Are Immigrants Really Attracted to the Welfare State? Evidence from the OECD Countries

Authors:

Aaron L. Jackson, PhD
Department of Economics
Bentley University
175 Forest Street
Waltham, MA 02452-4705
Ph: 781-891-3483
E-mail:ajackson@bentley.edu.
Fax: 781-891-2896

Dave Ortmeyer, PhD
Department of Economics
Bentley University
175 Forest Street
Waltham, MA 02452-4705
Ph: 781-891-2857
E-mail:dortmeyer@bentley.edu.
Fax: 781-891-2896

Michael A. Quinn, PhD [1]
Department of Economics
Bentley University
175 Forest Street
Waltham, MA 02452-4705
Ph: 781-891-2938
E-mail:mquinn@bentley.edu.
Fax: 781-891-2896

Status: Under review at *Demography.*

[1] Corresponding author

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Abstract

Developed countries have been faced with the dual phenomena of rising immigration and growing budget deficits. There has been a debate as to whether lower educated immigrants are attracted to countries with high levels of welfare benefits. This is especially important for Western European countries that are facing the lifting of East-West immigration restrictions after 2011. Using data from the World Bank, we examine the impact of unemployment, health, education, welfare and retirement benefits on both the size and educational levels of immigration flows. Evidence is found that whether or not a country's policies are attracting highly educated immigrants goes beyond the issue of the "welfare state". Immigrants are making important distinctions between the different benefits provided by a receiving country's government. Welfare, health and education spending all have a positive impact on the educational level of the immigration flow while unemployment benefits are found to be insignificant. Retirement benefits/taxes and income taxes adversely affect the educational level of immigration flows. This is consistent with the hypothesis that benefits with the shortest time to eligibility have the most positive impact on attracting highly educated immigrants. This implies that governments wanting to attract more highly educated immigrants (versus low-skilled) should focus on policies such as health and education and be concerned about overly burdensome tax regimes.

Keywords: Migration, European Union, Fiscal, Welfare.
JEL codes: J1, J6, O1, I0

I. Introduction and Background

Immigration is a major economic and political issue for developed countries around the world. Globally, the number of international migrants has been increasing for decades, more than doubling over the period of 1980-2005 (World Bank, 2008). This is a crucial issue for the governments of developed countries, as they are the destinations for approximately 60% of international migrants (World Bank, 2008). The expansion of the European Union and the upcoming lifting of East-West restrictions on labor movements have made migration a priority within the European Union.

Immigration is consistently a serious concern among voters and policy makers in developed countries. Allensbach Institute and Eurobarometer polls have found that 46 percent of Germans and 35% of British report increased immigration as their greatest concern (Eurobarometer, 2008; Martin, 2005). There is also concern in the United States, with Gallup polls finding that 39% of the population supports decreasing immigration while only 18% believes it should be increased (Gallup, 2008).

Worries from individuals about the impact of increased migration stem primarily from labor market effects and the strain on government budgets. Individuals are concerned with the negative impacts that increased migration flows may have on the wages and employment prospects of native workers in particular labor market segments. However, the issue of government budgets impacts all citizens. In particular, there is concern that if a country attracts a large percentage of lower educated immigrants, they will consume a disproportionate percentage of government services thereby increasing the tax burden on domestic workers. A recent Gallup poll found that 63% of Americans believe that immigrants cost the government too much money (Gallup, 2008). This is particularly striking as the United States has a relatively small government sector and ungenerous benefits as compared with most Western European countries. Thus, policy issues relate not only to the size of migration flows but also to the composition of those flows.

The relationship between immigrants and governments budgets may be bidirectional since immigrants may both impact *and* be impacted by government budgets. Tiebout (1956) proposed that individuals consider governmental tax and social spending policies when they make migration decisions. Thus, one would expect individuals to choose to locate in areas where government policies match their preferences. Of course, these fiscal factors must be

considered alongside other migration variables such as wage and unemployment differences, distance and network effects. There are many different theoretical approaches to modeling migration that have appeared in the literature: neoclassical economics, new economics theories, dual labor market theory, social capital theory, world systems theory and others. The goal of this section is not to exhaustively survey this literature, but rather to focus on relevant research linking government spending/benefits and migration.[2] One of the main ideas in this literature is that the migration decision is influenced by differences in an individual's preferences regarding the spending and tax priorities of governments. This paper (and its related literature) could be viewed as being based in the areas of neoclassical economics and the new economics of migration.

A significant body of research has been conducted which examines the impact of fiscal factors on domestic migration within the United States and Canada. Since a full review of this literature is beyond the scope of this paper, readers are directed to Dowding and John (1994) for a survey of the empirical literature on the Tiebout hypothesis. Some examples of the empirical Tiebout research includes papers such as Buchanan and Goetz (1972), Cebula and Karoglis (1986), Cushing (1993), Day (1992), Day and Winer (2001), Flatters et al. (1974), Koven and Shelley (1989), Ott and Shadbegian (1993), Shaw (1986) and Starrett (1980). This literature focuses on the impact of aggregate government spending variables (such as total education spending) and their impact on the number of immigrants which a country attracts.

More recent evidence that fiscal factors affect international migration include Liebig and Sousa-Poza (2006), who examine the Tiebout hypothesis using data from Switzerland. They find that immigrants' decisions on which communities to locate in are impacted by local tax rates. Twomey (1987) and Cuthbertson et al (1982) test the Tiebout hypothesis with data from

[2] Massey *et al* (1994) and Taylor and Yunez-Naude (1999) provide a good review of different migration theories.

different boroughs in the United Kingdom, and find that government spending has a significant impact on location decisions. Recent papers by Peridy (2006) and Karidis and Quinn (2006) examine the impact of fiscal factors on flows of immigrants into the European Union. Peridy (2006) focuses on health and education spending by the government.[3] Karidis and Quinn (2006) utilize the broader measure of social spending by governments but also include the impact of tax rates.

An area of research that focuses specifically on the role of government welfare benefits on immigration is commonly known as the "welfare magnet hypothesis". Studies in this literature examine whether individuals move to take advantage of better welfare benefits. Early work examining this idea in the context of the Tiebout hypothesis includes Brehm and Saving (1964), Cebula (1974), Dye (1990) and Pack (1973). Recent research from the labor economics literature tends to focus on the movements of welfare eligible populations in the United States and Canada. The empirical results as to whether or not the welfare magnet hypothesis holds have been mixed. Research such as Borjas (1999), Dodson (2001) and Enchautegui (1997) all found evidence of the welfare magnet phenomenon occurring in the United States. However, Kaushal (2005), Levine and Zimmerman (1999), and Zavodny (1997) utilized different samples within the United States and found no evidence of the welfare magnet hypothesis.

