



**Immigrants' Economic Performance Across  
Europe -  
Does Immigration Policy Matter?**

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The European Panel Analysis Group (EPAG) is a consortium of European social and economic researchers who have been collaborating since 1990 in the development and analysis of household panel surveys in the European Union. Most recently it has been engaged in the study of flexible labour and its impact on earnings and poverty under a Eurostat contract, and a programme of research on social exclusion as part of the EU's Targeted Socio-Economic Research programme. The group has set up new comparative datasets based on five-year sequences of the British, German and Dutch national household panels, and is analysing the early data from the European Community Household Panel (ECHP). Most of the research to date has been in the fields of family formation, employment, household income and 'deprivation'.

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## ABSTRACT

Drawing on panel data from the ECHP, the BHPS and the GSOEP, we compare the economic performance of immigrants to Great Britain, West Germany, Denmark, Luxembourg, Ireland, Italy, Spain and Austria to that of the respective indigenous population. Economic performance is measured in terms of the country-specific pre-government income position and change in the relative income position due to redistribution processes within the respective tax and social security systems. Our work is based on the premise that countries may be categorized –similarly to the categorization concept of welfare regimes– according to the nature of their immigration policy.

Our basic premise is that a successful and integrative immigration policy should result in a non-significant differential between the economic performance of immigrants and that of the indigenous population. Our results show, however, that this “ideal” is not attained in all of the analysed countries, particularly in Germany and Denmark, where the economic performance of immigrants is much lower than that of the indigenous population. GLS random-effects models show that the substantial cross-country differences in the immigrant/native-born performance differential persist, even when controlling in detail for the social structure and level of integration of immigrants. This suggests that not only the conditions of entry to a country impact on immigrants’ economic performance, but also country-specific institutional aspects such as restrictions on access to the labour market and parts of the social security system that are related to citizenship or immigrant status. There still is a great deal of heterogeneity across EU member states in this respect. This should be taken into account when working towards the harmonization of national EU immigration policies.

JEL classification: J15, J18, D31

Keywords: Immigration, Income, Income Redistribution

## **Immigrants' Economic Performance Across Europe -**

### **Does Immigration Policy Matter?**

#### **1. Starting point: The need to harmonize EU immigration policies**

At their Amsterdam meeting on June 16th and 17th, 1997, the heads of the European Union (EU) states and governments revised the policies and institutions of the EU by signing a new treaty on “visa, asylum, immigration and other policies connected with the free circulation of people”. According to the terms of the Amsterdam Treaty<sup>1</sup>, the European Union has to adopt measures to control its external borders and to harmonize their immigration policies.

The EU member states had several good reasons to start this harmonization initiative. First of all, the plans to abolish border checks within the Union that had been laid down in the Schengen Treaty of 1990 led to the need to cooperate at the executive level to fight illegal immigration. Apart from this specific practical interest, the establishment of freedom of movement and residence for EU citizens reinforced the need to adjust social policy standards within the EU and, in this context, to think harder about questions of citizenship. Furthermore, almost all EU states are currently undergoing dramatic demographic changes: they are rapidly ageing societies. This is leading to serious problems with respect to the functioning of social systems as well as the skill supply to the labour market. Selective immigration is seen as a tool that may help to address these problems. Finally, the pending eastward extension of the EU's boundaries requires a joint effort to tackle the immigration problem. Many consider a harmonized immigration policy to be a *conditio sine qua non* for the incorporation of new member states into the EU.

It is evident that this harmonization will be difficult to realize (Zimmermann 1995, 1994a, b). Immigration policies vary substantially across states, as do natives' attitudes towards immigrants (Fertig & Schmidt 2002, Bauer et al. 2000, Cummings & Lambert 1998, Clark & Schultz 1997). Which elements of the immigration policies of

single member states should be adopted at EU level, and which should be dropped? In other words, what characterizes a “successful” immigration policy?

The simplest strategy for enhancing any immigration policy is to steer immigration actively with respect to the social composition of the immigrant population. However, since all countries tend to try to attract the “best” immigrants, the success of this strategy may be limited by competition between countries. Additionally, the native population may fear being crowded out by high-performing immigrants. Ethical considerations also limit the extent to which this strategy can be pursued.

A second long-term strategy is to force, rather than to encourage, immigrants to assimilate to the native society as soon as possible. Limitations to this approach include the traditionally less favourable social structure of immigrant communities, budget constraints, inflexible institutions including the legal system, and a lack of political will on the part of the electorate as well as the government.

A modern immigration policy will try to combine both of these elements, but it remains unclear how much weight should be given to each. Beyond these two major parameters that largely determine the success or failure of any immigration policy, numerous institutional regulations may facilitate or impede immigrants’ integration in the host country, e.g. unhindered access to the labour market and to social benefits. There is a great deal of variation in these institutional settings across the EU states. Of course, the effect of a single institutional regulation is hardly empirically measurable. The cumulative effect at the country level can be observed, however. Comparable to clustering into different types of welfare-state regimes (Esping-Andersen 1990), countries can be characterized with respect to the nature of the immigration policy they pursue. In this paper, we try to isolate these state effects of institutional settings from the results of the two other main parameters of immigration policy, i.e. the social composition of the immigrant population and assimilation behaviour across countries.

In our approach, immigrants’ economic performance is first compared to that of the

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<sup>1</sup> For an overview of the Treaty, see: <http://europa.eu.int/scadplus/leg/en/1vb/a24000.htm> (accessed 5 December 2002).



native-born population, as measured by pre-government (“market”) household income as well as post-government income. Secondly, we split this income into its various components: wages, benefits and others, paying particular attention to the distribution of the most important source of income. Thirdly, we compare income “portfolios”, consisting of market income, non-market income, and – as a deduction component – taxes and contributions.

Another major issue in the ongoing discussion about immigration to Europe relates to the role of immigrants in the income redistribution process. We analyse that role using a proxy measure gained from a comparison of relative income positions based on pre- and post-government income. We interpret our results in such a way that *ceteris paribus* – i.e. after controlling for the social background and level of assimilation of immigrants – a non-significant differential between the economic performance of the native-born and the immigrant population as determined by our income measures reflects a moderate and desirable immigration policy. If immigrants emerged to be in a significantly weaker position than natives, this could be interpreted as a sign of legal discrimination. The opposite result would be unjustified and could fuel the persistent xenophobic attitudes that exist – to a greater or lesser extent – across the EU. The main aim of this paper is to provide accurate information about the difference in the “net” performance of immigrants and the native-born inhabitants of various European countries. Comparing this information across EU countries will not only illustrate the effectiveness of the respective national immigration policies, but also provide an indication of the amount of effort that is needed to harmonize them.

There is no doubt that policy makers and citizens all over Europe are far more concerned about the second form of imbalance – i.e. about immigrants outperforming the native population – than about the first (for the case of Germany, see e.g. Rotte 1998). This may explain why the existing literature, in the field of economics at least, focuses primarily on the question of whether or not immigrants represent a burden to the economy of the host country. The following section gives a short overview of this field of research.

## **2. Literature survey: The economic performance of immigrants**

The existing literature contains a wide variety of research designs that tackle the question of whether immigrants represent an economic burden to the native-born population in more or less specific form. The most unspecific form of analysis is to use a *dummy variable* to control for foreign nationality or immigration when analysing any social phenomenon. On average, immigrants or foreigners tend to occupy a weaker socio-economic position than the native-born population. Very often, this is interpreted as indicating that immigrants weaken the welfare position of the indigenous population. In view of the heterogeneous social structure of the immigrant population, however, this standard interpretation is definitely too rash.

Most empirical research focusing explicitly on immigrants can be grouped into a few subtopics (for an overview see Schultz 1998). A variety of analyses deal with the question of *social integration*. The effects of institutional changes in the welfare system on the immigrant situation have been analysed by Kaestner and Kaushal (2001). Frick et al. (1999) have considered the social heterogeneity of the immigrant population in Germany and in the USA by controlling for differences in labour market behaviour and income among different ethnic groups and immigration cohorts. Bell (1997) and Berthoud (1998) analysed the impact of ethnic origin on incomes in the United Kingdom. The role of ethnic networks on labour market performance has attracted increasing interest (Bagchi 2001). Chiswick and Miller (2002) found a negative correlation between the linguistic concentration of the language of origin in the immigrants' residential area and their earnings. Reversing the research angle, Dustmann (1996) found that economic success seems to be less important as a condition for assimilation. When analysing social integration, a long-term perspective is of particular interest and longitudinal data are of great value (cf. Fielding 1995). Seifert (1997) has shown clear differences in educational attainment between first and second generation immigrants' behaviour in Germany. In general, changes in the social structure of the immigrant population (e.g. Borjas 1995, 1994, 1985) also affect assimilation opportunities. Another approach is to focus on intergenerational status mobility, e.g. with respect to educational participation (Spiess et al. forthcoming, Gang & Zimmermann 1999, Haisken-DeNew et al. 1997, Büchel & Wagner 1996).

