What Institutions help immigrants Integrate?

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Contribution to the Project

This research focuses on the potential impact of policies on the structure of migration and on the attitudes of the native population towards migration. It draws conclusions on how migration and labor market policy institutions affect a) the structure of migration and b) are most likely to cause potentially costly social conflict between natives and migrants.

What Institutions help immigrants Integrate?

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Abstract

I analyse the importance of national migration policy and labour market institutions for immigrants' labour market integration. Results indicate that the sending country structure of immigrants to a country, its ethnic diversity and its wage bargaining institutions as well as product market regulation are the most important national institutions impacting immigrants' labour market integration. Variables related to the generosity of the welfare state and tax progressivity are, by contrast, only important in selecting migrants with high employment probabilities and migration policy variables remain unimportant altogether. Countries with more centralized wage bargaining, stricter product market regulation and countries with a higher union density, have worse labour market outcomes for their immigrants relative to natives even after controlling for compositional effects. Immigrants with better chances for labour market integration on account of observable characteristics self-select to countries with more centralised wage bargaining and higher minimum wages but a lower coverage rate by collective agreements. Liberal product market regulation, less centralised wage bargaining and ensuring inclusive trade unions thus assist the integration of immigrants in host countries' labour markets most strongly.

JEL Codes: J15, J61

Key-Words: Immigrant Integration, Migration Policy, Labour Market Institutions

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Introduction

Demographic forecasts suggest that European welfare states are increasingly challenged by aging. For instance EUROSTAT's most recent population forecast predicts an increase of old age dependency ratios in all European Union (EU) countries in the next two decades (EUROSTAT, 2011). As a consequence a number of analysts (e.g. Zimmermann 2008, OECD, 2008) have called for increased immigration to relieve European welfare systems from the fiscal burden of an ageing population. Such a strategy, however, will only be successful if immigrants are net contributors to European welfare states. This, as has been shown by a number of recent comparative studies on the welfare contribution of immigrants (Huber and Oberdabernig, 2013, OECD 2013, Barrett and Maitre, 2011), is more likely when immigrants are well integrated in their host countries' labour markets (i.e. when their chances of finding paid employment are high and their unemployment risks are low). The literature on the labour market integration of immigrants, however, often finds that immigrants face substantially lower chances of being employed and higher ones of being unemployed than natives.

A substantial part of this literature has therefore analysed the individual characteristics favouring immigrants labour market integration. It finds that better educated immigrants and immigrants with more host country specific human capital (e.g. language proficiency) have fewer problems in integrating into host countries' labour markets (e.g. Borjas 2000, Chiswick and Miller 2011) and that age at migration (Chiswick and DebBurman 2004, Goldner and Epstein, 2014), cultural or linguistic similarity to the majority population (Chiswick and Miller 2011, Wanner 1998) as well as the years of residence in the country (Chiswick 1978, Borjas 2000) have an important impact on immigrants' labour market integration. A policy conclusion of this is that immigrant receiving countries should select immigrants with better chances of labour

market integration in their respective country and should provide incentives for immigrants to invest in host country specific human capital.

A further finding of this literature, however, is the huge difference in immigrants' labour market integration across countries (Dustman and Fratini 2011, Hierländer et al. 2010, Algan et al, 2010, Münz 2007). For instance OECD (2008) reports that among European OECD countries employment rate differentials between high skilled immigrants and natives range from -25 percentage point (to the disadvantage of immigrants) in Finland to -2.3 percentage points in Portugal. These vast differences are unlikely to be explained by the composition of immigrants alone, but are likely to also be related to differences in national migration policy and labour market institutions (Dustman and Fratini, 2011). Yet, only few studies have so far analysed the relationship between national labour market and migration policy institutions on immigrants' labour market integration. Most of these focus on case studies of a few countries to highlight the importance of compositional effects (Cangiano, 2012, Lewin-Epstein et al, 2003), migration policy (Rendall et al 2010, Cangiano, 2012), welfare state regimes and labour market institutions (Antecol et al, 2004) in determining immigrants labour market outcomes. These studies, however, often lack the data to formally test their hypothesis. The few cross country comparative studies, by contrast, often focus on different labour market indicators to measure immigrants' labour market integration and also come to rather different conclusions. For instance Kogan (2006) finds that male immigrants' *employment* disadvantages are lower in liberal welfare states marked by flexible labour markets; Fleischman and Dronkers (2010), by contrast, find that countries' integration policies and welfare state regimes do not affect immigrants' *unemployment* risks.

In this paper we also analyse the impact of national labour market and migration policy institutions on immigrants' labour market integration. We, however, extend on

previous literature both in terms of focus and methodology. In terms of focus, in contrast to previous studies, that often focus on a country's welfare state regime (as defined by Esping-Andersen, 1990), we concentrate on measures of labour market institutions such as wage bargaining institutions, replacement rates or minimum wages that have been amply used in the literature explaining differences in natives' labour market outcomes (e.g. Baccaro and Rei 2007, Nickel et al. 2005, Sachs 2012) and use both employment and unemployment rate differentials between natives and immigrants to measure immigrants' labour market integration.

Methodologically, following a recent contribution by Schneeweis (2011) that looks at the impact of education institutions on educational attainment of immigrants, we apply a two-step procedure. First, we decompose the differences in labour market integration between natives and foreign born into one (explained) component, due to differences in observable characteristics (such as age, gender and education) between these two groups, and another (unexplained) component, due to differences in the "returns" to these variables. Second, these components are then correlated to labour market and migration policy institutions. We, however, extend on Schneeweiss (2011) by explicitly accounting for model uncertainty in the analysis through Bayesian averaging of classical estimates (Sala-i-Martin et al. 2000). This has the additional advantage of allowing for the analysis of a larger set of variables than previously considered.

Theory and Method

The starting point of our analysis is that the disadvantages of immigrants in terms of labour market integration relative to natives in a country may be due either to immigrants having characteristics that make them more prone to have worse labour market outcomes (i.e. due to compositional effects) or to immigrants having worse labour market outcomes than observationally equivalent natives. To analyse the

differences in labour market outcomes between immigrants and natives, therefore, a comparable measure of labour market integration across countries and time periods is needed. To derive this, we follow Schneeweiss (2011) and use Oaxaca-Blinder decompositions to decompose the raw employment and unemployment probability differences between immigrants and natives into one component due to differences in characteristics between immigrants and natives in a country and another one that remains unexplained.

