تم تحميل هذا الملف من موقع مهاجرون	

دراسة شاملة حول الهجرة المجانية والوصول إلى الرعاية الاجتماعية التجربة السويدية باللغة الانجليزية
موقع مهاجرون ⇦ السويد ⇦ الإقامة

روابط مواقع التواصل الاجتماعي في السويد				

أحدث ما تم نشره في السويد	
التأشيرات في السويد - دليل شامل للوافدين	1
العثور على عمل في السويد من خلال برنامج الترسيخ	2
التجنيد الإجباري في السويد: الوثائق والإجراءات والرأي العام مع الكُتيب الرسمي	3
شرط الاعالة حسب القانون الجديد في السويد	4
طرق ايجاد عمل في السويد بدون لغة سويدية	5
للمزيد من المقالات التي تهم المهاجرين في السويد اضغط هنا	

Free immigration and welfare access: the Swedish experience

Joakim Ruist*
Department of Economics
University of Gothenburg
Box 640
40530 Gothenburg, Sweden
joakim.ruist@economics.gu.se
Telephone: +46 703 96 77 31

June 2013

Abstract

With the expansion of the European Union from 15 to 25 member countries in 2004, fears of migrants' excessive welfare use lead 14 of the 15 older member countries to impose restrictions on access of citizens of the new member countries – the A10 countries – to their welfare systems. Sweden was the only exception. This paper evaluates the net contribution of post-enlargement A10 immigrants to Swedish public finances in 2007. On average, A10 immigrants generate less public revenue than the population on average, but also cost less. The net result is a zero or small positive net contribution. In particular A10 immigrants do not benefit more from basic social welfare than the population on average. The discounted net contribution over the A10 immigrants' lifetime may be positive or negative depending, e.g., on their income assimilation rates and on future real interest rates.

Keywords: immigration, welfare benefits, public finances, EU enlargement

JEL codes: H20, H31, H50, J61

* I am grateful for comments and suggestions from Pelle Ahlerup, Lisa Andersson, Simona Bejenariu, Arne Bigsten, Jorge Bonilla, Oana Borcan, Lennart Flood, Olof Johansson-Stenman, Kristina Mohlin, Katarina Nordblom, and Anja Tolonen.

1 – Introduction

A contentious issue in the immigration debate in many high-income countries is immigrants' actual or potential use of the host country's welfare systems. The risk of immigrants benefiting disproportionately from welfare systems and thus draining public finances is a common argument in favor of restricting immigration. This was seen, e.g., in the debate preceding the EU enlargement in 2004, and again more recently as the lifting of transitional restrictions for Romanian and Bulgarian citizens was approaching in the UK in 2013. The same argument is supported by economic theory in the writings of, e.g., Friedman (1977), Borjas (1999), and Razin et al. (2011).

Empirical studies of immigrants' net contributions to public finances show that these tend to be close to zero (Rowthorn, 2008). Yet these studies are confined to cases of restricted immigration, since until recently there has not been any case of a modern welfare state allowing free immigration from poorer countries. A recent exception is Sweden since the EU enlargement in 2004, when the EU expanded from 15 member countries (henceforth referred to as EU15) with high and relatively similar income levels by adding another 10 countries (referred to as the A10 countries) with substantially lower income levels on average. Sweden was the only EU15 country that did not impose restrictions on access of the new EU citizens to its welfare systems (Gerdes and Wadensjö, 2010). The Swedish case thus provides a possibility to study empirically the net public finance contribution of immigrants arriving under a regime of unrestricted immigration and equal access to welfare systems. The fact that the Swedish welfare sector is larger than in most other countries makes the case even more interesting.

Two questions are of major importance. The first is the question of the overall net contribution of A10 immigrants to Swedish public finances, revenues and costs taken together. The second is whether A10 immigrants are overrepresented as beneficiaries of welfare systems, relative to the total Swedish population or to immigrants from the richer EU15 countries. This study provides answers to both questions, using detailed individual data from 2007 on tax payments, welfare receipts, and age structure of a random sample of more than 3,000 A10 immigrants who moved to Sweden in 2004-2006. The study contains both a static analysis of these immigrants' net contribution to public finances in 2007, and a longitudinal analysis predicting the discounted net contribution over their lifetimes.

The static analysis shows that the net contribution to public finances in 2007 is zero or slightly positive and that A10 immigrants' use of basic social welfare (minimum level of subsistence) is similar to the total Swedish population on average, also when differences in age structure are controlled for. These outcomes should be reassuring concerning public fears of migrants' excessive use of welfare systems, especially considering that Sweden has one of the more generous welfare systems in the EU and the OECD. There are reasons to expect that the corresponding outcomes are or will be even more positive in other EU15 countries, which is also supported by a comparison with the results of a similar recent study by Dustmann et al. (2010) using data from the UK.

Longitudinal analysis predicts that the discounted net contribution over the immigrants' life cycles may be positive or negative. The long-term outcomes depend strongly on migrants' yet unknown future income assimilation rates, on future real interest rates, and on whether marginal public costs equal average costs. The long-term outcomes will be strongly negative if we assume zero income assimilation and that all marginal costs are equal to average costs. Yet even with modest assumptions about positive income assimilation rates and declining marginal costs the outcomes will be positive. Somewhat surprisingly the long-term outcomes depend less on remigration rates. This is mainly because revenues and costs are initially balanced and the immigrant population is young enough for discounted costs related to future old age to be relatively small.

