khoudour-Casetéras estimated that without that social insurance, the German emigration rate from 1886 to 1913 would have been more than double its actual level.

Southwick (1981) used US data to show that a larger gap in welfare-state benefits between origin and destination regions increased the proportion of welfare-state benefit recipients among migrants. Gramlich and Laren (1984) analyzed a data sample from the 1980 US census and found that the high-benefit regions attracted more welfare-recipient migrants than the low-benefit regions. Using the same data, Blank (1988) employed a multinomial logit model to show that welfare benefits have a significant positive effect on the location choice of female-headed households. Similarly, Enchautegui (1997, 2007) found a positive effect of welfare benefits on the migration decisions of women with young children. Meyer (2000) employed a conditional logit model as well as a comparison-group method to analyze the 1980 and 1990 US census data, and found significant welfare-induced migration, particularly for high school dropouts. Borjas (1999), using the same dataset, found that low-skilled migrants are much more heavily clustered in high-benefit states than are other migrants or native-born. Galbach (2000) found strong evidence of welfare migration in 1980, but less in 1990. McKinnish (2005, 2007) also found evidence of welfare migration, especially in individuals



located close to state borders (where migration costs are lower). Walker (1994), using the 1990 US census data, found strong evidence in support of welfare-induced migration. In contrast, Levine and Zimmerman (1999) estimated a probit model, using a dataset for the period 1979–1992, and found that welfare benefits had little effect on the probability of female-headed households (the recipients of the benefits) to relocate.

Péridy (2006) studied migration rates in 18 OECD destination countries from 67 origin countries and found that the destination–origin ratio of welfare state benefits (as measured by total public spending) had a significant positive effect on migration. De Giorgi and Pellizzari (2006) conducted an empirical investigation of migration from outside the EU-15; using a conditional logit approach, they found that welfare-state benefits attracted migrants. Welfare-state benefits also have a positive effect on the probability of the lowest-education group to migrate, when benefits interact with the education level, but the migration probabilities of the secondary and tertiary education groups were not significantly affected. Docquier and Marfouk (2006) and Docquier, Lohest and Marfouk (2006) studied the determinants of migration stocks in the OECD countries in the year 2000, with migrants from 184 countries classified according to three education levels; they found that social welfare programs encouraged the migration of both highly skilled and low-skilled workers. However, the low-skilled were much more strongly motivated by social expenditures than were the highly skilled migrants, so they concluded that the skill composition of migrants is adversely affected by welfare state benefits; that is, welfare benefits encourage immigration biased toward the low-skilled.

Recall that our parsimonious model predicts differential effect of the skill composition of migration depending on whether migration is free or controlled. Therefore, in order to obtain unbiased estimates of the effects of welfare state generosity on the skill composition of migration, we must control for the migration regime (free versus controlled). This means that studies of migration among states within the US (e.g., Borjas 1999), which are evidently confined to a single migration regime (free migration), can produce an unbiased result. Other studies that employ samples confined to controlled migration but at the same time employ a model including migrants' choice of whether to migrate, and if so to which country, are evidently inconsistent. In this case, the estimates convey little information on the migrants' choice (and hence on the welfare state as a magnet for low-skilled migrants), but rather

information on the migration policy choices of the destination country. Those studies that refer to both migration regimes without controlling for them are not easily interpretable, because they convey a mixture of information on migration policies in the destination countries and on the individual migrant's migration choices in the origin countries.

## 5.2 Recent literature

There are, however, two recent studies that do control for the migration regime when analyzing the generosity of the welfare state on the skill composition of migration.

Razin and Wahba (2014), following Cohen and Razin (2009), decompose a cross-country sample into three categories, each category drawing on three groups of countries. The first group (EUR) is composed of countries that enable free mobility of labor among them, and prohibit any kind of discrimination between native-born and migrants regarding labor market accessibility and welfare-state benefits eligibility. These are 16 European countries, 14 of them in the EU (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden and UK), plus Norway and Switzerland. The second group (DC) includes non-European developed countries: the US, Canada, Japan, Australia, New Zealand, Israel, Taiwan, Hong Kong, Korea and Singapore. The third group (LDC) consists of 23 developing countries: Argentina, Brazil, Chile, China, Colombia, Ecuador, Egypt, Jordan, India, Indonesia, Iran, Malaysia, Mexico, Morocco, Lebanon, Nigeria, Peru, Philippines, Tunisia, South Africa, Thailand, Turkey and Venezuela.

The first category consists of pairs of destination–origin countries all from the first group. The second category consists of pairs of destination–origin countries whose destination countries come from the first group and origin countries from the second. The third category consists of pairs of destination–origin countries whose destination countries come from the first group and origin countries from the third.

This decomposition enables us to plausibly assume that migration is free among the 16 EUR countries. Migration is, however, effectively policy-controlled in the second and third categories. That is, migration from either the second group (10 non-EUR developed OECD countries), or from the third group (23 developing countries) into any of the 16 EUR countries is effectively policy-controlled by the EUR country concerned.

Thus, these studies can identify the differential effect of the generosity of the welfare state on the skill composition of migration in an unbiased way. The first category enables us to study the generosity of the welfare state on the skill composition of migration under a free-migration regime. The second and third categories enable us to study the effect of the generosity of the welfare state on the skill composition of migration when the latter is controlled.

The main reason why the distinction is drawn between the second and third groups of countries (and, consequently, between the second and the third category) has to do with differences between the two groups—both cultural and institutional, plus other factors which are unobservable.

Because our interest is the effect of the generosity of the welfare state on the skill composition of migration rates, controlling for the heterogeneity in the skill (education) measurement is essential. The heterogeneity stems from the raw data which measures skills by years of schooling, disregarding differences in the quality of the schooling. To address this potential problem, all the migration stocks and rates are adjusted for quality of education, using Hanushek and Woessmann's (2009) measures of international differences of cognitive skills—an average international assessment arrived at through 12 international student achievement tests (ISATs).

Hanushek and Woessmann (2009) use their schooling quality measure to provide evidence on the robust association between cognitive skills and economic growth. They also find that home-country cognitive-skill levels strongly affect the earnings of immigrants in the US labor market in a difference-in-differences model that compares home-educated immigrants to US-educated immigrants from the same country of origin. This suggests that controlling for the quality of schooling is important.

Table 5.1 describes the average test score in math and science, in primary through end of secondary school (EQ) in the countries in three groups, as calculated by Hanushek and Woessmann (1999). The average score in Taiwan is 5.452, whereas in South Africa it is only 3.089. The group averages are 4.939, 5.132 and 3.999 in the first, second, and third groups respectively.

Razin and Wahba (2014) employ the EQ data in Table 5.1 in order to adjust the raw data on the migration rates of highly skilled individuals. Table 5.2 illustrates the adjustment for two destination–origin pairs (UK–Egypt and Egypt–Italy).

TABLE 5.1 Average test scores, by country

EUR (First group)		DC (Second group)		LDC (Third group)	
Country	EQ	Country	EQ	Country	EQ
Austria	5.089	Australia	5.094	Argentina	3.920
Belgium	5.041	Canada	5.038	Brazil	3.638
Switzerland	5.142	Hong Kong	5.195	Chile	4.049
Denmark	4.962	Israel	4.686	China	4.939
Spain	4.829	Japan	5.310	Colombia	4.152
Finland	5.126	Korea, Rep.	5.338	Egypt	4.030
France	5.040	New Zealand	4.978	Indonesia	3.880
United Kingdom	4.950	Singapore	5.330	India	4.281
Germany	4.956	Taiwan (Chinese Taipei)	5.452	Iran	4.219
Greece	4.608	United States	4.903	Jordan	4.264
Ireland	4.995			Lebanon	3.950
Italy	4.758			Morocco	3.327
Netherlands	5.115			Mexico	3.998
Norway	4.83			Malaysia	4.838
Portugal	4.564			Nigeria	4.154
Sweden	5.013			Peru	3.125
				Philippines	3.647
				Thailand	4.564
				Tunisia	3.795
				Turkey	4.128
				South Africa	3.089
Group averages	4.939		5.132		3.999

Notes: EQ= average test score in mathematics and science, primary through end of secondary school, all years (scaled to PISA scale divided by 100).

The variable DM in Table 5.2 is defined by the difference between high-skilled and low-skilled migration rates as follows:

$$DM_{o,d} = \frac{m_{o,d}^s}{P_o^s} - \frac{m_{o,d}^u}{P_o^u} \quad (5.1)$$

where  $(o, d)$  stands for the origin–destination pair and, as usual,  $s$  refers to high-skill and  $u$  to low-skill. Accordingly,  $m_{o,d}^i$  is the stock of migration from origin country  $o$  to destination country  $d$  of skill level  $i = s, u$ .  $P_o^i$  is the total stock of individuals of skill level  $i = u, s$  in the origin country  $o$ .

