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Zentrum für Europäische Wirtschaftsforschung GmbH

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Rechts-, Wirtschafts- und Verwaltungswissenschaftliche Sektion
Fachbereich Wirtschaftswissenschaften

Diskussionspapiere der DFG-Forschergruppe (Nr.: 3468269275):

Heterogene Arbeit: Positive und Normative Aspekte der Qualifikationsstruktur der Arbeit

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March 2008

Diskussionspapier Nr. 08/02
http://www.wiwi.uni-konstanz.de/forschergruppewiwi/

Konstanzer Online-Publikations-System (KOPS)
URL: http://www.ub.uni-konstanz.de/kops/volltexte/2008/5107/
URN: http://nbn-resolving.de/urn:nbn:de:bsz:352-opus-51077

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How can scholarship institutions foster the return of foreign students?

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Abstract:

We investigate the return decision of foreign students from developing countries who graduated in Germany and received support from a scholarship institution. Controlling for the impact of economic, political and institutional determinants, we find that individual factors in particular age and time spent in the host country have a crucial impact on the return decision. Better integrated students have lower propensities to return to their home countries after graduation. Scholarship institutions which want their students to return might, thus, consider personal characteristics like age or family status when they select their students. Also provisions for scholarship receipt should be scrutinised. Some provisions for scholarship receipt, for example time restrictions or age limits, lead to increased return rates. We further investigate the impact of cultural differences between home and host country on the return decision. Especially graduates from Africa and Asia seem to consider cultural differences when deciding whether to return or not.

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Miriam Hein* and Joachim Plesch†

March 11, 2008

Abstract

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1 Introduction

Governmental and non governmental institutions in (industrial) countries spend considerable amounts of money on educating foreign students.[1] Several organizations in the US and in Europe provide scholarships to foreign students and graduates. One major concern associated with the provision of such scholarships is whether the foreign students return to their home countries after graduation. In this paper we investigate the return decision of foreign students from developing countries who studied in Germany and were supported by a scholarship institution. We focus on measures which scholarship institutions can take in order to encourage return.

Shearer (1970) distinguishes three objectives for granting support to foreign students: provision of aid, recruitment of highly-skilled people and promotion of cultural exchange. Scholarship institutions which sponsor students from developing countries often motivate their support with a commitment to foster technological advance and political and economic development in the students' home countries. These scholarship institutions usually expect their scholars to return after graduation and to pass on their knowledge in their home countries.

While Kim (1998) mentions concerns that returning foreign students might promote the dependency of developing home countries on industrial countries and increase rent seeking activities, for the most part, student non-return is associated with brain drain.[2] Recent studies show positive effects of foreign education on growth (Kim, 1998), technological advancement (Park, 2004) and political systems i.e. promotion of democracy (Spilimbergo, 2007).

Even though developing countries might also benefit from knowledge flows if graduates stay abroad,[3] there seems to be a broad consensus in the literature that return of foreign graduates is important for development.[4] Governments in developing countries like China, in Central and Eastern European transformation countries but also in industrial countries like the UK pursue various strategies to actively foster return.[5]

As Myers (1972) notes sponsored students have a higher propensity to return because sponsorship programs are in a position to select students and often make arrangements for return. We investigate which selection criteria should be used and which arrangements can be made by scholarship institutions in order to encourage

[1] see e.g. Spilimbergo (2007)

[2] for recent literature on brain drain see e.g. Beine et al. (2003) and Docquier, Lohest and Marfouk (2005)

[3] for a discussion of positive feedback effects see e.g. Beine et al (2003) and Doquier (2006)

[4] see e.g. Regets (2001), Kapur and McHale (2005), Luo and Wang (2002) and Spilimbergo (2007)

[5] see e.g. Broaded (1993), Luo and Wang (2002), Zweig (2006), Tung and Lazarova (2006) and Guellec and Cervantes (2002)

return.

Since there are hardly any records of actual return, studies of student return often rely on aggregated data on visa status adjustment to estimate non return.[6] These studies find that the economic and political situation in home and host country has an impact on student return. Scholarship institutions in industrial countries might therefore demand more freedom and improvement of conditions for economic activity. But their impact on governments in developing countries might be small. We want to identify more direct measures to raise return rates.

Various studies based on surveys indicate that individual factors have a crucial impact on return intentions.[7] Return intentions, however, are an imprecise measure of actual return behaviour. As Spilimbergo (2007) notes, more people actually return than intended to return. We investigate whether the actual return decision is also affected by individual factors or whether economic and political considerations dominate. If individual factors have an impact, scholarship organizations can select their students according to individual characteristics and provide conditions that are supportive to return.

For our analysis we use individual level data from a German scholarship institution which sponsors foreign students from developing and transformation countries. Because of the selection process and the arrangements that the scholarship organization takes, our sample is not representative for the population of foreign students in Germany. Our data only allow for a case study. But we provide some insights and derive practical implications which can be transfered also to other scholarship institutions in other countries.

In the economic literature the impact of culture on migration decisions is much neglected. As stated above, one objective for providing scholarships to foreign students is the promotion of cultural exchange. Knowledge and appreciation of other cultures shall be fostered. But cultural differences might complicate adjustment in the host country and might be a motive to return. We analyze whether students from culturally more distant countries have a higher propensity to return.

2 Determinants of the return decision

A graduate who decides whether to stay or to return will be exposed to contradictory forces. He estimates costs and benefits of the alternatives - to stay or to return (or to migrate to a third country) - and chooses the alternative which offers him the highest utility.

[6] see e.g. Bratsberg (1995)

[7] see e.g. Tansel and Güngör (2002), Güngör and Tansel (2005 and 2007), Zweig (2006) and Baruch et al (2007)

2.1 Economic and political determinants

Early literature on migration mainly focused on the impact of economic factors. Potential return migrants compare employment conditions - in particular wages - and employment opportunities in home and host country.[8] Highly educated people are more likely to stay if labour market demand in the host country is high and labour market conditions are good.[9] Graduates who expect to find a job easily in the home country might have a higher propensity to return.

Also the desire to gain higher standards of living is widely acknowledged to be a reason for migration. Differences in standards of living between industrial host countries and developing or transformation home countries are often substantial. Graduates who spent some time in the host country get used to higher standards of living and might, thus, be reluctant to return. Bratsberg (1995) reports that students from wealthier home countries have a higher propensity to return.

There are substantial R & D spillover effects from industrial countries to developing countries which trade heavily.[10] Developing countries need well educated people with up to date knowledge to absorb the advanced technology imported from industrial countries. Therefore, labour market demand for foreign graduates who acquired this kind of knowledge and are familiar with advanced technology might be higher in home countries which trade more heavily with the host country.

Also noneconomic factors were found to have an impact on migration decisions. Students are less inclined to return when freedom in the home country is limited. Political instability might affect employment opportunities and income prospects and restrictions of civil liberties might complicate personal and professional life. Several studies report that highly educated people are less likely to return when civil liberties are at stake.[11]

Eposto and Zaleski (1999) find that economic freedom enhances the quality of life. For graduates who earn relatively much, who take high positions in enterprises or even start up their own enterprise, protection of property, free exchange and other aspects of economic freedom are important. Graduates from countries with more economic freedom might, thus, be more likely to return. Ashby (2007) shows that within the US people migrate to states with higher levels of economic freedom.

Another aspect of freedom is whether men and women have equal opportunities. Attitudes towards women and in particular towards female employment might be crucial in particular for the return decision of women. Women who have no opportunity to work or are restricted in their rights might be less inclined to return.

[8] see e.g. Sjaastad (1962), Nakosteen and Zimmer (1980) and Massey et al (1993) for a review.

[9] see e.g. Baruch et al. (2007) and Güngör and Tansel (2005 and 2007)

[10] see e.g. Coe and Helpman (1997) and Kwark and Shyn (2006)

[11] see e.g. Bratsberg (1995), Zweig (2006), Güngör and Tansel (2005 and 2007). Dreher and Poutvara (2005) find no significant effect.

2.2 Impact of individual determinants

Also on the individual level there are contradictory forces at play. Personal connections in the home country are contrasted with personal connections in the host country and costs of return have to be considered.

In this section we develop hypotheses concerning the impact of individual determinants on the return decision and derive implications for scholarship institutions which want to promote return. If it is possible to identify individual characteristics which are supportive to return, the scholarship institution can select according to such criteria and it can offer conditions that are supportive to return.

2.2.1 Connections in the home country

For people from developing or transformation countries with unfavourable economic and political conditions, social ties and personal connections are a major reason to return. Even though de Palo et al. (2006) argue that social ties are less important for highly educated people, we hypothesize that graduates with close connections to home are more likely to return.

Social ties are manifold and hard to capture empirically. The most prominent ties are family ties. Most people want to live close to their spouses and children. They perceive separation from their families as psychic cost. Many studies of return intentions find that people with family at home are more likely to return.[12]

> Graduates whose families live in their home countries are more likely to return.
> Scholarship institution should provide personal support and avoid to encourage students to take their families in.

Social ties and other personal connections evolve over life-time. Students who arrive in the host country at a higher age might be more attached to their home countries since they are more likely to own property there and probably have closer social and economic ties. Dustmann (1996) finds that older people have a higher propensity to return to their home countries.

> Students who came to the host country at a higher age are more likely to return.
> Scholarship institution should select older students.

Students might use home visits to refresh connections in the home country. Kapur and McHale (2005) propose that industrial countries should facilitate interaction and transaction with home country in order to encourage return. Gmelch (1980)

[12] see e.g. Baruch et al. (2007) and Güngör and Tansel (2005 and 2007)

reports that many migrants made the decision to return during a vacation in their home country.

> Graduates who visited home are more likely to return.
> Scholarship institution should facilitate home visits.

2.2.2 Connections in the host country

Foreign students who spent some time abroad develop social ties in their host country. They adjust and their desire to return might weaken. We hypothesize that better adjusted students with closer social ties in the host country are less likely to return.