2 – The EU enlargement in 2004 and Swedish immigration

The ten countries that acceded to the EU in 2004, the A10 countries, had on average substantially lower income levels and higher unemployment rates than the EU15 countries. Purchasing power adjusted income per capita and unemployment rates for the two blocks of countries in 2003, the year before the enlargement, are shown in Table 1. The enlargement was preceded by extensive debate in the richer EU countries about the possible consequences of free labor mobility between dissimilar countries. There were fears that A10 citizens would migrate to the richer EU15 countries and use their social welfare systems excessively. Eventually, most of the EU15 countries imposed various restrictions on access of A10 citizens to their labor markets and welfare systems. Fewer restrictions were imposed by the UK, Ireland, and Sweden, where Sweden was the only country that did not impose any restrictions at all (Gerdes and Wadensjö, 2010). Any citizen of any EU member country became eligible

to reside in Sweden and use the Swedish welfare systems, as long as the person is "actively looking for employment and has a realistic chance of finding it".[1]

During the first years after the EU enlargement, the UK and Ireland received more immigrants than Sweden from the A10 countries, relative to their total populations. According to data from the UK Office of national statistics, the UK immigration rate from the new EU member states in 2004-2006 was about three times as high as the Swedish rate. According to less exact estimates in Barrett (2010), the Irish rate may have been about six times as high as the Swedish. A10 migration flows to Sweden in each year 2003-2007 are shown in Table 2.

2.1 – A10 immigrant characteristics

A10 immigrants differ from the total Swedish population in respects that are of first order importance for their net contribution to public finances. Most importantly they have lower incomes and thus pay less in taxes, and very few of them are old, which implies low public costs related to old age. This section reviews these background characteristics in detail.

To describe the characteristics of A10 immigrants, I use micro data from the *Linda* database. The *Linda* database is managed by Statistics Sweden and contains detailed information from public registers on two large samples of the Swedish population: the general sample and the immigrant sample. The general sample comprises a random 3% of the total population (referred to as sampled individuals), as well as all individuals belonging to the same households as those 3%. The immigrant sample comprises a random 20% of the Swedish immigrant population, plus all those who belong to their households. The database is longitudinal: it contains the same individuals each year, and each year the sample is adjusted through the addition of some new individuals to maintain its representativeness of the whole population. See Edin and Fredriksson (2000) for a detailed description of the data source.

The 2007 *Linda* immigrant sample contains information on 3,392 sampled individuals who immigrated to Sweden from the A10 countries in 2004-2006 and did not register emigration through 2007. The most important countries of origin are Poland (69%) and Lithuania (11%). The sample also contains data on 5,779 sampled individuals who immigrated to Sweden from the rest of EU15 during the same period, with Denmark (27%), Germany (21%), and Finland

[1] This formulation is my direct translation of the law text and in a small number of cases it has been decided in court whether a specific person (from an A10 or EU15 country) can be considered as fitting that description.

(15%) being the most important countries of origin.[2] Figures relating to the latter group are included in this study to highlight the differences in net contributions of immigrants of different origin to public finances. The general *Linda* sample contains 323,418 sampled individuals. These samples together form the dataset used in this study. Only sampled individuals – i.e., not other household members – are included in order to maintain the randomness of the sample.

One important difference between A10 immigrants and the total Swedish population lies in their age distributions, which are shown in Figure 1. As the figure shows, A10 immigrants are heavily concentrated in the younger half of the working ages, and there are almost no individuals above retirement age. The distribution of EU15 immigrants is skewed in the same direction yet not to the same extent.

Table 3 shows the distributions of income from work and business activity for ages 25-64. When obtaining reliable information on income distributions for recent immigrants, we are confronted with the question of which immigrants still remain in the country. While data on immigration from these countries are very reliable, re-emigration data are not. There is no real incentive for the re-emigrants to register their emigration. On the contrary there are even incentives not to do so, because one may then lose one's entitlements to sickness, parental leave, or unemployment support. A clear indication of immigrants having re-emigrated without registering is that out of all A10 immigrants in *Linda* who arrived in 2004-2006 and have not registered re-emigration, 11% have exactly zero household disposable income in 2007. This is not at all in parity with the rest of the population, yet corresponds well to the estimate in Gerdes and Wadensjö (2010) that official statistics may contain around 10% of recent A10 immigrants who are no longer in Sweden. I deal with this flaw by deleting all individuals with household disposable income of zero or less from the sample. The smaller number with a registered disposable income below zero may not be as likely to have left Sweden, yet there are probably other important errors in the data on these individuals. They are very few (0.18% of A10 immigrants) and their inclusion or exclusion does not substantially affect the results of the analysis.

[2] While the ratio of these stocks of A10 and EU15 immigrants is 0.59, the ratio of the corresponding immigrant inflows in Table 2 was only 0.31. The difference is due to a substantially higher re-emigration rate of EU15 immigrants.

As shown in Table 3, most recent immigrants from EU15 and A10 countries earn less than the total population across the distribution, although the top segment of EU15 immigrants earn more. Substantial shares of the recent immigrant populations do not earn any income, and this is after deleting individuals for whom the reported *household* disposable income, including welfare income, is non-positive. While some of these individuals may in fact also have left the country, their households all have registered positive income, so it is plausible that the majority of them are supported by other household members.

