

## 11 Summary

This study traces the secondary added value effects of “corporate higher education” for the City of Vienna. In order to most comprehensively and realistically estimate the regional effects, the analyses go beyond the pure demand side and monetary effects, which can be summarized in few figures. A holistic approach was chosen that takes into account demographic factors through domestic and foreign students as well as effects on national and international congress tourism in addition to buying power and employment effects, which arise from the spending of institutes of higher education, their employees and students. This concerns an array of single factors that cannot be added together and thus must be handled separately.

The myriad of public universities, universities of applied sciences and private universities in the location of Vienna emphasizes on the one hand the dominance of Vienna in the Austrian educational landscape: 53.9 % of students in Austria are enrolled at a Viennese institutes of higher education. On the other hand, Vienna is characterised by a considerable heterogeneity and diversity of tertiary institutes of education, which can be observed in differences in size and educational curriculum. This diversity is reflected in the varied advising quotas, budget structure as well as very different significance of external funds and must be taken into account in the assessment of the added value effects.

### **Demographic Significance of Viennese Institutes of Higher Education**

The number of students at Viennese higher education institutions is denoted by a continually, long-term growth trend, which was only temporarily interrupted by the introduction and abolition of tuition fees. While approximately 134,300 students were enrolled at Viennese institutes of higher education in winter semester 2005, it had risen to 187,000 by winter semester 2012. This strong growth was partially caused by a continual, over-proportional increase of foreign students: in winter semester 2012, 26,9 % of students were of foreign nationality.

These numbers illustrate the significant effect of institutes of higher education on the structure of the population: The estimate showed that in the age group of 19-26 year olds within the entire Viennese population, almost every second person (49.4 %) was enrolled at a Viennese institute of higher education. In the hypothetical situation that Vienna had no institutes of higher education, there would be less immigration of this age group from the rest of Austria and many young people would study at a different location. However, if commuters from the greater Vienna area are taken into account, the respective proportion within the total population in this age group increases to 58.1 %. The localisation of students whose home addresses lie outside of the city limits of Vienna showed that Viennese higher education institutions have a very broad draw area: every region (every political district) has students at Viennese institutes of higher education. Naturally there are significant differences among the draw areas, which are

determined by the specific curricula offered (such as the University of Natural Resources and Life Sciences vs. the University of Vienna).

### **Internationalisation through Higher Education Institutions**

The foreign students in Vienna – in winter term 2011 there were 46,600 – are a demonstration of the international attractiveness (and low entrance limitations) of Viennese higher education institutions as well as of the location of Vienna in general. Conversely, it is relevant for the City of Vienna that the foreign students, many of whom choose to remain in Vienna after completing their studies, have a positive effect on the migration regime of the city.

The draw area of foreign students in Vienna shows that the internationalisation mainly constitutes an Europeanisation: 90 % come from a European country (including Turkey). Within Europe, the draw area is characterised by three factors: the German language (students from South Tirol and above all Germany) countries with a long tradition of guest worker migration to Austria, and finally Eastern European countries.

### **Institutes of Higher Education as an Important and Stable Factor for Viennese Congress Tourism**

One of the not insignificant influences of Viennese higher education institutions arises from national and international scientific events. According to one estimate, 868 events (national and international) were hosted at Viennese higher education institutions in 2011, amounting to 240,400 participant days. A direct comparison with international congresses according to the Vienna Convention Bureau is not possible due to specific structures and parameters; however, the simple ratio shows the quantitative significance of scientific events at Viennese higher education institutions. Nevertheless, it should be noted that in the case of higher education institutions, this is an endogen or regional added value that – unlike in the case of international congresses – is not at risk of changing location the next year.

### **Viennese Institutes of Higher Education as Significant Employer in Vienna**

With approximately 31,400 employees in 2011, the examined Viennese higher education institutions comprise a large and at the same time very valuable segment of the Viennese labour market. Four per cent of the entire Viennese labour population is employed at the examined institutions; among the scientific personnel, 14.5 % of the employees are qualified as professors and among general personnel, 33.5 % on average hold an academic degree (this ranges widely among the different types of institutes of higher education). A comparison of individual institutions shows that the University of Vienna has more employees (per headcount) than the largest private company in Vienna (Unicredit Bank Austria AG, 7,235 employees) and that the Medical University of Vienna is ahead of the third largest private sector company of the city (Billa AG, 4,479 employees).