The creation of social ties and adjustment in another country take some time. Güngör and Tansel (2005 and 2007) and Dustman (1996) find that people who spent more time in the host country are less likely to return.

> Graduates who spent more time in the host country are less likely to return.
> Scholarship institution should restrict the duration of scholarship receipt in order to shorten the time period the student spends in the host country.

The effect of time spent in the host country on the adjustment process might be decreasing. After a certain time abroad, the main part of the adjustment process is accomplished and a longer stay duration might only have marginal effects.

Since time spent in the host country does not only capture adjustment, we test for a non-linear effect. Graduates who spent more time in the host country because they needed more time to finish their studies might be less likely to stay since they might have more difficulties to find a job in the host country if employers prefer employing graduates with shorter study periods. According to Dustmann and Kirchkamp (2002) a person's decision on the optimal migration duration is connected with the intended after-return activity. Foreign students might require some international experience, contacts in the host country or a certain amount of money to pursue their intended after-return activity and return as soon as these requirements are met. Dustmann (1996) finds that migrants who are willing to return will return earlier the more time they spent in the host country. Moreover, graduates who stayed abroad for more time might get homesick. A longer period of absence from home might strengthen the desire to return.

Since we argued above that older people are more attached to the home country, these people might have less incentives to adjust in their host country.

Scholarship institutions pursue different recruitment strategies. Some scholarship institutions select their students from foreign students who already study in the host

country. Others recruit their students when they are still in their home countries. Students who spent already some time in the host country are better adjusted than students who are invited from abroad.

> Graduates who were recruited from abroad are more likely to return.
> Scholarship institutions should recruit their students from abroad.

2.2.3 Other personal factors

Employment opportunities in home and host country might differ across fields of study. Students studying agricultural sciences have less employment opportunities in an industrial host than in their home countries where the agricultural sector often plays a major role and are expected to have a higher propensity to return. In contrast, students of law should be more likely to stay since there might arise problems of transferability of the degree earned in the host country because of differences in judicial systems. Labour market demand for students who study the host country's language or literature is limited in the host country.

> Students from different fields of study might have different incentives to return.
> Scholarship institution might select students from particular fields of study.

Graduates who spent some time in an industrial country might have difficulties to reintegrate when they are back home. Some scholarship institution offer seminars which are intended to address topics of development policy and provide assistance for reintegration.

> Students who participated in a seminar are more likely to return.
> Scholarship institutions should offer such seminars.

2.3 Impact of cultural factors

Culture creates connections to the home country. Students from countries with large cultural differences to the host country might feel alienated and might have more difficulties to adjust. De Palo et al. (2006) find that migrants from countries with larger cultural differences socialize less in their host countries. Also Baruch et al. (2007) hypothesize that graduates from countries which are culturally more distant from the host country have a higher propensity to return but they find mixed evidence concerning the role of culture.

> Students from countries that are culturally more similar have a lower propensity to return.

Scholarship institutions could exploit the impact of cultural differences by selecting students from countries which are culturally more distant. The objectives to spur development and to promote cultural exchange might, however, conflict with such a selection criterion.

Another topic in the migration literature is the role of diaspora networks. It is often argued that networks of compatriots abroad facilitate migration. The role of the diaspora for the return decision is less clear. If diaspora networks facilitate adjustment and advance connections in the host country, graduates from countries with a larger diaspora in the host country should be less likely to return. In a large diaspora, however, often home country customs and culture are cultivated. If this is the case, there might be less need for the graduate to integrate into host country society and to develop social contacts with host country nationals.

3 Framework of the case study

Our empirical analysis is based on a data set of scholarship recipients of the Catholic Academic Exchange Service (KAAD). In this section, we describe the scholarship institution and compare it to other scholarship institutions in Germany and in other industrial countries. We also depict the legal framework for the migration decision in Germany.

3.1 The scholarship institution

The KAAD is the scholarship institution of the German Catholic Church for (postgraduate) students and scientists from developing and transformation countries in Africa, Asia, Latin America, the Near and Middle East, as well as Eastern and Southeastern Europe. As a non-profit, non-governmental organization it is dedicated to goals of promoting development and a dialogue between cultures and churches.

The KAAD aims at providing young professionals and junior researchers with a background of social responsibility. It envisages its students to return to their home countries after graduation. Back in their home countries students shall help to foster economic, political and social development and advance a dialogue of cultures and religions.

The KAAD manages three scholarship programs. Selections criteria for all programs are above average qualification for the proposed study or research project, integrity and return intention. Since the KAAD is a catholic organization it supports primarily - but not exclusively - catholics.

In scholarship Program 1, also called Partner Program, graduates from developing countries are invited to come to Germany for research or graduate study. The program focuses on some specific countries which are selected in consultation with

the Episcopal Aid Organizations and the German Catholic Bishops' Conference. Partner organizations in the respective countries propose candidates and the selection board of the KAAD, the Academic Committee, decides on the acceptance of scholarship students. Accepted students are invited to come to Germany and receive a scholarship for study or research.

Scholarship Program 2 is geared towards students who are already living in Germany and who are in an advanced stage of their studies - they have typically passed their mid-degree examinations. Personal applications are not possible. Students are proposed by the relevant Catholic university community. It is again the KAAD Academic Committee that decides on the application. Students of Program 2 might be most representative for foreign students in Germany. Their decision to come to Germany was not affected by the offer of a (KAAD) scholarship and they had to finance the first period of their stay in Germany by other means.

Programs 1 and 2 are aimed at students from developing countries in Africa, Asia, Latin America and the Middle East. For both programs the maximum duration for financial support is three years.

The KAAD also runs an Eastern European Scholarship Program that supports students from Eastern and South-Eastern Europe in financing primarily short stays for research or study purposes in Germany. Similar to the first program, partner organizations propose candidates and the Academic Committee decides on the acceptance.

Financial aid in all programs consists of a monthly scholarship which is determined by the student's economic conditions and should cover his study and living costs. The KAAD does not only grant financial support but also offers educational programs as well as spiritual and personal assistance. In cooperation with partner committees and associations of ex-scholars the KAAD sets up (scientific) networks.

The KAAD encourages return. If a scholar does not return to his home country or to another developing country at the end of his studies, the funds received via the KAAD scholarship and any additional aid must be repaid in full. Even though enforcement of this measure seems to be a challenge, it should raise cost to stay in Germany. Moreover, the KAAD offers seminars which address topics of development policy and provide assistance for reintegration.

The KAAD resembles other scholarship organizations in many respects. Well-known scholarship organizations like the Fulbright program or the Ford foundation motivate support for students from developing countries with the aim to foster development.[13] These organizations usually expect their scholars to return. Selection criteria for scholarships usually include above average performance at university or work and societal involvement. Organizations which provide scholarships to foreign students who do not yet study in the respective host country often rely on local

[13]see Spilimbergo (2007)

councils in the home countries to (pre-)select the scholarship recipients. The Fulbright Program for example has own local selection committees. Most scholarship organizations do not only provide funds, but also offer non-material support and try to maintain contact to their scholars. They do so through seminars and other networking events, which are partly mandatory.

Because of the similarities to other scholarship organizations, the results derived from KAAD data are of interest for all organizations trying to enhance global development through education. The results indicate relevant control lever for the success of scholarship programs (at least as it is measured in the return rate of students).

The KAAD program has two distinctive features: a selection geared primarily towards catholics and the payback requirement if the scholarship recipient stays. In our analysis we control for the preferential selection of catholics. The payback requirement does not seem to compromise the underlying data. Even though the decision to stay gets more costly if students are required to repay the loan, still a large number of scholarship recipients stay in Germany. Moreover, the enforcement of the payback requirement is rather difficult and some students might get around it.

3.2 Legal situation

In the period between 1990 and 2004 migration laws in Germany were such that students were obliged to return to their home countries after graduation. Even though some students might have been forced to return by these laws, many students found a way to stay. The enforcement of these laws was, thus, not too strict.

Graduates who married a German spouse were allowed to stay in Germany. Unfortunately, we do not know, when students married and of which nationalities their spouses are. Since many unmarried students stayed in Germany, however, there must have been other ways to get a permission to stay.

Migration agencies made the decision which graduates were allowed to stay on a case by case basis. It was common practice, however, that graduates who found appropriate employment in Germany or who planned further education in Germany were allowed to stay. Furthermore, we know of no informal rules which guided migration agencies' decisions.

In 1993, 1997 and 2000 migration laws in Germany were changed. In 1993 the right of asylum was restricted, in 1997 the legal position of foreigners living in Germany was improved and in 2000 the green card was introduced and conditions for naturalization were changed. Even though these changes were not explicitly aimed at students they might have affected their return decision. Apart from the change in 1993 the changes should have had a positive effect on the propensity to stay.

Since 2005 foreign students are allowed to stay in Germany after graduation to

Table 1: Descriptive statistics concerning the return decision

program	total number	return (share)		stay (share)	
all	2281	1472	(64.53 %)	809	(35.47 %)
Program 1	1197	667	(55.72 %)	530	(44.28 %)
Program 2	259	88	(33.98 %)	171	(66.02 %)
Program 3	812	704	(86.70 %)	108	(13.30 %)

search for employment. Accordingly, we expect that more students choose to stay than before.

4 Data and empirical strategy

For our analysis we use data of 2281 students from 77 countries who graduated in Germany between 1990 and 2005. The largest group of students came from Poland (342 students), followed by China (144 students) and Romania (119 students). The data set is a cross section. Personal characteristics are recorded at one point in time and updated if the student informs the KAAD about a change in his status.

We assume that a student decides whether to stay or to return at graduation and portray this decision with the help of a probit model. In this section we briefly describe our data set (for descriptive statistics see Tables 5 to 7, for variable descriptions Table 16 in the appendix).

4.1 Dependent variable

The dependent variable is a dummy for the decision to stay in Germany. Unfortunately, the return date is missing for many students. This can be due to the fact that the student did not return or that the return date was not reported to the KAAD. We, thus, decided to use the information whether the student repayed the scholarship as a proxy because students are only obliged to repay if they stay in Germany. Since some students who did not repay their loans stayed for a considerable time before they returned, we probably underestimate the number of students who decided to stay.