$DM^*$  is the DM adjusted for the quality of education, as follows.

$$DM_{o,d}^* = DM_{o,d} (EQ_o / EQ_d). \quad (5.2)$$

TABLE 5.2 Education adjustment of high-skilled migration rate (examples)

High-Skilled Immigration Rate	UK (Destination)–Egypt (Origin) Migration	Egypt (Destination)–Italy (Origin) Migration
Unadjusted: DM	0.2435	0.1144
Adjusted: $DM^*$	0.198	0.0969

In order to study the effect of the generosity of the welfare state on the skill composition of migration under either free or controlled migration regimes, Razin and Wahba (2014) estimated the following equation.

$$DM_{o,d}^* = \beta_0 + \beta_1 I_{o,d} + \beta_2 b_d + \beta_3 I_{o,d} b_d + \beta_4 x + \beta_5 I_{o,d} x + \epsilon_{o,d} \tag{5.3}$$

The variable  $b_d$  is the log average social benefit per capita in the destination country  $d$  over the period 1974–1990,  $x_i$  is a vector of control variables which are listed in Table 5.3, consisting of two groups—returns to skill and immigration policies. These variables refer to the destination country, the origin country, and jointly to both countries.  $I_{o,d}$  is an index function which assumes a value of zero when  $(o,d)$  belongs to the first category (free migration within the EUR countries) and a value of one when  $(o,d)$  belongs to the second and third categories (controlled migration).  $\epsilon_{o,d}$  is the residual variable. The dependent variable in this equation ( $DM_{o,d}^*$ ) captures the skill composition of migration (a higher value indicates a composition tilted in favor of the high-skilled). The value of  $DM_{o,d}^*$  in the estimation consists of the changes in the values of the components  $m_{o,d}^i$  and  $P_o^i$  ( $i = s, u$ ) defining  $DM_{o,d}$  in Equation (5.1) between the year 2000 and the year 1990. The explanatory variables consist of the social benefit in the destination country and an assortment of other control variables. In a free migration regime ( $I_{o,d} = 0$ ), the effect of the social benefit on regime skill composition of migrants is given by the parameter  $\beta_3$ . In a controlled migration regime ( $I_{o,d} = 1$ ), this effect is given by the sum  $\beta_3 + \beta_4$ .

A potential endogeneity problem may arise, in particular between the level of social benefits in the host country,  $b_d$ , and the skill difference in the migration rates, because highly skilled immigrants can influence the potential economic equilibrium level of benefits. For example, if immigrants are likely to become unemployed, or if they arrive with large dependent families, then more immigration may lead to lower levels of social spending per capita.

Therefore, the levels of social benefits that are employed in the estimation are not concurrent levels, but rather those of the pre-sample period

1974–1990. In addition, an instrumental variable method was employed, with the legal origin in the destination country serving as an instrument. The legal system indicates the cultural and social features of the destination countries and reflects the basic constitutional notion regarding the attitude towards property rights on the one hand and social rights on the other. The legal origin traces the different strategies of common and civil law back to different ideologies about law and its purpose and how those were incorporated historically into specific legal rules and into the legal system shaping many spheres of lawmaking and regulations on the security of property rights and contract enforcement. Hence, it can be argued that the legal origin has shaped welfare generosity.

Table 5.3 presents the estimates of the coefficients of the selected group of explanatory variables at the focus of our analysis. The estimates of the coefficients of all the explanatory variables are given in Appendix 5A.1.

First, note that the coefficient  $b_d$  is negative. This means, as we hypothesized in the preceding chapter, that in the free migration regime the generosity of the welfare state tilts the skill composition of migration in favor of the highly skilled—the magnet effect.

Next, note that  $b_d I_{o,d}$  is the additional effect of the generosity of the welfare state on the skill composition of migrants in the controlled-migration regime, over and above the effect that exists in the free-migration regime. Note that the coefficient of  $b_d I_{o,d}$  is positive which means, as hypothesized in the preceding chapter, that in the controlled-migration regime the generosity of the welfare state affects the skill composition of migrants more positively in the direction of the highly skilled than it does in the free-migration regime. Furthermore, Table 5.3 shows that

**TABLE 5.3** *The generosity of the welfare state and the skill composition of migration: free versus controlled migration, selected variables*

	Categories 1 and 2 (EUR, and DC to EUR)	Categories 1 and 3 (EUR, and LDC to EUR)
Benefits per capita ( $b_d$ )	-0.170 (0.070)**	-0.178 (0.064)***
Lagged Benefits ( $b_d I_{o,d}$ )	0.207 (0.077)***	0.194 (0.080)*
Chi2(1) $\beta_2 + \beta_3 > 0$	7.72***	7.83***
Observations	360	534
R-squared	0.871	0.835

Notes: Robust standard errors in parentheses; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

Chi-square test for  $\beta_2 + \beta_3$  being positive holds. That is, the total effect of the generosity of the welfare on the skill composition of migrants is positive in the controlled migration regime (in both cases, whether the origin country is from the second group or the third). Note that in the preceding chapter we hypothesized that this effect is non-negative; see Equation (4.15).

### Appendix 5 A.1 The Generosity of the Welfare State and the Skill Composition of Migration: Free versus Controlled Migration

	Categories 1 and 2 (EUR, and DC TO EUR)			Categories 1 and 3 (EUR, and LDC to EUR)		
<b>Welfare generosity</b>						
Benefits per capita ( $b_d$ )	-0.159 (0.075)**	-0.207 (0.087)*	-0.170 (0.070)**	-0.175 (0.076)**	-0.179 (0.079)**	-0.178 (0.064)**
Lagged benefits ( $b_d I_{0,d}$ )	0.269 (0.089)***	0.268 (0.098)*	0.207 (0.077)**	0.207 (0.083)**	0.218 (0.102)**	0.194 (0.080)**
<b>Migration rates</b>						
Low-skilled migration 1990xEQ	-0.686 (0.148)***	-0.685 (0.145)***	-0.678 (0.155)***	-0.602 (0.144)***	-0.665 (0.154)***	-0.666 (0.164)***
Low-skilled migration 1990x EQx $I_{0,d}$	1.753 (0.172)***	1.765 (0.170)***	1.732 (0.174)***	0.553 (0.212)***	0.694 (0.290)**	0.686 (0.292)**
High-skilled migration 1990xEQ	1.026 (0.166)***	1.022 (0.163)***	1.014 (0.171)***	0.941 (0.163)***	0.991 (0.173)***	0.989 (0.180)***
High-skilled migration 1990xEQx $I_{0,d}$	-0.698 (0.164)***	-0.693 (0.162)***	-0.684 (0.168)***	-0.632 (0.173)***	-0.566 (0.193)***	-0.564 (0.198)***
<b>Returns to skill</b>						
High-low labor ratio in 1990 (destination)		-1.192 (0.358)***			0.075 (0.386)	
High-low labor ratio in 1990x $I_{0,d}$		0.833 (0.534)			0.027 (0.574)	
High-low wage diff. in 1995 (destination)			0.004 (0.002)*			0.003 (0.002)
High-low wage diff. in 1995 (destination) x $I_{0,d}$			-0.007 (0.003)**			-0.007 (0.005)**
Gini in 1990 (origin)		0.012 (0.004)***	0.013 (0.004)***		0.012 (0.004)***	-0.013 (0.005)***

*Continued*

	Categories 1 and 2 (EUR, and DC TO EUR)			Categories 1 and 3 (EUR, and LDC to EUR)		
Gini in 1990 (origin) x $I_{o,d}$	-0.013 (0.005)***	-0.015 (0.005)***		-0.012 (0.004)***	0.012 (0.004)***	
High-low unempl. rate diff. in 1990 (destination)	0.008 (0.003)*	0.002 (0.003)		0.003 (0.003)	-0.006 (0.004)	
High-low unempl. rate diff. in 1990 (destination) x $I_{o,d}$	0.005 (0.005)	-0.005 (0.004)		-0.008 (0.005)	-0.012 (0.004)***	
<b>Immigration policies</b>						
Total migrants stock in 1990	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.001)**	-0.002 (0.001)**	-0.002 (0.001)**
Share of refugees in 1990	-2.592 (3.245)	0.106 (3.535)	-2.809 (3.548)	-1.768 (2.476)	-1.694 (2.571)	-1.315 (2.919)
$\text{Chi2}(1)\beta_2 + \beta_3 > 0$	8.26***	7.44***	7.72***	6.28**	5.28**	7.83***
F Statistics First Stage	167.98	148.47	140.94	26.87	25.01	24.79
Cragg-Donald F- statistics	-51.69	58.98	62.65	86.45	92.77	169.49
Kleibergen-Paap rk Wald F statistics	203.13	104.39	291.73	148.23	297.41	450.85
Observations	384	384	360	601	570	534
R-squared	0.863	0.867	0.871	0.805	0.830	0.835

Notes: Regressions include real GDP per capita growth rate in destination, distance, and dummy for same language in destination and origin, and real GDP per capita in destination and in origin countries.

Robust standard errors in parentheses; \* significant at 10%; \*\* significant at 5%;  
\*\*\* significant at 1%.