The summary statistics on A10 immigrants presented so far indicate both positive and negative factors concerning Swedish public finances. Their age structure is favorable as it implies low costs for elderly care, while the fact that they earn less income from work should imply that they contribute less to public finances through taxes. The rest of this study presents a detailed analysis of public revenues and costs in order to estimate the net contribution of A10 immigrants to Swedish public finances.

3 – Method

The method used in this study is to ascribe, as far as possible, all Swedish public revenues and costs to the proper individuals or groups of individuals in the population, and thus to estimate the net contribution of A10 immigrants. Different individuals contribute very different amounts to public finances and also imply very different public costs. Children typically do not contribute at all, while they imply high costs through publicly financed schooling and child care. During the working ages, about 20-64 years of age, the average individual is a net contributor who works and pays more in taxes than he/she costs in the form of welfare receipts and costs of health care. As individuals turn 65 and older they imply costs in the form of pensions, and the older they get the more hospital care and elderly care they require. Same-age individuals differ too. Although some parts of public services, such as infrastructure and defense, are more or less equally distributed, the majority of public costs can be attributed to specific individuals or groups of individuals. Examples are grants to specific persons, hospital care costs, or costs of running schools. On the public revenue side, an even larger share relates to specific individuals, although there is a certain share for which the connection is more far-fetched here as well, such as revenues derived directly from larger corporations.

The *Linda* dataset contains detailed information on all tax payments to and all individual receipts from the public finances for all individuals in the data. These detailed data correspond to about one-third of all public sector revenues and one-third of all public sector costs per

individual. In addition, the income data in *Linda* can be used to estimate payroll taxes with high precision, adding a detailed breakdown of another third of public revenues. Income data can also be used to estimate VAT payments, which will not be very credible per individual, yet arguably so when averaging over large groups and using aggregated data on the relation between income and consumption. In total, *Linda* data can be used to ascribe with high credibility 78% of public sector revenues in 2007 to different groups of individuals.

On the cost side, about one-third of all public sector costs are costs of schooling and care, for which there are no detailed data on individual use of services. Yet there are detailed data on these costs by age group, and when averaging over larger groups of people these can be used to ascribe costs to different groups with high precision. This results in 62% of public sector costs in 2007 being ascribed to different groups. The share is thus lower on the public cost side than on the revenue side, which is mostly a reflection of the fact that a substantial part of public sector costs are counted equally for all.

Having ascribed all the public revenues and costs included in the study to different individuals, calculating the net contribution of A10 immigrants to public finances amounts to a simple estimate of difference in means between these immigrants and the total population. It could be argued that the proper reference value to set to zero would be the total population average *less the immigrant group in question*. However, since the group of interest in this study amounts to less than 0.2% of the total population, this does not affect the results.

The method used is borrowed from a set of studies estimating the net contributions of immigrant stocks to public finances in various high-income countries. These studies were surveyed recently by Rowthorn (2008); Swedish studies were surveyed by Ekberg (2009). The resulting estimates of immigrants' net contributions to public finances are generally between +1% and -1% of GDP, yet estimates are of limited usefulness for immigration policy evaluation since the immigrant stocks at hand are the consequences of generations of immigration policies. In the present study, the method is used for more direct policy evaluation, focusing only on one group of immigrants that arrived under one specific policy regime.

The variables collected in this study represent important public revenues and costs that are directly related to specific individuals. Different methods are used in the literature to distribute the remaining elements of public finances between immigrants and natives. The key question is whether marginal public costs are equal to average costs. Lee and Miller (1998)

argue that they are not, with important implications for estimates of public sector contributions of immigrants. There may be pure public goods – the best example of which is probably national defense – for which the marginal cost of the extra immigrant may be essentially zero. Marginal costs of, e.g., infrastructure and central administration are also plausibly smaller than average costs. This study uses both a benchmark measure where all marginal costs are equal to average costs, and two alternative measures: one where the marginal cost of national defense is zero and all other marginal costs are equal to average costs, and one where all marginal revenues and costs not assigned to specific individuals are set to zero.

3.1 – Data treatment

Direct tax payment data are reported from the tax agency to Statistics Sweden, making the values in the dataset highly reliable. Earnings data are also directly reported, and payroll taxes are estimated as 32.42% of earnings, which was the payroll tax rate in 2007. When estimating value-added taxes (VAT) from earnings data, I take into account that VAT payments are a highly concave function of earnings. Statistics Sweden publishes VAT payment estimates per disposable income decile of the population. I use these data to ascribe to each individual in the dataset VAT payments equal to the estimated mean of his/her income decile. Sensitivity analysis will consider possible differences between A10 immigrants and the total population regarding the relation between disposable income and consumption.

Similarly, all data on transfers to individuals, as well as student loan repayments, are directly reported to Statistics Sweden and are thus very reliable. The estimates of individual costs of education and care on the other hand are made using age (and gender) group means. Child care, schooling, elderly care, and disability care are municipality responsibilities, and all municipalities report average costs, per age group where relevant. These data are published by the Swedish Association of Municipalities and Regions (Sveriges Kommuner och Landsting, 2007). Schooling cost estimates per child are taken directly from these data. Child care cost estimates per child are adjusted for female labor force participation, as all immigrant groups have substantially lower female labor force participation than the Swedish population mean. Childcare costs for each immigrant group and immigration year are multiplied by the share of females aged 20-49 who report positive labor income in that group, and divided by the same share in the population. For A10 immigrants, this implies a multiplication by about 0.9.

