Individual attitudes towards migration: a reexamination of the evidence

Tobias Müller[†] and Silvio H. T. Tai[‡]

May 17, 2010

PRELIMINARY VERSION

Abstract

Recent economic research has highlighted the importance of labor-market and welfare-state mechanisms in the explanation of individual attitudes towards immigration. By contrast, political scientists argue that attitudes are mostly determined by individual cultural values and

1 Introduction

Although migration has been the neglected factor in globalization, its importance is rising fast. In Europe, many countries have seen important immigration flows in recent years and a large share of new jobs is occupied by immigrants. In 2003, 9% of the population in Austria was composed by immigrants, 8% in Belgium, 9% in Germany, 40% in Luxembourg, 7% in Spain, 20% in Switzerland and 5% in United Kingdom[1]. These trends can be expected to continue in the future, with growing migration pressure on the supply side and increasing needs for young workers in ageing societies.

(2008a) dataset. The relative skill ratios are defined for each destination country, and for different immigrant groups, based on a direct measure on the educational levels of immigrants. Therefore our relative skill ratio is much less subject to measurement error than the proxies (e.g. GDP per capita) used in previous contributions.

This paper is structured as follows. Section 2 presents the theoretical model and section 3 details the data. Section 4 reports on the findings and Section 5 presents the conclusion.

2 Theoretical Model

This section describes the simple economic model that will help us to determine how concerns

With perfectly competitive factor markets and profit maximization by the representative firm, prices and marginal products of production factors are equalized. Marginal products are given by $f'(h)$ (human capital) and $f(h) - hf'(h)$ (raw labor). Earnings of individual i (holding h_i units of human capital and 1 unit of raw labor) can therefore be written as

$$y_i = f(h) - hf'(h) + h_i f'(h_i) = f(h) + (h_i - h)f'(h): \tag{1}$$

We assume that individuals consider small changes in the average human capital h of their country when they are asked about their immigration preferences. A small change in human capital has the following impact on an individual's income:

$$dy_i = (h_i - h)f''(h)dh: \tag{2}$$

The economy's average human capital stock h increases (decreases) with immigration if immigrants are on average more (less) skilled than current residents. In the empirical implementation of the model, we consider different groups of immigrants, according to their region of origin. Denoting $h^m = H^m/L^m$ the average human capital of immigrants of group m, we have $dh = (h^m - h)(dL^m/L)$. Combining the latter expression with (refweq2) yields

$$z_i^m \equiv \frac{dy_i/y}{dL^m/L} = \left(\frac{h_i}{h} - 1\right)\left(1 - \frac{h^m}{h}\right)\frac{1}{\sigma}(\alpha_H - \alpha_L); \tag{3}$$

where σ is the elasticity of substitution between the inputs raw labor and human capital and α_H and α_L are the share of human capital and of raw labor in aggregate income.[3]

In view of the interpretation of our empirical results, it is useful to represent the relation between individual human capital and attitudes towards immigration as defined by equation (3). Figure 1 depicts the case where immigrants are on average less educated than the resident population (1 –

respect to H and L. Therefore, if we assume that r does not change with immigration, we can redefine f as follows: $f(h) = \tilde{G}(r; H/L; 1)$.

[3]Note that $[-hf''(h)f(h)]/[f'(h)[f(h) - hf'(h)]]$ equals the inverse of the elasticity of substitution σ.

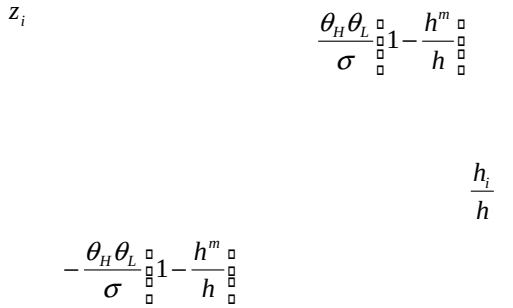


Figure 1: Labor Market Mechanism (Low-Skill Immigration, $h^m < h$)

$h^m = h > 0$). Due to labor market competition, immigration reduces earnings of low-skilled natives and increases earnings of high-skilled natives.

When considering several countries, it is useful to introduce subscript c for each destination country. In view of the estimation, we rewrite equation (3) as:

$$z_{ic}^m = \frac{dy_{ic}/y_c}{dL_c^m/L_c} = \frac{h_{ic}}{h_c}\left(1 - \frac{h_c^m}{h_c}\right)\frac{1}{\theta_H \theta_L} + \varepsilon_c^m; \qquad (4)$$

where $\varepsilon_c^m = \left(\frac{h_c^m}{h_c} - 1\right)\frac{1}{\theta_H \theta_L}$ collects all terms that are specific by country and by immigrant group.

2.2 Adding the Welfare State

The economic model can be extended to incorporate welfare state considerations by introducing income redistribution. This is the other major determinant of attitudes according to the recent economic literature (Facchini and Mayda, 2009; Hanson et al., 2007). Redistribution is accomplished using a linear tax-benefit schedule. A constant marginal tax rate t is applied to each individual's income and each individual receives an identical benefit b. We require that the government's budget is balanced, which implies: $tf(h) = b$. Earnings of an individual i can now be rewritten as: $y_i = (1 - t)[f(h) + (h_i - h)f'(h)] + b$.

With immigration, the tax-benefit schedule has to be adjusted in order to ensure a balanced budget of the government. Following Facchini and Mayda (2009), we focus on the two extreme cases

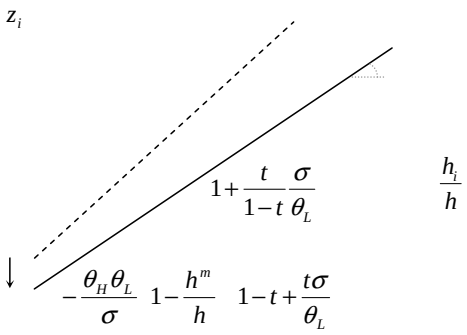


Figure 2: Welfare Mechanism - Benefit Adjustment (Low-Skill Immigration, $h^m < h$)

where either the taxation level t remains constant and the benefit b adjusts, or the benefit remains

where $\omega_c^m = \left(1 - \frac{h_c^m}{h_c}\right)\left(\bar{t}_{(H,L)} - \bar{1}_{(H,L)} - t_H\right)$ collects all terms that are specific by country and by immigrant group.

Turn now to the alternative case where the marginal tax rate t adjusts to compensate a variation in government revenues. Considering the benefit b constant, the marginal tax rate t is endogenous, $tf'(h)dh + f(h)dt = 0$, and equation (3) becomes:

$$z_i^m = \frac{dy_i/y}{dL^m/L} = \left(\frac{h_i}{h} - 1\right)\left(1 - \frac{h^m}{h}\right)\left(\bar{1}_{(H,L)}(1-t) - t_H^2\right) - \left(1 - \frac{h^m}{h}\right)t_H: \qquad (7)$$

In the case of low-skill immigration, the marginal tax rate has to increase in order to ensure a balanced government budget. As a consequence, highly skilled natives have to bear a greater share of the welfare cost from immigration than unskilled natives. This adjustment is reflected by a large change in the slope in figure 3. As the analytical expression makes clear, the rotation is much larger than in the previous case and individual human capital and attitudes towards immigration may even become negatively related if the fiscal costs of low-skill immigration are higher than the complementarity advantages in the labor market. The latter outcome will be observed in countries with a large welfare state (i.e. a large initial t). As the benefit level is kept constant in this case,

