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The effects of Erasmus+ incoming participants on the Austrian economy

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Executive Summary (English)

Erasmus+ is one of the most remarkable EU programmes. It promotes the international mobility of students and teachers and equips them with enhanced learning opportunities and valuable experiences abroad. While the focus of Erasmus+ is primarily on education rather than on fiscal redistribution within the EU, it is still legitimate to assess the economic effects of such programmes. This study focuses on the effects that the Erasmus+ incoming participants had on the Austrian economy. The results can be summarised as follows:

- In 2014, Austria accounted for about 14,000 incoming participants from all over Europe. Most of them came from Germany; their preferred destination in Austria was Vienna. Though more than half of the incoming participants were students in higher education, Erasmus+ covers not only universities but also pupils, trainees and teaching staff in all fields of education.
- The incoming participants from all over Europe spent considerable grant money during their stay in Austria. Their consumption amounted to 37.1 million euros in 2014. Concerning spending behaviour, there is a difference between those who stay for a longer period and those whose visit ends after just a few days or weeks.
- Besides these consumption effects, there are more aspects to consider that influence the economic calculations. Both incoming and outgoing participants have travel expenses of which 2.1 million euros might apply to companies in Austria. Furthermore, the education facilities receive mobility management lump sums from the EU budget.
- There would be no incoming participants without outgoing participants: Participants who leave Austria for a certain period will not be available (much) for domestic consumption. However, the economic balance is still positive in Austria as there were less outgoing participants than incoming participants in 2014. Furthermore, outgoing participants will still have certain expenses in Austria, even though they are abroad for a while.
- Altogether, Austria benefits considerably from its Erasmus+ incoming participants. The value added effect in 2014 was 12.4 million euros, even after correcting for outgoing participants and other aspects. In addition, about 151 full time equivalents were needed. The public budget collected 5.0 million euros in taxes. A full fiscal analysis has not been conducted. We can assume, however, that a rich country such as Austria is a net contributor to an EU programme like Erasmus+.

Executive Summary (German)

Erasmus+ ist eines der bemerkenswertesten Programme der EU. Es unterstützt die internationale Mobilität von Lernenden und Lehrenden und bietet ihnen dabei wertvolle Auslandserfahrungen und Bildungsmöglichkeiten. Obwohl die angestrebten Effekte von Erasmus+ im Bildungsbereich liegen und nicht auf der fiskalischen Umverteilung innerhalb der EU, so ist es doch legitim, nach den ökonomischen Effekten solcher Programme zu fragen. Die vorliegende Studie nimmt die Auswirkungen der Personen in den Fokus, die mit Erasmus+ im Bereich Bildung nach Österreich kommen (Incomings). Die Ergebnisse können so zusammengefasst werden:

- Im Jahr 2014 wurden europaweit rund 14.000 Mobilitäten nach Österreich genehmigt. Die meisten Anträge kamen dabei aus Deutschland; das bevorzugte Ziel in Österreich war Wien. Obwohl mehr als die Hälfte der TeilnehmerInnen aus dem Hochschulbereich kamen, erstreckt sich Erasmus+ auch z. B. auf SchülerInnen, Lernende in der beruflichen Bildung sowie Lehrkräfte.
- Die Incomings gaben während ihres Aufenthalts erhebliche Geldmittel in Österreich aus. Bei den im Jahr 2014 genehmigten Anträgen kann von etwa 37,1 Millionen Euro ausgegangen werden. In Bezug auf das Ausgabenverhalten dürften Unterschiede zwischen denen bestehen, die sich länger in Österreich aufhalten und jenen, die nur wenige Tage oder Wochen bleiben.
- Neben den Konsumeffekten sind jedoch noch mehr Aspekte zu berücksichtigen. Sowohl Incomings als auch Outgoings haben z. B. Reisekosten zu tragen, die zum Teil in Österreich wirksam werden. Außerdem erhalten die Bildungseinrichtungen Mobilitätsmanagementpauschalen aus dem EU-Budget.
- Ohne Outgoings würde es jedoch keine Incomings geben: Diejenigen, die Österreich für eine gewisse Zeit verlassen, konsumieren hier nichts mehr (oder nur noch wenig). Dennoch bleibt der Saldo für Österreich positiv, da im Jahr 2014 mehr Incomings als Outgoings genehmigt wurden, und da die Outgoings selbst während ihrer Abwesenheit noch Ausgaben im Inland zu tätigen haben.
- Insgesamt profitiert Österreich von den Erasmus+ Incomings. Der Bruttowertschöpfungseffekt der im Jahr 2014 genehmigten Anträge betrug 12,4 Millionen Euro; bereits nach Abzug der Effekte der Outgoings. Es wurden außerdem ungefähr 151 Vollzeitäquivalente pro Jahr gesichert. Der Fiskus profitierte im Umfang von 5,0 Millionen Euro. Eine vollständige fiskalische Analyse wurde hier zwar nicht durchgeführt. Man kann aber davon ausgehen, dass ein relativ reiches Land wie Österreich mehr in ein solches EU-Programm einzahlt, als es herausbekommt.

1 Introduction

Hardly any other programme of the European Union is as well known and popular as the Erasmus+ exchange programme. Providing the opportunity to study and gather experiences in other European countries, it is the very embodiment of the European idea. In 2014, the European Union started combining efforts in the areas of training/education, sport and youth under the name Erasmus+. Now the programme encompasses far more than just the student exchange programme for which it is known far and wide. Among other areas, its mission is also to support the mobility of pupils, teachers, interns and athletes. The European Union aims to spend over 16 billion euros on Erasmus+ in the 2014-2020 funding period alone (see EUROPEAN UNION (2017)).

Economic or even fiscal considerations are not necessarily at the forefront of Erasmus+. Rather, it is about the social advantages that the programme creates, the fact that whole generations of EU citizens come into contact with one another and increase the quality and diversity of the training/education through this exchange. Nevertheless, it is perfectly legitimate to also compare the costs of Erasmus+ with its very concrete economic effects. The track record of the Austrian Federal Ministry of Finance (BMF) (2017) shows that Erasmus+ generated 28.8 million euros in return flows in 2014. This sum benefits individuals who study or teach at Austrian educational institutions and go abroad for a certain period of time (hereinafter referred to as “outgoing participants”). In reality, this amount has scarcely any economic relevance as it is spent during the exchange abroad instead of becoming consumed in Austria. Much more interesting, therefore, are the programme’s participants who come to Austria from other countries (hereinafter referred to as “incoming participants”). They spend the funds they receive from the funding programme within Austria. As these funds are generally insufficient and are more like an allowance in nature, the participants are likely to use additional personal funds to support themselves in Austria. By consuming goods and services domestically, they also increase the demand for the corresponding input goods and services. The incoming participants can therefore have a positive impact on domestic gross value-added, employment and tax return flows.