# 6

## Principles of International Taxation

► **Abstract:** *Each country must decide (i) whether, and if so at what rate, to tax its citizens/ residents on their foreign-source income (e.g. wages, interests, dividends, etc.); and (ii) whether, and if so at what rate, to tax foreigners on their income originating from sources within the jurisdiction. This chapter describes the main principles of international taxation.*

**Keywords:** Destination principle; source principle

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In a world with international flows of capital, labor, finance, etc there arise two distinct income tax issues that are absent in closed economies.<sup>1</sup> Each tax jurisdiction must decide (i) whether, and at what rate, to tax its citizens/residents on their foreign-source income (e.g. wages, interests, dividends, etc.); and (ii) whether, and at what rate, to tax foreigners on their income originating from sources within the jurisdiction.

There are two main principles of international taxation. Most countries employ, either statutorily or effectively, a mixture of these two principles. The first is known as the *residence principle*, whereby the country taxes its residents (in the US both residents and citizens) on their worldwide income. To avoid double taxation, US residents usually receive some form of relief (typically, tax credits) on taxes paid to the country where the income had originated; also according to this principle, no taxes are levied on income originating in that country that accrued to non-residents. The second principle is known as the *source principle*, whereby a country taxes all incomes originating within its borders, no matter whether they accrue to residents or non-residents. According to this principle, its residents' income from foreign sources is exempt from tax.

No country adheres exclusively to either one of these two principles. The rationale is simple. A country would not like to exempt its residents on their foreign-source incomes, in order not to encourage its residents to divert their capital and work efforts away from home. A country of origin, knowing that its expatriates usually receive credits in their adopted countries against taxes paid in the country of origin anyway, has no incentive to exempt those expatriates from its own taxes; such an exemption would amount to transferring potential tax revenues from the country of origin to the adopted country. Therefore, most countries tax non-residents on (at least, some of) their incomes originating within their boundaries. Thus, most countries employ a mixture of both principles.<sup>2</sup>

In the following chapters we focus on economies employing the source principle, in a study of how taxation affects the volume of migration and its skill composition. In this context, it is important and relevant to employ the source principle, as under this principle the migrants are treated for tax-benefit purposes as residents whether or not they are indeed fully-fledged residents. That is, they are taxed on their income, and they qualify for welfare benefits.

In a closed economy, the first optimality theorem of welfare economics suggests that competition leads through Adam Smith's "invisible

hand” to an efficient allocation of economic resources. That is, there is no other allocation that can beat the competitive allocation in the sense of making at least one individual better off without making any other individual worse off. Thus, the role of government is limited to providing public goods and services, law and order, money, social insurance and redistribution of income, etc. There are several conditions that have to be met in order for the first optimality theorem to hold. One important such condition is the absence of externalities, a condition which (like other conditions) often fails to hold.

In this context, we are dealing not only with internal competition (that is, competition within each country), but also with competition among a group of countries in the world economy. This international competition manifests itself among governments with respect to tax and migration policies. In this setup, it can be expected that such international competition will generate an efficient allocation of resources among this group of countries (as well as an efficient allocation within each country brought about by domestic competition). When this is the case, then there can be no gains to these countries from coordinating their tax and migration policies.<sup>3</sup>

However, if there are cross-country externalities within this group of countries, competition fails to bring about efficiency. Indeed, in the following chapters we identify just such an externality built into the welfare and migration competition; a (cross-country) fiscal externality. Furthermore, if the group of countries as a whole is large enough to enjoy market power vis-à-vis the rest of the world economy, it may benefit from collectively exploiting this power. In our setup, the rest of the world is a source of migrants to the group, and the supply of such migrants to the group is typically upward-sloping.

Therefore, the group can collectively exercise its market power with respect to the economic conditions (wages, social benefits) offered to the migrants. Therefore, there may exist gains to be reaped from coordination among the countries in the group with respect to their tax/benefit and migration policies.

## Notes

- 1 Similar issues arise in the context of indirect taxes (e.g. excise, value added tax, etc) with international flows of goods.

- 2 The international tax literature shows that when international flows of capital are free, if the residence principle were to be exclusively employed by all countries the world private investment in physical capital (machinery, equipment, etc) would effectively be allocated worldwide. That is, the pre-tax marginal productivity of capital would be equated across all countries. Alternatively, if the when international financial flows are still free but the source principle were to be employed everywhere, then the world private saving would effectively be allocated across all countries. That is, the after-tax intertemporal (between present and future consumption) marginal rate of substitution, governing saving–consumption decisions, would be equated worldwide. For a treatise on international taxation, see Frenkel, Razin and Sadka (1991).
- 3 See, for instance, Razin and Sadka (1991).

# 7

## Migration and the Fiscal System: Intra-Union Competition

► **Abstract:** *There is free mobility of labor goods and capital among states within a union. These states are also destination countries for migrants from the rest of the world, who are generally poorer than the native-born residents of these countries. In this chapter, we consider a competitive policy regime in which each country in the union determines its own tax/ benefit and migration policies in competition with the other countries. This institutional regime of competition among union-member states may capture the essence of the European Union system.*

**Keywords:** Fiscal competition; migration competition

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DOI: 10.1057/9781137443809.0010.

The pioneering framework for competition among jurisdictions is credited to Tiebout (1956), who dealt with localities. Tiebout’s model features many “utility-taking” localities, analogous to the perfect competition setup of many “price-taking” agents. His focus was on the allocation of a given population among competing localities.<sup>1</sup>

Adopting a similar approach, we model a stylized economy with a group (union) of  $n$  small countries, with free mobility of goods and capital among them. They are also destination countries for migrants from the rest of the world, who are generally poorer than the native-born residents of these countries. In this chapter we consider a competitive regime in which each country in the union determines its own tax/benefit and migration policies, in competition with the other countries. The alternative of coordination among the union’s members with respect to the fiscal and migration policies (the coordination regime) is dealt with in the next chapter.

We turn now to a description of the union countries. For the sake of simplicity, we assume that all these countries are identical and we specify the characteristics of a representative country.

## 7.1 Representative country

A representative country is similar to the representative country of Chapter 5, except that we introduce now an additional input capital ( $K$ ), with an income share of  $0 < \beta < 1$ .

### 7.1 Producers

With a capital input, the constant-returns-to-scale Cobb–Douglas production function now becomes

$$Y = AK^\beta L_s^{(1-\beta)\alpha} L_u^{(1-\beta)(1-\alpha)}, \quad 0 < \alpha < 1, \quad 0 < \alpha < 1. \tag{7.1}$$

The income shares of the highly skilled and low-skilled workers, respectively, are now given by  $(1-\beta)\alpha$  and  $(1-\beta)(1-\alpha)$ , as can be seen from Equation (7.2) below.

The competitive wages of highly skilled and low-skilled workers are equal to their marginal productivities:

$$\begin{aligned} w_s &= (1-\beta)\alpha Y/L_s \\ w_u &= (1-\beta)(1-\alpha) Y/L_u. \end{aligned} \tag{7.2}$$

Note that not only does the abundance of high-skilled labor raise the wage of the low-skilled, but also an abundance of low-skilled labor raises the wage of the high-skilled.

As before, the aggregate labor supply, for both highly skilled and low-skilled workers respectively, are given by:<sup>2</sup>

$$\begin{aligned} L_s &= (S + \sigma\mu)l_s \\ L_u &= (1 - S + (1 - \sigma)\mu)l_u. \end{aligned} \quad (7.3)$$

As above, the size of the native-born population is normalized to one. In addition, the total number of workers, native-born and immigrant, is given by:

$$N = 1 + \mu. \quad (7.4)$$

For the sake of simplicity, we assume that physical capital does not depreciate. Firms rent capital from individuals. In a competitive equilibrium, the pre-tax rental price of capital ( $r$ ) will be equal to the marginal productivity of capital, that is:

$$r = \frac{\beta Y}{K}. \quad (7.5)$$

## 7.2 Individuals

Native-born highly skilled individuals, low-skilled individuals and immigrants differ from one another in their ownership of capital (wealth). The native-born highly skilled are endowed with more capital than the native-born low-skilled, whereas in this model immigrants of both types (highly skilled and low-skilled) own no capital. Denoted by  $\bar{K}_i$  the stock of capital owned by a native-born individual with skill level  $i = s, u$ , where  $\bar{K}_s > \bar{K}_u$ . Given that the highly skilled earn a higher wage rate than the low-skilled (that is,  $w_s > w_u$ ), it follows that the native-born highly skilled are unambiguously richer than the native-born low-skilled and all immigrants. In addition, the native-born low-skilled are richer than the low-skilled immigrants. Such heterogeneity in income and wealth is crucial for the analysis below.

An individual can rent their capital either at home or in the other union countries. Thus the total stock of capital owned by residents,  $S\bar{K}_s + (1 - S)\bar{K}_u$ , does not have to equal  $K$ , the total input of capital, as

would be the case in a closed economy. As explained in the preceding chapter, capital taxation is levied according to the source principle, according to which each country taxes only the capital employed in that country. Denoting the tax rate on capital income by  $\tau_K$ , the net-of-tax rental price of capital is  $(1 - \tau_K)r^3$ .

We have specified a simple welfare-state system in which there is a dual tax system: a tax at the rate  $\tau_L$  on labor income and a tax at the rate  $\tau_K$  on capital income. We allow for different rates of taxation of labor and capital in order to examine the effects of migration and capital mobility separately on capital and labor taxation. The welfare state also provides a uniform social benefit ( $b$ ), which may capture not only a cash transfer, but also outlays on public services such as education, health, and other provisions. Thus  $b$  is not necessarily a perfect substitute for private consumption.

