

Assessing the Effect of the Consumer-Voter Sentiment on Fiscally Induced Migration: The EU 27 Case¹

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Abstract

The paper revisits the determinants of intra European migration using a conditional logit model for the period 2000-2010. With all moving restrictions lifted, a substantial Union enlargement in 2004, and a severe economic crisis in progress, new evidence is being revealed regarding the decision making process of individuals who choose to relocate. We examine Tiebout's proposition of voting with one's feet in the context of the Union and we show that fiscal policies in the form of fiscal packages offered to a country's residents as well as consumer confidence indicators play a decisive role in affecting that process. With 26 alternative destinations over a period of 11 years we find that people will choose to move to a country that offers them a better fiscal surplus, higher confidence as economic agents, and higher potential earnings. In light of our results, and after establishing the migration patterns, we believe that a new discussion should open regarding efficiency concerns and government policy implications.

JEL Classification: F22, F6.

Keywords: Fiscal Surplus, Migration, Consumer Confidence Indicator, Tiebout Hypothesis, Conditional Logit.

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1. Introduction

A number of studies have empirically investigated the determinants of fiscally induced migration, with most of the interest directed to the intra state migration cases of US and Canada (Clark et.al. 2002, Hunt and Mueller 2004). However, little work has been done regarding migration within the European Union despite the significant changes that have taken place, particularly over the past decade, and the overall absence of legal distortions. Most studies in the area, concentrate on a specific country and primarily Germany and the UK (Hatton 1995, Fertig, 2005, Brucker and Schroder, 2005)

While looking at both the enlargement that took place in two phases (2004, 2007) and the economic crises, affecting mainly countries in the periphery, one would expect a sizable movement, initially from the residents of “New Europe” towards the traditional European economies, followed by clearly defined migration patterns from the countries that are mainly affected by the crises to the ones that took the hit more moderately. Nevertheless, one would rightfully argue, that migration patterns developed due to the economic crisis might be difficult to detect as the new economic map in the European continent has not yet matured in its formation.

With a significant and still growing empirical literature on migration, two main trends can be identified. One that looks at the direct effect of migration on both the origin and the destination countries in terms of income redistribution and efficiency, and one that tries to identify the driving factors that would induce people to migrate, those being either pushing or pulling for outward or inward migration respectively.

This paper deals with the latter and tries to empirically investigate the fiscal and other economic determinants of intra European migration for the period 2000-2010. For instance, public goods provision and locational choice have been of interest for a number of researchers led by Samuelson (1954) and particularly by Tiebout (1956) who, in an effort to overcome the problem of identifying a consumer's preferences as posed by Samuelson (and Musgrave in 1939), proposed that those preferences are revealed by the locational choice. Individuals will act as consumer-voters and choose to locate in areas or communities that best satisfy their preferences for public goods. It is plausible to argue that public spending factors should be considered along with other variables such as wage, unemployment, education, cost of living etc. Tullock (1971) extends Tiebout's thesis by including the notion that individual's would also assess the tax burdens associated with a specific locational choice.

A number of studies examine the impact of fiscal factors on internal migration (Buchanan and Goetz 1972; Flatters et al. 1974; Starrett 1980, Cebula and Karoglis 1986; Shaw 1986; Koven and Shelley 1989; Day 1992; Cushing 1993; Ott and Shadbegian 1993; Day and Winer 2001; Liebig and Sousa-Poza 2006). However, little attention has been paid to the EU case. Recent papers by Peridy (2006), Karidis and Quinn (2006) and Jackson et. al., (2012) 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 while Karidis and Quinn (2006) utilize a broader measure of social spending by governments but also include the impact of tax rates. Jackson et. al., (2012) examine the impact of fiscal policies on both the size and the educational levels of immigrants in destination countries.

In this paper, we attempt to take a further step and extend the usual question of whether fiscal factors are useful determinants of one's choice to migrate. We focus on the indirect impact

of sentiment indicators as an amplification mechanism over and above the usual macroeconomic variables. In particular, we empirically test the existence of a positive and significant impact of consumer confidence, as a leading indicator, on people's motivation to relocate. Consumer spending depends not only on current income and wealth but also on consumer confidence regarding households' personal financial situation as well as the general economic situation.

Thus, in line with the Tiebout interpretation of consumer-voter, we try to explore the possibility of an asymmetry in one's decision to migrate, not only *ex post*, i.e. after facing the tight conditions in his/her country of origin, but also *ex ante* via peoples' expectations regarding future economic conditions. Undoubtedly, expectations are bound to be important in this context, given that peoples' decisions are by default forward-looking. In other words, people will discount the future, while employing efficiently any relevant information regarding the probability to migrate. Consumer confidence reflects specific attitudes related to particular events and/or uncertainty about the future financial and economic situation. A number of previous studies show the relation between sentiment indices and economic stance. However, there are hardly any studies modeling the migration choice as a function of individuals' expectations for a European panel of countries. To the best of our knowledge, there is no study focusing on migratory responses associated with agents' expectations of future conditions.