Another type of analysis focuses on the *labour market integration* of immigrants. Broad approaches to this topic are rare (Bauer 1998, Velling 1995). In general, the earning patterns of immigrants are compared to those of the native-born population (cf. Reitz et al. 1999, Winkelmann & Winkelmann 1998, Fry & Lowell 1997, Schmidt 1997, 1993).

Another important topic is the *effect of immigration on the structure of the host country's labour markets*. Extended attempts to answer this question have been made by Hatton and Williamson (1994) and Friedberg and Hunt (1995). In general, immigration effects are considered to be rather small (cf. Zorlu 2000, Pischke & Velling 1997, Velling 1995, Gang & Rivera-Batiz 1994, LaLonde & Topel 1991). However, Enchautegui (1997) found immigration to have rather large positive employment effects. DeNew and Zimmermann (1994) found a negative impact of immigration on wages in Germany, whereas Winter-Ebmer and Zweimüller (1996) presented contrasting results for Austria. Börsch-Supan (1994) found that only gross wages, and not net wages, are negatively affected by immigration. Axelsson and Westerlund (1998) found migration to Sweden to have no significant effect on real disposable household income over the 1980s. Frick et al. (1997) as well as Grabka et al. (1999) extended the field of analysis by focusing on immigration-related changes in personal income distribution. Both papers provide evidence for a rather small increase in inequality. Müller (1995) found assimilation to be easier for those immigrants who import higher capital resources. White and Liang (1998) analysed the effects of immigration on the labour mobility of the native population, and found that results were heavily dependent on the immigrants' ethnic background. Lowell (2001) paid special attention to the effect of the inflow of skilled temporary workers on labour markets and addressed the question of whether employers undercut US workers with temporary workers.

The *take-up of public transfers* is another major field of research. The receipt of welfare benefits is of particular interest here (cf. Gustman & Steinmeier 1998, Riphahn 1998, Hu 1998, Khoo 1994, Maani 1993, Jensen 1988). The general expectation is that take-up intensity among immigrants decreases with increasing

duration of stay. This is found to be the case in Germany by Voges et al (1998). However, contrary results have been presented by Baker and Benjamin (1995) for Canada as well as by Borjas and Trejo (1995) for the USA. This could be explained by national differences in institutional settings. Borjas and Hilton (1996) believe that immigrants' social networks lead to higher take-up rates among this group. However, this interpretation has been challenged by Zavodny (1997). Voges et al. (1998) as well as Castranova et al. (2001) found that welfare recipience is higher among immigrants to Germany than among the native-born population, and the latter even found that take-up rates among immigrants are above average in the case of eligibility. However, both studies concluded that this is due to the less favourable social structure of immigrant populations, i.e. that ethnic origin is not a risk factor per se. Analyses considering the structure of the welfare system as a whole are rare compared to those with "traditional" empirical designs. Sinn (1997) suggests – with special regard to immigration – at least a partial transition from the existing pay-as-you-go system to a funded system.

Finally, some previous studies have addressed the question we are especially interested in, i.e. whether a host society is *economically burdened by or profits from immigration*. An adequate approach to this question must consider both the receipt of benefits and contributions to the tax and welfare system. LaLonde and Topel (1991) reported that immigrants to the USA have lower incomes, but bear this burden for themselves, that is, without seriously affecting the native-born population. Simon (1996) confirmed this finding for the US in the 1970s; but the picture for more recent times is not as clear. Rürup and Sesselmeier (1994) found that immigrants to Germany are net payers with respect to the unemployment insurance and medical aid systems. With respect to the old age pension system, however, the results seem to be less clear because of uncontrollable and unpredictable interdependent effects. For Switzerland, Weber and Straubhaar (1996) found that immigrants are net payers to the tax and social security system. Gustafsson & Österberg (2001) noted that immigrants tend to burden the public sector budget upon arrival in Sweden, but that after a few years this is no longer the case. However, as Ekberg (1999) pointed out, the question of whether the immigrant population as a whole contributes to or benefits from the public sector is largely dependent on the age structure of this population and on the labor market

situation, and is therefore subject to change. An innovative and sophisticated approach has been introduced by Bonin (2002), who used the long-term budget method of generational accounting to evaluate the overall fiscal impact of immigration to Germany, and concluded that immigration has a positive impact on the intertemporal government budget. Büchel and Frick (2002) compared the situation in Great Britain and Germany and found that, on the whole, the non-indigenous population in Great Britain fares much better – relative to the native-born population – than the immigrant population in Germany. However, the range of economic performance across different ethnic groups is much larger in Great Britain than in Germany. The German corporatist welfare system is characterized by much stronger redistribution effects than the liberal British one. Consequently, the relatively low-performing immigrant population in Germany profits more from the redistribution system than immigrants with similar socio-economic attributes in Great Britain. The following cross-country analysis of selected EU countries should be seen in the tradition of this type of immigration research and may help to combat the lack of empirical cross-country research in this field.

### **3. Data and Methods**

#### *Data*

Our empirical analyses are based primarily on data from the European Community Household Panel (ECHP-UDB). This panel survey with a yearly re-interview design is organized by EUROSTAT; for the years 1994 to 2001, it was carried out by the EU countries' National Data Collection Units (NDU), which are generally the national statistical offices (for more detailed information on the ECHP, see Wirtz and Mejer 2002, or <http://forum.europa.eu.int/irc/dsis/echpanel/info/data/information.html>). Micro-data for scientific use is currently available for the period 1994 to 1998. In order to maximize the potential for cross-national comparisons, data collection is “input harmonized”, with a blueprint version of the questionnaire being prepared as a guideline and then adjusted to national particularities. The ECHP starting sample covered some 60,000 households and 130,000 individual interviews, with the achieved sample size ranging from about 1,000 households in Luxembourg to

approximately 7,000 in Spain, Italy and France. For the purposes of this study, we draw on data collected in Denmark, Luxembourg, Ireland, Italy, Spain and Austria. Unfortunately, all other countries had to be excluded because of data restrictions, mainly because information on certain immigration-related issues<sup>2</sup> or income components<sup>3</sup> was missing.

In order to at least partially compensate for the exclusion of some of Europe's most important immigrant countries, we also use representative micro-data from two further ongoing panel studies, the British Household Panel Study (BHPS)<sup>4</sup> conducted by ISER at the University of Essex and the German Socio-Economic Panel Study (GSOEP)<sup>5</sup> carried out by DIW Berlin. In principle, both databases cover the same areas of interest as the ECHP, and provide comparable data. In fact, the GSOEP and BHPS are now used as the basis for "cloning" ECHP data for Germany and Great Britain, respectively, since data collection for these countries was discontinued after the third wave of the ECHP. Our analysis is based on all years of observation in the 1994-1998 period, depending on the country-specific timing of data collection (e.g. Austria did not join the ECHP until 1995; data for Luxembourg only exists for 1994-1996). For Germany we draw on GSOEP data for the period 1995-1999, thus allowing for the inclusion of the additional immigrant sample introduced in 1995 (cf. Burkhauser et al. 1997). We pool all available annual data for each of the eight countries under consideration. The unit of analysis is the individual in the household context.

Since our approach is "performance-minded" with respect to the opportunities on the labour market rather than "social burden-minded" (i.e., looking at the society as a whole), we consider only individuals living in households with a head aged between

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2 Data on immigration status is missing for all observations or for at least a very high proportion of the ECHP samples in Germany, the Netherlands and Great Britain. Information on immigrants' country of origin is missing for Greece. In some countries, these variables had to be dropped due to national data protection regulations.

3 The ECHP data for France, Finland and Sweden do not allow gross and net income to be differentiated as required in our analysis of income redistribution effects.

4 The BHPS was initiated in 1991 with 5,500 households and 10,300 individuals who are re-interviewed yearly (for further details, cf. Taylor, 1998, or <http://www.iser.essex.ac.uk/bhps/>).

5 The GSOEP was initiated in 1984 with 6,000 households and more than 12,000 individual interviews. In contrast to the BHPS, the immigrant population was over-sampled in the GSOEP from the outset, thus facilitating analyses of this specific population (for further details, see GSOEP Group, 2001, Wagner et al., 1993, or <http://www.diw.de/english/sop/>). Because almost no immigrants are resident in Eastern Germany, and because East German income structures still differ markedly from West German ones, we restrict the present analysis to West Germany.

20 and 60. This helps to eliminate the impact of different age structures in the native-born and the foreign-born population. Furthermore, the relationship between the economically active and the retired population may vary markedly across countries, since immigration often takes place in waves that create specific age structures in the immigrant population of a country.

