Access to Higher Education

Globalization and Access to Higher Education – Policy Implications

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Introduction[3]

The Bologna Process was launched in 1999. Its philosophy is well summarized in the Bologna Declaration, which states that "A Europe of Knowledge is now widely recognized as an irreplaceable factor for social and human growth and as an indispensable component to consolidate and enrich the European citizenship, capable of giving its citizens the necessary competences to face the challenges of the new millennium, together with an awareness of shared values and belonging to a common social and cultural space" (Bologna Declaration 1999). In other words, the main aim of the Bologna Process has been to create a European Higher Education Area (EHEA) based on international cooperation and academic exchange that is attractive to European and non-European students and staff.

This article focuses on one key element that has been neglected in the Bologna Process: the financing of higher education when students and graduates, i.e. (potential) tax-payers, are mobile. More precisely, it deals with the central issue of who will pay for the education of mobile students. This, in turn, raises the questions of: What share of higher education costs should be publicly (viz. privately) financed and which jurisdiction(s) should be taken into account in the financing process?

Imbalanced migration

Ultimately, the Bologna Process should lead to a single market for high skilled labor. Whether this also leads to spill-over effects or externalities and endangers the efficiency of the higher education system in the Europe Union (EU) depends on the extent of student and graduate mobility; and even more on the link between them. Do students who have graduated in one country embark upon their professional career, earn their wage income and pay their taxes in that country? Or do they join the workforce in their country of origin or in another country? There is empirical evidence that mobility increases with the skill level of workers (see, for example, Ehrenberg and Smith 1994, for the US, or Uebelmesser 2006, for Germany). This would suggest that university graduates are comparably mobile. Besides, the mobility of graduates is incentivized by mobility before and during tertiary education (see, for example, Dreher and Poutvaara 2011; Parey and Waldinger 2011; and most recently Voin and Gérard 2013). This means that foreign students are fairly likely to move on after graduation.

In terms of the financing of higher education, graduate, and thus tax-payers', mobility would not present any problem if migration flows were balanced. As illustrated in Table 1, however, the mobility of students is imbalanced. A negative sign means that the country is a net importer of young people – or raw human capital – and a net exporter of graduates – or enriched human capital – if most intra-EU migrant students do not stay after their studies.

Those countries that face a negative balance can be separated into two different groups: one group comprising Austria, Belgium, the Czech Republic, the Netherlands and Denmark, and the other group featuring the United Kingdom.

The members of the first group all have large neighboring countries – France for Belgium, Germany for the other countries – that are quite selective regarding admissions to medical and paramedical studies. Students who fail at the entrance examination level in their own country, either France or Germany, enroll in the

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Table 1

Imbalanced mobility of students in the European Union

Country	Foreign students (%)	Balance of mobility (%)
Austria	11.36	-8.02
Belgium	6.98	-4.62
United Kingdom	4.06	-3.63
Czech Republic	5.21	-3.01
Netherlands	4.17	-2.41
Denmark	2.70	-1.18
Sweden	2.03	0.11
Germany	2.61	0.26
Spain	0.75	0.30
France	1.60	0.33
Hungary	1.20	0.36
Italy	0.54	1.06
Finland	0.74	1.37
Poland	0.11	1.43
Portugal	0.68	2.50
Greece	0.15	4.06
Ireland	1.92	7.47
Slovak Republic	1.59	9.73
Luxembourg	37.00	232.70

Note: Foreign students: fraction of students coming from abroad. Balance of mobility: the number of outgoing students minus the number of incoming students, divided by the total number of students (Erasmus students excluded).

Source: Gérard (2012) based on Eurostat and own calculation.

equivalent programs of their small neighboring countries where language is the same or similar, access to studies is formally easier – no entrance examination – and tuition fees are generally low – they do not exist in Austria, Denmark and the Czech Republic (in the Czech Republic, a EUR 1,000 per term fee is charged to students following courses taught in a language other than Czech), and amount to EUR 830 per year in Belgium and up to about EUR 2,500 in the Netherlands.[4] As a result of EU laws, the nationality of the degree does not preclude practice in another country. So, one could conclude that France and Germany free ride on their small neighbors. The latter face a net inflow of students who are not the best in their field and cohort.[5]

The other group comprises the UK alone. In that country, the language is country specific, but used in the entire world as *lingua franca*, access to studies is intellectually demanding – admission is very selective – and tuition fees are very high by European standards, reaching up to GBP 9,000 a year. The UK, therefore, can be expected to face a different, rather able, group of students.