Specifically we consider a set of binary labour market outcomes (such as unemployment or employment) of individual i belonging to population group j (which may be natives - indexed by n - or immigrants - indexed by m) in country c at time t, that are captured by the variable Γ_{ict}^{j} and let $\Gamma_{ict}^{\mathrm{j}\,*}$ be a latent variable governing this outcome such that $\Gamma_{i}^{\mathrm{j}*} = \gamma_{ct}^{j} Z_{ict} + \varepsilon_{ict}$ (with Z_{ict} a vector of individual characteristics, γ_{ct}^{j} a vector of group, country and time specific parameters and ε_{ict} an identically and independently normally distributed error term with mean zero and variance $\sigma_{\eta\,\mathrm{ct}}$) and $\Gamma_{ict}^{j} = 1$ if $\Gamma_{i}^{\mathrm{j}*} > 0$ and zero else. As shown by Yun (2005) under these assumptions the total difference between natives and foreign born in this outcome, given estimates of γ_{ct}^{j} (derived from probit regressions and denoted by $\hat{\gamma}_{ct}^{j}$) can be decomposed into the two components of interest by noting that:

$$P(\Gamma_{ict}^{m}) - P(\Gamma_{ict}^{n}) = [\bar{\Phi}(Z_{ict}^{m}\hat{\gamma}_{ct}^{m}) - \bar{\Phi}(Z_{ict}^{n}\hat{\gamma}_{ct}^{m})] + [\bar{\Phi}(Z_{ict}^{n}\hat{\gamma}_{ct}^{m}) - \bar{\Phi}(Z_{ict}^{n}\hat{\gamma}_{ct}^{n})] \quad (1)$$

with a bar over variables indicating sample means and Φ the standard normal cumulative density function.

The first term in square brackets on the left hand side of equation (1) is the difference in characteristics effect reflecting differences in the composition of immigrants and natives in a particular country. This should be higher in countries which

attract immigrants that (relative to natives) have less favourable characteristics for labour market integration. In this respect previous research (Kao and Thompson, 2003, Fleischmann and Dronkers, 2010, Van Tubergen et al. 2004) has found sending country structure to be an important explanatory variable to explain differences in labour market integration among immigrants. This component may, however, also be related to migration policy variables as for instance Rendall et al. (2010) and Cangiano (2012) amongst others find that immigrants entering the host country under family reunion schemes have less favourable characteristics than migrants entering under labour market quota. Furthermore, this component may be influenced by the welfare state and wage setting institutions of a country. This will be the case, if as argued by the welfare magnet hypothesis of migration (Borjas 1999, Levine and Zimmermann 1999, Nowotny 2011), immigrants with lower chances of labour market integration are particularly attracted to countries with a generous welfare state, if less skilled immigrants are particularly strongly drawn to countries where the wage structure is more compressed, as hypothesized by self-selection theories of migration (Borjas 1987, Chiswick 1999) or if as found by Egger and Radulescu (2009) more able immigrants prefer to move to countries with lower tax progressivity.

The second term in square brackets on the left hand side of equation (1) is the difference in parameters, or unexplained, effect. As pointed out by Schneweiss (2011) this is a comparable measure of the disadvantage of immigrants in labour market integration relative to natives after accounting for compositional effects. Different authors have voiced different hypotheses about the factors impacting on this component. For instance Kogan (2006) finds that immigrants' integration prospects improve in more flexible labour markets. The discrimination literature (see Cain 1986 for a survey) has, by contrast, sometimes argued that a higher degree of unionisation may hamper immigrants' labour market integration if unions take insufficient account

of immigrants in wage bargaining. Similarly, a somewhat larger literature (e.g. Fougere and Safi, 2009, Steinhart 2012, Gathmann and Keller 2014) finds positive returns to a citizenship of the host county. This implies that more liberal naturalisation laws may have a positive impact on immigrant's labour market integration. Also migration policy and the sending country structure of immigrants may impact on this component. This could for instance be the case if anti-discrimination policies or long term residence rights assist immigrants in labour market integration or if immigrants from certain countries are discriminated against.

Theoretical considerations, thus, lead to two hypotheses with respect to the factors impacting on the components of the Oaxaca decomposition in equation (1). The first is that the explained component of this decomposition should be smaller (more favourable for immigrants) the more favourable is the sending country structure of immigrants and the more generous are rules for labour market migration relative to those for family migration, while it should be larger (less favourable for immigrants) the more generous the welfare state and the more compressed the wage distribution in a country. The second is that the unexplained component of this decomposition is smaller if a country's labour markets are more flexible, if naturalisation and long term residence laws are more lenient, and if anti-discrimination policies are more stringent. By contrast, it may be higher in countries with higher trade union density and where a larger share of immigrants comes from countries that are discriminated against.

We test these hypotheses by separately regressing the explained and the unexplained component of the Oaxaca-Blinder decomposition on a set of explanatory variables reflecting these hypotheses. Denoting the explained component of the Oaxaca-Blinder decomposition for country c at time t by η_{ct} (i.e. $\eta_{ct} = \overline{\Phi}(Z_{ict}^{m}\hat{\gamma}_{ct}^{m}) - \overline{\Phi}(Z_{ict}^{n}\hat{\gamma}_{ct}^{m})$), the unexplained component by μ_{ct} (i.e. $\mu_{ct} = \overline{\Phi}(Z_{ict}^{n}\hat{\gamma}_{ct}^{m}) - \overline{\Phi}(Z_{ict}^{n}\hat{\gamma}_{ct}^{n})$)

and the potential explanatory variables by X_{ct} and Y_{ct} we consider regressions of the form:

$$\eta_{ct} = \lambda_0 + \lambda_1 X_{ct} + \xi_{ct} \tag{2}$$

and

$$\eta_{ct} = \theta_0 + \theta_1 Y_{ct} + \epsilon_{ct} \tag{3}$$

to test for the impact of various institutional factors impacting on these components.

There are a number of issues that have to be addressed with this procedure. The first is related to the interpretation of the components of the Oaxaca – Blinder decomposition: These as shown by for instance Kunze (2007) and Huber (2014) can be interpreted causally only if both the group variable used to define the decomposition (in our case immigrants status) as well as all the control variables (X_{ct} and Y_{ct}) are exogenous. From the point of view of our application the first of these conditions should be less problematic if we measure immigrant status by country of birth, since country of birth should be as good as randomly assigned.[2] The exogeneity of the control variables, however, is will be questionable if more able immigrants self-select into countries offering them better conditions. Thus if immigrants with better unobserved abilities positively (negatively) self-select to certain countries, our estimates of the explained component for an individual country are under- (over-) estimated and those of the unexplained component are over- (under-) estimated. Although the possibility of such a self-selection cannot be excluded this bias will be mitigated by non-economically motivated migration, which according to some estimates (e.g. Constant and Zimmermann 2005) is as high as 84% of all migration.