### *Definition of Ethnic Groups*

We take an *immigration-based* rather than a *citizenship-based* approach to defining ethnic groups. We chose this concept because it is more robust to cross-national differences in citizenship legislation and to avoid confusion between the status of being *foreign-born* and that of being a *foreigner*. In the following, a household is defined as an immigrant household if at least one adult member of the household is foreign-born. In this case, all members of the household are defined as “immigrants”, irrespective of their country of birth. Accordingly, a non-immigrant household is one in which all adults are native-born. We also refer to data on the immigrants’ length of residence in the host country. We expect integration and economic performance to improve with duration of residence. Furthermore, we identify the country of origin, and distinguish between EU and non-EU countries. In general, we expect people from EU member states to be better off economically, mainly because the cultural differences between the country of origin and the host country are assumed to be less pronounced, but also because EU citizens have privileged legal status compared to other immigrants to the EU. Finally, we categorize immigrant households into two groups to reflect their level of assimilation: so-called “mixed” households and “non-mixed” households. Whereas all adult members of “non-mixed” households are foreign-born, in “mixed” households at least one adult is native-born and at least one other is foreign-born (mainly “mixed” couples). We expect people living in “mixed” immigrant households to perform better than those in “non-mixed” households because they are more integrated into the host society. We are aware that this is not a standard measure. However, results presented by Büchel and Frick (2001) suggest that this concept of measuring the individual degree of integration is a valid one.

**Table 1: Population living in private households with prime-aged heads<sup>1)</sup> in selected EU countries, 1994-1998<sup>2)</sup>, by household immigrant status**

	Native-born  All adult household members are native-born	Immigrant			Total
		All adult household member are immi-grants (“non-mixed” HH)	At least one adult household member is immigrant (“mixed” HH)	Total	
<i>Population share in %</i>					
Denmark	89.6	4.6	5.8	10.4	100.0
Luxembourg <sup>3)</sup>	53.8	28.5	17.7	46.2	100.0
Ireland	88.7	1.8	9.5	11.3	100.0
Italy	95.4	0.7	3.9	4.6	100.0
Spain	96.3	0.6	3.1	3.7	100.0
Austria <sup>4)</sup>	86.6	6.9	6.5	13.4	100.0
Great Britain <sup>5)</sup>	88.8	3.8	7.4	11.2	100.0
West Germany <sup>6)</sup>	79.2	12.2	8.6	20.8	100.0

<sup>1)</sup> Head of household is 20 to 60 years of age. - <sup>2)</sup> Average over the 1994-1998 observation period. - <sup>3)</sup> Observation years 1994-1996 only. - <sup>4)</sup> Observation years 1995-1998 only. - <sup>5)</sup> Based on BHPS data 1994-1998. - <sup>6)</sup> Based on GSOEP data 1995-1999.

*Source:* ECHP-UDB waves 1-5; BHPS waves 4-8; GSOEP waves 12-16; authors’ calculation (weighted).

Table 1 shows that both the proportion of immigrants<sup>6</sup> and their level of integration as measured by the method described above varies markedly across the countries under consideration. The highest proportion of immigrants is found in the small country of Luxembourg which geographically lies in the centre of the EU; this may be due to the high concentration of foreigners working in Luxembourg’s financial and banking sector, as well as to the rather large group of migrant workers from Portugal. In the Mediterranean states, represented by Italy and Spain, there are few (legal) immigrants.<sup>7</sup> Because of their relatively weak economic performance in the 1960s and 1970s, these countries were long characterized by emigration rather than immigration

6 Note that the figures in Table 1 may deviate from official statistics for several reasons. This is mainly due to the definition of “foreigners” chosen for the present study (foreign-born rather than non-citizens) and the restriction to prime-age groups in our sample. In addition, the definition of immigrant status at the household level certainly overstates the number of individual immigrants since native-born persons are given immigrant status if they live in the same household as a foreign-born adult. Furthermore, it is not clear at this point to what extent ECHP data gives a representative picture of the total immigrant population in the countries analysed – illegal immigrants, in particular, are probably not covered.

7 For an estimation of the numbers of illegal immigrants to Mediterranean countries see Reyneri (2001).



(e.g. the “guest worker” movement of low-skilled labour to the German automobile industry and mining sector). On the other hand, the few immigrants to these countries are atypically well integrated; most of them live with members of the native population. As a result of this out-migration from Mediterranean countries as well as the massive influx of immigrants with German ancestry (*Aussiedler*) from Eastern European countries since the late 1980s, West Germany has a rather high share of immigrants, most of whom live in “non-mixed” households. The proportion of immigrants in Great Britain is markedly lower than in Germany, and these immigrants appear to be somewhat better integrated, with two-thirds of them living in the same household as a member of the native population.

#### *Income Components, Relative Income Positions, and Redistribution Measures*

Although we analyse income at the individual level, income information is calculated at the household level. This is because, in many countries, receipt of some income components – such as social assistance – is related to the household as a whole and not to specific individuals living in a household. The assumption underlying this approach is that all members of a specific household pool their resources and share the utility of a given household income. Consequently, we apply the information about the various (equivalent) income components of a specific household to all members of that household, regardless of age or individual income performance.

In order to adjust for differences in household size, we apply the so-called modified OECD equivalence scale.<sup>8</sup> By eliminating the lowest 0.5 percent of post-government incomes (“bottom trimming”) we reduce the effect of extreme income outliers at the lower end of the distribution. This procedure is conducted for each country separately. All incomes are deflated and adjusted for purchasing power differences.

The ECHP collects information on the most important sources of income in each household<sup>9</sup>: i) wages and salaries; ii) income from self-employment or farming; iii)

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8 Equivalence weights: head of household = 1; other household members aged 14 years and older = 0.5; children aged below 14 = 0.3.

9 This self-assessed information is not available in comparable form in the BHPS or GSOEP.

private income; iv) public pensions; v) unemployment or redundancy benefits; vi) any other social benefits or grants.

In our portfolio analysis, we use slightly different components: “pre-government income” – also called “market income” – is the sum of “labour income” and “non-labour income”, the latter resulting mainly from returns on capital. Public pensions and public transfers represent “non-market income”. Finally, adding pre-government income to non-market income, and subtracting taxes and social security contributions results in “post-government income”. Because the ECHP does not include data on these deductions, we subtract post-government income from the sum of pre-government income and non-market incomes, thus yielding a proxy for taxes and social security contributions.

Some income components of particular interest to our analysis are standardized by relating individual income to the respective mean for the total population of a given country (total mean = 100%). The effect of redistribution is measured by subtracting the relative income position based on pre-government income from that based on post-government income for each individual. This yields a metric measure which is positive (negative) for those who improve (worsen) their income position as a result of the redistribution process entailed by taxes and social security contributions on the one hand and the receipt of public transfers (including public pensions) on the other. When interpreting these results, it is important to bear in mind some of the shortcomings of the surveys underlying our analyses. Most population surveys do not attempt to collect data on the exact amount of taxes paid and other deductions made – the information provided in the public micro-data available is often the result of rather crude approximations. In the ECHP, annual income data is converted from gross to net figures using a simple conversion factor which is the same for all household members and for all gross income components. This procedure appears to be somewhat less precise than in that used for the GSOEP data, where the annual income information is drawn from the Cross-National Equivalent File (CNEF, see Burkhauser et al. 2001). Here, a simulation module is used to calculate individual tax and social security

contributions, taking into account progression rules and basic allowances (cf. Schwarze 1995). However, given that potential tax exemptions – which are more often found at the upper tail of the income distribution – are overlooked by this procedure, it may overestimate real tax payments. For detailed documentation of annual income data based on the BHPS, see Bardasi et al. (1999).

### *Steps of Analysis*

As a first exploratory indication of economic self-sufficiency, we examine the most important income component separately for native-born and immigrants (Table 2). We then take a closer look at the “portfolio structure” (Table 3), as reflected by the percentage share of various income components in the total post-government income. To facilitate the interpretation of Table 3, we additionally present the income position of immigrants relative to that of the native-born population for the income components analysed (Table 4). An Appendix Table reports the same information in absolute *ppp*-adjusted figures rather than relative shares.

Econometric models controlling for various socio-economic characteristics are then used to analyse relative income positions based on pre-government income (left panels in Tables 6a, 6b) as well as changes in the relative income position due to the redistribution process within the tax and welfare system (right panels in Tables 6a, 6b). This provides information about which of the population groups profit from the tax and welfare system on average, and which contribute to it. Means and standard deviations of all the socio-economic variables applied are presented in Table 5, providing a short description of the immigrant and native-born population in each country. In a first specification of the models (Table 6a), we characterize immigrants in a given country as a homogenous group identified by a dummy only; in a second specification (Table 6b), we control for heterogeneity among immigrants with respect to their region of origin (EU versus non-EU countries) and assimilation status (measured in terms of years since migration and our “mixed”/“non-mixed” variable). To avoid methodological problems with unobserved heterogeneity due to the fact that individuals living in the same household are not statistically independent observations, we switch from the individual to the household level for the regression analyses. To

make full use of the panel nature of the data, we apply random-effects GLS models to control for the repeated observation of households over time.