We can conclude from the stylized facts presented above that the cross border flows of students are imbalanced. In a decentralized world like the EU, where higher education is extensively financed by the government of the jurisdiction that hosts the students, and where tuition fees must not discriminate between EU residents on the basis of their country of origin, imbalanced transfers, and thus externalities, undermine the efficient functioning of the Bologna process. This is *per se* an argument for allocating the responsibility of higher education to the level of the EU, something that is already the case when it comes to the definition of cursus norms, but which seems to be impossible in terms of financing.

The focus in the following is therefore on a decentralized system of financing higher education, whose outcome comes closest to that of a centralized one. We will, in particular, address the question of whether higher education should be financed via taxes or fees. A two-step procedure is called for to arrive at the optimal financing regime with open borders. In a first step, the private and social benefits and the corresponding share of costs which should be borne through fees or taxes have to be determined. In a second step, the specific implementation of the regime has to be considered. This involves the private part and the question of whether tuition fees should be levied at the time of studying or after graduation (as graduate taxes or income-contingent loans). This also concerns the public part and how it should be allocated between the country of education and the country or countries where the social benefits arise. In fact, with migration, the financing would have to be split up among four parties: the graduates, according to their private returns, the country of higher education (the host country), that of previous education (the origin country, possibly identical to that of birth), and the working-country or countries, which benefit from the improved skills of the worker.[6]

[4] See http://www.studyineurope.eu/tuition-fees.

[5] It is worth noting that Denmark is also a net importer of students from other Nordic Countries. We will come back to this case later. We would like to point out that the negative sign for the Czech Republic should be seen together with the positive one observed for the Slovak Republic.

[6] For a more detailed analysis, see Gérard and Uebelmesser (2013).

The private and public parts in a closed economy

Table 2

Private and public benefits and expenditure for higher education

Country	Private benefits*	Public benefits*	Public benefits / total (in %)	Public expenditure / total (in %)
Australia	166,171	93,958	36	45
Austria	236,476	159,110	40	88
Belgium	140,903	177,439	56	90
Canada	183,575	86,318	32	63
Chile				23
Czech Republic	222,826	107,484	32	80
Denmark	106,617	89,239	46	95
Estonia	90,610	26,723	23	80
Finland	173,811	113,999	40	96
France	196,484	101,687	34	83
Germany	184,918	177,091	49	84
Hungary	174,960	215,674	55	
Iceland				92
Ireland	263,123	162,856	38	84
Israel	168,558	88,638	34	58
Italy	173,002	148,338	46	69
Japan	219,138	75,263	26	35
Korea (South)	239,529	47,196	16	26
Mexico				69
Netherlands	226,635	177,804	44	72
New Zealand	99,297	50,303	34	68
Norway	149,158	92,805	38	96
Poland	210,093	106,521	34	70
Portugal	320,627	117,196	27	71
Slovak Republic	187,571	70,037	27	70
Slovenia	222,633	165,223	43	85
Spain	167,788	72,709	30	79
Sweden	114,866	69,956	38	90
Turkey	82,176	38,000	32	
United Kingdom	260,237	115,103	31	30
United States	365,591	204,132	35	38
Average (unweighted)	190,978	112,529	36	70

Note: Data for benefits are from 2008 or latest available year; data for expenditure are from 2009 except for Canada (2008) and Chile (2010).

* Net-present value in equivalent USD converted using PPPs for GDP (mean of men and women).

Source: OECD (2012, Tables B3.2b, A9.3 and A9.4).

As Table 2 illustrates, both the public, i.e. society at large, and the individual benefit in a significant way from higher education. Private and public benefits, as detailed in the table, refer to the difference between benefits that can be claimed by people who have attained a tertiary education and benefits obtained by those who have attained an upper secondary or post-secondary non-tertiary education. Private benefits include differences (positive or negative) in net earnings, transfers and grants; public benefits comprise differences in income tax and social contribution payments, transfers and grants.