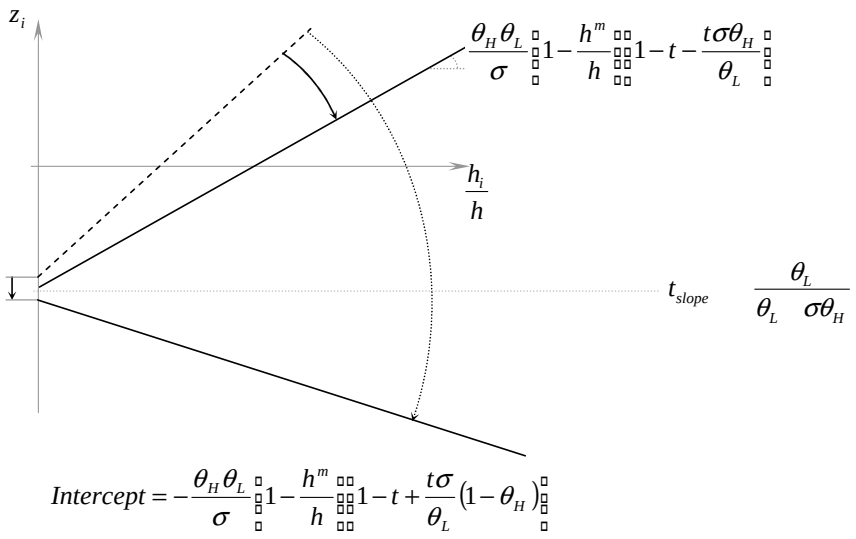


Figure 3: Welfare Mechanism - Tax Adjustment (Low-Skill Immigration, $h^m < h$)

in other disciplines (see Hainmueller and Hiscox, 2007) suggests noneconomic explanations for these attitudes. According to these authors, cultural or ideological factors would have a primary impact on natives' opinions, above any economic mechanism. Moreover, Hainmueller and Hiscox (2007) posit a correlation between openness to other cultures and the natives' education level, and relate low education levels and "xenophobic or racist predilections". In their view, education is not a proxy for human capital but has a direct link to general attitudes towards immigration. More educated individuals support more cultural diversity, regardless of the immigrants' skill level.

The correlation between education and openness towards other cultures is particularly a problem in the econometric analysis, since it implies a missing variable in equations (4) to (8). Clearly, the estimate equation incorporates not only a stochastic error ε_{ic}^{m}, but also a missing "cultural" or "ideological" variable correlated with the individual level of education. This important issue is a-23.904ttms7

3 Data

3.1 Attitudes Towards Immigrants

Data on attitudes are taken from the rst round of the European Social Survey (ESS) which covers the period 2002-2003.[4] This round of the ESS included a rotating module with detailed questions about attitudes to immigration, according to the location and the wealth of the immigrant's origin country. Using a scale from 1 (few) to 4 (many),[5] a respondent living in country C answers di erent

"cultural content" questions. One can see that these "cultural opinions" are mostly correlated with the general component of attitudes. Specific attitudes to immigrants from poor countries (or from rich countries) are only weakly correlated to these individual opinions. Taking the second question as an example, this decomposition is formalized by:

$$Cov(ind\_opinion; poor\_eur) = Cov(ind\_opinion; avg\_eur) + Cov(ind\_opinion; \Delta poor\_eur)$$

where $avg\_eur = (poor\_eur + rich\_eur)/2$ and $\Delta poor\_eur = poor\_eur - avg\_eur$

More than 90% of the covariance between the opinion that "immigrants undermine a country's culture" and attitudes toward immigrants from poor countries can be attributed to the general component of attitudes. This result, and the other decompositions in table 1, seem to confirm the existence of individual values that are related to immigration in general. Our econometric analysis below take this into account.

Table 1: Decomposition of the Covariances: Some Native's Individual Characteristics

Individual Native's Opinions	Europe				RoW			
	allow poor immig?		allow rich immig.?		allow poor immig?		allow rich immig?	
Immigrants:	average	deviation	average	deviation	average	deviation	average	deviation
1. contribute to taxes?	89.2%	10.8%	113.8%	-13.8%	87.4%	12.6%	116.9%	-16.9%
2. bring down wages?	89.9%	10.1%	112.7%	-12.7%	89.9%	10.1%	112.7%	-12.7%
3. should belong to the majority's race?	96.4%	3.6%	103.9%	-3.9%	96.8%	3.2%	103.4%	-3.4%
4. undermine country's culture?	90.7%	9.3%	111.5%	-11.5%	90.1%	9.9%	112.4%	-12.4%
5. get crime problem worse?	89.2%	10.8%	113.8%	-13.8%	87.2%	12.8%	117.2%	-17.2%
6. should be christian?	88.4%	11.6%	115.1%	-15.1%	86.6%	13.4%	118.3%	-18.3%
7. should be white?	86.9%	13.1%	117.7%	-17.7%	84.6%	15.4%	122.2%	-22.2%

and h_c is obtained by averaging over the natives of each country c

rich and poor countries have a higher level of education than the total population. Here we find countries as diverse as Great Britain, Ireland, Hungary, Italy, Portugal and Spain. In the second quadrant immigrants from rich countries are more educated than total population while immigrants from poor countries are less educated than total population. Finally, the third quadrant indicates destination countries where immigrants from rich and poor countries have a lower level of education than the total population. The only clear pattern that seems to emerge from these two figures is that most countries can be found above the 45 degree line. This indicates that in most host countries, immigrants from rich countries are more educated than immigrants from poor countries.

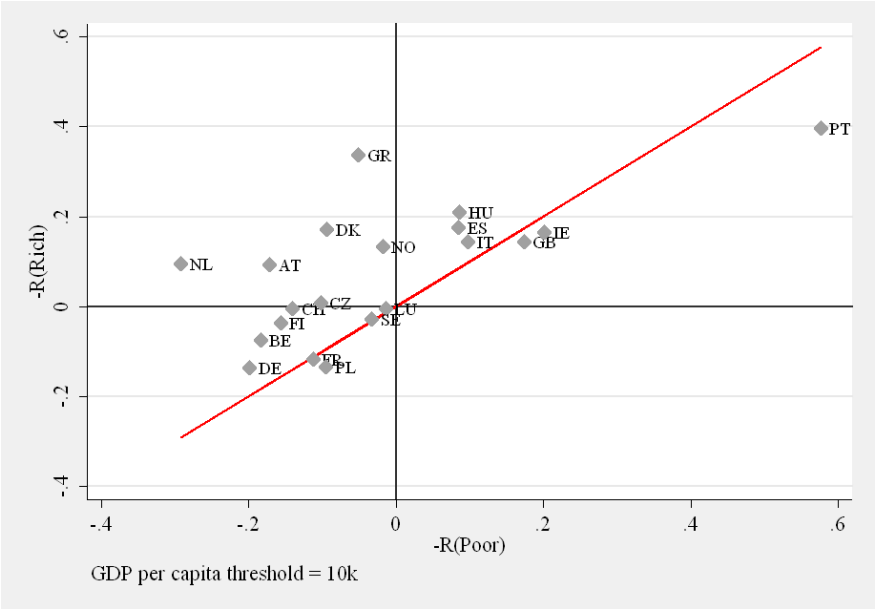


Figure 5: Immigrant's Human Capital from European Countries (threshold=10k)