[2] This, however, would not be the case when migrant status is defined by nationality, since more able migrants could self-select into naturalization.

The second issue is model uncertainty. This arises because theoretical considerations suggest a rather large set of variables that may impact on immigrants' labour market integration, with theory being rather unspecific as to which variables are to be included in the "true" model, formulated in general terms in equations (2) and (3), and on how these variables are to be measured. A method to overcome this form of model uncertainty in small data sets with few observations on different countries and time periods is Bayesian averaging of classical estimates (see amongst others: Sala-i-Martin et al. 2000)

This entails estimating each and every of the 2^k conceivable regressions in a model with k possible variables and performing inference based on a weighted average of the estimates obtained in each specification. Sala-i-Martin et al. (2000) show that under the assumption that the marginal prior density of model j (M_j) is multivariate normally distributed as proposed by Zeller's g-prior structure and that all models have equal prior probability, the expectation of the posterior distribution of the parameters (δ) in a regression with data set (Ω) is given by $E(\delta|\Omega) = \sum_{\iota=1}^{2^k} P(M_\iota|\Omega)\hat{\delta}_\iota$, while its variance can be approximated by $Var(\delta|y) = \sum_{\iota=1}^{2^k} P(M_\iota|\Omega)Var(\delta|\Omega, M_\iota) + \sum_{\iota=1}^{2^k} P(M_\iota|\Omega)\left[\hat{\delta}_\iota - \sum_{\iota=1}^{2^k} P(M_\iota|\Omega)\hat{\delta}_\iota\right]$ where $P(M_j|y\Omega) = T^{-\kappa_\iota/2} SSE_\iota^{-T/2} / \sum_{l=1}^{2^k} T^{-\kappa_l/2} SSE_\iota^{-T/2}$, and T is the number of observations, κ_ι the number of regressors and SSE_ι the sum of squared errors in regression ι. In this setup the posterior inclusion probability of a variable, which can be calculated by taking the sum of $P(M_\iota|\Omega)$ across all specifications in which this variable is included, gives an assessment of whether the variable should be included in the model and the ratio of the posterior expectation to the posterior variance can be considered as a measure of the efficiency of this variable. In particular Sala-i-Martin et al. (2000) suggest that variables with a posterior inclusion probability exceeding the prior (of 0.5) should be considered to be part of a model while Masanjala and Papageorgiou (2008) state that a variable is "efficient" if the ratio of posterior expectation to variance exceeds 1 in absolute value.

Data

We use individual level data from European Labour Force Survey (ELFS) for the years 2004 to 2011 for 14 EU countries (Austria, Belgium, the Czech Republic; Denmark, Spain, Finnland, France, Greece, Ireland, Italy, The Netherlands, Portugal, Sweden, UK) which provide data on the country of birth of their residents and where the foreign born population is large enough to allow for a detailed analysis as well as Norway to estimate the probit regression underlying the decomposition in equation (1).[3] The ELFS is a representative survey conducted in these countries that (amongst others) asks respondents on their country of birth and (if born abroad) on their duration of stay in the respective country as well as on demographic characteristics (such as age, gender, marital status number of children and others) and labour market status (which may be employed, unemployed and inactive). Thus from the data the number and structure of foreign born residing in a country as well as their employment status can be calculated. The data are, however, only a sample of the households in the EU27 and are thus subject to sampling error. To reduce this we estimate equation (1) on a country by country basis taking the average of three time periods (2004 and 2005, 2006 to 2008 and 2009 to 2011) that match our institutional data.

Dependent Variables

For our benchmark results we focus on comparisons between active aged (15 to 64 year old) immigrants from non-EEA countries to active aged natives (thus excluding immigrants from other EU and EEA countries), to ensure that all immigrants in our

[3] Although the ELFS provides data on all EU27 countries, Germany had to be dropped, on account of the German LFS, not asking the question of the country of birth of residents. In addition Bulgaria, Cyprus, Estonia, Hungary, Malta, Latvia, Lithuania, Luxemburg, Poland, Romania, Slovakia and Slovenia had to be dropped because the number of interviewed foreign born was to small to allow for an analysis. In addition for unemployment rates we miss data for the first period of analysis in the Czech Republic for the same region.

sample are subjected to immigration policies. Furthermore, we differentiate between recent immigrants (living in their current country of residence for less than 10 years) and established immigrants (living in their current country of residence for 10 or more years), since following the results of the migration literature (e.g. Eckstein and Weiss 2004, Mattoo et al. 2012) established immigrants should be better integrated than recent ones, on account of the longer time they have had to invest in host country specific human capital.

We focus on employment and unemployment probabilities as dependent variables, since these have been considered to be central indicators of labour market integration by a number of studies (Rendall et al. 2010, Cangiano 2012, Antecol et al. 2004, Kogan 2006) and have also been shown to be important determinants of the net fiscal contribution of immigrants to European welfare states (Huber and Oberdabernig 2013, OECD 2013). In the ELFS these variables are measured according to ILO/EU definitions. In consequence an internationally comparable measure for both variables is available. Thus for the probit estimates underlying the Oaxaca-Blinder decompositions in equation (1) we use dummy variables which take on a value of 1 if a person is employed (respectively unemployed) and 0 else, as dependent variable.

{Table 1: here}

Table 1 shows the country specific average unemployment and employment rate differentials between natives and recent as well as established immigrants for the time period 2004 to 2011. There is wide variation across countries in both indicators. Native to recent immigrant differentials in unemployment rates range from -17.7 percentage points (in France) in the average of the seven years considered to 3.3 percentage points in the Czech Republic and native to immigrant differentials in employment rates range

between 24.6 (France) to -8.9 (Czech Republic) percentage points. Somewhat in contrast to expectations, however, established immigrants are not always better integrated. Differences to natives in terms of unemployment rates are larger for established than recent immigrants in Ireland and Portugal and the same applies to 5 countries (Belgium, Czech Republic, Finland, Ireland and the United Kingdom) when considering employment rates. This suggests that earlier immigrant cohorts to these countries may have had less favourable characteristics for labour market integration or may have faced larger problems in integrating in labour markets.