We observe that the private and public benefits from higher education are significant in all countries with private ones ranging from EUR 82,000 in Turkey to EUR 365,000 in the United States and public ones from being as low as EUR 26,000 (Estonia) and amounting up to EUR 215,000 (Hungary). With the exception of Belgium and Hungary, public benefits fall short of private benefits in all countries. Comparing public and private benefits could provide some indication of the relative contributions to the financing of higher education by the public and the student. On average, public benefits amount to 36 percent of total returns when the latter are measured by summing up private and public returns. On the contrary, the public expenditure share is almost twice as large at 70 percent.[7]

It is worth making two remarks at this point. Firstly, we have implicitly abstracted here from any market failure. Secondly, we have neglected any further social benefits. Let us briefly consider the implications of these restrictions.

Firstly, in the absence of any market imperfections, i.e., particularly if the credit market is perfect, it is straightforward that there is no justification for additional public intervention if not related to social or public benefits. Additional interventions, however, are called for (independently of benefit considerations) when there are market imperfections related, for example, to borrowing constraints. If there is a mark-up to the interest rate, for instance, which reflects the moral hazard problems (von Weizsäcker and Wigger 2001; Jacobs and van der Ploeg

[7] Public expenditure refers to subsidies, while its counterpart, private expenditure, comprises mostly tuition fees paid by private households. Data are after transfers from public sources, i.e. subsidies attributable to payments to educational institutions received from public sources are included as private expenditure.

2006) or the riskiness of the human capital investment, what would then be the optimal financial regime? If the distortions on the credit market are not too large, there is still an argument for a positive fee level (albeit smaller than in the absence of this market imperfection – and combined with a subsidy from the public sector) in order to induce the optimal number of students with the optimal ability. A pure tax-financing regime can only arise if the distortions are very large. So, distortions on the credit market justify (additional) intervention by the government via tax-financing.

Secondly, among other limitations of the data, the public benefits displayed in Table 2 only comprise of the additional tax revenues from individuals with tertiary education relative to those with non-tertiary education, as well as saved transfer payments. There are other positive public benefits of a more educated population like those related to productivity gains and thus to economic growth. Similarly, many other positive (causal) effects of education have been established, for example, a reduction in crime (Lochner and Moretti 2004) and an improvement in the health status (Webbink, Martin and Visscher 2010).

If these two points were to be relevant, the public expenditure share would increase. Importantly, however, it is very unlikely that, even in such a case, full tax-financing of higher education would be justified (on efficiency grounds). So, in a closed economy, we would expect the tax share in the financing of higher education to roughly reflect the share of public benefits in total benefits from higher education (Table 2). This would point towards a mixed financing system.

The question is whether these conclusions have to be adjusted in an open economy with mobile students and / or mobile graduates.

The specific design in an open economy

Whatever the conclusions may be for a closed economy, it is obvious that a financial regime that relies heavily on taxes is not sustainable in the presence of significant mobility of graduates, i.e. high-skilled and high-wage tax-payers (Justman and Thisse 2000; Demange, Fenge and Uebelmesser 2013). With tax-financing, students receive their education free-of-cost at the time of studying, as it is financed by tax-revenues from those working at that time. This is based, however, on the implicit understanding that in the subsequent period those former-students-and-now-workers finance the next student generation with their tax-payments. But this requires that a sufficient number of those or other graduates is present in the country at that time. If migration is unbalanced (see Table 1), a tax-based regime is only sustainable if there are transfer agreements between the countries affected, in particular between the host country providing higher education and the working-country or countries benefitting from the graduates' increased productivity. If there are no transfer agreements, the sustainability of the public budget requires that the students bear a larger share of the costs involved.[8] Otherwise, the host country will have an incentive to underprovide higher education to foreign students, but also – in the absence of any way of discriminating – to their own native students.

Sharing of education costs among the governments of affected countries

We now discuss the current system of financing the higher education of cross border students in the EU and investigate alternative avenues (Gérard 2007). Currently, in most EU member states except for England, higher education for native and foreign students from other EU countries is mainly publicly funded by the local government of the host country, and thus by the tax-payers of that country (Table 2). Moreover the tuition fees are either zero or equal to a very moderate amount compared to those charged in England or the US (or in the EU to non-EU residents). These features characterize what is referred to here as the Host Country Principle.

A first alternative is the Origin Country Principle. According to that mechanism, the country of origin of a student, say, the country where she/he received secondary education, is responsible for her/his higher education, irrespective of whether the latter takes place at home or abroad. In both cases, it is up to the origin country to pay – and to decide on the number of students it sends abroad. From the perspective of the host country, the incentives to underprovide higher education are reduced.