3.3 Other Explanatory Variables

In our model, the welfare state is represented by a simple linear tax-benefit system. To measure the degree of redistribution in all destination countries, we rely on indicators published by the OECD in the \Taxing Wages" series. For all 20 destination countries, we estimate marginal tax rates that are representative of the real income tax paid by wage earners. The OECD provides average and marginal tax rates at four di□erent points of the wage distribution for adult, full-time workers in

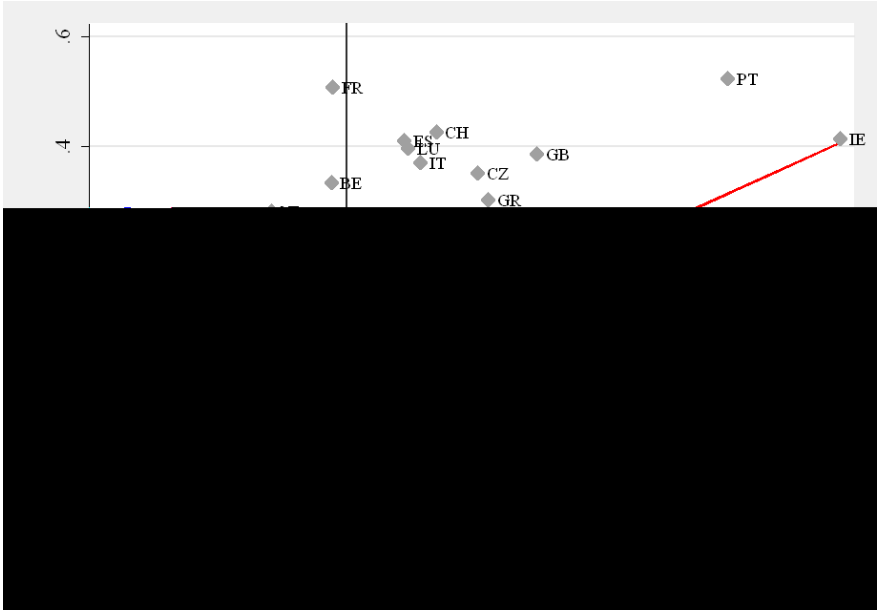


Figure 6: Immigrant's Human Capital from RoW countries (threshold=10k)

manufacturing sectors: at 67%, 100%, 133% and 167% of average earnings.[11]

We use two simple methods to estimate a unique marginal tax rate for each country, based on the tax schedule for single wage earners. First, we calculate a simple average of marginal tax rates at the four points of the income distribution. Second, we adjust a linear tax-benefit schedule to the aq1(b)-283l1 TJ/F17 11.955 Tf 49.401 0 Td[(ta)1(x)1.51.9ates

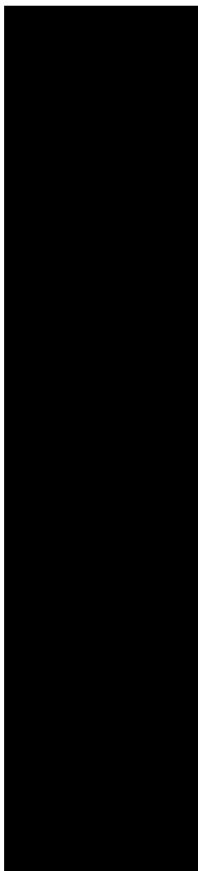
4

A d attitudes towards
in lementation of (4),
at

(10)

w c, $R_c^m = 1 - h_c^m = h_c$
ar ng on the country c
ar g individual beliefs
ar tative and can take
fo of immigration of
in), we recode z_{ic}^m as
a

Fr can be tested) and
th



To address these problems, we estimate the model using four different approaches. First, we estimate equation (10) separately for m = poor; rich using ordered probit models. This is the approach used in past research (Scheve and Slaughter, 2001; Mayda, 2006; O'Rourke and Sinnott, 2006; Hanson et al., 2007; Facchini and Mayda, 2009) and it fails to address the problems of omitted variables and endogeneity by ignoring $_{ic}$.

Second, we estimate equation 10 jointly for m = poor; rich using a random-effects logit model. This model accounts for omitted individual factors by treating $_{ic}$ as an unobserved random variable which is assumed to follow a normal distribution. Note that the random-effects logit estimator is consistent only if the individual-specific effect $_{ic}$ is not correlated with regressors.

Third, applying a procedure developed by Chamberlain (1984), we can use the random-effects logit model if the individual omitted factor follows a determined correlation with regressors. Imposing the relation: $_{ic} = {}_1 A_{ic} R_c^{poor} + {}_2 A_{ic} R_c^{rich}$, our estimated equation becomes:

$$\tilde{z}_{ic}^{m} = {}_0 + {}_1 A_{ic} + {}_2 A_{ic} R_c^{m} + {}_1 A_{ic} R_c^{poor} + {}_2 A_{ic} R_c^{rich} + {}^0 X_{ic} + {}_c^{m} + {}_{ic}^{m} \qquad (11)$$

In our fourth approach, we allow for the possibility that $_{ic}$ is correlated in any way with explanatory variables by using a fixed-effects logit model. The estimation of this model relies on conditional maximum likelihood, where the incidental parameters problem can be avoided. Only observations for individuals whose attitudes differ between immigration from poor countries, on the one hand, and immigration from rich countries, on the other hand, are taken into account in this method. In this method, all criticisms formulated by Hainmueller and Hiscox (2007) are taken into account and the estimated relationship between human capital and immigration preferences is purged from all unobserved beliefs about immigration in general.[14]

Table 3 presents the results for the estimation of the labor market model using our three econometric approaches. Regressions (1) to (4) apply an ordered probit estimator while regressions (5) and

[14] In all estimations (except random-effects logit), standard errors are corrected for heteroscedasticity and clustering at the country level using White's (1980) method.

(6) apply a random-effects logit estimator and regressions (7) and (8) apply a fixed-effects logit estimator.

Using the first approach, regressions (1) to (4) show a very significant effect of the labor market on the natives' attitudes toward immigrants: the coefficient of the interaction term $A_{ic}R_c^m$ ($_2$) has the expected sign and is significantly different from zero in all cases. No matter if immigrants are from a rich, a poor, an European, a non European country, natives are more receptive to immigrants whose skills are complementary to their own (e.g., high-skill natives and low-skill immigrants are complementary). This confirms the results found by Scheve and Slaughter (2001), Mayda (2006) and O'Rourke and Sinnott (2006) who used different datasets and different definitions of the relative-skill indicator. Note, however, that the economic model does not provide an exhaustive explanation of attitudes since the prediction that $_1 = 0$ is rejected in all cases and individual education seems to have an independent effect on attitudes.

