

Chapter 39

Who Is to Pay for Mobile Students?

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39.1 Introduction

In most European countries, higher education tuition fees are especially low if not zero. This does not mean that university studies are free goods. Indeed, graduates are expected to get higher wages than less skilled people and, therefore, to pay higher taxes, especially in those countries where labour income tax is progressive. In that sense, students receive implicit loans from the government during the time of their studies that they later repay possibly with an interest, in a way contingent to the income generated by their studies. One could conclude from that simple reasoning that the current system of financing higher education is close to a contingent loan mechanism, namely a system where the students receive money covering the cost of studies and sometimes the cost of living, and pay back that amount after their graduation, in line with their income.

That reasoning holds in a world where the graduates pay their tax in the country where they graduated. However, it no longer holds in a setting where people graduate in one jurisdiction and then have their career in another one or in some other

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Table 39.1 Imbalance in the mobility of students within the EU (2008)

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

Source: Eurostat and own computation

countries. In such a setting, one country pays for the cost of studies and other countries benefit from the skill, the contribution to the local GDP and tax revenue.

In today's European Union we are in some sense moving from the first to the second setting even if the first one still extensively dominates. However, the second setting may no longer be ignored; on the one hand, it corresponds to an emerging single market for high skilled labour, and on the other hand, it creates spill over effects or externalities which call for internalisation if one wants to improve the efficiency of the higher education system in Europe.

The latter issue is addressed in this paper. In other terms, our research question is 'who is to pay for mobile students?' By 'who' we mean which jurisdiction, as well as which individual. In other terms, we plan to investigate a key missing character in the Bologna Process: its financing side.

Prior to go ahead with that issue, we may usefully document on the mobility of students in Europe and the relevance of the issue we cope with; this is done in Sect. 39.2 where the contemplation of Table 39.1 especially deserves interest since it motivates our investigation¹. Based on the examination of those stylised facts, with a focus on the imbalance in student migration, the research question actually becomes: 'how to internalise the negative externality imposed to Austria, Belgium and similar countries by their large neighbours'?

Then, in Sect. 39.3 we briefly examine, based on the existing literature, the impact of student mobility, including on economic growth. Section 39.4 is the core of the paper. It presents, in words, a series of models that we elsewhere develop more formally (Gérard 2007, 2010a, b), which set forth the relative inefficiency – or degree of efficiency – of alternative ways to finance mobile students. We first describe the system currently operated in Europe based on a host country principle; we then turn to another system based on the alternative origin country principle. Then we relate to the latter model the use of two-part vouchers – shown to be also

¹The table is explained in Sect. 39.2.4 below.

instruments to direct students towards some fields of study and to favour some targeted groups within the population –, of a Bhagwati tax and of contingent loans. In Sect. 39.5 we highlight those developments by three country cases referring to Norway, Australia and Switzerland, respectively. Policy suggestions conclude the paper in Sect. 39.6.

The literature on the subject of this paper includes Mechtenberg and Strausz (2008, 2009, 2010) and their references. For those authors ‘the most stable result (...) is that although increasing mobility (...) will lead to higher private investment in education, public provision will decrease. The government will tend to free-ride on the education system of other country’. Similar results might be read in Buettner and Schwager (2004); next to the free riding effect, Kemnitz (2005) sets forth the competition between governments to provide education to mobile students.

39.2 International Student Mobility

International student mobility is not a new phenomenon. To make an example, let us mention that, for a long time, German students were known for their travelling across German states for the purposes of studying. Also, many professors currently teaching in EU universities have spent one or more years in US institutions. The importance of the phenomenon, however, is sharply growing and it is encouraged by the European higher education system through fellowships like Erasmus or the European Research Council (ERC) scholarships, and by the approximation of the degrees and information of supplements to diploma set up by the Bologna Process.

Student mobility is now regarded as part of the European culture, as a means to favour peace, prosperity, and employment through the raise of a single market for graduates or high skilled labour. Moreover, many governments consider the mobile students as future ambassadors; they contribute to a positive recognition of their own country abroad, and when they come back home, to a positive recognition of the host jurisdiction.

39.2.1 *Who Is an Internationally Mobile Student?*

In this contribution, international student mobility relates to higher education, sometimes also called tertiary education. We may use the definition suggested by Kelo et al. (2006); for them, mobile students are ‘students who crossed a national border to study or undertake other activities relating to the studies, for a part or less than one syllabus or for a certain period of time, in the country in which they moved’.

We understand that international student mobility implies a physical move, inducing a cultural contact with the country in which they study; that rules out e.g. distance learning.

