Public Pensions and Immigration

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Introduction

All industrialized OECD countries face an increasing demographic strain. Both increased longevity and the retirement of the baby boomers are burdening unfunded or pay-as-you-go (PAYGO) pension systems with additional pension claims. The sustainability of pension systems is also threatened because low fertility rates shrink the contribution base. Hence, pension systems are in urgent need of substantial reforms. Unfortunately, parametric reforms are not a very promising strategy to counter the demographic challenge. Increasing contribution rates will impair the working-age population and have negative repercussions on labor markets, while decreasing pension benefits may ultimately lead to rising old-age poverty.

This calls for more general, that is, *structural* (or *demographic*) reforms, which take the contribution base as a starting point. A sufficiently expanding contribution base helps to cover existing and new pension claims. Broadly speaking, the contribution base is equal to the total wage income of the labor force. It may expand through two main channels. Quantitatively, there could be more contributors (e.g., by raising female labor-force participation) and/or people could be forced to pay contributions not only on wages, but also on other income sources (e.g., capital). Qualitatively, the contribution base expands when the workers' productivity and thus their wages increase.

Immigration influx may affect the contribution base in a similar way and has therefore been suggested as an antidote to the demographic challenge. Not only could immigrants fill the gaps in the labor force, but carefully selected immigrants might also help to raise average productivity in the economy. However, large immigration influxes may cause their own problems, which could turn this seemingly simple solution to the aging problem into a problematic one. This paper will analyze the relationship between public pensions and immigration from both a theoretical and practical perspective in order to derive policy recommendations for today's aging societies. This includes, in particular, an evaluation of the question of whether large immigration influxes may be so beneficial in terms of relaxing demographic strain that they can overcompensate for other downsides (e.g., on the labor market or in other branches of the welfare state).

The welfare-theoretic perspective

Razin and Sadka (1999) propose a simple mechanism showing how immigration raises overall welfare in the host country via the PAYGO pension system. This happens because immigrants, even the unskilled ones, will pay the missing part of contributions that the system needs for sustainability. The additional claims against the pension system, that is, the obligation to pay pension benefits to the immigrants once they retire, can be shifted forward indefinitely (Sinn 2000, 2001). In an infinitely-lasting economy, immigrants' descendants will cover their parents' claims in the same way in every future period. Immigrants' contributions, however, will be transferred to native pensioners, although the latter have never acquired any corresponding claims to these payments. Hence, they constitute a positive fiscal externality of relevant size.[2] Since no other generation is affected by this gift, welfare in the host country increases unambiguously. This speaks clearly in favor of the idea of using immigration policy as a means to counter the demographic challenge. The larger the immigration influx, the higher the welfare in this simple framework.

Razin and Sadka's (1999) model spurred some criticism due to its simplifying assumptions. In particular, unskilled immigration may trigger undesired distributional effects, many of which are related to negative labor market repercussions. Capital owners may gain

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2 Sinn (2001) estimates the externality to amount to €175.000 per immigrant in the German pension system.

more than those who rely on labor for income (Razin and Sadka 2000) due to falling wages or unemployment (Kemnitz 2003) among unskilled natives. The unskilled may further be hurt by a changing skill distribution due to endogenous skill upgrading (Casarico and Devillanova 2003; Jinno 2011). In the longer run, differences in fertility and skills between immigrants' and natives' descendants may also change the distribution of welfare gains and losses (Krieger 2004). Similarly, repeated unskilled immigration could lower savings, capital per capita and thus wages as part of the contribution base (Aslanyan, in press). All of these effects tend to be the more relevant, the larger the immigration influx.