35 % of the students in our sample stayed in Germany. The differences between the programs are quite large (see Table 1). Given the aim of the KAAD and the legal situation in Germany, however, the number of students who decided to stay is surprisingly high in all three programs.

4.2 Independent variables

4.2.1 Individual factors

On average, students spent 45 months in Germany before graduation. The average age of graduates in our sample is 32 years. 44.3 % of the scholarship recipients are women and 26.3 % have children. For descriptive statistics concerning field of study see Table 5 in the appendix. 54.5 % of the scholarship recipients participated in one seminar at least, 23.7 % visited home once or more often.

4.2.2 Cultural proximity

One way to control for culture is including dummies for country areas. But also within country areas some countries might be culturally closer to Germany than others. We rely on matrices constructed by Eff (2004) to capture also other aspects of cultural proximity. Following his consideration that "Language is the primary vehicle of inherited culture" (Eff 2004, p. 5) linguistic proximity is used as a proxy for cultural similarity of nations.[14] Since cultural similarity might also arise from common history we include a dummy which indicates whether home and host country had colonial and imperial relationships within the last 300 years.[15]

We control for the impact of networks of compatriots by including the logarithmic of the stock of people from the student's home country in Germany in the regression. The logarithmic is used because an additional compatriot living in the host country might matter less when already many compatriots live in Germany.

4.2.3 Control Factors

Standards of living in home and host country are proxied by GDP per capita which is considerably lower in the home countries (on average 6.364 dollars) than in Germany (on average 24.237 dollars). Since we expect that the motive to gain higher living standards is stronger for students from countries with low living standards, we include the logarithmic. The unemployment rate of highly qualified people in Germany (which was 3.7 % on average) measures labour market perspectives in Germany. Since reliable and comparable information on unemployment levels is not available for developing countries, the labour market situation in the students' home countries is described by the average growth rate of GDP per capita assuming that higher growth results in more employment. We also include the logarithmic of the amount of bilateral trade in order to capture higher labour market demand in the home country because of R & D spillovers. The demand for qualified people who have up to date knowledge might, however, rise under proportionally. In a

[14] see Table 14 in the Appendix
[15] see Table 15 in the Appendix

home country which trades heavily with Germany, the transmission of up to date knowledge within the country might be encouraged.

We include indices of (political) freedom (from "Freedom House") and of economic freedom (from the Fraser Institute) in our regressions. To proxy access restrictions for women to national labour markets, we use female labour force participation. A low share of women in the labour market indicates that women might be inhibited to work. When the share of women approaches the population share of women, differences are less likely to reflect discrimination but might also have other reasons. Therefore, we include the logarithmic. One indication of gender discrimination is a gender bias in mortality. Sen (1989, 1990) proposed to compare actual population sex ratios with expected ones and coined the notion of "missing women". According to the classification of Klasen and Wink (2003) 21 % of the graduates in our sample come from a country in which there is excess female mortality - in which women are missing.

Since the KAAD is a catholic organization, most students in our sample are roman catholics (76.3 %). In some countries in our sample catholics are a minority. This might affect the selection process of the KAAD because it selects preferably catholic students. We therefore include the share of catholics in the home country which is on average 43 %.

To account for the effect of different recruiting we include dummies for programs 1 and 3 in our baseline regression. Also legal situation is controlled.

5 Probit Analysis

In this section results of the probit regression are reported. We first estimated a baseline specification with the control variables. Then, we included individual factors. Likelihood ratio (LR) tests indicated whether the group of individual characteristics is significant.[16] To check whether cultural determinants are important, we added these factors to our baseline specification and performed a LR test.

5.1 Whole Sample

The results are displayed in Table 9 in the Appendix.

Connections to the home country matter. Graduates who have children are more likely to return. Since the KAAD only pays for the students and not for their family, most graduates will have their families in the home country. The higher propensity to return can, thus, be explained by the desire to return to the family. Graduates who visited home during their study period in Germany have a higher propensity to return which might also be due to stronger social and personal ties to the home

[16]The likelihood ratios are reported in Table 13 in the appendix.

country. Older students are less likely to stay after graduation. These graduates seem to be more attached to the home country and less willing to adjust in the host country.

The effect of time spent in Germany on the return decision is non-linear. Students having spent more time in Germany are presumably better integrated and, thus, less likely to return. Only for students who spent more than 104 months[17] in Germany - which only few did - the propensity to return starts to increase with time. Adjustment in the host country takes some time. But the effect of time spent in the host country on the adjustment process might be decreasing. After a certain time abroad, the main part of the adjustment process is accomplished and longer stay duration might only have marginal effects. Graduates who are separated from home for a longer time might feel a growing desire to return. Moreover, students who spent a long time in Germany before graduation needed a long time for their studies in Germany and might be less likely to find a job there. If the study period was prolongated because of difficulties with German language, these difficulties might also weaken the desire to stay in Germany.

As expected, students of German who might have difficulties to find a job in Germany have a lower propensity to stay than students of other disciplines. There are no significant differences in the propensity to return for students of the other fields of study.

In contrast to our expectation, participation in a seminar reduces the propensity to return. Students who participate in a seminar might get more sensitized of the reintegration problems they await. There might also be a selection bias if only students who are reluctant to return because they are aware of possible problems take part in the seminars.

The propensity to return is significantly higher for participants in the two invitation programs (program 1 and 3) than for participants in program 2. The recruitment process, thus, seems to be crucial. Graduates who are recruited when they already spent some time in the host country (participants of program 2) are better adjusted to the host country and less likely to return.

The fact that the KAAD preferably chooses catholic students takes effect. Catholic students have a higher propensity to return. Since students in the first and the third program were recommended by (local) partner organizations which are often close to churches catholic students might be more embedded into local society in their home country and therefore more inclined to return.

Also cultural proximity has significant effects. Students from countries which speak a similar language and are therefore culturally closer have a higher propensity to stay. These students might have less difficulties to adjust because they are more familiar with culture.

[17] computation: $0.0208/(2 * 0.0001)$

Table 2: Significant effects

variable	prediction	whole sample	men	women
individual factors				
children	-	-	-	
age	-	-	-	-
triphome	-	-	-	
time spent in Germany	+	+	+	+
time spent in Germany squared		-	-	-
German	-	-	-	
seminar	-	+	+	+
cultural factors				
language	+	+		+
stock of compatriots			+	

Our results concerning the economic and political control variables are largely in line with findings in the literature. Graduates from countries that trade more heavily with Germany, however, have a higher propensity to stay. If their home countries are important trading partners for Germany, German firms might be particularly interested in establishing and maintaining good relations. Since foreign graduates know language and mentality they can facilitate contacts and might, thus, have better employment opportunities in Germany than graduates from other countries with weaker trade relations.

Women are more prone to stay than men. They might develop social ties more easily. Maybe, women with strong social ties at home are less likely to do a study period abroad than men. In this case, women in our sample would have weaker ties than men. In the next section we will analyze whether there are systematic differences in the return decision of men and women.

Implications for scholarship institutions:
Scholarship institutions which want their students to return should select older students and students who have children. They should recruit their scholars from abroad and try to restrict the time spent in the host country for example by rigorously enforcing time restrictions for scholarship receipt. Also home visits should be encouraged.

5.2 Differences between sexes

Separate regressions for male and female graduates (see Table 10 in the appendix) reveal some differences in the return behaviour of men and women. Connections to the home country seem to affect men more than women. Men who have children and who visited home during their study period are more likely to return. While

32 % of the male graduates have children, only 20 % of the female graduates are mothers. It might be more difficult for women with strong ties in the home country to spent a study period abroad. Women in our sample might, thus, be less attached to their home countries than men.

Employment perspectives in home and host country seem to differ for men and women in some fields of study. While male students of medicine and German are more likely to return female students of agricultural and technical sciences have a higher propensity to return.

Cultural differences are important only for female graduates. Women seem to have more difficulties to adjust when culture is more different. Establishing social ties is more difficult when cultural differences are large and women might value social ties more than men.

Men are more likely to stay, when more of their compatriots live in Germany. Compatriots might help to adjust and to find employment in Germany.

Even though the impact of economic and political control factors is basically in line with the literature, it is striking, that men and women are affected by different aspects. While the return decision of women hinges on the unemployment rate in Germany, living standards in the home country are crucial for men. Either men might find a job in Germany more easily or they might be more able to bridge a time span without employment for example because they have more financial resources or support from home. Living standards in the home countries of the female graduates are on average higher and differences in living standards, thus, less severe. While women care about political freedom, men consider economic freedom. In some countries political rights of women are more limited than political rights of men. Economic freedom might be more valued the higher positions people have. Maybe leading positions in developing home countries are filled rather by men than by women.

Men care about equal opportunities for women. Maybe, it is due to the education of the male graduates and to the experiences these men gathered in a host society where gender discrimination is disapproved that male students abstain from returning to a home country where women are discriminated. If graduates prefer to marry women who are well educated unmarried men might have difficulties to find a wife in home countries where women are discriminated and often do not receive a good education. Women might encourage their husbands to stay abroad, to work there for some time and to take them in as soon as it is possible. Moreover, men who have daughters might not want to raise them in a hostile environment.

Implications for scholarship institutions:
Scholarship institutions which want their students to return should select older students. Since the impact of family status on the return decision is weak, selection based on family status might not take effects. The scholarship institutions should

implement time restrictions for scholarship receipt and encourage students to study quickly. Support of home visits is particularly effective for men.

5.3 The three Programs

Since the three KAAD programs differ somewhat in focus and organization, we investigate them separately in this section. Regression results are reported in Table 9 in the appendix. For the students in all three programs individual factors are important. Connections in the home country play a role. Graduates from developing countries outside Europe are more likely to return when they have children. For Eastern European students, it might be easier to invite their families (at least for shorter stays). The psychological costs of separation from the family might, thus, be smaller. Only for students from the second program home visits are influential. These students are separated from home for a longer time. During their home visits connections might be refreshed and the desire to return reinforced. Age is an important determinant for graduates in the invitation programs but not for participants in program 2 who are proposed by German catholic communities and can, thus, be expected to be integrated quite well.