The data on elderly care are adjusted for a more detailed breakdown published by the National Board of Health and Welfare (Socialstyrelsen, 2008) of elderly care costs by five year age interval and gender. The average woman in each age group costs substantially more than the average man. The data on aggregate disability care costs from the Swedish Association of Municipalities and Regions are made individual by distributing them evenly across those individuals who received an individual disability support transfer (in *Linda*).

Hospital care is a regional and not a municipal responsibility. Thus, hospital care costs cannot be estimated using the same dataset as other care-related costs. Instead I rely on a study by Borgquist et al. (2010), who estimate hospital care costs by age group in 2007 in the county of Östergötland, which is deemed representative of Sweden as it includes both rural areas and two larger cities (neither one is among the country's four largest), and both a university environment and basic industry. Sensitivity analysis will consider possible differences between A10 immigrants and the total population regarding hospital costs by age group.

One problem in the data concerns calculating the number of children born to immigrants after they arrived to Sweden, since these children are not defined as immigrants. Hence, when identifying them in the data they may be mixed up with children who entered the household because the whole household composition changed. However, since the number of children born to immigrants up to three years after their arrival is not very large, sensitivity analysis will show that estimation errors cannot plausibly affect the results to any large degree.

The data elements used in the study and their importance for the Swedish public sector are summarized in the second column of Table 4. The value of 36,024 SEK toward the bottom is the net position per Swedish inhabitant vis-à-vis the public sector that is left when all the differently ascribed elements are accounted for. Out of this value, 24,624 SEK is the difference between differently ascribed revenues and costs, and 11,400 SEK is the public sector surplus per individual in 2007.

4 – Static contribution of A10 immigrants to Swedish public finances

The third and fourth columns of Table 4 show the average public sector revenues and costs per A10 immigrant and per EU15 immigrant. The net contributions of the average A10 and EU15 immigrants to public finances are given by the differences between each of these columns and the total population average in the second column. These net contributions and their T values are shown in Table 5. A positive sign indicates larger revenue or smaller cost,

compared to the population at large, and a negative sign indicates smaller revenue or larger cost. Due to their age structures, both groups cost the public sector substantially less than the population average with respect to pensions, elderly care, and hospital care. For A10 immigrants, this smaller cost is balanced by smaller tax revenues, as they earn less and thus pay less tax than the population on average. Hence the net contribution of the average A10 immigrant is not significantly different from zero. For EU15 immigrants, the negative difference in tax payments is smaller and the net contribution is more positive yet still economically unimportant. Multiplied by the number of immigrants, the total net contribution of all EU15 immigrants is only about 1/1,500 of the public sector turnover.

The above exercise included the financial surplus on the cost side of public finances. The main reason for doing so is to make the estimated net contributions of immigrant groups independent of variation in public debt. However the estimates will more accurately represent actual net contributions in the actual year if the financial surplus is not included as a cost. Calculated this way, the contribution of the average immigrant thus becomes slightly larger, and significant also for A10 immigrants, as shown in Table 5. Yet although statistically significant the contribution is economically unimportant. The bottom two rows of Table 5 present the results obtained with the two alternative assumptions regarding decreasing marginal public costs, i.e., less than average marginal public costs due to immigration. Second from the bottom are results based on the more conservative assumption that marginal costs of immigration related to public defense are zero, while all other marginal costs are equal to average costs. Finally the results at the bottom row are given by setting marginal revenues and costs from immigrants to zero for all budget elements that are not assigned to specific individuals. Hence the contribution of the average recent immigrant increases by 24,624 SEK. These two adjustments also both result in larger and statistically significant – yet economically unimportant – contributions of A10 immigrants.

On three rows, the numbers in Table 5 may be affected by relatively low immigrant eligibility. These are sickness and parental leave support, which require eight months of working for eligibility, and unemployment support, where eligibility increases gradually, and full eligibility is reached after twelve months of working. Thus, not all immigrants who arrived in 2006 were fully eligible for these benefits from January 1st 2007, even if they started working directly upon arrival. Table 6 contains the values that correspond to those in Table 5, but for 2004-2005 and for A10 immigrants only. It shows that the immigrants who arrived during this period indeed used more of these systems in 2007. Substituting Table 6

values for the corresponding values in Table 5 changes the benchmark net contribution per A10 immigrant from +1,288 to -791 SEK, which is still not significantly different from zero.

The standard errors used in calculations of the T values in Table 5 are based only on variance in assigned values, and thus do not reflect uncertainty in the value assignment itself, i.e., they do not capture the unknown variation in age-related costs within age groups or in consumption within income deciles. Perhaps most importantly, there are no data that enable identification of whether A10 immigrants are on average different from the total population in their consumption behavior after controlling for income, or in their use of hospital care after controlling for age. Under the hypothesis that those differences are no larger than 10%, the estimates for A10 immigrants in Table 5 may be wrong by at most about 2,000 SEK for VAT and at most 1,000 SEK for hospital care, which are quite small numbers. As mentioned in the previous section there are also uncertainties in the number of children born to immigrants in Sweden. The estimated number of Swedish-born children is 2.1% of the actual A10 immigrant population. Under the assumption that any estimation error is not larger than 20%, the effect of this error is not larger than 400 SEK.