All individuals (irrespective of skill or national origin) have identical preferences over private consumption ( $c$ ), work efforts ( $l$ ), and the social benefit ( $b$ ), given by the following utility function:

$$u_i = c_i - \frac{\varepsilon}{1+\varepsilon} l_i^{\frac{1+\varepsilon}{\varepsilon}} + \ln(b) \tag{7.6}$$

where  $\varepsilon > 0$  is a preference coefficient that will turn out to be the individual labor supply elasticity (see Equation (7.8)). Recall that we interpret  $b$  not just as a pure cash transfer, but rather as some social benefit that creates a utility of  $\ln(b)$ .<sup>4</sup>

The budget constraint of a native-born individual with skill level  $i = s, u$  is given by:

$$c_i = (1 - \tau) l_i w_i + \left[ 1 + (1 - \tau_K)r \right] \bar{K}_i, \quad i = s, u. \tag{7.7}$$

We assume that migrants are fully entitled to the welfare system. That is, they pay the tax rate  $\tau_L$  on their labor income (they own no capital) and receive the social benefit  $b$ . Thus, the budget constraint of a migrant of a skill level  $i = s, u$  is given by:

$$c_i = (1 - \tau) l_i w_i. \tag{7.8}$$

In view of our quasi-linear utility function, capital income does not affect labor supplies. Thus, all individuals (irrespective of skill or national origin) have the same labor supply:

$$l_i = ((1 - \tau)w_i)^{\varepsilon}, \quad i = s, u \tag{7.9}$$



Note that the (fixed) coefficient  $\varepsilon$  is indeed equal to the labor supply elasticity.

In general, the indirect utility function gives the maximum level of utility that an individual can obtain, given their budget constraint and the social benefit provided by the government. In our case the indirect utility function is obtained by substituting the labor supply Equation (7.9) and the budget constraint Equations (7.7) or (7.8) into the utility function Equation (7.6). Thus, for a native-born individual, this indirect utility function ( $V_i$ ) is given by:

$$V_i(\tau_L, \tau_K, b) = \ln(b) + \frac{((1-\tau_L)w_i)^{1+\varepsilon}}{1+\varepsilon} + (1 + (1-\tau_K))\bar{K}_i, \quad (7.10)$$

$i = u, s$

The indirect utility of a migrant who owns no capital is given by

$$V_i^m(\tau_L, b) = \ln(b) + \frac{((1-\tau_L)w_i)^{1+\varepsilon}}{1+\varepsilon}, \quad i = s, u \quad (7.11)$$

### 7.3 Government

In a static model like the present one, it is common and natural to employ a balanced-budget rule.<sup>5</sup> That is, the government employs all its revenues, from labor and capital taxation, to finance the uniform social benefit.

The government budget constraint is thus given by:

$$bN = \tau_K rK + \tau_L (w_u l_u + w_s l_s) \quad (7.12)$$

Note that source taxation is employed, so that the government obtains its capital tax revenues from the entire input of capital employed in domestic production.

### 7.4 Migrants

As stated above, migrants to the union member countries pay their dues to the welfare system, but also qualify for all the social benefits that the

system provides. Therefore they are driven not merely by better wages, but also by the social benefits; in other words, migration is driven by the utility gap rather than by just the wage gap. Note that as all the countries of the union are assumed to be identical, there will be no intra-union migration. Therefore we consider only migration from the rest of the world to union member countries.<sup>6</sup>

However there is, as explained in Chapter 5, a cost to migration, and this cost may depend on individual characteristics such as age, family size, ethnicity, whether or not pension benefits are portable to the new destination, and if so to what extent, etc. Thus, the migration cost may vary not only among different skill levels, but also within each skill level. Consequently, the reservation utility—the threshold utility level in the destination country for migration to occur—varies accordingly. We assume that would-be migrants are indifferent with respect to the identity of the would-be destination country; all they care about is the level of utility they will enjoy. Thus, the number of migrants of each skill level who wish to emigrate to the union (as a whole) rises with the level of utility (well-being) that they will enjoy in the union. (Note that utilities are identical across the union member countries.)

In other words, the union faces an upward-sloping migrant supply function for each skill level:

$$\sigma\mu = f_s(V_s^m) \tag{7.13}$$

$$(1-\sigma)\mu = f_u(V_u^m),$$

where  $f_i$  is the supply function of migrants of skill level  $i$ , and  $V_i^m$  denotes the utility level accorded to migrants of skill level  $i$  in the union  $i = s, u$ .

## 7.5 Fiscal and migration policy of a union member country

A representative union-member country determines its fiscal and migration policy by majority vote among the native-born. For clarity, we describe in detail the case where the native-born highly skilled form the majority, that is  $S > 0.5$  (the other case is specified similarly).

Each union-member country, as it is only a small part of the union, will naturally take union-wide prices as given. In the presence of free capital mobility, there will be only one rental price of capital throughout

the union. Because source taxation is employed, the relevant price is the net-of-tax rental price of capital.<sup>7</sup> This price (market rate of return) is denoted by  $\bar{r}$ . Therefore:

$$(1 - \tau_K)r = \bar{r}. \quad (7.14)$$

In our case, prices include also the utility levels of migrants and native-born, by skill.

Because of intra-union free migration, there are therefore also equal utilities, by skill and origin, throughout the union. Each union-member country also takes union-wide utility levels as given; that is, each country is also a “utility-taker” (in analogy to being a “price-taker”). Denoting the (assumed given) union-wide utility level of a migrant of skill  $i$  as  $\bar{V}_i^m$  ( $i = s, u$ ), then:

$$V_s^m(\tau_L, b) = \bar{V}_s^m \quad (7.15)$$

$$V_u^m(\tau_L, b) = \bar{V}_u^m.$$

(Note that because  $V_i$  and  $V_i^m$  differ from one another only by the term  $(1 + \bar{r})\bar{K}$  ( $i = s, u$ ), which is uniform across the union, it follows that the utilities of the native-born, by skill, are also uniform across the union.)

Each union-member country chooses its fiscal and migration policy variables ( $\tau_L$ ,  $\tau_K$ ,  $b$ ,  $\mu$ , and  $\sigma$ ), so as to maximize the utility of the native-born majority subject to the constraints of its budget Equation (7.12), its free-capital mobility Equation (7.14), and its intra-union free migration Equation (7.15).

An asterisk (\*) denotes the levels of the economic variables that ensue under the fiscal and migration policy chosen by the government.

## 7.6 Competitive policy equilibrium

Each union-member country seeks to admit  $\sigma^* \mu^*$  highly skilled migrants and  $(1 - \sigma^*) \mu^*$  low-skilled from the rest of the world. The union’s demands for highly skilled and low-skilled migrants from the rest of the world are thus  $\sigma^* m^* n$  and  $(1 - \sigma^*) \mu^* n$ , respectively. Therefore, utility levels that clear the market for migrants from the rest of the world are determined in equilibria by

$$n\sigma^* \mu^* = f_s(V_S^m) \tag{7.16}$$

$$n(1-\sigma^*)\mu^* = f_u(\bar{V}_u^m).$$

These equations determine the utility levels of the migrants that each union member assumed as given. Also, the worldwide net-of-tax rental price of capital,  $\bar{r}$ , is determined so as to equate the union demand for capital,  $nK^*$ , to the union supply,  $n(S\bar{K}_S + (1-S)\bar{K}_u)$ , that is:

$$nK^* = n(S\bar{K}_S + (1-S)\bar{K}_u) \tag{7.17}$$

(Note that because all the countries in the union are identical, then in fact there is no movement of capital from one country to another; each country employs the entire capital endowment of its native-born.)

## Notes

- 1 A related issue, fiscal federalism, was first analyzed by Oates (1972).
- 2 We also assume that  $\frac{\alpha(1-S+(1-\sigma)\mu)}{(1-\alpha)(S+\sigma\mu)} > 1$ , which ensures that the wage of the highly skilled always exceeds the wage of the low-skilled ( $w_s > w_u$ ).
- 3 Note that due to our constant-returns-to scale assumption, there are no pure profits at the firm's level that can be taxed (as, for example, by a corporate tax).
- 4 This quasi-linear utility function is quite common in the tax literature (e.g. Diamond 1998). It implies that there is no income effect on the labor supply; see Equation (7.8) below.
- 5 This is the analog of an intertemporal balanced budget rule, in present value terms, in a multi-period model.
- 6 For an extension to a union with non-identical countries and, consequently, intra-union migration from poor to rich member countries (in addition to migration from the rest of the world), see Razin and Sadka (2013).
- 7 If residence taxation were to be employed instead, then the relevant price would be the pre-tax rental price of capital.

# 8

## Intra-Union Coordination

**Abstract:** *The alternative to policy competition among states within a union is coordination among the union's members with respect to the fiscal and migration policies. This institutional regime of coordination among union-member states may capture the essence of the federal system of the United States.*

**Keywords:** Fiscal coordination; migration coordination

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Thus far, we have assumed that the union-member countries compete with each other in an attempt to provide as high as possible a utility level for the majority. The countries compete in the sense that each of them determines its fiscal and migration policy variables (i.e.  $\tau_L, \tau_K, b, \mu, \sigma$ ) independently of the other union-member countries, taking their policies as given (a Nash equilibrium).