There are remarkable differences in the effect of time spent in Germany. The effect is non-linear for all three programs. But, while for the two invitation programs the hump shaped pattern like for the whole sample emerges, for students from the second program the pattern is opposite. In general, students in program 2 stayed for a longer time in Germany. So these students will correspond to the tail of the time distribution of program 1 and 3. Moreover, for participants of program 2 time spent in Germany might be a bad indicator for adjustment. Since the students are proposed by local student communities they are likely to be integrated. Maybe students in program 2 come to Germany with a view to gather some experiences and to stay abroad for a certain time. Accordingly, graduates who finish their studies quickly choose to stay in order to prolong their period abroad and to gather more experiences. It could also be the case that students who are determined to stay in Germany study more quickly for example because chances to find a job in Germany might be better the shorter the study period was.

Participation in seminars increases the propensity to stay for students from the first and the third program. This might again be explained by intensification of concerns of seminar participants. Because of longer absence from the home country, aid to reintegration might be most relevant for participants in program 2. The decision of these students is, however, not affected by participation in a seminar.

There are hardly any significant differences with respect to the field of study. The strongest results emerge again for German. Graduates of German in programs 2 and 3 are less likely to stay. Eastern European graduates who studied technical sciences or EBP also have a higher propensity to stay. Since the Eastern European

countries are important trading partners for Germany, students of these disciplines might have good employment perspectives in Germany. Students of medicine from the second program are more likely to stay. In contrast to students from the other programs who often come in an advanced stage of their studies students in program 2 are likely to have done their whole study period in Germany and are used to the German health system.

Catholic students in the invitation programs are less likely to stay in Germany. These students are embedded in local society in their home countries. Eastern European graduates from countries where less catholics live are more likely to return. This indicates that catholic students have a stronger attachment to home and feel the obligation to return.

Cultural determinants affect the decision of students of the first program, but have no significant impact on the students from programs 2 and 3.[18] In contrast to participants of program 1, participants in program 2 already studied in Germany for some time before they applied for the scholarship and are often integrated in a catholic student community. They are more familiar with German culture than participants in program 1. Since they chose to come to Germany because of other reasons than promise of scholarship they might appreciate German culture. Participants of program 3 are from countries in Eastern Europe for which cultural differences to Germany are often smaller and therefore less of an impediment to adjustment.

Economic and political control factors also affect the return decision. The effect of trade relations which only matter for Eastern European students, however, is again different as expected. Eastern European graduates from countries with closer trade relations have a higher propensity to stay. Since Eastern European countries are important trading partners for Germany this might be explained by better labour market perspectives in Germany.

Implications for scholarship institutions:
In particular scholarship institutions which recruit their students abroad should select their students according to age and enforce time limits. Scholarship institutions which recruit in the host country might consider family status. These institutions might support students whose families do not live in Germany.

5.4 The Regions

Regression results for the different regions can be found in Table 11 in the appendix. Family ties have a significant impact for students from Africa. Age is an important determinant for students from Asia, Latin America, the Middle East and Eastern

[18] Likelihood ratios are reported in Table 13 in the Appendix

Table 3: Significant effects

variable	prediction	program 1	program 2	program 3
individual factors				
children	-	-	-	
age	-	-		-
triphome	-		-	
time spent in Germany	+	+	-	+
time spent in Germany squared		-	+	-
German	-		-	-
seminar	-	+		+
cultural factors				
common history	+	+		

Europe. Students who come to Germany at a higher age are less likely to stay. Even though family ties are less important for them, these students might have other social ties or connections to the home country.

Students from all four regions are more likely to stay the longer they are in Germany. For graduates from Asia, Latin America and Eastern Europe the effect of time spent in Germany is non-linear.

The effect of German only applies for graduates from Eastern Europe. Eastern European countries might be particularly prone to establish close relations to EU countries like Germany and might therefore encourage people to learn German and offer jobs to persons who know German. With respect to the other fields of studies no clear cut picture emerges. While students of technical sciences from Africa are more likely to stay those from Eastern Europe are less likely to stay. This might be explained by differences in labour market perspectives at home. The transferability of technical know-how to African countries might be more limited and students might not be satisfied with working conditions in Africa. Also demand for students of medicine seems to differ across country areas. Graduates from Eastern Europe and Latin America are less likely to stay but graduates from the Middle East have a higher propensity to stay.

Participation in a seminar has a negative impact on the propensity to return only for students from Africa and Eastern Europe.

Cultural determinants i.e. common history matter only for graduates from Africa and Asia. African students from countries which share a common history are more likely to stay which is in line with our hypothesis that common history indicates similar culture and similar culture eases integration. Asian students, however, are less likely to stay. Countries with common history often have similar legal, administrative and societal systems. So it might be easier to transfer a degree earned abroad, valuation of German degrees and chances to find employment might be higher.

For the return decision of graduates from Africa and Asia the form of recruitment

Table 4: Significant effects

variable	prediction	Africa	Asia	LAC	ME	EE
individual factors						
children	-	-				
age	-		-	-	-	-
time spent in Germany	+	+	+	+	+	+
time spent in Germany squared			-	-		-
seminar	-	+				+
cultural factors						
common history	+	+	-			

does play a role. Participants in the invitation program who were recruited abroad have a higher propensity to return. The incentive to adjust might be weaker and differences in culture and the way of life might be more grave.

Graduates who come from countries in Middle East where catholics are a minority are less likely to return. This might be connected to fear of religious discrimination. In order to test whether this is true, however, we would need data on religious discrimination.

Economic and political control variables have contradictory effects. The effect of trade volume on the propensity to return is in line with our hypotheses for graduates from the Middle East but not for graduates from Asia and Eastern Europe. Like Eastern Europe, also countries in Asia were booming during our observation period. Therefore also graduates from Asia might have had good employment in Germany because of the objective to intensify trade relations.

The effects of freedom are ambivalent. For graduates from all country areas except for Eastern-European graduates, one aspect of freedom - political, economic or equal opportunities for women - is significant. In contrast to our prediction, however, graduates from Latin America are more likely to return when economic freedom at home is limited. This finding is counterintuitive and might be an artifact of the selection process in these countries. The selected students seem to come from a group which profits from restrictions of economic freedom. The graduates might profit from large government sizes e.g. because it provides good employment perspectives, they might be able to work in occupations for which entry is otherwise limited or they might benefit from other privileges. Also the observation that graduates from the Middle East are more likely to return when freedom of women is limited is not in line with our prediction and our previous findings. The descriptive statistics[19] reveal that freedom of women is lowest in countries in the Middle East. In these countries attitudes towards opportunities of women might be in sharp contrast to attitudes in Germany. Such differences might be an impediment to adjustment.

[19]see Table 6 in the Appendix

Implications for scholarship institutions:
Scholarship institutions which support students from different country areas should pay attention to age and time spent in the host country. In particular students from Africa and Asia should rather be recruited in their home countries. Since there are some differences in the impact of other individual factors on the return decision selection criteria and conditions for scholarship receipt might be chosen differently for students from different country areas.

6 Duration Analysis

If a student decides to stay in the host country after graduation, this decision is not irrevocable - in fact such a decision is often taken just for the present. Some graduates choose to stay for some more time in Germany with a view to return to their home country at a later stage. Reasons to prolong a stay in the host country might be gathering of job experiences or accumulating money. Students, thus, not only have to decide whether to return or not but also on the optimal time to return. Since economic conditions but also the political and personal situation change over time return intentions are revised frequently. In this section we perform a duration analysis in order to identify factors which influence the timing of return.

6.1 Data

In the duration analysis we exclude all students for whom the date of return is missing since we do not know whether they really stayed in Germany. Our analysis is, thus, restricted to students whose return is documented. For technical reasons we have to exclude all students who returned shortly after graduation. Descriptive statistics of the sample which consists of 805 persons can be found in Table 8 in the appendix.

We perform a survival analysis using a discrete time proportional hazard model. For any student in our sample as many data rows as there are months he or she stayed in Germany are created. The dependent variable indicates whether the person left Germany in a given month.

To account for duration dependence, we specify a polynom of degree two as baseline hazard. Additionally, most of the explanatory variables already used in the probit analysis are included. Merely family status is disregarded because our data is a cross section and it is not known when family status changed. Age and the time spent in Germany are included in our regression as time varying covariates. Also economic and political factors vary. We, thus, consider the economic and political situation in the respective year.

To test for potential unobserved heterogeneity ("frailty") we estimated two models including gamma distributed and normally distributed unobserved heterogeneity. The likelihood ratio test indicated that there is statistically significant frailty of these types.

6.2 Results

Results for the duration analysis are reported in Table 12 in the appendix. The baseline hazard is u-shaped. The conditional return rate of graduates in Germany, thus, declines initially. Shortly after their graduation students are more likely to return than later. If students stay and work in the host country, personal and material connections in the home country evolve and graduates get used to working and living conditions in Germany. Since our sample includes only students who eventually did return, the conditional return rate finally rises again.

Older students return earlier than younger students. Connections in the home country might be stronger and it might be more difficult for them to get a job in Germany. Some of the older students already worked some time in their home countries and might be used to working conditions there.

As in the probit analysis the effect of time spent in Germany is non-linear. Graduates who spent more time in Germany seem to develop closer ties there. But graduates who studied for a long period might have more difficulties in the labour market. Some graduates might pursue a prespecified goal which is reached after some time.

Students of EBP, German and medicine return earlier than students of other disciplines. For students of German it might be particularly difficult to find a job in Germany. Moreover, labour protection in Germany is quite strict. Since persons who work longer in a job gain more protection, employing them is more expensive. In particular foreigners might therefore be employed on short term contracts and be replaced by others before they are eligible for more protection.

Participants of programs 1 and 3 stay in Germany for a shorter time than the students in program 2. They might have more difficulties to adjust or they might have stronger commitments in the home country.