Considering public fears regarding A10 immigrants' (possibly even intentional) excessive use of welfare systems it is interesting to note that according to Table 5 their basic social assistance receipts are not significantly different from those of the total population on average. However a more useful comparison in this case would have to control for age, since basic social assistance mainly applies to working-age individuals (96% of total payments are received by individuals aged 20-64). To do this I perform regression analysis on all sampled individuals aged 20-64 from the total population and the A10 immigrant population. The regression equation is

$$assistance = \beta_0 + \beta_1 A10 + \beta_2 age + \beta_4 age^2 + \varepsilon$$

where the dependent variable is the size of any assistance received, *A10* is a dummy for an A10 immigrant, and a second-degree polynomial in age is included as a control. The regression results even predict that the average A10 immigrant receives 393 SEK *less* than the average individual in the total population. The T value is only 1.70 though, i.e., again the difference between the groups is not significant.

5 – Lifetime contribution of A10 immigrants

The results presented thus far give the estimated contributions of immigrants in a static framework. The main advantage of the static framework is its simplicity and robustness. However it is not informative about the discounted net contribution of immigrants over their lifetimes. The latter is undoubtedly a more informative measure of the immigrants' contribution, although its estimation is sensitive to the accuracy of predictions about the future (Lee and Miller, 1998). In the present case of A10 migrants the absence of a negative net static contribution in spite of lower earnings compared with the population on average was primarily due to their age structure being skewed to the left, also compared with other Swedish immigrants. It is therefore particularly informative to complement the static picture with an estimate of the net lifetime contribution in their case.

Lee and Miller (1997, 1998, 2000) present methods to estimate net lifetime fiscal contributions of immigrants. Calculations involve making predictions of, e.g., future fertility and mortality rates, income assimilation rates, re-emigration rates, and productivity growth rates. However, as noted by Dustmann et al. (2010), the short migration histories of post-EU-enlargement A10 migrants make it particularly difficult to make appropriate predictions about the future in their case. Neither is there any previous immigrant group with a longer migration history that could be used to predict the A10 migrants' future, due to the quite unique setting and migration policy regime affecting their migration. Due to this lack of relevant historical data, the analysis in this section will be somewhat more superficial compared with, e.g., the studies by Lee and Miller.

5.1 – Benchmark calculations

As a first step, static net contributions in 2007 are estimated separately by age for the total population. For A10 immigrants the same is done for those aged 1-65. Above 65 there are too few observations for this to be feasible. Yet since values in this range are strongly determined by age-related costs, values for immigrants are simply set equal to total population averages. To further reduce the impact of measurement error due to few observations by age, the value for age T in the range 1-65 is measured as the average of values for ages T, T+1, and T-1 for immigrants.

Total population survival rates by age are taken from data published online by Statistics Sweden. These rates are assumed to apply also to A10 immigrants and not to change in the

future. The further analysis is restricted to individuals that are alive in 2007, i.e., not including yet unborn children.

Net contributions by age for the total population by age are assumed to remain constant in the future. As a benchmark the same is assumed to be true for A10 immigrants. The government is expected to run a balanced budget in the long run. The expected discounted net lifetime contribution of each individual alive in 2007 is then

$$\sum_{i=a}^{106}\left(\frac{p_{i,a}c_{i,m}}{(1+r)^{i-a}}\right)-e \qquad (1)$$

where a is age in 2007, $p_{i,a}$ is the probability that an individual reaches the age of i given that we know he/she did reach the age of a, m denotes whether the individual is an A10 immigrant or not, $c_{i,m}$ is the average net contribution of group m at age i, r is the real interest rate, and e is a residual that is included to meet the restriction that the budget should be balanced in the long run. The oldest individual in Sweden in 2007 is 106 years old and the survival rate at that age is set to zero. Any future policy changes necessary to balance the budget are assumed to affect A10 immigrants in the same way as the total population, i.e., the parameter e is constant across all individuals. Hence the benchmark discounted net contribution of the average A10 immigrant is the average of Equation (1) for all A10 immigrants minus the average for the total population.

These benchmark contributions for future real interest rates of 3% and 4% respectively are reported in Table 7. We see that the choice of interest rate and the choice of whether to treat national defense as a public good or not both substantially affect the resulting estimates. Benchmark estimates range from a 151,000 SEK deficit to a 31,000 SEK surplus. For comparison total public sector spending per capita in 2007 was 167,000 SEK and GDP per capita was 341,000 SEK. Since average costs related to old age will increase more for A10 immigrants than for the total population in the future, a higher interest rate implies a more positive result. Although national defense accounts for no more than around 3% of public sector costs and the choice of treating it as a public good or not had only a small impact on the static results in Section 4, the accumulated effect of this choice over the years is substantial.

5.2 – Accounting for income assimilation and re-emigration

Of the simplifying assumptions made to obtain the benchmark estimate of the average net discounted lifetime contribution of A10 immigrants to public finances, two appear especially

important. These are the assumptions that the age-specific earnings gaps between A10 immigrants and the total population will not diminish as the immigrants spend more time in Sweden, and that the re-emigration rate is zero. While obviously untrue these assumptions are still useful as a benchmark, due to the lack of data to support good predictions of actual future income assimilation and re-emigration rates. However this subsection aims to provide more plausible estimates with more plausible – yet modest – assumptions about these rates.