Considering three main criteria for mobility, Chevalier and Gérard (2010) propose a useful diagram to understand the concept – see Fig. 39.1. In that figure,

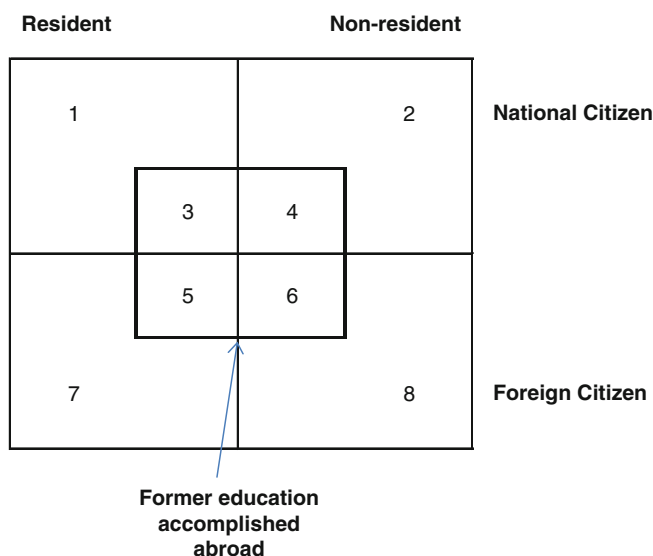


Fig. 39.1 Criteria for determining an internationally mobile student (Source: Chevalier and Gérard 2010)

a (non-) resident means an individual who is (not) a permanent resident of the country in which the individual is studying; and a national (vs. foreign) citizen refers to an individual who does (not) have the nationality of the country in which the individual studies.

Students located in box 6, who study in a country whose they are neither citizens nor permanent residents and where they did not obtain their previous degree (say, the degree received for secondary education) are the sole ones to be regarded as truly mobile. That definition will be taken into account in the theoretical and policy sections of this paper, though it is more severe than the concept used in many statistics where the citizenship plays a major role.

39.2.2 Which Are the Main Host Countries for Internationally Mobile Students?

According to OECD data, the number of internationally mobile students enormously increased in the recent past. Indeed, in little more than 30 years, it was multiplied by four, to reach approximately 3.3 million individuals in 2008.

Figure 39.2 enables us to observe the distribution of student mobility across host countries. It is to be noticed that a little more than 40% of the mobile students move to Anglo-Saxon countries and that more than 30% move to EU Member States. More generally, nearly three quarter of the mobile students are concentrated in 17 countries. These countries are all among those with the highest GDP per capita.

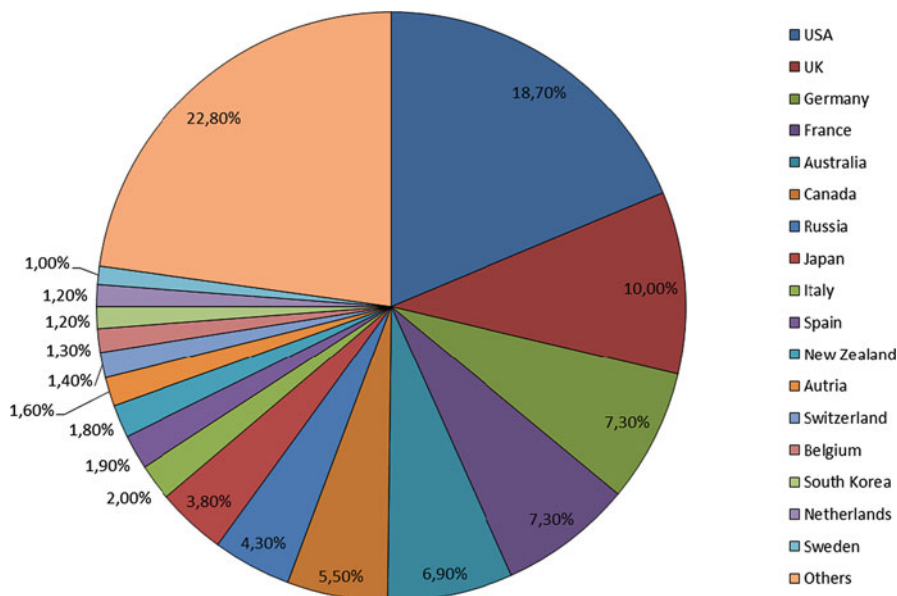


Fig. 39.2 Market share of the main host countries in international student mobility (Source: OECD 2010)

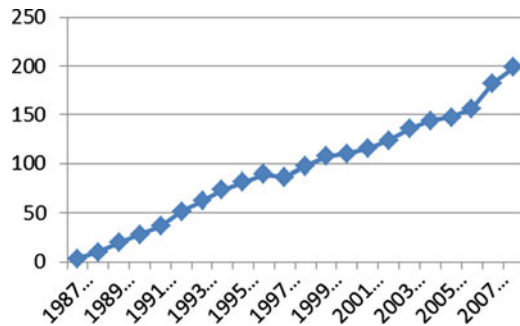
Though not illustrated here, the distinction made by Rivza and Teichler (2007), who suggest two types of mobility, deserves interest; those two types are: the ‘vertical’ mobility, which primarily concerns flows of students going from developing to developed countries, and the ‘horizontal’ mobility which corresponds to students moving between similarly developed countries, say between European countries, respectively.

39.2.3 *The Erasmus Programme and the Bologna Process*

The European Union started 60 years ago. Its main objective was to build up a union organised around the coal and steel industries. Today, one of the objectives of the EU Member States is to set up a single European labour market, a condition for a monetary union to function. Another objective is to make the EU the most advanced area in research, development and innovation – see the Lisbon Agenda (European Council 2000), the Sapir Report (Sapir et al. 2003) and more recently the Europe 2020 Strategy (European Commission 2010a), especially the flagship “Youth on the move”.

Both the Erasmus Programme and the Bologna Process might be read today in that prospect. In 1987, the ERASMUS Programme was launched, encouraging EU students to spend a term or a year of their higher education in an institution located

Fig. 39.3 Number of students in the ERASMUS programme (Source: European Commission 2010b)



in another Member State. This programme has been especially successful, as we may observe in Fig. 39.3.