Distributional effects may not only arise through the immigration-effects on the labor market, but also through the institutional design of the pension systems themselves. Real-world pension systems typically include a complex set of rules, which govern the degree of *inter*generational and *intra*generational redistribution. For instance, the link between one's own contributions and actual pension claims might be tighter (*Bismarckian* system) or looser (*Beveridgean* system), or the pension systems tend to fix contribution payments (*notional defined contribution* system) or benefits (*defined benefit* system). Further distributional effects may arise through pension- and/or immigration-related legal norms. For instance, the positive fiscal externality is mainly driven by the fact that immigrants have children themselves. Whether or not immigrants' children are allowed to reside in the host country (and become contributors to the pension system) depends on the host country's residency requirements or citizenship legislation. Krieger (2008) shows that temporary immigration may not be beneficial when children have to return home with their parents. On the other hand, returning temporary migrants often lose some or even all of their claims (Rowthorn 2008), so redistribution might benefit natives and their offspring at the expense of temporary migrants.

Accordingly, empirical studies provide an ambiguous picture of the fiscal impact of immigration on host-country pension systems. The higher the number of skilled immigrants who enter a country, find a suitable job and do not displace native workers, the more likely a positive fiscal effect due to their above-average contributions is to occur. Unskilled workers may also generate a positive, albeit smaller impact (in line with Razin and Sadka 1999) unless they make large demands on the welfare state in the form of transfer payments and public services (Rowthorn 2008). Immigration into unemployment, family reunification (with mostly unskilled spouses entering the country) and providing asylum (where asylum-seekers are not allowed to work, but receive pensions once they reach retirement age) tend to expand pension claims without sufficiently raising contributions.

Rowthorn's (2008) review of the empirical literature shows that the estimates of the net fiscal contribution of past immigration normally lie within the range ± one percent of GDP. This may or may not suffice to overcome the aging problem of a *specific* country. For instance, Storesletten (2000) argues for the US that a feasible immigration policy characterized by an increased inflow of working-age high- and medium-skilled immigrants may completely offset the effect of the retirement of baby-boomer cohorts. On the other hand, Schou (2006) shows in a similar setting that increased immigration will generally worsen the fiscal sustainability problem in Denmark. A mixture of labor market repercussions and institutional aspects (e.g., the redistributiveness of the pension system) is mainly what drives these estimates.

Even if the effect of immigration is positive, suggesting that immigration might be a promising means of resolving the aging problem of a country, a realistic level of immigration influx will not achieve a solution to the problem. The current mixture of skilled and unskilled immigration will only create a sufficiently large net fiscal impact if future immigration influx will be enormously large, probably too large to be accommodated by the host countries (Uebelmesser 2004a; Krieger 2005; Serrano, Eguía and Ferreiro 2011). That is, these studies suggest that immigration policies are – on average – insufficient to deal with the aging problem alone (and they probably need to be accompanied by parametric reforms). A highly skill-selective form of immigration might turn out to be more successful due to higher expected contributions (Bonin, Raffelhüschen and Walliser 2000), but attracting (only) high-skilled immigrants is a difficult challenge for any country, as will be shown below.

The political-economy perspective

As shown above, immigration has the potential to relax demographic strain, but is likely to induce distributional conflict between different groups in society. This may give rise to different voting behavior by groups in society and different voting equilibria. In fact, immigration has always been a highly disputed political issue in most developed countries.

The public-choice literature on public pensions and immigration usually relies on some version of a referendum as the political economic mechanism (Gaston and Rajaguru 2013). For instance, the median voter (in terms of skills or age) may face the trade-off between benefits from immigrants' contributions to the pension system and the costs resulting from depressed wages due to the immigration influx of workers who turn out to be substitutes to the median voter. This trade-off will shape the voting equilibrium that typically involves restricting immigrants' access to a country or a selective immigration policy (Krieger 2003; Lacomba and Lagos 2010; Scholten and Thum 1996). One important concern of the median voter will be her/his political power once she/he is no longer in the median-voter position after retirement. Today's (rational) median voters might then allow additional immigrants into the country, although they might depress their wages, if this helps to strengthen their political power today and sustain it tomorrow (Haupt and Peters 1998; Sand and Razin 2007; Razin, Sadka and Suwankiri 2010). It should be noted, however, that these models implicitly assume that immigrants and/or their children will be allowed to vote upon arrival, which is not necessarily the case under real-world legislation on residency and citizenship in many countries (see above). In general, the relevant literature on these issues differs mostly in terms of how the political process is modeled in terms of the sequencing of votes on issues and admission, leading to a large range of results (Gaston and Rajaguru 2013).