A large number of studies from different immigration countries shows that immigrants on average earn less than comparable natives on arrival in the immigration country and that this gap closes over time, often at a rapid pace. In a relatively recent study, Hammarstedt and Shukur (2006) study income assimilation rates of Swedish immigrants who arrived during the decades before the year 2000. Their estimates imply that after five years in Sweden, Eastern European immigrants' earnings had risen by more than 10 percentage points more than natives', and Southern European immigrants' even by more than 30 extra percentage points. The data used in the present study also indicate strong initial growth in A10 immigrants' incomes and tax payments. Average nominal direct income tax payments of all 2004 A10 immigrants and their children were 13% higher in 2007 than in 2005, while only 2% higher for the total population. If expressed as a fraction of the total population average, the payment of the average A10 immigrant increased by four percentage points from 43% in 2005 to 47% in 2007.

To stay on the modest side of these strong initial assimilation figures, future income and tax payment assimilation of A10 immigrants is simulated by considering cases where average age-specific public revenue from the immigrant stock in 2007 increases by 1% and 2% respectively over the following five years. After these five years, there is no further assimilation. As shown in Table 7 even these modest assimilation rates have large impact on the immigrants' estimated discounted net lifetime contribution. All estimates that are also based on treating defense as a public good become positive.

The second alternative to the benchmark simulations is to add re-emigration. Re-emigration rates appear even more difficult to properly predict than income assimilation rates. Studies surveyed by Barcevičius et al. (2012) include estimates of five-year remigration rates of post-EU-enlargement Polish emigrants ranging from below 5% to above 25%. Emerek and Kirkeby (2013) estimate an emigration rate of similar immigrants in Denmark of 30% after only three years. According to Barcevičius et al. the main reasons for the wide disparities are

different definitions of immigrants and re-emigrants (primarily how to account for seasonal and circular migrants), different study periods, and different data collection methods. However in the present case it turns out – perhaps surprisingly – that re-emigration does not have a huge impact on the estimated long-term contribution of immigrants; at least not as long as re-emigration is random. The bottom rows of each panel of Table 7 show results from adding to the benchmark specification a 5% random emigration probability for each of the first five years after 2007 and a zero probability thereafter. Although this remigration rate is quite high, the resulting differences from the benchmark results are quite small in comparison with the larger effects of treating defense as a public good, or of accounting for income assimilation. The differences could be larger if re-emigrants were positively or negatively selected, yet there is no possibility to use the available data to make any reasonable predictions on that issue.

6 – Discussion

This study estimates the net contribution of post EU-enlargement A10 immigrants to Swedish public finances. The estimated static contribution in 2007 is either zero or slightly positive. Immigrants' use of basic social welfare is not significantly different from the total population on average, also when differences in age structures are controlled for. Predicted long-term outcomes over the migrants' life cycles may be either positive or negative. These predicted outcomes depend strongly on expected income assimilation rates, real interest rates, and the structure of marginal versus average public costs. Yet even with quite conservative assumptions about income assimilation and the difference between marginal and average costs the predicted discounted net contribution is positive.

The results of this study indicate that the fears that lead all other EU15 countries to restrict A10 immigrants' access to their welfare systems may have been ill-founded. In theory, if excessive welfare use and a negative net contribution of A10 migrants to public finances were to be present anywhere, it ought to be in Sweden with its large welfare sector and equal access to welfare for these migrants. The only existing study whose results are directly comparable with the (static) results obtained in this study is the one by Dustmann et al. (2010), who estimate the static contribution of post EU-enlargement immigrants from the "A8" countries, i.e., the A10 countries less Cyprus and Malta, on UK finances. The net contribution they identify is more positive than the one identified in this study. This difference between outcomes in the two immigration countries could be expected for several reasons, and these

reasons also indicate what lessons could be drawn from the experiences of Sweden and the UK in other countries and other settings.

A first plausible reason for the difference is the difference in migrants' access to welfare. In the UK A10 immigrants had to pay a registration fee and access to important parts of the welfare system was delayed for one year (Dustmann et al., 2010). Although most migrants present in the sample of this study have stayed in Sweden for more than one year and hence would have had equal access to welfare also if they had instead migrated to the UK, we may expect that the differences in access also had selection effects that impact on the results. Migrants with a higher expected probability to become eligible for welfare already in the first year would have had relatively higher incentives to choose Sweden rather than the UK.

Similar reasoning applies to the difference in the amounts of wealth that are redistributed through the public sectors in Sweden and the UK respectively. According to the OECD online database, the sum of public and mandatory private social expenditure was 21.2% of GDP in 2007 in the UK, while in Sweden it was 27.7%. The corresponding figures for public social expenditure only were 20.4% and 27.3% respectively. The marginal tax wedge for a single worker earning the country's average wage was 40.6% in the UK and 63.4% in Sweden.[3] Plausibly these differences have migrant selection effects. Migrants expecting to earn higher income would have relatively more reason to go to the UK, while those expecting higher probabilities to be net receivers from the public sector would have relatively more reason to go to Sweden.

A final plausibly important factor is language. We would expect non-negligible numbers of potential emigrants to be proficient in English, and more or less no first-time emigrant to be proficient in Swedish. Emigrants more proficient in English should have relatively higher incentives to go to the UK. Their expected success – and hence their contribution to public finances – in the destination country should be higher compared with migrants not initially proficient in the language of the destination country.

