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## Economics Working Papers

2014-17

On the importance of macroeconomic factors for the foreign student's decision to stay in the host country

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# On the importance of macroeconomic factors for the foreign student's decision to stay in the host country\*

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July 2014

**Abstract:** The paper tests empirically whether the macroeconomic variables suggested by migration theories have a significant impact on the foreign student's decision to stay in their host country. The analysis is based on the combination of country level variables and individual register data. The mean labour income difference between the home and the host countries significantly negatively affects the student's probability of staying in the host country. The differences in the unemployment rates, welfare benefits, business cycles do not affect the probability of staying. The more hierarchical society in the home country is, the less likely male students are to stay. The employment outcome of student migrants has also been analysed and it is positively related to English language knowledge, but not to the abovementioned macroeconomic and culture related variables.

Keywords: student migration, return migration, European Union migration, immigrant labour, register data

JEL codes: F22, J61, I29

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\*The author would like to thank Anna Piil Damm, Torben M. Andersen, Anna Okatenko, Silvia Migali, Federico Carlini, and participants in CReAM, University College London internal workshop and Danish Graduate Programme in Economics workshop 2013 for their highly valuable comments and suggestions.

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## 1. Introduction

Labour migration has been extensively studied in the literature as the main economic motive for people to move. However, people choose to migrate not only in search of employment and a higher income, but also with the aim of accumulating human capital which increases the value of their labour. International student mobility is a good example of this phenomenon. The graph below illustrates the growing importance of student migration. As shown, the number of foreign students studying in the old EU-15 and EFTA member states has increased more than twofold between 1999 and 2011; eventually exceeding 1.5 million in 2011.

*[Figure 1 about here]*

The harmonization of educational systems, including the creation of European Higher Education area in the Bologna Process and the introduction of transferrable European Educational credits, has significantly contributed to the increased globalization of higher education and the international transferability of knowledge.

Studies in the US, Netherlands and Denmark report that considerable shares of students, namely 20% to 40% of the arrival cohort remain in the country after they are finished with their studies (Bijwaard, 2010; INS, 2001). Notably, foreign students are shown to be an important source of the future high-skilled labour in their host countries (Suter and Jandl, 2006; Felbermayr and Reczkowski, 2012). Therefore it is important to understand which factors influence the individual's decision to obtain a higher education abroad and later remain in the host country after graduation.

The aim of this paper is to test if the macroeconomic variables suggested by migration theories have a significant impact on the return migration of students using Danish administrative register data. To the best of my knowledge, this is the first study which addresses the return migration of student migrants using the combination of detailed micro-demographic and macroeconomic data. The population of analysis is European citizens who came to Denmark to study for a post-graduate degree during the period of May 2004 – December 2006. I focus on European students as they face similar costs of travelling to Denmark and are exempt from paying a tuition fee. Post-graduate students are chosen in order to ensure that individuals in the population represent as homogenous a group as possible in terms of their skills and demographic characteristics.

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<sup>1</sup> see also Ministeriet for Forskning, Innovation og Videregående Uddannelser, 2013 for figures for Denmark

The explanatory macroeconomics variables used are the differences in nominal and purchasing power adjusted wages, income inequalities, unemployment rates, welfare expenditures on benefits and business cycles between the home and the host country. Moreover, variables accounting for cultural background and religion in the home country and language proximity between the home and the host countries are included in the regressions.

The findings show that the difference in incomes between the home and the host countries is a significant predictor of the student's stay probability. The higher the mean labour income in the student's home country relative to mean wage in Denmark, the less likely he is to stay in Denmark in the medium run. Moreover, the higher social inequality in the home country, the higher the out-migration probability is for men. This finding likely indicates that well-educated men choose to return to countries where they can take a higher social position. There is no evidence to substantiate that the differences in unemployment rates, business cycle and social benefits between the home and the foreign country have a significant impact on the probability of the student staying in the host country.

The employment outcome of student migrants is also analysed. This part of the analysis is particularly interesting from the receiving country's perspective. It helps to understand which students not only remain in the host country in the medium run but also how they integrate into the labour market faster and contribute to the country's public finances. The results show that while the macroeconomic and cultural differences affect the foreign student's decision to stay, they do not determine the student's employment outcome. Instead, English language proficiency is important for successful integration into the host-country's labour market.

Despite the growing importance of students' international mobility, the research on student migration is scarce. There are a few empirical studies which try to explain one-way migration of students, i.e., migration from their origin country to the country where they obtain a higher education (see, for example, Dreher and Poutvaara, 2011; Kahanec and Králiková 2011; Bessey, 2012; Beine et al., 2012).

However, few studies have investigated the return migration of students. This paper is, conceptually, most similar to Huang's (1988) study. He is the first person to empirically test the link between several economic and socio-political factors and the non-return of foreign students from the USA on an aggregate country-level. He has shown that non-return of students is significantly related to the income differentials across countries (as also found in this study), unemployment level in the host country, as well as the business cycle, and the tax burden in the home country. Bratsberg (1995) has extended the theory of selective migration developed by Borjas (1987) to explain the non-return of foreign students from the United States which has been tested on a sample of 69 countries. Rosenzweig (2008) has

also built and tested a theoretical model further explaining student migration. In his paper, he has included a section about the return migration of students from the USA, the key empirical finding being that the student return rates are positively and significantly related to the skill prices in the home country. Finally, in a recent working paper, Bijwaard and Wang (2013) use the administrative register data from the Netherlands to find that becoming employed and forming a family in the host country make foreign students more prone to stay.

A clear advantage of this study over the previous two studies linking student return migration to the macroeconomic differences across countries is that in the register data it is possible to observe the in- and out-migration decisions of each individual rather than just the aggregate flows of student migrants. It prevents miscounting the numbers of student immigrants and the share of them remaining in the host country<sup>2</sup>. Moreover, by using register data, it is possible to control for the demographic characteristics and the field of education of each student; the latter factor is shown to be significantly related to the stay decision.

The rest of the paper is structured as follows. Section 2 presents the theoretical background for the model estimated in this paper. Section 3 describes the data construction procedure and the empirical specification. Section 4 presents the results and the robustness checks, and Section 5 concludes.

## **2. Theoretical background**

The underlying model in this paper has its roots in the theoretical framework developed by Sjastaad (1962). It postulates that the individual migrates in search for a higher return to labour (similar arguments were made by Ravenstein, 1985 and Hicks, 1932). However, the income differential does not have to be a single cause for economic migration.

Later richer theories have been developed, many of which build on Sjastaad's framework. For example, Todaro (1969) has relaxed the assumption of full employment in the model of rural-urban migration. In his model unemployment at the destination affects the probability of becoming employed. This in turn affects total expected income from migration and the migration decision per se.

Borjas (1987) has been the first to introduce migrants with heterogeneous skills based on Roy's (1951) self-selection model. According to his theory, those who are high skilled will emigrate from the home country if the host country has a more unequal income

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<sup>2</sup>For example, in Huang's (1988) data, the individual's decision to stay after graduation is not observed. Therefore, he has divided the number of applications for student visa status change to an immigrant status by a weighted average of students who immigrated to the US over the 5 preceding years to obtain a percentage of those who stay in the medium run. Similarly, Bratsberg (1995) has used aggregated flows which lead to large errors due to repeated migration spells.

distribution than the home country, The income of highly skilled individuals abroad will be further away from the mean in the right tail of the income distribution. Thus they will get a higher return to skills relative to an averagely skilled person in the host country. On the other hand, if the host country has a more equal income distribution compared to the home country, it will attract low skilled immigrants. Low skilled immigrants will benefit from the less dispersed income distribution as their income will be closer to the mean income in the host country.

Later Borjas and Bratsberg (1996) have extended Borjas's framework to explain return migration. In their model the possibility of return migration reemphasizes the selectivity of the permanent immigrant pool. If the host country initially has attracted high skilled individuals, only the most able of these will remain in the long run and vice versa if the initial migrant pool is negatively selected. At the same time Dustmann (1996) develops another theory of return migration based on the possibility of human capital accumulation. He suggests several motives to return, namely the change in earnings potential in the home country by obtaining foreign experience, price level differences between countries (home country being cheaper to live in), and strong preferences for home consumption (see also Djajic and Milbourne, 1988 and Hill, 1987 for this argument).

Another economic motive for migration has been presented by Borjas (1999) as a "welfare magnet" theory. According to Borjas, low skilled individuals may choose to migrate to countries with generous social benefits as their labour market income in the home country is lower than the amount of social assistance they can receive abroad.

Finally, it has recently been acknowledged that the same individual may choose to migrate and return several times during his lifetime. Thus his migration decision is sensitive to temporary changes in macroeconomic conditions in the home country and abroad. Beine et al. (2013) have shown that migration flows are significantly affected by the short-run differences in business cycle across countries.

The macroeconomic factors suggested by the general migration theories listed above are incorporated in my empirical model as push and pull factors. The aim is to test if the traditional macroeconomic variables affect the return migration of students as a particular group of migrants.

A negative relationship between the probability of the student staying in Denmark and the difference in incomes between the student's country of citizenship and Denmark is expected as argued in Sjastaad (1962) and Dustmann (1996). In line with the propositions of Borjas (1987) as well as Borjas and Bratsberg (1996), highly skilled individuals prefer countries with more dispersed income. As education traditionally serves as a proxy for skills in migration literature, student with tertiary degrees are considered to be in the upper end of the skill distribution. Consequently, if Borjas's theory holds, the income inequality measure in

the student's home country versus the host country and the probability that he stays in Denmark have to be negatively related. The difference in unemployment rates between the student's citizenship country and Denmark and the probability to stay have to be positively related according to Todaro (1969). A negative relation between the difference in expenditure on social benefits per capita between the home and the host country and the decision of the individual to stay in the host country would support the welfare magnet theory. However as argued by Borjas (1999), welfare support is important for low skilled individuals. Thus the effect might not be present for well-educated post-graduate students. Finally, the difference in the business cycle (economic growth) between the home and the host country should have a negative impact on the decision to stay, as in Beine et al. (2013).

### **3. Background, data and empirical framework**

#### ***3.1 Student migration to Denmark***

In addition to the availability of high quality data, there are several reasons why Denmark is an appropriate country choice for studying the return migration of students.

European students have especially favourable circumstances for studying in Denmark. The citizens of the European Economic Area and Switzerland are entitled to free education in Denmark. The material cost of migrating and returning is low as the distances between European countries are short. The residence permits<sup>3</sup> issued for educational purposes constitute around 35 - 45% (depending on the year) of the total number of residence permits issued in Denmark to EU citizens (Nyidanmark 2012, 2013).

Denmark's public expenditure on education is the highest among the EU-27 states. In 2011 the educational expenditure in Denmark amounted to 8.75% of GDP, which is more than 3% above the EU average (Eurostat, 2014). Part of this expenditure covers the expense of educating foreign students who are completing a full tertiary degree in Denmark as well as foreign students participating in exchange programmes.

Yet, one year after graduation only 50% of the foreign students continue to live in Denmark. The share of those who stay in the long run is even lower. After three years around 40% of foreign students who finished their education are still in the country, 75-80% of these are employed (Ministeriet for Forskning, Innovation og Videregående Uddannelser, 2013). The results of the survey carried out among foreign students in Copenhagen show that a majority of foreign students have a high willingness to stay in Denmark after their

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<sup>3</sup> The residence permit is a mandatory registration document in Denmark if a person lives in the country for more than 3 months. It is necessary if the person wishes to receive legal employment income, public or private health care, education, benefits or even open a bank account.

studies. However they leave the country as the probability of finding an appropriate job-to-education match in the labour market is very low (Momentum, 2012)<sup>4</sup>.

### **3.2 Data**

The data are constructed using the combination of the individual level data and the country-specific macroeconomic, cultural, and linguistic variables. The procedures of data construction and data description are presented in sub-sections below. The summary of all variables' names and detailed definitions and sources are available in the Online Appendix in Table A1.

#### **3.2.1 Individual level data**

The micro level data in the study stem from the Danish Administrative Register data for the entire population in Denmark which are linked across registers using a unique personal identifier. First, the Population register is used. It contains demographic information (such as gender, age, family information, country of citizenship, and date of immigration). Secondly, the data from the Educational Institution Register are added. Thirdly, the Employment register data are merged with the data from the previous three registers to add information on employment related variables. Data in three registers are available for the entire period of individual's stay in Denmark.

The population of students from the European Union and EEA who enrolled in a full degree in Denmark after the enlargement of the European Union in May 2004 is selected. The inclusion of the new member states provides more variation in macroeconomic and cultural variables. The individuals in the sample are followed for at least four years after the immigration year. Administrative register data at the moment of writing are available until 2010; therefore the information about students who arrived before 2007 is used.