## **4. Empirical Results**

### **4.1 Main Source of Income**

Given the restriction of our analysis to individuals living in households with a prime-aged head, it is not surprising that wages and salaries form the main source of income for the clear majority of inhabitants in all countries considered (Table 2). A remarkable exception here is Denmark, where wages and salaries represent the main source of income for only 40% of the immigrant population. We will interpret this outlying result more carefully in our discussion of the results to be presented in Tables 3 and 4. For immigrants living in Luxembourg, wages and salaries play a more significant role as the main source of income than for the native-born population. This is in line with the findings that income from self-employment or farming and from pensions is somewhat less important for this group.

**Table 2: Main source of income for population living in private households with prime-aged heads<sup>1)</sup> in selected EU countries, 1994-1998<sup>2)</sup>, by household immigrant status**

	<i>Main source of income in the previous year (%)</i>						
	Wages and salaries	Income from self-employment or farming	Private income	Pensions	Unemployment / redundancy benefits	Any other social benefits or grant	Total
	Native-born						
Denmark	81.8	6.0	0.4	0.5	2.9	8.4	100.0
Luxembourg <sup>3)</sup>	74.9	7.5	1.4	7.8	0.1	8.3	100.0
Ireland	63.0	13.4	0.7	1.7	12.2	8.9	100.0
Italy	68.2	18.8	2.2	8.5	0.8	1.7	100.0
Spain	68.4	15.4	1.5	6.0	4.4	4.2	100.0
Austria <sup>4)</sup>	79.3	6.7	1.8	5.7	1.1	5.4	100.0
Great Britain	n.a.						
West Germany	n.a.						
	Immigrants						
Denmark	40.3	1.9	0.2	0.6	18.7	38.3	100.0
Luxembourg <sup>3)</sup>	86.1	4.6	1.4	2.4	0.3	5.3	100.0
Ireland	58.9	12.5	0.6	1.7	18.5	7.8	100.0
Italy	70.9	19.2	2.6	4.6	0.7	2.0	100.0
Spain	66.4	15.0	3.6	3.5	8.1	3.4	100.0
Austria <sup>4)</sup>	83.4	4.3	1.8	2.5	2.3	5.7	100.0
Great Britain	n.a.						
West Germany	n.a.						

<sup>1)</sup> Head of household is 20 to 60 years of age. – <sup>2)</sup> Average over the 1994-1998 observation period

– <sup>3)</sup> Observation years 1994-1996 only. – <sup>4)</sup> Observation years 1995-1998 only.

Source: ECHP-UDB waves 1-5; authors' calculation (weighted).

In Italy, Spain and Ireland, a substantial proportion of inhabitants report income from self-employment or farming to be their main source of income. Here, the differences between the native-born population and immigrants are only marginal. This is a notable result considering that immigrants are generally less likely to have access to capital and farmland. However, the large agriculture sectors in these countries may offer relatively good employment opportunities to low-educated immigrants.

Private income as the main source of income is very rare in all countries considered. Again, the differences between the native-born population and immigrants are inconsequential. Due to the restricted age range of our sample, pensions play a minor role as well. However, it should be mentioned that in four of the six countries, access to pensions as the main source of income is much more restricted for immigrants than for the native-born population. Exceptions are Denmark and Ireland, where no differences can be observed.

Another picture emerges with respect to public transfers. In almost all countries considered here, immigrants more often than members of the native-born population are reliant on unemployment or redundancy benefits as their main source of income. Exceptions are Luxembourg and Italy, where this income component is negligible as a main income source for both, immigrants and the native born population. For other social benefits and grants the differences between the two groups are rather small for all countries except for Denmark, where social benefits form the major source of income for almost 40% of the immigrant population, i.e., five times as high a share than among the native born group.

Although, for some countries, these results seem to be roughly in line with the expectation of immigrants being costly to the host country's native population, it is not clear to what extent these findings reflect the self-supporting capacities of immigrants *per se* or rather differences in the underlying social structure (education, family composition, unemployment, health status, etc.), or even institutional effects in the sense of discrimination against immigrants. Thus, we will control for socio-economic differences in our multivariate models (Section 4.3).

## **4.2 Structure of Post-Government Income (“Portfolio”)**

We start the interpretation of the portfolio analysis by considering the income structure of the native-born population in the countries under analysis (left-hand part of Table 3). When discussing the differences between the native-born and the immigrant population below, we will use the condensed information provided in

Table 4, which incorporates the immigrant-specific information presented in the right-hand part of Table 3.

The income portfolio of the native-born population varies substantially across countries (Table 3), clearly reflecting the effects of different institutional settings and the underlying welfare regimes. Taxes and social security contributions are especially high in the classic social democratic welfare state of Denmark. These deductions range are around 40% for countries representing the conservative welfare regime (Germany -41% and Austria -38%) and somewhat lower for the Southern European or Rudimentary welfare regimes of Italy (-37%) and Spain (-32%). For Luxembourg, which should be considered a conservative welfare state, we find a surprisingly low share of deductions due to taxes and social security contributions (-23%). Finally, the proportion of deductions in the liberal welfare regimes of Ireland and Great Britain is expectedly low (-28% and -22% of the portfolio of the native born population, respectively).

**Table 3: Components and structure of equivalent post-government income for population living in private households with prime-aged heads<sup>1)</sup> in selected EU countries, 1994-1998<sup>2)</sup>, by household immigrant status**

	<i>Income components as a share of total post-government income</i>					
	Pre-government (=market) income			Non-market income (pensions and public transfers)	Taxes and social security contributions	Total post-government income
	Total	Labour income	Non-labour income			
	<i>Native-born</i>					
Denmark	139	135	3	20	-59	100
Luxembourg <sup>3)</sup>	100	95	5	23	-23	100
Ireland	100	98	2	28	-28	100
Italy	123	118	5	14	-37	100
Spain	113	109	4	19	-32	100
Austria <sup>4)</sup>	116	110	6	22	-38	100
Great Britain <sup>5)</sup>	103	98	5	19	-22	100
West Germany <sup>6)</sup>	126	121	5	15	-41	100
	<i>Immigrant</i>					
Denmark	69	67	2	60	-29	100
Luxembourg <sup>3)</sup>	111	106	5	18	-29	100
Ireland	96	94	2	32	-28	100
Italy	126	121	5	11	-37	100
Spain	114	106	8	18	-32	100
Austria <sup>4)</sup>	120	116	4	21	-41	100
Great Britain <sup>5)</sup>	104	98	6	19	-23	100
West Germany <sup>6)</sup>	114	111	3	21	-35	100

<sup>1)</sup> Head of household is 20 to 60 years of age. <sup>2)</sup> Average over the 1994-1998 observation period (i.e., 1993-1997 income years; equivalent income based on modified OECD scale). – <sup>3)</sup> Observation years 1994-1996 only. – <sup>4)</sup> Observation years 1995-1998 only. – <sup>5)</sup> Based on BHPS data 1994-1998. – <sup>6)</sup> Based on GSOEP data 1995-1999.

Source: ECHP-UDB waves 1-5; BHPS waves 4-8; GSOEP waves 12-16; authors' calculation (weighted).



**Table 4: Income position of immigrants relative to the native-born population for various types of income for population living in private households with prime-aged heads<sup>1)</sup> in selected EU countries, 1994-1998<sup>2)</sup>**

	<i>Relative income position of immigrants (native-born population = 100)</i>					
	Pre-government (=market) income			Non-market income (pensions and public transfers)	Taxes and social security contributions	Total post-government income
	Total	Labour income	Non-labour income			
Denmark	47	47	47	274	46	85
Luxembourg <sup>3)</sup>	103	103	102	75	111	97
Ireland	117	117	106	102	131	110
Italy	105	105	93	76	108	100
Spain	107	104	202	87	104	105
Austria <sup>4)</sup>	97	98	63	89	96	95
Great Britain <sup>5)</sup>	107	106	138	91	110	104
West Germany <sup>6)</sup>	71	74	36	121	68	78

<sup>1)</sup> Head of household is 20 to 60 years of age. – <sup>2)</sup> Average over the 1994-1998 observation period (i.e., 1993-1997 income years; equivalent income based on modified OECD scale). – <sup>3)</sup> Observation years 1994-1996 only. – <sup>4)</sup> Observation years 1995-1998 only. – <sup>5)</sup> Based on BHPS data 1994-1998. – <sup>6)</sup> Based on GSOEP data 1995-1999.

*Source:* ECHP-UDB waves 1-5; BHPS waves 4-8; GSOEP waves 12-16; authors' calculation (weighted).

Based on the income information given in the Appendix Table, Table 4 presents the income position of immigrants relative to the native-born population for each income component. The relative income positions of the immigrant populations vary markedly across the countries (Table 4). The result for immigrants to Denmark is particularly notable. Whereas the market income of this group is not even half that of the native-born Danish population, the non-market income component of their portfolio is almost three times as high. Consequently, the taxes and social security contributions paid by immigrants to Denmark are very low. This outlying pattern may be explained by the atypical social structure of the Danish immigrant population, which is characterized by a high proportion of low-skilled immigrants from non-EU countries (Brücker et al. 2002, p. 52, 60 and Table 5 below). This situation may partly explain – although not justify – the negative attitudes of the native-born Danish population to foreigners.