Do the results change if we take unobserved individual beliefs into account? Assuming that these beliefs are not correlated with explanatory variables, we estimate jointly equation (10) for attitudes towards immigration from poor or rich countries (i.e. for immigration groups m of a same geographical region: Europe or rest of the world). In regressions (5) and (6), the labor market effect remains highly significant but the relative importance of this effect, compared to the direct influence of education, has become slightly smaller than in regressions (1) to (4), especially for the case of non European immigrants.[15]

Table 3: Determinants of Attitudes - Labor Market Model

Specification	Ordered Probit				R.E. Logit		R.E. Logit Chamberlain		F.E. Logit	
Origin Region	Europe	RoW	Europe	RoW	Europe	RoW	Europe	RoW	Europe	RoW
Poor/Rich/Pooled	Rich	Rich	Poor	Poor	R+P	R+P	R+P	R+P	R+P	R+P
Variable Coe .	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A_{ic} 1	0.47***	0.46***	0.37***	0.41***	1.24***	1.22***	1.33***	1.41***		
	(0.03)	(0.05)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.06)		
$A_{ic}R_c^m$ 2	0.56***	0.16	0.26***	0.48***	1.01***	0.33***	0.04	-0.17	-0.6	-0.36**
	(0.13)	(0.15)	(0.09)	(0.10)	(0.14)	(0.11)	(0.24)	(0.12)	(0.63)	(0.16)
Observations	32719	32719	32719	32719	65438	65438	65438	65438		
N groups (id-ctry)					32719	32719	32719	32719		
					0.57	0.59	0.57	0.59		
u					2.09	2.17	2.09	2.17		
log likelihood					-35875.22	-35408.85	-35858.83	-35370.06		

Notes: All regressions include country xed e ects, in regressions (5) to (10) these e ects are interacted with m (poor or rich). Dummies variables control for gender and

In a fourth step, we estimate jointly equation (10) for m = rich; poor assuming that $_{ic}$ are fixed effects. The fixed-e□ects logit estimator used in regressions (9) and (10) allows for possible correlation between estimators and individual e□ects $_{ic}$. In this estimation procedure, only individuals who express di□erent attitudes towards immigrants from poor or rich countries are taken into account. Here the labor market e□ect vanishes again or becomes even negative (significant at the 10 percent level for immigration from the rest of the world).

At first glance, these results give some support to Hainmueller and Hiscox's (2007) argument that the estimates of labor market e□ects are biased by the fact that individual beliefs and cultural values are correlated with education. Indeed, once we control for unobserved individual beliefs and possible correlation with explanatory variables, we find no significant e□ect of the labor market channel on attitudes towards immigration. It remains to see whether the introduction of welfare state determinants will change this preliminary conclusion.

4.2 Taking the Welfare State into Account

The welfare state changes the relation between human capital and attitudes towards immigration. The sign of this relationship can even be reversed (compared to the labor market model) if there is a high level of income redistribution and if the marginal tax rate is adjusted in order to keep social benefits at the initial level. More specifically, a high-skilled native does not compete with a low-skilled immigrant in the labor market, but the arrival of the latter can deteriorate the former's fiscal situation.

In the theoretical framework, we allowed for two possible adjustments of the government budget: either the benefit level or the marginal tax rate adjusts to the new situation created by immigration. In view of the econometric estimation, the theoretical equations (6) and (8) corresponding to these two cases can be summarized as follows

$$\tilde{z}^{m}_{ic} = \ _{0} + \ _{1}A_{ic} + \ _{2}A_{ic}R^{m}_{c} + \ _{3}t_{c}A_{ic}R^{m}_{c} + \ ^{m}_{c} + \ _{ic} + \ ^{m}_{ic}; \qquad (12)$$

where α_c^m is a country/immigrant group fixed effect and ε_{ic} is the unobserved individual effect capturing general attitudes to immigration.

As in the previous specification with labor market, the procedure developed by Chamberlain (1984) is applied. The random-effects logit model is regressed considering individual omitted factors correlated with regressors as follows: $\varepsilon_{ic} = \gamma_1 A_{ic} R_c^{poor} + \gamma_2 A_{ic} R_c^{rich} + \gamma_1 t_c A_{ic} R_c^{poor} + \gamma_2 t_c A_{ic} R_c^{rich} + \omega_{ic}$. In this case, our estimated equation becomes:

$$\tilde{z}_{ic}^m = \beta_0 + \beta_1 A_{ic} + \beta_2 A_{ic} R_c^m + \beta_3 t_c A_{ic} R_c^m + \gamma_1 A_{ic} R_c^{poor} + \gamma_2 A_{ic} R_c^{rich} + \gamma_1 t_c A_{ic} R_c^{poor} + \gamma_2 t_c A_{ic} R_c^{rich} + \delta X_{ic} + \alpha_c^m + \omega_{ic}^m \quad (13)$$

The two versions of the theoretical model can be distinguished as follows. If the benefit level b is endogenous, the theoretical model predicts that

$$\gamma_1 = 0; \qquad \gamma_2 = -\beta_3 = \lambda(H - L) = \lambda.$$

Both restrictions can be tested.

$$= -\frac{L}{H} \quad \frac{3}{2} + 1$$

Table 4 presents estimation results for this model, using the three di□erent econometric approaches discussed above. Unlike the labor market model, the random-e□ects and fixed-e□ects logit models (regressions (5) to (10)) give consistent results when welfare state considerations are taken into account. This important result reverses our previous conclusions and seems to indicate that the correlation between cultural values and education does not matter in the estimation if the model accounts for taxation and redistribution. We can therefore conclude that the labor market model gives an incomplete description of attitudes towards immigration.

What do these results tell us about the way the government budget adjusts to immigration? The restriction $_2$ +

account. This results=-39 the0(th54(p)-2 Tdo)1jmenbpn9eco450(us265-357(t)1(he)-1(r)1(e)

Table 4: Determinants of Attitudes - Complete Model

Specification	Ordered Probit				R.E. Logit		R.E. Logit Chamberlain		F.E. Logit	
Origin Region	Europe	RoW	Europe	RoW	Europe	RoW	Europe	RoW	Europe	RoW
Poor/Rich/Pooled	Rich	Rich	Poor	Poor	R+P	R+P	R+P	R+P	R+P	R+P
Variable Coe .	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A_{ic} 1	0.46***	0.42***	0.37***	0.41***	1.25***	1.22***	1.29***	1.32***		
	(0.03)	(0.06)	(0.03)	(0.03)	(0.03)	(0.04)	(0.05)	(0.06)		
$A_{ic}R_c^m$ 2	0.73	0.90**	-0.31	0.76*	3.24***	2.25***	4.42***	1.34**	7.20***	1.71**
	(0.64)	(0.39)	(0.36)	(0.45)	(0.59)	(0.40)	(1.04)	(0.57)	(1.38)	(0.73)
$t_C A_{ic}R_c^m$ 3	-0.68	-2.71**	2.07	-0.83	-7.97***	-6.32***	-14.96***	-4.87***	-24.96***	-6.40***
	(2.21)	(1.21)	(1.49)	(1.27)	(2.03)	(1.28)	(3.43)	(1.80)	(4.90)	(2.14)
$-_3 =_2$		3.01			2.48	2.81	3.38	3.63	3.47	3.74
		2.38			1.76	2.14	2.82	3.12	2.92	3.25
Observations	32719	32719	32719	32719	65438	65438	65438	65438	12818	11386
N groups (id-ctry)					32719	32719	32719	32719		
					0.57	0.59	0.57	0.59		
u					2.09	2.17	2.09	2.17		
log likelihood					-35867.42	-35396.98	-35846.57	-35354.44		

Notes: All regressions include country xed e ects, in regressions (5) to (10) these e ects are interacted with m (poor or rich). Dummy variables control for gender and political orientation. Continuous variables control for individual age and individual age squared. Robust standard errors are country clustered in regressions (1)-(4) and (9)-(10).
, , denote signi cance at the 1%, 5%, 10% levels.
Hausman tests for regressions (9) and (10) reject Ho: null individual e ects at the 1% level