There is another area of migration research that focuses on the educational composition of migration flows. This literature, often termed "brain drain", examines the flows of highly educated immigrants from less to more developed countries. There is a substantial literature on the impact of "brain drain" on both the sending and receiving countries (for examples see Docquier, Faye and Pestieau, 2008; Fan and Stark, 2007; Lien and Wang, 2005; Yabuuchi and

[3] While Peridy's paper utilizes the term "welfare magnet", he tests health and education spending and does not use welfare spending in his analysis.

Chaudhuri, 2007). This research tends to focus on factors such as differential returns to education and other labor market factors as reasons for a higher/lower educated flow of immigrants (Borjas, Bronars, and Trejo, 1992; Chiswick 1999; Chiquiar and Hanson 2002; Hunt and Mueller, 2004). Recent work such as Docquier, Lohest and Marfouk (2007) has examined the impact of a country's openness and educational inequality on "brain drain" flows. To the best of our knowledge, the "brain drain" hypothesis has not been examined from the perspective of the Tiebout hypothesis.

The first contribution of our paper is to supplement the recent internationally oriented Tiebout hypothesis literature. Unlike previous research, this paper will examine both government spending priorities and specific programs (such as welfare, unemployment and retirement benefits) on international migration flows. These benefits have different eligibility timeframes. Research has shown that higher educated immigrants have shorter migration durations than lower educated immigrants (Dustmann and Weiss, 2007). Therefore, higher educated immigrants should place more value on government spending that has short term benefits for them. By testing this hypothesis, the paper further bridges the Tiebout hypothesis and "brain drain" literature by examining the impact of government spending programs on the educational composition of international migration flows. This paper also contributes to the literature by explicitly accounting for the endogeneity which is inherent in the two-way relationship between fiscal factors and migration flows. The analysis also includes the impact of factors commonly cited in the literature such as wage and unemployment differences, distance, network effects and previous colonial relationships. This comprehensive approach provides a more detailed examination of determinants which affect both the size and composition of

immigration flows and thereby allows governments to better construct policies to meet their economic, political, and social objectives.

II. Theoretical Model

Migrants make a decision to immigrate or not based on the expected wages in the host country versus home country, as well as any differences in public goods provision or social safety nets. Agents work and save in the first period, and in the second period, agents draw off of savings accumulated in the first period to consume in retirement, as well as retirement benefits and public goods provided by the host country.

For immigrant *i*, the decision to migrate or not depends on whether the utility of staying in the home country is greater than that of immigrating. Lifetime expected utility for agent *i* is given by

$$V_{i,t} = u_{i,t}(Y_{i,t}) + \rho u_{i,t+1}(Y_{i,t+1}) \quad (1)$$

where Y is aggregate goods consumption by each potential migrant, and $u(.)$ is an increasing concave function of Y. We assume for simplicity that migrants provide a fixed amount of labor services.

We assume for simplicity that private consumption goods and public goods are perfect substitutes, such that the two are additive as an argument of u, i.e. $Y_{i,t} = C_{i,t} + G_{i,t}$ where C is real consumption of private goods and G is real public goods consumed (we later decompose public goods into a welfare spending variable, P, and spending on combined health and education, H). In period two, agents consume private goods from savings accumulated while

working in period 1, as well as public goods consumption and any retirement benefits provided by the state. The parameter ρ represents a time discount factor.

Thus, the decision to migrate is a standard intertemporal utility maximization problem in which agents base their decision to move across the differences in benefits received now, as well as those expected to be received in the future. Expected income of each migrant for the first period is given by

$$I_{i,t} = \gamma_w(1 - \tau(w))w_{i,t} + \gamma_B B_{i,t} \quad (2)$$

where γ_w is the probability of earning wage w and $\tau(w)$ is the income tax rate, which is a function of wages. The γ_w term can be roughly interpreted as the inverse of the unemployment rate. In the event that the person does not find a job, $\gamma_B B_{i,t}$ represents the amount of expected unemployment compensation that can be drawn from the government, where γ_B is the probability of an immigrant receiving benefits B. The variable B also is meant to capture any informal income opportunities that migrants may have in lieu of or in addition to formal compensation. Consumption, income, and savings are related by the identity $C_{i,t} + S_{i,t} = I_{i,t}$, or

$$C_{i,t} + S_{i,t} = \gamma_w(1 - \tau(w))w_{i,t} + \gamma_B B_{i,t} \quad (3)$$

where $S_{i,t}$ is the amount of savings in period t. Expected consumption in period $t+1$ is then given by

$$C_{i,t+1} = S_{i,t} + \gamma_R R_{i,t+1} \quad (4)$$

That is, expected consumption in $t+1$ depends on accumulated savings from the working years, as well as any expected (retirement) benefits provided either by the state or private employers. Again γ_R is the probability that migrants will be able to draw retirement benefits.

Rearranging and substituting (3) and (4), lifetime utility in (1) is then given by:

$$V_{i,t} = u_{i,t}\{\gamma_w (1 - \tau(w))w_{i,t} + \gamma_B B_{i,t} - S_{i,t} + \gamma_G G_{i,t}\} + \rho u_{i,t+1}(S_{i,t} + \gamma_R R_{i,t+1} + \gamma_G G_{i,t+1}). \quad (5)$$

Period t utility for migrant i is assumed to be an increasing, convex quadratic function of aggregate goods consumption, taking the following form

$$u_{i,t} = \delta Y_{i,t} - (\kappa/2)(Y_{i,t})^2. \quad (6)$$

Thus, agents choose $S_{i,t}$ (and hence implicitly C) to maximize (5), as all other variables are taken as given. Substituting (6) into (5) and solving for the utility maximizing amount of savings $S^*_{i,t}$ yields

$$S^*_{i,t} = [\gamma_w (1 - \tau(w))w_{i,t} + \gamma_B B_{i,t} + \gamma_G G_{i,t} + (\delta/\kappa)(\rho - 1) - \rho(\gamma_R R_{i,t+1} + \gamma_G G_{i,t+1})]/(1+\rho). \quad (7)$$

From (7) it can be shown that aggregate consumption of goods in time t and $t+1$ is given by

$$Y^*_{i,t} = \rho\Pi/(1+\rho) + \delta(1 - \rho)/(\kappa(1 + \rho)), \quad (8)$$

and

$$Y^*_{i,t+1} = \Pi/(1+\rho) - \delta(1-\rho)/(\kappa(1+\rho)), \quad (9)$$

where $\Pi \equiv \gamma_w (1-\tau(w))w_{i,t} + \gamma_B B_{i,t} + \gamma_R R_{i,t+1} + \gamma_G (G_{i,t} + G_{i,t+1})$. Thus, each agent's lifetime expected maximized utility is given as

$$V^*_i = \delta^2(1-\rho)^2/(2\kappa(1+\rho)) + 2\rho\delta\,\Pi/(1+\rho) - \kappa\rho\Pi^2/(2(1+\rho)). \quad (10)$$

Note that $u(.)' > 0$ as long as $Y < \delta/\kappa$, and $u(.)''$ is negative for all values of Y. This implies that for utility to be increasing in Y, the parameter κ must be sufficiently small relative to δ. Thus, for κ sufficiently small, the second order term $-\kappa\rho\Pi^2/(2(1+\rho))$ can be ignored. Assuming the preference parameters are constant for each individual, the first term $\delta^2(1-\rho)^2/(2\kappa(1+\rho))$ will not affect the decision to migrate, and therefore can be dropped.