The focus is on the students who continue studies after their higher professional diploma or a Bachelor's degree. First of all, the time it takes to obtain a post-graduate degree is short (on average being 2 academic years). Hence it is possible to observe the labour market participation of graduates despite the short data length. Secondly, individuals migrating to obtain a Master's degree are already relatively highly skilled. To be admitted to a post-graduate programme, their first degree has to be internationally acceptable, and their GPA has to be high. Thus, one can expect that they have already acquired profession related skills even if they drop out of a post-graduate programme.

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<sup>4</sup> Using Swedish register data, Joona, Datta Gupta and Wadensjo (2012) document that immigrants more often than natives are overeducated for their job positions. On the other hand, Nielsen (2011) focuses on non-Western immigrants living in Denmark and argues that only immigrants with a foreign-acquired education have a significant risk of becoming overeducated.



The out-migration time of the individual is defined by the year in which the person is no longer observed in registers. Those who have not been tax eligible in Denmark during the entire 4<sup>th</sup> year since immigration are also treated as leavers<sup>5</sup>. The statistics on the length of students' stay in the country are presented in Table A2 in the Online Appendix. Unfortunately, it is not possible to observe the individuals once they have left Denmark, i.e., there is no information on whether they return to their home country or become so-called circular migrants. Therefore it is assumed that a student when deciding to stay or out-migrate compares Denmark with his home country. Given that master level students stay abroad only for a few years, they preserve the social links in the home country as well as the home country's language knowledge. Thus they are likely to choose to return home after graduation if they decide not to stay in the host country. There are few Scandinavian studies which document that a significant share of Scandinavian students indeed returns home after studying abroad (Saarikallio-Torp and Wiers-Jenssen, 2010, Norden.org, 2005).

To analyse labour market outcome of foreign students, two alternative measures are used. The first measure is based on an individual being employed in November in the 4th year since the immigration year. This measure is constructed by the Danish statistical agency, and it is directly available in the Employment register. The second measure is based on whether a person receives any employment related income in the 4th year after immigrating. Information about labour income is found in the same register.

The important advantage of the register data is that the data are longitudinal and the same person and his characteristics can be observed during his entire stay in the host country. Each individual's decision to out-migrate is linked to the explanatory macroeconomic variables after controlling for the individual's demographic characteristics and educational choice which has not been done before. Furthermore, the previous papers focusing on the relation between the return migration of students and macroeconomic factors are based on aggregate flows and the assumptions about the timing of visa status change from student to a resident (Huang, 1988; Bratsberg, 1995). It was impossible to account for the repeated entrance of the same individual to the country, and these aggregate non-return rates of foreign students were poorly approximated and overstated (also pointed out by Rosenzweig, 2008). This paper overcomes the problem. In the register data the individual has the same unique identifier during all years he has been in Denmark, even in case he had repeated entries.

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<sup>5</sup> It is possible that some individuals do not report that they have left the country, and the information about them might not be timely updated. Thus an alternative procedure defining whether a person is still in the country has been used, namely, whether a person receives any personal income in Denmark during the year. The results obtained from these regressions resemble the results in the paper and thus are not reported. Moreover, some students may be supported by spouses or parents living abroad while in search of job. These types of financial support are not always identifiable in register data.

Another advantage of longitudinal data is that when analysing the determinants of foreign student's employment in the host country, the analysis can be based on the entire initial sample of student immigrants rather than only those who have stayed in Denmark for at least 4 years. It allows avoiding the selection problem which occurs if the economic performance of migrants in the host country is analysed conditionally on their stay.

### **3.2.2 Sample description**

The sample at arrival consists of 983 individuals from 21 countries. 341 (35%) of these individuals are still living in Denmark after four years. 25.6% of the initial sample are recorded as having received employment income in the 4th year after the immigration year.

The majority of students (63%) originate from Scandinavia, followed by Western Europe (19%), Eastern Europe (10%), and Southern Europe (8%). The percentage of those who leave in the medium run is the highest among Northern Europeans – 68.5% and lowest among Eastern Europeans, of whom only 53.5% leave. There are 540 male and 443 female students in the sample at the arrival. However after four years the number of women and men observed is nearly equal, 171 and 170 respectively. The individuals' mean age at arrival is 25 years, and 95% of them are below age 31. Among stayers the mean age at arrival is lower – 24 years. 49% of the observed students are enrolled in social sciences, 24% in technical sciences and 10% in medicine. The detailed summary statistics on the demographic, educational and variables are available in the Panels B, C and F in Table 1.

*[Table 1 about here]*

### **3.2.3 Country level variables**

Country level variables include the set of macroeconomic, cultural, and linguistic variables. In the baseline analysis macroeconomic variables are assigned to the individual based on the year of expected graduation<sup>6</sup>. The graduation year can be anticipated to serve as a good proxy for the time when an individual makes the decision to stay in the host country or to leave. A general Master's degree is 120 ECTS which is 2 years of full-time studies. Programmes for medicine students are mostly 3 years long. Consequently, the graduation year is defined as the second year after the immigration year for students in all disciplines but medicine for whom the graduation year is defined as the third year after the immigration year.

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<sup>6</sup> This is done because a student's degree is not recorded in the data if the student left the country right after the education was finished. The share of such students is large – 67.65 %. However, according to the Forum for Business Education (2009) the completion rate for foreign students is very high – 88.8%.

The main macroeconomic variables of interest are the log nominal and purchasing power adjusted monthly wage<sup>7</sup>, the unemployment rate for individuals with tertiary degree, and the income inequality dummy, which is equal to one in case the income inequality in the source country is higher than in Denmark and zero otherwise as defined in Borjas (1990)<sup>8</sup>. Additionally, social welfare benefits per capita and the business cycle variable are introduced. The business cycle variable is the growth in the nominal value added across 7 NACE industries: agriculture, forestry and fishing; manufacturing; industry (including construction); services; education; human health and social work activities; and arts, entertainment and recreation. These industries are matched with the educational disciplines in the corresponding order: agriculture, natural sciences, technical sciences, social sciences, medicine, pedagogy and languages, and arts<sup>9</sup>. All the continuous variables are defined as the differences between the country of the student's origin and Denmark<sup>10</sup>. The data is obtained from Eurostat except for the nominal wage variable which is extracted from the UNECE statistical database.

Geographical and cultural variables control for the region specific effects. The geographical classification M49 of the United Nations is followed to create geographical dummies. The cultural and linguistic variables include the linguistic proximity index, the Protestantism binary variable, Hofstede's cultural indices and the English proficiency score.

The linguistic proximity index is constructed as in Adsera and Pytlikova (2012) who study the role of language in international migration. It is standardized to have mean 0 and standard deviation 1. The index is based on the distance between languages in the linguistic tree and is presented in Table A6 in the Online Appendix. Adsera and Pytlikova (2012) argue that this measure, despite its simplicity, provides results similar to those of complicated linguistic measures based on the phonetic similarities. In case a country has several official languages which belong to different branches in the linguistic tree, the official language spoken by the majority of the population is chosen as a country's main language. The Protestantism dummy variable is equal to one if more than 30% of a country's population affiliated with the church are protestant and zero otherwise (please see Halsall, 1999 for the

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<sup>7</sup> One could argue that the return to labour is better measured with the hourly wage. Hourly wage statistics on all countries in the sample (except for Switzerland) is available only for 2006 from Eurostat Earnings survey. The correlation between the mean hourly wage for 2006 and the average mean monthly wage over the period 2004-2010 is 97.9%. As detailed yearly statistics are available for the mean monthly wage, mean monthly wage is used as the main measure of return to labour.

<sup>8</sup> A continuous income inequality variable cannot be used as it causes collinearity problem in the regressions.

<sup>9</sup> This is the best business cycle measure available as the data on the real output or employment growth split by NACE level does not exist for the entire sample period for the majority of the countries.

<sup>10</sup> In case of time fixed macroeconomic explanatory variables the average values of macroeconomic variables over the sample period for Denmark are just constants. Therefore there is no difference in the estimated coefficient values (except for the intercept) between the regression with macroeconomic variables defined in differences and macroeconomic variables for the source country only. To preserve the comparability of the discussion for both specifications the macroeconomic variables in differences are also used in the regressions with time fixed variables.

list of protestant countries). The information is obtained from CIA World Factbook and International Religious Freedom Reports for 2004 and 2012.

To control for the major cultural differences across countries, standardized Hofstede's cultural indices are used: Power Distance Index, Masculinity versus Femininity Index, Individualism versus Collectivism Index, and Uncertainty Avoidance Index. The indices are based on the world-wide survey of employee values by IBM carried out in the 70s and the 80s with recent follow ups and replication studies conducted (see, for example, Jones, 2007). The main advantage of this cultural study is that it allows for cross-country comparison and the data are available for a large number of countries. Data are available for almost all EFTA and EU member states of interest<sup>11</sup>.

The Power Distance Index reflects the acceptance of unequal power distribution in society. High Power Distance Index values are associated with highly hierarchical society. The Masculinity versus Femininity Index is often defined as the "quality of life" (feminine characteristic) vs. the "quantity of life" (masculine characteristic) index. Masculine societies are more competitive and money oriented than feminine societies; typically they are characterized by a large gender gap. The Individualism versus Collectivism Index describes how self-centred the culture is, including the importance of social and family ties. The Uncertainty Avoidance Index measures by how much a representative individual in a society is uncomfortable with uncertainty and prefers to be in full control of situation.

Finally, the information about English proficiency in the home country is added as a cultural control variable. English proficiency may affect how well the person can integrate in the host country's society as it is usually the main language of communication between foreigners and natives in Denmark. The information is taken from the latest English Proficiency Index report published by Education First and is standardized to have mean 0 and standard deviation 1. The index is constructed based on the actual test scores from English language tests. These data provide a better measure of language skills compared to similar data available from Eurostat. Eurostat data are based on self-reported results or on the number of pupils taking a foreign language class without assessing their actual knowledge. Individual level data on English proficiency unfortunately are not available.

Table A3 and A4 in the Online Appendix summarize the means and standard deviations of the macroeconomic, cultural and linguistic variables across regions. Table A3 shows individuals from Nordic countries would receive similar to Danish before-tax nominal and purchasing power adjusted wages in the home country if they decide to return, lower than Danish unemployment rate (among individuals with tertiary education), and somewhat higher income inequality. Nordic countries also have also high language proximity to

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<sup>11</sup> Hofstede does not study Iceland,. However, data on Iceland are available from an Icelandic study about Hofstede's cultural dimensions by Aðalsteinsson, Guðmundsdóttir and Guðlaugsson (2011).

Denmark, high English proficiency and are mostly Protestant. Western European citizens on average face slight wage and unemployment disadvantage at home as compared to Denmark. Table A4 shows that Northern and Western European countries culturally are more similar to Denmark than other European regions.

Southern and Eastern European countries are located the furthest away from Denmark in terms of both macroeconomic and cultural background. Wages and social welfare expenditures are particularly low in Eastern Europe and unemployment among high skilled is especially high in Southern Europe. Southern and Eastern Europe countries are also very different from Denmark and Nordic countries in terms of all four Hofstede's cultural indices. Both Southern and Eastern European regions are characterized by high acceptance of power inequality and masculinity dominance, high uncertainty avoidance and a low degree of individualism. Similarly they score low on linguistic proximity and none of these countries is Protestant. The level of English proficiency is very low in Southern Europe compared to Denmark.

### 3.3 Empirical methodology

The basic specification represents individual's  $i$  from country  $j$  decision to stay in Denmark for at least four years after his first immigration to Denmark in year  $t$  which is estimated as a linear probability model:

$$(1) \quad y_{ijt+4} = \beta X_{it} + \gamma Educ_{it} + \lambda Macro_{jt+2} + \mu Reg_j + \varepsilon_{ijt}$$

where the variable  $y_{ijt+4}$  is a binary indicator which takes the value 1 if individual  $i$  from country  $j$  is living in Denmark for at least four years and 0 otherwise.

The vector  $X_{it}$  includes demographic control variables measured at the arrival. These are gender and age<sup>12</sup>.  $Educ_{it}$  is the vector of control dummies describing the education choice. The vector  $Macro_{jt+2}$ <sup>13</sup> contains the country level macroeconomic variables at the time of expected graduation: the binary indicator for the income inequality in the source country being higher than in the host country, the differences between the source and the host country in log nominal wage, in log purchasing power adjusted wage, in the unemployment rate among individuals holding a tertiary degree, in log public expenditure on social benefits per capita, and in the business cycle (industrial value added growth) measure.

The vector  $Reg_j$  includes geographical dummies or the set of cultural and linguistic variables characterizing individual  $i$ 's country of citizenship  $j$ . Geographical dummies

<sup>12</sup> Marriage status and children are included as demographic control variables in alternative specifications. Due to the statistical insignificance of these variables and the small number of married individuals in the sample these results are reported only in Table A15 in the Online Appendix.