Independent variables for Oaxaca – Blinder decomposition

As control variables in the probit regressions underlying the first step Oaxaca-Blinder decomposition we use set of dummy variables for human capital (education which may be compulsory, vocational or upper secondary and tertiary) and age (dummies for 15-24, 25-44 and 45-64 year olds) and augment these by a dummy variable for gender, to control for the sizeable gender differences in our dependent variables in many EU countries. Table 2 compares immigrants' characteristics in these variables to those of natives by considering relative shares. Thus a number larger than 1 in the table indicates that the share of immigrants with the respective characteristic is larger than among natives, while a number smaller than 1 indicates that this share is smaller than among natives. In general immigrants are over-represented among the 25 to 44 year olds and under-represented among the young (15 to 24 year olds) and older (45 to 64 year olds). They are also over-represented among both the high- and low-skilled and as a rule are more often female than natives. There is, however, substantial variation across countries. For instance in Denmark, Spain, Finland immigrants are overrepresented among the young and in France and Poland among the old. In Spain, Ireland, Portugal and the United Kingdom the share of unskilled among immigrants is lower than among natives and in Spain and Portugal the share of medium skilled

immigrants exceeds that of natives, while in quite a number of countries the share of high-skilled among immigrants is lower than among natives. In the Czech Republic, Greece and Italy immigrants are more often male than natives.

{Table 2: Around Here}

Independent variables for regression analysis

For the second step analysis we collect data on the structure of migration, indicators of migration policy and a number of indicators of labour market institutions related to the flexibility of labour markets, wage setting and the generosity of the welfare state, for which summary statistics are reported in table 3. In particular to control for immigrant structure we control for the share of immigrants originating from a certain region (which may be Southeast Asia, Middle East and Northern Africa, other European countries, other African countries or the Rest of the World with the later being the base group)[4]. We expect these share to affect both the explained component (since they measure the ability of immigrants) and the unexplained component (since for instance certain groups may be exposed to discrimination) of the Oaxaca-Blinder decomposition. In addition we include the Herfindahl index of immigrant shares coming from the above regions as a measure of the ethnic diversity of immigrants in a country that is often used in the literature on ethnic diversity (e.g. Alesina et al., 2003) as an additional control in both the explained component (to control for immigrants differing preferences for ethnic diversity) and the unexplained component (as diversity may complicate the integration of immigrants) of the Oaxaca-Blinder decomposition.

[4] This choice is dictated by data, as it is the most disaggregated sending country structure that can be derived across the counties and time periods considered in this paper.

{Table 3: Around here}

Furthermore, to measure migration policy we use the MIPEX data base. This (based on a total of 148 indicators) assesses a country's migration and integration policies by measuring the generosity of labour market and family reunion migration regulation, the ease of access to education, political participation, long-term residence and nationality and the stringency of anti-discrimination policies (see http://www.mipex.eu/ for details). This data was collected for different sets of countries in the years 2004, 2007 and 2010 (see data appendix for a description). For the years 2007 and 2010 the data has been harmonized by MIPEX. Data for 2004 was compiled according to a slightly different method. Therefore data at the most disaggregated level available was used to derive consistent indicators over the three periods. This allows us to derive consistent indicators for the generosity of labour market and family reunion migration regulations as well as ease of access to long-term residence and nationality and the stringency of anti-discrimination laws.

These variables are scaled so that the best country receives a score of 100% and the worst 0% and should impact on the explained part of the Oaxaca – Blinder decomposition because the generosity of family immigration relative to labour market immigration regulations may impact on immigrants quality and because certain immigrants may be attracted to countries with more stringent anti-discrimination polices or to countries offering better prospects for long term residence rights or for the acquisition of the host country's nationality. In addition, the stringency of anti-discrimination policy but also the ease with which long term residence and citizenship can be obtained may impact on the unexplained part of the Oaxaca decomposition if anti-discrimination policies are effective or if the ease of obtaining long-term residence

and nationality rights impact on immigrants incentives to invest in host country specific human capital.

Finally, data on labour market institutions was compiled from a variety of standard sources. In particular we use the data on employment protection legislation and on product market regulation from OECD to proxy for labour market flexibility. If immigrants find it easier to integrate in more flexible labour markets these indicators should impact positively on the unexplained component of the Oaxaca decompositions. To measure the generosity of the welfare state and the progressivity of the tax system, by contrast, we include the net replacement rate and the marginal tax rate of moving from unemployment to employment provided by OECD as well as indicators taken from Botero et al. (2003). The later measure the generosity of old age and sickness and health benefits and are used to control for aspects of the generosity of the social security system not covered by other data and take on values between 0 and 1, with 1 indicating high generosity of old age benefits, respectively health benefits, but are only available for one period of time. To the degree that less skilled immigrants are attracted to countries with a more generous welfare system and repelled from countries with high tax progressivity these indicators should impact negatively on the explained component of the Oaxaca decomposition.

Finally, data on minimum wages (in % of the median wage) from OECD and on the organisation of trade union bargaining and trade union organisation (trade union density, adjusted coverage rates of collective agreements as well as the centralisation and co-ordination of wage bargaining) from Visser (2011) is included[5]. These indicators may have a negative impact on the explained component of the Oaxaca-Blinder

[5] We use these indicators because previous literature differs on which of these institutional variables are the most important in determining wage flexibility.

decomposition if these institutions lead to more wage compression in a country, but could be negatively correlated to the unexplained component if for instance countries with a higher bargaining power of trade unions are more likely to discriminate against the foreign born or if low wage flexibility in a country disproportionately rations low ability immigrants out of the labour market.

Results

Results of Oaxaca-Blinder decompositions

Figure 1 displays the results of the first step Oaxaca – Blinder decomposition. It shows that the variance of the outcome indicators is larger with respect to the unexplained component than with respect to the explained component. For unemployment probabilities, the explained component ranges between -0.1 (Ireland) and -3.6 (Italy) percentage points and the unexplained component between 2.7 (Czech Republic) and -13.9 (Sweden) percentage points. For the employment probability decomposition the explained component ranges from 7.4 (in Italy) to -5.0 (in Ireland) percentage points and the unexplained from 21.8 (Netherlands) to -8.2 (Czech Republic) percentage points. This thus confirms that the compositional effects captured in the explained part of the Oaxaca-Binder decomposition contribute only a (small) part to the total differences in immigrants' labour market outcomes relative to natives across countries. Furthermore, explained and unexplained differences in employment probabilities are negatively correlated to explained and unexplained differences in unemployment probabilities. Thus, as could be expected, countries where immigrants have higher unemployment probabilities than natives due to observable differences or due to unexplained reasons, also have employment higher employment probabilities due the same components. This correlation is, however, not always perfect. For instance in the Netherlands the unexplained component for unemployment rates was 0.21

percentage points in the average of the three periods considered while it was only -0.08 for unemployment rates.