A system based on the Origin Country Principle can be implemented through the provision of vouchers by the government of a given country to potential students who are residents of that country. Those vouchers may be used for, say, one year of studies in a particular field in an university located at home or abroad, provided it is

[8] Of course, nothing is said here about the relevance of special schemes, scholarships, etc. deemed to alleviate the burden and guarantee equality of chances independent from individual financial resources. See below for further discussion.

recognized as an institution of high quality by the issuer of the voucher. Those vouchers should either cover the actual cost of studies, or a standardized benchmark cost. It is up to the issuer of the voucher to decide whether the vouchers are distributed upon request, or are allocated through a competition; and whether they are made available for free or subject to a present or future (re)payment. Vouchers could also finance the cost of living during the studies or be targeted at certain socio-economic groups, or may even be used as instruments to incentivize young people to study for jobs which are not very attractive or poorly compensated, although socially highly desirable.

Provided that other countries commit to not admit students without a voucher, this device expands the geographical area of sovereignty to the set of those participating countries, for example, the Bologna Area or the EU. As an example, let's imagine that Germany limits the number of students admitted to the first year of medicine in German universities in order to optimize the supply of medical services in the future; those young Germans who go to Austria and enroll in the schools of medicine there try to bypass the German numerus clausus – at least in cases where they plan to return to Germany after they have obtained their MD degree. If we move to the Origin Country Principle, only those young Germans with a voucher issued by the German authorities will be admitted to Austrian schools of medicine; thus the decision to admit those students for studies in medicine, even outside Germany, is in the hands of the German authorities, who are then in a position to expand the application of their numerus clausus rules and thus their area of sovereignty. Similarly, Austria has the opportunity to sell the quality of its medical schools while being in accordance with German public health policy.

Although the vouchers depicted above channel the transfer implied by the Origin Country Principle through students, that transfer may alternatively be directly operated by governments. This is already the case in Switzerland and in the Nordic Countries. In Switzerland, cantons that do not have universities pay for the studies of their residents in universities located in other cantons.

Among Nordic Countries, a similar transfer system is at work. To illustrate the Nordic system, based on a four country agreement, it is worth noting that: "the previous agreement was signed in 1996, and the new agreement will be effective from 1 January 2013 for Denmark, Finland, Norway and Sweden (…) The new agreement means that the yearly compensation per student for Denmark will be DKK 22,000 (USD 3,800) in 2013 – the same as it was in 2012 – rising to DKK 30,000 (USD 5,200) in 2014. The compensation will be regulated according to the consumption index calculated each year by Statistics Denmark. Under EU regulations, Denmark is obliged to treat citizens of the EU and the European Economic Area the same as Danish citizens, which means that European students are entitled to free higher education in Denmark. The compensation agreement has been concluded despite this, with the cost to be carried by governments rather than by individual students."[9] This quotation seems to indicate that direct transfers between governments are a way of bypassing EU legislation.

Implementing transfer systems either via vouchers to students or via inter-governmental transfers would alleviate the problems related to open economies and to the sustainability of public budgets. This would make it possible to maintain the cost sharing and the corresponding tax-fee mix as derived above. As far as we know, however, the inter-cantonal transfer systems at work in Switzerland and in the Nordic Countries are among the very few such mechanisms implemented so far. This means that most countries do not have a compensatory system. Globalization and increased flows of students and graduates then require a shift of the cost share to the students if the public budget is to be sustained, and if a race to the bottom in terms of educational quality or, in general, an underprovision of higher education is to be avoided.

Shift towards fee-financing

The main question is how a larger financial contribution by the students should be implemented when graduates are potentially mobile and the negative consequences of this shift towards fee-financing for equality of chances are to be avoided.

A new application of the Bhagwati Tax, proposed by Bhagwati (1976) and again by Wilson (2008), is one possible such mechanism. Those who have studied at the expense of one country and currently work in another country have to compensate the former for the cost of their higher education. In practice, that may take the form of a transfer by the government of the latter coun-

[9] See University World News, 03 November 2012, http://www.universityworldnews.com/article.php?story=20121031163939447#.UJOYFr7pNiM.email.