A low-skilled majority voter will presumably opt to admit highly skilled migrants for two reasons: first, such migrants are net contributors to the finances of the welfare state—that is, the tax that each individual pays ( $\tau_L w_s l_s$ ) exceeds the benefit they receive ( $b$ ). Second, for a given stock of capital (and volume of migration), increasing the share of highly skilled migrants raises the wage of the low-skilled (native-born and migrants alike), due to the factor-substitution built-into the Cobb–Douglas production function. Therefore, if the low-skilled form the majority they will admit only highly skilled migrants.<sup>1</sup>

On the other hand, the highly skilled (who are assumed to form the majority) may opt for admitting both types of immigrants. This is because low-skilled immigration raises the wage of the highly skilled due to a factor substitution effect, but imposes a fiscal burden on the highly skilled because low-skilled immigrants are net consumers of the welfare state. Meanwhile, high-skilled immigration lowers the wage of the highly skilled, but contributes positively to the finances of the welfare state. All of these reinforcing or conflicting forces achieve a balance in a competitive equilibrium. The aforementioned setup may capture the essence of the policy competition that takes place among the members of the EU.

An alternative institutional regime is for the union-member states to coordinate their fiscal and migration policies to their mutual benefit. This institutional regime of coordination among union-member states may capture the essence of the federal system of the United States. In particular, the federal government is the governing body that set migration policy and the bulk of the fiscal policy. Naturally, such coordination can come only at the expense of the migrants from the rest of the world.

The very advantage of coordination over competition is that the former allows the union-member countries (states) to take into account the effect of policy on economic variables (prices) that each individual country takes as exogenous under competition. The union-member countries are no longer price (utility)—takers in the coordination regime, as they were in the competitive regime. In our case, there are three such variables: the utility level of the highly skilled ( $\bar{V}_s^m$ ), the utility

level of the low-skilled ( $\bar{V}_u^m$ ), and the net-of-tax rental price of capital ( $\bar{r}$ ). These variables govern the allocation of high-skilled labor, low-skilled labor and capital in the union.

The coordinating states now *jointly* determine their fiscal and migration policy variables ( $\tau_L, \tau_K, b, \mu, \sigma$ ), as opposed to independently choosing them. In addition and simultaneously, the coordinating states now also choose the “prices”— $\bar{V}_s^m, \bar{V}_u^m$ , and  $\bar{r}$ —subject to the market-clearing conditions in Equations (7.16) and (7.17). As before, they are also bound by the budget constraints in Equation (7.12). Note that as all the union-member states are alike, the issue of revenue-sharing among states does not arise.

## Note

- 1 This result hinges crucially on the assumption that migrants are not entitled to vote. If they were, then a low-skilled majority might, in order to preserve its own majority, opt to limit the number of highly skilled migrants. For an analytical treatment of this case, see Razin, Sadka and Suwankiri (2011).

# 9

## Competition versus Coordination: The US and the EU

► **Abstract:** *When union member states compete with each other, they admit a higher proportion of low-skilled migrants, and provide a more generous welfare state, than when they cooperate. However, when cooperating they admit smaller actual numbers of migrants overall—both highly skilled and low-skilled—than when they compete with each other.*

**Keywords:** Generosity of the welfare state; skill composition of migrants

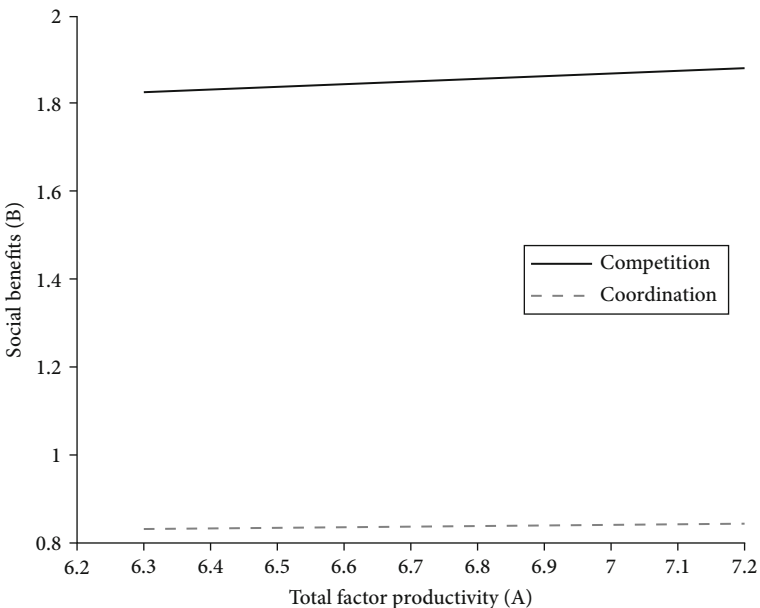
Razin, Assaf and Efraim Sadka. *Migration States and Welfare States: Why Is America Different from Europe?* New York: Palgrave Macmillan, 2014.  
DOI: 10.1057/9781137443809.0012.



The focus of this monograph is how coordination among countries (states) in an economic union affects fiscal and migration policies, as compared to competition among them. This comparison may offer some explanation of the differences between the US (coordination) and the EU (competition) with respect to the size (generosity) of the welfare state and the share of high-skilled migration in total migration.

We consider the social benefit variable ( $b$ ) as a proxy to the size (generosity) of the welfare state.<sup>1</sup> As there are in our model economy only two types of workers (highly skilled and low-skilled), we are interested in the share of only one of these two types of migrants in total migration.

Specifically, we look at the high-skilled share,  $\sigma$ . We carry out this comparison via numerical simulations.<sup>2</sup> Figure 9.1 depicts the social benefit ( $b$ ) under the two institutional regimes (competition and coordination) for different levels of total factor productivity ( $A$ ). Figure 9.2 depicts the share of high-skilled migration in total migration ( $\sigma$ ) under the two institutional regimes for different levels of total factor productivity ( $A$ ). As a bonus result, we note that the social benefit increases under both regimes when



**FIGURE 9.1** *Social benefits, by total factor productivity: competition versus coordination*

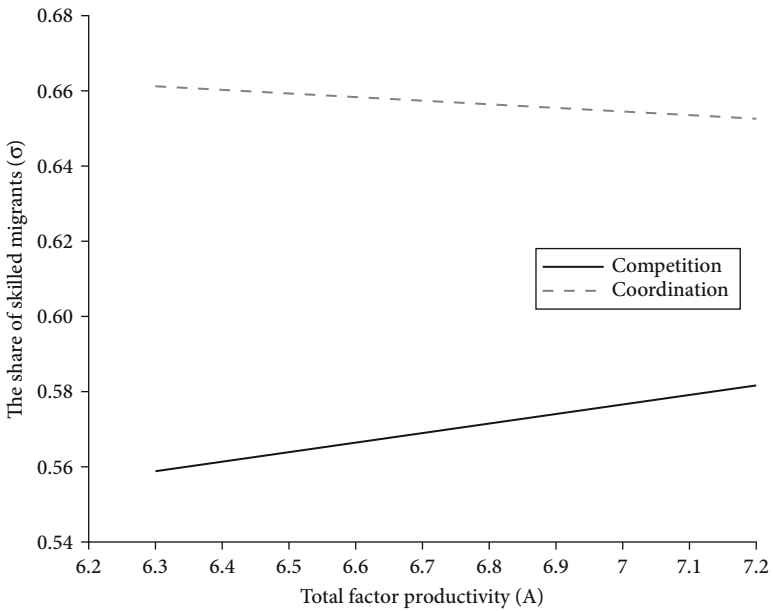


FIGURE 9.2 Composition of high-skilled migration, by total factor productivity: competition versus coordination

total factor productivity rises. This is not unexpected: a richer economy can afford to accord its residents a higher level of social benefits.

Our main interest lies in comparing  $b$  and  $\sigma$  under the two regimes. Interestingly, coordinating the fiscal and migration policies allows the union-member states to offer less generous social benefits than when they compete with each other (see Figure 9.1). The rationale for this result is rooted in a fiscal externality associated with migration.