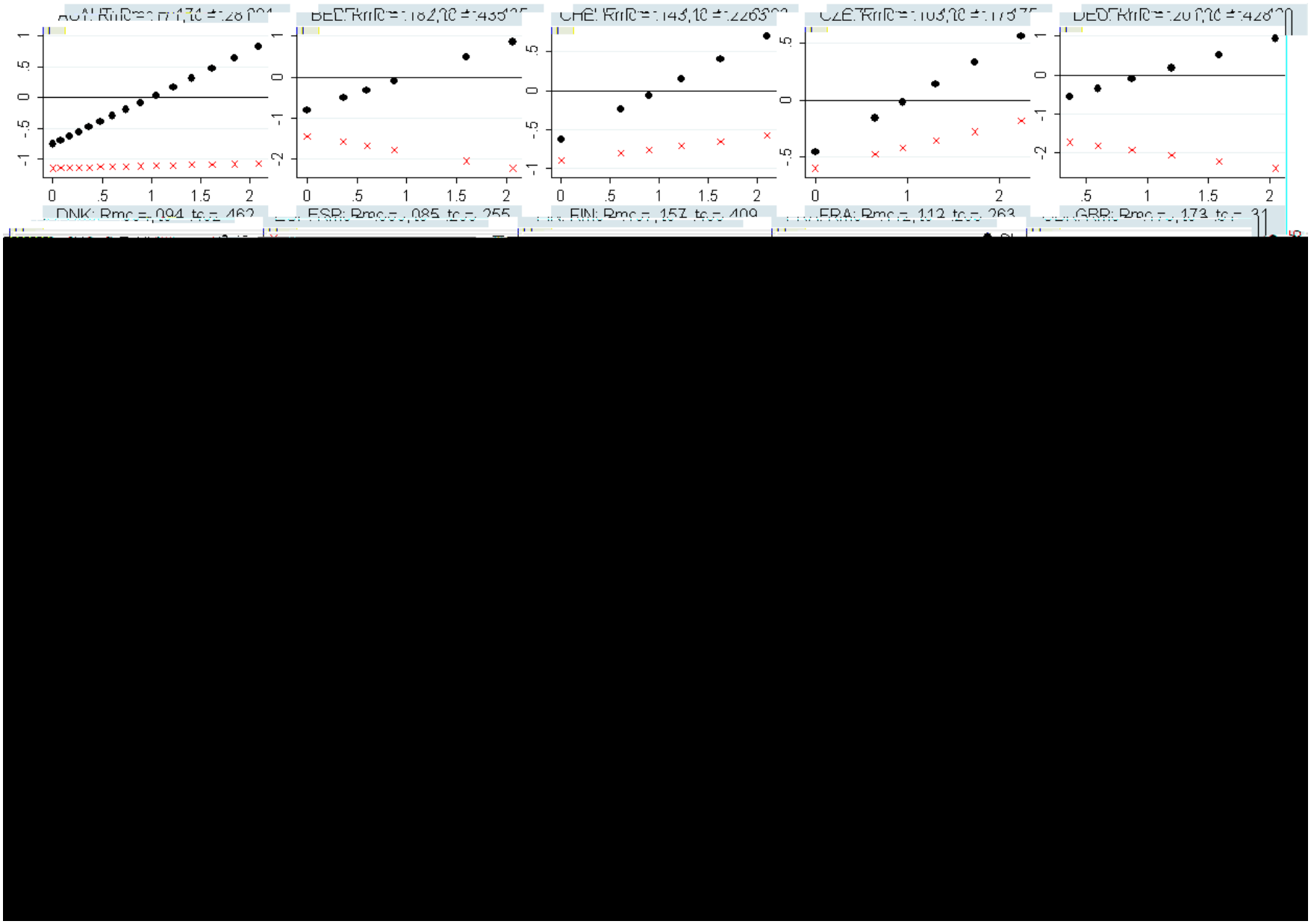


Figure 7: Simulation - Economic Determinants, Immigrants from Poor European Countries

In order to follow the description of the theoretical model which is summarized in figure 3, we plot these predicted values by the proportional education of the native (h_i=h). Moreover, we plot first the predicted values determined by the labor market mechanism (in black) and then the sum of the predicted values determined by the labor market mechanism and the tax-benefit mechanism (in red). Figure 7 plots the impact of the economic determinants on attitudes regarding immigrants from poor and European countries. The theoretical predictions are fully confirmed. Taking for example Belgium, where immigrants are less educated than the average resident ($R_c^m > 0$), the labor market mechanism is harmful to low skilled natives and beneficial for high skilled natives. This can be seen in the positive slope with a negative intercept (black points). From the tax-benefit point of view, less educated immigrants would represent a burden for all natives, reducing the slope according to the level of the taxes (t_c). We expect that the slope changes sign if the marginal tax rate is higher than 29%, which is indeed the case. For Belgium, the cumulated effect of economic mechanisms is that natives are against immigration, and this negative attitude is stronger for skilled natives.

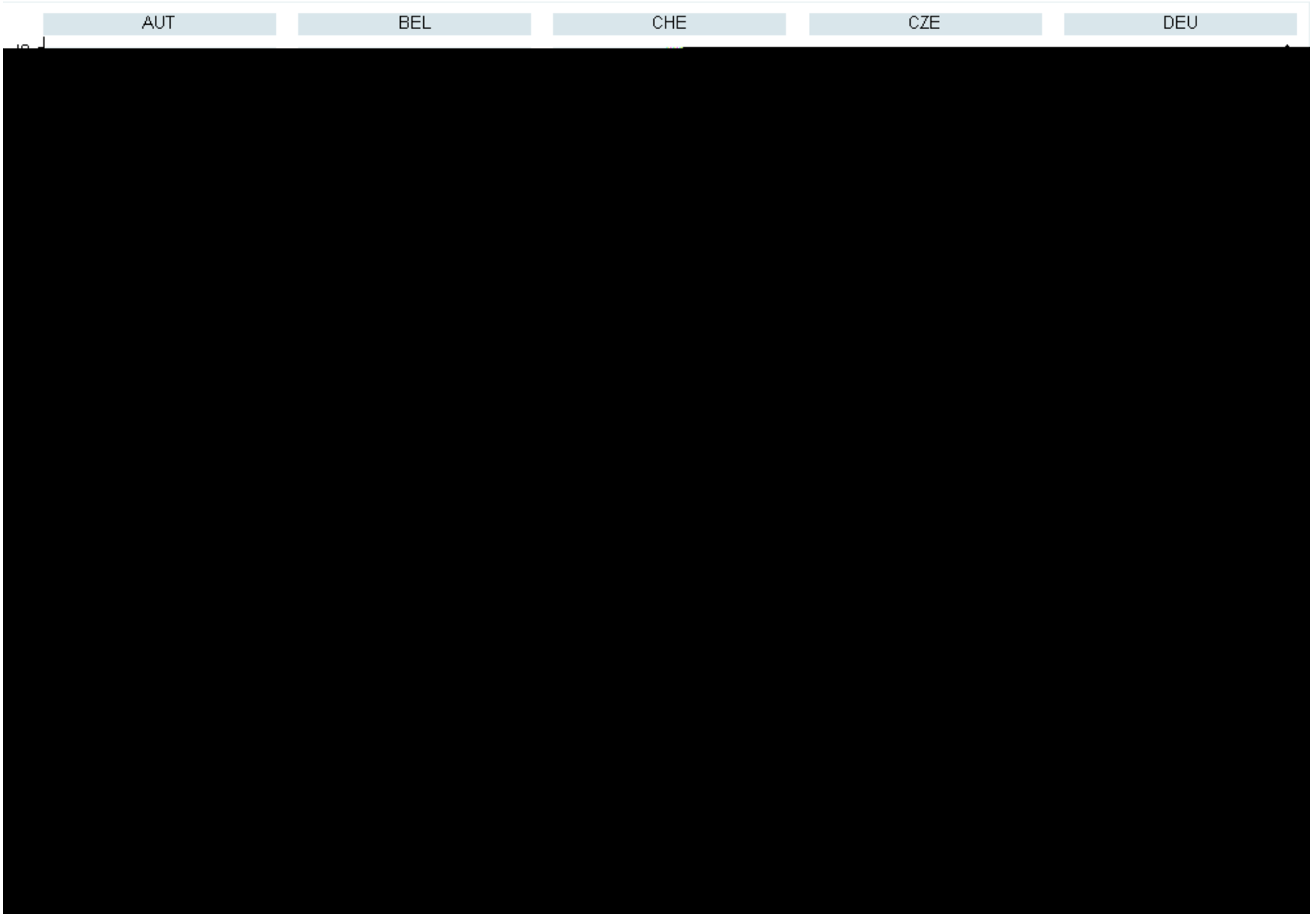


Figure 8: Simulation - Individual Beliefs and Predicted Values, Immigrants from Poor European Countries