Surprisingly, students have a higher hazard rate and can thus be expected to return earlier when the economic situation in Germany is better i.e. GDP is higher. Dustmann and Kirchkamp (2002) show that people stay in their host country until they reach a prespecified goal. Graduates might pursue (financial) objectives which are easier and earlier fulfilled when the economic situation in Germany is better. They might want to gather job experience, establish contacts and accumulate a certain amount of money e.g. to start up their own business before they return.

Also employment opportunities affect the timing of return. Graduates return earlier the higher unemployment of high-skilled people in Germany is.

Cultural factors have no significant impact on the timing of return.

Implications for scholarship institutions:
Scholarship institutions should encourage their scholars to return immediately after graduation. If scholars stay for some more time, they are less likely to return. Moreover, scholarship institutions should select older students and recruit them in their respective home countries.

7 Discussion

This paper provides a study of return decisions of foreign students from developing and transformation countries who study in Germany under the support of a scholarship organization. We find that individual factors, in particular the time spent in the host country and age, are important determinants for the return decision and for the timing of return. Social networks in home and host country, thus, seem to be important for foreign graduates.

Scholarship institutions can take several measures to raise return rates. They can take individual characteristics which are supportive to return into consideration when selecting their students. Since the propensity to return increases with age, older students should be selected. Usually, scholarship institutions rather select younger students who might learn more easily and might have better career perspectives. But are older students less effective in promoting development than younger ones?

Family status might be another selection criterion. Some groups of graduates are more likely to return when they are parents. This might be due to the fact that most graduates will have their families in the home country since the KAAD does not provide financial assistance to the families. To investigate the role of family ties more closely, we would need data on the place of residence of the families.

Selection according to the field of study will probably not take large effects. Only students of German language and literature consistently have a higher propensity to return. Scholarship institutions might, thus, preferably select students who study the host countries language or literature. Since culture expresses in language and literature, these students might be best suited to promote cultural exchange. Their impact on economic, political and societal development, might, however, be more limited than the impact of graduates in other fields of study.

With respect to conditions of scholarship receipt, several aspects should be considered. Students who are recruited when they live in the home country are more likely to return than students who are already in the host country and built some connections there. Scholarship institution should, thus, consider to recruit their students in their respective home countries. Another promising measure is to es-

tablish (and rigorously enforce) time restrictions. Scholarship recipients should be encouraged to finish their studies quickly since graduates who spent more time in the host country are more likely to stay. Moreover, scholarship institutions could facilitate home visits. They can offer administrative support and might consider to provide some traveling funds for home visits.

Cultural proximity has an impact on the return decision of some groups of students, in particular students from Africa and Asia. For the decision when to return cultural factors are not important.

Scholarship institutions should also use their political weight to improve freedom and the situation of women in developing countries. Policies that aim at higher growth rates and promise academics higher standards of living should also be encouraged. These policies directly foster development. Additionally, improvements in these policy areas might induce more students to return.

Since the conditional return rate declines initially, scholarship institutions might consider to address graduates who just finished their studies to encourage them to return. Scholarship institutions might cooperate with migration agencies and activate networks of former scholarship recipients in the home countries in order to design favourable incentives and to facilitate return.

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Table 5: Descriptive statistics for the different programs

	Whole Sample		Program 1		Program 2		Program 3	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
stay	0.3547	0.4785	0.4428	0.4969	0.6602	0.4745	0.1330	0.3398
children	0.2630	0.4404	0.3124	0.4637	0.2973	0.4580	0.1786	0.3832
age	31.9022	6.0196	33.4928	5.4134	32.9683	4.6111	29.1945	6.2923
triphome	0.2372	0.4254	0.4085	0.4918	0.1969	0.3984		
time spent in D	44.8562	43.0221	58.4363	38.0357	94.1228	46.4836	9.6573	8.6312
agricultural sciences	0.0469	0.2115	0.0735	0.2611	0.0347	0.1835		
technical sciences	0.0837	0.2771	0.0952	0.2937	0.1622	0.3693	0.0431	0.2032
medicine	0.1719	0.3773	0.2005	0.4005	0.1776	0.3829	0.1281	0.3344
EBP	0.0951	0.2935	0.1044	0.3059	0.0965	0.2959	0.0825	0.2753
law	0.0460	0.2096	0.0326	0.1776	0.0232	0.1507	0.0739	0.2618
German	0.1052	0.3069	0.0409	0.1982	0.0463	0.2106	0.2204	0.4148
seminar	0.5449	0.4981	0.6316	0.4826	0.0463	0.2106	0.5751	0.4946
female	0.4428	0.4968	0.3793	0.4854	0.2896	0.4544	0.5800	0.4939
catholic	0.7633	0.4252	0.8212	0.3833	0.2625	0.4409	0.8387	0.3681
share of catholics	0.4331	0.3857	0.4238	0.4057	0.1260	0.2827	0.5446	0.3245
law 1993	0.2696	0.4439	0.2331	0.4230	0.5560	0.4978	0.2340	0.4236
law 1997	0.2188	0.4135	0.2247	0.4176	0.0232	0.1507	0.2697	0.4441
law 2000	0.3775	0.4849	0.4144	0.4928	n.a.	n.a.	0.4446	0.4972
law 2005	0.0241	0.1534	0.0276	0.1638	n.a.	n.a.	0.0259	0.1588
program 1	0.5248	0.4995	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
program 3	0.3617	0.4806	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
unemployment rate, D	3.6966	0.3859	3.7084	0.3745	3.8619	0.2291	3.6269	0.4226
avg. Growth rate, H	3.8742	3.6536	4.0836	3.6436	5.1432	3.7724	3.1729	3.4683
GDP p.c., D	24237.3900	1470.7870	24395.1000	1450.1950	22370.1400	681.6351	24595.9600	1233.4050
GDP p.c., H	6364.4430	3873.4240	4507.7030	3328.0380	5540.6780	3284.8870	9336.2990	2836.0720
tradevolume p.c.	0.0003	0.0005	0.0000	0.0001	0.0001	0.0001	0.0007	0.0006
freedom, H	9.1381	3.7014	7.6048	3.3654	6.3861	3.3569	12.2426	1.5942
economic freedom, H	5.5498	0.8991	5.6563	0.8336	5.1658	0.7960	5.5193	0.9769
missing women	0.2122	0.4089	0.2565	0.4369	0.6834	0.4661	n.a.	n.a.
female labour force	0.8028	0.1335	0.7871	0.1227	0.6149	0.1682	0.8847	0.0215
language	0.0489	0.0393	0.0321	0.0361	0.0259	0.0279	0.0807	0.0232
colonial	0.3932	0.4886	0.1479	0.3551	0.1776	0.3829	0.8153	0.3883
africa	0.1561	0.3630	0.2673	0.4428	0.1390	0.3466	n.a.	n.a.
asia	0.1854	0.3887	0.2932	0.4554	0.2703	0.4450	n.a.	n.a.
me	0.0995	0.2994	0.0844	0.2781	0.4865	0.5008	n.a.	n.a.
stock of compatriots	95599.5000	228603.3000	37171.9900	190978.0000	172471.4000	460794.7000	156839.8000	121215.9000

Abbreviations used: D for Germany and H for Home

Table 6: Descriptive Statistics for the different regions

	Africa		Asia		LAC		ME	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
stay	0.4438	0.4975	0.3729	0.4842	0.4646	0.4993	0.7753	0.4183
children	0.3118	0.4639	0.4014	0.4908	0.2743	0.4467	0.2070	0.4061
age	33.6956	5.5322	34.1161	5.4438	33.0266	5.1823	32.3485	4.5152
triphome	0.3315	0.4714	0.3824	0.4866	0.4115	0.4927	0.3304	0.4714
time spent in D	59.2781	38.7231	64.9443	41.0123	56.6030	36.4184	89.4138	49.0272
agricultural sciences	0.1039	0.3056	0.0523	0.2228	0.0531	0.2245	0.0617	0.2411
technical sciences	0.1180	0.3230	0.1378	0.3451	0.0575	0.2331	0.1322	0.3394
medicine	0.1742	0.3798	0.1259	0.3321	0.1991	0.3998	0.3568	0.4801
EBP	0.1545	0.3619	0.1069	0.3093	0.0819	0.2745	0.0573	0.2329
law	0.0225	0.1484	0.0309	0.1732	0.0442	0.2059	0.0176	0.1319
German	0.0309	0.1733	0.0618	0.2410	0.0465	0.2107	0.0132	0.1145
seminar	0.5112	0.5006	0.5629	0.4966	0.5774	0.4945	0.3877	0.4883
female	0.2219	0.4161	0.3515	0.4780	0.5310	0.4996	0.2731	0.4466
catholic	0.8399	0.3672	0.6936	0.4616	0.9867	0.1146	0.0617	0.2411
share of catholics	0.2609	0.1619	0.0715	0.2023	0.9196	0.0563	0.0056	0.0064
law 1993	0.2669	0.4429	0.2660	0.4424	0.2987	0.4582	0.3568	0.4801
law 1997	0.2135	0.4103	0.1686	0.3749	0.2168	0.4125	0.1322	0.3394
law 2000	0.4635	0.4994	0.3444	0.4757	0.2965	0.4572	0.2291	0.4212
law 2005	0.0112	0.1056	0.0356	0.1856	0.0265	0.1609	0.0088	0.0937
program 1	0.8989	0.3019	0.8337	0.3728	0.9403	0.2373	0.4449	0.4981
unemployment rate, D	3.7138	0.3819	3.7368	0.3522	3.7319	0.3597	3.7756	0.3229
avg. Growth rate, H	2.6603	3.7906	7.0187	3.3027	2.9112	2.8626	4.4158	2.5491
GDP p.c., D	24511.6400	1354.6860	24050.5600	1620.3090	23963.9600	1502.5230	23399.3600	1575.4480
GDP p.c., H	1547.3380	1086.8480	5470.0040	4029.0460	6331.4680	2369.3520	4912.8150	2565.4880
tradevolume p.c.	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000	0.0001	0.0001
freedom, H	6.7022	2.9101	6.8551	3.8545	9.8252	1.7513	4.5991	2.4912
economic freedom, H	5.3897	0.8561	5.9121	0.5433	5.6525	0.9442	5.0479	0.7692
missing women	0.0309	0.1733	0.6603	0.4742	n.a.	n.a	0.8590	0.3488
female labour force	0.8300	0.1345	0.8179	0.0987	0.7631	0.0749	0.5142	0.0874
language	0.0086	0.0150	0.0065	0.0206	0.0747	0.0160	0.0245	0.0205
colonial	0.2388	0.4269	0.3278	0.4700	n.a.	n.a	n.a.	n.a.
stock of compatriots	13313.5100	17683.9600	32137.5100	22295.6900	8492.3610	7360.7090	295404.9000	620723.9000