This approach tends, however, to ignore the institutional setting for pension policy and obscures how immigration will actually affect different groups in societies, given that institutions differ. For instance, immigration into pension systems that keep contribution rates fixed is most beneficial for pensioners, while fixing pension benefits affects workers positively (Haupt and Peters 1998; Krieger 2003). By assuming a defined-contribution rate pension system, Razin and Sadka's (1999) model is in line with the first case. However, most real-world pension systems are of the defined-benefit type, suggesting that immigration will lead to a different voting equilibrium than implied in their model.[3]

Empirically, one observes that both economic variables (including expected labor market repercussions) and the welfare state have substantial effects on attitudes toward unskilled immigration (O'Rourke and Sinnott 2006; Facchini and Mayda 2009). Facchini and Mayda (2012) combine – across various countries – attitudes towards both skilled and unskilled immigration with different welfare state designs. Their findings are in line with expectations: on the one hand, high income earners in a country where natives are on average more highly skilled than immigrants dislike immigration when the welfare state forces them to support poor immigrants; on the other hand, individual skill is positively correlated with pro-immigration preferences. If immigrants have higher skills on average than natives, the signs reverse. That is, skill distributions of natives and immigrants as well as the type of the tax/transfer (contribution/transfer) system shape attitudes and thus voting equilibria. Again, it is the national institutional setting that also matters in answering the question of whether immigration may help to relax demographic strain.

War for talent? When aging societies compete for skilled immigrants

The previous discussion has indicated that selective immigration policies aiming at skilled immigrants have two (interrelated) advantages. Firstly, skilled immigrants generate the relatively highest (positive) net fiscal impact; and secondly, their immigration is more likely to be supported by a political majority (skilled natives, who might dislike skilled immigration, usually constitute only a minority of voters). Hence, a growing number of countries are considering adapting skill-selective immigration policies. Typically, however, skilled workers are relatively mobile internationally and their number is limited. Furthermore, they easily integrate into the local societies and labor markets. This may give rise to severe competition for this group of workers, sometimes labeled as the "war for talent", especially when there are no legal restrictions to mobility.[4]

From a theoretical perspective, skilled workers constitute a mobile contribution base. Both the direct and psychological cost of migration, as well as the cultural differences dampen the individual willingness to migrate (these costs are typically lower for skilled than for unskilled workers), while better income prospects and low net contributions to the welfare system tend to foster

[3] Lacomba and Lagos (2010) resolve this problem by arguing that defined-contribution rate systems are plausible at least for the future. Due to the aging of societies, contribution rates will certainly not fall in the future, while global tax competition and mobile workers set an upper limit to payroll taxation at the same time, which does not allow further increasing contribution rates either.

[4] In the European Union, unrestricted mobility is even considered a fundamental right. In fact, the EU Council Regulations (EEC) No. 1408/71 and 574/72 make sure that pension claims can be transferred between EU member states without a loss.

individual migration. Assuming that skilled workers' wages between industrialized countries do not differ too substantially, that there are no legal restrictions to mobility, and that cultural differences, that is, the costs to integrate, tend to be low for high-skilled workers, there remain mainly differences in the tax/transfer system that affect individual migration decisions. According to Wildasin (1999), these differences are substantial. For instance, moving from the German into the French pension system results in an increase of the individual net public pension wealth of more than EUR 53,000 for a single aged 40. This is equivalent to 15 percent of her/his lifetime income.