The Bologna Process was not an initiative of the EU itself, when launched in 1999; its initial goal was to build up a European educational space by 2010. Although it was signed by the Ministers in charge of higher education of 46 European countries, this process does not rest on an intergovernmental arrangement. Its philosophy is well summarised in the Bologna's Declaration (Bologna Declaration 1999). That declaration states that 'A Europe of Knowledge is now widely recognised 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'.

Then participants recognise the 'Importance of education and educational co-operation in the development and strengthening of stable, peaceful and democratic societies' and the 'Universities' central role in developing European cultural dimensions'. They promote the 'creation of the European area of higher education as a key way to promote citizens' mobility and employability and the Continent's overall development'.

In line with this philosophy six main goals were to be implemented,

- Adoption of a system of easily readable and comparable degrees in order to promote European citizens employability and the international competitiveness of the European higher education system.
- Adoption of a system essentially based on two main cycles.
- Establishment of a system of credits as a proper means of promoting the most widespread student mobility.
- Promotion of mobility by overcoming obstacles to the effective exercise of free movement.
- Promotion of European co-operation in quality assurance.
- Promotion of the necessary European dimensions in higher education.

Since then, those goals have turned into action lines, work plans and objectives which have evolved with time.

Though both the Erasmus Programme and the Bologna Process favour students' mobility, a main difference exists between those two features. The Erasmus

Programme is an exchange programme; a student staying abroad in that framework remains enrolled in the institution of his/her country of origin and is just ‘in exchange’ in the host institution, where he/she is not asked to pay a tuition fee; usually Erasmus students do not appear in statistics of foreign students. Unlike that, within the Bologna framework, a student enrolls in the school where he/she actually attends classes for a term, a year or more, pays a tuition fee in that institution and is permitted to impute the credits obtained abroad – the so-called ECTS – on the programme he/she follows in her original country.

39.2.4 *Imbalance in Students Migration*

Table 39.1 completes this section and provides the data which eventually motivate this paper. The second and fifth columns represent the share of foreign students of European nationality enrolled in the tertiary education of the host country. The third and sixth columns represent the difference between the number of nationals going abroad for the purpose of higher education (HE) and the number of incoming foreign EU HE students, divided by the total number of HE students in the country. A negative (viz. positive) figure of that balance means that the country hosts more (viz. less) EU foreign students than it sends nationals to other EU institutions.

In other terms, countries like Austria, Belgium, United Kingdom, the Czech Republic, Netherlands and Denmark are thus net importers of students and net exporters of enriched human capital. Such imbalances deserve investigation and are at the root of a challenge for the financing of higher education in Europe. However, the cases of those countries are far from being identical.

Belgium and Austria share a common border and a similar language with a large neighbouring country where *numerus clausus* is at work in medical and paramedical disciplines. Moreover, they charge low tuition fees to local students and, therefore, are bound to charge similar low fees to nationals from other EU countries. Then, numerous students not accepted in German and French schools go to Austria or Belgium.¹ The same kind of argument holds for the Czech Republic, Netherlands and Denmark who also have a common border with Germany; the Czech figures have also to be related with the Slovak ones. One can say that, in those countries, immigrant students are not the top ranked graduates of secondary schools. Further, due to the low tuition fee charged, the human capital of EU immigrant students is enriched at the expense of local taxpayers.

The British situation is very different. It is attractive for foreign students because it provides higher education of good quality taught in the most international language. Those characteristics are sought by talented students who regard the high tuition fee charged to both British and EU students as an investment in their future.

¹According to OECD (2010), there are 16,650 French students in tertiary education in Belgium against 2,768 Belgian students in France; similarly, there are 17,464 German students in Austrian tertiary education against 6,419 Austrians in Germany.

In the rest of the paper we leave aside the case of the UK while we consider that of the other net student importing countries as the stylised fact motivating this investigation. The research question then becomes: “how to internalise the negative externality imposed to Austria, Belgium and similar countries by their large neighbour”?

39.3 Evaluation of the Impact of Student Mobility

The economic literature recognises various effects on international student mobility. Among them, it sets forth a positive link between mobility and economic growth. More generally, studying abroad generates individual and collective positive impacts. Individual effects include access to a foreign culture which may help finding a job in a foreign country after graduation; that opportunity, however, still needs extra empirical evidence. Collective impact stems from mobility making it possible to bring closer different cultures and nations, and then favouring peace among them.

If we focus on the economic effects, two groups appear: simultaneous and direct effects on the one hand, and differed and indirect effects on the other hand.

39.3.1 Simultaneous and Direct Effects

The direct economic effects are quite clear. They relate to the economic impact of hosting foreign students on the territory. Like national students, international students contribute to the expansion of the real estate market and spend money in local stores. But, on the other hand, they generate a cost for the local community due to the hosting related expenditures, namely in terms of teaching and support staff. Since most foreign students do not remain in the host country after completing their studies, that cost is a sunk cost.

Direct economic effects also occur for the country of origin of the students since there is some probability that those students will not come back home after their stay abroad or not have their career at home, which means a loss of skill and of contribution to GDP.

According to Throsby (1999), all in all the impact for the host country is neutral. For the country of origin that impact is more ambiguous. In the case of Germany, it seems that there exists a direct cost in terms of student support, and also in terms of lost output and less social contributions; in Sweden however, the effects seem to be balanced.