Each agent's lifetime expected maximizing utility can then be expressed as

$$Z_i = \gamma_w (1-\tau(w))w_{i,t} + \gamma_B B_{i,t} + \gamma_R R_{i,t+1} + \gamma_G (G_{i,t} + G_{i,t+1}) \quad (11)$$

where $Z_i = (1+\rho)/(2\rho\delta)V^*_i$.

Letting superscript s denote the source country and superscript d denote the destination country of the potential migrant, agents then will choose to migrate whenever $Z^d_i > Z^s_i + X_i$ where X_i is a vector of variables representing both the direct costs of migrating (such as the distance from source to destination country), and indirect costs of migrating (such as former colony status, or current stocks of migrants in the destination from the source country).

Thus, taking into account social factors such as expected income, benefits, and other public good provisions, if the expected lifetime utility of the destination country is greater than that of the home country (net of migration costs), the agent will migrate. This condition can similarly be expressed as

$$(\gamma_B B^d_{i,t} - B^s_{i,t}) + \{\gamma_G (G^d_{i,t} + G^d_{i,t+1}) - (G^s_{i,t} + G^s_{i,t+1})\} + (\gamma_R R^d_{i,t} - R^s_{i,t})$$
$$+ (\gamma_w w^d_{i,t} - w^s_{i,t}) - [\gamma_w \tau^d_{i,t}(w) w^d_{i,t} - \tau^s_{i,t}(w) w^s_{i,t}] - X_i > 0 \quad (12)$$

This condition tells us that the decision to migrate hinges on the differences in the origin and destination countries between expected wages, taxes paid, unemployment benefits and secondary income, public goods provision while working, and retirement benefits and other public goods provision while not working.[4]

The theoretical model suggests several hypotheses:

(H1) Total migration flows should be negatively related to the cost of migration. This includes variables such as distance, colonial relationship and migrant stocks.

(H2) Total migration flows should be positively related to expected income gains. This incorporates the unemployment and wage difference variables.

(H3) Total migration flows should be positively related to the differential in government provided benefits (welfare, health, education, unemployment insurance, and retirement benefits).

(H4) Total migration flows should be negatively related to tax differentials.

(H5) The educational level of migration flows should be positively related to government benefits with the highest probability of receiving benefits (γ) for highly educated immigrants. If we assume that highly educated immigrants have shorter migration durations and/or better information about benefits eligibility then benefits with the most immediate eligibility such as health, education and welfare should be positively related to educational level of migration flows. Benefits with longer times to eligibility such as unemployment and retirement benefits may be less positive or even negatively related to educational level.

[4] The γ term is only necessary for the destination countries in Equation (12), as we assume that immigrants have full knowledge regarding employment prospects, government benefits and eligibility in their source country.

(H6) The educational level of migration flows should be negatively related to differentials in the progressivity of the tax system.

(H7) The educational level of migration flows should be negatively related to the cost of migration. This is assuming that immigrants with higher educational levels will have more resources to pay the costs of migration (X_i).

III. Data and Variables

The data set is cross-sectional in nature, using observations from the year 2000. Data availability for the education levels of migration flows dictated the choice of year and made a panel data approach infeasible. There are 19 immigrant receiving (destination) countries and 91 sending (source) countries resulting in 1,619 observations, which is quite sufficient for reliable inferences.[5]

There are two main dependent variables of interest in the analysis: total number of immigrants between country pairs, and the average educational level of these immigrants. Both of these variables are taken from the Docquier and Marfouk (2004) World Bank data set. The size of the immigrant flows from source to destination country is denoted as M_{sd}, and is in log form.[6] The average educational level of the flow from source to destination country is denoted as E_{sd} and is measured as the average number of years of schooling of migrants flowing from source to destination country.

Due to data constraints, the fiscal factors are only available for the destination countries.[7] The government spending variables (denoted as G in the theoretical model) consist of two variables: welfare spending (P_d) and combined health and education spending (H_d). Total

[5] The destination countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.
[6] We converted to log form to scale the variable.
[7] Note that the theoretical model has fiscal variables entering as differences between destination and source countries. However, these fiscal variables are unavailable for many developing countries, making the use of source country fiscal variables unfeasible. Variation is captured in these variables across migration destinations. Difference variables are available and included for many of the non-fiscal variables.

welfare spending is defined as a percentage of government expenditures and comes from the OECD's *Stat Extracts* (OECD, 2008). Welfare spending includes such programs as old age assistance, survivor assistance, housing, day care, training, social assistance, income maintenance, etc. The combined health and education spending is defined as a percentage of GDP and is taken from World Development Indictors (World Bank, 2008).

In addition to these spending variables, there are three other fiscal factor variables that impact individuals. The percentage of an unemployed individual's income replaced by the government (denoted as B_d) is from Standing (2000) and is based on calculations from the *OECD Benefits and Work Incentives Database*. The percentage of an individual's income that is replaced by government retirement/pension benefits is taken from the *OECD Pensions at a Glance*, and is denoted as R_d. Income tax rates (τ_d) are from World Development Indicators and are defined as the highest marginal tax rates on individuals measured as percentages.

For the analysis of total migration flows (M_{sd}), a variable was defined to capture the interaction between unemployment benefits and the average educational level of the migration flow. A theoretical model created by Heitmueller (2005) suggests that individuals with higher educational levels may be more risk averse and therefore prefer systems with more generous unemployment benefits (as a form of insurance). This interaction term is included as a test of his hypothesis.

There are several other control variables in the analysis, included in vector X_{sd}.[8] Wages across countries are from Freeman and Oostendorp (2000), and are based on data from the International Labour Organization surveys. Wages are defined as average monthly wages for male workers across multiple occupations and are adjusted for purchasing power parity

[8] Although wages are separated from the direct and indirect costs which defined the vector X_{sd} in the theory section, to simplify the presentation of our estimated model we will lump the wage variable into the vector X_{sd}.

differences. Since the wage data was compiled from occupational surveys, it is considered to be a more reliable indicator of individuals' expected wages than a broad GDP per capita variable might be. This variable is constructed as the difference between the migration destination and source countries.[9]

Variables for inequality (Gini coefficient), population aged 0-14 in 1985, life expectancy, population (source country) and unemployment rates are all taken from World Development Indicators. Unemployment rates, life expectancies and lagged population aged 0-14 are constructed as differences between destination and source countries. The population aged 0-14 in 1985 reflects the domestic population aged 15-29 in year 2000 as a percentage of the total population. The Gini coefficient is only available for destination countries. The stock of source country migrants in the destination country (converted to log form for scaling) is taken from the *OECD Trends in International Migration* (OECD, 2002). A dummy variable is constructed to equal 1 if there is a former or current colonial relationship, and is obtained from the CIA World Factbook. Distance between countries is from the CEPII database and is measured in miles converted to logs (CEPII, 2008). The index of economic freedom in the destination country variable is compiled by the Heritage Foundation (Heritage, 2008).