<sup>13</sup>As explained in the section on macroeconomic data construction the graduation date for medicine students is defined as  $t+3$ .

(Northern, Western, Southern, and Eastern Europe) control for the region fixed effects. Alternatively, the cultural and the linguistic explanatory variables are included instead of geographical dummies. These cultural variables include the Protestantism dummy, Hofstede's standardized four cultural indices, the standardized linguistic proximity index and the standardized country level English language proficiency score.

Regressions analysing the employment of student migrants are formulated as equation (1), except that the dependant variable is one of two binary indicators describing the individual's employment outcome. The first binary indicator is equal to 1 if the student is registered as employed in the host country in November in the 4th year after the immigration year and 0 otherwise. The second indicator is equal to 1 if the student receives any employment income in the host country 4 years after immigration<sup>14</sup>. These regressions are estimated unconditionally on individual decision to stay in Denmark in the medium run<sup>15</sup>.

The variables used in regressions are defined both on an individual and a more aggregated – a EU member-state level. Thus the standard errors are clustered at the country level.

## 4. Results

### 4.1 *The determinants of the medium run stay*

#### 4.1.1 *Macroeconomic explanatory variables*

The main regression results are presented in Table 2 and Table 3. The regressions are based on the macroeconomic variables defined at the time of expected graduation.

*[Table 2 about here]*

Specifications (1) to (6) in Table 2 are based only on macroeconomic explanatory variables and specification (7) introduces binary controls for a geographical region. The regression results suggest that the nominal wage difference is a very important predictor of the foreign student's stay decision. The sign on the nominal wage variable is negative and statistically significant at 1% in all regressions, implying that students originating from

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<sup>14</sup> The estimations have also been performed with the successful outcome being living in Denmark for at least 4 years and not experiencing unemployment spell in the 4th year after immigration (based on information from the Employment register). However the results of the regressions are very close to the results of the regressions determining medium run stay as the number of unemployed in the 4th year after immigration in the sample is very low – 10.4% of all medium run stayers. These results can be found in Table A18 and Table A19 in the Online Appendix.

<sup>15</sup> In addition to the linear probability model a probit model has been estimated with the same dependent and independent variables as in the OLS regressions. The model is not fully saturated. Thus, the conditional expectation function may not be linear and OLS can be seen only as approximation for the conditional expectation. However the results are very similar for OLS and probit regressions. Probit results are not reported, but are available from the author upon request.

countries with higher labour income are less likely to stay in Denmark<sup>16</sup>. The coefficient value ranges from -0.143 to -0.093, which implies that a 1000\$ decrease in the home-host country difference in monthly wage around the mean results into a 2.04% to 3.13% decline in the probability that the student stays in Denmark in the medium run<sup>17</sup>.

The coefficient on the income inequality is positive and significant at 1% significance level in specification (2) when it is included as the second (in addition to wage) macroeconomic explanatory variable and at 5% once the home - host country difference in unemployment is added to the model. The positive sign of the GINI coefficient is the opposite of what is expected as well-educated individuals should prefer to return to countries with a larger income inequality to obtain a higher return on their education. However, the majority of individuals from countries with the GINI index below that of Denmark come from neighbouring Sweden and Norway (97%), whereas a great majority of other European countries have income inequality larger than that of Denmark. Therefore this result cannot be used to reject Borjas's theory.

The home – host country difference in the unemployment rate among individuals holding a tertiary degree is not found to significantly affect the student's decision to stay. Similarly, the difference in the log social welfare benefits expenditure per capita variable is insignificant. The latter finding suggests that post-graduate students do not plan to rely on the social welfare protection system after graduation. The business cycle variable is not found to have a significant impact on the student's decision to stay either. One possible explanation is that nominal output growth measured across the major industries is not a good proxy for the business cycle differential affecting the individual decision. Growth in employment or the growth in real or nominal output measured on a more disaggregated industry level would be a better proxy, but unfortunately such variables cannot be constructed from the international data available<sup>18</sup>.

The control dummies for Western and Eastern European regions are positive and significant indicating that individuals from these parts of Europe are more likely to remain in

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<sup>16</sup> One may argue that a migrant takes into account after-tax rather than before-tax income difference across countries when making migration decision. Therefore a similar analysis has been performed using after-tax wage statistics (for individual with mean income) from the OECD database. The results obtained are similar for all variables in the regression, the after-tax wage variable being negative and significant at 0.1 to 0.01 significance level depending on the specification chosen. However, these data are available only for OECD countries. Consequently, individuals from several of the poorest EU10 countries become selectively excluded from the sample. Therefore these results are not reported, but they are available upon request from the author.

<sup>17</sup> The nominal wage value for Denmark around the sample mean is \$5347.59 and \$4085.75 for the student's home country. A \$1000 decrease in the nominal monthly wage difference between the home country and Denmark corresponds to a 0.219 units decrease in the log nominal monthly earnings difference around the mean.

<sup>18</sup> For example, variables for the differences in the nominal and real output growth as well as the difference in employment growth between the home country and Denmark variables all have a negative coefficient at the aggregate level as predicted by theory if introduced in the regressions; however neither of the variables enters significantly. Time dummies corresponding to individual's graduation year have also been introduced to account for the impact of business cycle across time; however they turned out to be insignificant as well. Tables are available upon request from the author.

Denmark in the medium run as compared to Nordic students. Coming from Southern Europe increases student's probability of staying in Denmark for at least four years by 11.4%, whereas coming from Western Europe increases it by 10.8% (as compared to the individual from Northern Europe).

*[Table 3 about here]*

In Table 3 the cultural and the linguistic explanatory variables are introduced instead of regional dummies. The explanatory power of the model increases slightly, indicating that the controls for the cultural differences perform better than geographical controls in terms of explaining the return migration of students. The conclusions about the impact of macroeconomic differences on the out-migration decision do not change. The coefficient on the nominal wage variable is negative significant at 1%, although it declines in magnitude to the range of -0.104 to -0.083. Consequently, once controlled for cultural difference across countries a \$1000 decrease in the wage gap between the home and the host country corresponds to a 1.82-2.28% increase in the probability of student leaving the host country. The income inequality variable is positive and significant as before (but mostly at 10% significance level only) in the majority of specifications. Similarly to the findings in the previous table, the unemployment variable is insignificant.

When considering the explanatory cultural variables, only two of four Hofstede's cultural variables are found to be significant – the Power Distance Index and the Masculinity versus Femininity Index. The direct effect of power inequality is insignificant in specification (1). However, the interaction term between the man dummy and the power inequality variable is significant at 5% in the regressions (3-6). This suggests that men are attracted by the possibility of high social status upon the return after studying abroad. One standard deviation increase in the acceptance of hierarchical inequality in the male student's home country decreases his probability of staying in Denmark in the medium run by 3.4-4.4% depending on the specification<sup>1920</sup>.

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<sup>19</sup> One may argue that in countries with a high hierarchical inequality educated workers have a relatively high, as compared to the mean, wage. In countries with low social inequality the situation is the opposite. Thus a higher rate of out-migration for male students originating from countries characterized by the high Power Distance Index values might be driven purely by the economic and not the social motive. To test for this, log mean nominal wage was substituted with log nominal wage for individuals with a tertiary degree (education levels ED5A and ED5B in Eurostat) for each country. The interaction term between the man dummy and the Power Distance Index has remained negative and significant at 5% whereas the new wage variable has turned out to be significant at 1% similarly to the mean nominal wage variable used before. The results for these regressions are not reported in the paper as they are qualitatively the same, but due to missing statistics for some countries sample declines in size by 32-35%.

<sup>20</sup> One standard deviation increase around the mean for the PDI corresponds approximately to an increase in the power distance in the society from that of Lithuania to the one of Malta, Czech Republic or Spain.



The coefficient on the second cultural variable, the Masculinity versus Femininity Index, is positive and significant at 1% in all specifications. One standard deviation increase in the Masculinity Index in the home country results in a 6.4% to 7% increase in the probability that the student stays in Denmark<sup>21</sup>. Denmark lies in the lowest end of the masculinity index distribution. Consequently, a potential explanation for the strong positive impact of the Masculinity versus Femininity Index on the decision to stay in the host country is that students who come to Denmark learn Danish cultural values and get used to more cooperation in the workplace and in the society, and they gain a better leisure-work balance. Another possible explanation is that more “feminine” individuals from the countries with a more competitive environment self-select to come to Denmark to study. Afterwards they choose to stay because their personal values are different from their home society’s norms. Without detailed survey data at the time of arrival it is impossible to say whether or not this is the reason. The interaction term of the female dummy with the masculinity measure has been introduced to check for heterogeneous effects by gender. It has a positive sign, however it is insignificant<sup>22</sup>. Consequently one cannot reject the hypothesis that there is impact difference of the home country’s masculinity on the stay probability with respect to gender.

The coefficient on language proximity index, specification (4), is negative, but insignificant. The language proximity variable mainly accounts for the effect of neighbouring Scandinavian countries which score high on this index and is highly correlated with another explanatory cultural variable, the Protestantism dummy, included in specification (5). The coefficient on the Protestantism dummy is also negative and insignificant of a similar magnitude and with a similar standard deviation. In the last regression (6) in Table 3 the standardized English proficiency index is introduced defined on a country level. The coefficient is positive; however the p-value is low, 0.13. As English is usually the main language of communication for foreign students, one would expect a positive significant relation between the English language knowledge and the probability to stay. Unfortunately there is no register data available about the individual level of English proficiency which could provide even a clearer view on this point.

To account for the purchasing power differences across countries, the regressions identical to the ones presented in Table 2 and 3 were run, but the log nominal wage difference between the home and the host country was substituted with the log purchasing power adjusted difference. The coefficient on the purchasing power adjusted difference is approximately 1.5 times larger than on the nominal wage difference in all specifications,

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<sup>21</sup> One standard deviation increase around the mean for the Masculinity versus Femininity index corresponds approximately to an increase in the index value from the level of Estonia to that of Belgium.

<sup>22</sup> The result is not reported in the paper due to space limitation, but it is available upon request from the author.

suggesting that the students' decision to stay is more sensitive to the change in the purchasing power adjusted income rather than change in income in purely monetary terms. However, at the same time the coefficient on the purchasing power adjusted wage difference is considerably less significant in all regressions, except for specification (1). The individuals may have very dissimilar estimates of how their income translates into consumption due to the differences across their consumption baskets as well as errors in estimating the cost of products in different countries. Therefore the log purchasing power adjusted wage difference is likely to be a noisy measure of perceived individual consumption possibilities, which also leads to a lower statistical significance of this variable. These regression results can be found in Tables A7 and A8 in the Online Appendix.

#### *4.1.2. Individual level control variables*

The control variables include the set of demographic variables and educational choice dummies. There is no evidence that the demographic variables strongly affect the student's probability of staying in Denmark in the medium run. The coefficient on the woman dummy is positive in all specifications, but it is marginally significant at 10% significance level only in 4 out of 13 regressions<sup>23</sup>. Age has a coefficient close to 0 which is insignificant. It can be expected as the majority of the individuals in the sample are of similar age, and therefore, there is almost no variation in the age variable.

Educational choice dummies show that students enrolled in agriculture, technical and natural sciences, medicine, and arts are more likely to stay in Denmark in the medium run compared to students studying social sciences. Students in pedagogy and humanities are not significantly more likely to stay in Denmark compared to students studying social sciences. One possible explanation for this is a higher demand for engineers, it specialists, natural scientists and doctors compared to professionals in the humanities and social sciences disciplines in Denmark (Undervisningsministeriet, 2012). Another possible explanation is that the knowledge of the official country language is more important for finding a job to students in pedagogy, linguistics and social sciences compared to students in natural sciences or technology. Individuals working within the humanities can be required to be fluent in the official language as they interact closely with other people. Therefore they

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<sup>23</sup> One could expect that women prefer to stay in Denmark due to the good social welfare protection and child care. Indeed the interaction term of the woman dummy with the benefits expenditure per capita has a negative sign, but it is insignificant when controlled for geographical regions and cultural background. The results are available upon request.

face more complications in search of a job in Denmark and are more prone to leave<sup>24</sup>. Results on educational controls are available in Table A16 on the Online Appendix<sup>25</sup>.

#### *4.1.3. The determinants of the medium run employment*

In this section the relation between macroeconomic and cultural variables and student immigrants' employment in the host country is tested. In Table 4 the successful employment outcome is defined as being employed in Denmark in November in the 4<sup>th</sup> year after immigration. In Table 5 the successful outcome is defined as receiving any labour income in Denmark in the 4<sup>th</sup> year after immigration.