{Figure 1: Around here}

BACE Results for the explained components

Table 4 reports the results of the second step BACE analysis for the explained component of the Oaxaca-Blinder decomposition (i.e. η_{ct} in equation 2) with the variables sorted according to their posterior inclusion probability. Among the 20 variables tested in the 1.04 million regressions underlying this analysis only 3 (the centralisation of wage bargaining, minimum wages and the share of migrants from Southeast Asia) are both efficient and have a posterior inclusion probability exceeding the prior of 0.5 in the unemployment probability analysis. For the employment probability the same applies to four variables (the centralisation of wage bargaining, minimum wages and the share of migrants from both the Middle East and Northern Africa as well as from the Rest of Africa). In addition in the analysis of the unemployment probability the adjusted coverage rate by collective agreements and in the in the analysis of the employment probability effective tax rates and the generosity of old age benefits attain a posterior inclusion probability of more than 0.5 but fail to be efficient. This is therefore evidence of the important role played by wage bargaining institutions and the sending country structure for the selection of migrants to a particular country.

This is also confirmed by the posterior means of the coefficients. These suggest that countries with a higher centralisation of wage bargaining and higher minimum wages attract migrants with a lower probability of unemployment and a higher probability of employment relative to natives on account of more favourable observable

characteristics, while countries with a lower share of migrants from Southeast Asia have a lower unemployment rate and countries with a higher share of migrants from the Middle East and Northern Africa as well as from the Rest of Africa have lower employment rates relative to natives on account of observable characteristics. In addition the estimated coefficients imply that countries with a higher adjusted coverage rate of collective agreements receive migrants that are more likely to be unemployed relative to natives on account of observables, while countries with higher effective tax rates and less generous old age benefits receive migrants that have lower employment chances relative to natives on account to observables.

{Table 4: Around here}

In sum therefore the sending country structure of immigrants and wage bargaining institutions in a country are the most important determinants of the quality of immigrants received by a country for labour market integration, with the signs of the coefficients for these variables according to theoretical expectations. Migration policy variables, by contrast, fail to be important throughout, while the tax and welfare benefit system variables are important only for the selection of migrants with respect to their employment probability, with the impact of old age benefits on the ability of migrants to integrate in the host countries' labour markets having an unexpected positive sign. One explanation for this lack of importance of migration policy variables in the selection of migrants in terms of ability to integrate in host countries' labour markets may be that European labour migration regulations are not skill–selective enough to influence the structure of migration over and above what can be considered to be determined by the sending country structure An explanation for the unexpected positive impact of the

generosity of old age benefits is that such benefits attract particularly able migrants as their employment allows them to secure old age benefits when in pension.

BACE Results for the unexplained component

Looking at the results for the unexplained part of the Oaxaca decomposition in table 5, by contrast, for the unexplained component of unemployment probabilities five variables attain a posterior inclusion probability exceeding the 0.5 mark as well as being efficient. These are the MIPEX index for the stringency of anti-discrimination policies, union density, the share of immigrants from the Middle East and Northern Africa, product market regulation and the adjusted coverage rate of collective agreements. The coefficients of these variables are highly consistent with prior expectations. The negative coefficient for the share of immigrants from the Middle East and Northern Africa implies that, for reasons other than their education and age, immigrants from this region have higher unemployment rate probabilities than others. This may be indication of discrimination against these immigrants or alternatively of particular problems in transferring human capital by these immigrants.

The negative coefficient on adjusted coverage rates of collective agreements suggests that countries with higher adjusted coverage rates of collective agreements, have higher unemployment probabilities among migrants relative to natives after controlling for observable differences in characteristics between these groups, while the negative coefficient of union density suggests that countries with higher union density tend to have larger unemployment rate differences between observationally equivalent migrants and natives. This implies that unions often act as organisations that insulate native “insiders” from potential labour market competition of foreign born outsiders. The positive coefficient on product market regulation, by contrast, implies that countries with more stringent product market regulation have lower unemployment rate differentials between immigrants and natives after controlling for observable

characteristics. This may be because in such countries immigrants have easier access to self-employment. The only coefficient that does not accord with prior expectations is the negative coefficient on the stringency of antidiscrimination policies. This may, however, be due to such a higher stringency leading to increased labour supply of immigrants but not necessarily higher employment probabilities – a finding that is corroborated by the low posterior inclusion probability of this variable for the employment rate

{Table 5: around here}

In addition, for the unexplained component of the employment probability the share of recent immigrants, product market regulation, the share of immigrants from Southeast Asia, the adjusted coverage rate of collective agreements, a more diverse ethnic composition of the immigrant groups and union density attain posterior inclusion probabilities exceeding 0.5 and are also efficient. Also the posterior coefficient signs of these variables accord with expectation and indicate that countries with a higher share of immigrants from Southeast Asia, a lower share of recent immigrants, lower union density, a higher ethnic diversity among their immigrants, a higher adjusted coverage rate of collective agreements and with weaker product market regulation have higher employment probabilities among their immigrants relative to natives for unexplained reasons. Once more therefore the structure of migration and wage bargaining institutions seem to be important determinants of labour market integration of immigrants rather than migration policy and or welfare state variables.

Conclusions

This paper is concerned with the importance of national migration policy and labour market institutions for determining immigrants' labour market outcomes. Our

results suggest that in general the structure of immigrants to a country in terms of diversity sending country structure and the wage bargaining institutions of a country are the most important factors impacting on labour market integration in a country, while variables related to the generosity of the welfare state and the progressivity of taxation and even more so variables measuring different aspects of migration policy remain to be less important determinants. In countries with more centralized wage bargaining, stricter product market regulation (and potentially also employment protection) as well as countries with a higher union density, labour market outcomes of immigrants relative to natives tend to be worse even after controlling for compositional effects. In addition immigrants with ex-ante better expectations of labour market integration on account of observable characteristics self-select to countries with more centralised wage bargaining and higher minimum wages but a lower coverage rate by collective agreements.

These results apply to both employment and unemployment rates relative to natives as measures of labour market integration and imply that liberal product market regulation (to allow immigrants to more easily enter self-employment) and less centralised wage bargaining (to increase wage flexibility towards immigrants working in low wage jobs) and ensuring inclusive trade unions could assist most in facilitating the integration of immigrants in host countries' labour markets.