39.3.2 Differed and Indirect Economic Effects

A stay abroad also improves human capital indirectly. The economic literature stresses that human capital obeys a process of accumulation. In that respect, a stay abroad, like other features of life and education, is an experiment which may add to the accumulation of knowledge and help improving productivity. This is so because,

next to making it possible for an individual to attend classes in another, possibly better, university, staying abroad means being confronted to a new environment. This environment may include the use of another language and the adaptation to a different culture. Such an experiment is positive in terms of productivity; indeed, the mobile students acquire concepts harder to get domestically and they expect that their future employer will recognise that they have a larger capacity in terms of integration and practice of a foreign language.

Moreover, mobility enables creating cross border networks. Former mobile students will be able to propose new outlets for trade to their employers. A good example is reported by Hsu and Saxenian (2001); they set forth the important links woven by a community of Taiwanese people which had settled in Silicon Valley, California. That network effect seems particularly important, though not easily measurable.

The following two questions are especially relevant for our purposes:

- Do studies abroad influence the geographic area in which current mobile students evolve? and
- Do studies abroad influence the geographic area in which former mobile students will evolve?

Large numbers of foreign students could affect the structures that host them. In that respect, Ward (2001) proposes to study the following four questions: What is the nature of the interaction and relations between the international students, the local students and the host institutions, respectively? What is the difference in terms of use of the institutional support between the international and local students? What is the impact of the mobile students on teaching and training? And what are the conditions so that positive effects of internationalisation appear?

These questions led the author to note that the interactions between local and foreign students are weak, even non-existent. It also seems that the impact of the foreign students on the local teaching habits is very weak and that the internationally mobile students have very little influence on the functioning of the institutions in the host country.

One of the most important impacts of student mobility consists in a shift of human capital. If one admits that studying abroad increases the probability of working abroad later in the career, one can easily imagine that international student mobility will allow the creation of an efficient EU wide job market which would permit a better allocation of resources and thus a stronger growth.

Oosterbeek and Webbink (2009) study the impact of a subsidy on the cross border mobility of individuals who pursue higher education in the Netherlands. Their first results, using ordinary least squares, show that the subsidy increases the probability of studying abroad from 25% to 30% and the number of months spent abroad from 5 to 8 months. They also show that recipients of the help have the probability of living in the Netherlands during the first years of their professional career decreased by 30%. Further, second results based on instrumental variables reinforce the first findings: studying abroad increases the probability of settling abroad by 100%, each month spent abroad decreasing the probability of living in the Netherlands at the beginning of the career by 4–5%. This study confirms the

intuition issued above; however it refers to the sole case of the Netherlands and it would be interesting to see similar studies for other countries.

Jahr and Teichler (2001) summarise the results of a study undertaken by the Center for Research on Higher Education and Work of the University of Kassel in Germany, over the 1989–1994 period of time. The goal of this study is to analyse the impact of a temporary stay abroad during the studies. The investigation reveals that the students who studied abroad think that their stay was positive for their personal development and the learning of other cultures and foreign languages. However, the majority of the students estimate that the stay abroad did not have a decisive impact on their future job from the point of view of the qualification or remuneration. On the other hand, the authors mention that, among the students actually employed 5 years after the stay, 18% work abroad (9% in the country which hosted them during their Erasmus stay, and another 9% in another country), a figure which is 2–3% higher than the European average. Five years later, a new questionnaire addressed to those individuals reveals that half of them frequently use the language of the country which hosted them; and that approximately one-third always use competences acquired abroad. And even for those who do not work abroad, the knowledge acquired during their stay is important for their employment.

That new study tends to confirm the effects that we anticipated above. For the authors, however, it is likely that the study is biased. Indeed, it is pretty sure that the most mobile people have also little time for filling-in a questionnaire. In the same way, one can think that some competences had already been acquired in the country of origin – like mastering the language – or that the students who left had already an experience of living abroad.

The work of Parey and Waldinger (2011) tries to avoid the above bias. Through a more complex econometric methodology, their first conclusion is that granting more subsidies involves larger student mobility and increasing professional mobility. Then, using a large database on German students, they investigate the causality between student mobility and professional mobility; their results show that studying abroad increases the probability of working abroad from approximately 15–20%. Moreover, it seems that students tend to migrate to the countries where they stayed during their studies.

39.4 Theoretical Analysis

The developments above were devoted to the presentation of stylised facts motivating this study (Sect. 39.2) and to that of results from the economic literature able to highlight some aspects of the topic (Sect. 39.3). Now we turn to a theoretical analysis based on Gérard (2010a, b). It assumes a deliberately simplified world in order to set forth some results that may eventually be turned into policy propositions.

We first assume that higher education is entirely financed by local taxpayers and we call such feature an application of the *host country principle*. Then we turn to an alternative principle: studies are financed by the country where students got

their previous degree; in such a system, studies are paid by the country from which the student comes and we can name that an application of the *country of origin principle*.

In order to circumvent the difficulties of implementing the latter system we explore close specific designs like a system of two-part vouchers granted by the country of origin government. In that case, the first part of the voucher is dedicated to cover the cost of the studies either at home or abroad provided it is in an institution whose quality has been recognised by the issuer of the voucher. The second part of the voucher aims at providing a *student wage* which might be also an incentive for attracting students to higher education in general, through an extra wage for students belonging to targeted groups, or to specific fields of study.