In sum the comparison with the UK highlights the reasons to treat the Swedish results as a most negative bound of what other countries may have reason to expect from A10 migrants. In further generalizing these results to a prediction of the effects of free migration from poorer

[3] The marginal tax wedge definition includes both payroll taxes and received cash benefits. See stats.oecd.org for details.

to richer countries in general, further potentially important issues are income levels in the emigration countries and migration costs. Previous studies (Chiswick; 1978, 1999) have found that these factors have strong selection effects on average skill levels of migrants. If income levels are lower than in the emigration countries included in this study, migrants' skills may be lower and there may be reason to expect more negative results. However if migration costs are higher, e.g., because migration distances are longer, only relatively more skilled people with higher expected income gains from migration will find it worth migrating and the results may instead be more positive.

References

Barčevius, Egidijus, Krystyna Iglicka, Daiva Repečkaitė, and Dovilė Žvalionytė (2012), *Labour mobility within the EU: The impact of return migration*, European Foundation for the Improvement of Living and Working Conditions, Dublin, Ireland

Barrett, Alan (2010), ”EU enlargement and Ireland’s labor market”, in Martin Kahanec and Klaus F. Zimmermann (eds), *EU labor markets after post-enlargment migration*, Springer, Berlin Heidelberg, and IZA, Bonn

Borgquist, Lars, David Andersson, Sven Engström and Henrik Magnusson (2010), ”Primärvårdsersättning efter socioekonomi eller sjukdomsbörda”, *Läkartidningen*, 107: 2158-2163

Borjas, George (1999), ”Immigration and welfare magnets”, *Journal of Labor Economics*, 17: 607-637

Chiswick, Barry (1978), “The effect of Americanization on the earnings of foreign-born men”, *Journal of Political Economy*, 86: 897-921

Chiswick, Barry (1999), “Immigration policy and immigrant quality”, *American Economic Review*, 89: 181-185

Dustmann, Christian, Tommaso Frattini and Caroline Halls (2010), “Assessing the fiscal costs and benefits of A8 migration to the UK”, *Fiscal Studies*, 31: 1-41

Edin, Per-Anders and Peter Fredriksson (2000), *LINDA – Longitudinal INdividual DAta for Sweden*, Working paper 2000:19, Department of Economics, Uppsala University

Ekberg, Jan (2009), *Invandringen och de offentliga finanserna*, Rapport till expertgruppen för studier i offentlig ekonomi 2009:3, Finansdepartementet

Emerek, Ruth, and Anja Kirkeby (2013), *Eastern European migrant workers and the Danish labour market*, unpublished project paper, Center for the Study of Migration and Diversity, Aalborg University, Denmark

Friedman, Milton (1977), *What is America?*, Lecture given at the University of Chicago, viewed September 20, 2011 at URL: http://www.youtube.com/watch?v=3eyJIbSgdSE

Gerdes, Christer and Eskil Wadensjö (2010), “Post-enlargment migration and labor market impact in Sweden”, in Martin Kahanec and Klaus F. Zimmermann (eds), *EU labor markets after post-enlargment migration*, Springer, Berlin Heidelberg, and IZA, Bonn

Hammarstedt, Mats, and Ghazi Shukur (2006), “Immigrants’ relative earnings in Sweden – a cohort analysis”, *LABOUR*, 20: 285-323

Lee, Ronald D., and Timothy W. Miller (1998), “The current fiscal impact of immigrants: Beyond the immigrant household”, in James P. Smith and Barry Edmonston (eds), *The immigration debate*, National Academy Press, Washington DC

1997, 2000

Razin, Assaf, Efraim Sadka and Benjarong Suwankiri (2011), *Migration and the welfare state: Political-economy policy formation*, MIT Press

Rowthorn, Robert (2008), "The fiscal impact of immigration on the advanced economies", *Oxford Review of Economic Policy*, 24: 560-580

Socialstyrelsen (2008), *Äldre – vård och omsorg andra halvåret 2008*

Sveriges Kommuner och Landsting (2007), *Vad kostar verksamheten i din kommun?*

Tables

Table 1. Purchasing power adjusted GNI per capita and unemployment rates in 2003

Country group	GNI per capita (PPP $)	Unemployment rate
EU15	27,800	8.0%
A10	13,300	14.9%

Notes: Numbers are averaged over total populations, not countries. Data source: World Development Indicators (the World Bank).

Table 2. Swedish yearly immigration from A10 and EU15 countries 2003-2007

Year	N.o. A10 immigrants	‰ of home population	N.o. EU 15 immigrants	‰ of home population
2003	2,381	0.03	19,005	0.05
2004	4,232	0.06	18,661	0.05
2005	5,559	0.07	19,403	0.05
2006	9,178	0.12	23,690	0.06
2007	10,767	0.14	25,065	0.07

Notes: Data source: Statistics Sweden. A10 immigration numbers prior to 2003 were similar to the 2003 numbers.