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Table 1: Raw Differences in employment unemployment and over-education rates between natives and foreign born (means over 2004-2011)

	Unemployment rate Recent immigrants	Employment Rate Recent immigrants	Unemployment rate Established immigrants	Employment Rate Established immigrants
AT	-6.4	10.5	-6.1	5.9
BE	-9.7	10.9	-10.3	7.7
CZ	3.3	-8.9	-0.3	-2.6
DK	-9.5	19.2	-8.2	17.6
ES	-7.9	1.9	-6.1	-3.9
FI	-13.8	19.1	-17.7	18.5
FR	-17.7	24.6	-11.7	11.1
GR	-2.0	1.5	1.3	-11.3
IE	-3.3	-3.2	-3.5	1.1
IT	-9.0	8.5	-2.9	-7.8
NL	-8.1	23.3	-8.9	20.4
NO	-9.3	13.7	-6.8	11.8
PT	-5.8	2.0	-5.3	3.2
SE	-17.5	27.3	-13.5	18.5
UK	-2.8	8.3	-3.2	7.8
Total	-8.3	10.8	-7.0	6.8

Source: ELFS, own calculations. Recent immigrants= foreign born with less than 10 years of residence in the receiving country, Established immigrants = immigrants with 10or more years of residence in the receiving country.

Table 2: Demografic characteristics of immigrants/relative to natives in EU countries (means over 2004-2011)

	Age			Education			Gender	
	15 to 24	25 to 44	45 to 64	low	Medium	high	male	Female
AT	0.81	1.27	0.80	1.57	0.64	1.66	0.99	1.01
BE	0.69	1.33	0.81	1.33	0.77	0.92	0.98	1.02
CZ	0.68	1.49	0.61	1.65	0.73	1.72	1.20	0.80
DK	1.12	1.30	0.66	1.34	0.83	0.92	0.93	1.08
ES	1.12	1.37	0.51	0.98	1.50	0.65	0.97	1.03
FI	1.14	1.39	0.60	1.44	0.88	0.82	0.91	1.09
FR	0.52	1.06	1.18	1.44	0.69	0.97	0.99	1.01
GR	0.80	1.40	0.64	1.19	0.86	0.91	1.15	0.85
IE	0.86	1.43	0.51	0.58	0.86	1.71	1.00	1.00
IT	0.86	1.42	0.60	1.14	0.86	0.86	1.02	0.98
NL	0.74	1.22	0.91	1.27	0.91	0.83	0.97	1.03
NO	0.96	1.44	0.56	1.52	0.77	0.96	0.95	1.06
PT	0.74	1.36	0.71	0.79	1.55	1.44	0.96	1.04
SE	0.88	1.35	0.72	1.44	0.75	1.13	0.96	1.04
UK	0.70	1.30	0.82	0.85	0.95	1.24	0.98	1.02
Total	0.82	1.30	0.76	1.21	0.90	1.16	0.99	1.01

Source: ELFS, own calculations. Numbers larger than 1 indicate that share in this group is larger among immigrants than natives, numbers smaller than 1 that share in this group is lower among immigrants than natives .

Table 3: Descriptive statistics for explanatory variables in BACE Analysis

	Mean	S.D.	Min	Max
ethnic diversity	0.85	0.29	0.51	1.51
Southeast Asia	0.11	0.08	0.01	0.31
Rest of Africa	0.09	0.12	0.00	0.51
Middle East and North Afr.	0.12	0.10	0.00	0.41
Europe Rest	0.20	0.16	0.01	0.67
Recent share	0.44	0.15	0.17	0.81
Labour market access	68.32	17.43	45.56	100.00
Family Migration	62.34	16.99	33.75	90.63
Long term residence	61.65	10.99	31.47	78.72
Naturalisation	53.61	19.12	18.27	81.96
Anti-discrimantion	60.94	16.80	18.25	87.17
Centralisation	0.42	0.18	0.10	0.93
Union Density	36.33	20.50	7.63	74.06
Adjusted Coverage	75.10	20.23	32.70	99.00
Wage co-ordination	3.33	1.03	1.00	5.00
Minimum wage	0.26	0.19	0.00	0.49
net replacement rate	42.90	13.75	19.74	71.89
Old age benefits	0.68	0.11	0.52	0.85
Health services	0.77	0.13	0.55	0.99
effective tax rate	79.65	19.53	36.41	121.95
Employment protection	2.15	0.71	0.75	3.46
Product market regulation	1.33	0.39	0.77	2.50
Observations	89.00			

Source: see annex.

Table 4: BACE Results for explained decomposition

	Unemployment probability				Employment probability		
	Coef.	t	pip		Coef.	T	pip
_cons	-0.035597	-2.53	1.00	_cons	0.076147	1.24	1.00
Centralisation	0.048128	4.89	1.00	Centralisation	-0.115948	-4.85	1.00
Minimum wage	0.033681	3.22	0.97	Minimum wage	-0.144492	-3.28	0.99
Southeast Asia	0.037831	1.33	0.73	Middle East and North Afr.	0.197972	2.66	0.95
Adjusted Coverage	-0.000156	-0.99	0.55	Rest of Africa	0.061674	1.29	0.73
Middle East and North Afr.	-0.021551	-0.85	0.48	effective tax rate	0.000323	0.90	0.52
Union Density	0.000041	0.56	0.30	Old age benefits	-0.053921	-0.90	0.51
Europe Rest	-0.001803	-0.32	0.14	Europe Rest	0.022340	0.75	0.44
ethnic diversity	0.000445	0.10	0.12	Recent share	0.022872	0.78	0.44
Recent share	-0.001187	-0.28	0.11	Southeast Asia	-0.044496	-0.58	0.34
net replacement rate	0.000011	0.22	0.10	Family Migration	0.000133	0.49	0.25
Wage co-ordination	-0.000147	-0.23	0.09	Anti-discrimantion	-0.000093	-0.33	0.22
effective tax rate	0.000004	0.12	0.08	ethnic diversity	-0.008168	-0.40	0.21
Rest of Africa	0.000601	0.15	0.07	Long term residence	0.000064	0.33	0.15
Labour market access	0.000074	0.04	0.06	Labour market access	0.000046	0.27	0.13
Family Migration	0.000000	0.00	0.06	Adjusted Coverage	0.000056	0.27	0.12
Long term residence	-0.000097	-0.03	0.06	Health services	0.000009	0.00	0.12
Naturalisation	-0.000256	-0.11	0.06	Wage co-ordination	-0.000254	-0.15	0.10
Anti-discrimantion	0.000278	0.11	0.06	Union Density	-0.000002	-0.03	0.09
Old age benefits	-0.000130	-0.03	0.06	net replacement rate	0.000020	0.17	0.09
Health services	0.000009	0.00	0.06	Naturalisation	0.000007	0.09	0.07
Observations	88			Observations	89		
Regressions	1048576			Regressions	1048576		