Abbreviations used: D for Germany and H for Home

Table 7: Descriptive statistics for male and female graduates

	women		men	
Variable	Mean	Std. dev.	Mean	Std. dev.
stay	0.3416	0.4745	0.3651	0.4816
children	0.1960	0.3972	0.3163	0.4652
age	30.5519	5.9621	32.9753	5.8488
triphome	0.2109	0.4081	0.2581	0.4377
time spent in Germany	38.5650	40.9733	49.8556	43.9613
agricultural sciences	0.0317	0.1752	0.0590	0.2357
technical sciences	0.0356	0.1855	0.1220	0.3274
medicine	0.1356	0.3426	0.2006	0.4006
EBP	0.0901	0.2865	0.0991	0.2990
law	0.0505	0.2191	0.0425	0.2018
German	0.1792	0.3837	0.0464	0.2105
seminar	0.5693	0.4954	0.5256	0.4995
catholic	0.8089	0.3934	0.7270	0.4457
share of catholics	0.5114	0.3835	0.3709	0.3761
law 1993	0.2584	0.4380	0.2785	0.4484
law 1997	0.2376	0.4258	0.2038	0.4030
law 2000	0.3970	0.4895	0.3619	0.4807
law 2005	0.0277	0.1643	0.0212	0.1443
program 1	0.4495	0.4977	0.5846	0.4930
program 3	0.4762	0.4997	0.2707	0.4445
unemployment rate, D.	3.6912	0.3904	3.7010	0.3824
avg. Growth rate, H	3.7754	3.3721	3.9526	3.8622
GDP p.c., D	24369.2100	1416.0510	24132.6400	1505.2110
GDP p.c., H	7407.9090	3689.6790	5535.2520	3816.4510
tradevolume p.c.	0.0004	0.0005	0.0002	0.0004
freedom, H	10.0584	3.3592	8.4068	3.7977
economic freedom, H	5.5964	0.9276	5.5128	0.8743
missing women	0.1574	0.3644	0.2557	0.4364
female labour force	0.8209	0.1100	0.7885	0.1481
language	0.0596	0.0368	0.0404	0.0391
common history	0.4723	0.4995	0.3304	0.4706
africa	0.0782	0.2686	0.2179	0.4130
asia	0.1485	0.3558	0.2148	0.4108
me	0.0614	0.2402	0.1298	0.3362
stock of compatriots	108576.7000	230461.1000	85287.1500	226677.4000

Abbreviations used: D for Germany and H for Home

Table 8: Descriptive statistics for the Duration Analysis sample

	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs
female	0.3832	0.4862	12110	0.4484	0.4976	805
catholic	0.7363	0.4406	12110	0.8137	0.3896	805
share of catholics	0.3607	0.4139	12110	0.4487	0.3883	805
law 1993	0.3050	0.4604	12110	0.2509	0.4338	805
law 1997	0.2646	0.4411	12110	0.2360	0.4249	805
law 2000	0.3355	0.4722	12110	0.4385	0.4965	805
law 2005	0.0098	0.0986	12110	0.0447	0.2068	805
program 1	0.5847	0.4928	12110	0.4770	0.4998	805
program 3	0.0835	0.2766	12110	0.4286	0.4952	805
unemployment rate, D	10.9451	1.2250	12110	11.2103	0.9530	805
avg. Growth rate, H	4.4934	3.4972	12110	4.0749	3.2866	805
GDP p.c., H	7065.6620	4746.9900	12110	7151.5340	4174.0180	805
GDP p.c., D	24155.2300	1376.5230	12110	24597.5200	1322.8260	805
tradevolume p.c.	0.0001	0.0002	12110	0.0003	0.0005	805
freedom, H	8.6794	3.5406	12110	9.8571	3.4513	805
economic freedom, H	5.7846	0.8681	12110	5.6985	0.8657	805
missing women	0.4208	0.4937	12110	0.1789	0.3835	805
female labour force	0.7693	0.1267	12110	0.8275	0.1045	805
age	36.0424	6.3097	12110	33.6410	8.4663	805
triphome	0.2920	0.4547	12110	0.2385	0.4264	805
time spent in D	103.9649	56.4517	12110	55.9552	58.4105	805
agricultural sciences	0.0400	0.1961	12110	0.0447	0.2068	805
EBP	0.0837	0.2770	12110	0.0994	0.2994	805
German	0.0606	0.2386	12110	0.1168	0.3213	805
law	0.0434	0.2037	12110	0.0534	0.2250	805
technical sciences	0.0868	0.2815	12110	0.0807	0.2726	805
medicine	0.1209	0.3260	12110	0.1416	0.3489	805
seminar	0.3424	0.4745	12110	0.5677	0.4957	805
language	0.0324	0.0372	12110	0.0518	0.0393	805
common history	0.3178	0.4657	12110	0.4522	0.4980	805
africa	0.1164	0.3207	12110	0.1106	0.3138	805
asia	0.3917	0.4882	12110	0.2261	0.4186	805
me	0.1158	0.3200	12110	0.0422	0.2013	805
stock of compatriots	54642.1200	206790.1000	12110	84799.8400	152887.7000	805

Abbreviations used: D for Germany and H for Home

Table 9: Results of Probit Analysis for the different programs

	Whole Sample		Program 1		Program 2		Program 3	
dependent variable:	stay		stay		stay		stay	
individual factors								
children	-0.2140	***	-0.1771	*	-0.5680	***	0.1738	
	(0.0828)		(0.0978)		(0.2174)		(0.2271)	
age	-0.0417	***	-0.0568	***	0.0025		-0.0573	***
	(0.0072)		(0.0097)		(0.0253)		(0.0166)	
triphome	-0.1928	**	-0.1367		-0.4079	*	n.a.	
	(0.0829)		(0.0929)		(0.2229)		(0)	
time spent in D	0.0208	***	0.0210	***	-0.0128	*	0.0858	***
	(0.003)		(0.0038)		(0.007)		(0.0123)	
time spent in D squared	-0.0001	***	-0.0001	***	0.0001	*	-0.0006	***
	(0)		(0)		(0)		(0.0002)	
agricultural sciences	-0.1565		-0.1243		-0.0506		n.a.	
	(0.1496)		(0.1639)		(0.5694)			
technical sciences	0.0149		0.0755		0.0643		-0.7296	*
	(0.1159)		(0.1496)		(0.2643)		(0.4174)	
medicine	-0.0452		-0.1015		0.5941	*	-0.0071	
	(0.0901)		(0.1137)		(0.3263)		(0.1948)	
EBP	-0.0900		0.1187		-0.3653		-0.4712	*
	(0.1075)		(0.139)		(0.3179)		(0.278)	
law	-0.0976		-0.1416		0.4624		-0.2183	
	(0.1514)		(0.2251)		(0.5717)		(0.2447)	
German	-0.2457	**	0.2128		-1.0047	**	-0.5454	***
	(0.1199)		(0.2157)		(0.4888)		(0.1845)	
seminar	0.4419	***	0.3692	***	-0.3422		0.3560	**
	(0.0844)		(0.1125)		(0.4861)		(0.1589)	
cultural factors								
language	4.4616	**	2.8993					
	(1.8242)		(2.6222)					
common history	0.0860		0.3322	**				
	(0.1096)		(0.1551)					
africa	-0.1569		-0.6725					
	(0.2439)		(0.41)					
asia	-0.4546	*	-1.1282	**				
	(0.2473)		(0.4441)					
me	-0.2450		-0.5786					
	(0.2704)		(0.4853)					
stock of compatriots (log)	0.0407		0.0325					
	(0.0326)		(0.0489)					
female	0.1647	**	0.0036		0.2659		0.6269	***
	(0.0667)		(0.0878)		(0.2145)		(0.1503)	
catholic	-0.3201	***	-0.2895	**	-0.0202		-0.7077	***
	(0.1037)		(0.1298)		(0.3141)		(0.261)	
share of catholics	0.0499		-0.6027		0.1056		1.2646	***
	(0.1906)		(0.4351)		(0.5917)		(0.3799)	
program 1	-0.4104	***	n.a.		n.a.		n.a.	
	(0.1373)		(0)		(0)		(0)	
program 3	-1.5018	***	n.a.		n.a.		n.a.	
	(0.2714)		(0)		(0)		(0)	
unemployment rate, D	-0.2149	**	-0.1707		0.6180		-0.5101	***
	(0.0878)		(0.119)		(0.6218)		(0.1746)	
avg. Growth rate, H	0.0071		0.0113		-0.0015		-0.0084	
	(0.0114)		(0.0151)		(0.0336)		(0.0278)	
GDP p.c., D (log)	-0.6325		3.6786		-3.2796		-2.3233	
	(2.0951)		(2.8766)		(4.3675)		(5.9706)	
GDP p.c., H (log)	-0.2070	**	-0.0071		-0.8025	**	-1.3226	**
	(0.0959)		(0.1334)		(0.3333)		(0.5284)	
tradevolume (log)	428.0901	***	-2111.7220		5029.1715		637.4102	***
	(106.208)		(1297.72)		(4077.65)		(184.066)	
freedom, H	-0.0364	**	-0.0276		0.0214		-0.0084	
	(0.0155)		(0.0202)		(0.0586)		(0.0609)	
economic freedom, H	-0.1027	*	-0.1596	**	0.0581		-0.1085	
	(0.0614)		(0.0732)		(0.2043)		(0.2093)	
missing women	0.2819	**	0.2984	*	0.1276		n.a.	
	(0.1436)		(0.1709)		(0.379)		(0)	
female labour force (log)	-1.5887	**	-1.2149		-4.7128	***	-7.7437	
	(0.6808)		(0.8165)		(1.322)		(8.4799)	
law 1993	-0.1452		-0.2769		0.0090		-0.0882	
	(0.1495)		(0.2032)		(0.348)		(0.6156)	
law 1997	0.0133		-0.3129		-0.8149		0.5538	
	(0.2348)		(0.317)		(0.8004)		(0.7447)	
law 2000	0.3206		-0.2164		n.a.		0.9358	
	(0.3411)		(0.4651)		(0)		(0.9585)	
law 2005	0.8000	*	-0.1979		n.a.		2.3045	**
	(0.4215)		(0.5611)		(0)		(1.0916)	
Constant	10.9725		-33.0975		39.6969		40.9066	
	(20.9085)		(28.7132)		(43.5648)		(58.5171)	
Observations	2281	1197		259		812		
log likelihood	-1093.9055	-663.1443		-124.0243		-227.3692		
Pseudo R^2	0.2625	0.1931		0.2528		0.2858		