*[Table 4 about here]*

*[Table 5 about here]*

The results in both tables are very similar. Regressions show that macroeconomic and cultural explanatory variables become insignificant almost in all regressions. However, the coefficient on the English language proficiency in the home country standardized index increases 1.5-2 times in value and becomes significant at 5%, likely indicating the importance of good English knowledge for students' success in the host country's labour market. The professional choice also matters for employment: students in agriculture, medicine, as well as natural and technical sciences are more likely to be employed in the 4<sup>th</sup> year after the immigration year compared to students in social sciences. However, students in arts who were found to have a higher chance of staying in the host country are not more likely to be employed in the medium run than students in social sciences.

Note that individual employment depends on the labour market conditions and the success of the individual in the job search. The employment outcome will be equal to zero not only for those who left Denmark, but also for the individuals in informal or official search for a job or on maternity leave. This may serve as an explanation of why the cultural and linguistic differences are important for the decision to stay for at least 4 years, but this is not significantly related to the employment outcome.

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<sup>24</sup> Unfortunately it is not possible to introduce the interaction terms between the Danish language learning variable and the educational category due to the low number of individuals participating in a Danish language class in each category.

<sup>25</sup> The majority of students in medicine and agriculture are still studying four years after enrollment. Thus they might not have made a final decision of whether to stay or to out-migrate and one should be careful when interpreting the association between their long run stay and the demand for the particular professions in the Danish labour market. The number of students who are studying other disciplines for more than 4 years is below 5%. As a robustness check the regressions excluding students studying medicine and agriculture from the sample have been run. This did not alter the conclusions.

## **4.2 Robustness checks**

### *4.2.1 Defining explanatory macroeconomic variables as period averages*

In addition to the specifications above, the regressions with macroeconomic variables which are defined as averages over 2004-2010 are estimated. They are used to check if the estimation results with time varying variables are not caused by the macroeconomic fluctuations in a particular graduation year assigned to each individual. Moreover, the averages are expected to reflect better the medium to long run differences in macroeconomic fundamentals between countries, based on which the individual forms the expectations about the future pay-off of his return migration decision. In fact, regressions with time fixed macroeconomic variables provide results very similar to the estimations with the macroeconomic variables defined at the time of expected graduation. This is caused by the slow varying nature of the majority of macroeconomic variables and thus a high correlation between the explanatory variables defined at the time of expected graduation and the period averages as shown in Table A5. The results with time invariant explanatory variables are reported in Tables A9-A14 in the Online Appendix.

### *4.2.2 Excluding origin countries on one at a time basis to check for outliers*

In this robustness check the preferred regression specification (3) from Table (3)<sup>26</sup> has been run excluding interchangeably a one country of origin at a time. Results are reported in Table A17 in the Online Appendix. The regressions show that the log nominal wage difference remains a statistically highly significant explanatory variable independently of which country is excluded from the analysis. The coefficient on the log nominal wage difference varies in a limited range of -0.116 to -0.084 depending on the country excluded (this range is below one standard error from the coefficient value estimated on the entire sample). The coefficient on Masculinity versus Femininity Index is also economically and statistically insensitive to the exclusion of any particular country. The income unemployment variable is always positive and significant at 10% in the majority of regressions. The unemployment variable is highly insignificant in all regressions likewise in the regression on the entire sample. The interaction term between the man dummy and the standardised Power Distance Index remains significant once any country, but Poland or Slovakia, is excluded from the sample. However, even if Poland or Slovakia is excluded, the coefficient on the interaction between the man dummy and the Power Distance index is close to its value in the regression run on all observations and has a p-value between 0.10-0.20. Overall, these results suggest that my findings are robust to the exclusion of any of the origin countries from the sample and are not driven by a particular outlier.

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<sup>26</sup>It is the preferred specification as it includes only statistically significant cultural explanatory variables and has a higher explanatory power than regression (7) in Table (2) with geographical controls.

#### *4.2.3 Accounting for the selectivity of the initial migrant pool with respect to the professional choice*

Finally, the individuals studying medicine, Danish law and political studies, Danish language pedagogy and linguistics (144 observations in total) have been excluded<sup>27</sup>. This has been done to account for the selectivity in the initial student pool, as these professions may be related to the student's decision to move to Denmark permanently already at arrival. The results obtained are very similar to the main specification results - neither sign nor the statistical significance of the explanatory variables has changed<sup>28</sup>.

### **5 Conclusion**

In this paper the importance of macroeconomic factors for the foreign student's decision to stay in the host country in the medium run has been tested. The analysis is based on the register data on European students who enrol in a post-graduate education in Denmark after the enlargement of the European Union in 2004. In addition to the explanatory macroeconomic variables suggested by the theory, it has been controlled for the individual demographic characteristics at the time of immigration, for choice of the educational discipline and for culture in the country of origin.

In line with the theories of Sjastaad (1962), Borjas and Bratsberg (1996) and Dustmann (1996), the difference in income between the source and the host country is found to be highly significantly related to the stay decision. It holds for both nominal and purchasing power adjusted wages, but the relation is statistically stronger for the nominal wage difference. A \$1000 decrease in the wage difference between the home and the host countries results into 2-3% lower probability of foreign student staying in the host country in the medium run. Thus from a public finance perspective it is particularly worth to invest in the foreign students coming from low-wage countries by financing their education and helping with finding a job placement, as they are more willing to remain in the host country after graduation.

This paper also finds support for Borjas and Bratsberg's (1996) theory, that highly skilled individuals have intention to return to countries where they can obtain a higher return to their skills compared to the averagely skilled individual. It is shown that the more hierarchical the society in the home country, the less likely the graduate male student is to stay in the host country. This finding likely indicates that well educated men self-select to move back to the countries where they can take a relatively high social position in the society.

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<sup>27</sup> The largest part of these students (67%) originates from Scandinavia and studies medicine which yields a transferable degree across these countries.

<sup>28</sup> Tables are available upon request.

On the other hand, the differences in unemployment and the business cycle between the home country and the foreign country do not have a significant impact on the graduate student's decision to stay abroad. Likewise, the difference in social assistance levels between the home and the host country does not significantly affect the decision to stay. The latter suggests that well-educated individuals are less likely to be strongly concerned with unemployment in the longer run and the need for social assistance.

The demographic level variables such as age, the number of children, and being married do not significantly affect the individual decision to stay. There is only weak evidence that female students are more likely than male students to stay in Denmark for at least four years. A significant relation does exist between the educational choice and the probability of staying in Denmark in the medium run. Compared to the students in social sciences, pedagogy, and humanities, students in natural sciences, technology, arts agriculture and medicine are significantly more likely to stay in Denmark for at least four years. This finding can be explained either by the differences in Danish sector demand for highly skilled labour or by the difference in the degree of the host country's state language knowledge required for different professions.

Finally, the employment outcome of student migrants in Denmark has been analysed. The inter-country differences in macroeconomic conditions and culture are not able to explain the employment outcome of student immigrants. However, the home country English language proficiency score is significantly related to becoming employed. Moreover, individuals studying professions demanded in the Danish labour market, i.e., natural sciences, technology, agriculture and medicine, are significantly more likely to be employed in the medium run. Thus, host countries should educate foreign students in the occupations that lack domestic specialists and provide possibilities to advance English skills. Retaining foreign graduates and post-graduates is one of the ways to fill in existing vacancies and generate additional tax revenue.

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## Tables and Figures

**Table 1**

Summary statistics

Variable	Mean	Standard deviation		
		Overall	Between	Within
<i>Panel A: Dependent variable</i>				
Living in Denmark for at least 4 years	0.35	0.48	0.22	0.46
Employed in November in the 4th year after immigration	0.22	0.41	0.15	0.41
Receiving employment income in the 4th year after immigration	0.26	0.44	0.16	0.42
<i>Panel B: Individual level variables</i>				
Woman	0.45	0.5	0.23	0.48
Man	0.55	0.5	0.23	0.48
Age	24.75	3.58	2.18	3.12
Married	0.05	0.22	0.06	0.21
Spouse in Denmark	0.05	0.21	0.05	0.20
Number of children	0.11	0.43	0.11	0.37
<i>Panel C: Education choice variables</i>				
Agriculture	0.03	0.16	0.03	0.15
Arts	0.02	0.14	0.07	0.14
Medicine	0.1	0.30	0.12	0.23
Natural sciences	0.07	0.26	0.23	0.25
Pedagogy and humanities	0.06	0.23	0.12	0.22
Social sciences	0.49	0.5	0.30	0.45
Technical sciences	0.23	0.42	0.24	0.35
<i>Panel D: Macroeconomic variables defined at the time of expected graduation</i>				
Log nominal wage, home-host diff.	-0.42	0.62	0.69	0.14
Log purchasing power adjusted wage, home-host diff.	-0.18	0.32	0.39	0.02
Income inequality in the home higher than in the host country	0.73	0.45	0.33	0.26
Unemployment among individuals with tertiary degree, home-host diff. (%)	0.23	1.57	1.58	0.35
Log social welfare benefits per capita, home-host diff.	-0.45	0.70	0.70	0.08
Nominal value added growth in the industry the individual is expected to work in, home-host diff. (%)	0.70	9.21	5.21	8.09
<i>Panel E: Macroeconomic variables defined as averages over 2004-2010</i>				
Log nominal wage, home-host diff.	-0.47	0.6	0.69	0
Log purchasing power adjusted wage, home-host diff.	-0.2	0.31	0.39	0
Income inequality in the home higher than in the host country	0.88	0.33	0.28	0
Unemployment among individuals with tertiary degree, home-host diff. (%)	0.2	1.52	1.62	0
Log social welfare benefits per capita, home-host diff.	-0.48	0.71	0.71	0
Nominal value added growth in the industry the individual is expected to work in, home-host diff. (%)	0.67	3.18	2.80	0.21
<i>Panel F: Geographical variables</i>				
Home country located in Northern Europe	0.63	0.48	0.49	0
Home country located in Western Europe	0.19	0.39	0.44	0
Home country located in Southern Europe	0.08	0.28	0.44	0
Home country located in Eastern Europe	0.10	0.30	0.37	0
<i>Panel G: Cultural and linguistic variables</i>				
Power inequality measure, standardized, home	0	1	1.37	0
Masculinity dominance measure, standardized, home	0	1	1.33	0
Individualism versus collectivism measure, standardized, home	0	1	1.10	0
Uncertainty Avoidance measure, standardized, home	0	1	1.04	0
Protestantism is a major religion, home	0.69	0.46	0.48	0
Linguistic proximity to Danish index, standardized, home	0	1	0.71	0
English language proficiency index, standardized, home	0	1	1.57	0

<sup>a</sup>*Note:* The panel variable is country. The between and within variation may not sum up to overall variation for the majority of variables due to the highly unbalanced panel with respect to countries of students' citizenship and variance bias correction.

<sup>b</sup>*Source:* own calculations based on the data from administrative registers from Statistics Denmark, Eurostat, UNECE statistical database, Hofstede's cultural indices, International Religious Freedom Reports and United Nations Statistics Division. For more detail please see the main text and Table A2 with the primary data sources.