There are gains and losses to be brought about by migration. A union-member country has an intra-marginal gain from either high-skilled or low-skilled migration, stemming from the diminishing productivity of either type of labor for a fixed stock of capital (illustrated in Figure 4.1). The gain stems from the fact that each immigrant (whether highly skilled or low-skilled) is paid according to the productivity of the marginal immigrant, which is lower than the average productivity of the migrants of the same type. On the other hand, the native-born population shares with immigrants the tax collected from capital income (recall that immigrants have no capital), because the transfer  $b$  that the immigrants receive is not financed fully by their labor income tax. That

is, the capital tax revenues paid by the native-born population ‘leak’ to the immigrants.<sup>3</sup>

The fiscal burden imposed by migration on the native-born (both highly skilled and low-skilled) is reinforced when this migration is composed of low-skilled migrants. This is because not only do the low-skilled possess no capital, but also they have low wages and accordingly pay low labor income taxes.<sup>4</sup>

Each union-member country in a competitive regime evidently balances at the margin the gains and losses from migration. In doing so, each country (being a “utility-taker”) takes the well-being of the migrants,  $\bar{V}_s^m$  and  $\bar{V}_u^m$ , as given (see Equation (7.15)). It thus ignores the fact that when it adopts a fiscal-migration policy that admits an extra immigrant, it raises the well-being that must be accorded to immigrants not only by it but also by *all* other union member countries, in order to encourage the migrant to come in. As a result, it offers immigrants too high a level of the social benefit ( $b$ ), and admits too high a share of low-skilled immigrants—a “fiscal leakage” externality. Indeed, Figure 9.2 demonstrates that the union member states admit a higher share of low-skilled migrants when they compete with each other than when they cooperate. As expected, the cooperating states, facing an upward-sloping supply of migrants (of both types), exploit their market power by admitting lower numbers of highly skilled and low-skilled migrants than when they compete with each other.

## Notes

- 1 Recall that with a balanced budget the social benefits  $b$  are equal to (per capita) tax revenues. Therefore, social benefit is a more appropriate proxy for the size of the welfare state than the two tax parameters  $\tau_L$  and  $\tau_K$ , which do not always move in the same direction.
- 2 No attempt has been made to calibrate the model to the EU and US economies, as they are highly stylized, abstracting many important features that are similar or different between them. Nevertheless, the simulations offer a useful insight into the quantitative differences between the two unions with respect to fiscal and migration policies.
- 3 Fiscal leakage effects in demographic contexts were first analyzed by Razin, Sadka and Swagel (2002a; 2002b).
- 4 Highly skilled migrants, although bringing no capital, still pay relatively high taxes on labor income.

# 10

## Aging and Migration: The US and the EU

► **Abstract:** *Although the population of the US is both getting older and growing more slowly than in the past, the demographic future for the US is younger than that of the core EU countries. This chapter presents a political-economy overlapping generations model which predicts the implications for aging on the generosity of the welfare state.*

**Keywords:** Political influence of old; highly skilled young; low-skilled young

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The aging of the population is another fundamental that sets the EU and the US apart. In 2010, the proportion of people aged 65 and older constituted 13.1% in the US, whereas in the core EU countries it was significantly larger: 20.89% in Germany, 20.3% in Italy, 16.8% in France, and 16.6% in the UK (United Nations, 2013).

Although the population in the US is getting older and growing more slowly than in the past, the demographic future for the US is younger than that of the core EU countries. In particular, in the second half of the twenty-first century the US population is projected to grow faster and age more slowly than the populations of its major economic partners in Europe.

Immigrants have made the US population younger. They come in at their working age, whereas the native-born population consists of both working age and retirees. Without immigration, US population growth from 2005 to 2050 would have been only 8.5%, more on a par with that of European nations (Pew Global, 2014).

In this chapter we consider how the age composition of the population affects the politico-economic choice of the fiscal and migration policies. In particular, we focus on the question of how the age composition affects the generosity of the welfare state.

To study the implications of an aging population for the generosity of the welfare state, we have to extend the analytical framework employed so far to a dynamic setup. In this case, the political balance of power is no longer exogenous, as assumed so far; that is, the fiscal and migration policies themselves affect the formation of coalitions, which in turn shape the policies chosen by the electorate. In preceding chapters, the native-born highly skilled formed one coalition, and all the native-born low-skilled another. The new immigrants, deprived of voting power, could not affect the formation of coalitions that shaped policy. It may be perfectly admissible that new immigrants are not allowed to vote when they arrive, but they do however vote when they grow older. Similarly, the fact that the next generations of migrants will be integrated into the society and thus participate in the democratic process should be taken into account. In this case, the native-born existing at the time the fiscal and migration policy is shaped (voted for) will be able to take into account the effect that the policy may have on the political balance of power in the future. That is, the existing native-born will take into account how the current fiscal and migration policy will affect the outcome of the voting process in the future. The current (at the time of

writing) political debate in the US about the path to citizenship of its existing undocumented migrants is probably affected by expectations about how these new citizens may change the composition of the future electorate.

## 10.1 The demographic framework

We draw upon the model developed in Razin, Sadka and Suwankiri (2011, ch.7; 2014) to examine the effect of future voting on today's voting. We consider the familiar overlapping-generations model, where the economy lives forever, but each generation lives for a finite number of periods. This model has, since its inception by Samuelson (1958), become the main workhorse for analyzing the economic issues that arise in a world of (for all practical purposes) infinite duration with individuals of finite duration. Among these issues are the roles of money, old-age social security, and fiscal imbalances.

We assume for simplicity that each generation lives for two periods: in the first period they are "young", and in the second "old". The young work; the old retire. The young bring offspring who mature to become young and working in the next period. The fertility rate of the first generation of immigrants is higher than that of the native-born. This is consistent with the migration and demographic data. But the second generation of migrants is fully integrated in its destination country, and is thus identical in all respects (including fertility) with the native-born from ages past. Naturally, only the young are allowed to immigrate. Skill is innate and passes from one generation to the next; that is, the offspring of a highly skilled individual are also highly skilled, and the offspring of low-skilled are low-skilled. Thus, in each period there may be six groups, each consisting of identical voters: young native-born highly skilled, young native-born low-skilled, old native-born highly skilled, old native-born low-skilled, old first-generation highly skilled migrants (who were young in the preceding period and thus unqualified to vote), and old first-generation low-skilled migrants (the same). To simplify, we further assume that there is no physical capital; that the inter-temporal parameters are set so as to give no incentive to private saving; and that wages are fixed (because the marginal productivity of labor is assumed constant).<sup>1</sup> In this case, there are no wealth differences among individuals, whether young or

old or whether native-born or migrant (as there is no wealth at all); there are only income differences. Therefore the number of different voting groups reduces from six to just three: young native-born highly skilled; young native-born low-skilled; and the old native-born combined with the old first-generation migrants (both highly skilled and low-skilled).

## 10.2 Interaction between coalition formation and policy

As before, in any given period  $t$  people vote on the labor income tax ( $\tau_{Lt}$ ) and the volume ( $\mu_t$ ) and composition ( $\sigma_t$ ) of migration. We denote this policy triplet by  $P_t = (\tau_{Lt}, \mu_t, \sigma_t)$ . Note that the choice of this triplet determines the social benefit  $b_t$  through the budget constraint.  $S_t$  denotes the fraction of native-born highly skilled young in the total native-born young population (the native-born labor force).

Each voter takes into account how their choice of the policy variables in period  $t$  will affect the chosen policy variables in period  $t + 1$ , which depends on  $S_{t+1}$  (recall that the benefit they will get in period  $t + 1$ , that is  $b_{t+1}$ , depends on the policy triplet  $P_{t+1}$ ). Therefore, each voter will cast their vote on the set of the policy triplet  $P_t$  that maximizes their utility, given the value of  $S_t$  and taking also into account how this will affect  $S_{t+1}$ . Thus, there is a link between the policy chosen in period  $t$  and that chosen in period  $t + 1$ .

We adopt the electoral system studied by Osborne and Silvinsky (1996) and Besley and Coate (1997), known as “political competition with citizen-candidates”.<sup>2</sup> Each of our three voting groups presents a candidate who, if elected, will implement the preferred policy of their group. When one of these groups enjoys an absolute majority (that is, it constitutes more than 50% of the electorate), then it wins the elections and implements their preferred policy.

When no particular group enjoys an absolute majority, there will be a (“second-round”) runoff between the two largest groups. The smallest group will then vote for the candidate of whichever of the two others has a preferred policy that is better for the third group, even though this policy may not be the one preferred by the third group.

This model is designed to make a three-dimensional policy choice ( $P_t = (\tau_{Lt}, \mu_t, \sigma_t)$ ) such that there is a clear “left” group, a “center” group

and a “right” group. The left group consists of the old native-born and old first-generation migrants (both highly skilled and low-skilled) who earn no income and wish to extend the generosity of the welfare state as far as possible. They will vote to admit as many highly skilled immigrants as possible, to help finance the generosity of the welfare state.

The right group consists of the native-born highly skilled who bear the main burden of financing the welfare state and therefore wish to downscale its generosity as far as possible. The attitude of this group toward highly skilled migrants is subject to two conflicting considerations. On the one hand, its members benefit from the contribution of those highly skilled migrants to the financing of the welfare state, alleviating their burden. On the other, they are aware that the offspring of those highly skilled migrants will vote to downscale the generosity of the welfare state in the forthcoming periods, when the members of this right group will have grown older and be benefiting from the generosity of the welfare state—exacerbated by the fact that the fertility rate of immigrants is higher than that of the native-born.

The center group consists of the native-born low-skilled young. They like a generous welfare state, but because they are paying for it they do not like it as much as the old do. However, they like it more than the native-born, highly skilled young do, because they are paying less for it than are those highly-skilled young. With respect to migration, they (and the native-born highly skilled) face two conflicting effects. On the one hand, they would like to admit highly skilled immigrants who will contribute positively towards the finances of the welfare state during the current period. But, on the other hand, they are concerned that the highly skilled offspring of these migrants will tilt the political balance of power in favor of the highly skilled in the next period—and consequently against the generosity of the welfare state, which they themselves will be wanting. The center group is less pro high-skilled migration than the left group, but similar in attitude to the right.