References

Chamberlain ,G. , 1984, "Panel Data," Chapter 22 in Z. Griliches and M. Intrilligator, eds., Handbook of Econometrics, North-Holland, Amsterdam, 1247-1318.

Docquier, F., B. L. Lowell and A. Marfouk , 2009, "A gendered assessment of highly skilled emigration," Population and Development Review, 35 (2), 297-322.

Dustmann, C. and Ian P. Preston , 2007, "Racial and Economic Factors in Attitudes to Immigration," The B.E. Journal of Economic Analysis & Policy, 7(1): Advances, Article 62.

Facchini, G. and A. M. Mayda , 2008, "From individual attitudes towards migrants to migration policy outcomes: Theory and Evidence," Economic Policy, 56: 651 - 713.

Facchini, G. and A. M. Mayda , 2009, "Individual attitudes towards immigrants: Welfare-state determinants across countries," Review of Economics and Statistics, 91(2): pp. 295-314.

Greene, W. P. , 2003, Econometric Analysis - Fifth Edition, Englewood Cli□s: Prentice Hall.

Hainmueller, J. and M. J. Hiscox , 2007, "Educated Preferences: Explaining Attitudes Toward Immigration in Europe," International Organization, 61, pp. 399-442.

Hanson, G. and K. Scheve and M. Slaughter , 2007, "Local Public Finance and Individual Preferences over Globalization Strategies," Economics and Politics, 19: 1-33.

Klenow, P., A. Rodriguez-Clare , 2005, "Externalities and Growth," Handbook of Economic Growth, Volume 1A, Aghion, P. and S. N. Durlauf (eds), North-Holland.

Krueger, A. B. , 1999, "Measuring Labor's Share," American Economic Review, 89(2), pp. 45-51.

Mayda, A. M. , 2006, "Who is against immigration? A cross-country investigation of individual attitudes toward immigrants," Review of Economics and Statistics, 88(3), pp. 510-530.

Psacharopoulos, G. and H. A. Patrinos , 2004, "Returns to investment in education: a further update," Education Economics, 12(2), pp. 111-134.

OECD , 2007, "International Migration Statistics ," SourceOECD Vol 2007 release 01.

OECD , 2008a, "A Profile of Immigrant Populations in the 21st Century: Data from OECD Countries," OECD Publications.

O'Rourke, K., R. Sinnott , 2006, "The Determinants of Individual Attitudes Towards Immigration," European Journal of Political Economy 22 :838-861.

Scheve, K.F., M.J.Slaughter , 2001, "Labor Market Competition And Individual Preferences Over Immigration Policy," Review of Economics and Statistics, 83(1): 133-145.

White, H. , 1980, "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity," Econometrica, 48(4): 817-838.

Appendix I

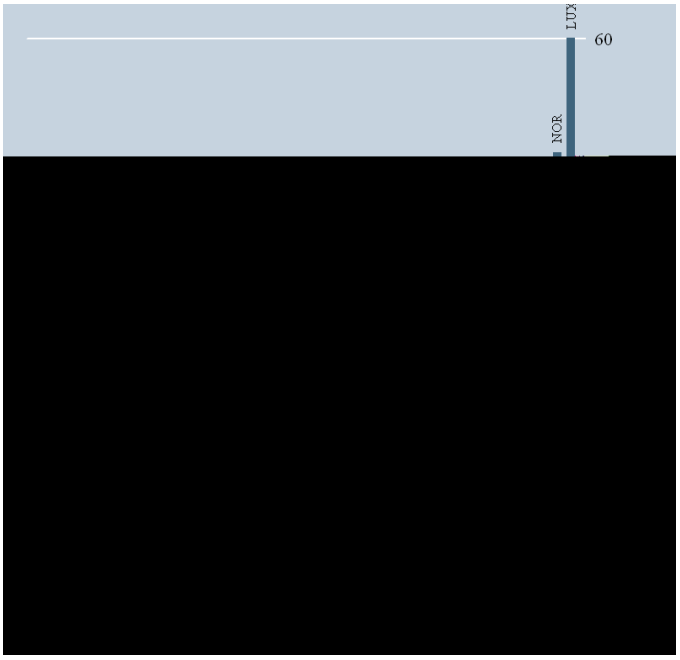


Figure A.1: Thresholds of GDP per capita for European countries

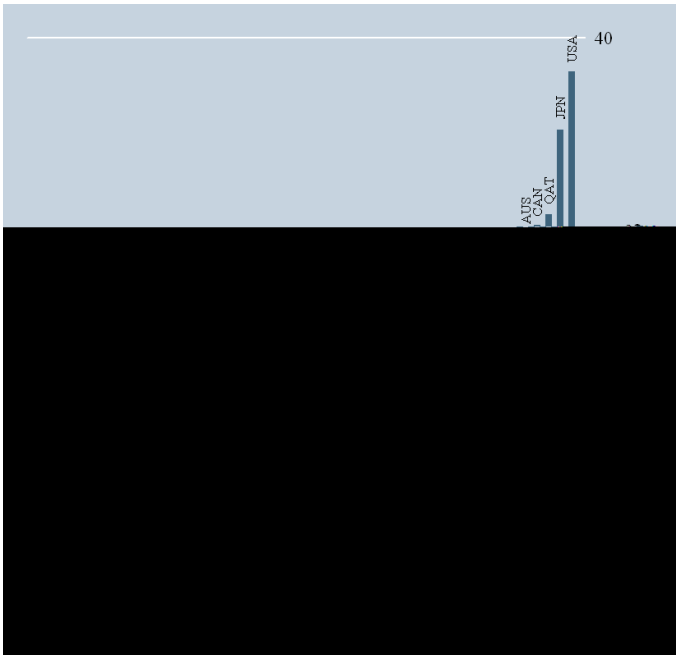


Figure A.2: Threshold of GDP per capita for RoW countries

Appendix II: Robustness Test: Applying Net Income data

This appendix tests for robustness of the empiric analysis controlling for native's net income. This data is available for about two thirds of the sample describing the net income of the household.[19]

$y \equiv Y=L = \frac{F(H=L;\,1)+E}{L} \equiv g(h) + \frac{E}{L} \equiv f(h)$, where $E = \sum_{c} e_i$ and e_i

countries present slightly less observations.