In this study by the INSTITUTE FOR ADVANCED STUDIES (IHS) on behalf of the AUSTRIAN EXCHANGE SERVICE (OeAD), the economic effects of the incoming participants have been calculated for Austria and the individual provinces within the framework of Erasmus+. This involved determining the direct as well as the indirect and induced effects on gross value-added, employment as well as taxes and levies. The GERMAN ACADEMIC EXCHANGE SERVICE (DAAD) (2014) conducted a similar study for foreign students in Germany. That

study differentiates between short-term and long-term effects; the long-term effects are caused by former students being able to take up employment in Germany after completing their studies (abroad). In contrast, the study presented in this report deals only with the short-term effects, although it also takes into account the fact that there cannot be any incoming participants without outgoing participants. Even if these effects are offset, the economic effect for Austria is still positive. A complete fiscal analysis of Erasmus+, i.e. a comparison with Austria's (national) share in the programme's financing, should not be performed here, however, as too many factors cannot be cleanly measured. Nevertheless it seems clear that, at least in the short term, a comparatively small but rich country like Austria pays more into such a programme than it receives.

The next section starts with a review of the Erasmus+ incoming participants in Austria for the year under consideration, 2014. Section 3 describes the assumptions needed to estimate the total expenditure of the incoming participants in Austria; i.e. the amount of Erasmus+ funding that flows into the country. Further (positive and negative) aspects needed for a balanced analysis of the economic and fiscal effects of the Erasmus+ incoming participants are subsequently discussed in Section 4. Section 5 then describes the method of the input-output analysis used, before the results are discussed in Section 6. Section 7 presents the conclusions.

2 Review of the Erasmus+ incoming participants to Austria in 2014

Erasmus+ is aimed at a large number of people who are active in the education and training sector as learners or teachers. In the current programme period from 2014 to 2020, the goal is to make it possible for 4 million people to participate in a stay abroad (see EUROPEAN COMMISSION (2017)).

The programme is subdivided into several sub-programmes called KEY ACTIONS. From the perspective of this study, the most important of these is KEY ACTION 1: “Learning mobility of individuals”, as most mobilities are in this group. In 2014 alone, there were almost 650,000 participants across Europe; the European Union spent 1.2 billion euros just on these mobilities (see EUROPEAN COMMISSION (2015)). While this focused on the individuals, KEY ACTION 2: “Cooperation for innovation and the exchange of good practices” looks more at exchanges for the purpose of strategic collaboration in the field of education. Alongside individual learning success, this area targets systematic improvements in the education system. In 2014, almost 173,000 people participated in over 1,700 projects in KEY ACTION 2; the costs were around 346 million euros (see EUROPEAN COMMISSION (2015)).

KEY ACTIONS 1 and 2 account for by far the largest part of Erasmus+. In the first year of Erasmus+, around 14,000 people came to Austria through these actions alone.¹ Therefore, this project will limit itself to this group. In addition, there is also KEY ACTION 3: “Support for Policy Reform”, as well as further programmes in the field of sport or the Jean Monnet Programme for Excellence.

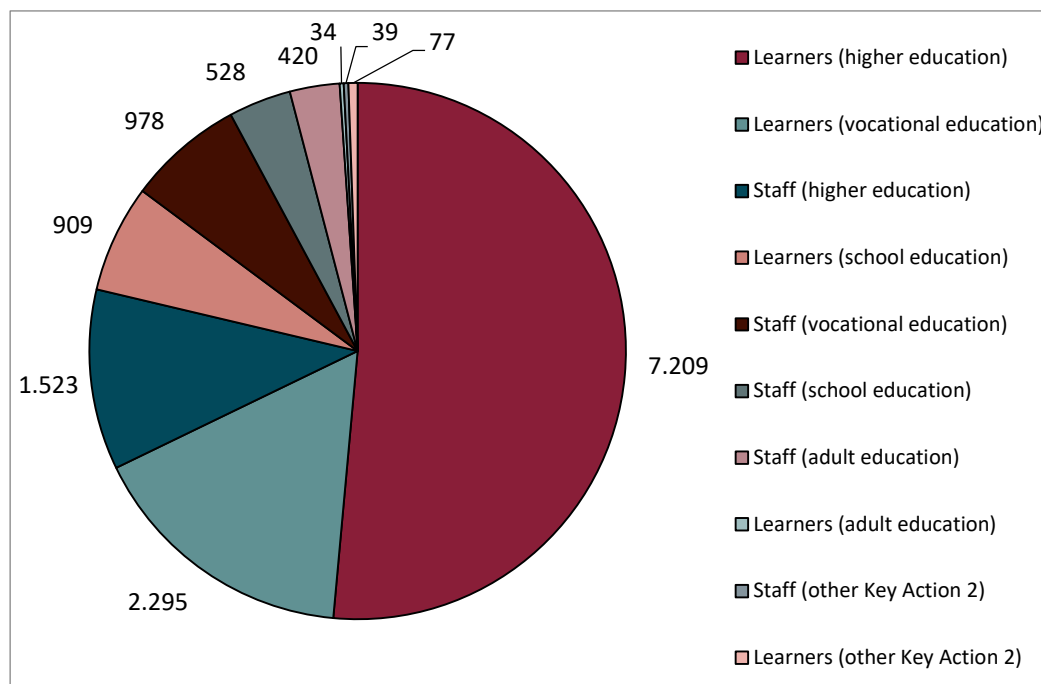
This study concentrates on those Erasmus+ participants who come to Austria and also refers to them below as “incoming participants”. The underlying data about the incoming participants in 2014 was provided by the OeAD. The remaining section will first present various descriptive statistics.

¹ The data used here and below originate from the European Commission and were provided by the OeAD. They refer to applications approved in 2014; the actual exchange may only have taken place at a later date. In this study, however, mobilities and projects are assumed to have taken place in the year in which they were approved. Due to overlaps between the years (i.e. previously approved mobilities were also carried out in 2014), this assumption appears non-critical.

2.1 Distribution by education and training fields

Figure 1 first shows the distribution of the applications of incoming participants approved in 2014 by education and training fields.

Figure 1: Roles of the Erasmus+ incoming participants in Austria



Source: OeAD, presentation of the IHS.