Table 3

Benefits and costs for the host, origin and working countries

Country	Host country of higher education	Origin country	Working-country
Host Country Principle	Benefit = remaining graduates Cost = Studies	Benefit = returning graduates Cost = Opportunity	Benefit = attracted graduates No cost
Origin Country Principle	Benefit = remaining graduates No cost	Benefit = returning graduates All costs	Benefit = attracted graduates No cost
Origin Country Principle + Bhagwati Tax (BT) or Contingent loan	Benefit = remaining graduates Cost = BT on remaining	Benefit = returning graduates Cost = All - BT	Benefit = attracted graduates Cost = BT on attracted

Source: The authors.

try to the government of the former within an agreement similar to the Nordic one mentioned previously, although the compensation now occurs *ex post*. If the Host Country Principle applies for the financing, the transfer is to that country; but then the opportunity cost supported by the country of origin is not offset – by opportunity cost we mean the loss of domestic GDP generated by people studying instead of working. If the Origin Country Principle applies, the transfer is to the origin country and may include the compensation of the opportunity cost. In fact, that latter case, which combines the Bhagwati Tax with the Origin Country Principle, might be better since a transfer may offset both the opportunity cost and the cost of studies in that case. Table 3 summarizes the arguments developed so far.

If the compensation is borne by the students, the question once again is how to implement it. Given that students are subject to credit constraints at the moment of their studies, an instrument to remedy the negative repercussions from an efficiency and distributional point of view is to turn the vouchers described above into contingent loans (see, for example, Barr 2012; Del Rey and Racionero 2012). Payments would then only be due if the graduates' earnings were to exceed a given threshold. So, upfront fees are changed into fees after graduation; and in addition, they include an insurance element whereby successful graduates (and, depending on the specific design, also all other tax-payers) cover the contribution due by unsuccessful students.[10]

If payments associated with the contingent loans are deductible against personal income tax liabilities – imagine a tax credit – in the country of residence, this mechanism is similar to the Bhagwati Tax, except possibly for its timing. Alternatively, when the graduate stays abroad, the charge of the loan might be isolated by the local tax administration and transferred to the country of origin deemed to have made the loan.

Some empirical relations

Taking all of this into consideration, it is interesting to see the extent to which the financing-mix of higher education reflects these observations. What can be said is that the systems differ significantly between countries in terms of the relative importance of public and private financing (Table 2). At one end of the spectrum, we find the Nordic Countries with a public share of close to 90 percent and above. In Germany, the share is 84 percent and in France 83 percent. At the other end, there are the United Kingdom, South Korea and Chile, each with a public share of less than 30 percent, followed by Japan with 35 percent and the United States with 38 percent. Comparing public expenditure for higher education as a share of total expenditure between 2000 and 2009, a trend towards more private contributions can be identified (OECD 2012, Table B3.3). This holds, in particular, for the United Kingdom where the public share in 2009 is less than half of what it was in 2000. Exceptions are the United States, Ireland and Spain where the private share decreased by more than five percentage points.

So, the financing schemes differ between countries, but do they also differ in a systematic way? We have dis-

[10] Whether all students – also the best ones who expect to earn income above the threshold – have incentives to voluntarily participate in such a scheme or whether the scheme has to be made compulsory is not addressed here.

cussed above that we would expect a positive association between the tax-fee mix of financing higher education and the public-private mix of benefits on the one hand, and a negative association between that tax-fee mix and graduate (tax-payer) mobility on the other hand. Of course, there are many additional relevant factors that we do not take into account here. The correlations below are, therefore, only intended to highlight some basic relations, which can be observed in a cross-country perspective.

Considering first the relation between public benefits from higher education and public expenditure on higher education (both as shares of the respective totals), we find a positive and highly significant association (Figure 1). So, a larger share of public benefits goes hand in hand with a larger share of public expenditure, although to a lesser degree than one-to-one.[11] In Germany, for example, the public benefit share is 49 percent and the public expenditure share is almost twice as large at 85 percent, while in France, the difference is even more important with a public benefit share of 34 percent and a public expenditure share of 81 percent.

As countries are affected differently by student and graduate mobility, the second point of interest is how graduate mobility relates to the public share of total expenditure for higher education. The hypothesis is that with a high level of graduate out-mobility, a system of financing higher education that relies mostly on taxes (and not on tuition fees) is not sustainable as a (net) outflow of graduates also reduces the number of (potential) tax-payers.