Table A.3: Determinants of Attitudes - Complete Model + Income

Specification	F.E. Logit	
Origin Region	Europe	RoW
Variable Coe cient	(1)	(2)
$A_{ic}R_c^m$ 2	6.01***	2.49**
	(1.28)	(1.11)
$t_C A_{ic} R_c^m$ 3	-18.55***	-7.41**
	(4.82)	(3.00)
$\Delta e_i t_C A_{ic} R_c^m$ 4	-0.16***	-0.07***
$\times 10^3$	(0.03)	(0.02)
$-_3 = _2$	3.08	2.98
	2.46	2.34
Observations	8942	8074

Notes: All regressions include country xed e ects interacted with m (poor or rich). Dummy variables control for gender and political orientation. Continuous variables control for individual age and individual age squared. Robust standard errors are country clustered in all regressions. , , denote signi cance at the 1%, 5%, 10% levels.

Table A.4: Number of observations - Fixed E□ects Logit, Total and Limited Sample

Country	Immig. from EU		Immig. from RoW	
	Total Sample	\Net Income" Sample	Total Sample	\Net Income" Sample
AUT	650	462	498	334
BEL	764	614	670	538
CHE	542	424	524	442
CZE	464	340	430	316
DEU	1186	956	1178	930
DNK	658	574	656	582
ESP	408	262	378	232
FIN	900	830	736	672
FRA	546	0	420	0

Appendix III: Simulations

This appendix explains the simulation procedure. Predicted values of the econometric model give us the "total" attitudes of the natives. Instead, predicted values of the model considering marginal tax equals to zero, give us attitudes regarding only the labor market competition and the individual values and beliefs. As the specification used is based on equation 8:

$$z_{ic}^{m} = \frac{h_{ic}}{h_c}\left(1 - \frac{h_c^m}{h_c}\right)\left(\bar{\ }_{H}\right) - t_c\frac{h_{ic}}{h_c}\left(1 - \frac{h_c^m}{h_c}\right)\left({}^{2}_{H} + \bar{\ }_{H}\right) + {}^{m}_{c}$$

where country fixed effect is ${}^{m}_{c} = \left(1 - \frac{h_c^m}{h_c}\right)\left(\bar{t}_{H}\right) - \left(\bar{\ }_{H}\right) - t_{H} + t\,{}^{2}_{H}$. Imposing tax equals to zero corresponds to restrict ${}_{3}$ equals to zero and to subtract the terms related to t from the country fixed effects: $1 - \frac{h_c^m}{h_c}$

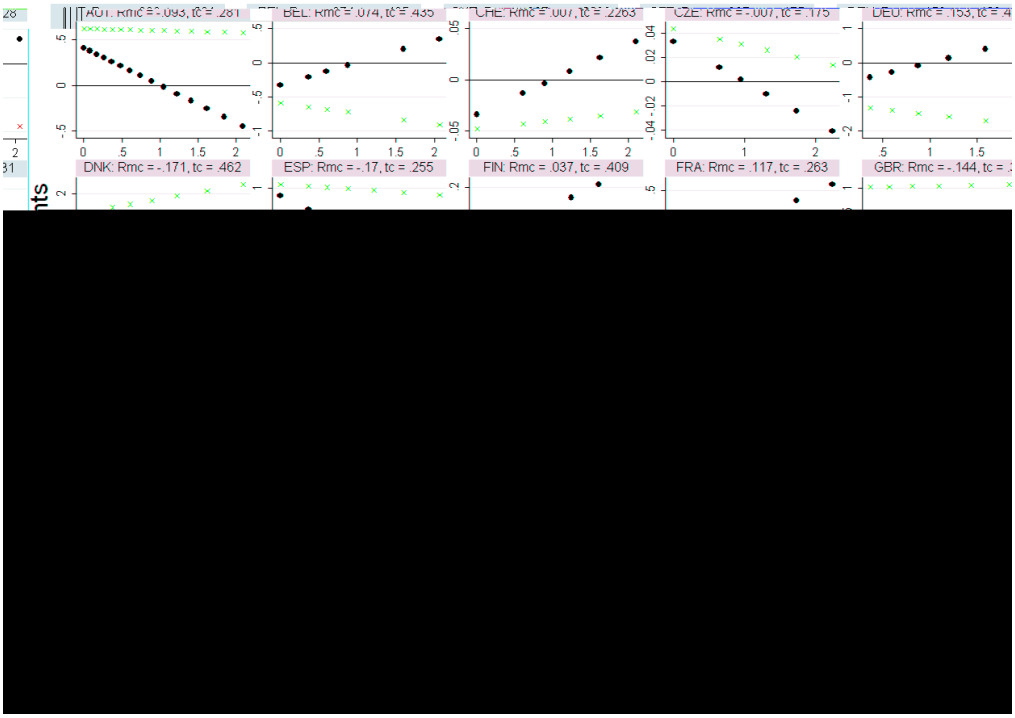


Figure A.3: Simulation - Economic Determinants, Immigrants from Rich European Countries

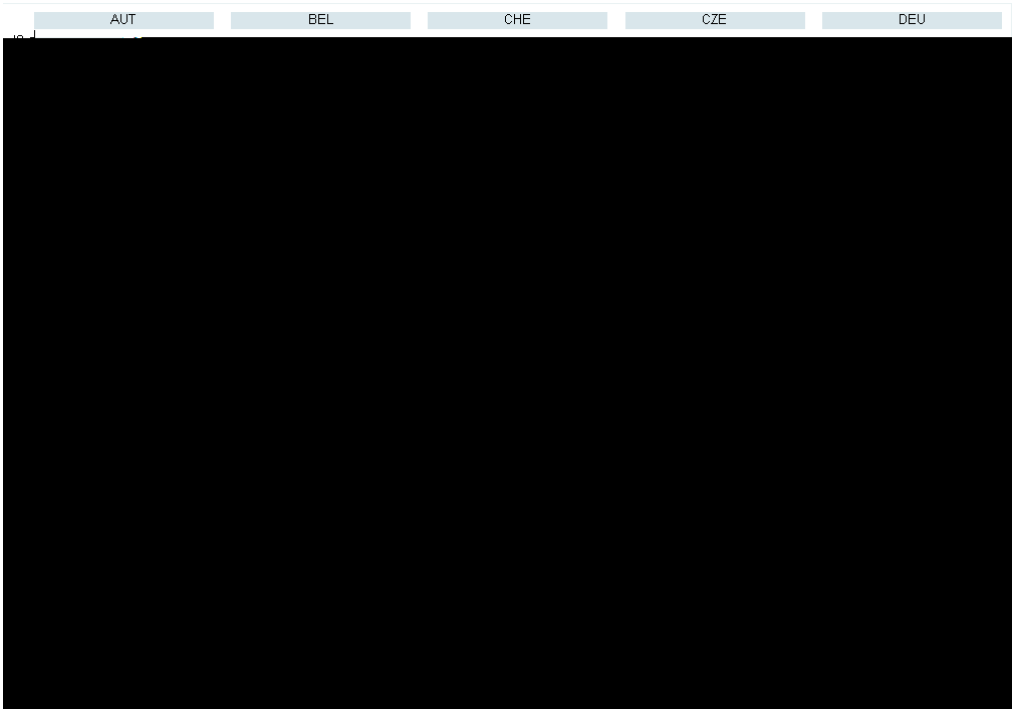


Figure A.4: Simulation - Individual Beliefs and Predicted Values, Immigrants from Rich European Countries

Figure A.5: Simulation - Economic Determinants, Immigrants from Poor R.o.W. Countries