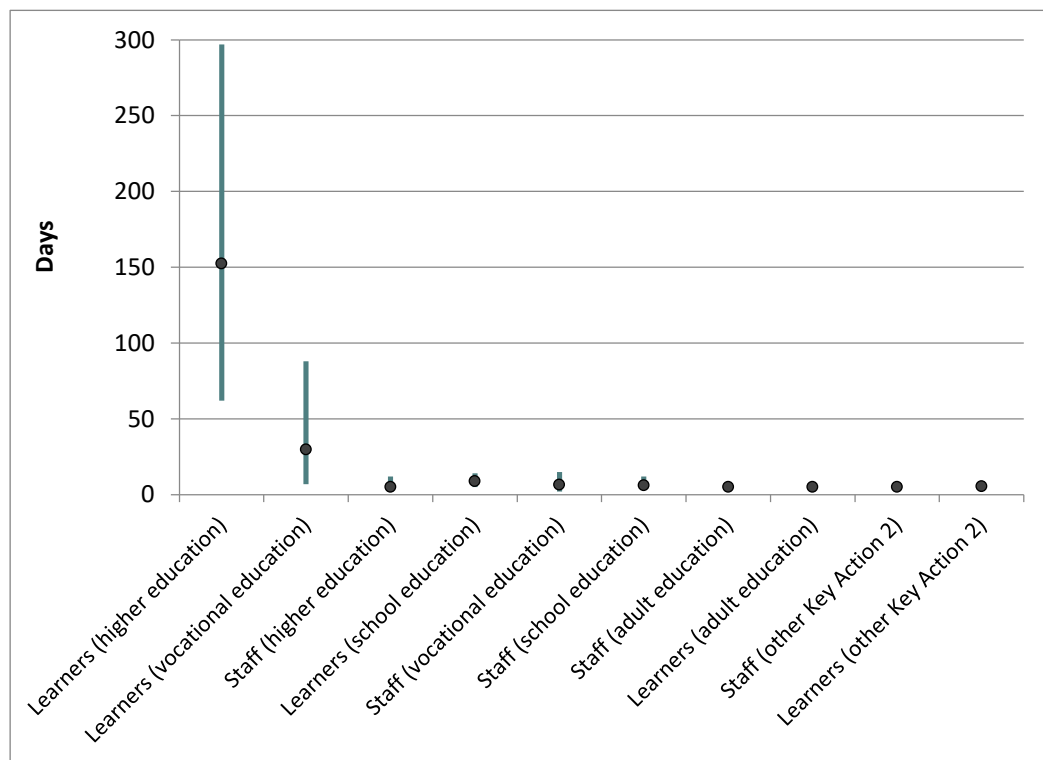
Over half of the incoming participants were learners in the university sector (i.e. students or to some extent interns as well). There were also almost 2,300 pupils and apprentices (learners in vocational education). The third-biggest group was formed by teachers and staff in the university sector, with around 1,500 participants. Most people in these three groups came individually through KEY ACTION 1. In contrast, the fourth-biggest group – learners in the school sector – came solely (and mostly in class groups including teachers and sometimes with escorts) through KEY ACTION 2, in order to participate in projects in Austria. The remaining incoming participants were predominantly teachers in the areas of school, vocational education and adult education (through both KEY ACTIONS).

Especially important for this study is how long the individual incoming participants remain in Austria. This factor is decisive for determining how high their monthly expenditure will be. Participants who are in Austria for only a few days or weeks will not have their own apartment and will consume relatively little. However, those who stay for several months will most probably rent a place to live and will also be forced to cover their personal consumption requirements while here.

2.2 Distribution by length of stay in Austria

The lengths of stay vary considerably depending on the educational area and KEY ACTION. Figure 2 shows the lengths of stay for each of the groups introduced above. Since there are always outliers upwards and downwards, it makes no sense to specify minimum and maximum lengths of stay. The lower (upper) end of each column section therefore shows the 5th (95th) percentile (i.e. only 5% of all the incoming participants stayed shorter (longer) in Austria than indicated there). The columns thus cover 90% of the incoming participants. The black dots mark the respective mean values.

Figure 2: Lengths of stay of the Erasmus+ incoming participants in Austria



Source: OeAD, presentation of the IHS.

It can be seen that it is mainly learners in the university sector who stay in Austria for several months. The average stay is 152 days. Among students, a minimum stay of three months applies for study periods abroad (and of two months for internships); some of them even stay for a whole year. In contrast, learners in initial vocational education stay for only one month in Austria on average; only very few stay for longer than three months. Among the remaining groups, the length of stay very rarely exceeds one week.

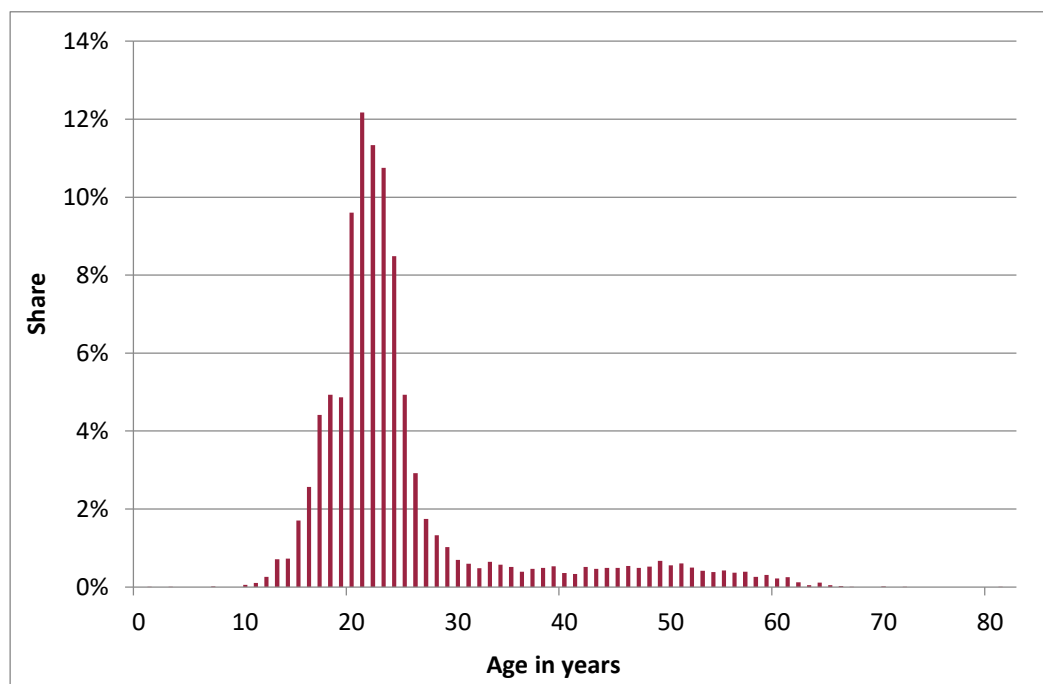
For this study, this means that housing needs must only be assumed for students and learners in initial vocational education. The spending behaviour of the remaining

groups, on the other hand, is more likely to correspond to that of tourists.

2.3 Distribution by age

The age distribution of all the incoming participants is presented in Figure 3. It is obviously strongly driven by the overwhelming number of young people in KEY ACTION 1. Half of all the incoming participants are 22 years of age or younger. The median age for all pupils is 16 years, for learners in initial vocational education 19, and for higher education students 22 years. Teaching staff, on the other hand, are much older. In their case, the median age in both schools and vocational schools is approximately in the mid-40s. In university and adult education, the age of the teaching staff is not consistently recorded. Although the younger cohorts dominate the dataset, 15% of the Erasmus+ incoming participants in Austria are nevertheless over 30 years of age.

Figure 3: Age distribution of the Erasmus+ incoming participants in Austria



Source: OeAD, presentation of the IHS.