There are six instrumental variables used in the analysis. These variables are used in the instrumental variable estimations discussed in the methodology section. The first instrument is the dependency ratio, which is the percentage of the population aged 0-14 and over 65 divided by the total population. The second variable is the income share held by the poorest 10% of the population. Both of these variables are from World Development Indicators. The other four instrumental variables are taken from the International Social Survey and Eurobarometer Surveys (ISSP, 1996; Eurobarometer, 1993). These variables are created by combining

[9] To convert the wage difference data to logs, we had to first normalize it since some differences were negative.

equivalent questions across the two surveys. The four variables from these surveys capture respondents' views on the government's responsibility to provide health care for all citizens, care and support for the elderly, adequate housing, and free education for all its citizens.

Descriptive statistics for the variables of interest are provided in Table 1 below.

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Migration Flow (log)	5.06	3.64	0.00	15.67
Average Education Level (years)	11.83	1.72	6.64	15.79
Colonial Relationship	0.03	0.17	0.00	1.00
Distance (log miles)	8.07	0.85	3.58	9.37
Migrant Stock (log)	6.35	3.01	0.00	16.05
Dest. Freedom	69.68	6.28	57.40	80.90
Wage Difference (log)	8.48	0.34	0.00	8.94
Youth Population Difference (%)	-0.15	0.10	-0.33	0.13
Dest. Welfare Spending (%)	0.48	0.06	0.36	0.58
Dest Health/Educ Spending (%)	0.12	0.02	0.08	0.15
Dest. Income Tax (%)	0.46	0.07	0.29	0.59
Unemployment Rate Difference	-6.12	12.00	-82.70	13.10
Dest. Unemployment Compensation (%)	0.32	0.11	0.13	0.66
Dest. Gini	32.06	4.41	24.70	40.81
Source Population	15.65	1.91	10.70	20.96
Dest. Retirement Compensation (%)	0.75	0.15	0.47	1.16
Instruments				
Income share of lowest 10%	0.03	0.01	0.02	0.04
Dependency Ratio	0.50	0.03	0.46	0.55
Elderly Survey	0.49	0.31	0.00	1.00
Housing Survey	0.47	0.30	0.00	1.00
Health Survey	0.32	0.30	0.00	1.00
Education Survey	0.42	0.25	0.00	0.86

Variable Predictions for the Size of Migration Flow Analysis (M_{sd})

Our model and the literature provide predictions for the vector of variables X_{sd} with respect to the size of the migration flow (M_{sd}). The migrant stocks variable attempts to capture the network effects of an existing base of migrants in the destination country and should be positively related to total migration flows. Network effects have been cited in numerous

migration studies including Curran and Rivero-Fuentes (2003), Massey (1990) and Stark (1991). Transportation costs are proxied by a distance variable which is measured as the distance (in miles) between the capitals of the migration source and destination countries and should be negatively related to total migration flows.

According to neoclassical expected wage theory, real wage differences between destination and source countries should be positively related to migration. Unemployment differences between destination and source countries should be negatively related. An unemployment rate perceived to be higher in the destination country than in the source country should discourage migration. Life expectancy differences and economic freedom should be positively related to migration, as these are both "draw" factors from an individual's perspective. The source country population variable should be positive, as countries with larger populations will send out more immigrants (in absolute terms). Countries with large youth populations experience demographic pressure which results in increased migration outflows, thus the lagged population aged 0-14 difference variable should be negative (Hatton and Williamson, 2002; Clark, Hatton, and Williamson, 2002). The Gini coefficient is expected to be negative, as inequality may be viewed negatively by prospective immigrants.

The fiscal variables are expected to have differential impacts tied to differences in the timing of migrant eligibility for the programs. For most destination countries, migrants can draw benefits almost immediately from government health and education programs. For many EU destination countries, the next most eligible benefit would be welfare.[10] After a longer period of time, immigrants may qualify for unemployment benefits, as eligibility usually requires a documented record of working in the country. The benefit with the longest eligibility time is

[10] It is more difficult for immigrants to receive welfare benefits in the United States than in Western Europe as most U.S. states deem immigrants ineligible. Some U.S. states also deny government health and education benefits to immigrants.

obviously retirement benefits. An immigrant would have to stay in a destination country for many years to qualify for retirement benefits. During this time, they would be subject to payroll taxes to fund retirement programs. Depending on the time horizon of immigrants, welfare, unemployment, and retirement benefits should have differential impacts and hence different signs. The most positive signs should go to benefits with the shortest eligibility waits. So, the variables from most positive to most negative should be health/education spending, welfare benefits, unemployment benefits and then retirement benefits. At the far end of the eligibility timeframe, retirement benefits is expected to have a negative sign, as it will represent nothing more than another form of taxation for most immigrants. It is clear that income tax rates will have an expected negative impact on the size of the migration flow.

Variable Predictions for the Educational Level Analysis (E_{sd})

It is predicted that the cost of migration will be positively related to the educational level of the migration flow. Individuals with more resources and earnings capacities can afford to undertake more difficult/expensive migrations. Therefore, distance is expected to be positive and both colony and migrant stocks are expected to be negative. The economic freedom variable is expected to be positive as migrants with higher educational levels have the most to gain from a more openly capitalistic system. In a similar manner, inequality is expected to be positive, as higher educated immigrants have more to gain from an unequal system than would lower educated immigrants. There are no a priori expectations for the wage, unemployment, birthrate difference, and population variables. There is a weak expectation that the life expectancy difference will be positive, reflecting a greater importance for quality of life issues for higher versus lower educated immigrants.

The literature has predictions regarding the impact of the fiscal variables. The welfare magnet hypothesis predicts that welfare benefits will be negatively related to education level as lower educated immigrants would be more likely to collect these benefits. Theoretical work by Heitmueller (2005) indicates that unemployment benefits should be negatively related to educational level, due to risk aversion rising with level of education. In terms of health and education spending, it could be argued that higher educated immigrants will place more value on high quality health and educational systems for their families. However, a counter-argument could be made that higher educated immigrants have more ability (than lower educated immigrants) to finance private health and education services.

Our theoretical model has different predictions for the fiscal variables. The time horizon of immigrants is asserted to vary based on educational level. This is also consistent with the previous research discussed in the literature review which has found that higher educated immigrants have shorter migration stays (than immigrants with less education). Therefore, the impact of government programs on the educational level of the migration flow should be strongest for programs that have the most immediate eligibility and benefits. According to this hypothesis, health and education spending should have the most positive impact on the educational level of the immigration flow. The next strongest impact should come from welfare and then unemployment benefits. Retirement benefits should have a negative impact on the educational level as relatively few highly educated immigrants will stay long enough in the destination to collect benefits but they will have to pay the corresponding payroll taxes. Also, income tax rates should be negatively related to the educational level of the migration flow. This is predicted by our theoretical model, as higher educated immigrants earn more and will therefore be paying higher tax rates.