**Table 2**

OLS regression results. Explanatory variables: macroeconomic variables at the time of expected graduation and geographical region

Dependent variable: Living in Denmark for at least 4 years after immigration							
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log nominal wage	-0.1308 <sup>†</sup> (0.0279)	-0.1089 <sup>†</sup> (0.0272)	-0.1106 <sup>†</sup> (0.0323)	-0.1431 <sup>†</sup> (0.0276)	-0.1287 <sup>†</sup> (0.0306)	-0.0935 <sup>†</sup> (0.0321)	-0.1051 <sup>†</sup> (0.0411)
Unemployment among ind. with tertiary education (%)			0.0152 (0.0111)			0.0121 (0.0109)	-0.0105 (0.0145)
Log social benefits per capita				0.0160 (0.036)			
Nominal value added growth in the industry the individual is expected to work in (%)					0.0923 (0.238)		
Income inequality in the home larger than in the host country		0.1141 <sup>†</sup> (0.0326)				0.1099** (0.0339)	0.0821** (0.039)
Home country located in Western Europe							0.1077** (0.0461)
Home country located in Southern Europe							0.1139* (0.0616)
Home country located in Eastern Europe							0.0886 (0.0629)
Controls:							
Age, gender	YES	YES	YES	YES	YES	YES	YES
Academic discipline	YES	YES	YES	YES	YES	YES	YES
R2	0.131	0.138	0.133	0.131	0.131	0.139	0.144
N				983			

<sup>a</sup>Note: <sup>†</sup>p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in parentheses. All differences are defined between the country of individuals's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies. Unreported constant included in all regressions. Northern Europe is the omitted geographical dummy. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table 3**

OLS regression results. Explanatory variables: macroeconomic variables at the time of expected graduation, cultural and linguistic variables

Dependent variable: living in Denmark for at least 4 years after immigration						
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)
Log nominal wage	-0.1037 <sup>†</sup> (0.0266)	-0.1000 <sup>†</sup> (0.0264)	-0.0966 <sup>†</sup> (0.0255)	-0.0914 <sup>†</sup> (0.0215)	-0.0874 <sup>†</sup> (0.0255)	-0.0833 <sup>†</sup> (0.0288)
Unemployment among ind. with tertiary education (%)	-0.0049 (0.0106)	-0.0040 (0.0101)	0.0657* (0.0341)	-0.0062 (0.0109)	-0.0074 (0.0092)	-0.0023 (0.0110)
Income inequality in the home larger than in the host country	0.0697* (0.0346)	0.0669* (0.0353)	-0.0050 (0.0094)	0.0553 (0.0493)	0.0629* (0.0327)	0.0809* (0.0463)
Power inequality measure, home	-0.0284 (0.0180)	-0.0128 (0.0229)				
Interaction: man*power inequality measure, home		-0.0256 (0.0193)	-0.0341** (0.0148)	-0.0359** (0.0164)	-0.0437** (0.0161)	-0.0350* (0.0175)
Masculinity dominance measure, home	0.0697 <sup>†</sup> (0.0169)	0.0698 <sup>†</sup> (0.0168)	0.0682 <sup>†</sup> (0.0175)	0.0644 <sup>†</sup> (0.0190)	0.0648 <sup>†</sup> (0.0159)	0.0642 <sup>†</sup> (0.0188)
Linguistic proximity to Danish, home				-0.0541 (0.0355)		
Protestantism is a major religion, home					-0.0507 (0.0361)	
English lang. proficiency index, home						0.0176 (0.0112)
Controls:						
Age, gender	YES	YES	YES	YES	YES	YES
Academic discipline	YES	YES	YES	YES	YES	YES
R2	0.149	0.150	0.149	0.150	0.150	0.161
N	983					

<sup>a</sup>Note: <sup>†</sup>p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in paratheses. All differences are defined between the country of individuals's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies. Unreported constant included in all regressions. The power inequality acceptance, the masculinity dominance, the average English language proficiency index and the source country's linguistic proximity to Danish indices are standarized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table 4**

OLS regression results. Explanatory variables: macroeconomic variables at the time of expected graduation, geographical, cultural and linguistic variables

Dependent variable: employed in November in the 4th year after immigration						
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)
Log nominal wage	-0.0463** (0.0223)	-0.0373 (0.0285)	-0.0246 (0.0269)	-0.0371 (0.0237)		-0.0325 (0.0263)
Log purchasing power adjusted wage					-0.0337 (0.0510)	
Unemployment among ind. with tertiary degree (%)		0.0014 (0.0075)	-0.0078 (0.0130)	-0.0083 (0.0095)	-0.0042 (0.0103)	0.0003 (0.0124)
Income inequality in the home larger than in the host country		0.0372* (0.0188)	0.0261 (0.0225)	0.0194 (0.0255)	0.0280 (0.0262)	0.0275 (0.0284)
Home country located in Western Europe			0.0544 (0.0389)			
Home country located in Southern Europe			0.0428 (0.0536)			
Home country located in Eastern Europe			0.0996** (0.0455)			
Interaction: man*power inequality measure, home				0.0000 (0.0148)	-0.0006 (0.0160)	-0.0023 (0.0187)
Masculinity dominance measure, home				0.0275 (0.0188)	0.0278 (0.0199)	0.0248 (0.0164)
English lang. proficiency index, home						0.0281** (0.0123)
<b>Controls:</b>						
Age, gender:	YES	YES	YES	YES	YES	YES
Academic discipline:	YES	YES	YES	YES	YES	YES
R2	0.056	0.057	0.060	0.059	0.057	0.073
N	983					775

<sup>a</sup>Note: †p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in parentheses. All differences are defined between the country of individuals's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies, Danish language education in the first year after arrival dummy. Unreported constant included in all regressions. Northern Europe is the omitted geographical dummy. The masculinity dominance and the average English language proficiency indices are standardized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table 5**

OLS regression results. Explanatory variables: macroeconomic variables at the time of expected graduation, geographical, cultural and linguistic variables

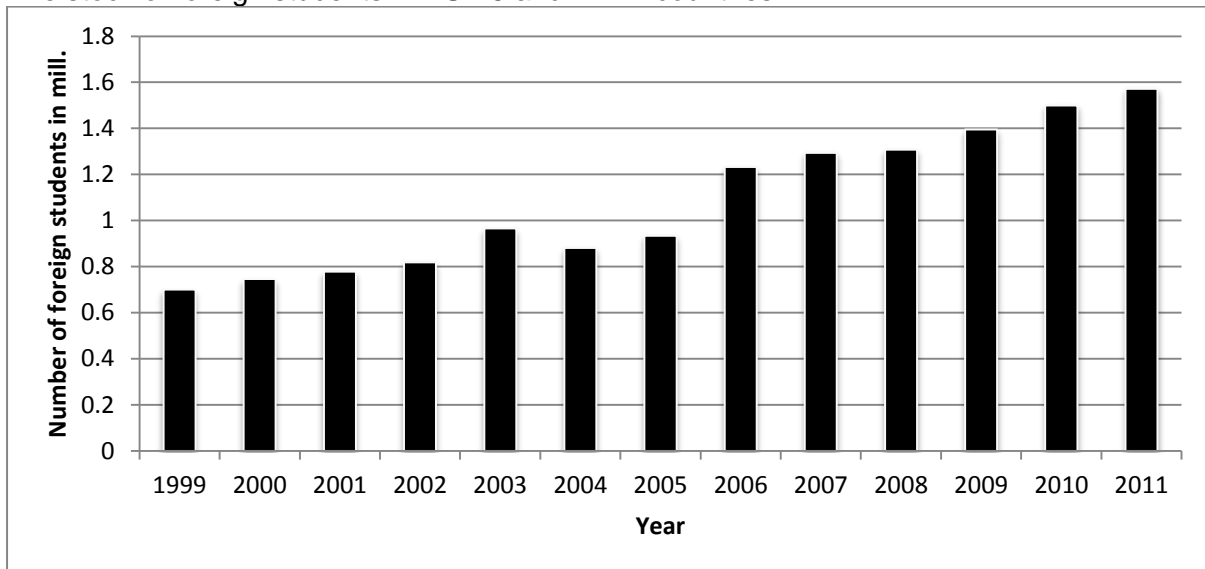
Dependent variable: receiving employment income in the 4th year after immigration						
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)
Log nominal wage	-0.0577 <sup>†</sup> (0.0200)	-0.0433 (0.0281)	-0.0272 (0.0307)	-0.0433* (0.0247)		-0.0351 (0.0257)
Log purchasing power adjusted wage					-0.0502 (0.0519)	
Unemployment among ind. with tertiary degree (%)		0.0049 (0.0085)	0.0018 (0.0160)	-0.0026 (0.0112)	0.0012 (0.0118)	0.0033 (0.0141)
Income inequality in the home larger than in the host country		0.0414 (0.0261)	0.0402 (0.0344)	0.0271 (0.0329)	0.0364 (0.0326)	0.0444 (0.0366)
Home country located in Western Europe			0.0162 (0.0486)			
Home country located in Southern Europe			0.0212 (0.0578)			
Home country located in Eastern Europe			0.0712 (0.0479)			
Interaction: man*power inequality measure, home				-0.0018 (0.0141)	-0.0034 (0.0157)	-0.0013 (0.0153)
Masculinity dominance measure, home				0.0221 (0.0200)	0.0227 (0.0212)	0.0219 (0.0154)
English lang. proficiency index, home						0.0381** (0.0152)
<b>Controls:</b>						
Age, gender:	YES	YES	YES	YES	YES	YES
Academic discipline:	YES	YES	YES	YES	YES	YES
R2	0.116	0.118	0.119	0.119	0.117	0.147
N			983			775

<sup>a</sup>Note: <sup>†</sup>p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in paratheses. All differences are defined between the country of individuals's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies, Danish language education in the first year after arrival dummy. Unreported constant included in all regressions. Northern Europe is the omitted geographical dummy. The masculinity dominance and the average English language proficiency indices are standardized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.



**Figure 1**

The stock of foreign students in EU-15 and EFTA countries



<sup>a</sup>Note: Foreign students defined by the country of citizenship. Greece, Luxembourg and Liechtenstein excluded due to missing data.

<sup>b</sup>Source: OECD Statistics Database, foreign/international students enrolled.

## Online appendix

**Table A1**

Variable definitions and primary data sources

Variable	Definition	Primary Data Source
<i>Dependent variable</i>		
Living in Denmark for at least 4 years	Dummy for living in Denmark for at least 4 years after immigration	Population Register, DST
Employed in November in the 4th year after immigration	Individual registered as employed in the 4 <sup>th</sup> year after the immigration year	Employment Register, DST
Receiving employment income in the 4th year after immigration	Wage income registered and for the ind. in the 4 <sup>th</sup> year after the immigration year	Employment Register, DST
<i>Individual level variables</i>		
Woman	Dummy for female	Population Register, DST
Man	Dummy for male	Population Register, DST
Age	Age as of the 1 <sup>st</sup> of January in the year of immigration	Population Register, DST
Married	Dummy for being married	Population Register, DST
Spouse in Denmark	Dummy for spouse being registered in Denmark in the year of immigration	Population Register, DST
Number of children	Discrete variable for the number of own children	Population Register, DST
<i>Educational choice variables</i>		
Agruculture	Dummy for being enrolled in agriculture studies	Educational Institution Register, DST
Arts	Dummy for being enrolled in arts studies	Educational Institution Register, DST
Medicine	Dummy for being enrolled in medicine and health studies	Educational Institution Register, DST
Natural sciences	Dummy for being enrolled in studies in natural sciences	Educational Institution Register, DST
Pedagogy and humanities	Dummy for being enrolled in studies in pedagogy and humanities	Educational Institution Register, DST
Social sciences	Dummy for being enrolled in studies in social sciences	Educational Institution Register, DST
Technical sciences	Dummy for being enrolled in studies in technical sciences	Educational Institution Register, DST
<i>Macroeconomic variables</i>		
Log nominal wage, home – host difference	Difference in the log gross average monthly wage between the country of student's citizenship and Denmark. Defined at the time of expected graduation in regressions with time varying macroeconomic variables or as an average over period 2004-2010 in regressions with time fixed macroeconomic variables	UNECE Statistical Database/ Gross Average Monthly Wages by Country and Year
Log purchasing power adj. home – host	Difference in the log gross average monthly	UNECE Statistical Database/ Gross Average Monthly Wages by

difference	purchasing power adjusted wage between the country of student's citizenship and Denmark. Defined at the time of expected graduation in regressions with time varying macroeconomic variables or as an average over period 2004-2010 in regressions with time fixed macroeconomic variables	Country and Year  Eurostat database/prc_ppp_ind/PLI_EU15 Price index is used is based on actual individual consumption (A01) measure.
Income inequality in the home higher than in the host country	Dummy for the GINI coefficient of equivalised disposable income in the source country being higher than in Denmark. Defined at the time of expected graduation in regressions with time varying macroeconomic variables or as an average over period 2004-2010 in regressions with time fixed macroeconomic variables	Eurostat/SILC/ild_di12/GINI_HND  Gini coefficient of equivalised disposable income
Unemployment among individuals with tertiary degree, home – host difference (%)	The difference in unemployment rate (%) among individuals (15-64) who have completed the first or the second stage of tertiary education between the country of student's citizenship and Denmark. Defined at the time of expected graduation in regressions with time varying macroeconomic variables or as an average over period 2004-2010 in regressions with time fixed macroeconomic variables	Eurostat/LFS/lfsa_urgaed/  Unemployment rates by sex, age and highest level of education attained (%)
Log social welfare benefits (expenditure) per capita, home – host difference	The difference in general government expenditure in EUR per capita on social benefits between the country of student's citizenship and Denmark. Defined at the time of expected graduation or in regressions with time varying macroeconomic variables or as an average over period 2004-2010 in regressions with time fixed macroeconomic variables	Eurostat/ gov_a_main  Social benefits other than social transfers in kind and social transfers in kind = expenditure on products supplied to households via market producers. Defined at general government (S13) level.
Nominal value added growth in the industry	The difference in nominal output growth (%) in the industry the	Eurostat/ nama_nace21_c/P1 and

the individual is expected to be employed in, home – host difference (%)	individual is expected to be employed in, between the country of student’s citizenship and Denmark. The industry matches the discipline the individual is studying (for more information please refer to the data section on country level variables). Defined at the time of expected graduation in regressions with time varying macroeconomic variables or as an average over period 2004-2010 in regressions with time fixed macroeconomic variables	Eurostat/name_nace10_c/P1 National Accounts by 21 branches - aggregates at current prices  National Accounts by 10 branches - aggregates at current prices
<i>Geographical variables</i>		
Home country located in Northern Europe	Dummy for a country being located in Northern Europe	United Nations Statistics Division  Composition of macro geographical (continental) regions, geographical sub-regions, and selected economic and other grouping, M49
Home country located in Western Europe	Dummy for a country being located in Western Europe	United Nations Statistics Division  Composition of macro geographical (continental) regions, geographical sub-regions, and selected economic and other grouping, M49
Home country located in Southern Europe	Dummy for a country being located in Southern Europe (includes Cyprus classified as an Asian country by UN Statistics division)	United Nations Statistics Division  Composition of macro geographical (continental) regions, geographical sub-regions, and selected economic and other grouping, M49
Home country located in Eastern Europe	Dummy for a country being located in Eastern Europe	United Nations Statistics Division  Composition of macro geographical (continental) regions, geographical sub-regions, and selected economic and other grouping , M49
<i>Cultural and linguistic variables</i>		
Power inequality measure, home	Standardized Hofstede’s Power Distance Index	Hofstede, G. (2005)  Hofstede G., Hofstede G. J., Minkov M. (2010)
Masculinity dominance measure, home	Standardized Hofstede’s Masculinity vs. Femininity Index	Hofstede, G. (2005)