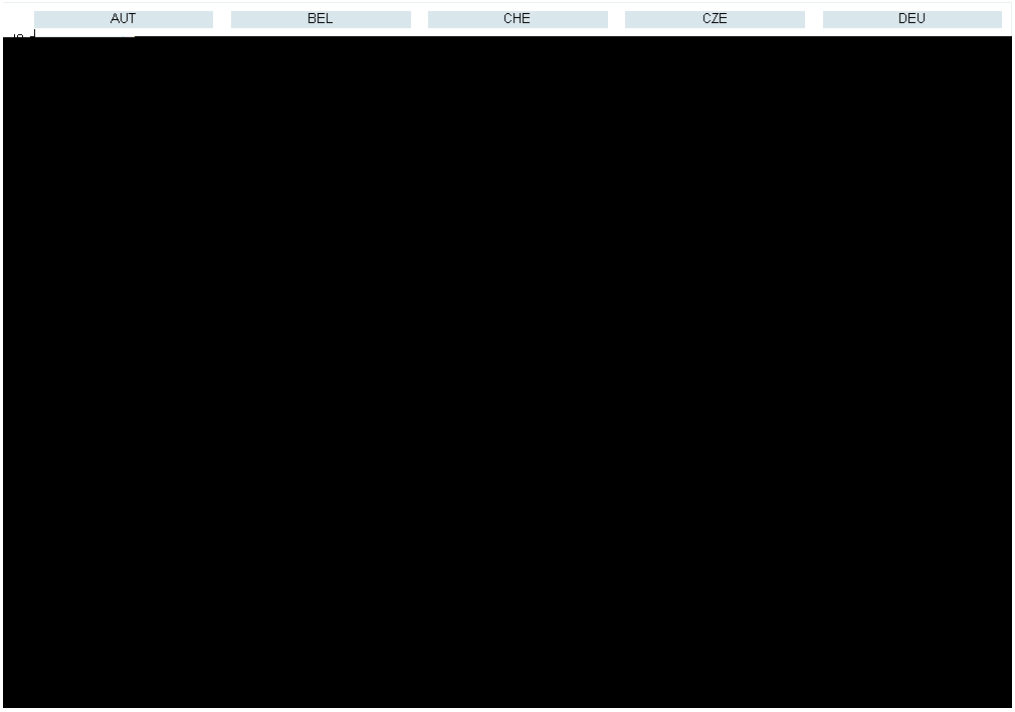


Figure A.6: Simulation - Individual Beliefs and Predicted Values, Immigrants from Poor R.o.W Countries

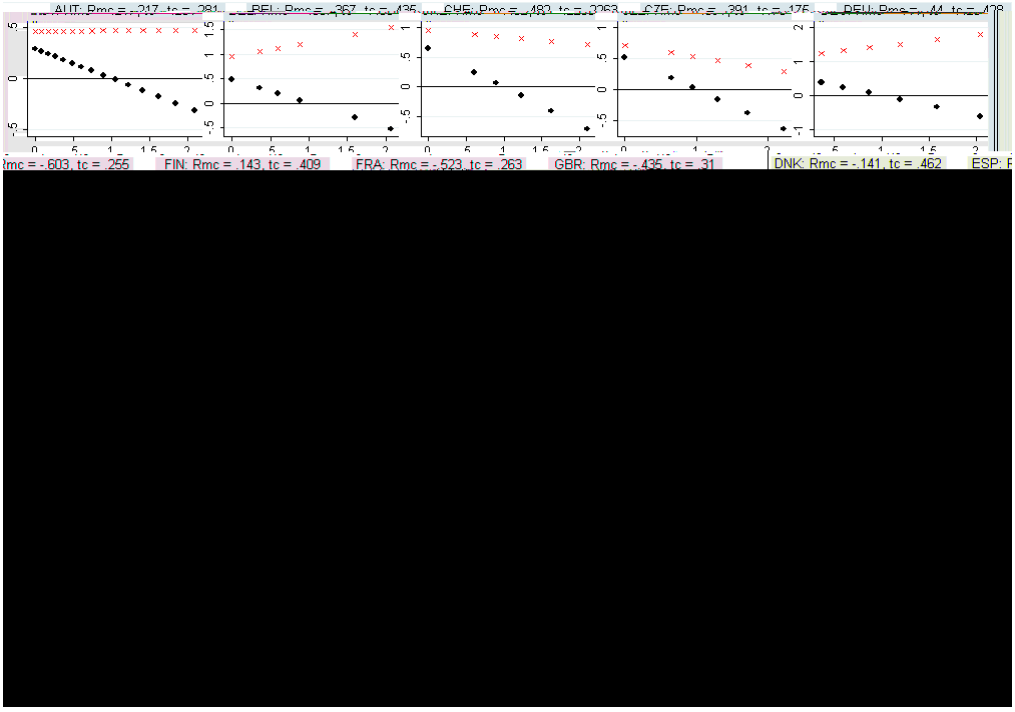


Figure A.7: Simulation - Economic Determinants, Immigrants from Rich R.o.W. Countries

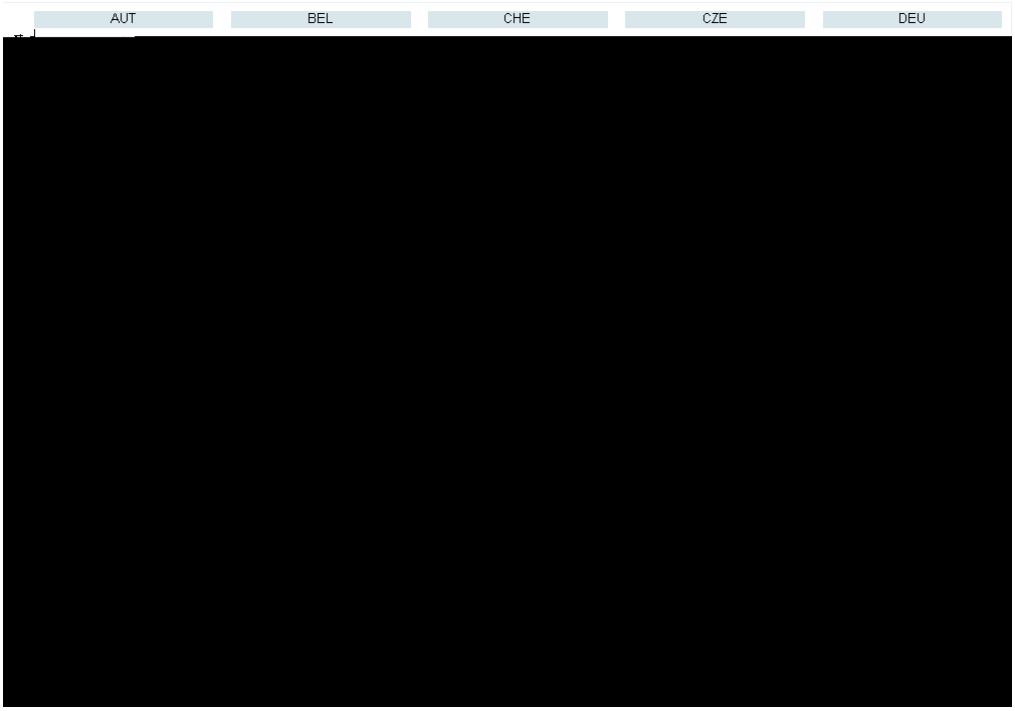


Figure A.8: Simulation - Individual Beliefs and Predicted Values, Immigrants from Rich R.o.W. Countries