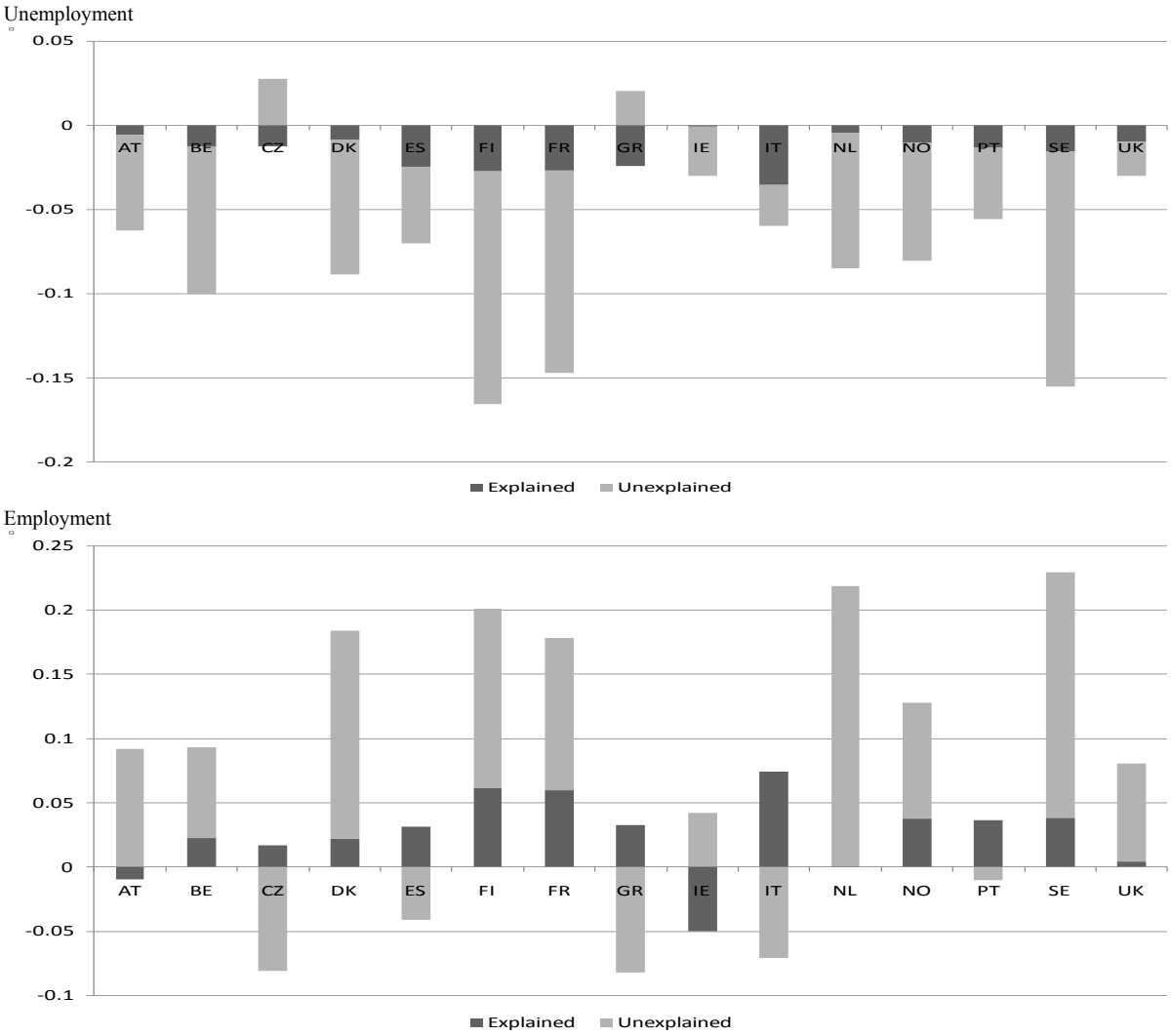
Source: own calculations. Coef.= posterior mean of the coefficient, T=efficiency of the estimate, PiP= posterior inclusion probability.

Table 4: BACE Results for explained decomposition

	Unemployment probability				Employment probability		
	Coef.	t	pip		Coef.	T	pip
_cons	0.098983	2.58	1.00	_cons	-0.14530	-0.85	1.00
Anti-discrimantion	-0.001178	-3.78	0.99	Recent share	-0.26300	-2.53	0.94
Union Density	-0.000900	-3.27	0.98	Product market regulation	-0.08628	-2.15	0.89
Middle East and North Afr.	-0.198423	-1.84	0.88	Southeast Asia	0.56055	1.65	0.83
Product market regulation	0.023482	1.33	0.72	Adjusted Coverage	0.00232	1.41	0.74
Adjusted Coverage	-0.000664	-1.08	0.61	ethnic diversity	0.11607	1.11	0.67
Centralisation	-0.040543	-0.86	0.49	Union Density	0.00076	1.01	0.59
Southeast Asia	0.020743	0.39	0.20	Minimum wage	0.06205	0.80	0.47
Europe Rest	0.009001	0.36	0.18	Centralisation	0.08806	0.73	0.43
ethnic diversity	-0.005332	-0.36	0.17	Anti-discrimantion	0.00055	0.67	0.41
Wage co-ordination	0.001297	0.37	0.17	Middle East and North Afr.	0.07044	0.46	0.28
Recent share	0.003045	0.21	0.11	Wage co-ordination	-0.00366	-0.37	0.20
Minimum wage	0.002828	0.21	0.11	Rest of Africa	-0.01441	-0.18	0.15
Employment protection	-0.000643	-0.19	0.10	Naturalisation	0.00001	0.04	0.11
Long term residence	0.000006	0.05	0.08	Europe Rest	-0.00316	-0.11	0.09
Naturalisation	0.000003	0.02	0.08	Employment protection	-0.00091	-0.12	0.09
Rest of Africa	0.001335	0.08	0.07	Long term residence	-0.00002	-0.08	0.07
Observations	88			Observations	89		
Regressions	65536			Regressions	65536		

Source: own calculations. Coef.= posterior mean of the coefficient, T=efficiency of the estimate, PiP= posterior inclusion probability.

Figure 1: Results of Oaxaca-Blinder decompositions (average over all immigrants and all time periods)



Source: ELFS, own calculations. Note: Figure reports unweighted averages across three time periods

Data Appendix

Dependent variables

Throughout we focus on the active aged (15 to 64 year old) population.

Employment (and employment rate) – The definition of employment in the ELFS is the standard ILO definition. Persons are considered employed if they have been in paid employment or self-employment for at least one hour in the week preceding the interview.

Unemployment (and unemployment rate) – The definition of employment in the ELFS is the standard ILO definition. Persons are unemployed if they are not employed, have been actively searching for employment in the week before the interview and are available for employment within three months.