However, in the majority of countries included in our analyses, non-market incomes are lower among immigrants than among the native-born population. Ireland and West Germany form exceptions here. While in Ireland, there are no great differences between the two groups, immigrants to West Germany are much more reliant on non-market income than the native population – though the situation is nowhere near as extreme as in Denmark. Furthermore, with the exception of Denmark and West Germany immigrants are slightly more heavily burdened by taxes and social contributions than the native-born population. These results may indicate discrimination against immigrants, in that they are taxed more heavily (although this may simply be a result of tax progression due to higher market incomes) and have somewhat reduced access to the social systems. However, given the underlying data restrictions with respect to deductions (see Section 3 above), we abstain from this interpretation. An exceptional situation is found in Ireland, where highly skilled immigrants (Brücker et al. 2002, p. 60), mainly from Great Britain and the USA, show a substantially better market performance than the native-born population, and therefore bear a clearly above-average tax and contributions burden.

#### **4.3 Correlates of Relative Pre-Government Income Position and Income Redistribution**

It is easy to misinterpret empirical results of bivariate cross-country analyses of since there is a great deal of variation in the social structures of the respective populations (Table 5). Although we will not discuss these differences in detail at this stage, it should be noted that, in all countries considered here, immigrant households tend to be somewhat larger, to have more children, and to be more frequently affected by unemployment. Looking at the structure of the immigrant population only, it appears that the majority of immigrants to Luxembourg and Ireland come from EU countries, while the proportion of immigrants from non-EU countries is considerably larger in all of the other countries under investigation (up to 80% in Great Britain, West Germany and Austria). However, the geographic origin of these non-EU populations is very heterogeneous across these three countries: while for Great Britain this covers mostly immigrants from (former) commonwealth countries, in Germany immigrants from Turkey, the former Yugoslavia and since the late 1980s ethnic Germans from Poland,

Romania and Russia are major immigrant groups. Finally, in Austria this group includes many immigrants from the Czech Republic and from Hungary.

The dependent variables in the regression models are pre-government income position (left-hand panel in Table 6a/6b) and the impact of redistribution (right-hand panel in Table 6a/6b), the latter being measured in terms of the difference in the relative income positions based on pre- and post-government income, respectively.

**Table 5: Socio-economic characteristics of population living in private households with prime-aged heads<sup>1)</sup> in selected EU countries, 1994-1998<sup>2)</sup>, by household immigrant status**

	Native-born								Immigrants							
	DK	Lux <sup>3)</sup>	Ireland	Italy	Spain	Austria <sup>4)</sup>	GB <sup>5)</sup>	W.Ger. <sup>6)</sup>	DK	Lux <sup>3)</sup>	Ireland	Italy	Spain	Austria <sup>4)</sup>	GB <sup>5)</sup>	W.Ger. <sup>6)</sup>
	Mean (standard deviation)															
Individual age (years)	31.06 (17.03)	32.04 (18.82)	27.11 (17.33)	31.95 (17.66)	31.66 (18.58)	32.49 (18.48)	29.60 (17.33)	31.75 (16.95)	25.35 (16.85)	29.46 (17.24)	25.44 (16.80)	30.26 (17.34)	29.54 (17.03)	30.61 (17.90)	27.98 (17.11)	29.76 (17.35)
Head aged 16-25	0.05 (0.22)	0.02 (0.15)	0.02 (0.14)	0.01 (0.10)	0.02 (0.13)	0.04 (0.20)	0.05 (0.22)	0.03 (0.18)	0.06 (0.23)	0.02 (0.14)	0.02 (0.12)	0.01 (0.10)	0.02 (0.14)	0.06 (0.23)	0.04 (0.20)	0.03 (0.18)
Head aged 26-35	0.25 (0.43)	0.25 (0.43)	0.19 (0.39)	0.17 (0.38)	0.21 (0.40)	0.29 (0.45)	0.26 (0.44)	0.31 (0.46)	0.30 (0.46)	0.34 (0.47)	0.31 (0.46)	0.22 (0.41)	0.25 (0.43)	0.30 (0.46)	0.22 (0.41)	0.24 (0.42)
Head aged 36-45	0.31 (0.46)	0.35 (0.48)	0.36 (0.48)	0.33 (0.47)	0.32 (0.47)	0.33 (0.47)	0.33 (0.47)	0.30 (0.46)	0.50 (0.50)	0.32 (0.47)	0.33 (0.47)	0.35 (0.48)	0.33 (0.47)	0.29 (0.45)	0.37 (0.48)	0.32 (0.46)
Head aged 46-55	0.30 (0.46)	0.26 (0.44)	0.32 (0.47)	0.34 (0.47)	0.33 (0.47)	0.24 (0.43)	0.27 (0.45)	0.24 (0.43)	0.09 (0.28)	0.26 (0.44)	0.25 (0.43)	0.28 (0.45)	0.32 (0.47)	0.27 (0.45)	0.28 (0.45)	0.30 (0.46)
Head aged 56-60	0.09 (0.28)	0.12 (0.32)	0.10 (0.30)	0.15 (0.36)	0.12 (0.33)	0.10 (0.30)	0.08 (0.28)	0.12 (0.32)	0.06 (0.23)	0.06 (0.23)	0.09 (0.28)	0.14 (0.34)	0.08 (0.27)	0.08 (0.27)	0.09 (0.29)	0.11 (0.31)
Age of household head (years)	41.68 (9.94)	42.45 (9.63)	43.32 (8.95)	44.88 (9.09)	43.83 (9.35)	41.20 (9.86)	41.23 (9.80)	41.40 (10.05)	38.51 (8.35)	40.39 (9.07)	41.05 (9.37)	43.71 (9.19)	42.12 (9.07)	40.71 (10.22)	42.15 (9.31)	42.64 (9.75)
Number of children in household	1.03 (1.15)	1.11 (1.17)	1.91 (1.66)	0.96 (1.04)	1.04 (1.06)	0.96 (1.06)	1.12 (1.18)	0.94 (1.07)	2.18 (1.82)	1.18 (1.14)	2.00 (1.57)	1.05 (1.05)	1.00 (0.90)	1.11 (1.24)	1.45 (1.62)	1.42 (1.50)
No children in household	0.45 (0.50)	0.41 (0.49)	0.25 (0.43)	0.42 (0.49)	0.40 (0.49)	0.45 (0.50)	0.43 (0.49)	0.46 (0.50)	0.26 (0.44)	0.37 (0.48)	0.22 (0.42)	0.38 (0.48)	0.34 (0.47)	0.41 (0.49)	0.35 (0.48)	0.34 (0.47)
1 child in household	0.21 (0.41)	0.23 (0.42)	0.20 (0.40)	0.29 (0.46)	0.27 (0.45)	0.23 (0.42)	0.20 (0.40)	0.24 (0.43)	0.18 (0.38)	0.24 (0.42)	0.17 (0.38)	0.31 (0.46)	0.37 (0.48)	0.27 (0.45)	0.23 (0.42)	0.25 (0.43)
2 children in household	0.25 (0.43)	0.24 (0.43)	0.24 (0.43)	0.21 (0.41)	0.25 (0.44)	0.24 (0.43)	0.24 (0.43)	0.21 (0.41)	0.18 (0.38)	0.26 (0.44)	0.24 (0.43)	0.23 (0.42)	0.24 (0.43)	0.20 (0.40)	0.24 (0.43)	0.24 (0.43)
3+ children in household	0.09 (0.29)	0.12 (0.33)	0.32 (0.46)	0.07 (0.25)	0.08 (0.27)	0.07 (0.26)	0.13 (0.34)	0.08 (0.28)	0.39 (0.49)	0.13 (0.34)	0.37 (0.48)	0.08 (0.27)	0.04 (0.21)	0.12 (0.32)	0.17 (0.38)	0.17 (0.38)
Couple household	0.80 (0.40)	0.72 (0.45)	0.77 (0.42)	0.81 (0.40)	0.75 (0.43)	0.66 (0.47)	0.65 (0.48)	0.68 (0.47)	0.84 (0.36)	0.78 (0.41)	0.84 (0.37)	0.76 (0.42)	0.81 (0.39)	0.80 (0.40)	0.69 (0.46)	0.77 (0.42)
Lone parent household	0.05 (0.23)	0.08 (0.27)	0.09 (0.28)	0.07 (0.25)	0.07 (0.25)	0.09 (0.28)	0.09 (0.28)	0.05 (0.21)	0.03 (0.17)	0.03 (0.17)	0.07 (0.25)	0.09 (0.29)	0.07 (0.26)	0.04 (0.19)	0.09 (0.28)	0.03 (0.18)
Male household head	0.66 (0.48)	0.85 (0.36)	0.83 (0.38)	0.87 (0.34)	0.92 (0.33)	0.54 (0.50)	0.64 (0.48)	0.68 (0.47)	0.65 (0.49)	0.88 (0.32)	0.83 (0.38)	0.86 (0.35)	0.88 (0.34)	0.63 (0.48)	0.65 (0.48)	0.80 (0.40)
Bad health conditions	0.40 (0.49)	0.66 (0.47)	0.78 (0.42)	0.68 (0.47)	0.44 (0.50)	0.63 (0.48)	0.08 (0.26)	0.05 (0.21)	0.68 (0.47)	0.71 (0.45)	0.79 (0.41)	0.71 (0.45)	0.42 (0.49)	0.65 (0.48)	0.08 (0.27)	0.03 (0.18)
Education level: High	0.19 (0.39)	0.07 (0.26)	0.06 (0.24)	0.03 (0.16)	0.07 (0.26)	0.03 (0.16)	0.48 (0.50)	0.15 (0.36)	0.21 (0.41)	0.11 (0.31)	0.09 (0.28)	0.07 (0.25)	0.13 (0.34)	0.06 (0.24)	0.62 (0.49)	0.08 (0.27)

... contd.