The paper contributes to the literature in the following ways. Firstly, we go beyond the internationally oriented Tiebout hypothesis literature by incorporating a forward looking index as an indicator of the probable relocating decision. This broadened interpretation of the Tiebout notion works in parallel with the traditional approach and enriches the range of the hypothesis itself in a way that makes it more comprehensive. Secondly, we work with an up to date

extensive sample of 27 countries and 11 years utilizing a concrete econometric methodology in order to capture the determinants that drive the choice between different destinations.

This paper is organized as follows: Section II revisits, in short, the existing empirical Tiebout literature. Section III presents a theoretical model that incorporates fiscal factors, where the consumer-voter is viewed as a utility maximizing agent between the country of origin and that of destination. The theory provides testable hypotheses with regard to fiscal policy, consumer sentiment, earnings and migration. In Section IV we discuss our data and the empirical method used for testing these hypotheses. Section V presents the results of our primary empirical analysis and further discusses some alternative sensitivity tests. We conclude in Section V.

2. Fiscal Migration: Theory & Evidence

THEORETICAL MODEL

Individuals are seeking to maximize a utility function consisting of a bundle of private and public goods. Their utility is constrained by the prices they have to pay through direct purchases and taxation. The demand for private goods depends on the migrant's income and prices. Similar theoretical developments are provided by Conway and Houtenville (2001) in the context of elderly migration across states and by Farnham and Sevak (2006) who tested a lifetime model of Tiebout sorting. Cebula, on the other hand, (2005, 2009) uses the model developed by Sjaastad (1962) to consider the migration decision as an investment one in which the consumer-voter expects his discounted present value of the migration chosen to be the maximum possible from moving from area A to area B. Nakosteen and Zimmer (1980) assume that potential migrants behave as though they seek maximization of their present value of net

gains resulting from locational choice. Following Karidis and Quinn (2006), we incorporate a random utility model and we consider the individual utility function to be given by:

$$U_j^i = U^i(X_j, G_j) \quad \mathbf{1}$$

where X_j and G_j are the vectors of private and public goods in country j , respectively. The variable j is defined as $j=A,B$ with A being the country of origin and B the destination.

Over the process of maximizing their utility individuals believe that their decision to migrate will not affect the distribution of tax burdens and consumption of public good among the citizens of the two countries in question. We also assume that the cost of moving is negligible.

The demand for private goods is given by

$$X_j = X[E(I_j), P_j] \quad \mathbf{2}$$

where $E(I_j)$ is the expected income of individual i in country j and P_j is the aggregate price level in country j . Prior studies assume that although the individual is uncertain about his/her income in the destination country, there is no uncertainty involved when he/she assesses the income level associated with the home country. In this paper we argue that changing economic conditions, especially in times of economic uncertainty, create doubts regarding one's confidence even in the home country. An individual's decision process takes into account the fact that increasing unemployment rates as well as continuous austerity measures in countries of trouble create severe doubts about income security and therefore this uncertainty has to be taken into account.

Therefore, indirect utility functions at home and abroad are:

$$V_A^i = V^i[E(I_A), P_A, G_A] \quad j=A \text{ (origin)} \quad \mathbf{3a}$$

$$V_B^i = V^i[E(I_B), P_B, G_B] \quad j=B \text{ (destination)} \quad \mathbf{3b}$$

Dividing by P_j yields:

$$V_A^i = V^i \left[\frac{E(I_A)}{P_A}, \frac{G_A}{P_A} \right] \quad \mathbf{4a}$$

$$V_B^i = V^i \left[\frac{E(I_B)}{P_B}, \frac{G_B}{P_B} \right] \quad \mathbf{4b}$$

Expected disposable income is given by

$$E(I_j) = (1 - \rho_j)w_jL_j - t_jB_j \quad \mathbf{5}$$

where w_j is the average wage in country j , L_j is the number of working hours, t_j is the tax rate and B_j the tax base with $B_j < w_jL_j$.

ρ_j represents an effort to capture income uncertainty at home and abroad. It expresses the probability of being unemployed at home or abroad and it is basically shown in the unemployment rate. However, it could be proxied by a consumer sentiment indicator as well. The individual worries about being able to maintain a certain standard of living, and although the information set at home is richer and more accessible, as it reflects the person's current state, the views expressed in a consumer-voter's indicator of confidence can be taken into consideration along with the unemployment rate in order to give a sense of how uncertain the person is. Therefore ρ_j represents the probability that individual i will not be able to secure his or her income at home or abroad to a level that will maximize his/her utility function unless if it is zero. Considering L_j to be given and by substituting equation 5 in 4 we can rewrite the indirect utility function as

$$V_A^i = V^i \left\{ \left[\frac{(1 - \rho_A)w_A}{P_A} - \frac{t_A B_A^i}{P_A} \right], \frac{G_A}{P_A} \right\} \quad \mathbf{6a}$$

$$V_B^i = V^i \left\{ \left[\frac{(1 - \rho_B)w_B}{P_B} - \frac{t_B B_B^i}{P_B} \right], \frac{G_B}{P_B} \right\} \quad \mathbf{6b}$$