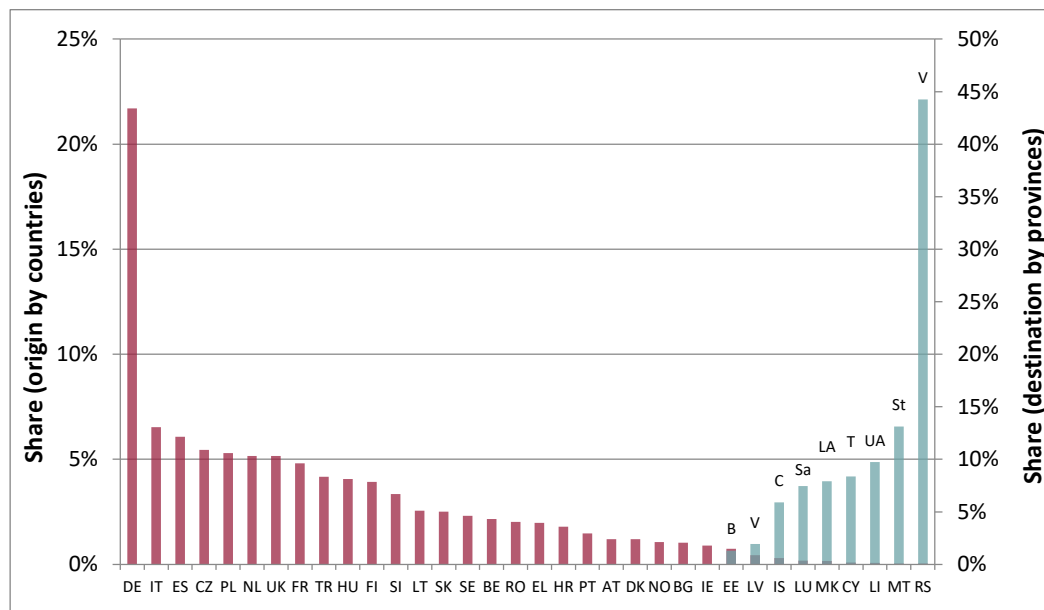
2.4 Distribution by origin and destination in Austria

The dataset also provides information about the origin of the incoming participants and their destination in Austria. Clear concentrations can be seen in both categories. Figure 4 first shows the countries of origin on the left axis.² Around 22% of all Erasmus+

² The term “country of origin” is used here to describe the country in which the sending organisation is based.

incoming participants come from an educational institution in Germany.³ This means that Germany itself is very strongly represented in terms of proximity and population size; Italy, for example, achieves only 7%. The obvious assumption is that the shared language plays a significant role. A number of third countries also participate in Erasmus+, such as Turkey and the countries of Western Balkans.

Figure 4: Origin (left) and regional distribution (right) of the Erasmus+ incoming participants in Austria



Source: OeAD, presentation of the IHS.

As far as the distribution within the destination country of Austria is concerned, it is not surprising that the big cities and university locations dominate. Since the incoming participants cannot always be clearly assigned to a postcode, this study is based solely on the province level; this disaggregation is also necessary and sufficient for the later application of the multi-regional input-output model. In Figure 4, the destination provinces are shown on the right axis. A whole 44% of the incoming participants have selected an institution in Vienna for their stay abroad. The other provinces – even those with big universities/universities of applied science – fall far behind. The figure for both Burgenland and Vorarlberg is less than 2%. Within the provinces, a strong concentration on the big university cities such as Linz, Graz and Innsbruck can be observed. Only in the area of vocational education is the distribution much larger; here, the Erasmus+ incoming participants are also found in rural areas.

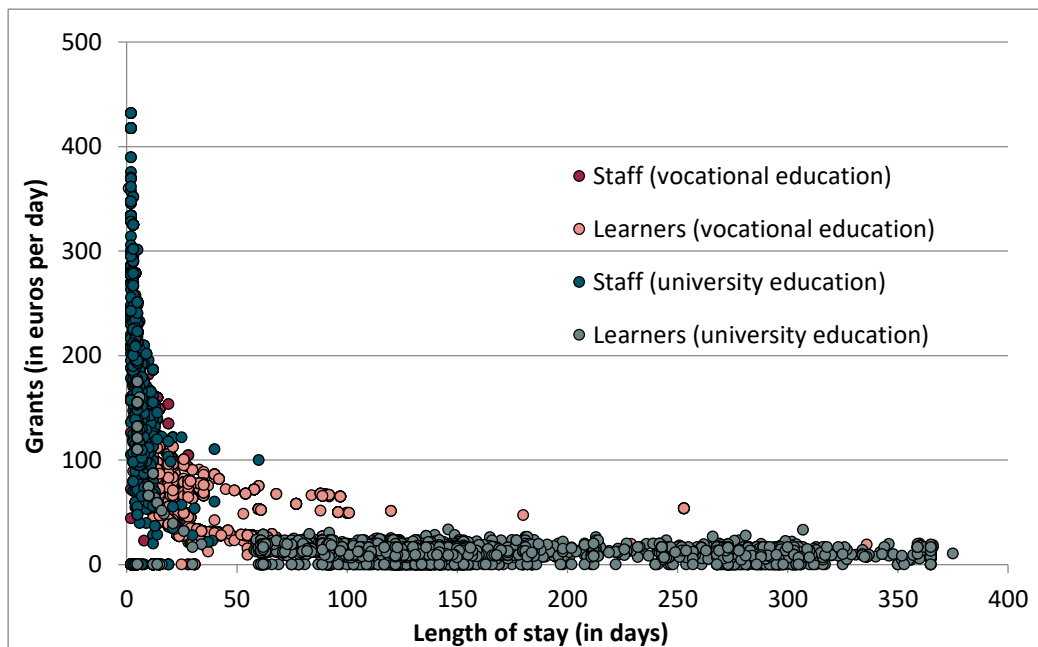
³ However, the nationalities of the incoming participants can be different. They may also come from third countries.

2.5 Funding received through Erasmus+

In essence, Erasmus+ not only helps cover the costs of the incoming participants' stays in the chosen destination but (at least for some groups of people) also their travel and organisational costs (including language courses, if necessary). As the lengths of stay vary considerably (see Section 2.2), it is almost impossible to find a cost aspect that can meaningfully be compared between the different groups of Erasmus+ incoming participants. Among those who stay in Austria for only a few days, the costs per day are far higher because of the travel costs than for those who remain for several months. In addition, the grants also vary according to the role: Teaching staff generally receive much higher daily allowances than learners.

Figure 5 shows the average daily grant provided through Erasmus+ by participant groups and lengths of stay; for a better overview, only the two key areas of vocational and university education are shown here.

Figure 5: Grants per day by participant groups and length of stay



Source: OeAD, presentation of the IHS.