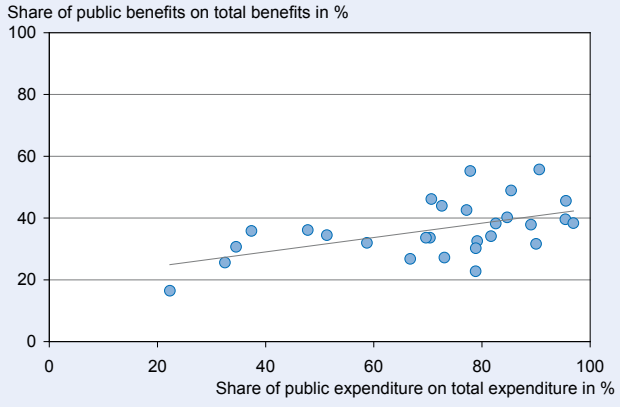
As data about graduate mobility are not available, we make use of data about the net brain gain (Docquier and Marfouk 2005). Figure 2 shows that there is a negative, but insignificant relation. This result also holds if the Nordic Countries are excluded. Following our arguments above, one could have expected that, for these countries, the mobility of students and graduates should not affect the choice of the financing mix as much as for the other countries given their inter-governmental transfer system.

A negative brain gain, i.e. a net outflow of highly educated workers is not associated, on average, with a larger share of private expenditure on total expenditure for higher education in the sending (host) country. Countries with comparable net outflows of between 0.4 and 0.6 percent have very different financing regimes with only the United Kingdom relying much on private contributions (public share of 35 percent), while Italy, the Czech Republic and Austria have large public shares of, respectively, 70, 79 and 85 percent.

On the other hand, the importance of public expenditure in immigration countries is relatively modest. Australia, with a net brain gain of 11.4 percent, relies on private and public financing in a very balanced way (public share of 48 percent). The public contributions to the financing of higher education are slightly larger for Canada with 59 percent and a net inflow of highly educated migrants of 10.7 percent, while the United States, with a net inflow of 5.4 percent, has the smallest public expenditure share of these three immigration countries with 37 percent.

Figure 1

Relation of public benefits to public expenditure



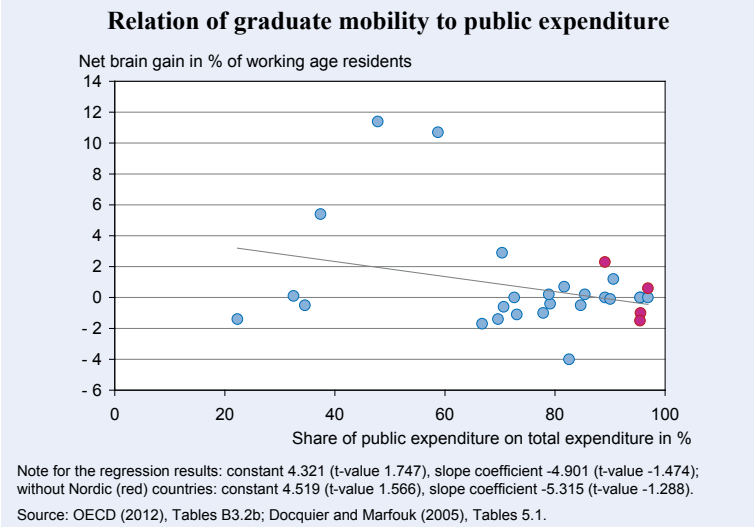
Note for the regression results: constant 0.197 (t-value 3.357), slope coefficient 0.233 (t-value 3.122).
Source: OECD (2012), Tables B3.2b, A9.3 and A9.4.

[11] Remember, however, that public benefits do not include (positive) externalities and are, therefore, underestimated.

Policy conclusions

The analysis conducted in this article might lead to the following policy conclusions. Given the externalities related to the public provision of higher education with mobile students and graduates, their internalization calls for a system as close as possible to a centralized one. The system should include cross border transfers

Figure 2



Note for the regression results: constant 4.321 (t-value 1.747), slope coefficient -4.901 (t-value -1.474); without Nordic (red) countries: constant 4.519 (t-value 1.566), slope coefficient -5.315 (t-value -1.288).

Source: OECD (2012), Tables B3.2b; Docquier and Marfouk (2005), Tables 5.1.

aimed at compensating the country that finances higher education without sharing in the benefits – mostly the host country. Otherwise, there are strong incentives for that country to underprovide higher education if it is (mostly) publicly financed or to shift the financing-mix towards fee-financing. A compensatory system might be implemented as a (comprehensive) Bhagwati Tax where the transfer is from government to government. If the compensation relies on transfers by the students, income-contingent loans might be considered.