IV. Empirical Methodology

The hypotheses from the previous section are tested using an instrumental variables methodology. This is implemented in both two-equation (single endogenous regressor) and three-equation (two endogenous regressors) models. This allows us to compare the different two equation approaches with each other and with a more comprehensive three equation system. The first two-equation system is analogous to a welfare magnet approach, considering welfare benefits as an endogenous variable but excluding overall government health and education spending (as this is also endogenous). The second two-equation system is similar to a fiscal factors approach (see Peridy, 2006). This employs government health and education spending as endogenous but excludes welfare benefits. The three equation system combines both of these approaches, accounting for the endogeneity and impact of both welfare benefits and health/education spending. There are separate analyses for the number of immigrants and the average educational level of the flow. This section will discuss the two-stage least squares methodology, endogeneity and the instruments.

Two- Stage Least Squares (2SLS) – Single Endogenous Regressor

In analyzing the impact of fiscal factors on the dependent variables of interest, the first approach one might take would be an Ordinary Least Squares (OLS) regression. An OLS approach assumes that all regressors are exogenous; however, this is unlikely to be the case in our study. Specifically, there are *a priori* reasons to suspect that welfare spending and/or health and education spending are endogenous. They not only impact migration flows and average educational levels of migrants, but are also impacted by these variables. We test this assertion using the Hausman-Wu test for endogeneity, which is a three-step procedure (Davidson and

MacKinnon, 1993). The first step involves identifying the regressor(s) suspected to be endogenous. Next, a regression is run with the suspected endogenous variable as the dependent variable. The predicted residuals from this regression are then used as an independent variable in the original equation. If the coefficient on the residuals variable is significant, then the variable is likely endogenous. Our results show the Hausman-Wu test rejects the null hypothesis of exogeneity with respect to welfare spending and health/education spending for both total flows and education levels.[11] Therefore, our *a priori* expectations are statistically supported and an instrumental variable (2SLS) approach is required.

Two-stage least squares solves the problem of endogenous regressors by creating an instrumental variable for each endogenous regressor in the primary equation that is uncorrelated with the error term. The instrumental variables are fitted values from a first-stage regression of the endogenous variable on all included exogenous variables in the primary equation plus additional identifying exogenous variables (instruments). To ensure that the fitted values are not correlated with the error term, the instruments must not be correlated with the error term. To properly identify the equations, the instruments need to be correlated with the endogenous regressor but not with the dependent variable from the primary equation (exclusion restrictions).

Considering the endogenous regressor welfare spending (*P)*, the equation

$$P_d = \beta_0 + \beta_1 X_{sd} + \beta_2 B_d + \beta_3 R_d + \beta_4 I_d + \varepsilon \qquad (13a)$$

is estimated using OLS with robust standard errors. The vector of variables X_{sd} is as defined in the previous section.[12] The variables B_d, R_d, and I_d refer to the unemployment benefits variable, retirement benefits variable and instruments, respectively. The instrumental variables in this

[11] The Hausman-Wu test rejects the null of exogeneity with a p-value of 0.00 for both welfare spending and health/education spending for both dependent variables M_{sd} and E_{sd}.

[12] Note that fiscal variables such as *P* and *H*, *B*, and *R* are available only for destination countries, hence the *d* subscript. This is also true of the instruments (*I*). The vector *X* of control variables also contains some variables that are only available for destination countries. Others are differences between values in source and destination countries. Still others pertain to source countries. For convenience we subscript the *X* variable with *sd*.

equation are the income share of the poorest 10% of the population, the survey question on elder care, and the dependency ratio (percentage of the population aged 65 and over). The predicted values of P_d, denoted as $\hat{P}_d$, are calculated from the estimates of equation (13a). The $\hat{P}_d$ variable is then included in the M_{sd} regression instead of P_d. So the second stage equation is

$$M_{sd} = \delta_0 + \delta_1 X_{sd} + \delta_2 \hat{P}_d + \delta_3 B_d + \delta_4 R_d + \mu \qquad (13b)$$

This regression is not biased (as an OLS estimation of Equation 13b would be) because $\hat{P}_d$ is not correlated with the error term.

Empirically, our choice of instruments seems reasonable. The instrument are jointly significant (as determined by an F-test, p-value=0.00) in the first stage regression with welfare spending as the dependent variable. That is, they are correlated with the endogenous regressor (P_d). Also, it is reasonable to assume that the instruments (e.g. dependency ratio, survey results on elder care) are not correlated with migration flows (M_{sd}), the dependent variable. This justification needs to be made on economic grounds since we are dealing with an endogenous explanatory variable (Wooldridge, 2002). The most widely accepted empirical test on overidentification is the Sargan test. The null hypothesis of the Sargan test is that the model estimated with all the instruments differs by only sampling errors when compared to the model with only one instrument. Rejecting the null hypothesis is evidence that the instruments are suspect. The Hausman statistic produced by the test fails to reject the null hypothesis of instrument validity with a p-value of 0.40. All first stage regression results are in the Appendix.

There is a similar issue with estimating the impact of health and education spending (H) on total migration flows (M_{sd}). For the 2SLS with health and education spending, the following equations are estimated:

$$H_d = \alpha_0 + \alpha_1 X_{sd} + \alpha_2 B_d + \alpha_3 R_d + \alpha_4 I_d + \varepsilon' \quad (14a)$$

$$M_{sd} = \phi_0 + \phi_1 X_{sd} + \phi_2 \hat{H}_d + \phi_2 B_d + \phi_3 R_d + \mu \quad (14b)$$

The first stage equation (14a) estimates health and education spending using the instruments from the education and housing survey. Both of these factors should impact a country's health and education spending but not be directly related to the size of immigration flows entering the country. Empirically, these instruments are significant in a joint F-test and also pass the Sargan overidentification test. Equation (14a) provides a predicted value $\hat{H}_d$ which is used in equation (14b) (instead of H_d) so the regression is unbiased.

This two-stage least squares approach is also used when estimating regressions with educational level of the flow (E_{sd}) as the dependent variable. The equations for analyzing fiscal factors including welfare spending (P_d) are:

$$P_d = \beta_0 + \beta_1 X_{sd} + \beta_2 B_d + \beta_3 R_d + \beta_4 I_d + \varepsilon \quad (15a)$$

$$E_{sd} = \delta_0 + \delta_1 X_{sd} + \delta_2 B_d + \delta_3 \hat{P}_d + \delta_4 R_d + \mu' \quad (15b)$$

The instruments in this equation are the education and elderly survey variables. Both of these variables reflect a country's view on providing services for its citizens and should thus impact welfare spending. However, neither variable should theoretically directly impact the educational level of the migration flow. These instruments are significant in a joint F-test and also pass the Sargan overidentification test.