For study periods abroad (that last at least three months), the average grant is around 335 euros per month. Learners in initial vocational training receive slightly more on average. However, this analysis shows that Erasmus+ usually only provides financial support for the overall costs and that considerable private funds have to be spent on top of this, especially for longer stays. The assumptions in this regard are explained in Section 3 below.

3 Assumptions on the overall expenditure of the Erasmus+ incoming participants

The previous analyses in Section 2 showed that the Erasmus+ incoming participants differ considerably with regard to their length of stay. Only higher education students and learners in initial vocational education remain for longer periods; all other incoming participants usually stay in Austria for only a few days. Therefore, a distinction will be made only between the two groups below: The first group stays longer than 30 days and mainly consists of higher education students and learners in initial vocational education. This group's assumed spending behaviour is taken from the Austrian Student Social Survey. The second group remains for a maximum of 30 days and is therefore considered equivalent to tourists in their spending behaviour. Reference is made to TOURISMUS MONITOR AUSTRIA for this. Apart from the level of expenditure in both groups, the distribution of the expenditures between groups of goods must also be modelled. For the input-output analysis, it plays a significant role whether a euro is spent on, for example, accommodation or used for food, clothing, etc., as the stimulated input streams are different.

3.1 Stays of more than 30 days

For the longer stays of more than a month, the main focus of attention must be on the spending behaviour of the overwhelmingly young students and learners undergoing initial vocational education. The Student Social Survey (see IHS (2016)) records the social situation of students in Austria. One element of the survey focuses on the costs of studying. This reveals sharp socio-demographic differences, above all with regard to age, field of study, university location and social background. On average, however, a student spent about 928 euros per month in 2015. This includes all costs for the studies themselves, as well as for accommodation, food, etc.

However, there are risks in transferring the Student Social Survey directly to the Erasmus+ incoming participants. Of course, foreign students are also taken into account in the survey; on average, they have lower monthly expenses than foreign students. These should nevertheless differ from Erasmus+ incoming participants. The latter come, for example, solely from European educational institutions. Moreover, they only stay in Austria for a relatively short time and could therefore have a different spending structure from those who want to complete their entire studies here. The accommodation situation, for example, is likely to differ considerably. One might also

assume that higher education students who come to Austria for their entire studies without a mobility grant have fundamentally different (possibly better) sources of financing than the Erasmus+ incoming participants.

Therefore, as part of this study, a special analysis of the Student Social Survey was performed in order to estimate the spending behaviour of the Erasmus+ incoming participants in Austria. To this end, the dataset was restricted to all foreign students in their first academic year. Moreover, a new weighting by Erasmus+ countries of origin (see Section 2.4) was carried out. The result is an average monthly expenditure of around 737 euros, i.e. a fifth less than in Austria as a whole. Account was taken of the fact that Erasmus+ incoming participants in the host country are exempt from any tuition fees and that various items of expenditure (e.g. possible loan repayments) continue to be made in the home countries and not in Austria. The total expenditure of incoming participants with longer stays thus amounts to 28.6 million euros per year.⁴ The funding through Erasmus+ was only 13.5 million euros, which therefore covered less than half of the actual spending.

The distribution of expenditure by classes of goods is also part of the special analysis of the Student Social Survey. By the far the biggest part of the expenditure (45%) goes towards accommodation in the place of study. This is followed by the items food (25%) and leisure (9%).

3.2 Stays of up to 30 days

While higher education students and learners undergoing initial vocational education generally spend a longer time in Austria, the length of stay of all other Erasmus+ incoming participants (with a few exceptions)⁵ is limited to a few days. Consequently, travel costs make up a large part of the total costs. Overnight stays are mostly spent in hotels or similar accommodation; groups of pupils (only in KEY ACTION 2) may be accommodated in youth hostels. In any event, the accommodation costs far more per day than an apartment or a room would cost per day.

⁴ For a small percentage of participants with a length of stay of more than 30 days, the reported grants are higher than the expenditure assumed here. In these instances, the higher value was used in each case.

⁵ The few participants who are neither students nor learners in initial vocational education, but nevertheless remain for longer than 30 days, were handled as in Section 3.1.

According to the TOURISMUS MONITOR AUSTRIA, the expenditure of foreign tourists in Austria was 125 euros per day.⁶ This includes expenditure on accommodation, the return journey, food and miscellaneous items. It was also considered that children cost less under certain circumstances. The fact that this study treats people on short stays in the same way tourists naturally does not mean that they come to Austria for recreational purposes. With regard to their spending behaviour, however, they exhibit certain similarities to real tourists (e.g. higher share of travel costs in overall costs, very high expenditure on accommodation per night, etc.).

An amount of 125 euros per day should therefore be assumed for Erasmus+ incoming participants who stay in Austria for only up to 30 days.⁷ The total expenditure of Erasmus+ incoming participants with short lengths of stay therefore amount to 8.5 million euros per year. The grants they received from the programme covered approximately two thirds of this.

With regard to the distribution of expenditure among the individual commodity groups, reference is made here to the experience of the IHS gathered from various tourism-related projects. The expenditure is distributed according to the data of the TOURISMUS MONITOR AUSTRIA and a study of the German FEDERAL MINISTRY OF ECONOMY AND TECHNOLOGY (BMWi, 2012). It is hardly surprising that the biggest share of expenditure is accounted for by the accommodation and gastronomy sector (56%), followed by passenger transport (10%) in second place and the clothing sector (7%) in third.

⁶ The data of TOURISMUS MONITOR AUSTRIA used here were taken from a publication of the WKO (2016).

⁷ Only for people (with lengths of stay of up to 30 days), whose reported grant is more than 125 euros per day, will the higher amount be used as a yardstick for the expenditure. This can happen in particular for teaching staff with short lengths of stay.

4 Further aspects related to Erasmus+

Section 3 estimated for starters only the level of funds that flowed into Austria for the applications approved under Erasmus+ in 2014. These funds – totalling 37.1 million euros – are consumed here, triggering positive effects on value-added, employment and fiscal factors. However, there are further aspects related to Erasmus+ that must be considered in addition to these effects. Many of them refer to the outgoing participants, i.e. the people who attend Austrian educational institutions and spend a certain time abroad. These are not the focus of this study. Nevertheless, it must be noted that Erasmus+ is an exchange programme and that without outgoing participants there would be no incoming participants either. Further aspects that must also be considered when calculating the economic effects are therefore described below:

EXPENDITURE OF THE OUTGOING PARTICIPANTS: While the incoming participants bring money to Austria and set positive economic effects in motion here, the opposite naturally applies to the outgoing participants. Instead, they take money abroad, stop consuming in Austria during their stay, and thereby trigger effects across the entire value-added chain domestically, which have to be deducted from the effects of the incoming participants. Accordingly, all the considerations from Section 3 must be taken into account for outgoing participants.⁸ Since the focus will continue to be on the incoming participants, the relevant assumptions are only briefly summarised here: The outgoing participants are divided into teachers (with higher incomes, taken from the consumer survey; see STATISTICS AUSTRIA (2016)) and learners (with lower incomes, taken from the Student Social Survey; see IHS (2016)). Furthermore, the length of stay again plays a role. For stays of up to three months, it is assumed that not all expenditure items in Austria will be eliminated; for example, an apartment would not be given up. Credit and insurance contracts as well as expenditure on telephone contracts or season tickets of transport companies would also continue to be incurred in Austria. However, some of these contracts would actually be terminated in the event of longer stays abroad. For teaching staff, this loss is expected to be much higher than for learners because there are likely to be large differences in living standards between these two groups – not least due to differences in age and income.