### 10.3 Policy dynamics

The evolution of the fiscal and migration policy of the economy over time naturally depends on its state when it starts. The state of this stylized



economy depends exclusively on the proportion  $S_t$  of the native-born, highly skilled young within the total native-born young population.

It can be shown (see Razin, Sadka and Suwankiri, 2014) that there are several different decisive ranges for this share which determine which of the three group's preferred policies will be implemented. These ranges are arranged from the lowest values of  $S_t$  (starting at 0) to the largest values of  $S_t$  (ending at 1). Note also that these ranges depend on the fertility rates of the native-born and the first-generation immigrants.

When  $S_t$  falls in the lowest range, the policy that will be implemented is the one preferred by the center group (the native-born low-skilled young). In this case, this group forms a majority<sup>3</sup> and is able to implement its most preferred policy: moderate welfare-state generosity with a large, but not extreme, influx of highly skilled immigrants only. Therefore the share of native-born, highly skilled migrants grows over time. Eventually,  $S_t$  enters the next range.

When this happens, the center group is still the largest, but does not constitute an overall majority, and in this case the native-born high-skilled group is the smallest. That group, being on the right, always prefers the policy preferred by the center group to that of the old (the left group). Therefore, the preferred policy of the center will still be a winning one, though in this case through a coalition with the right, rather than by a straight majority. Note that over time this policy increases the share  $S_t$  of the native-born, low-skilled; and eventually  $S_t$  enters the next range.

When this happens, the left group (the old) is the largest group, but does not constitute a majority, and the right group (the native-born high-skilled) is the smallest. In this case, the center group (the native-born low-skilled) will join a coalition led by the left. The preferred policy of the left will be implemented: extreme generosity by the welfare state and an extreme influx of highly skilled migrants. Consequently,  $S_t$  continues to rise. Eventually, when  $S_t$  become sufficiently large, the right group (the native-born high-skilled) becomes the largest, and its preferred policy will be implemented, that is the generosity of the welfare state will be severely downscaled. All voters will be concerned that in the next period, when they grow old, admitting more highly skilled migrants will render the highly skilled an unbeatable majority who will severely cut their benefit. This future threat to the welfare state balances the dynamic forces to drop  $S_t$  and it stops rising. Only a limited high-skilled migration will be allowed, and  $S_t$  will enter a steady state.

## 10.4 The EU and the US: different population growth rates

Naturally, a higher rate of population growth (that is, a younger, rather than aging, population) reduces the political clout of the old (the left group). In terms of the ranges of  $S_i$  from the preceding subsection, a higher rate of population growth shrinks the ranges in which the preferred policy of the old is implemented. Thus the share  $S_i$  will arrive more quickly at the range in which the preferred policy of the right (the native-born high-skilled) will be implemented: a downscaled welfare state and controlled migration. Furthermore, a higher population growth rate brings more concern among the young (native-born) voters about possible future cuts in their old-age benefits, by the increasing number of next-generation young. This concern applies also to highly skilled migrants, and is shared by both native-born low-skilled and native-born highly skilled. As a result, the native-born young now become less keen on immigration, and would like to tighten migration quotas, even for highly skilled immigrants.

In a nutshell, it can be said that the higher population growth rate of the US is tilting it, ahead of the EU, towards this political balance range of downscaled welfare state and controlled migration. This is the case even though its higher rate of population growth enables the welfare state to be more generous to the old.

### Notes

- 1 There is no evidence that the long-run effects of migration on wages is significant; see Boeri, Hanson and McCormick (2002).
- 2 For an alternative approach see Benhabib (1996).
- 3 Note that because of positive population growth, the young are always more numerous than the old.

# 11

## Is the Net Fiscal Burden a Proper Predictor of the Political Attitude towards Migration?

**Abstract:** *Net fiscal burden has been used as an indicator for the native-born income losses from low-skilled migration. But in the context of a pay-as-you-go welfare system with overlapping generations, the indicator is not correct. It does not properly predict the gains for the native-born from the support the migrants provide by increasing the workforce to the welfare system.*

**Keywords:** Fiscal burden; pay-as-you-go welfare system

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In Section 4.2 we illustrated how a country can gain not only from high-skilled migration but also from low-skilled. The driving force for the result is the infra-margin gain stemming from the decline of the native-born low-skill (flexible) wage; see Figure 4.1. We also noted that the native-born low-skilled actually lose, whereas the native-born, highly skilled gain; it is only the net *aggregate* gain which is positive. We noted in the preceding chapter that in practice the long-term impact of migration on wages is rather small, so that the net aggregate gain is likely to be small too.

We have also noted throughout this monograph that there might be a distributive burden of low-skilled migration through the net fiscal burden that may be imposed on the various groups of the economy. In particular, low-skilled migration may tilt the political power balance in favor of “big” government, thereby giving rise to a political backlash. The literature on welfare migration has focused mainly on calculating the net fiscal burden of low-skilled migration as a measure of the attitude of the native-born towards low-skilled migration; see, for example, Smith and Edmonston (1997), Auerbach and Oreopolus (1999), Barbone, Bontch-Osmolovsky and Zaidi (2009), and Dustman, Frattini and Halls (2009).

Nevertheless, in this chapter we show that the net fiscal burden of low-skilled immigrants is not always a proper predictor of the political attitude of various groups towards low-skilled migration. This is particularly true with respect to an old-age security program, where the old may benefit from an influx of low-skilled immigrants, even though these immigrants impose a net fiscal burden over their lifetime.<sup>1</sup>

## 11.1 An overlapping-generations model of an old-age social security program

We employ a simplified overlapping-generations model similar to that behind the analysis of the preceding chapter.<sup>2</sup> We continue to assume a fixed labor supply: one unit by each young individual. Individuals are born either highly skilled or low-skilled, and live for two periods. When young, they supply one unit of labor, consume, and save for retirement. When old, they retire and live on their private savings and social security benefits.

The social security system is pay-as-you-go (PAYG), where in every period the government levies a flat tax on the young’s wage income (at

the rate of  $\tau_t$ ), which fully finances a social security benefit ( $b_t$ ) paid to the old. With no loss of generality, we maintain  $\tau_t$  constant over time (and drop the subscript  $t$ ), and let  $b_t$  adjust, so as to keep the period-by-period balance of the PAYG social security system.

We assume that the utility of the representative young is of the Cobb–Douglas form:

$$U(c_t^y, c_t^o) = \log(c_t^y) + \beta \log(c_t^o), \quad (11.1)$$

where  $c_t^y$  is the consumption of the young in period  $t$ ,  $c_t^o$  is the consumption of the old (who were born in period  $t$ ) in period  $t+1$ ; and  $\beta$  is the subjective discount factor, between zero and one.

The transfer payment to the old at period  $t$ ,  $b_t$ , is financed by collecting a wage tax,  $\tau$ , from the young individual's wage income at the same period,  $w_{it}$ , where  $w_{it}$  denotes the wage rate in period  $t$  of an individual with skill level  $i = s, u$ . The interest rate and savings of a young individual of skill level  $i$  in period  $t$  are denoted by  $r$  and  $s_{it}$ , respectively. The budget constraints of a young individual of skill level  $i$  in period  $t$  are given by:

$$s_{it} + c_t^y = (1 - \tau)w_{it}, \quad (11.2)$$

$$c_t^o = (1 + r)s_{it} + b_{t+1}. \quad (11.3)$$

These two constraints may be combined into one lifetime constraint, as follows:

$$c_{it}^y + \frac{c_t^o}{1+r} = (1-\tau)w_{it} + \frac{b_{t+1}}{1+r}, \quad i = s, u. \quad (11.4)$$

Maximization of the utility function in Equation (11.1) subject to the budget constraints in Equation (11.4) gives rise to an indirect utility function of a young individual,  $V(1-\tau)w_{it}, r, b_{t+1}$ , which depends on the net wage, the interest rate, and the old-age social security benefit. For an individual in period 0, utility depends only on  $r$  and  $b_0$ .

As before, we use  $S$  to denote the proportion of highly skilled individuals in the native-born population. With no loss of generality, we normalize to 1 the size of the native-born young population in period 0. We consider just one wave of migrants,  $\mu$ , in period 0. The migrants are all young, and the proportion of the highly skilled among them is denoted by  $\sigma$ . Each migrant brings  $1+m$  offspring, where  $m > n$ , which

is the birth rate of the native-born. We assume that the offspring of the migrants are perfectly assimilated into the native-born population, both in terms of birth rate and skill distribution, so the proportion of young highly skilled individuals (including the offspring of the migrants from period 0) in period 1 onward is  $S$ .

We assume free international borrowing and lending, so that the interest rate of interest is exogenously given for this economy in each period; and we further assume that it does not vary over time. We assume that  $n < r$ , that is our economy is dynamically efficient. That is, we preclude Ponzi games, which can yield perverse situations.