Structure of migration

Here we use the share of immigrants originating from Southeast Asia, Middle East and Northern Africa, other European countries, other African countries and the Rest of the World and the Herfindahl index of immigrant shares coming from the above regions as a measure of the ethnic diversity of immigrants in a country. This indicators have been calculated from ELFS data.

Migration policy

We take data from the MIPEX data base to measure migration policy in EU countries. This data (based on a totalof 148 indicators) measures policies to integrate immigrants in six policy fields in a large number EU Member States and some non-EU countries and was collected for a different set of countries in the years 2004, 2007 and 2010 (see table below for a full list of counties by wave).

This database assesses a country's migration and integration policies in 7 policy areas: labour market mobility, family reunion, education, political participation, long-term residence, access to nationality and anti-discrimination (see http://www.mipex.eu/ for detail) . In each of the indicators a country can obtain a maximum of three points when the policies meet these highest targets and indices are constructed by taking averages across indicators. For the years 2007 and 2010 the data has been harmonized by MIPEX. Data for the year 2004 has been compiled according to a slightly different method. We therefore used data at the most disaggregated indicators available to us to derive consistent indicators over the three periods for indicators of labour market mobility, family reunion, long-term residence, political participation, access to nationality and anti-discrimination. Furthermore to guarantee consistency with the 2004 version of the data all indeces were scaled so that the best country received 100 % and the least successful 0 % in the subindices used.

Table A1: Countries included in MIPEX data by wave

2004	2007	2010
Austria	Austria	Austria
Belgium	Belgium	Belgium
Denmark	Cyprus	Bulgaria
Finland	Czech Republic	Cyprus
France	Denmark	Czech Republic
Germany	Estonia	Denmark
Greece	Finland	Estonia
Ireland	France	Finland
Italy	Germany	France
Luxembourg	Greece	Germany
Netherlands	Hungary	Greece
Portugal	Ireland	Hungary
Spain	Italy	Ireland
Sweden	Latvia	Italy
UK (Great Britain)	Lithuania	Latvia
	Luxembourg	Lithuania
	Malta	Luxembourg
	Netherlands	Malta
	Norway	Netherlands
	Poland	Norway
	Portugal	Poland
	Slovakia	Portugal
	Slovenia	Romania
	Spain	Slovakia
	Sweden	Slovenia
	Switzerland	Spain
	UK (Great Britain)	Sweden
		Switzerland
		UK (Great Britain)

Table A2: National Indicators and Sources

Variable	Description	Sources
CENT	Centralisation of wage bargaining	Visser (2011)
UD	union density	Visser (2011)
CONC	Concentration of wage bargaining	Visser (2011)
WCOORD	Wage setting coordination	Visser (2011)
AdjCov	Adjusted Coverage	Visser (2011)
MINW_Mean_	Minimum wage in % of median wage (0 if no minimum wage)	OECD
NRR_	Net replacement rate	OECD
NRR_SAHB_	Net replacement rate including soial and housing assitance	OECD
PMR_	Product market regulation index	OECD
ALMP_	Active labour market policy expenditure in % of GDP	OECD
ETR_UN_33_NC_S_NK	Effective marginal tax rate for unemployed moving to employment at 33% of mean wage	OECD
index_sick2	Level of sickness and health benefits	Botero et al (2004)
index_old_202	Level of old age, disability and death benefits	Botero et al (2004)
OECD_EP_v1_	Employment protection index	OECD

Labour market and social policy

National data on labour market institutions and social policy by contrast was compiled from a variety of sources of standard sources. In particular we focus on the following indicators (see also table A2):

Data on labour market flexibility – here we use the data on employment protection legislation and on product market regulation from OECD sources, with the later being included to capture any potential regulations impacting on the possibility for immigrants to enter self-employment

Data on the generosity of the welfare state and work incentives – under this heading we collect data on replacement rates including social and housing markets, and data on marginal tax rates (as captured by the effective marginal tax rate when moving from unemployment to employment in a job earning 33% of the average national income) also provided by OECD.

Data on wage bargaining and trade union organisation – These consist of data on minimum wages in % of the median wage from OECD and on the organisation of wage bargaining institutions from Visser (2011). From this we extract the indicators of trade union density, adjusted trade union coverage and centralisation, concentration and co-ordination of wage bargaining in the respective countries. Again these data are available on an annual frequency.

Finally, we augment this data with some indicators taken from Botero et al. (2003), which measure the level of old age and social security benefits and the generosity of sickness and health benefits to control for further aspects of the generosity of the social security system not covered by other data . These indeces take value between 0 and 1, with 1 indicating high generosity of the welfare state. They are however only available for one period of time

Project Information

Welfare, Wealth and Work for Europe

A European research consortium is working on the analytical foundations for a socio-ecological transition

Abstract

Europe needs change. The financial crisis has exposed long-neglected deficiencies in the present growth path, most visibly in the areas of unemployment and public debt. At the same time, Europe has to cope with new challenges, ranging from globalisation and demographic shifts to new technologies and ecological challenges. Under the title of Welfare, Wealth and Work for Europe – WWWforEurope – a European research consortium is laying the analytical foundation for a new development strategy that will enable a socio-ecological transition to high levels of employment, social inclusion, gender equity and environmental sustainability. The four-year research project within the 7th Framework Programme funded by the European Commission was launched in April 2012. The consortium brings together researchers from 34 scientific institutions in 12 European countries and is coordinated by the Austrian Institute of Economic Research (WIFO). The project coordinator is Karl Aiginger, director of WIFO.

For details on WWWforEurope see: www.foreurope.eu

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	Policy Network	policy network	United Kingdom
	Ratio	Ratio	Sweden
	University of Surrey	SURREY	United Kingdom
	Vienna University of Technology	TU WIEN	Austria
	Universitat Autònoma de Barcelona	UAB	Spain
	Humboldt-Universität zu Berlin	UBER	Germany
	University of Economics in Bratislava	UEB	Slovakia
	Hasselt University	UHASSELT	Belgium
	Alpen-Adria-Universität Klagenfurt	UNI-KLU	Austria
	University of Dundee	UNIVDUN	United Kingdom
	Università Politecnica delle Marche	UNIVPM	Italy
	University of Birmingham	UOB	United Kingdom
	University of Pannonia	UP	Hungary
	Utrecht University	UU	Netherlands
	Vienna University of Economics and Business	WU	Austria
	Centre for European Economic Research	ZEW	Germany
	Coventry University	COVUNI	United Kingdom
	Ivory Tower	IVO	Sweden
	Aston University	ASTON	United Kingdom