Assuming that the income tax base equals the wage base and rearranging the terms, the indirect utility functions of individual i take the following form for the origin and destination countries:

$$V_A^i = V^i \left(\rho_A, \frac{w_A}{P_A}, t_A \frac{G_A}{P_A} \right) \quad \mathbf{7a}$$

$$V_B^i = V^i \left(\rho_B, \frac{w_B}{P_B}, t_B \frac{G_B}{P_B} \right) \quad \mathbf{7b}$$

We can determine that $V_\rho < 0$, $V_w > 0$, $V_t < 0$, $V_G > 0$, implying that a person's utility increases with the wage rate, and the level of public goods provided while it decreases with higher uncertainty, and higher prices of private and public goods.

Individual i will choose to migrate from country A to country B only if the utility derived is higher by doing so than staying at home:

$$V_A^i \left(\rho_A, \frac{w_A}{P_A}, t_A \frac{G_A}{P_A} \right) < V_B^i \left(\rho_B, \frac{w_B}{P_B}, t_B \frac{G_B}{P_B} \right) \quad \mathbf{8}$$

When in a position to choose from a set of different options, the individual will choose the destination that maximizes his/her utility. The inclusion of fiscal factors in the theoretical model implies that any choice involves a Tiebout like process of adjustment. This is captured by the two fiscal policy variables. For this process to be optimum, efficiency concerns should be considered according to Buchanan and Goetz (1972). However, these concerns are beyond the scope of the present study. We extend the idea that the choice of a destination depends on policy decisions by implementing two arguments that reflect market conditions directly but contain also elements of indirect policy decisions: Labor earnings and uncertainty factors regarding the state of the economy. Therefore, the theoretical model yields the following testable hypotheses:

Labor earnings in a specific country should, *ceteris paribus*, have a positive effect on the likelihood of an individual choosing this country as potential destination ($V_w^i > 0$).

Uncertainty in securing a level of labor income in a particular country is, *ceteris paribus*, negatively associated with the decision of a potential migrant to choose this country as destination ($V'_p < 0$).

The marginal income tax rate in a country should, *ceteris paribus*, have a negative relationship with the individual's decision to choose this country as a migration destination ($V'_t < 0$).

The level of public goods provision should, *ceteris paribus*, have a positive effect on the probability of an individual migrating to that country ($V'_G > 0$).

EMPIRICAL EVIDENCE

There is a number of studies incorporating Tiebout's notion and attesting to its implications.² However, the Tiebout model remained essentially inactive for over a decade after its first publication. When the model reappeared again in the literature, it took the form of a testable proposition concerning local fiscal behavior. Existing tests of the Tiebout model can be grouped into two broad categories. Indirect tests, the most common, have focused on deductive implications of the model. For example, Oates (1969) and Edel and Sclar (1974) searched for evidence of capitalization of local tax and service levels in house values. According to Farnham and Sevak (2004), "such studies tend to find that property taxes (public services) are capitalized negatively (positively) in local house values, although the authors disagree on whether such capitalization is evidence for or against Tiebout's theory." On the other hand, Epple, et. al. (1978), Yinger (1982), Rubinfeld (1987) and Yinger et al. (1988) criticize capitalization studies on the basis that they do not account for housing supply or the adjustment of community

² For an extensive review see Dowding, et al. (1994) and Oates 2006

boundaries, and therefore cannot be used to draw conclusions on the efficiency of the observed distribution of local public goods provision.

The number of studies examining the direct effect of fiscal variables on migration, the main Tiebout argument of people voting with their feet, is much smaller. As mentioned above, economic theory states that individuals will choose to relocate to communities where they can maximize their utility which consists of both economic and non-economic factors. However, when studying migration decisions, economists typically focus on the impact of economic determinants while trying to control for non-economic factors (Gabriel et al., 1992; Greenwood and Hunt, 2001; Kennan and Walker, 2003, Sasser 2010).

A number of papers have been published regarding domestic migration within the United States and Canada. Works by Buchanan and Goetz (1972); Flatters et al. (1974); Starrett (1980); Shaw (1986); Islam (1989); Day (1992); Ott and Shadbegian (1993) and Day and Winer (2001) examine the impact of aggregate government spending variables on the number of immigrants a county attracts.

Surprisingly, there is little evidence regarding the fiscal aspects of migration within the European Union. Cuthbertson et al (1982) and Twomey (1987) test the Tiebout hypothesis with data from different boroughs in the United Kingdom, and find that government spending has a significant impact on location decisions. Evidence that fiscal factors affect international migration is included in the Liebig and Sousa-Poza (2006) study, where the Tiebout hypothesis is examined using data from migrants in different parts of Switzerland. 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), finds among other things that public spending in the EU is a significant variable in accordance with the welfare magnet theory.