Individualism versus collectivism measure, home	Standardized Hofstede's Individualism vs. Collectivism Index	Hofstede G., Hofstede G. J., Minkov M. (2010) Hofstede, G. (2005)
Uncertainty avoidance measure, home	Standardized Hofstede's Uncertainty Avoidance Index	Hofstede G., Hofstede G. J., Minkov M. (2010) Hofstede, G. (2005)
Protestantism is a major religion, home	Dummy for Protestantism being a major religion in the source country, i.e. if more than 30% of believers in a country are protestants.	Hofstede G., Hofstede G. J., Minkov M. (2010)
Linguistic proximity to Danish, home	The linguistic proximity index between the country of student's citizenship and Denmark, standartized	U.S. Department of State, Bureau of Democracy, Human Rights, and Labor. International Religious Freedom Report (2004) and (2012) CIA World Factbook. Religions
English language proficiency index, home	Standardized English language proficiency index for the country of student's citizenship	Own calculations based on the procedure described in Adsera and Pytlikova (2012) CIA World Factbook. Languages
		Education First English Proficiency Index 2013 report

<sup>a</sup>Note: Standardized variables have mean 0 and standard deviation 1.

**Table A2**

The number of students remaining – time since an arrival year

<i>At arrival</i>	<i>1 year</i>	<i>2 years</i>	<i>3 years</i>	<i>4 years</i>
983	771	521	417	341

<sup>a</sup>Source: Own calculations based on the administrative Population and Employment registers from Statistics Denmark.

**Table A3**

Summary statistics on macroeconomic variables (time-varying) by the regions

	Northern Europe	Western Europe	Southern Europe	Eastern Europe	Overall
Log nominal wage, home-host diff.	-0.21 (0.55)	-0.36 (0.08)	-0.70 (0.17)	-1.54 (0.56)	-0.42 (0.62)
Log purchasing power adjusted wage, home-host diff.	-0.10 (0.31)	-0.06 (0.08)	-0.32 (0.09)	-0.77 (0.03)	-0.18 (0.32)
Unemployment rate (individuals with tertiary education, home-host diff. (%))	-0.61 (1.07)	1.13 (1.18)	2.74 (1.14)	1.61 (0.81)	0.23 (1.57)
Income inequality in the home higher than in the host country	0.58 (0.49)	1 (0.00)	0.98 (0.16)	0.95 (0.22)	0.73 (0.45)
Log social benefits per capita, home-host diff.	-0.41 (0.71)	0.02 (0.04)	-0.51 (0.24)	-1.56 (0.14)	-0.45 (0.70)

<sup>a</sup>Note: Unweighted means and standard deviations in parentheses. N=983 for all variables. Macroeconomic variables are defined as the time of expected graduation

<sup>b</sup>Source: Own calculations based on data from the administrative registers from Statistics Denmark, Eurostat, UNECE statistical database, Hofstede's cultural indices, International Religious Freedom Reports and United Nations Statistics Division. For more detail please see the main text and Table A1 with primary data sources.

**Table A4**

Summary statistics on cultural and linguistic variables (time-varying) by the regions

	Northern Europe	Western Europe	Southern Europe	Eastern Europe	Overall
Power inequality acceptance, standardized, home	-0.52 (0.31)	0.28 (1.13)	0.95 (0.38)	1.93 (0.68)	0 (1)
Masculinity dominance , standardized, home	-0.64 (0.46)	0.84 (0.77)	1.09 (0.58)	1.49 (0.44)	0 (1)
Individualism dominance, standardized, home	0.34 (0.86)	-0.09 (0.41)	-1.26 (1.59)	-0.88 (0.35)	0 (1)
Uncertainty avoidance, standardized, home	-0.41 (0.91)	0.26 (0.59)	1.06 (0.68)	1.20 (0.47)	0 (1)
Linguistic proximity to Danish, standardized, home	0.56 (0.86)	-0.73 (0.27)	-1.12 (0.06)	-1.14 (0.08)	0 (1)
Protestantism – a major religion, home	0.96 (0.20)	0.48 (0.50)	0 (0)	0 (0)	0.69 (0.46)
English lang. proficiency index, standardized, home	0.54 (0.91)	-0.69 (0.63)	-1.14 (0.77)	-0.24 (0.26)	0 (1)

<sup>a</sup>Note: Unweighted means and standard deviations in parentheses. N=983 for all variables except average English proficiency (N=775). All variables are defined for the source country. The value for Denmark is subtracted from the means of each country's cultural indices. Therefore the results in the table can also be seen as standardized cultural differences between the home country and Denmark. As indices are time invariant this transformation does not affect the regression coefficients (except for constant).

<sup>b</sup>Source: Own calculations based on data from the administrative registers from Statistics Denmark, Hofstede's cultural indices, International Religious Freedom Reports, the Education First EPI report . For more detail please see the main text and Table A1 with primary data sources.

**Table A5**

Correlation matrix for time varying and time invariant macroeconomic variables

<b>Variable</b>	<b>Correlation between time varying and time invariant variable</b>
Log nominal wage, home - host country difference	0.947
Log purchasing power adjusted wage, home - host country difference	0.930
Unemployment rate (individuals with tertiary education), home - host country difference	0.928
Income inequality in the home higher than in the host country	0.474
Log social welfare benefits per capita, home - host country difference	0.994
Nominal value added growth in a sector the individual is expected to work in, home - host country difference	0.540

<sup>a</sup>Note: N=983 for all variables. Time varying variables are defined at the time of student's expected graduation. Time invariant variables are defined as averages over period 2004-2010.

<sup>b</sup>Source: Own calculations based on data from the administrative registers from Statistics Denmark, Eurostat, UNECE statistical database, Hofstede's cultural indices, International Religious Freedom Reports and United Nations Statistics Division. For more detail please see the main text and Table A2 with primary data sources.

**Table A6**

Linguistic proximity to Denmark (country-level), index

<b>Countries</b>	<b>Index value</b>
Estonia, Finland, Hungary	0
Belgium, Czech, Cyprus, France, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Poland, Portugal, Slovakia, Slovenia, Spain	0.1
Austria, Germany, Malta, Netherlands, Sweden, UK	0.25
Iceland	0.45
Norway, Sweden	0.7

<sup>a</sup>Note: Country score is based on the official state language spoken by the majority.

<sup>b</sup>Source: Own calculations based on the procedure in Adsera and Pytlikova (2012) using CIA World Factbook. Languages.



**Table A7**

OLS regression results. Explanatory variables: macroeconomic variables at the time of expected graduation and geographical region

Dependent variable: Living in Denmark for at least 4 years after immigration							
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log purchasing power adjusted wage	-0.2007 <sup>†</sup> (0.0679)	-0.1673 <sup>**</sup> (0.0641)	-0.1434 <sup>*</sup> (0.0745)	-0.1875 <sup>**</sup> (0.0779)	-0.1982 <sup>**</sup> (0.0743)	-0.1279 <sup>*</sup> (0.0702)	-0.1525 (0.0957)
Unemployment among ind. with tertiary education (%)			0.0244 <sup>*</sup> (0.0126)			0.0180 (0.0119)	-0.0062 (0.0174)
Log social benefits per capita				-0.0085 (0.0466)			
Nominal value added growth in the industry the individual is expected to work in (%)					0.0302 (0.268)		
Income inequality in the home larger than in the host country		0.1401 <sup>†</sup> (0.0341)				0.1293 <sup>**</sup> (0.0362)	0.1008 <sup>**</sup> (0.0393)
Home country located in Western Europe							0.1148 <sup>**</sup> (0.0546)
Home country located in Southern Europe							0.1130 (0.0671)
Home country located in Eastern Europe							0.1113 (0.0663)
Controls:							
Age, gender	YES	YES	YES	YES	YES	YES	YES
Academic discipline	YES	YES	YES	YES	YES	YES	YES
R2	0.121	0.133	0.126	0.122	0.122	0.135	0.140
N				983			

<sup>a</sup>Note: <sup>†</sup>p<0.01, <sup>\*\*</sup>p<0.05, <sup>\*</sup>p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in paratheses. All differences are defined between the country of individuals's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies. Unreported constant included in all regressions. Northern Europe is the omitted geographical dummy. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table A8**

OLS regression results. Explanatory variables: macroeconomic variables at the time of expected graduation, cultural and linguistic variables

Dependent variable: living in Denmark for at least 4 years after immigration						
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)
Log purchasing power adjusted wage	-0.1579** (0.0604)	-0.1547** (0.0605)	-0.1479** (0.0558)	-0.1305** (0.0543)	-0.1306** (0.0509)	-0.1186* (0.0628)
Unemployment among ind. with tertiary education (%)	0.0004 (0.0123)	0.0012 (0.0118)	0.0003 (0.0109)	-0.0020 (0.0124)	-0.0035 (0.0103)	0.00254 (0.0117)
Income inequality in the home larger than in the host country	0.0900** (0.0419)	0.0852* (0.0414)	0.0838** (0.0393)	0.0634 (0.0533)	0.0778** (0.0363)	0.0982* (0.0529)
Power inequality measure, home	-0.0312 (0.0233)	-0.0108 (0.0262)				
Interaction: man*power inequality measure, home		-0.0340* (0.0198)	-0.0408** (0.0184)	-0.0431** (0.0193)	-0.0527** (0.0197)	-0.0395* (0.0203)
Masculinity dominance measure, home	0.0711 <sup>†</sup> (0.0199)	0.0713 <sup>†</sup> (0.0195)	0.0699 <sup>†</sup> (0.0207)	0.0628** (0.0227)	0.0653 <sup>†</sup> (0.0189)	0.0660 <sup>†</sup> (0.0219)
Linguistic proximity to Danish, home				-0.0228 (0.0368)		
Protestantism is a major religion, home					-0.0663* (0.0375)	
English lang. proficiency index, home						0.0200* (0.0111)
Controls:						
Age, gender	YES	YES	YES	YES	YES	YES
Academic discipline	YES	YES	YES	YES	YES	YES
R2	0.145	0.146	0.146	0.147	0.148	0.158
N	983					

<sup>a</sup>Note: <sup>†</sup>p<0.01, \*\*p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in parentheses. All differences are defined between the country of individuals' citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies. Unreported constant included in all regressions. The power inequality acceptance, the masculinity dominance, the average English language proficiency index and the source country's linguistic proximity to Danish indices are standardized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table A9**

OLS regression results. Explanatory variables: macroeconomic variables as averages over period 2004-2010 and geographical region

Dependent variable: Living in Denmark for at least 4 years after immigration							
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log nominal wage	-0.1257 <sup>†</sup> (0.0311)	-0.1270 <sup>†</sup> (0.0333)	-0.0990 <sup>**</sup> (0.0360)	-0.1586 <sup>†</sup> (0.0370)	-0.1259 <sup>†</sup> (0.0348)	-0.0905 <sup>**</sup> (0.0357)	-0.1308 <sup>†</sup> (0.0487)
Unemployment among ind. with tertiary education (%)			0.0168 (0.0116)			0.0233* (0.0128)	-0.0105 (0.0155)
Log social benefits per capita				0.0359 (0.0410)			
Nominal value added growth in the industry the individual is expected to work in (%)					-0.0085 (0.803)		
Income inequality in the home larger than in the host country		0.0935 <sup>†</sup> (0.0306)				0.1190 <sup>**</sup> (0.0430)	0.0566 <sup>**</sup> (0.0514)
Home country located in Western Europe							0.1318 <sup>†</sup> (0.0345)
Home country located in Southern Europe							0.1302 <sup>**</sup> (0.0602)
Home country located in Eastern Europe							0.0638 (0.0602)
<b>Controls:</b>							
Age, gender	YES	YES	YES	YES	YES	YES	YES
Academic discipline	YES	YES	YES	YES	YES	YES	YES
R2	0.128	0.130	0.129	0.129	0.128	0.132	0.139
N	983						