⁸ The data for the outgoing participants are also provided by the OeAD.

As there were slightly more incoming participants than outgoing participants in 2014, and as the outgoing participants do not completely stop domestic consumption during their stay abroad, the balance for Austria is positive. Lost consumption due to outgoing participants is estimated to have been 31.9 million euros in 2014. That is about 5.2 million euros less than flowed into Austria through incoming participants.

PROJECT MANAGEMENT LUMP SUMS: This item is also related to the number of outgoing participants. It is also positive for Austria. For organising the exchanges, the sending educational institutions incur expenditure that is reimbursed at a lump sum from the Erasmus+ programme. For each outgoing in KEY ACTION 1, 350 euros flow here from the EU budget to Austria. However, higher education students have one special feature: As these exchanges are mostly organised by the OeAD rather than the universities/universities of applied science themselves, only a portion of this sum is available to those universities. With the rest, they can finance additional exchanges; this portion therefore comes from the EU budget (around 1.4 million euros) but flows immediately abroad and, thus, triggers no economic effect in Austria. The larger share (about 2.6 million euros), however, is directly spent in Austria. The regional distribution of this sum follows the regional distribution of the sending organisations. For the outgoing participants in KEY ACTION 2, the calculation is a little more complicated, as such a simple per-capita approach does not work due to the complexity of the projects carried out. The lump sum depends on the duration of the projects and the role played by the educational institution (either as project coordinator or project partner). In 2014, a total of around 1.7 million euros is thought to have been invested in the Austrian education and training sector through KEY ACTION 2.

TRAVEL COSTS: Both the incoming participants and the outgoing participants incur costs for travelling to and from Austria. Some of them have their travel costs reimbursed by Erasmus+; others (e.g. higher education students) have to cover these costs themselves. For this study, only the portion of the travel costs attributable to Austria is of interest. We will set these at a lump sum of 100 euros per person.⁹ This way, a further 2.1 million euros were spent in Austria in 2014; around half stem from outside the country. In order to calculate the economic effects, this sum is divided equally between land transport and air transport. With regard to the regional distribution, it should be noted that not all provinces have commercial airports.

⁹ For incoming participants with short lengths of stay, the travel costs to and from Austria are already included in the 125 euros per day.

The list of effects for consideration could theoretically be extended further: It could, for example, be assumed that the education and training system needs additional staff in order to actually be able to absorb additional learners. Although the outgoing participants that leave the Austrian education system for a certain period had to be offset, the overall balance of incoming participants and outgoing participants was still positive in 2014. In reality, however, the capacities in the education sector are sufficient for absorbing additional people. The additional costs that could actually arise (e.g. any rewards for teaching staff who participate in projects under KEY ACTION 2) are difficult to estimate, but are unlikely to be significant overall.

The assumptions made about learners in vocational education could also be broken down further. Most of them complete an internship and produce goods and services in Austria. In return, they receive a kind of internship compensation; material costs continue to be incurred in their work. Here as well, the balance between incoming participants and outgoing participants must be considered in order to determine whether more or less was produced in Austria as a result of the exchange. Such an approach, however, is characterised by significant uncertainties. It is not clear how many incoming participants (and outgoing participants) actually work (or worked) in companies. The actual contribution of trainees to the value added is also very difficult to estimate. In any event, it is questionable whether a business produces notably more (or less) when it takes on interns for a few weeks (or sends a few trainees abroad). The effect on the economy is hardly worth estimating and in numerical terms is probably very small.

The long-term effects could also be theoretically considered: Former incoming participants could return to Austria many years later to live and work here. In reverse, they could use the knowledge they acquired in Austria in their home countries and contribute to productivity increases there. Both situations also apply in reverse to today's outgoing participants. These phenomena would have an impact on Austria. However, as the effects of Erasmus+ on the actual success of education would have to be estimated for this, such questions cannot be answered within the scope of this study.

Diverse mechanisms that can trigger economic as well as fiscal effects therefore come into play in connection with Erasmus+. The input-output analysis, which is explained in the next section, makes the various effects visible.

5 Method: Input-output analysis

In calculating the economic effects of the Erasmus+ incoming participants, this study not only quantifies the direct but also the indirect and induced effects on value-added, employment as well as taxes and levies in Austria. The direct effects are those that arise directly through the expenditure of one or more sectors in connection with Erasmus+ (e.g. the organisational costs borne by the universities/universities of applied science). By definition, the consumption expenditure of incoming participants, therefore, cannot trigger any direct effects. Rather, this involves indirect effects, as these generate demand in various sectors (e.g. in retail) and their upstream providers and in turn the upstream providers of those upstream providers along the value-added chain. The consumption-inducing effects arise through the spending of income earned by directly and indirectly employed people. Investment-induced effects arise through the spending of upstream companies, which in turn invest a part of their revenues.

In this study, employment effects (in full time equivalents), value-added effects and fiscal effects (in total and separately by entities) have been quantified for Austria and for the individual provinces. For this purpose, the most profitable economic sectors are presented according to ÖNACE 2008.

The input-output analysis is used to quantify the economic impact of Erasmus+. It records the interlinked supply and procurement structures of the individual sectors of an economy and quantifies the multiplicatively amplified macroeconomic effect. It enables the calculation of direct, indirect and induced value-added and employment effects. This instrument can also be used to calculate the effects on the overall economic revenue from taxes and social security contributions.

The input-output analysis is based on the highly detailed Austrian input-output tables, which are prepared by Statistics Austria as a supplement to the national accounts. The IHS has also developed a multi-regional input-output model which is intended to calculate the economic stimuli triggered in Vienna, the individual provinces and abroad. This includes, in particular, the interdependencies between the provinces.

6 Results

For the presentation of the results we will start with the simplest case and then increasingly add other aspects. Section 6.1 first considers only the expenditure of the incoming participants, for whom wide-ranging assumptions were made in Section 3. In Section 6.2, the effects of the outgoing participants are then deducted to see whether the balance remains positive. Finally, Section 6.3 considers the management lump sums that the Austrian institutions receive from the EU budget for the organisation of exchanges. It can be seen that Austria profits from the incoming participants in many ways, even when any costs are offset.

6.1 Effects of the incoming participants

The economic effects that the Erasmus+ incoming participants trigger in Austria are presented in Table 1. The travel costs are also included. The table contains information about gross value-added (in millions of euros), the employment effects (in full time equivalents) and about taxes and levies (in millions of euros). These are broken down by province and subdivided into direct, indirect and induced effects.