*** significant at the 1 % level, ** significant at the 5 % level, * significant at the 10 % level;
standard errors in parentheses

Table 10: Results of Probit Analysis: Differences between sexes

	Whole sample			
	male		female	
dependent variable:	stay		stay	
individual factors				
children	-0.1955	*	-0.2341	
	(0.1068)		(0.1435)	
age	-0.0460	***	-0.0376	***
	(0.0105)		(0.0098)	
triphome	-0.2250	**	-0.1664	
	(0.1056)		(0.1367)	
time spent in D	0.0168	***	0.0256	***
	(0.0038)		(0.0052)	
time spent in D squared	-0.0001	***	-0.0001	***
	(0)		(0)	
agricultural sciences	-0.0984		-0.4632	*
	(0.1841)		(0.2667)	
technical sciences	0.1060		-0.7799	***
	(0.1338)		(0.2983)	
medicine	-0.2314	*	0.2341	
	(0.1183)		(0.1462)	
EBP	-0.1373		-0.0469	
	(0.1453)		(0.1656)	
law	-0.2865		0.0324	
	(0.222)		(0.2086)	
German	-0.5655	**	-0.2100	
	(0.2409)		(0.1483)	
seminar	0.4671	***	0.4297	***
	(0.1209)		(0.1241)	
cultural factors				
language	3.0984		4.9129	*
	(2.5517)		(2.7411)	
common history	0.1221		0.1392	
	(0.138)		(0.1921)	
africa	-0.4403		-0.4300	
	(0.3468)		(0.3754)	
asia	-0.9025	***	-0.2115	
	(0.3503)		(0.3793)	
me	-0.6854	*	-0.0043	
	(0.3716)		(0.4588)	
stock of compatriots (log)	0.0961	**	-0.0303	
	(0.0448)		(0.0479)	
catholic	-0.2635	**	-0.2974	*
	(0.1295)		(0.1805)	
share of catholics	-0.4238		0.4074	
	(0.2871)		(0.2698)	
program 1	-0.3262	*	-0.5379	**
	(0.172)		(0.2425)	
program 3	-2.1336	***	-1.0345	**
	(0.3968)		(0.4095)	
unemployment rate, D	-0.0763		-0.3653	***
	(0.1209)		(0.1314)	
avg. Growth rate, H	-0.0030		0.0166	
	(0.0147)		(0.0197)	
GDP p.c., D (log)	2.4075		-3.2708	
	(2.7939)		(3.4688)	
GDP p.c., H (log)	-0.2165	*	-0.1822	
	(0.1269)		(0.1578)	
tradevolume (log)	515.4015	***	343.7000	**
	(178.803)		(136.619)	
freedom, H	-0.0159		-0.0881	***
	(0.0187)		(0.0287)	
economic freedom, H	-0.1638	**	-0.0509	
	(0.0813)		(0.0975)	
missing women	0.2661		0.3427	
	(0.174)		(0.2742)	
female labour force	-1.6501	**	-1.9026	
	(0.8108)		(1.2966)	
law 1993	-0.2246		-0.0922	
	(0.1925)		(0.2474)	
law 1997	-0.3244		0.3398	
	(0.3163)		(0.3698)	
law 2000	-0.1695		0.8498	
	(0.4596)		(0.5382)	
law 2005	0.0624		1.5948	**
	(0.5757)		(0.6529)	
Constant	-19.4125		38.2660	
	(27.9103)		(34.6002)	
Observations	1271		1010	
	-592.8867		-472.4335	
	0.2892		0.2715	

*** significant at the 1 % level, ** significant at the 5 % level, * significant at the 10 % level;
standard errors in parentheses

Table 11: Results of Probit Analysis for the different regions

	Africa		Asia		Latin America		Middle East	
dependent variable:	stay		stay		stay		stay	
individual factors								
children	-0.5920	***	-0.0805		-0.1884		-0.0995	
	(0.2138)		(0.1708)		(0.1561)		(0.2665)	
age	-0.0099		-0.0732	***	-0.0513	***	-0.1413	***
	(0.0203)		(0.018)		(0.0148)		(0.0293)	
triphome	-0.2713		-0.1947		-0.2196		-0.0982	
	(0.1991)		(0.1549)		(0.1583)		(0.293)	
time spent in D	0.0254	***	0.0125	**	0.0175	***	0.0156	*
	(0.008)		(0.0061)		(0.0057)		(0.0093)	
time spent in D squared	-0.0001		-0.0001	*	-0.0001	**	0.0000	
	(0.0001)		(0)		(0)		(0)	
agricultural sciences	-0.0839		-0.2937		-0.1628		-0.4347	
	(0.2961)		(0.3074)		(0.3081)		(0.4881)	
technical sciences	0.7786	**	-0.3499		-0.0602		0.1922	
	(0.318)		(0.2131)		(0.2838)		(0.3458)	
medicine	-0.4029		0.0120		-0.3117	*	0.7299	***
	(0.2552)		(0.2633)		(0.1822)		(0.2819)	
EBP	0.0338		0.1846		-0.0909		-0.0854	
	(0.2495)		(0.2368)		(0.2518)		(0.4622)	
law	0.2745		0.4074		-0.1806		-0.7953	
	(0.4355)		(0.3675)		(0.3177)		(1.0645)	
German	-0.2981		-0.4791		0.2609		-1.4760	
	(0.539)		(0.3458)		(0.303)		(1.1112)	
seminar	0.8461	***	0.0720		0.2269		-0.4711	
	(0.2051)		(0.249)		(0.1786)		(0.3624)	
cultural factors								
language	-2.7674		-15.2499					
	(8.2701)		(11.0141)					
common history	0.7972	***	-0.8273	*				
	(0.2508)		(0.4664)					
stock of compatriots (log)	0.0359		0.2478					
	(0.0966)		(0.2167)					
female	-0.0978		0.1707		0.1552		0.3758	
	(0.215)		(0.1473)		(0.1339)		(0.2802)	
catholic	-0.5019	*	-0.0478		-0.2886		0.5407	
	(0.2827)		(0.1722)		(0.6278)		(0.5344)	
share of catholics	-1.1729		0.3097		-1.4166		-250.2218	***
	(0.9599)		(0.7282)		(1.7015)		(91.359)	
program 1	-0.7164	**	-0.6186	**	-0.3789		0.7790	
	(0.3604)		(0.269)		(0.3148)		(0.5009)	
unemployment rate, D	-0.0892		-0.2142		0.0406		-0.0661	
	(0.2495)		(0.2544)		(0.2149)		(0.3835)	
avg. Growth rate, H	0.0244		0.0062		-0.0439		0.0752	
	(0.0273)		(0.0431)		(0.0296)		(0.0516)	
GDP p.c., D (log)	-0.5678		0.7361		-0.3250		0.5149	
	(6.6034)		(4.3424)		(4.2641)		(6.9898)	
GDP p.c., H (log)	-0.0191		-1.4377	**	0.1412		-2.5878	*
	(0.2948)		(0.6063)		(0.236)		(1.3647)	
tradevolume p.c. (log)	5299.9245		8576.6597	*	3523.1949		-6672.8610	*
	(7167.24)		(5096.85)		(5964.37)		(3780.01)	
freedom, H	0.0517		0.0910		-0.1617	***	0.1075	
	(0.0484)		(0.0666)		(0.0565)		(0.1137)	
economic freedom, H	-0.7205	***	-0.2178		0.2779	***	-0.7727	
	(0.1987)		(0.2865)		(0.1055)		(0.4908)	
missing women	-1.1156		0.8066	*	n.a.		-3.5555	**
	(0.9438)		(0.4899)		(0)		(1.6326)	
female labour force (log)	-1.0227		-0.8504		1.1120		15.7346	***
	(2.5111)		(3.2815)		(2.1548)		(5.8384)	
law 1993	-1.0163	**	0.2268		-0.2629		-0.9459	**
	(0.5082)		(0.3083)		(0.2756)		(0.4556)	
law 1997	-1.0115		0.4451		0.0836		-0.6074	
	(0.7726)		(0.4833)		(0.4552)		(0.8622)	
law 2000	-0.3348		0.7201		0.4300		0.6209	
	(1.0663)		(0.6856)		(0.6729)		(1.1154)	
law 2005	-1.9062		1.6099	*	0.4565		-1.0099	
	(1.3531)		(0.847)		(0.836)		(1.3942)	
Constant	10.5799		5.2029		4.0200		22.8680	
	(66.3404)		(42.8037)		(42.4019)		(68.079)	
Observations	356		421		452		227	
Log likelihood	-152.1614		-222.5326		-265.8888		-80.4177	
Pseudo R^2	0.3777		0.1997		0.1483		0.3350	