Karidis and Quinn (2006) propose that a country's fiscal policies regarding taxes and spending affect international migration flows. In a recent paper, Jackson et.al. (2012) examine both government spending priorities and specific social programs on international migration flows. They find that public spending has a significant impact on total migration flows.

3. Data and Empirical Framework

According to our theoretical framework, the individual seeks to maximize his/her utility by choosing to migrate to a specific country instead of another. The i^{th} migrant derives utility by moving from country A to country B according to:

$$V_j^i = \beta_j'z + e_j \text{ where } j=A,B \text{ and only if } V_B^i > V_A^i \quad \mathbf{9}$$

Although we cannot observe the individual utilities, individual choices ($Y=0,1$) can be observed and reveal that if $V_B^i > V_A^i$, then $Y=1$ (migrate), otherwise $Y=0$ (non, migrate, in which case $V_{iA} > V_{iB}$). If country B is chosen as migration destination, then

$$\text{Prob}[Y=1|z] = \text{Prob}[V_B^i > V_A^i | z] \quad \mathbf{10}$$

z is a vector of characteristics specific to the region. The conditional choice model will provide information on which characteristics in vector z played a significant role in the individual's decision. Y will take the value of 1 for the chosen country and 0 for the ones he/she rejects, i.e. the rest of the choices. If we assume that Y^i is a random variable indicating the choice made, McFadden (1974) has proven, that under certain assumptions

$$\text{Prob}(Y_j^i = 1) = \frac{e^{\beta_j'z_{ij}}}{\sum_{j=1}^J e^{\beta_j'z_{ij}}} \quad \mathbf{11}$$

The McFadden model considers the effects of choice characteristics (country differences in our case) on top of individual ones, allowing for the unobserved differences to play a role

when determining the probabilities. The conditional logit model performs a maximum likelihood estimation of models with dichotomous dependent variables. By using the observed revealed choice (in this case the destination country), it captures the unobserved attributes of the choice. It is in a sense a fixed effects model and in our case it helps identifying the unobserved region specific factors that induced the migrant to choose a destination country.

If we denote by $Y=1$ the individual's choice to move from country A to country B, equation 9 is proven to be equal to

$$\text{Prob}[Y=1|\mathbf{z}] = \text{Prob}[\beta' \mathbf{z} + \varepsilon > 0 | \mathbf{z}] \quad \mathbf{12}$$

where β is a vector of coefficients equal to $\beta_B - \beta_A$

The conditional choice model deals with a number of problems we might have had encountered had we chosen to employ either a linear regression or another logistic approach. It overcomes the problem of serial correlation between locations by assuming heterogeneity across them. It also allows for moving beyond the potential problems of a linear probability estimation such as lack of efficiency of the estimating method and the potentiality of the conditional expectations lying outside the $[0,1]$ interval. Country specific characteristics can be used instead of individual ones as the multinomial choice model would imply. Finally, as pointed out by Davies et. al. (2001), using the nested logit model as developed by Maddala (1983) and McFadden (1984), in which a person's migration is treated as two separate decision procedures (move or stay followed by the choice of destination), would imply that the migration decision is made sequentially. We agree with the authors that a decision about migrating is intimately related to the possible destination choices.

The four hypotheses of the theoretical model are tested for the period 2000-2010. In our approach, Tiebout's notion of *local* becomes *national* and the national becomes *international*.

Countries are included in the sample upon their entrance in the European Union. Therefore, growing overtime, the sample becomes an unbalanced panel. The number of countries goes from 15 in 2000 to 25 in 2004, reaching a maximum of 27 in 2007. The total number of country to country pairs over that period is 3081. Only observations with non zero migration are included in the sample. The structure of the conditional model allows for that as it is irrelevant whether nonexistent country pairs are included or not. The model is tested based on the available macroeconomic level data for the countries in our sample.

The ability of the conditional logit to weight observations is important because of the way in which the dependent variable is constructed. The dependent variable is a dichotomous zero/one variable representing the migration choice. With the data in this paper being macroeconomic flows and not a microeconomic survey the level of observation is country to country and not individual. Each observation is a country pair in a given year.

For instance, let us consider the case of Austria in 2005. Let us assume that in that year, a total of 3000 Austrian residents decided to migrate. Let us further assume that 1500 Austrians went to Spain, 1000 to the U.K. and 500 to Greece. Austria will have nine country pairs for 2005 [(Austria-Spain)*3, (Austria – UK)*3 and (Austria - Greece)*3]. The choice variable will take the value of 0 or 1 for each of the pairs. It will be weighted by the number of individuals making that choice. For instance, there will be an Austria – Spain observation equal to 1 with a weight of 1500 on that observation. This represents the fact that 1500 individuals chose this Austria Spain migration. At the same time though, they rejected UK and Greece as their destination so for the pairs Austria-UK and Austria-Greece the choice variable will have the value of zero with a weight of 1500. The process continues until the dependent choice variable is constructed for 3081 country pairs.