To date, compensatory transfer systems have not been implemented in Europe – with the notable exception of the Swiss system of inter-cantonal transfers and the Nordic one. Neither have the national systems of financing higher education been adjusted to increased student and graduate mobility.

It remains to be seen when the most concerned countries will put these issues on their agenda. If they plan to do so, this contribution is meant to provide some guidelines.

References

Barr, N. (2012), "Financing Higher Education: Mobility, Quality and Access", paper presented at the conference on *Cross Border Mobility of Students and Researchers: Financing and Implications for Economic Efficiency and Growth*, CESifo Venice Summer Institute, Venice.

Bhagwati, J. (1976), *Taxing the Brain Drain*, vol. 1, *A Proposal and the Brain Drain and Taxation*, vol. 2, *Theory and Empirical Analysis*, North Holland, Amsterdam.

Bologna Declaration (1999), *Towards the European Higher Education Area*, Conference of Ministers responsible for Higher Education in 29 European countries, Bologna.

Del Rey, E. and M. Racionero (2012), "Choosing the Type of Income-Contingent Loan: Risk-Sharing versus Risk-Pooling", paper presented at the conference on *Cross Border Mobility of Students and Researchers: Financing and Implications for Economic Efficiency and Growth*, CESifo Venice Summer Institute, Venice.

Demange, G., R. Fenge and S. Uebelmesser (2013), "Financing Higher Education in a Mobile World", *Journal of Public Economic Theory*, in press.

Docquier, F. and A. Marfouk (2005), *International Migration by Educational Attainment* (1990-2000) - Release 1.1., The World Bank, Washington.

Dreher, A. and P. Poutvaara (2011), "Foreign Students and Migration to the United States", *World Development* 3, 1294–1307.

Ehrenberg, R. G. and R. S. Smith (1994), *Modern Labor Economics: Theory and Public Policy*. Harper Collins, New York.

Gérard, M. (2007), "Financing Bologna: Which Country Will Pay for Foreign Students?", *Education Economics* 15, 441–54.

Gérard, M. (2012), "Who Is to Pay for Mobile Students?", in A. Curaj, P. Scott, L. Vlaseanu and L. Wilson, eds., *European Higher Education at the Crossroads: Between the Bologna Process and National Reforms*, Springer Science+Business Media, Dordrecht, 727–48.

Gérard, M. and S. Uebelmesser (2013), "Cross-Border Mobility of Students and Researchers: Background Paper", mimeo.

Jacobs, B. and F. van der Ploeg (2006), "Guide to Reform of Higher Education: A European Perspective", *Economic Policy* 21, 535–92.

Justman, M. and J. F. Thisse (2000), "Local Public Funding of Higher Education when Skilled Labor Is Imperfectly Mobile", *International Tax and Public Finance* 7, 247–58.

Lochner, L. and E. Moretti (2004), "The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports", *American Economic Review* 94, 155–89.

OECD (2012), *Education at a Glance 2012: OECD indicators*, OECD, Paris.

Parey, M. and F. Waldinger (2011), "Studying Abroad and the Effect on International Labour Market Mobility: Evidence from the Introduction of Erasmus", *The Economic Journal* 121, 194–222.

Uebelmesser, S. (2006), "To Go or not to Go: Emigration from Germany", *German Economic Review* 7, 211–31.

Voin, M. and M. Gérard (2013), "A Contribution to the Study of Global Competition for Talent: The Determinants of Student Mobility and its Consequences for the Internationalization of the Labor Market", Bruges European Economic Policy Briefings (BEEP) 27., College of Europe, Bruges.

Webbink, D., N. G. Martin and P. M. Visscher (2010), "Does Education Reduce the Probability of Being Overweight?", *Journal of Health Economics* 29, 29–38.

Weizsäcker, R. K von and B. U. Wigger (2001), "Risk, Resources and Education", *IMF Staff Papers* 48, 547–60.

Wilson, J. (2008), "Taxing the Brain Drain: A Reassessment of the Bhagwati Proposal", in E. Dinopoulos, P. Krishna, A. Panagariya and K. Wong, eds., *Trade, Globalization and Poverty,* , Routledge, London, 254–262.