Education level: Medium	0.42 (0.49)	0.22 (0.42)	0.25 (0.44)	0.20 (0.40)	0.10 (0.30)	0.47 (0.50)	0.45 (0.50)	0.28 (0.45)	0.18 (0.38)	0.17 (0.38)	0.31 (0.46)	0.25 (0.44)	0.30 (0.46)	0.40 (0.49)	0.32 (0.47)	0.42 (0.49)
Education level: Low	0.39 (0.49)	0.70 (0.46)	0.68 (0.47)	0.76 (0.42)	0.82 (0.38)	0.50 (0.50)	0.06 (0.24)	0.53 (0.50)	0.61 (0.49)	0.72 (0.45)	0.60 (0.49)	0.68 (0.47)	0.57 (0.50)	0.53 (0.50)	0.07 (0.25)	0.47 (0.50)
HH with previous unemployment	0.50 (0.50)	0.06 (0.23)	0.43 (0.49)	0.37 (0.48)	0.62 (0.49)	0.31 (0.46)	0.15 (0.36)	0.14 (0.35)	0.75 (0.44)	0.18 (0.38)	0.49 (0.50)	0.52 (0.50)	0.67 (0.47)	0.59 (0.49)	0.20 (0.40)	0.29 (0.46)
Origin: EU / mixed HH	-	-	-	-	-	-	-	-	0.25 (0.43)	0.35 (0.48)	0.78 (0.41)	0.35 (0.48)	0.40 (0.49)	0.18 (0.39)	0.17 (0.37)	0.12 (0.32)
Origin: EU / non-mixed HH	-	-	-	-	-	-	-	-	0.03 (0.18)	0.52 (0.50)	0.13 (0.34)	0.02 (0.15)	0.04 (0.19)	0.04 (0.20)	0.03 (0.16)	0.08 (0.27)
Origin: Non-EU / mixed HH	-	-	-	-	-	-	-	-	0.31 (0.46)	0.04 (0.20)	0.06 (0.24)	0.51 (0.50)	0.42 (0.49)	0.30 (0.46)	0.49 (0.50)	0.29 (0.46)
Origin: Non-EU / non-mixed HH	-	-	-	-	-	-	-	-	0.40 (0.49)	0.09 (0.29)	0.03 (0.16)	0.12 (0.33)	0.14 (0.34)	0.48 (0.50)	0.32 (0.47)	0.51 (0.50)
Years since migration	-	-	-	-	-	-	-	-	15.00 (10.85)	15.96 (11.04)	24.17 (10.44)	22.58 (12.98)	19.83 (10.22)	19.39 (15.74)	23.11 (11.05)	17.71 (10.36)
Years since migration (squared) / 100	-	-	-	-	-	-	-	-	3.43 (4.55)	3.77 (5.03)	6.93 (5.27)	6.78 (7.69)	4.98 (4.72)	6.23 (8.94)	6.56 (5.33)	4.21 (4.27)
Year 1994	0.25 (0.43)	0.35 (0.48)	0.26 (0.44)	0.22 (0.41)	0.24 (0.43)	0.00 (0.00)	0.21 (0.40)	0.00 (0.00)	0.19 (0.39)	0.39 (0.49)	0.26 (0.44)	0.22 (0.42)	0.26 (0.44)	0.00 (0.00)	0.22 (0.42)	0.00 (0.00)
Year 1995	0.22 (0.42)	0.33 (0.47)	0.22 (0.42)	0.23 (0.42)	0.22 (0.41)	0.27 (0.44)	0.21 (0.40)	0.20 (0.40)	0.20 (0.40)	0.33 (0.47)	0.22 (0.42)	0.24 (0.43)	0.26 (0.44)	0.30 (0.46)	0.21 (0.41)	0.20 (0.40)
Year 1996	0.19 (0.39)	0.32 (0.47)	0.19 (0.39)	0.21 (0.41)	0.20 (0.40)	0.26 (0.44)	0.21 (0.40)	0.20 (0.40)	0.23 (0.42)	0.29 (0.45)	0.19 (0.39)	0.21 (0.41)	0.21 (0.41)	0.28 (0.45)	0.20 (0.40)	0.20 (0.40)
Year 1997	0.18 (0.38)	0.00 (0.00)	0.17 (0.38)	0.19 (0.39)	0.18 (0.38)	0.25 (0.43)	0.20 (0.40)	0.20 (0.40)	0.21 (0.41)	0.00 (0.00)	0.17 (0.37)	0.18 (0.38)	0.17 (0.37)	0.22 (0.41)	0.20 (0.40)	0.20 (0.40)
Year 1998	0.16 (0.37)	0.00 (0.00)	0.15 (0.36)	0.16 (0.36)	0.16 (0.37)	0.22 (0.42)	0.18 (0.38)	0.20 (0.40)	0.18 (0.38)	0.00 (0.00)	0.16 (0.37)	0.14 (0.35)	0.11 (0.32)	0.20 (0.40)	0.16 (0.37)	0.19 (0.39)
Year 1999	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.20 (0.40)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.20 (0.40)

<sup>1)</sup> Head of household is 20 to 60 years of age. – <sup>2)</sup> Average over the 1994-1998 observation period (i.e., 1993-1997 income years; equivalent income based on modified OECD scale). –

<sup>3)</sup> Observation years 1994-1996 only. – <sup>4)</sup> Observation years 1995-1998 only. – <sup>5)</sup> Based on BHPS data 1994-1998. – <sup>6)</sup> Based on GSOEP data 1995-1999.

Source: ECHP-UDB waves 1-5; BHPS waves 4-8; GSOEP waves 12-16; authors' calculation (weighted).

**Table 6a: Pre-government income positions and redistribution effects for households with prime-aged heads in selected EU-countries, 1994-1998: Results from RE-GLS regression models (full SES model with simple immigrant control)**