Data on migration flows are obtained from OECD's International Migration Database. All explanatory variables are introduced in the model in differences between the destination and the origin country. Data are obtained from Eurostat. The hypotheses are tested with government expenditure and tax variables as ratios. We follow Buchanan and Goetz (1972), Ott and Shadbegian (1993), and Karidis and Quinn (2006) in using the fiscal surplus variable (**Fiscal**) which is defined as the ration of spending to tax revenue both as percentage of GDP. Fiscal surplus variables are constructed for origin and destination countries and their difference (destination – origin). Results produced in this paper are consistent with the use of tax and spending separately as suggested by Fox et al. (1989). We expect an increase in the difference of fiscal surpluses between the destination and home to increase the probability of migrating to that particular country and therefore to have a positive sign.

The effect of labor earnings (**Earnings**) on the probability under question is captured by a Net Earnings variable which is also entering the model in the form of the difference between the destination and the origin country. Annual net earnings are valued in Euros. We choose to employ this variable instead of the traditionally used GDP per capita for the sake of consistency with our theoretical model and because we believe that the part of a person's decision to migrate which is induced by the income factor is closely related to labor income earned at home compared to what can potentially be earned abroad.

We believe that a main contribution of this study to the existing literature is the evaluation of consumer confidence (**Confidence**) as an additional impact factor on the relocation choice. Although there has been an extensive and enlightening empirical literature on the issue of economic fundamentals and their effects on output fluctuations, more needs to be done in order to capture adequately some crucial aspects of agents' decision making. Confidence has no effect

on the real economy, under the standard neo-classical economics assumption on production and utility function, that is, a unique equilibrium is determined. On the other hand, when sunspot equilibrium exists, a random variable that does not directly affect economic fundamentals (i.e. preferences, technology etc), can cause economic fluctuations (Utaka, 2003). There is a growing literature on confidence indicators and their use in monitoring or forecasting short-term economic developments³. In other words, output can fluctuate just because everyone expects it to (Matusaka and Sbornone, 1995). In this respect, a “pessimistic” agent would be keener to migrate, if he/she expects a lower quality of life either in terms of income/employment or in terms of public provisions in his/her home country as a consequence of a worsening economic environment.

We circumvent the obstacle of measuring expectations, by utilising the widely used Consumer Confidence Indicator (CCI hereafter), which relieves us from having to rely on *ad hoc* assumptions regarding the expectations’ formation mechanism. Although business surveys⁴ have a relatively longer history than consumer ones, much of the empirical research on sentiment surveys focuses on the expectations of consumers. Such surveys receive considerable attention because of their potential to be utilized as indicators of future economic performance and the overall state of the economy. Hence, in order to detect turning points in the economic cycle and the overall agents’ expectations we include the CCI which is taken from Eurostat and is the arithmetic average of the seasonally adjusted balances (%) referring to the questions on the financial situation of households, general economic situation, unemployment expectations (with

³ For an extensive review see C. Kallandranis (2007) “Topics on the Dynamics of Capital and Labour Demand: An Empirical Analysis.”

⁴ For a review on business surveys regarding Economic Sentiment Indicator as a forward looking indicator see Mourougane and Roma (2002); Hufner and Schreoder (2002); Drakos (2006) and Drakos and Kallandranis (2005, 2007).

inverted sign) and savings; all over the next 12 months. The variable enters the model in standardized form with a mean of zero and a standard deviation of one.

This study, among others, explores the information contained in a consumer sentiment survey conducted for the European economies. In particular, we try to determine whether and how people's expectations regarding the difference in economic performances between the origin and the destination country is related to the formation of a migration trend, since consumer confidence has a predictive ability. This we call the **indirect effect on migration**, and it is going beyond the traditional direct tests of tangible economic factors on migration trends.

The extent to which sentiment indicators can, in a sense, forecast economic activity has been a recurrent and controversial topic in economic research. A number of researchers advocate that the predictive capacity of consumer sentiment indices provides little gain in forecasting real economic activity (see e.g. Stock and Watson 1993; Emerson and Hendry 1996; Weale 1996; Fan and Wong 1998; Bram and Ludvigson 1998; Howrey 2001, etc). Against this line, a vast number of empirical studies have found a consistent connection between consumer confidence indicators and economic activity. They find evidence that overall sentiment indicators summarize prior or contemporary information, and that consumer confidence has significant explanatory power for the growth rate of consumption (see e.g. Acemoglu and Scott 1994; Carroll et.al. 1994; Matsusaka and Sbordone 1995; Berg and Bergstrom 1996; Huth et.al., 1994; Lovell and Tien, 2000; Dunn and Mirzaie 2004; Easaw and Heravi 2004; Easaw et.al., 2005; Celik et.al. 2010, etc). Thus, they argue, what happens in the real world has repercussions on the behavior of consumers.