The 37.1 million euros (plus travel costs) spent in Austria by incoming participants in 2014 trigger a value added effect of 31.1 million euros. The total (i.e. including abroad) is actually 45.7 million euros; however, as the value-added chains extend across national borders and many input services are imported, only a portion of this amount has an impact in Austria. As already mentioned above, the direct effects are zero by definition. The majority of the effects is indirect and arises through the consumption of the incoming participants and through the purchase of input goods and services. Along the value-added chain, this ensures revenues and makes investments, from which the induced effects follow. The majority of the effects arises in Vienna (around 12.7 million euros) as, on the one hand, most incoming participants arrive here, and on the other, many input goods and services – especially in the service area or in public administration – lead to Vienna sooner or later. The situation is very similar with the employment effects; across Austria, about 324 full time equivalents (or 407 jobs) are secured. The public sector also profits: In total, there are fiscal effects amounting to 13.6 million euros (around half of which goes to the federal government) without having to incur public expenditure (apart from, of course, payments to the EU budget).

Table 1: Economic effects of the Erasmus+ Incoming participants

ratio	total	of which		
		direct	indirect	induced
Gross value added (€ m.)	31.08	0.00	25.37	5.72
Burgenland	0.38	0.00	0.30	0.08
Carinthia	1.88	0.00	1.53	0.35
Lower Austria	2.71	0.00	2.14	0.56
Upper Austria	2.97	0.00	2.35	0.62
Salzburg	2.60	0.00	2.12	0.48
Styria	4.03	0.00	3.27	0.75
Tyrol	2.95	0.00	2.38	0.57
Vorarlberg	0.85	0.00	0.67	0.18
Vienna	12.72	0.00	10.60	2.12
Employment effects (FTE)	324	0	256	68
Burgenland	4	0	3	1
Carinthia	22	0	17	4
Lower Austria	33	0	26	7
Upper Austria	35	0	27	7
Salzburg	28	0	22	6
Styria	42	0	33	9
Tyrol	29	0	23	7
Vorarlberg	9	0	7	2
Vienna	122	0	97	25
Taxes and levies (€ m.)	13.61	0.00	10.90	2.71
Social security	3.38	0.00	2.62	0.76
Social funds	0.56	0.00	0.44	0.12
EU	0.02	0.00	0.01	0.00
Federal government	6.63	0.00	5.41	1.22
<i>Burgenland (state and municipalities)</i>	<i>0.11</i>	<i>0.00</i>	<i>0.09</i>	<i>0.02</i>
<i>Carinthia (state and municipalities)</i>	<i>0.25</i>	<i>0.00</i>	<i>0.20</i>	<i>0.05</i>
<i>Lower Austria (state and municipalities)</i>	<i>0.64</i>	<i>0.00</i>	<i>0.52</i>	<i>0.12</i>
<i>Upper Austria (state and municipalities)</i>	<i>0.54</i>	<i>0.00</i>	<i>0.44</i>	<i>0.10</i>
<i>Salzburg (state and municipalities)</i>	<i>0.24</i>	<i>0.00</i>	<i>0.19</i>	<i>0.05</i>
<i>Styria (state and municipalities)</i>	<i>0.48</i>	<i>0.00</i>	<i>0.39</i>	<i>0.09</i>
<i>Tyrol (state and municipalities)</i>	<i>0.30</i>	<i>0.00</i>	<i>0.24</i>	<i>0.06</i>
<i>Vorarlberg (state and municipalities)</i>	<i>0.17</i>	<i>0.00</i>	<i>0.13</i>	<i>0.03</i>
<i>Vienna</i>	<i>0.74</i>	<i>0.00</i>	<i>0.60</i>	<i>0.14</i>
Other levies	-0.43	0.00	-0.39	-0.04

Source: IHS, 2018.

6.2 Effects of the incoming participants less the outgoing participants

Erasmus+ thrives on exchange, i.e. the positive economic effects of incoming participants can only have a hypothetical size without outgoing participants. However, if the effects from the last section are adjusted for the lost effects of the outgoing participants, the balance still remains positive. This is shown by Table 2 on the next page. The effects initially shrink to 7.3 million euros in gross value added, 80 secure full time equivalents (or 100 jobs) and around 2.6 million euros in taxes and levies. Despite this, Austria still profits. The reason for this, on the one hand, is the fact that the nationwide balance of incoming participants and outgoing participants in 2014 was positive. On the other, is the assumption that outgoing participants continue making expenditure in Austria during their absence (e.g. for apartments, insurance policies, etc.).

6.3 Effects of the incoming participants less the outgoing participants and plus project management lump sums

Now the project management lump sums are added, which flow from the EU budget to the sending institutions in Austria. These funds are connected with the outgoing participants and are counted per capita in KEY ACTION 1. By contrast, the compensation in KEY ACTION 2 depends on the project duration. As the organised projects in most cases encompass the mutual exchange of staff or learners, it is not clear whether the inflows arising from the EU budget should be allocated to the incoming participants (i.e. Section 6.1) or to the outgoing participants (Section 6.2).

For the applications approved in 2014, around 5.7 million euros flowed to Austria, of which 4.3 million euros were effective here. The effects from the last section increase accordingly. The results can be found in Table 3 on the page after next. The annual value added effect is climbing back to 12.4 million euros; 151 full time equivalents (or 194 jobs) are secured. The fiscal effect is 5.0 million euros. The direct effects can now also be identified.

Table 2: Economic effects of the Erasmus+ incoming participants less outgoing participants

ratio	total	of which		
		direct	indirect	induced
Gross value added (€ m.)	7.30	0.00	6.01	1.29
Burgenland	0.10	0.00	0.08	0.02
Carinthia	0.70	0.00	0.58	0.12
Lower Austria	0.40	0.00	0.31	0.09
Upper Austria	0.61	0.00	0.49	0.13
Salzburg	1.08	0.00	0.90	0.18
Styria	0.66	0.00	0.53	0.13
Tyrol	0.03	0.00	0.01	0.02
Vorarlberg	-0.02	0.00	-0.02	0.00
Vienna	3.75	0.00	3.16	0.59
Employment effects (FTE)	80	0	64	15
Burgenland	1	0	1	0
Carinthia	9	0	7	1
Lower Austria	6	0	5	1
Upper Austria	8	0	7	2
Salzburg	12	0	9	2
Styria	7	0	5	2
Tyrol	0	0	0	0
Vorarlberg	0	0	0	0
Vienna	37	0	30	7
Taxes and levies (€ m.)	2.63	0.00	2.02	0.61
Social security	0.82	0.00	0.65	0.17
Social funds	0.13	0.00	0.10	0.03
EU	0.00	0.00	0.00	0.00
Federal government	1.18	0.00	0.90	0.28
<i>Burgenland (state and municipalities)</i>	<i>0.02</i>	<i>0.00</i>	<i>0.01</i>	<i>0.00</i>
<i>Carinthia (state and municipalities)</i>	<i>0.05</i>	<i>0.00</i>	<i>0.04</i>	<i>0.01</i>
<i>Lower Austria (state and municipalities)</i>	<i>0.12</i>	<i>0.00</i>	<i>0.09</i>	<i>0.03</i>
<i>Upper Austria (state and municipalities)</i>	<i>0.10</i>	<i>0.00</i>	<i>0.08</i>	<i>0.02</i>
<i>Salzburg (state and municipalities)</i>	<i>0.04</i>	<i>0.00</i>	<i>0.03</i>	<i>0.01</i>
<i>Styria (state and municipalities)</i>	<i>0.09</i>	<i>0.00</i>	<i>0.07</i>	<i>0.02</i>
<i>Tyrol (state and municipalities)</i>	<i>0.05</i>	<i>0.00</i>	<i>0.04</i>	<i>0.01</i>
<i>Vorarlberg (state and municipalities)</i>	<i>0.03</i>	<i>0.00</i>	<i>0.02</i>	<i>0.01</i>
<i>Vienna</i>	<i>0.13</i>	<i>0.00</i>	<i>0.10</i>	<i>0.03</i>
Other levies	-0.14	0.00	-0.13	-0.01