<sup>a</sup>Note: <sup>†</sup>p<0.01, <sup>\*\*</sup>p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in parentheses. All differences are defined between the country of individuals's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies. Unreported constant included in all regressions. Northern Europe is the omitted geographical dummy. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table A10**

OLS regression results. Explanatory variables: macroeconomic variables as averages over period 2004-2010, cultural and linguistic variables

Dependent variable: living in Denmark for at least for 4 years after immigration						
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)
Log nominal wage	-0.1048 <sup>†</sup> (0.0315)	-0.1019 <sup>†</sup> (0.0310)	-0.0957 <sup>†</sup> (0.0278)	-0.0798 <sup>**</sup> (0.0299)	-0.0871 <sup>†</sup> (0.0266)	-0.0793 <sup>**</sup> (0.0344)
Log purchasing power adjusted wage						
Unemployment among ind. with tertiary education (%)	0.0075 (0.0181)	0.0074 (0.0173)	0.0042 (0.0147)	-0.0083 (0.0158)	-0.0009 (0.0137)	0.0162 (0.0189)
Income inequality in the home larger than in the host country	0.0629 (0.0625)	0.0583 (0.0609)	0.0496 (0.0568)	0.0063 (0.0654)	0.0364 (0.0557)	0.0796 (0.0652)
Power inequality measure, home	-0.0417 (0.0291)	-0.0194 (0.0285)				
Interaction: man*power inequality measure, home		0.0629 (0.0192)	-0.0471 <sup>**</sup> (0.0226)	-0.470 <sup>**</sup> (0.0213)	-0.0578 <sup>**</sup> (0.0231)	-0.0508 <sup>**</sup> (0.0232)
Masculinity dominance measure, home	0.0710 <sup>†</sup> (0.0192)	0.0715 <sup>†</sup> (0.0188)	0.0702 <sup>†</sup> (0.0194)	0.0586 <sup>**</sup> (0.0222)	0.0666 <sup>†</sup> (0.0178)	0.0651 <sup>†</sup> (0.0185)
Linguistic proximity to Danish, home				-0.0432 (0.0279)		
Protestantism is a major religion, home					-0.0639 (0.0379)	
English lang. proficiency index, home						0.0219 (0.0129)
<b>Controls:</b>						
Age, gender	YES	YES	YES	YES	YES	YES
Academic discipline	YES	YES	YES	YES	YES	YES
R2	0.144	0.145	0.145	0.146	0.146	0.157
N	983					775

<sup>a</sup>Note: <sup>†</sup>p<0.01, <sup>\*\*</sup>p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in paratheses. All differences are defined between the country of individuals's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies. Unreported constant included in all regressions. The power inequality acceptance, the masculinity dominance, the average English language proficiency index and the source country's linguistic proximity to Danish indices are standardized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table A11**

OLS regression results. Explanatory variables: macroeconomic variables as averages over period 2004-2010 and geographical region

Dependent variable: Living in Denmark for at least 4 years after immigration							
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log purchasing power adjusted wage	-0.1982** (0.0744)	-0.2025** (0.0778)	-0.1194 (0.0810)	-0.1872* (0.101)	-0.1950** (0.0866)	-0.1076 (0.0804)	-0.1734* (0.101)
Unemployment among ind. with tertiary education (%)			0.0277** (0.0125)			0.0339** (0.0144)	-0.0001 (0.0198)
Log social benefits per capita				-0.0064 (0.0536)			
Nominal value added growth in the industry the individual is expected to work in (%)					0.0717 (0.989)		
Income inequality in the home larger than in the host country		0.0969 <sup>†</sup> (0.0266)				0.1317 <sup>†</sup> (0.0435)	0.0668 (0.0531)
Home country located in Western Europe							0.1379*** (0.0434)
Home country located in Southern Europe							0.1153 (0.0692)
Home country located in Eastern Europe							0.1193 (0.0704)
Controls:							
Age, gender	YES	YES	YES	YES	YES	YES	YES
Academic discipline	YES	YES	YES	YES	YES	YES	YES
R2	0.120	0.122	0.124	0.120	0.120	0.128	0.136
N				983			

<sup>a</sup>Note: <sup>†</sup>p<0.01, \*\*p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in paratheses. All differences are defined between the country of individuals's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies. Unreported constant included in all regressions. Northern Europe is the omitted geographical dummy. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table A12**

OLS regression results. Explanatory variables: macroeconomic variables as averages over period 2004-2010 and geographical region

Dependent variable: living in Denmark for at least 4 years after immigration						
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)
Log purchasing power adjusted wage	-0.1586** (0.0619)	-0.1546** (0.0613)	-0.1494** (0.0580)	-0.1209* (0.0614)	-0.1372** (0.0519)	-0.1111 (0.0668)
Unemployment among ind. with tertiary education (%)	0.0087 (0.0193)	0.0085 (0.0182)	0.0066 (0.0157)	-0.0093 (0.0168)	-0.0001 (0.0147)	0.0211 (0.0190)
Income inequality in the home larger than in the host country	0.0581 (0.0614)	0.0533 (0.0597)	0.0484 (0.0563)	-0.0040 (0.0655)	0.0327 (0.0548)	0.0821 (0.0652)
Power inequality measure, home	-0.0345 (0.0291)	-0.0109 (0.0290)				
Interaction: man*power inequality measure, home		-0.0340* (0.0198)	-0.0448* (0.0223)	-0.0431** (0.0193)	-0.0576** (0.0233)	-0.0475** (0.0226)
Masculinity dominance measure, home	0.0795 <sup>†</sup> (0.0198)	0.0798 <sup>†</sup> (0.0191)	0.0787 <sup>†</sup> (0.0201)	0.0631** (0.0240)	0.0738 <sup>†</sup> (0.0191)	0.0720 <sup>†</sup> (0.0189)
Linguistic proximity to Danish, home				-0.0523 (0.0307)		
Protestantism is a major religion, home					-0.0745* (0.0394)	
English lang. proficiency index, home						0.0256* (0.0129)
Controls:						
Age, gender	YES	YES	YES	YES	YES	YES
Academic discipline	YES	YES	YES	YES	YES	YES
R2	0.145	0.146	0.143	0.147	0.145	0.155
N	983					

<sup>a</sup>Note: <sup>†</sup>p<0.01, \*\*p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in parentheses. All differences are defined between the country of individuals' citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies. Unreported constant included in all regressions. The power inequality acceptance, the masculinity dominance, the average English language proficiency index and the source country's linguistic proximity to Danish indices are standardized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table A13**

OLS regression results. Explanatory variables: macroeconomic variables as averages over 2004-2010, geographical, cultural and linguistic variables

Dependent variable: employed in November in the 4th year after immigration						
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)
Log nominal wage	-0.0435*	-0.0377	-0.0227	-0.0365		-0.0271
	(0.0254)	(0.0323)	(0.0284)	(0.0273)		(0.0345)
Log purchasing power adjusted wage					-0.0385	
					(0.0540)	
Unemployment among ind. with tertiary degree (%)		0.0037	-0.0064	-0.0088	-0.00532	0.0031
		(0.0107)	(0.0138)	(0.0143)	(0.0146)	(0.0181)
Income inequality in the home larger than in the host country		0.0065	-0.0223	-0.0320	-0.0300	-0.0005
		(0.0449)	(0.0491)	(0.0519)	(0.0518)	(0.0593)
Home country located in Western Europe			0.0607**			
			(0.0275)			
Home country located in Southern Europe			0.0474			
			(0.0435)			
Home country located in Eastern Europe			0.1050**			
			(0.0417)			
Interaction: man*power inequality measure, home				-0.0029	-0.0011	-0.0066
				(0.0177)	(0.0172)	(0.0219)
Masculinity dominance measure, home				0.0322*	0.0346*	0.0296*
				(0.0180)	(0.0191)	(0.0154)
English lang. proficiency index, home						0.0273*
						(0.0136)
<b>Controls:</b>						
Age, gender:	YES	YES	YES	YES	YES	YES
Academic discipline:	YES	YES	YES	YES	YES	YES
R2	0.055	0.055	0.059	0.058	0.057	0.072
N			983			775

<sup>a</sup>Note: †p<0.01, \*\*p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in paratheses. All differences are defined between the country of individuals's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies, Danish language education in the first year after arrival dummy. Unreported constant included in all regressions. Northern Europe is the ommited geographical dummy. The masculinity dominance and the average English language proficiency indices are standarized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table A14**

OLS regression results. Explanatory variables: macroeconomic variables as averages over 2004-2010, geographical, cultural and linguistic variables

Dependent variable: employed in November in the 4th year after immigration						
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)
Log nominal wage	-0.0537** (0.0235)	-0.0468 (0.0314)	-0.0363 (0.0293)	-0.0456* (0.0259)		-0.0324 (0.0321)
Log purchasing power adjusted wage					-0.0594 (0.0528)	
Unemployment among ind. with tertiary degree (%)		0.0043 (0.0100)	-0.0063 (0.0128)	-0.0084 (0.0141)	-0.0057 (0.0146)	0.0034 (0.0177)
Income inequality in the home larger than in the host country		-0.0097 (0.0447)	-0.0358 (0.0491)	-0.0491 (0.0538)	-0.0481 (0.0538)	-0.0043 (0.0544)
Home country located in Western Europe			0.0460 (0.0272)			
Home country located in Southern Europe			0.0587 (0.0405)			
Home country located in Eastern Europe			0.0885* (0.0435)			
Interaction: man*power inequality measure, home				-0.0034 (0.0184)	-0.0017 (0.0183)	-0.0064 (0.0195)
Masculinity dominance measure, home				0.0331* (0.0187)	0.0366* (0.0198)	0.0316** (0.0130)
English lang. proficiency index, home						0.0357** (0.0159)
<b>Controls:</b>						
Age, gender:	YES	YES	YES	YES	YES	YES
Academic discipline:	YES	YES	YES	YES	YES	YES
R2	0.115	0.115	0.117	0.118	0.117	0.144
N			983			775

<sup>a</sup>Note: †p<0.01, \*\*p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in paratheses. All differences are defined between the country of individuals's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies, Danish language education in the first year after arrival dummy. Unreported constant included in all regressions. Northern Europe is the ommited geographical dummy. The masculinity dominance and the average English language proficiency indices are standarized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.



**Table A15**

Regression results for an expanded set of demographic variables

Dependent variable: living in Denmark for at least 4 years after immigration					
	(1)	(2)	(3)	(4)	(5)
Woman	0.0533 (0.0419)	0.0532 (0.0419)	0.0533 (0.0419)	0.0531 (0.0418)	0.0480 (0.0380)
Age	-0.0061 (0.0047)	-0.0065 (0.0054)	-0.0061 (0.0056)	-0.0064 (0.0065)	-0.0075 (0.0063)
Spouse in Denmark		0.0241 (0.0600)			
Married			-0.0015 (0.0606)		
Number of children				0.0052 (0.0424)	
Woman* number of children					0.0432 (0.0464)
<i>Controls:</i>					
Academic discipline:	YES	YES	YES	YES	YES
R2	0.105	0.105	0.105	0.105	0.105
N			983		

<sup>a</sup>Note: †p<0.01, \*\*p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in parentheses. Individual controls: educational discipline dummies. Unreported constant included in all regressions. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Data are from the administrative registers from Statistics Denmark. Administer registers information from Statistics Denmark.

**Table A16**

Regression results for academic discipline controls

Dependent variable: living in Denmark for at least 4 years after immigration				
	Table 2		Table 3	
Regression specification	(1)	(6)	(3)	(7)
Pedagogy and linguistics	0.0378 (0.0595)	0.0280 (0.0586)	0.0209 (0.0504)	0.0538 (0.0461)
Arts	0.1881* (0.1048)	0.2196* (0.1136)	0.2220* (0.1136)	0.2671** (0.1092)
Natural sciences	0.1089** (0.0451)	0.0995** (0.0426)	0.1078** (0.0416)	0.0949 (0.0565)
Technical sciences	0.1573 <sup>†</sup> (0.0451)	0.1334** (0.0525)	0.1591 <sup>†</sup> (0.0546)	0.1860** (0.0853)
Agriculture	0.3450 <sup>†</sup> (0.1032)	0.3773 <sup>†</sup> (0.0952)	0.4124 <sup>†</sup> (0.1111)	0.4785 <sup>†</sup> (0.1192)
Medicine	0.5006 <sup>†</sup> (0.0805)	0.5932 <sup>†</sup> (0.0511)	0.5770 <sup>†</sup> (0.0774)	0.5927 <sup>†</sup> (0.0810)

<sup>a</sup>Note: <sup>†</sup>p<0.01, \*\*p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in parentheses. The specifications correspond to the regressions with time varying macroeconomic variables (Table 2 and Table 3).