Finally, two other variables are employed in our set of factors that might induce people to choose a specific migration destination. Price level differentials between home and abroad are

considered in the form of a Price Level Index (**PLI**) derived from Purchasing Power Parities against the European average, and they are expected to negatively influence the decision to migrate. In an effort to capture any potential competition that the migrant might face in the destination country we utilize an education variable as well (**Education**). The total number of tertiary education graduates (per 1000) of population aged between 20 and 29 years of age gives us a good proxy of how tough the competition can be for people who will try to establish themselves in a new market. We argue that the higher the skills in the destination country's labor market, the lower the probability of being competitive for people who exhibit a moderately risk neutral or risk averse behavior. The expected sign for this variable is negative, indicating that a more skilled labor force in the destination country could be a discouraging factor for a potential migrant.

Given the framework provided, the migration decision is shown as:

$$Choice_{AB} = b_0 + b_1Fiscal + b_2Unemployment + b_3Earnings + b_4Confidence + b_5PLI + b_6Education + \varepsilon \quad \mathbf{13}$$

Descriptives are shown in Table 1.

[Insert Table 1 about here]

4. Empirical Results

Estimation results are largely consistent with our expectations. This holds for all alternative specifications of the basic model as well, which are presented in the second part of this section. The variables of main interest, such as fiscal surplus differences and consumer confidence, justify their use and seem to play an important role in the decision making process of

potential migrants. All variables are statistically significant mainly due to the way the conditional logit model incorporates the weight variable into each country pair observation.

Results of the basic model are presented in table 2. All variables are statistically significant at the 1% level and of the expected sign, with the exception of the unemployment variable which surprisingly turns out to be positive. Our fiscal variable being the largest in size and of the expected sign confirms the existing literature on people's decision to migrate, indicating that an increase of a one percentage unit in the fiscal surplus differential will increase the probability of migrating to the specific destination by 12 percentage points (pp). This result confirms prior findings in the intra-country context and that of Karidis and Quinn (2006) and Peridy (2006) in an international setting. However, in our case, extending the sample to include all 27 countries members of the European Union and utilizing the fiscal surplus variable in the context of spending – revenue trade off gives a new boost to Tiebout's original idea of people voting with their feet.

Our second variable of interest, consumer confidence, has also a positive and significant effect on the decision to migrate. People's perception about their ability and willingness to consume in a certain environment, as measured by our consumer confidence variable, is proven to affect the decision making process when choosing a destination. An increase of a one standard deviation in the difference of our consumer confidence variable between home and abroad increases the probability of migrating by 1.8 pp.

As anticipated, the net earnings difference between the two countries induces people to choose the country where they believe they will obtain higher labor income while the opposite is true for the cost of living as this is measured by the Price level index variable which gives a negative and significant result.

As mentioned in the empirical formulation of our model, we expect that people consider their potential competition in the labor market when they are about to make a decision about migrating. A higher level of tertiary education graduates would be a discouraging factor in the process of choosing one's destination. Results show that an increase in the differential between higher education graduates between home and abroad by one percentage point will decrease the probability of migrating to that particular destination by 2pp.

[Insert Table 2 about here]

4.1. Robustness Tests

Income Groups

The effects of our determinants on the decision to migrate are tested for a total of 27 countries over a period of 11 years. Taking into account the substantial differences in country characteristics in terms of economic structure, economic policy schemes as well as individual potential behavior, as those are revealed by examining the descriptive statistics of our variables, we believe that the robustness of our model should be examined after considering those disparities, at least to some extent. In addition, the whole character of the European Union has been altered after the substantial enlargement that took place in 2004 followed by a smaller increase in the number of members in 2007. We find it plausible to consider the year 2004 as a structural break in the Union's composition and therefore the two resulting sub periods (pre and post enlargement) could reveal attributes of the choice that are not visible when the whole sample is considered.

For the above reasons we conduct two kinds of robustness tests. First, we place all country members in three income groups, according to their GDP per capita and try to identify different patterns of behavior within those groups. The criterion used for grouping the countries

is pretty standard in the literature. Countries within a standard deviation of the Union’s average GDP per capita are considered to be middle income while the rest are classified as low and high income if their income is below or above the average by more than a standard deviation respectively. This classification is presented in table 3 and refers to the period 2000-2010.