Source: IHS, 2018.

Table 3: Economic effects of the Erasmus+ incoming participants less outgoing participants and plus project management lump sums

	ratio	total	of which		
			direct	indirect	induced
Gross value added (€ m.)		12.42	3.42	6.47	2.54
Burgenland		0.21	0.07	0.09	0.05
Carinthia		1.07	0.25	0.61	0.21
Lower Austria		0.91	0.32	0.36	0.22
Upper Austria		1.23	0.40	0.55	0.28
Salzburg		1.31	0.15	0.92	0.24
Styria		1.52	0.58	0.60	0.33
Tyrol		0.45	0.27	0.05	0.13
Vorarlberg		0.18	0.13	0.00	0.06
Vienna		5.53	1.24	3.29	1.01
Employment effects (FTE)		151	51	69	30
Burgenland		3	1	1	1
Carinthia		14	4	7	3
Lower Austria		13	5	6	3
Upper Austria		17	6	8	3
Salzburg		15	2	10	3
Styria		19	9	6	4
Tyrol		6	4	0	2
Vorarlberg		3	2	0	1
Vienna		61	18	31	12
Taxes and levies (€ m.)		4.98	1.46	2.27	1.25
Social security		1.83	0.79	0.71	0.33
Social funds		0.28	0.11	0.11	0.05
EU		0.00	0.00	0.00	0.00
Federal government		1.90	0.29	1.03	0.58
<i>Burgenland (state and municipalities)</i>		<i>0.03</i>	<i>0.01</i>	<i>0.02</i>	<i>0.01</i>
<i>Carinthia (state and municipalities)</i>		<i>0.08</i>	<i>0.02</i>	<i>0.04</i>	<i>0.02</i>
<i>Lower Austria (state and municipalities)</i>		<i>0.20</i>	<i>0.04</i>	<i>0.10</i>	<i>0.06</i>
<i>Upper Austria (state and municipalities)</i>		<i>0.16</i>	<i>0.03</i>	<i>0.09</i>	<i>0.05</i>
<i>Salzburg (state and municipalities)</i>		<i>0.08</i>	<i>0.02</i>	<i>0.04</i>	<i>0.02</i>
<i>Styria (state and municipalities)</i>		<i>0.15</i>	<i>0.03</i>	<i>0.08</i>	<i>0.04</i>
<i>Tyrol (state and municipalities)</i>		<i>0.09</i>	<i>0.02</i>	<i>0.05</i>	<i>0.03</i>
<i>Vorarlberg (state and municipalities)</i>		<i>0.05</i>	<i>0.01</i>	<i>0.03</i>	<i>0.01</i>
Vienna		0.22	0.04	0.12	0.06
Other levies		-0.11	0.05	-0.13	-0.02

Source: IHS, 2018.

The sectoral breakdown of these results is shown in Table 4. Not surprisingly, the education and training sector profits the most. The 51 full-time equivalents, however, are not so much the result of the incoming participants, but rather of the project management lump sums that the educational institutions receive as sending organisations and use for the maintenance of international offices, EU departments or other internal service structures (e.g. in the HR area). In Table 4, the sectors involved in the short-term and long-term accommodation of Erasmus+ participants have their fair share. The transport sectors also record positive effects.

Table 4: Sectoral breakdown of the effects (as per ÖNACE 2008)

Rank (GVA)	Rank (FTE)	Profiting sectors	GVA (€ mill.)	FTE
1.	1.	Education and teaching services	3.44	51
2.	2.	Accommodation and food services	2.55	39
3.	5.	Real estate services	1.98	4
4.	3.	Land transport services and transport services via pipelines	0.75	10
5.	4.	Building completion and other finishing work	0.32	6
6.	10.	Warehousing, other services for transportation	0.32	2
7.	7.	Creative, arts and entertainment services	0.25	3
8.	12.	Air transport services	0.20	2
9.	16.	Financial services	0.18	1
10.	14.	Wholesale services (excl. motor vehicles)	0.17	2
		Other sectors	2.28	30
		Total	12.42	151

Source: IHS, 2018.

7 Discussion and summary

The Erasmus+ programme costs the European Union – and thus the Member States – a great deal of money. It is one of the few programmes that not only transfers money between Member States but also increases the mobility of people. At a total of 16 billion euros, the costs in the current programme period are considerable.

This study abstracts from the manifold social and societal gains made by Erasmus+ and shows that even purely economic gains can arise that partly compensate for the costs. Each Member State participating in Erasmus+ pays its contribution to the EU budget. In return, however, incoming participants spend their grants (and even more) within the country. When outgoing participants and incoming participants are in balance, then the poorer countries may profit slightly more because the incoming participants from the richer countries consume more there than the country's own students. Such redistribution effects are the nature of most of the EU's funding programmes and can be entirely justified, particularly in the area of education and training in the context of long-term convergence efforts.

In 2014 incoming participants spent around 37.1 million euros in Austria. On top of this travel costs arise to about 2.1 million euros and 5.7 million euros in management lump sums were paid to the sending organisations in Austria. This is mirrored by the lost value-added effects due to the temporary absence of the outgoing participants.

Even when these costs are offset, Austria profits greatly from the Erasmus+ incoming participants. The value-added effect for the year under review was around 12.4 million euros (net). Furthermore, 151 full time equivalents were secured. The public purse recorded return flows of almost 5.0 million euros.

The calculation of effects in this study can be described as conservative. Initially, only the applications approved in 2014 were considered here. These effects are likely to be higher in subsequent years, as the programme and the number of mobilities and projects have increased significantly. The study also only accounts for short-term effects. Years later, however, former incoming participants, for example, might return to Austria to work there. In this way, Erasmus+ could also have an impact on the Austrian economy in the future.

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