**Table A17**

OLS regression results, excluding one source country at a time. Explanatory variables: macroeconomic variables at the time of expected graduation, cultural and linguistic variables

Dependent variable: Living in Denmark for at least 4 years after immigration													
Excluded c-y:	None	Finland	Iceland	Norway	Sweden	Belgium	France	Greece	Neth.	Ireland	Italy	Malta	Poland
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Log nom. wage, home-host diff.	-0.0966 <sup>†</sup> (0.0255)	-0.0944 <sup>†</sup> (0.0258)	-0.0977 <sup>†</sup> (0.0262)	-0.0912 <sup>†</sup> (0.0262)	-0.1070 <sup>†</sup> (0.0238)	-0.0976 <sup>†</sup> (0.0257)	-0.102 <sup>†</sup> (0.0285)	-0.0970 <sup>†</sup> (0.0258)	-0.0959 <sup>†</sup> (0.0258)	-0.0964 <sup>†</sup> (0.0256)	-0.0961 <sup>†</sup> (0.0250)	-0.0946 <sup>†</sup> (0.0257)	-0.0937 <sup>**</sup> (0.0394)
Income ineq. in the home larger than in the host country	0.0657 <sup>*</sup> (0.0341)	0.0693 <sup>*</sup> (0.0352)	0.0833 <sup>*</sup> (0.0452)	0.110 <sup>**</sup> (0.0513)	0.0371 (0.0239)	0.0661 <sup>*</sup> (0.0345)	0.0628 <sup>*</sup> (0.0350)	0.0652 <sup>*</sup> (0.0342)	0.0589 (0.0361)	0.0656 <sup>*</sup> (0.0341)	0.0602 <sup>*</sup> (0.0327)	0.0652 <sup>*</sup> (0.0343)	0.0746 <sup>**</sup> (0.0357)
Unemployment among ind. with tertiary degree (%), home-host diff.	-0.0050 (0.0094)	-0.0033 (0.0095)	-0.0141 (0.0096)	0.0006 (0.0108)	-0.0024 (0.0109)	-0.0052 (0.0094)	-0.0080 (0.0108)	-0.0040 (0.0100)	-0.0036 (0.0091)	-0.0054 (0.0094)	-0.0063 (0.0095)	-0.0034 (0.0093)	-0.0035 (0.0119)
Interaction: man* power inequality measure, home	-0.0341 <sup>**</sup> (0.0148)	-0.0342 <sup>**</sup> (0.0147)	-0.0323 <sup>*</sup> (0.0174)	-0.0302 <sup>*</sup> (0.0162)	-0.0380 <sup>**</sup> (0.0157)	-0.0321 <sup>**</sup> (0.0151)	-0.0449 <sup>†</sup> (0.0130)	-0.0370 <sup>**</sup> (0.0148)	-0.0340 <sup>**</sup> (0.0152)	-0.0347 <sup>**</sup> (0.0150)	-0.0409 <sup>†</sup> (0.0132)	-0.0361 <sup>**</sup> (0.0145)	-0.0287 (0.0210)
Masculinity dominance measure, home	0.0682 <sup>†</sup> (0.0175)	0.0662 <sup>†</sup> (0.0179)	0.0655 <sup>†</sup> (0.0196)	0.0592 <sup>†</sup> (0.0181)	0.0686 <sup>†</sup> (0.0178)	0.0673 <sup>†</sup> (0.0176)	0.0737 <sup>†</sup> (0.0181)	0.0686 <sup>†</sup> (0.0177)	0.0707 <sup>†</sup> (0.0175)	0.0692 <sup>†</sup> (0.0178)	0.0734 <sup>†</sup> (0.0174)	0.0673 <sup>†</sup> (0.0173)	0.0667 <sup>†</sup> (0.0207)
Observations	983	960	812	754	864	979	927	968	952	979	944	982	897
R-squared	0.149	0.147	0.152	0.109	0.126	0.149	0.162	0.152	0.154	0.150	0.159	0.150	0.149
Excluded c-y:	Portugal	Schweiz	Spanien	UK	Hungary	German	Austria	Estonia	Latvia	Lithuania	Slovenia	Czech r.	Slovakia
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
Log nom. wage, home-host diff.	-0.0965 <sup>†</sup> (0.0257)	-0.0966 <sup>†</sup> (0.0256)	-0.0975 <sup>†</sup> (0.0264)	-0.0974 <sup>†</sup> (0.0259)	-0.0939 <sup>†</sup> (0.0262)	-0.0906 <sup>†</sup> (0.0265)	-0.0962 <sup>†</sup> (0.0257)	-0.0843 <sup>†</sup> (0.0244)	-0.1160 <sup>†</sup> (0.0211)	-0.0836 <sup>†</sup> (0.0292)	-0.0954 <sup>†</sup> (0.0256)	-0.1010 <sup>†</sup> (0.0255)	-0.0975 <sup>†</sup> (0.0276)
Income ineq. in the home larger than in the host country	0.0668 <sup>*</sup> (0.0346)	0.0660 <sup>*</sup> (0.0341)	0.0647 <sup>*</sup> (0.0348)	0.0675 <sup>*</sup> (0.0345)	0.0667 <sup>*</sup> (0.0346)	0.0731 <sup>**</sup> (0.0350)	0.0663 <sup>*</sup> (0.0346)	0.0651 <sup>*</sup> (0.0349)	0.0738 <sup>**</sup> (0.0349)	0.0662 <sup>*</sup> (0.0351)	0.0690 <sup>*</sup> (0.0354)	0.0661 <sup>*</sup> (0.0343)	0.0485 (0.0300)
Unemployment among ind. with tertiary degree (%), home-host diff.	0.0034 (0.0095)	-0.0049 (0.0094)	-0.0066 (0.0106)	-0.0052 (0.0095)	-0.0036 (0.0098)	-0.0059 (0.0094)	-0.0047 (0.0095)	-0.0029 (0.0096)	-0.0048 (0.0089)	0.0009 (0.0091)	-0.0050 (0.0096)	-0.0081 (0.0094)	-0.0092 (0.0087)

Interaction: man* power inequality measure, home	-0.0325** (0.0147)	-0.0347** (0.0148)	-0.0347** (0.0155)	-0.0295* (0.0144)	-0.0339** (0.0146)	-0.0385** (0.0168)	-0.0310** (0.0149)	-0.0310** (0.0148)	-0.0355** (0.0147)	-0.0344** (0.0148)	-0.0328** (0.0149)	-0.0303* (0.0151)	-0.0270 (0.0180)
Masculinity dominance measure, home	0.0658 <sup>†</sup> (0.0180)	0.0675 <sup>†</sup> (0.0178)	0.0700 <sup>†</sup> (0.0183)	0.0618 <sup>†</sup> (0.0176)	0.0649 <sup>†</sup> (0.0177)	0.0751 <sup>†</sup> (0.0220)	0.0661 <sup>†</sup> (0.0181)	0.0689 <sup>†</sup> (0.0175)	0.0581 <sup>†</sup> (0.0169)	0.0677 <sup>†</sup> (0.0177)	0.0678 <sup>†</sup> (0.0175)	0.0705 <sup>†</sup> (0.0177)	0.0783 <sup>†</sup> (0.0164)
Observations	978	981	963	966	979	893	979	975	960	962	981	979	978
R-squared	0.149	0.149	0.152	0.153	0.149	0.166	0.147	0.148	0.155	0.152	0.150	0.150	0.150
Controls:													
Age, gender	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Academic disc.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Note: <sup>†</sup>p<0.01, \*\*p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in parentheses. All differences are defined between the country of individual's citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies. Unreported constant included in all regressions. The power inequality acceptance and the masculinity dominance indices are standardized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table A18**

OLS regression results. Explanatory variables: macroeconomic variables at the time of expected graduation, geographical, cultural and linguistic variables

Dependent variable: living in Denmark for at least 4 years without unemployment spell in the 4 <sup>th</sup> year after immigration						
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)
Log nominal wage	-0.1236 <sup>†</sup> (0.0267)	-0.0910 <sup>†</sup> (0.0301)	-0.1022 <sup>†</sup> (0.0325)	-0.0933 <sup>†</sup> (0.0204)		-0.0912 <sup>†</sup> (0.0268)
Log purchasing power adjusted wage					-0.1360 <sup>†</sup> (0.0443)	
Unemployment among ind. with tertiary degree (%)		0.0114 (0.0110)	-0.0148 (0.0147)	-0.0125 (0.0099)	-0.0067 (0.0114)	-0.0080 (0.0116)
Income inequality in the home larger than in the host country		0.0907** (0.0380)	0.0526 (0.0369)	0.0365 (0.0352)	0.0544 (0.0414)	0.0621 (0.0516)
Home country located in Western Europe			0.1494 <sup>†</sup> (0.0518)			
Home country located in Southern Europe			0.1092 (0.0722)			
Home country located in Eastern Europe			0.1243** (0.0599)			
Interaction: man*power inequality measure, home				-0.0276 (0.0164)	-0.0335 (0.0209)	-0.0249 (0.0171)
Masculinity dominance measure, home				0.0836 <sup>†</sup> (0.0200)	0.0852 <sup>†</sup> (0.0231)	0.0717 <sup>†</sup> (0.0217)
English lang. proficiency index, home						0.0206 (0.0121)
<b>Controls:</b>						
Age, gender:	YES	YES	YES	YES	YES	YES
Academic discipline:	YES	YES	YES	YES	YES	YES
R2	0.146	0.152	0.161	0.167	0.164	0.172
N			983			775

<sup>a</sup>Note: <sup>†</sup>p<0.01, \*\*p<0.05, \*p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in paratheses. All differences are defined between the country of individuals' citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies, Danish language education in the first year after arrival dummy. Unreported constant included in all regressions. Northern Europe is the omitted geographical dummy. The masculinity dominance and the average English language proficiency indices are standarized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

**Table A19**

OLS regression results. Explanatory variables: macroeconomic variables at averages over 2004-2010, geographical, cultural and linguistic variables

Dependent variable: living in Denmark for at least 4 years without unemployment spell in the 4 <sup>th</sup> year after immigration						
DIF (Home – Host):	(1)	(2)	(3)	(4)	(5)	(6)
Log nominal wage	-0.1190 <sup>†</sup> (0.0306)	-0.0859** (0.0365)	-0.1133** (0.0442)	-0.0890 <sup>†</sup> (0.0258)		-0.0838** (0.0325)
Log purchasing power adjusted wage					-0.1370** (0.0510)	
Unemployment among ind. with tertiary degree (%)		0.0222 (0.0132)	-0.0080 (0.0164)	-0.0021 (0.0153)	0.0004 (0.0161)	0.0130 (0.0188)
Income inequality in the home larger than in the host country		0.141 <sup>†</sup> (0.0435)	0.0783 (0.0522)	0.0584 (0.0558)	0.0576 (0.0553)	0.107 (0.0626)
Home country located in Western Europe			0.1506 <sup>†</sup> (0.0393)			
Home country located in Southern Europe			0.0991 (0.0652)			
Home country located in Eastern Europe			0.0941 (0.0704)			
Interaction: man*power inequality measure, home				-0.0391 (0.0236)	-0.0368 (0.0233)	-0.0398 (0.0239)
Masculinity dominance measure, home				0.0791 <sup>†</sup> (0.0200)	0.0870 <sup>†</sup> (0.0213)	0.0657 <sup>†</sup> (0.0195)
English lang. proficiency index, home						0.0268* (0.0144)
<b>Controls:</b>						
Age, gender:	YES	YES	YES	YES	YES	YES
Academic discipline:	YES	YES	YES	YES	YES	YES
Ind. enrolled in Danish lang. class during the 1 <sup>st</sup> year after arrival						
R2	0.143	0.149	0.159	0.164	0.162	0.169
N			983			775

<sup>a</sup>Note: <sup>†</sup>p<0.01, \*\* p<0.05, \* p<0.1. Robust standard errors clustered by the country of citizenship (25 countries) are reported in paratheses. All differences are defined between the country of individuals' citizenship and Denmark. Individual controls: age, gender dummy, educational discipline dummies, Danish language education in the first year after arrival dummy. Unreported constant included in all regressions. Northern Europe is the omitted geographical dummy. The masculinity dominance and the average English language proficiency indices are standarized to have mean 0 and standard deviation 1. The estimations are based on the entire population of post-graduate EU-25/EFTA/Swiss students arrived to Denmark from May 2004 till the end of 2006 (excluding repeated immigration and students whose parents reside in Denmark). Administrative register information from Statistics Denmark.

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