A single good is produced each period by two inputs, high-skilled and low-skilled labor ( $L_s$  and  $L_u$ , respectively), according to a linear production function (that generates a fixed wage)

$$Y = L_s + qL_u, \tag{11.5}$$

where

$$L_{st} = \begin{cases} S + \sigma\mu & \text{for } t = 0 \\ S[1 + n + \mu(1 + m)] & \text{for } t = 1 \\ S[1 + n + \mu(1 + m)](1 + n)^{t-1} & \text{for } t \geq 2 \end{cases} \tag{11.6}$$

$$L_{ut} = \begin{cases} 1 - S + (1 - \sigma)\mu & \text{for } t = 0 \\ (1 - S)[1 + n + \mu(1 + m)] & \text{for } t = 1 \\ (1 - S)[1 + n + \mu(1 + m)](1 + n)^{t-1} & \text{for } t \geq 2 \end{cases} \tag{11.7}$$

and where  $q < 1$ . That is, there is perfect substitution between high-skilled and low-skilled labor, with low-skilled labor having the fraction  $q < 1$  of the productivity of high-skilled labor. In this case, the wages are given by

$$w_s = 1 \text{ and } w_u = q \text{ for all } t. \tag{11.8}$$

The old-age PAYG social security benefit is given by:

$$b_t = \begin{cases} @\tau\{(S + \sigma\mu) + [1 - S + (1 - \sigma)\mu]q\}(1 + n) & \text{for } t = 0 \\ @\frac{\tau\{S(1 + n + \mu(1 + m)) + (1 - S) + (1 - \sigma)(1 + n + \mu(1 + m))q\}}{1 + \mu} & \text{for } t = 0 \\ @\tau(S + (1 - S)q). & \text{for } t = 0 \end{cases}$$

## 11.2 Gains from migration

The well-being of the old in period 0 (who were born in period  $-1$ ), when the wave of migrants occur, depends only on  $b_0$ . As can clearly be seen from Equation (11.9), the benefits  $b_0$  depends positively on  $\mu$ , no matter what the skill composition ( $\sigma$ ) of the migrants. That is, even when all migrants are low-skilled (namely  $\sigma=0$ ), the old are still better off in period 0. Naturally, when  $\sigma$  is higher the gain is higher.

Turning to the individual born in period 0, when the migrants arrive, their well-being is affected only by  $b_1$ . It follows from Equation (11.9) that  $b_1$  depends positively on  $m$ . That is, the higher the birth trace of the first generation of migrants, the better off the generation born in period 0. Because  $m > n$ , it also follows from Equation (11.9) that  $b_1$  depends positively on  $\mu$ . That is, the generation born in period 0 (both its highly skilled and its low-skilled members) benefits from migration. It also follows from Equation (11.9) that for  $t \geq 2$ ,  $b_t$  is unaffected by the migration wave of period 0. That is, generations born in period 1 onward are unaffected by migration. Naturally, if the migration waves repeat themselves, then all future generations gain too.

## 11.3 Net fiscal burden

We have shown that immigration, whether high-skilled or low-skilled, makes the native-born better off. However, we now show that it is misleading to focus the welfare implications of immigration on its net fiscal burden. Specifically, we demonstrate that the gains that were shown to accrue to the native-born hold even though there may be a net fiscal burden created by immigration when it is biased toward the low-skilled.

An immigrant pays a social security tax in period 0 when they arrive and receives an old-age benefit of  $b_1$ , when they retire in the following period. The net fiscal burden of a low-skilled migrant is therefore equal to

$$NFB_u = -\tau q + \frac{b_1}{1+r}. \quad (11.10)$$

Substituting for  $b_1$  from Equation (11.9) yields

$$NFB_u = \frac{\tau(1+\mu)}{1+r} w_u \left\{ (1+g_0) \frac{\bar{w}}{w_u} - (1+r) \right\}, \quad (11.11)$$

where

$$g_0 = \frac{n + \mu m}{1 + \mu}$$

is the population growth rate from period 0 to period 1, and

$$\bar{w} = S + (1 - S)q = Sw_s + (1 - S)w_u$$

is the average wage in period 1.

Now, if  $m$  or  $\mu$  are large enough (so that  $g_0$  is large enough) and/or  $\bar{w}/w_u$  is large enough, then the net fiscal burden of a low-skilled migrant is positive. Nevertheless, the native-born gain from immigration, even if purely low-skilled.

The rationale of this result is as follows. The young migrants (whether highly skilled or low-skilled) work when they arrive in period 0 and pay the payroll tax. They will receive the old-age social security benefit only in the next period, when they grow old. Therefore in period 0 the PAYG social security system has higher revenues, allowing it to pay a higher old-age benefit to the current old. Thus, the old of period 0 clearly gain. If the birth rate of the migrants in period 0 is larger than that of the native-born, there will be more young in the next period (period 1), and thereby also a higher old-age benefit. Therefore, the young at period 0 will get a higher old-age benefit in period 1, when they grow older. Thus, they gain too. In period 2 and on, there is no trace of the migration wave in period 0 and all variables return to their pre-migration levels.

As expected, being low-skilled, the migrants pay in payroll taxes in period 0 less than the discounted value of the old-age benefit they receive in period 1. Thus, they do impose a net fiscal burden. Nevertheless, this burden is postponed indefinitely, because the PAYG social security system lives on indefinitely.<sup>3</sup>

## Notes

- 1 See also Bohn and Rustichini (2000), Bohn (2005), Hainmuller and Hiscox (2010), Hanson, Scheve and Slaughter (2009), Lacombe and Lagos (2010), and Lee and Miller (2000).
- 2 For a detailed description of the model see Razin and Sadka (1999; 2000; 2004); see also an extension by Asalanyan (2014).



- 3 If this system is to be terminated at a particular point in the future, then the young at that time will lose, because there will be no one to finance their old-age benefit in the next period, when they grow old. Note that each young individual will lose the same amount as if there were no migration in period  $o$ , but due to the migration in period  $o$  there will be a larger number of young. Thus, the *total* loss is larger because of the migration, reflecting the net fiscal burden of the migration in period  $o$ .

# 12

## Conclusion

**Abstract:** *We argue that the differences between the US and the EU relating to the degree of coordination among the member states and the aging of the population contribute a great deal to our understanding of observed policy differences between the two unions: the generosity of the welfare state and the skill composition of migration.*

**Keywords:** Policy differences; tight and loose coordination

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In the era of the welfare state, it is no longer possible to envisage a world of free migration. Indeed, the US gradually ceased to freely admit migrants after World War I, when it also started to gradually develop the institutions of the welfare state (e.g., federal income tax, old-age security, etc.), culminating in the great social institutions of the 1960s (e.g. Medicare) and more recently, the affordable health care system known as ObamaCare. A welfare state is a magnet for migrants, especially the low-skilled, the poor, and the old. So a political backlash of the native-born against the “free-riders”—the immigrants—will arise. This does, however, not mean that immigration will be banned altogether

There are, after all, also some significant gains from immigration. First, high-skilled migration does not impose a fiscal burden on the welfare state. On the contrary—the taxes paid by highly skilled migrants generally exceed the benefits they receive. Second, high-skilled migration enhances the technological edge of the destination country. Furthermore, even low-skilled migrants may alleviate the finances of a welfare state that allocates a great deal of its resources to old-age security.<sup>1</sup> This led us to explore how migrating and fiscal (welfare) policies are jointly determined in a political-economic setup.

Evidently, both the US and the EU form economic unions: In each, there is a single market for goods, capital, finance, and labor. That is, there is free mobility of goods, physical and financial capital, and labor among the member countries of each union. Nevertheless, there is a much higher degree of economic policy coordination among the member states of the US than of the EU. For instance, the US has a common (federal) income tax system which constitutes the major source of revenues in the union. Similarly, the social security system is more or less uniform across the US, which also has a single migration policy set up and enforced by the federal government. In contrast, there is very little coordination on these issues among the member countries of the EU. In essence, they compete with each other on these issues.

Aging of the population is another key factor affecting the balance of power among different interest groups, which shapes the generosity of the welfare state and thereby its migration policy. A more aged society would naturally give more political clout to the old, who opt for a more generous welfare state. In contrast, the working young, who finance the welfare state, are naturally more reluctant to increase its generosity. Furthermore, the old are keen to admit young migrants, whereas the

young are more reluctant to allow this. We note in this respect that the US population is younger than that of the EU.

We argue that these two differences between the US and the EU—the degree of coordination among the member states and the aging of the population—contribute a great deal to our understanding of the observed policy differences between the two unions: the generosity of the welfare state and the skill composition of migration.

It is worth noting that the US welfare system has over the recent turn of the century undergone some reforms giving the states some more leeway in designing the structure and magnitude of public assistance. In particular, the 1996 welfare reform<sup>2</sup> substituted open-ended federal funds with block grants, leaving the states a certain degree of autonomy over individual eligibility criteria; see Blank (1997) for a review of this reform. It somewhat weakened the degree of coordination among the states of the US with respect to public assistance programs, in a small step towards the way the EU operates on these issues.

## Notes

- 1 See Storesletten (2000) for a calibrated overlapping-generations model which analyzes this issue.
- 2 Specifically: the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA).

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