*** significant at the 1 % level, ** significant at the 5 % level, * significant at the 10 % level;
standard errors in parentheses

Table 12: Results of the Duration Analysis

	normal frailty		gamma frailty	
dependent variable	return		return	
individual factors				
age	0.0436	***	0.0338	***
	(0.0132)		(0.0109)	
triphome	-0.1040		-0.1721	
	(0.2464)		(0.1896)	
time spent in D	-0.0178	***	-0.0141	***
	(0.0057)		(0.0051)	
time spent in D squared	0.0001	***	0.0000	*
	(0)		(0)	
agricultural sciences	0.4522		0.3414	
	(0.4244)		(0.3383)	
EBP	0.7291	*	0.4645	*
	(0.3754)		(0.2478)	
german	0.8240	**	0.5875	**
	(0.3826)		(0.2833)	
law	-0.1921		-0.1031	
	(0.4229)		(0.3597)	
technical sciences	0.0009		-0.0412	
	(0.3259)		(0.251)	
medicine	0.4003		0.5821	**
	(0.2699)		(0.2375)	
seminar	-0.3424		-0.3015	
	(0.2468)		(0.1896)	
seqvar	-0.0321	***	-0.0476	***
	(0.01)		(0.0092)	
seqvar squared	0.0003	***	0.0004	***
	(0.0001)		(0.0001)	
female	0.1289		0.0971	
	(0.2044)		(0.1508)	
catholic	0.0426		0.0571	
	(0.2918)		(0.2306)	
share of catholics	0.0780		0.0218	
	(0.3796)		(0.2766)	
program 1	0.9726	***	0.8492	***
	(0.3714)		(0.304)	
program 3	2.7361	***	2.1257	***
	(0.5667)		(0.4578)	
unemployment rate, D	0.5062	***	0.3530	***
	(0.1301)		(0.1075)	
avg. Growth rate, H	0.0265		0.0280	
	(0.0249)		(0.0216)	
GDP p.c., H (log)	-0.0452		0.0182	
	(0.1858)		(0.1586)	
GDP p.c., D (log)	11.0492	**	6.9189	**
	(4.4244)		(3.4336)	
tradevolume p.c. (log)	-123.3075		-135.4562	
	(368.129)		(248.13)	
freedom, H	0.0487		0.0315	
	(0.0383)		(0.0314)	
economic freedom, H	0.0069		0.0285	
	(0.1371)		(0.1078)	
missing women	-0.4623		-0.3926	
	(0.383)		(0.295)	
female labour force (log)	-1.2521		-1.0681	
	(1.5459)		(1.3598)	
law 1993	0.3164		0.3136	
	(0.448)		(0.3706)	
law 1997	-0.7827		-0.4104	
	(0.6343)		(0.5346)	
law 2000	-0.1151		0.1217	
	(0.6945)		(0.574)	
law 2005	1.8727	**	1.8264	***
	(0.8251)		(0.6944)	
Constant	-119.5470		0.0269	
	(44.0654)		(34.1747)	
			-76.2453	
	(0)		(0.1373)	
Observations	12110		12110	
Number of id	805		805	
Log likelihood	-2053.1827		-2063.1799	

*** significant at the 1 % level, ** significant at the 5 % level, * significant at the 10 % level;
standard errors in parentheses

Table 13: Table of Log Likelihoods

probit analysis	whole sample		program 1		program 2		program 3	
baseline	-1214.3102	(18)	-766.9606	(16)	-137.5089	(14)	-282.5748	(15)
baseline + individual	-1102.3782	(30)	-672.2232	(28)	-124.0243	(26)	-227.3692	(25)
baseline + cultural	-1205.9554	(24)	-757.3223	(22)	-132.0893	(20)	-279.0347	(18)

probit analysis	Africa		Asia		LAC		ME	
baseline	-209.2405	(17)	-247.0948	(17)	-290.4053	(16)	-107.8820	(17)
baseline + individual	-156.9445	(29)	-225.7459	(29)	-265.8888	(28)	-80.4177	(29)
baseline + cultural	-200.0310	(20)	-242.4158	(20)	-289.3163	(18)	-106.6506	(19)

duration analysis	normal frailty		gamma frailty	
baseline	-2051.1592	(20)	-2084.6501	(20)
baseline + individual	-2071.269	(31)	-2063.1799	(31)
baseline + cultural	-2053.1827	(26)	-2081.5786	(26)

number of variables included in the regression in parentheses

Table 14: Values of linguistic proximity

Albania	0.08334	Czech Republic	0.08842	Latvia	0.09718	Senegal	0.00047
Algeria	0.00037	Dominican Republic	0.08333	Lithuania	0.08333	Sierra Leone	0.04977
Argentina	0.08085	Ecuador	0.07206	Madagascar	0.00011	Slovakia	0.07588
Armenia	0.07934	Egypt	0.00145	Malawi	0.00098	Slovenia	0.08348
Bangladesh	0.08285	Estonia	0.00000	Mali	0.00009	South Africa	0.12418
Benin	0.00026	Gabun	0.00325	Mexico	0.07820	Sri Lanka	0.07042
Bolivia	0.03689	Georgia	0.00290	Morokko	0.00006	Syria	0.00994
Brazil	0.08327	Ghana	0.02925	Namibia	0.10193	Tanzania	0.02720
Bulgaria	0.07590	Guatemala	0.05265	Nepal	0.06854	Thailand	0.00000
Burundi	0.00000	Haiti	0.08333	Nicaragua	0.08268	Togo	0.00007
Cameroon	0.00000	Honduras	0.08243	Niger	0.00484	Tschad	0.00004
Central African Republic	0.00023	Hungary	0.02523	Pakistan	0.08156	Tunesia	0.00010
Chile	0.08096	India	0.06682	Panama	0.09414	Turkey	0.00875
China	0.00000	Indonesia	0.00000	Paraguay	0.00190	Uganda	0.02897
Columbia	0.08248	Iran	0.04668	Peru	0.06738	Ukraine	0.08342
Congo	0.00112	Israel	0.04027	Philippines	0.00063	Uruguay	0.08333
Congo, D.R.	0.00000	Jordan	0.00019	Poland	0.09620	Venezuela	0.08244
Costa Rica	0.08981	Kenya	0.00022	Romania	0.08248	Vietnam	0.00000
Cote d'Ivoire	0.00017	Korea	0.00000	Russia	0.07594	Zambia	0.00261
Croatia	0.08390	Kuwait	0.00000	Rwanda	0.00000	Zimbabwe	0.01886

Source: Eff

Table 15: Number of students who come from a country with common history

	Program 1	Program 2	Program 3
Bulgaria	0	0	7
Burundi	3	0	0
Cameroon	47	4	0
Czech Republic	0	0	29
Estonia	0	0	2
Hungary	0	0	107
Korea	56	42	0
Latvia	0	0	28
Lithuania	0	0	49
Philippines	27	0	0
Poland	0	0	338
Russia	0	0	19
Rwanda	10	0	0
Slovakia	0	0	45
Tanzania	9	0	0
Togo	12	0	0
Ukraine	0	0	38
Vietnam	13	0	0

classification of countries with common history according to Eff

Table 16: Variable Description

variable	description	source
time spent in Germany	number of months between arrival in Germany and graduation	KAAD
age	students' age at graduation	KAAD
female	dummy for students' gender (1 if female)	KAAD
children	dummy for having children (1 if student has children)	KAAD
catholic	dummy for being roman catholic (1 if catholic)	KAAD
Agricultural Sciences	dummy for field of study (1 if agricultural sciences)	KAAD
EBP	dummy for field of study (1 if economics, business or politics)	KAAD
German	dummy for field of study (1 if German)	KAAD
Law	dummy for field of study (1 if law)	KAAD
Medicine	dummy for field of study (1 if medicine)	KAAD
Technical Sciences	dummy for field of study (1 if technical sciences)	KAAD
law 1993	dummy for legal situation (1 if graduation between 1993 and 1997)	
law 1997	dummy for legal situation (1 if graduation between 1997 and 2000)	
law 2000	dummy for legal situation (1 if graduation between 2000 and 2005)	
law 2005	dummy for legal situation (1 if graduation after 2005)	
GDP, p.c., Germany	GDP per capita corrected for purchasing power parity in Germany	world bank, WDI
GDP, p.c., Home	GDP per capita corrected for purchasing power parity in home country	world bank, WDI
unemployment rate, Germany	rate of unemployed people with university degree in Germany	IAB
avg. Growth rate, Home	GDP growth rate in home country, three year average	world bank, WDI
tradevolume p.c.	bilateral trade, sum of exports from and imports to Germany divided by population of home country, three year average	DOTS
freedom, Home	15 - sum of civil liberties and political rights indicators (between 1 and 14)	Freedom House
economic freedom, Home	level of economic freedom in home country (between 1 and 10)	Fraser Institute
missing women	dummy for countries in which there are missing women (1 if missing women)	Klasen and Wink (2003)
female labour force participation	percentage of female labour force divided by percentage of female population in home country	WDI
share of catholics	share of population which is catholic	La Porta et al. (1999)
language	linguistic proximity between Germany and home country (1 indicating closest proximity)	Eff (2004)
common history	dummy for common history (colonial and imperial ties) between Germany and home country (1 if ties present)	Eff (2004)
seminar	dummy for participation in KAAD seminar (1 if participated)	KAAD
triphome	dummy for home visit (1 if home visit)	KAAD
prog 1	dummy for program 1 (1 if participant of program 1)	KAAD
prog 3	dummy for program 3 (1 if participant of program 3)	KAAD
africa	dummy for country area (1 if student comes from Africa)	
asia	dummy for country area (1 if student comes from Asia)	
me	dummy for country area (1 if student comes from the Middle East)	
lac	dummy for country area (1 if student comes from Latin America)	
ee	dummy for country area (1 if student comes from Eastern Europe)	
stock of compatriots	number of compatriots living in Germany	Federal Bureau of Migration