	Pre-government income								Redistribution							
	DK	Lux	Ireland	Italy	Spain	Austria	GB	W. Ger.	DK	Lux	Ireland	Italy	Spain	Austria	GB	W. Ger.
Immigrant household	-0.596** (7.49)	0.155* (2.01)	0.109+ (1.66)	0.044 (0.73)	-0.035 (0.42)	0.058 (0.93)	0.054 (1.28)	-0.174** (5.70)	15.372** (4.93)	-9.030* (2.23)	-4.626 (0.70)	-4.386 (1.40)	2.580 (0.56)	-2.646 (0.85)	-2.386* (2.42)	2.050** (2.77)
Head aged 16-25	-0.319** (6.10)	-0.067 (0.49)	-0.329** (4.23)	-0.252** (4.28)	-0.391** (5.91)	-0.239** (3.83)	-0.481** (12.78)	-0.281** (7.22)	8.505** (3.77)	6.230 (0.77)	10.499 (1.15)	8.497** (2.69)	12.274** (3.55)	9.859** (2.89)	6.945** (7.64)	5.017** (4.96)
Head aged 26-35	-0.086* (2.29)	-0.016 (0.23)	-0.030 (0.73)	-0.008 (0.30)	-0.046 (1.25)	-0.059 (1.55)	-0.109** (4.44)	-0.033 (1.39)	4.573** (2.80)	5.180 (1.25)	2.437 (0.48)	2.693+ (1.94)	7.798** (4.06)	4.510* (2.13)	-0.460 (0.76)	0.899 (1.46)
Head aged 46-55	-0.082* (2.14)	-0.276** (3.54)	-0.035 (0.88)	-0.162** (6.52)	-0.067+ (1.83)	-0.125** (3.15)	-0.063* (2.36)	-0.032 (1.19)	3.996* (2.38)	11.141* (2.47)	-3.450 (0.72)	2.493+ (1.88)	-2.580 (1.35)	5.716** (2.60)	6.411** (9.76)	3.816** (5.54)
Head aged 56-65	-0.393** (7.19)	-1.422** (12.54)	-0.213** (3.84)	-0.620** (19.00)	-0.265** (5.95)	-0.743** (14.67)	-0.404** (10.62)	-0.374** (10.80)	17.290** (7.36)	43.889** (6.78)	9.024 (1.39)	18.392** (10.58)	6.278** (2.68)	24.387** (8.82)	19.773** (21.35)	17.405** (19.61)
1 child in household	-0.024 (0.59)	0.073 (0.72)	-0.126** (2.65)	0.050 (1.56)	0.029 (0.88)	0.038 (0.75)	-0.321** (11.56)	-0.279** (11.35)	12.175** (6.88)	1.702 (0.28)	13.086* (2.13)	-5.422** (3.14)	-2.427 (1.42)	-4.229 (1.47)	6.590** (9.58)	11.268** (17.37)
2 children in household	-0.147** (2.95)	-0.259* (2.31)	-0.336** (6.27)	-0.116** (3.02)	-0.130** (3.09)	-0.173** (2.97)	-0.558** (17.16)	-0.461** (15.34)	19.489** (9.21)	12.114+ (1.85)	19.463** (2.92)	-1.116 (0.55)	0.014 (0.01)	6.855* (2.13)	10.737** (13.52)	16.647** (21.28)
3+ children in household	-0.251** (3.43)	-0.442** (3.20)	-0.628** (10.11)	-0.312** (5.41)	-0.350** (4.87)	-0.542** (6.83)	-0.962** (22.14)	-0.609** (13.97)	26.164** (8.38)	21.507** (2.72)	28.273** (3.83)	4.763 (1.55)	0.725 (0.19)	17.727** (4.11)	14.447** (13.67)	21.502** (19.11)
Couple household	0.762** (22.32)	0.193** (2.62)	0.493** (10.76)	0.301** (10.17)	0.388** (9.81)	0.450** (11.58)	0.329** (13.93)	0.186** (8.33)	-27.84** (18.70)	-8.251+ (1.96)	-28.52** (5.39)	-19.23** (12.25)	-18.44** (8.73)	-13.79** (6.68)	-3.741** (6.43)	-3.137** (5.35)
Lone parent household	0.027 (0.49)	-0.003 (0.02)	-0.226** (3.14)	-0.068 (1.42)	-0.153* (2.48)	-0.128* (2.14)	-0.836** (18.44)	-0.552** (11.64)	-8.498** (3.46)	1.033 (0.14)	1.654 (0.20)	-1.431 (0.56)	4.217 (1.28)	10.306** (3.18)	11.168** (9.97)	7.337** (5.84)
Male household head	0.156** (4.98)	0.419** (4.55)	0.306** (5.15)	0.157** (5.93)	0.156** (4.27)	0.125** (4.75)	0.235** (7.97)	0.312** (9.95)	-6.895** (5.24)	-9.507+ (1.87)	-6.861 (1.13)	-6.912** (4.88)	-7.738** (4.01)	-2.438 (1.64)	-3.925** (5.83)	-3.406** (4.54)
Bad health conditions	-0.202** (6.47)	-0.174* (2.13)	-0.169** (4.15)	-0.152** (5.57)	-0.286** (10.76)	-0.156** (3.89)	-0.405** (16.02)	-0.215** (7.51)	9.903** (7.14)	6.088 (1.22)	4.409 (0.81)	6.737** (4.59)	9.056** (6.56)	12.047** (5.18)	9.715** (15.30)	4.870** (6.31)
Education level: High	0.171** (4.70)	0.323* (2.50)	0.348** (5.81)	0.401** (6.59)	0.369** (6.53)	0.268** (2.81)	0.357** (16.25)	0.396** (10.37)	-10.79** (6.80)	-30.50** (4.42)	-32.13** (4.58)	-38.72** (12.10)	-24.93** (8.33)	-23.47** (4.83)	-6.537** (12.31)	-7.374** (7.64)
Education level: Low	-0.153** (4.74)	-0.494** (5.70)	-0.391** (10.85)	-0.334** (13.24)	-0.584** (13.71)	-0.265** (7.26)	-0.867** (21.05)	-0.179** (7.67)	10.275** (7.36)	25.298** (5.46)	29.099** (6.78)	18.643** (13.95)	26.996** (11.95)	13.615** (7.13)	8.012** (8.00)	2.495** (4.22)
HH with previous unemployment	-0.349** (9.19)	-0.496** (4.25)	-0.240** (6.20)	-0.017 (0.67)	-0.210** (6.02)	-0.043 (1.04)	-0.405** (21.38)	-0.495** (28.84)	22.437** (14.68)	14.196* (2.28)	16.844** (4.05)	3.289* (2.45)	10.533** (5.55)	7.840** (3.72)	7.515** (15.64)	16.693** (36.04)
Observations	10633	2223	11048	22218	13688	9162	16683	19403	10633	2223	11046	22218	13688	9162	16683	19403
Groups	2896	835	3226	6178	3890	2932	5077	5336	2896	835	3225	6178	3890	2932	5077	5336
R-Squared	.2134	.2776	.2280	.1348	.1823	.1480	.3912	.2207	.1791	.1568	.0331	.1050	.1416	.0873	.2541	.2034

Regression models also include controls for year of observation and a constant. Absolute value of z-statistics in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%

Source: ECHP-UDB waves 1-5; BHPS waves 4-8; GSOEP waves 12-16; authors' calculation.

Immigrants to Denmark, in particular, and West Germany have a much lower pre-government income position than the native-born population (Table 6a). As such, the descriptive results are confirmed when controlling for various socio-economic measures. When taking these social differences into account, immigrants to Luxembourg have a significantly higher pre-government income position than the native-born population. The same is true for Ireland, but only at the 10% significance level. Both countries appear to be able to attract outperforming migrant workers without major (language) problems. On the other hand, no immigration status-specific differences in the pre-government income are found in Italy, Spain, Austria or Great Britain. The redistribution analysis provides an almost perfect counterpart to these findings. The outperforming immigrant populations in Luxembourg and Ireland<sup>10</sup> lose out in the national redistribution process, whereas the opposite is the case for the severely under-performing immigrant populations of Denmark and West Germany. Although immigrants to Great Britain do not show a significant income advantage over the native-born population, they do pay significantly more into the system as a whole. The non-significant difference between the market performance of the Italian, Spanish and Austrian immigrant populations and the respective native-born populations is also reflected in the redistribution process.

Concerning the additional set of control variables, very similar patterns can be observed across countries. In all countries, households with a middle-aged, well-educated head who is in good health and who has not previously been affected by unemployment fare better economically than others. Two-parent households have higher market income, and the presence of (many) children in the household is negatively linked to income. Finally, the European tax and contribution systems seem to be “fair” to the extent that those socio-economic groups with a weaker pre-government income position tend to profit from the redistribution process.

Differentiating the immigrant groups according to their region of origin and level of integration allows for a better control of the heterogeneity of the immigrant population across Europe (Table 6b). The effects of the additional control variables (socio-economic status, time period) remain essentially unchanged when compared to the results of the

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<sup>10</sup> However, for Ireland, this effect is not significantly different from zero.

simple dummy control for immigration status described above (as such, these effects are not documented in Table 6b).

First of all, it emerges that in all countries analysed, “mixed” households in which an immigrant from the EU resides with an adult member of the native-born population do not show any significant differences in economic performance compared to households of native-born individuals only (first line of Table 6b). This holds for both of the performance indicators analysed – pre-government income position and change in the relative income position due to the redistribution process – with the exception of West Germany in the latter case. Bearing in mind that the social structures and skills of the citizens of the various EU member states – and especially of those leaving their country of origin for economic reasons – still differ markedly from one country to the next (cf. Barrett 1998 for an evaluation of immigrants to the US), this is a remarkable result. It shows that “mixing” with the native-born population by marriage (or at least cohabitation) is associated with successful economic integration of immigrants in all analysed countries, even in the first generation. Incidentally, this can also be taken as an indication of the validity of our “mixed”/“non-mixed” categorization. However, it should be noted that we cannot assume a causal relationship here. It may as well be that the economic success associated with “mixed” households is a result of better integration rather than its cause.