Table 3: Country Classification According to GDP per Capita			
Average GDP per Capita for the Union (2000-2010): \$26910			
Groups	Income	Country	
Group 1: “Low Income”	$Y_j - \bar{Y} < -\sigma_j$	Romania Bulgaria Latvia Poland	Lithuania Hungary Estonia
Group 2: “Middle Income”	$Y_j - \bar{Y} < \sigma_j $	Slovak Republic Portugal Malta Czech Republic Greece Slovenia Cyprus	Spain Italy Finland France Germany United Kingdom Belgium
Group 3: “High Income”	$Y_j - \bar{Y} > \sigma_j$	Denmark Sweden Austria	Netherlands Ireland Luxembourg

Source: Eurostat

Results are fairly consistent throughout all three samples. They are reported in Table 4. When low income countries are considered, the effect of our fiscal surplus variable strengthens. A one percentage unit change in the fiscal surplus difference between origin and destination increases the probability of migrating to that particular country by 19.7 pp (compared to 12 pp when the whole sample is considered). Potential migrants seem eager to exploit fiscal differences and they choose to move to a country that offers a more generous and cheaper fiscal scheme. Similarly, they are interested in securing their income by moving to a country where consumer confidence is revealed to be higher. An increase in consumer confidence difference by one standard deviation increases the probability of choosing the specific destination by 2.3 pp. Net earnings differential seems to be a decisive factor as well for low income countries. High

percentage of tertiary education graduates discourages potential migrants as expected while unemployment rate differential continues surprising us by coming out positive and significant.

Similar conclusions can be drawn when we look at middle and high income countries with the exception of our fiscal surplus variable which turns out negative and significant when origins in the top income group are considered. A plausible explanation would be that people from higher income countries, being more confident regarding their potential earnings in their destination are less interested in what the government can provide and more attracted to higher earnings. This is apparent on the size of the Net Earnings coefficient which is larger for high income origins indicating that a 10% potential raise in work generated income will increase the probability of choosing the destination under consideration by 10.1 pp which is higher by two and five percentage points compared to middle and low income countries respectively. Little attention is paid to educational differences between home and abroad when it comes to moving from high income countries leading us to a speculative proposition that high skilled people in the ages between 20 and 29 are particularly mobile and not afraid to face the competition.

There is an apparent consistency among all three income groups when it comes to consumer confidence. Residents of all countries are seeking to secure their incomes in their destination in a better way than they do at home and that is shown by the relatively large size of the coefficient of our consumer confidence variable in all three cases. Finally, higher price level indices at destination are, as expected a discouraging factor when it comes to choosing a destination.

[Insert Table 4 about here]

Structural Break 2004

Observing migration flows before and after the enlargement of 2004 leads to the expected substantiation of the fact that along with the higher number of possible destination there was a substantial increase in the number of migrants from 1.3 million between 2000 and 2003 to 6.8 million in the period 2004-2010. Regression results are presented in Table 5.

Although the number of alternative destinations has increased, the determinants of choosing a particular country to migrate are consistent with the initial model specification throughout the period under consideration. In both periods our fiscal surplus variable is proven to be the most significant factor in choosing the destination country followed by the consumer confidence indicator. Prior to 2004 and given the longer history of population mobility among European countries, people seem to place a very high importance on the fiscal package offered, providing a very strong verification to the Tiebout argument.

All variables are significant and of the expected sign with the exception of the unemployment rate once again. In fact, the consistency with which the unemployment rate contradicts our expectations should lead us to alternative considerations. It seems that other characteristics of the home and destination countries outweigh the negative impact that unemployment might have on one's decision. People seem to be more interested in securing their income through fiscal provisions and are willing to compete for a place in the labor market, probably being confident enough to do so due to their skills. Although it goes beyond the scope of this paper, it would be particularly interesting to estimate the model using instead of the unemployment rate, the unemployment spell. A possible consideration from the part of the potential migrant of the duration he/she would have to wait until finding a place in the labor market, while being entitled to fiscal provisions as it is the case for EU citizens across the Union,

would provide a useful insight on the reasons the unemployment rate variable seems to work in a way that is unanticipated in our model.

In conclusion, and in both sub periods, potential migrants, when in the process of choosing a destination country, seem to prefer a cheaper destination which would provide them with a higher fiscal surplus, and satisfactory net earnings which they would be able to secure when they find a place in the job market. They also believe that they have better chances in doing so by moving to a country where the number of higher education graduates is comparable or worse to theirs, indicating that their skills can be appreciated in their destination of choice.

[Insert Table 5 about here]

5. Concluding Remarks

This paper uses a conditional logit model to investigate the determinants of intra European Union migration. The results show that, in nearly all sample specifications, fiscal policies, as measured by our fiscal surplus variable, as well as the consumer – voter sentiment, derived from the confidence indicator used, play a significant role in a potential migrant's decision making process when choosing a destination. Other factors as net earnings, prices and education seem to also have an effect on that process.

Our results are consistent with prior studies indicating the importance of fiscal policy variables when testing Tiebout's notion of moving with one's feet. However, with the inclusion of the consumer confidence as an additional impact factor on the relocation choice, we attempt to move beyond the traditional approach, by trying to capture the indirect effects of sentiment indicators on the migration choice. We have established that although fiscal policies are primarily assessed by the potential migrant looking for a destination that offers higher but

cheaper benefits, people's expectations about the economic performance at home and abroad have a significant share in the decision making process.