The equations for analyzing fiscal factors including health and education spending (H_d) are:

$$H_d = \alpha_0 + \alpha_1 X_{sd} + \alpha_2 B_d + \alpha_3 R_d + \alpha_4 I_d + \varepsilon' \quad (16a)$$

$$E_{sd} = \delta_0 + \delta_1 X_{sd} + \delta_2 B_d + \delta_3 \hat{H}_d + \delta_4 R_d + \mu' \quad (16b)$$

The instruments in this case are the education and health survey variables. It is obvious that these should impact a country's health and education spending. Also, these should not directly impact the educational composition of immigrant flows. These instruments are significant in a joint F-test and also pass the Sargan overidentification test.

Estimating a Three-Equation System

A two-stage least squares approach allows for the handling of a single endogenous regressor and allows us to assess the validity of the endogeneity assumption and proper choice of instruments. However, we need to estimate a system of equations where both welfare spending *(P_d)* and health/education spending *(H_d)* are treated as endogenous.[13]

In the three-stage least squares approach, we robustly estimate the OLS instrument equations for welfare and the health and education spending regression for migration flows separately, equations (13a) and (14a), as was done in each of the two-stage least squares analyses. The predicted values $\hat{P}_d$ and $\hat{H}_d$ are then included in the migration flows equation. One important issue when using such an approach is to determine whether the error terms are correlated across the three equations. If they are, then efficiency gains are possible by taking cross correlations into account in the estimation method. If they are not, then 3SLS is equivalent to a multiple equation application of 2SLS. An examination of the residuals from the three equations suggests that they are not correlated and thus we can assume the covariance matrix of the error terms is an identity matrix. Thus, the system is run as a 2SLS system with two

[13] This is accomplished through using Stata's reg3 command with the 2sls option specified.

instrument equations (i.e. the error terms in equations (17a) and (17b) are treated as uncorrelated). The three equations are:

$$P_d = \beta_0 + \beta_1 X_{sd} + \beta_2 B_d + \beta_3 R_d + \beta_4 I_d + \varepsilon \quad (17a)$$

$$H_d = \alpha_0 + \alpha_1 X_{sd} + \alpha_2 B_d + \alpha_3 R_d + \alpha_4 I_d + \varepsilon' \quad (17b)$$

$$M_{sd} = \delta_0 + \delta_1 X_{sd} + \delta_2 \hat{P}_d + \delta_3 \hat{H}_d + \delta_4 R_d + \delta_5 B_d + \mu' \quad (17c)$$

A similar three equation system is run with educational levels of the migration flow (E) as the dependent variable of interest. The error terms in the two instrument equations are also found to be uncorrelated in this case. The system of equations is:

$$P_d = \beta_0 + \beta_1 X_{sd} + \beta_2 B_d + \beta_3 R_d + \beta_4 I_d + \varepsilon \quad (18a)$$

$$H_d = \alpha_0 + \alpha_1 X_{sd} + \alpha_2 B_d + \alpha_3 R_d + \alpha_4 I_d + \varepsilon' \quad (18b)$$

$$E_{sd} = \delta_0 + \delta_1 X_{sd} + \delta_2 \hat{P}_d + \delta_3 \hat{H}_d + \delta_4 R_d + \delta_5 B_d + \mu' \quad (18c)$$

V. Results

Discussion of the results will focus on the three-equation systems, as this is the specification which properly accounts for issues of endogeneity. The two-equation systems are included for the purposes of showing how some results can change significantly if one does not utilize the comprehensive three equation model. We first discuss results for the total migration flows (M_{sd}) analyses from Table 2, and then analyze results of the educational level of migrant flows (E_{sd}) from Table 3.

Results indicate that fiscal factors do have a significant impact on total migration flows (M_{sd}). Income taxes and retirement benefits are both negative and significant. As expected, higher income tax rates in the destination country reduce expected disposable income and thus create a disincentive to migrate. The negative sign on retirement benefits may seem

counterintuitive; however, since most immigrants will not be in a destination country long enough to collect these benefits, the retirement benefits variable essentially represents a form of taxation. The health/education spending variable is positive and significant, as expected. The welfare benefits variable is also positive, but is not significant. This suggests that health/education spending has a more significant impact on the migration decision than does welfare spending.

The unemployment benefits variable impacts migration flows both directly and indirectly via an interaction term with the educational level. The direct effect is positive and significant as one might expect. However, as educational levels rise, the impact of unemployment compensation on the migration decision diminishes (the interaction variable is negative and significant). This runs contrary to the view expressed in Heitmueller (2005). This is consistent, however, with the view that higher educated immigrants are more likely to secure long-term employment and therefore be less dependent on these benefits. It is also consistent with the hypothesis that higher educated immigrants have better information regarding benefits eligibility than do lower educated immigrants and/or shorter migration timeframes (as unemployment benefits would require a longer timeframe to collect than would health/education spending).

Results for the control variables are generally as expected. Migrant stocks, colonial relationship, destination economic freedom, source population and wage differences are all positive and significant as expected. Unemployment differences and distance are negative and significant, also as predicted. On the other hand, the destination inequality variable is positive and significant which seems counterintuitive. Likewise, the youth population difference (positive and significant) is also a surprise. It suggests that the younger the population in the destination country (relative to the source country) the greater the migration flow. This runs

contrary to the view that a larger youth population in the source country is a "push" factor. The life expectancy difference variable is negative and significant, which is unexpected. This may reflect however, the idea that individuals in countries with very low life expectancies lack the resources for international migration to developed countries.

Results for Analyses of Educational Level of the Migration Flows (E_{sd})

Our results show that fiscal factors have a significant impact on the educational level of migration flows. The income tax variable is negative and significant, suggesting that tax differences have an impact on the educational composition of migration flows. The results also appear to support the hypothesis that higher educated immigrants may possess better information regarding the timeframe of receiving benefits and/or a shorter planned migration duration. Results from the three-equation analysis show the health/education spending and welfare benefits variables both positive and significant. The coefficient on the unemployment benefits variable is near zero and insignificant. The retirement benefits variable is negative and significant. This is consistent with the view that benefits have differential impacts on the migration decision depending on the eligibility time and hence the perceived probability that the migrant receives them. This result goes beyond contradicting the welfare magnet hypothesis, and instead suggests a more complex view of the hypothesis. Rather than expecting government benefits to have a negative impact on the educational levels of immigrant flows (welfare magnet), the impact is shown to vary based on the benefit being considered.

The results also suggest that the educational level of migration flows rises with the cost of migration. Migrant stocks and colonial status variables are both negative and significant. The more familiar the destination environment is, the lower the cost of migrating and the lower

educational level of migrants on average. The distance variable is positive and significant, which is expected. Immigrants with higher educational levels can expect a higher financial return (in absolute terms) from migration and will have more resources (pre-migration) which allows them to pay a higher cost of migration. The destination inequality variable is positive and significant, which is also logical as higher educated immigrants will seek economies that are "less flat" in terms of income distribution. The destination economic freedom variable is positive and strongly significant, also sensible since immigrants with higher education levels will have more to gain from more highly capitalistic systems.