**Table 6b: Pre-government income positions and redistribution effects for households with prime-aged heads in selected EU-countries, 1994-1998: Results from RE-GLS regression models (full SES model with extended immigrant control)**

	Pre-government income								Redistribution							
	DK	Lux	Ireland	Italy	Spain	Austria	GB	W. Ger.	DK	Lux	Ireland	Italy	Spain	Austria	GB	W. Ger.
Origin: EU / mixed HH	-0.243 (1.17)	0.160 (0.94)	0.014 (0.07)	-0.250 (1.47)	-0.276 (1.11)	-0.074 (0.39)	-0.011 (0.09)	-0.064 (0.65)	13.365 (1.54)	-13.882 (1.50)	5.168 (0.25)	12.105 (1.36)	7.030 (0.53)	7.425 (0.76)	-1.028 (0.35)	5.756* (2.36)
Origin: EU / non-mixed HH	-1.169** (4.12)	0.127 (0.86)	-0.363+ (1.71)	-0.715* (2.39)	-0.191 (0.60)	-0.185 (0.84)	-0.595** (2.81)	-0.254* (2.50)	9.837 (0.84)	-17.404* (2.22)	-22.574 (1.00)	17.537 (1.11)	13.398 (0.77)	22.182* (1.97)	7.545 (1.51)	6.897** (2.72)
Origin: Non-EU / mixed HH	-0.603** (3.17)	0.273 (1.01)	0.098 (0.39)	0.065 (0.43)	0.281 (1.22)	-0.358* (2.26)	0.064 (0.62)	-0.288** (3.63)	16.959* (2.14)	-13.368 (0.91)	7.834 (0.29)	-3.958 (0.50)	-1.005 (0.08)	18.826* (2.28)	-2.906 (1.16)	9.308** (4.61)
Origin: Non-EU / non-mixed HH	-1.918** (9.90)	-0.265 (1.26)	-1.499** (3.25)	0.037 (0.18)	-0.327 (1.44)	-0.313* (2.47)	-0.226+ (1.92)	-0.662** (8.86)	36.67** (4.67)	-2.574 (0.23)	42.579 (0.97)	13.630 (1.24)	23.721+ (1.92)	8.423 (1.30)	-1.040 (0.37)	10.588** (5.66)
Years since migration	0.045* (2.48)	0.012 (0.95)	0.011 (0.73)	0.011 (1.16)	0.015 (0.85)	0.030** (2.72)	0.002 (0.17)	0.039** (4.91)	-0.973 (1.30)	0.298 (0.44)	-1.093 (0.64)	-0.869+ (1.71)	-2.274* (2.37)	-2.047** (3.62)	0.151 (0.68)	-0.849** (4.26)
Years since migration (squared)	-0.096* (2.29)	-0.036 (1.41)	-0.014 (0.43)	-0.018 (1.28)	-0.052 (1.50)	-0.038* (2.22)	0.012 (0.57)	-0.105** (5.31)	2.338 (1.39)	0.146 (0.11)	2.838 (0.82)	1.503* (2.07)	7.699** (4.12)	3.628** (3.99)	-0.657 (1.36)	1.934** (3.86)
...																
Observations	10633	2223	11048	22218	13688	9162	16683	19403	10633	2223	11046	22218	13688	9162	16683	19403
Groups	2896	835	3226	6178	3890	2932	5077	5336	2896	835	3225	6178	3890	2932	5077	5336
R-Squared	.2175	.2799	.2319	.1349	.1830	.1497	.3910	.2299	.1798	.1602	.0340	.1049	.1427	.0903	.2541	.2055

Models include all control variables as shown in Table 6a. Absolute value of z-statistics in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%

Source: ECHP-UDB waves 1-5; BHPS waves 4-8; GSOEP waves 12-16; authors' calculation.

The results shown in the second line of Table 6b reveal that those who immigrate to Denmark, Ireland, Italy, Great Britain and West Germany from other EU countries and who live alone or with a partner from the same ethnic origin (“non-mixed immigrants”) are worse off economically than the native-born population, even when controlling for duration of stay and numerous other socio-economic background variables. Since we are not able to measure the skill potential of individuals in our immigrant sample perfectly – e. g., we cannot measure language knowledge –, we hesitate to interpret this result as an indicator for discrimination against immigrants from the EU to these countries, and prefer the interpretation of atypically low (unmeasured) skill levels within these groups. Furthermore, when inspecting the findings on redistribution effects, it emerges that “non-mixed” immigrants lose out from the redistribution process in Luxembourg, but profit from it in Austria and in West Germany. While the latter result corresponds with our expectation of reduced self-supporting capacities among immigrants in “non-mixed” households, the Luxembourg result may well be influenced by the high-performing employees in the country’s financial and banking sector.

In general, integration in the sense of cohabitation with a native-born adult also raises the income of immigrants from non-EU countries to levels similar to those of the native-born population (third line of Table 6b). Exceptions are Denmark, Austria and West Germany, where non-EU immigrants in “mixed” households show a significantly lower market performance than the native-born population. Accordingly, in these three countries, these same groups also profit from the redistribution process.

The group assumed to be least well assimilated are immigrants from non-EU countries who live in “non-mixed” households. These are the “foreigners” central to the immigration debate. In terms of pre-government income, their households are outperformed by the native-born population in almost all countries under consideration; this effect is statistically significant in Denmark, Ireland, Austria, Great Britain and West Germany. However, it is only in Denmark and West Germany that they profit substantially from the redistribution process; a positive correlation is also found here for Spain.

Our hypothesis predicts that duration of stay in the host country (as another indicator of assimilation) will have a positive effect on the economic performance. However, our data only confirm this improved market performance with time among immigrants to Denmark, Austria and West Germany. As expected, the effect is not linear, but diminishes over time (see squared effect). The results for the redistribution analyses are essentially in line with the results on pre-government income, but with two notable exceptions. First, it emerges that immigrants who live in the host country for longer do help to finance the social system in Italy and Spain, although their pre-government income position is not affected by duration of stay. The finding for Denmark is most important: given the extremely poor economic performance of immigrants to this country, there is no statistically significant indication that their need for support via redistribution is reduced over time, i.e. immigrants to Denmark remain dependent on public transfers.

## **5. Conclusions**

It is well-known that there is considerable variation in the economic performance of immigrant populations in different EU countries. This is mainly caused by the heterogeneous conditions of entry to the EU states, which strongly influence the social structure of the immigrant population, as well as by differences in country-specific strategies to promote the integration of the existing immigrant population. A remarkable result of our analyses, however, is that these cross-country differences persist, even when we control in detail for social structure and the level of integration. This suggests that institutional aspects such as restrictions on access to the labour market and parts of the social security system that are related to citizenship play an important role in limiting the economic performance of immigrants. In this respect, there still is a great deal of heterogeneity across EU member states.

The heterogeneous pattern of results reflects the fact that policy can heavily influence the way that immigrants are (or are not) integrated into the indigenous population. A modern immigration policy will combine the elements of cautiously steering social selection of immigrants, supporting integration, and reducing institutional discrimination against non-citizens. Here, we found contrasting country-specific

patterns in our data. Denmark, for example, follows a very traditional, but apparently rather unsuccessful immigration policy. Further research may concentrate on clustering countries according to their immigration and integration policy along the lines of welfare state typologies.

Finally, we can not rule out the possibility that country-specific differences in data collection strategies of ECHP, BHPS and GSOEP may affect data comparability and consequently the interpretation of our results. Another important open question is whether the “mixing” of immigrants with the indigenous population is a consequence or a cause of the economic well-being observed in this group. The answer to this question is of particular relevance to those responsible for designing a harmonized EU immigration policy.

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**Appendix Table: Mean income levels of various types of income for population living in private households with prime-aged heads<sup>1)</sup> in selected EU countries, 1994-1998<sup>2)</sup>, by household immigrant status**

	Income level (mean, ppp-adjusted)					
	Pre-government (=market) income			Non-market income (pensions and public transfers)	Taxes and social security contributions	<i>Total post-government income</i>
	Total	Labour income	Non-labour income			
	<i>Native-born</i>					
Denmark	21,680	21,052	628	2,442	9,239	14,884
Luxembourg <sup>3)</sup>	25,037	23,638	1,399	3,905	6,121	22,821
Ireland	13,437	13,151	286	1,848	4,029	11,257
Italy	12,856	12,267	589	1,244	3,820	10,281
Spain	11,561	11,202	359	1,195	3,511	9,245
Austria <sup>4)</sup>	18,558	17,654	904	2,615	6,348	14,825
Great Britain <sup>5)</sup>	16,609	15,851	756	1,731	3,983	14,357
West Germany <sup>6)</sup>	22,175	21,116	1,059	1,567	7,593	16,149
	<i>Immigrant</i>					
Denmark	10,161	9,863	298	6,684	4,232	12,613
Luxembourg <sup>3)</sup>	25,882	24,455	1,427	2,940	6,782	22,040
Ireland	15,719	15,416	303	1,882	5,260	12,341
Italy	13,474	12,924	550	943	4,116	10,301
Spain	12,329	11,603	726	1,045	3,637	9,738
Austria <sup>4)</sup>	17,927	17,354	572	2,335	6,122	14,140
Great Britain <sup>5)</sup>	17,724	16,684	1,040	1,576	4,374	14,924
West Germany <sup>6)</sup>	15,938	15,560	378	1,883	5,210	12,611

<sup>1)</sup> Head of household is 20 to 60 years of age. – <sup>2)</sup> Average over the 1994-1998 observation period (i.e., 1993-1997 income years; equivalent income based on modified OECD scale). – <sup>3)</sup> Observation years 1994-1996 only. – <sup>4)</sup> Observation years 1995-1998 only. – <sup>5)</sup> Based on BHPS data 1994-1998. – <sup>6)</sup> Based on GSOEP data 1995-1999.

Source: ECHP-UDB waves 1-5; BHPS waves 4-8; GSOEP waves 12-16; authors' calculation (weighted).