39.4.1 *The Host Country Principle*

Let a Union consisting of two countries. Each wants to maximise the social welfare of its population which depends on the number of graduates from higher education who work in the country, producing GDP. Resident students educated abroad and foreign students hosted in the country and remaining in the territory after completing their studies might be more productive than purely domestically educated residents. This is why countries have to decide on the degree of international opening of their workers, represented by the number of credits (or ECTS) that they intend to deliver to students coming from abroad; such a mechanism encompasses the *quotas* of foreign students introduced by Austria and Belgium in some fields of study. There is no tuition fee charged to students and the costs of providing higher education are supported by local tax revenue. Furthermore, there is no difference in costs between national and international students, or between countries.

Externalities are clearly at work in such a setting. Indeed, a country only cares about students who will work on its territory and thus only includes those people in its objective function neglecting the human capital represented by foreign students educated in its territory but who go back home after completing their studies; those students will increase the GDP in their country of origin.

This model makes it possible to build up a two country infinitely living non-cooperative game and to draw two main conclusions from the obtained Nash equilibrium. On the one hand, too few credits, or seats in the auditorium, are proposed to foreign students as compared with an efficient benchmark where the governments – or a supranational authority – jointly maximise the social welfare of their two countries taken together. On the other hand, the number of credits supplied to foreign students decreases when the probability that they return home at the end of their studies increases; indeed those students will not contribute to local the GDP in the future.

The policy lesson driven by this model is that using quotas to limit the number of foreign students is an inefficient option; we come back below on that issue.

39.4.2 *The Country of Origin Principle*

Let us suppose the same theoretical framework as in the previous model. But studies of foreign students are financed by the country where they come from; that country is termed their country of origin and it has to finance the studies of its students. Henceforth, each government has to choose the quantity of credits permitted to be obtained by the students it sends abroad or, more simply, to decide on the number of students it sends abroad.

One can show that, although it is still inefficient compared with the efficient benchmark above, the outcome of this design is more efficient than the previous one provided that the probability of returning home after completion of the studies is higher than a given threshold. By ‘more efficient’ we mean that the number of credits or of foreign students is closer to that generated by the efficient benchmark. The reason of the efficiency gain is that countries now decide on their provision of seats in the auditorium or of ECTS based on the domestic students expected to return home after their studies abroad instead of the foreign students supposed to stay in the host country after those studies, the share of the former being larger than that of the latter.

We may conclude from these two models that the country of origin principle supports a more efficient solution than the current application of the host country principle, even if neither of those principles makes it possible to eliminate the free-riding phenomenon at work: a country might have the studies of the further contributors to its own GDP financed by taxpayers of the other country.

However, the implementation of that second model raises some issues. A simple solution should be that the two countries agree on jointly implementing that design. They may do that through, say, a bilateral treaty like treaties existing on tax or social security matters; or through a directive decided by the EU authorities. In that case, each country commits to pay the actual costs of studies – not the nearly or actually zero tuition fees – of its origin students to the other country, provided that the students enrol in schools agreed by the country of origin, by which it is meant that the quality of their education is recognised by the country of origin. That recognition might be based on a principle of mutual recognition or on the use of a quality certification process.

However, we may question the reasons why a country of origin is prepared to pay for studies in another jurisdiction. In other words, will Germany or France be ready to approve a treaty or a directive implying that they have to pay for the studies of their residents in Austria or in Belgium? Of course, we cannot rule out such possibility, e.g. in the framework of a policy package or in that of a more integrated higher education policy; nevertheless, for the time being, it is hard to imagine such policy design being easily adopted. Therefore, we should consider other, possibly close, designs. The first one comes out to be a good proxy for the just above described mechanism, the other two potentially involve a more efficient outcome. The first one is based on vouchers delivered by the country of origin; the second one, on a Bhagwati tax and the last one on contingent loans.

Please note that, within the European Union, the country of origin principle currently applies for health care abroad: a Belgian citizen hospitalised in Spain will have his/her health care eventually paid to Spain by Belgian social security. In higher education matters, the principle applies in Switzerland – see Sect. 39.5 below – where a canton without a university pays the cantons with a university that host its students.

39.4.3 A Two-Part Voucher System

Rather than explicitly transferring means to partner country, one may imagine a European or Bologna area reform of higher education financing based on a system of vouchers; and, if possible, a system of two-part vouchers.

39.4.3.1 First Part of the Higher Education Voucher: Covering the Cost of Studies

By that system, we first mean that the government of the country of origin provides its prospective students with vouchers that they may use to pay the actual cost of their studies, i.e. the cost supported by the teaching institutions; and you may imagine that the voucher value corresponds to 1 year of studies or 60 ECTS, either at home or abroad, again, provided that students enrol in schools whose quality is recognised by the issuer of the voucher. For those students who keep studying domestically, nothing is changed by the reform. For those who prefer studying abroad the voucher is to be passed to the authorities of the foreign university.

The efficiency of such a mechanism first calls for a pre-condition – that higher education institutions across the participating area – the EU or the Bologna area, or a larger geographic area – do not accept students unable to produce such a voucher, although we hardly rule out that they accept them for a tuition fee higher than actual cost.

That condition being fulfilled, the system exhibits the important property to allow each country to expand its area of sovereignty over its nationals, in terms of higher education, especially if the vouchers are specified by field of study.