Table 3. Distributions of income in SEK from work and business, ages 25-64

	Total population	A10 immigrants	EU15 immigrants
Mean	267,011	151,917	244,880
10^{th} percentile	84,700	0	0
25^{th} percentile	171,200	39,450	19,200
Median	249,000	139,250	168,700
75^{th} percentile	326,500	225,650	305,600
90^{th} percentile	435,300	300,000	508,100
Observations	161,034	2,108	2,841

Table 4. Revenues and costs and their importance for public finances

	Share of public sector spending (%)	Amount per capita (SEK)	Amount per A10 immigrant (SEK)	Amount per EU15 immigrant (SEK)
Revenues	**83.7**	**140,117**	**83,988**	**134,349**
--Direct taxes	35.3	59,144	28,924	58,522
--Payroll taxes	34.8	58,205	37,220	55,080
--Value-added taxes	12.9	21,577	17,803	20,615
--Student support repayment	0.7	1,192	41	132
Costs	**62.2**	**104,093**	**46,677**	**50,967**
--Transfers	**33.1**	**55,318**	**16,102**	**16,841**
----Sickness support	1.8	3,020	1,275	1,355
----Public pensions	19.3	32,332	358	3,390
----Parental leave support	1.6	2,680	4,317	3,044
----Unemployment support	1.7	2,772	1,539	1,302
----Early retirement	3.7	6,140	224	1,186
----Basic social assistance	0.6	929	1,202	935
----Other family support	2.8	4,706	4,435	3,096
----Other transfers	0.2	302	199	50
----Student support	1.5	2,436	2,553	2,482
--Education and care	**29.2**	**48,775**	**30,575**	**34,127**
----Child care	3.6	5,947	7,180	9,651
----Schooling	7.1	11,938	12,109	11,656
----Hospital care	9.4	15,717	10,478	11,395
----Elderly care	6.6	10,992	219	1,007
----Disability care	2.5	4,181	589	418
Revenues minus Costs		**36,024**	**37,311**	**83,382**
--whereof public sector surplus		11,400	11,400	11,400

Note: N=309,502. Numbers are averaged over the total population of all ages.

Table 5. Average net contributions of A10 and EU15 immigrants to public finances

	A10		EU15	
	Contribution (SEK)	T value	Contribution (SEK)	T value
Revenues	**-56,129***	**35.1**	**-5,768**	**1.6**
--Direct taxes	-30,220*	35.0	-622	0.3
--Payroll taxes	-20,985*	29.2	-3,124	2.2
--Value-added taxes	-3,774*	26.1	-961*	6.0
--Student support repayment	-1,150*	73.9	-1,060*	45.3
Costs	**+57,417***	**71.5**	**+53,126***	**67.6**
--Transfers	**+39,217***	**71.8**	**+38,477***	**64.1**
----Sickness support	+1,745*	9.8	+1,665*	9.6
----Public pensions	+31,975*	180.6	+28,942*	73.8
----Parental leave support	-1,638*	6.1	-365	1.8
----Unemployment support	+1,233*	7.0	+1,470*	11.4
----Early retirement	+5,916*	67.0	+4,954*	31.2
----Basic social assistance	-273	1.8	-6	0.0
----Other family support	+272	1.5	+1,610*	13.2
----Other transfers	+104	1.4	+252*	8.8
----Student support	-117	0.6	-46	0.2
--Education and care	**+18,200***	**27.2**	**+14,649***	**26.0**
----Child care	-1,233*	3.4	-3,704*	11.0
----Schooling	-170	0.4	+283	0.7
----Hospital care	+5,239*	97.3	+4,322*	59.3
----Elderly care	+10,772*	117.0	+9,985*	68.6
----Disability care	+3,592*	11.3	+3,762*	16.1
Net contribution	**+1,288**	**0.7**	**+47,359***	**12.2**
--Excluding financial surplus	+12,688*	6.4	+58,759*	15.1
--Excluding defense costs	+5,997*	3.0	+63,468*	13.4
--Excluding all non-individual-specific net costs	+25,912*	13.1	+71,983*	18.6
Observations	3,057		4,306	

Notes: The table shows difference in means estimates of A10 and total population values. Numbers are averaged over the total populations of all ages. A positive sign indicates either larger public revenue or smaller public cost. Significance at 1% level indicated by *. T values are finite-sample corrected and assume unequal variances between population groups.

Table 6. Average net contribution for 2004-2005 A10 immigrants only

	Contribution (SEK)	T value
--Sickness support	+1,132*	3.6
--Parental leave support	-2,923*	6.4
--Unemployment support	+264	0.8
Observations	1,539	

Notes: The table shows difference in means estimates of A10 and total population values. Numbers are averaged over the total populations of all ages. A positive sign indicates either larger public revenue or smaller public cost. Significance at 1% level indicated by *. T values are finite-sample corrected and assume unequal variances between population groups.

Table 7. Estimated lifetime contribution (SEK) of average A10 immigrant to public finances

	Interest rate	
	3%	4%
Defense is not a public good		
Benchmark	–150,600	–72,028
+ Income assimilation 1% / year first 5 years	–88,142	–16,949
+ Income assimilation 2% / year first 5 years	–23,314	+40,206
+ Return migration 5% / year first 5 years	–125,137	–73,747
Defense is a public good		
Benchmark	–26,961	+31,277
+ Income assimilation 1% / year first 5 years	+35,497	+86,356
+ Income assimilation 2% / year first 5 years	+100,325	+143,511
+ Return migration 5% / year first 5 years	–26,447	+9,169

Figures

Figure 1. Age distributions of total population and immigrant groups