This sets incentives for countries to unilaterally reduce net contributions of skilled workers. If additional skilled workers enter the country due to lower net contributions, lower per-capita contributions of the skilled may be overcompensated by an increased number of contributors. Since, however, all aging countries face similar incentives, a general retrenchment of pension systems will be the outcome of the strategic interaction of national governments (Homburg and Richter 1993; Breyer and Kolmar 2002; Uebelmesser 2004b). This retrenchment may be rather subtle in cases where, for instance, pension systems are made more Bismarckian (Cremer and Pestieau 2003; Kolmar 2007; Poutvaara 2007; Rossignol and Taugourdeau 2006). A close link between one's own contributions and pension claims is especially attractive to high-income earners as the return on contributions increases. Krieger and Traub (2011) indeed provide empirical evidence that pension systems have become more Bismarckian over time. Again, institutional aspects of the pension system seem to matter significantly.

Harmonizing or integrating pension systems at the supranational level will resolve the problem, but is not politically feasible and will involve distributional problems of its own. More importantly, however, harmful systems competition is a direct consequence of the *place-of-residence principle* that governs welfare-state access of immigrants. This principle implies that migrants, regardless of their nationality, become members of the pension system of their host country. The more attractive the pension system abroad, the more migration will occur. This problem disappears immediately when changing to a *dynastic origin-principle* (Sinn 1990) whereby migrants remain members of their home country's pension system under all circumstances. A potentially attractive pension system elsewhere no longer influences individual migration decisions.

While the supranational integration of pension systems is not necessary under this principle, the origin-principle nevertheless comes at a price because out-migration constitutes an important exit option for the young generation. According to Haupt and Peters (2003) the power of gerontocrats is constrained when young workers can leave the pension system at home. Under the origin-principle this is no longer possible. This is why Richter (2004) and Weichenrieder and Busch (2007) suggest the *principle of delayed integration*. Migrants are allowed to enter their host country's welfare systems only after a delay of some years. This avoids short-run migration incentives solely driven by welfare benefits, while it still allows migrants to leave a country in the long run.

Even if harmful direct systems competition for workers via the parameters of the pension system could be avoided, other related types of competition are far more difficult to prevent. For instance, in their attempt to make immigration policy more skill-selective, many countries have recently eased immigration regulations for students (Lange 2010). Attracting talented students from, for example, developing countries and providing them with the necessary professional, language and cultural skills at a university in the (aging) developed country has several advantages (Haupt, Krieger and Lange, in press). The local education facilitates the integration of foreign graduates into the domestic labor market and the *net public return per student* has been estimated to amount to USD 90,000 (for a male) in present value terms.[5] According to Haupt, Krieger and Lange (2011) this might give rise to severe competition, or even a "war for talent" along the education quality and tuition dimension, which is not too different from systems competition related to pensions.

Conclusions

This contribution has asked whether or not immigration could be a useful means of dealing with the demographic challenge that most industrialized countries face. Although the theoretical literature provides arguments for the positive welfare impact of immigration, high hopes are out of place. For one, the immigration influx must be extremely large to stabilize the dependency ratio. It is not clear whether so many immigrants can actually be attracted, nor whether the problems

[5] These numbers include the impact of higher education on tax revenues, social security contributions and social transfers. They also account for the direct and indirect public costs of higher education.

from large immigration influx in other branches of the welfare system, on the labor market or along other political and societal dimensions should be ignored. The attempt to attract only the highly skilled workers and most talented students, that is, potential net contributors to the pension system, might result in a harmful "war for talent" with other aging countries. In this respect, it would be more than problematic to focus on immigration as the main strategy for combatting the demographic challenge. Immigration should be only one of several building blocks for keeping pension systems sustainable in the face of a rapidly aging society.

When designing a national immigration policy, policy makers should take the domestic institutional setting into account. Existing labor market institutions, the rules of the pension system, and related legislation on citizenship etc. lead to a distinct impact of immigration. In addition, large immigration influx may also cause problematic labor market repercussions. Undesired distributional effects are likely to occur, but need to be taken into account in order to reap existing benefits from immigration. In general, it appears reasonable to proceed at a slow pace to make adaptations to existing institutions in order to avoid labor market shocks, as well as sudden negative income effects on the electorate. In other words, when expecting an increasingly rapid aging process in the future, a less and less restrictive immigration policy (next to other parametric reforms) should, starting today, be slowly phased in until its full effect occurs at the peak of the aging process.

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