To take the example of medical studies, Germany or France might decide to grant a given number of vouchers for first year studies in Medicine; French or German students who get those vouchers may use them in their country or abroad; those who fail to obtain a voucher are no longer permitted to enrol either at home or abroad. Therefore the *numerus clausus* decided by France or Germany hold for students from those countries even if they decide to study in another jurisdiction.

Table 39.2 below is based on Belgian figures and provides values for the vouchers at stake.

Table 39.2 Budget allocated by the French-speaking community of Belgium

<i>University higher education</i>	Euros per student
Any year of Bachelor and Master's degree in Philosophy, Theology, Humanities, History, Art and Archaeology, Architecture and Urban Planning, Information and Communication, Political and Social Sciences, Law, Criminology, Economics and Management, Psychology and Sciences of Education	5,597.50
1st or 2nd year of Bachelor degree in Medical Sciences, Veterinary Medicine, Dental Sciences, Agronomic Sciences and Biological Engineering, Engineering, any year of Bachelor or Master's degree in Art or Sciences of Art	11,195.00
3rd year of Bachelor degree or any year of Master's degree in Medical Sciences, Veterinary Medicine, Dental Sciences, Sciences, Agronomic Sciences and Biological Engineering, Engineering	16,792.50
<i>Non university higher education</i>	
Short-type economic studies	4,665.63
Long-type economic studies, short-type technical studies	5,132.19
Short-type agronomy, social studies	5,365.48
Applied arts (industrial engineer...)	5,598.76
Translator-interpreters	6,765.16
Paramedical	6,998.45
Education (teachers, ...), long-type agronomy, long-type technical	7,698.29

Source: Gérard and Vandenberghe (2007b)

Estimates by field of study, based on the 2005–2006 budget of the French-speaking Community of Belgium

39.4.3.2 Second Part of the Higher Education Voucher: Covering the Cost of Living and Providing Incentives to Targeted Students

The second part of the voucher, though not a necessary condition for the system to operate, would relate it to the financing of the student's life during the studies, providing her with a so called *student wage*.

Such a student wage could pursue two goals. One goal is to encourage students to undertake studying fields which, though especially needed by the society, are less attractive, maybe because they are less rewarded in money terms, or because they are less prestigious. Another goal is to favour some targeted groups like women, low income or immigrant families. That second part of the voucher actually makes it a tool for education – or labour market – and social policy.

39.4.4 A Baghwati Tax

So far the government of the country financing the improvement of mobile students' human capital takes into account a return on investment only if the graduates stay in the country after completing their studies – under the host country principle – or if they return home after such completion – under the origin principle.

Now let us investigate more efficient policy designs where countries investing in higher education either benefit from the contribution of graduates to their own GDP or social welfare, or are compensated for non-benefiting from such a return. The first such design is based on the *Bhagwati tax*. That tax has been suggested by Economist Bhagwati in order to offset developing countries whose students, after completing their education in developed countries, decided to stay and work there rather than to return home (see Bhagwati 1976; Wilson 2008); the tax is levied on the income of graduates remaining abroad and paid to the sending country.

Suppose, therefore, a graduate who studied in country H – for host – with vouchers financed by country O – for origin. After graduation, he/she decides to stay in country H and to have his/her career in that country. If a Bhagwati tax is at work, that person will have to pay a tax to his/her origin country in order to compensate it for the financing of his/her studies. One can show that this design is efficient if the compensation relates to both the financing cost and the opportunity cost incurred by the origin country.

That compensation might be organised through the local tax system and the local tax administration provided an international arrangement be in place. Should the career of the person at stake be shared between countries H and O, the compensation should be *pro rata temporis*. In the same line, extension of the reasoning to the case of a career distributed among various countries is straightforward.

In the introductory section above we wrote that ‘graduates are expected to get higher wages than less skilled people and, therefore, to pay higher taxes, especially in those countries where labour income tax is progressive. In that sense, students receive implicit loans from the government during the time of their studies that they later repay with an interest, in a way contingent to the income generated by their studies.’ We added that ‘that reasoning holds in a world where the graduates pay their tax in the country where they graduated. However, it no longer holds in a setting where people graduate in one jurisdiction and then have their career in another one or in some other countries. In such a setting, one country pays for the cost of studies and other benefit from the skill, the contribution to the local GDP and tax revenue.’ The Bhagwati tax set forth in this section is precisely a remedy to that difficulty since, in any case, the graduates compensate the country which provided them with such an implicit grant. Provided the income tax system is progressive, the Bhagwati tax may be made so and thus the investigated design is a form of contingent loan mechanism. One – important – difference, however, is that the size and timing of the refund of a contingent loan is limited while the payment of the tax is not limited over time; however, an equivalence in discounting terms between the two mechanisms might be computed.

Please note that such a Bhagwati tax exists for professional soccer players; a tax is levied on their gains and paid out to the clubs which supported their initial training in junior categories.

39.4.5 *Contingent Loans*

In the previous section we assumed that the cost of studies was initially paid by public authorities and later recovered through the tax system by means of either a traditional income tax or a Bhagwati tax; such a mechanism looks like a contingent loan where the lender is the government of the country of origin.