As in the case of students, a strong trend of internationalisation can be observed among scientific personnel at higher education institutions, although significant differences in levels exist, such as between general and scientific personnel and among types of institutions (scientific personnel: public universities 24.8 % foreign nationals, technical schools 5.2 % and private universities 29.6 %). This shows that the sector of universities of applied sciences has a marginal level of internationalisation not just among students, but also within the faculty due to its practice and professionally oriented curriculum. However, differences also exist among the various qualification levels. For example, at public universities, 27.7 % of the professors are foreign nationals, while the level among post-docs is 30.7 %.

The origin of the scientific personnel with foreign nationalities is characterised – as in the case of the students – by a strong Europeanisation. Closer examination illustrates a very strong concentration on a few countries: 60.8 % of the foreign scientific personnel are from Germany, Italy, the United States and United Kingdom, and among professors this share increases to 78.8 %. It is furthermore noticeable that the draw area of the scientific personnel shows a different geographical pattern than that of the students: the dominating countries are from Western Europe, reflecting their relatively dominant role in the international scientific system, while countries from Eastern Europe and former guest worker countries do not play a role.

#### **Estimate of the Direct Economic Added Value Effects**

The direct economic added value effects are comprised of the expenses of the students and faculty as well as the investments and material costs of the institutes. The student social survey (Unger et al. 2012) is the central foundation of the estimate of student expenses, although many additional location specific factors were also taken into account: gender specific differences in cost behaviour and inflows and outflows in buying power from and in the surroundings of Vienna as well as the influence of students from the surrounding areas of Vienna who are enrolled in Vienna. The resulting sum of a direct added value amounted to EUR 1,757.1 million for the academic year 2011.

The estimate of the relevant added value consumption costs of public university employees is based on the gross salaries of Viennese higher education institutions as well as on the consumer survey of Statistik Austria. The data was adjusted for specific regional factors as well: increase and decrease in buying power of commuters from the surrounding areas. According to this, the added value-relevant costs of the general and scientific personnel of higher education institutions amounted to EUR 298.9 million. Furthermore, the construction, investment and material costs of Viennese institutes of higher education that go to companies in Vienna amounted to EUR 242.2 million annually.

#### **Indirect and Secondary Added Value Effects**

Indirect effects on regional employment – additional employment that is created through the abovementioned expenses – can be derived from the direct consumption costs of students and personnel of higher education institutions as well as the general

expenses of the schools (construction, investment and material costs). The basis of the estimate is comprised by various branch specific labour market coefficients that were matched to various cost types of the students and personnel and then calculated in an aggregated manner. According to this, the expenses of the students create an employment effect of 9,064 employees, personnel of 1,745 employees and general expenses of institutes of 2.067 employees. The income effect induced in the next effect round amounts to EUR 395.1 million.

The results of this estimate should be assessed conservatively, as numerous regional specific factors (commuters, buying power currents) were taking into account and limited workplace coefficients could be applied for the indirect and induced effects. This underlines the plausibility of the presented estimate of the regional added value effect.

### **The Higher Education Institutions in the City Economy**

This study clearly shows that the higher education sector in general, but also individual institutes, do not “disappear in the city”; a significant influence can be seen on secondary and demand oriented effects that go beyond purely monetary aspects. Based on their high number of students, Viennese higher education institutions influence the demographic structure of the city and at the same time they are important actors in the regional labour market due to their number of employees.

The results of this study suggest that responsible actors should pay more attention to higher education institutions that they have thus far: on the one hand through research that should take these actors more into account in the context of the city economy and urban space, and on the other hand through politics that should view higher education institutions not as a fixed constant, but rather as actors with significant formation potential for city development processes.