Clearly, there is more to be done in identifying how the trends in European migration are formed. Literature on the subject, although limited, is growing. Extending the vector of characteristics on which the choice is based, beyond the country level, to include personal attributes of the migrant is something that the conditional model can do, when a database of appropriate size is provided. Additionally, when trends in European migration are established along with their determinants, efficiency concerns and government policy implications should be considered. After all, being able to reveal one's preferences when he/she assesses government policies regarding public goods provision and taxation, and the effect of transforming these effects into actions, was Tiebout's main scope of study.

Tables

Table 1 Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Fiscal Surplus Origin	1.07	0.11	0.86	1.88
Fiscal Surplus Destination	1.05	0.09	0.86	1.88
Fiscal Surplus Difference	-0.02	0.11	-0.88	0.82
Unemployment Origin	7.83	3.34	2.3	20.07
Unemployment Destination	7.62	3.33	2.3	20.07
Unemployment Difference	-0.21	4.53	-15.67	15.67
Net Earnings Origin	29.70	16.15	3.22	54.99
Net Earnings Destination	35.64	14.94	6.45	54.99
Net Earnings Difference	5.92	22.69	-44.76	50.44
Price Level Index Origin	92.13	24.59	40.1	140.5
Price Level Index Destination	99.75	22.15	48.8	140.5
Price Level Index Difference	7.62	33.17	-85.3	96.00
Consumer Confidence Origin	-13.09	17.01	-64.38	23.51
Consumer Confidence Destination	-11.29	17.09	-64.38	23.51
Consumer Confidence Difference	1.84	24.46	-83.2	87.8
Education Origin	58.65	18.73	12.1	100.2
Education Destination	56.92	17.50	12.1	100.2
Education Difference	-1.52	24.18	-77.90	77.90

Notes: Mean, Std. Dev., Min, Max, stand for sample average, standard deviation, minimum and maximum respectively for all pairs.

Table 2 The Decision to Migrate: Dependent Variable is Choice

Variable	Estimated coefficient	S.E	Marginal effect
Fiscal Surplus	1.973	0.0073	0.120
Unemployment	0.113	0.0001	0.007
Net Earnings	0.125	0.0001	0.008
Price Level Index	-0.048	0.0007	-0.003
Consumer Confidence	0.292	0.0061	0.018
Education	-0.027	0.0002	-0.002
Pseudo R-squared	0.15		
LR $\chi^2(6)$	5.07		
Observations (country pairs)	3081		
p(1-p)	0.061		

Notes: All variables are significant at the 1 percent level. All LRs are expressed in millions.

Table 4 The Decision to Migrate: Income Classes = 1,2,3 Dependent Variable is Choice

Variable	Class 1			Class 2			Class 3		
	Estimated coefficient	S.E	Marginal Effect	Estimated coefficient	S.E	Marginal Effect	Estimated coefficient	S.E	Marginal Effect
Fiscal Surplus	3.232	0.0107	0.197	1.163	0.0111	0.071	-0.148	0.0260	-0.009
Unemployment	0.128	0.0001	0.008	0.092	0.0001	0.006	0.142	0.0003	0.009
Net Earnings	0.106	0.0002	0.006	0.139	0.0002	0.008	0.180	0.0005	0.011
Price Level Index	-0.063	0.0001	-0.004	-0.032	0.0001	-0.002	-0.049	0.0002	-0.003
Consumer Confidence	0.375	0.0009	0.023	0.26	0.0010	0.016	0.135	0.0020	0.008
Education	-0.031	0.0004	-0.002	-0.024	0.0004	-0.001	-0.018	0.0008	-0.001
Pseudo R-squared		0.17			0.12			0.20	
LR chi ² (6)		3.14			1.47			0.65	
Observations (country pairs)		719			1594			768	
p(1-p)		0.061			0.061			0.061	

Notes: All variables are significant at the 1 percent level. All LR's are expressed in millions.

Table 5 The Decision to Migrate: Pre & Post 2004 Dependent Variable is Choice

Variable	Pre 2004			Post 2004		
	Estimated coefficient	S.E	Marginal Effect	Estimated coefficient	S.E	Marginal Effect
Fiscal Surplus	4.839	0.0260	0.295	1.959	0.0243	0.119
Unemployment	0.101	0.0003	0.006	0.115	0.0002	0.007
Net Earnings	0.179	0.0005	0.011	0.118	0.0004	0.007
Price Level Index	-0.025	0.0002	-0.002	-0.051	0.0002	-0.003
Consumer Confidence	0.361	0.0020	0.022	0.284	0.0016	0.017
Education	-0.016	0.0008	-0.001	-0.029	0.0007	-0.002
Pseudo R-squared		0.12			0.16	
LR chi ² (6)		0.55			4.62	
Observations (country pairs)		904			2177	
p(1-p)		0.061			0.061	

Notes: All variables are significant at the 1 percent level. All LR's are expressed in millions.

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