Overall, the results suggest a strongly significant impact of government tax and spending policies both the size and composition of migration flows. Interestingly, policies such as generous unemployment benefits which increases the overall size of immigration flows has no significant impact on the educational level of such flows. Health and education spending, on the other hand, increases both the size and educational level of the migration flow. Contrary to the welfare magnet hypothesis, welfare spending is found to have a positive impact on the educational level of migration flows, after other government programs are taken into account.

VI. Conclusions

The impact of government spending programs on immigration has become a topic of increased research and policy interest. This paper's comprehensive model and accompanying empirical results can shed additional light upon this issue. The analysis shows the issue to be more complex than either a welfare magnet or fiscal factors approach. Concerning the size of the migration flow, there is evidence that certain government programs, such as health/education spending and unemployment compensation have strong, positive impacts on the migration flow

decision and that others such as welfare spending, retirement compensation and income taxes, have a weak, or strongly negative impact.

Concerning the average education level of the migrants, we show that certain government programs such as health, education, and welfare benefits actually have a positive impact on educational levels of flows. However, other government programs may be insignificant (unemployment benefits) or negatively impact educational levels (retirement benefits). These results suggest that immigrants are discriminating among government benefits. This also suggests that it is more than the size of a country's government (or whether it is a "welfare state") that matters in attracting immigrants of a desired educational level, the structure of benefits matters.

The paper's results also suggest that a government's policies may have differential impacts on the size and composition of flows. For example, lower income taxes may result in larger, higher educated flows. Generous unemployment benefits, on the other hand, may increase the size of flows while not impacting their composition. Interestingly, it appears that generous welfare programs do not have a significant impact on the overall size of immigration flows and actually have a positive impact on the educational level of the flow, once other government programs are properly taken into account.

These results are particularly important for countries in the European Union which face the removal of intra-EU immigration restrictions in 2011 (on the 10 countries that joined in 2004). As the European Union expands, it continues to let in poorer countries. The 10 Eastern European countries that joined the EU in 2004 were poorer than the 15 Western European members and Romania and Bulgaria who joined in 2007 were poorer than those who joined in 2004. Prospective member Turkey would be the most populous EU member, and its poorest. As

new, poorer countries join the EU and immigration restrictions are phased out, the impact of government programs on immigration flows will become an essential policy issue for governments in the European Union.

Table 2. 2SLS Estimates for Log Migration Flow (M)

Variables	Combined 2SLS	Welfare 2SLS	Health/Educ 2SLS
Dest. Welfare Spending (P)	0.0144	0.6000	-
	(.0103)	(.1675)***	-
Dest. Health/Educ Spending (H)	0.2981	-	1.0053
	(.0406)***	-	(.1916)***
Dest. Income Tax (T)	-0.0360	-0.2292	-0.0642
	(.0060)***	(.0603)***	(.0110)***
Dest. Unemployment Compensation (B)	4.6481	22.1176	9.6822
	(.8359)***	(5.8941)***	(1.7694)***
Interaction (B*EducLevel)	-0.5472	-1.1572	-0.9649
	(.0638)***	(.2620)***	(.1404)***
Dest. Retirement Compensation (R)	-0.0281	0.0111	-0.0500
	(.0037)***	(.0116)	(.0072)***
Colonial Relationship	1.3116	-0.6783	1.4616
	(.1666)***	(.6635)	(.2102)***
Distance	-0.1304	-0.0335	-0.1971
	(.0374)***	(.0848)	(.0508)***
Migrant Stock	0.5448	0.5315	0.4154
	(.0171)***	(.0396)***	(.0407)***
Dest. Freedom	0.0266	0.2262	0.0291
	(.0079)***	(.0600)***	(.0093)***
Unemployment Rate Difference	-0.0121	-0.0352	-0.0039
	(.0030)***	(.0086)***	(.0043)
Wage Difference	0.2783	-1.3510	-0.5371
	(.1085)**	(.6084)**	(.2643)**
Dest. Gini	0.0666	0.0888	0.2535
	(.0148)***	(.0372)**	(.0530)***
Source Population	0.3659	0.3668	0.4284
	(.0202)***	(.0449)***	(.0308)***
Life Expectance Difference	-0.0261	-0.0428	-0.0158
	(.0038)***	(.0091)***	(.0056)***
Youth Population Difference	0.0268	0.0015	0.0336
	(.0045)***	(.0119)	(.0060)***
Number of Observations	1619	1619	1619
F-Statistic	377.68	81.73	244.19
Prob>F	0.00	0.00	0.00

Note: R^2 are not reported as they are invalid in 2sls (see Wooldridge 2002). Coefficients shown with standard errors in parentheses. *, ** and *** refers to significance at 10,5 and 1% level.

Table 3. 2SLS Estimates for Average Educational Level (E)

Variables	Combined 2SLS	Welfare 2SLS	Health/Educ 2SLS
Dest. Welfare Spending (P)	0.0774	-0.0420	-
	(.0137)***	(.0167)**	-
Dest. Health/Educ Spending (H)	0.3350	-	0.6473
	(.0496)***	-	(.0499)***
Dest. Income Tax (T)	-0.0442	0.0149	-0.0318
	(.0076)***	(.0086)*	(.0065)***
Dest. Unemployment Compensation (B)	0.0369	-2.5438	-1.1123
	(.5008)	(0.5457)***	(0.4445)**
Dest. Retirement Compensation (R)	-0.0094	-0.0048	-0.0229
	(.0047)**	(.0044)	(.0046)***
Colonial Relationship	-0.4861	-0.1737	-0.1752
	(.2074)**	(.2129)	(.2046)
Distance	0.3098	0.3660	0.2625
	(.0461)***	(.0464)***	(.0467)***
Migrant Stock	-0.0817	-0.0067	-0.1303
	(.0212)***	(.0198)	(.0216)***
Dest. Freedom	0.1488	0.1189	0.1217
	(.0093)***	(.0097)***	(.0084)***
Unemployment Rate Difference	0.0050	0.0062	0.0108
	(.0037)	(.0037)*	(.0037)***
Wage Difference	-0.9567	-0.1854	-1.0644
	(.1326)***	(.1324)	(.1328)***
Dest. Gini	0.0525	-0.0691	0.1253
	(.0186)***	(.0135)***	(.0192)***
Source Population	0.0632	0.0320	0.0864
	(.0251)**	(.0252)	(.0254)***
Life Expectance Difference	0.0200	0.0195	0.0254
	(.0047)***	(.0048)***	(.0048)***
Youth Population Difference	0.0387	0.0457	0.0432
	(.0055)***	(.0057)***	(.0056)***
Number of Observations	1619	1619	1619
F-Statistic	49.76	43.73	56.03
Prob>F	0.00	0.00	0.00

Note: R^2 are not reported as they are invalid in 2sls (see Wooldridge 2002). Coefficients shown with standard errors in parentheses. *, ** and *** refers to significance at 10,5 and 1% level.