One can make a step further and imagine that the lender is the government of either the host or the origin country. To keep the exposition simple consider again the stylised facts which motivate this study and suppose that any European student hosted in a Belgian institution of higher education located in the French-speaking Belgian Community, including Belgian residents, is proposed a loan by the government of that jurisdiction. They will pay that money back during their career, depending on their income.

The lender could be a private institution as well, like a bank or an insurance company, at least in theory. Numerous authors, however, – on contingent loans in general see Barr (1989, 1998) and Chapman (1997, 2005) and on the particular issue investigated here Del Rey and Verheyden (2011) – consider that such a loan is too risky for the private sector, but in some fields like a Master in Business Administration, especially because students are not able to provide the bank with enough collateral. This means that the financial risk has to be partly or totally socialised, by which is meant, that private loans – supposing them feasible – will need a public guarantee. Such public guarantee could be provided by the host country or by the country of origin or eventually by an international institution like the European Investment Bank. Please note that the latter already has some experience with contingent loans as a lender to organisations dedicated to that end.

This system still deserves at least two remarks. The first one is to mention that, in some countries, like Australia, the reported income for tax purposes is used to assess the income taken into account to compute the size and timing of the refund.

A second remark makes a link between the contingent loan and the vouchers depicted above. As we have seen, the vouchers can be used as incentive tools for higher education, labour and social policy. In the same way as granting extra amounts to students undertaking especially needed fields of study, though little rewarded, or belonging to targeted social groups, the size and timing of the refund might be modulated in line with the desirability and the social value of the studies and the socioeconomic group to which the – prospective – student belongs. And some loans might be turned into grants accordingly, e.g. if you become a teacher or a civil servant paid by the government.

More generally, like vouchers were twofold – a voucher to cover the costs of studies, and a voucher to support the cost of living – a contingent loan may aim at both covering the cost of studies and providing the student with a monthly amount equivalent to a student wage. As noticed by Barr in an exposition of contingent loans, that system makes studies costless for the student during the time of the studies.

Before turning to policy suggestions, we still want to highlight the topic under investigation by the examination of some national experiences.

39.5 Some National Experiences

Let us consider three national experiences that we consider as especially relevant for our purposes.

39.5.1 *Norway: A Combination of Loans and Grants*

In Norway there is generally no tuition fee for higher education. Therefore, the Norwegian State Educational Loan Fund, a public institution, has not been created to help students finance the cost of studies. This Fund intends to support the student's life costs, and thus to provide them with a kind of student wage. Though it primarily aims at Norwegian students, it may be also accessible to foreign students, under some conditions. The amount of the help does not depend on the student's family means; it is presented, initially, as a loan varying between 10,000 and to 14,000 Euros, according to whether or not the student lives in her parents' house and if he/she validates all the examinations. Later, these loans might be turned, partly or totally, into grants.

That aid is also accessible to students who decide to study abroad, though then subject to several conditions, like the similar quality of the host institution, the equivalent level of the studies and the attendance to the courses. These students benefit from the same financial help as the other Norwegian students, and might receive an extra amount related to additional costs implied by the studies abroad, like travelling costs and learning of the local language, and also in the event of very high tuition fees.

This system is generous towards both national and international students and the goal of Norway is twofold and well in line with the ideas developed in the previous section. The first objective is the free access to higher education for all social classes of the country. The second one is more international: by such a system, Norway makes it possible to give an international dimension to its project. It makes it possible to stimulate the Norwegian students to study abroad and it supports the integration of the foreign students in Norway so that they remain in the country at the end of their studies.

For a more detailed description of this system, we suggest to refer to Levy (2004).

39.5.2 *Australia: A Contingent Loan System*

In Australia, higher education is financed by the government – the Commonwealth contribution – and by the students – student contribution. The history of that system might be read, e.g. in Maguain (2005). Tuition fees are differentiated based on the

differences in the costs of studies and the expected future returns on those studies; the latter are left to the appreciation of the institutions.

Australia was the first country to introduce contingent loans, called FEE-HELP or Fee – Higher Education Loan Program. That program is accessible to Australian citizens and, under some conditions, to foreign students. Moreover, students with limited means may also call for this kind of loan in order to finance the cost of living. The loans are not charged a real interest rate and their refund is subject to future income: the refund is carried out from a certain income threshold and little increases in income.

Another system was set up for the mobile students, called OS-HELP. It makes it possible to finance the cost of the studies abroad. It obeys the same principle as the FEE-HELP; it is provided for a 6-month period and is renewable only twice; to receive that help, students must be affiliated with an Australian institution.

39.5.3 Switzerland: A Centralised Cantonal Management

Switzerland is a confederation of 26 cantons which have an executive and a legislative power. Competences in terms of higher education are distributed between the confederation and the cantons.

Since higher education is financed partly by cantons, a system called ‘Inter-cantonal University Agreement’ aims at coordinating the university policy. It allows each Swiss student to benefit from an equal treatment in terms of access to the university. A canton cannot operate a selection at the entrance of its universities based on the canton of origin of the student. On the other hand, if a canton is debtor with respect to another canton, in terms of student flow, it will have to pay compensation to that latter, in line with the cost of the studies in that canton.

Notice that such a system also exists among Scandinavian countries. That system of inter-cantonal – in Switzerland – or international – in Scandinavia – compensation is an illustration of the origin country principle depicted above.

39.6 To Conclude: Policy Suggestions

Our research question was: “how to internalize the negative externality imposed to Austria, Belgium and similar countries by their large neighbours”.

Such a question is a true challenge that Belgian – and Austrian – authorities have tentatively responded by imposing *quotas* to the number of first year foreign students, including European students, in some fields of studies.

That system of quotas, however, has been considered by the European Court of Justice – see European Court of Justice (2010) –, the ultimate custodian of EU principles, as not compatible with EU Law. For the Court indeed, ‘Articles 18 and 21 TFEU (the Treaty founding the EU) preclude national legislation, such as that

at issue in the main proceedings, which limits the number of students not regarded as resident in Belgium who may enrol for the first time in medical and paramedical courses at Higher Education establishments, unless the referring court, having assessed all the relevant evidence submitted by the competent authorities, finds that that legislation is justified in the light of the objective of protection of public health'. Moreover, although 'the Belgian Government, supported by the Austrian Government, confirms that the legislation at issue in the main proceedings is necessary to attain the objective of ensuring the quality and continuing provision of medical and paramedical care within the French Community', the Court adds that 'it follows from the case-law that a difference in treatment based indirectly on nationality may be justified by the objective of maintaining a balanced high quality medical service open to all, insofar as it contributes to achieving a high level of protection of health. Thus, it must be determined whether the legislation at issue in the main proceedings is appropriate for securing the attainment of that legitimate objective and whether it goes beyond what is necessary to attain it (...). That being the case, it is for the competent national authorities to show that such risks actually exist. According to the settled case-law, it is for those Authorities, where they adopt a measure derogating from a principle enshrined by European Union Law, to show in each individual case that that measure is appropriate for securing the attainment of the objective relied upon and does not go beyond what is necessary to attain it. The reasons invoked by a Member State by way of justification must thus be accompanied by an analysis of the appropriateness and proportionality of the measure adopted by that State and by specific evidence substantiating its arguments'.

As far as we know, the position of French-speaking Belgian Authorities is to justify the quotas 'by the objective of maintaining a balanced high quality medical service open to all'.

Our conclusion, at the end of this analysis, is quite different. We entitled one of our papers (Gérard and Vandenberghe 2007a) «Mobilité étudiante en Europe: une idée qui mérite mieux que des quotas» (*Student Mobility in Europe: an Idea Which Deserves More than Quotas*). That is to say that an alternative avenue does exist and we have explored some of its possible designs in this paper; mostly based on the country of origin principle.

The basic idea is that each EU government, when it decides its higher education policy, should take into account the welfare of the whole European Union, not to say of the entire world, and not the sole welfare of its territory or its taxpayers. For a government to behave such, one needs to compensate it for the loss of local welfare generated by students not returning to, or not remaining in, the jurisdiction which has financed their studies.

Therefore, if a government pays for the studies of its resident, either at home or abroad – provided it is in an institution of recognised quality – it will deserve getting a return, either a contribution of the graduate to the local welfare or a pecuniary compensation paid by this graduate in line with his/her means – because he/she would have contributed to the local welfare accordingly. The latter may take the form of a tax either paid directly or paid through his/her country of residence; this

is the idea of a Bhagwati tax. Otherwise that payment for studies might take the form of a contingent loan provided by a financial institution with public guarantee; in that case the compensation eventually goes to that institution; in that case there is no need that the lending institution be from the origin country.

Practically both the public grant and the contingent loan may take the form of a two-part voucher, one part to cover the actual costs of studies, another part to provide the students with a student wage. Though it is not a pre-condition for the operation of the system, the student wage is an important block of the financing of higher education – see above the Norwegian case – which allows the whole system to be used to direct students towards higher education in general as well as towards specific fields, like those which are especially needed from a social viewpoint though less rewarded in terms of money; and to incentivise some targeted groups of people of the population like low income people or immigrants.

In that respect, the possibility to turn loans into grants is also an interesting opportunity. We mention the case of Norway providing loans to students from developing countries and turning those loans into grants if those people return home after their studies, contributing to the development of their country of origin.

Although the externalities at the very root of this paper are currently limited, they are expected to grow in the future, not only in Europe but also worldwide. Studies predict an important increase of student flows from Asian countries such as China, India or Indonesia. International mobility covers more than ever a current and future policy issue. That also justifies that the European Union committed to build up a true European space of higher education.

Among the final remarks let us note that, obviously, from the point of view of eliminating externalities, centralising, say at EU level, the organisation and financing of higher education should be an efficient device; however, there is no room in today's EU agenda to make higher education a EU centralised competence or even a shared one. Should that latter opportunity emerge in the future, we should subject it to a test of subsidiarity (see Pelkmans 2005; Gérard 2008).

Moreover, international mobility of students is not only a question of externalities and free-riding. Other reasons may preside on the decision of an active policy of hosting foreign students. For example, France has recently decided to launch a plan to increase its capacity of hosting foreign students; this country considers that such an action is a real geopolitical investment – a foreign student can be an excellent ambassador of the French culture when he/she returns in his/her country of origin – and an economic investment as well – he/she will be able to create links with France.

Finally, please note that, throughout the paper, we have considered higher education as a sector mainly State financed. We have to be aware, however, that mobility or globalisation are likely to reduce the size of the public sector in that field – which is externality related – and to increase that of the private sector (Justman and Thisse 1997, 2000; Mechtenberg and Strausz 2008, 2009; Buettner and Schwager 2004; Poutvaara and Kanninen 2000).

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