Appendix – First Stage Results.

Table A1. First Stage Regression Results For Average Educational Level (E)

	Combined Model 2SLS		Welfare 2SLS	Health/Educ 2SLS
Endogenous Regressor:	Health/Educ	Welfare	Welfare	Health/Educ
Variables				
Dest. Welfare Spending (P)	-0.4085	-	-	-
	(.0755)***	-	-	-
Dest. Health/Educ Spending (H)	-	1.7003	-	-
	-	(.1189)***	-	-
Dest. Income Tax (T)	0.1399	0.2964	0.3711	0.0151
	(.0242)***	(.0135)***	(.0138)***	(.0042)***
Dest. Unemployment Compensation (B)	-3.0380	-11.9545	-12.8570	1.2082
	(.9692)***	(.9350)***	(0.1.032)***	(0.3169)***
Dest. Retirement Compensation (R)	0.0065	-0.1424	-0.0768	0.0327
	(.0072)	(.0101)***	(.0100)***	(.0030)***
Colonial Relationship	0.4848	1.4323	1.6799	-0.2084
	(.2834)*	(.4275)***	(.4725)***	(.1409)
Distance	0.0613	0.1309	0.3184	0.0309
	(.0566)	(.0963)	(.1056)***	(.0314)
Migrant Stock	0.1999	0.1106	0.3633	0.1043
	(.0302)***	(.0451)**	(.0459)***	(.0137)***
Dest. Freedom	0.1092	0.0917	0.1055	0.0298
	(.0196)***	(.0219)***	(.0242)***	(.0073)***
Unemployment Rate Difference	0.0034	0.0393	0.0286	-0.0066
	(.0048)	(.0075)***	(.0083)***	(.0024)***
Wage Difference	1.6410	2.0790	3.7226	0.4836
	(.2615)***	(.2740)***	(.2751)***	(.0838)***
Dest. Gini	-0.7371	-0.3946	-0.9223	-0.3022
	(.0832)***	(.0516)***	(.0398)***	(.0120)***
Source Population	-0.0799	-0.1164	-0.2150	-0.0304
	(.0319)**	(.0525)**	(.0576)***	(.0170)*
Life Expectance Difference	-0.0101	0.0279	0.0126	-0.0108
	(.0057)*	(.0098)***	(.0108)	(.0032)***
Youth Population Difference	-0.0061	0.0145	0.0209	-0.0065
	(.0068)	(.0115)	(.0127)*	(.0038)*
Dependency Ratio (Instrument)	26.3820	-		18.5807
	(2.2132)***	-		(.9356)***
Health Survey (Instrument)	5.2447	-		2.2300
	(.5869)***	-		(.1027)***
Education Survey (Instrument)	-10.1380	-20.5274	-20.0610	-0.5536
	(1.8180)***	(.6868)***	(.7588)***	(.2270)**
Elderly Survey (Instrument)	-	0.5527	3.3050	
	-	(.3530)	(.3273)***	
Number of Observations	1619	1619	1619	1619
F-Statistic	78.51	182.70	148.13	262.73
Prob>F	0.00	0.00	0.00	0.00

Note: R^2 are not reported as they are invalid in 2sls (see Wooldridge 2002). Coefficients shown with standard errors in parentheses. *, ** and *** refers to significance at 10,5 and 1% level.

Table A2. First Stage Regression Results For Migration Flow (M)

	Combined Model 2SLS		Welfare 2SLS	Health/Educ 2SLS
Endogenous Regressor:	Health/Educ	Welfare	Welfare	Health/Educ
Variables				
Dest. Welfare Spending (P)	0.2899	-	-	-
	(.0157)***	-	-	-
Dest. Health/Educ Spending (H)	-	17.7750	-	-
	-	(.2.6231)***	-	-
Dest. Income Tax (T)	-0.0576	-0.0602	0.3378	0.0435
	(.0071)***	(.0914)	(.0176)***	(.0049)***
Dest. Unemployment Compensation (B)	-3.7028	40.7172	-32.7637	-6.6924
	(.8132)***	(15.3974)***	(0.2.7412)***	(0.8549)***
Interaction Term (B*educflow)	0.5539	-8.3690	1.3689	0.5020
	(.0634)***	(1.6581)***	(.2074)***	(.0679)***
Dest. Retirement Compensation (R)	0.0565	-0.5290	-0.0544	0.0336
	(.0.0035)***	(.0849)***	(.0120)***	(.0035)***
Colonial Relationship	-0.5442	5.9858	3.3397	0.0680
	(.1587)***	(.2.2532)***	(..5565)***	(.1665)
Distance	0.0060	-0.2919	0.1716	0.0620
	(.0352)	(.5031)	(.1261)	(.0377)*
Migrant Stock	0.0611	-2.0025	0.0762	0.1584
	(.0160)***	(.3738)***	(.0536)	(.0162)***
Dest. Freedom	-0.0724	-0.1308	-0.3524	-0.0268
	(.0091)***	(.1039)***	(.0247)***	(.0094)***
Unemployment Rate Difference	-0.0151	0.0956	0.0378	-0.0102
	(.0027)***	(.0400)**	(.0098)***	(.0029)***
Wage Difference	-0.0963	-5.8463	3.0296	1.1890
	(.1141)	(1.8000)***	(.3380)***	(.0968)***
Dest. Gini	0.0505	4.4580	-0.1962	-0.2451
	(.0211)**	(.7120)***	(.0471)***	(.0147)***
Source Population	-0.0178	0.8663	-0.0233	-0.0669
	(.0191)	(.2994)***	(.0675)***	(.0203)***
Life Expectance Difference	-0.0115	0.1674	0.0241	-0.0139
	(.0036)***	(.0551)***	(.0128)*	(.0038)***
Youth Population Difference	-0.0080	0.2010	0.0388	-0.0050
	(.0042)*	(.0649)***	(.0151)**	(.0046)
Dependency Ratio (Instrument)	-	-387.0161	11.4443	-
	-	(60.9889)***	(4.0580)***	-
Housing Survey (Instrument)	5.2447	-		0.9206
	(.5869)***	-		(.2547)***
Education Survey (Instrument)	9.6518	-	-	0.2043
	(.6473)***	-	-	(.4232)
Elderly Survey (Instrument)	-	-39.4513	1.3053	-
	-	(.6.2098)***	(.3873)***	-
Income Share of lowest 10% (Instrument)		0.0345	-0.1826	-
		(.9763)	(.2447)	-
Number of Observations	1619	1619	1619	1619
F-Statistic	188.12	6.59	68.02	155.27
Prob>F	0.00	0.00	0.00	0.00

Note: R^2 are not reported as they are invalid in 2sls (see Wooldridge 2002). Coefficients shown with standard errors in parentheses. *, ** and *** refers to significance at 10,5 and 1% level.

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