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Research Report

Austria's Competitiveness in Trade in Services

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Wörz, J.

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Austria's Competitiveness in Trade in Services

by
Julia Woerz



FIW – Forschungsschwerpunkt Internationale Wirtschaft
Arbeitspaket "Dienstleistungsexport"
Modul 2

Vienna, March 2008

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Trade in services is a rapidly growing phenomenon. Consequently, the question of individual countries' competitiveness in trade in services is of increasing importance. In this paper we describe patterns of competitiveness in services sectors for EU members over the period 1995 to 2005, differentiating between 11 individual service activities. We find a clear East-West divide in general and especially for Austria's strengths and weaknesses in the services sector. Austria's competitiveness lies in traditional, yet globally declining sectors such as transport and travel and is weak in industries such as insurance, computer and information, communication services and royalties and licence fees. The latter two industries are characterized by above-average levels of competitiveness within the EU. We then investigate the influence of factors such as labour productivity, unit labour costs, industry size and skill endowments for services sector competitiveness in the EU member states.

Keywords: trade in services, comparative advantage, competitiveness

JEL classification: F14

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Modul 2

1. Introduction

Services account for the majority of economic activities in industrialized countries. With a share of 60-80% of value added, one should rather speak of post-industrialized, service-based economies in this context when referring to highly developed economies. The importance of services for modern economies is not yet fully reflected in international trade flows. Based on information obtained from balance of payments statistics (BoP), services comprise roughly 20% of global trade. However, this view does not fully reveal the importance of trade in services as defined by the GATS (General Agreement on Trade in Services). This very far-reaching definition considers four modes of trading services across international borders. Only three of these modes are covered (to varying extents) by BoP statistics. Mode 3 – trade through foreign affiliates – is not covered by the BoP and hence also omitted from most studies, including the present one. Recent estimates by the World Bank, based on US data, suggest that Mode 3 trade is equally important as Mode 1 trade. This would increase the share of services in total trade from about 20% to roughly 30%. Hence, we still see an under-representation of trade in services compared to the importance of the services sector for the domestic economy. Nevertheless, the expansion of global trade in services is proceeding rapidly and well in line with the record expansion of global merchandise trade. The volume of services trade has more than doubled over the past decade, seen either way.

The question of individual countries' competitiveness in trade in services thus attains increasing significance. This question should not only be addressed from a mercantilist, export-focused point of view; we also have to acknowledge the importance of services as efficiency-increasing inputs in other sectors of the economy and thus pay attention to the structure and dynamics of imported services and the implications for the economy.

Any analysis of the competitiveness of countries is plagued by shortcomings in the definition of 'competitiveness' for entities other than individual firms, whose objective is to survive and strengthen their market position vis-à-vis their competitors. At all other levels of analysis, be it sectors, regions or nation states, the objectives of individual agents within these entities may differ, thus making it difficult to unambiguously define competitiveness (this was pointed out, for instance, in the influential article by Krugman, 1994, in the discussion by Narula and Wakelin, 1995, and Aiginger and Landesmann, 2002). The Organisation for Economic Co-operation and Development (OECD) defines competitiveness as '... the ability of companies, industries, regions, nations or supranational regions to generate, while being exposed to international competition, relatively high factor income and factor employment levels on a sustainable basis' (Hatzichronoglou, 1996). The EU employs a similar concept when defining competitiveness as output growth and high rates of employment in a sustainable environment. Given their very broad scope, these definitions encompass two – in the short run potentially conflicting – objectives of a nation/region/industry: generating high factor income while keeping employment levels high.

Focusing mainly on the country and the industry level in this paper, we shall make use of the framework offered by Trabold (1995). He defines competitiveness as the strengthening of four abilities: the ability to sell (goods and services) internationally; the ability to attract resources, in particular foreign direct investment (FDI); the ability to adjust to changing external conditions through structural change and upgrading; and finally the ability to earn, which can be measured by GDP and its growth. While being more practicable, this definition of course neglects concerns about factor employment. Yet the definition is attractive nonetheless, as it focuses on distinct, but highly influential aspects of competitiveness: the external market (ability to sell), thus reflecting the outward orientation of competitiveness; the forward orientation (ability to adjust and ability to earn/grow); and finally the conditions of the home market (ability to attract), which provide the foundation for being competitive.

With respect to measuring competitiveness we are again confronted with different possibilities, namely input measures versus output measures. Output measures look at a country's performance on export markets, which is measured either by revealed comparative advantages or by market shares and their evolution over time. Input measures focus on underlying factors that determine competitiveness. This relates to cost and price competitiveness on the one hand (as measured by wages, unit labour costs, export unit values) and to output performance (measured by labour and total factor productivity) on the other.

In this paper, we analyse the 'ability-to-sell' aspect competitiveness in services for EU member states, which we quantify with the help of output-oriented measures. In this we focus on Austria, representing a small open economy with a comparably high share of services in its external trade. Following our description of competitive positions and changes in rankings among countries, we then use both input and output-measures in our econometric analysis of the determinants of competitiveness. Our sample covers the EU member states over the period 1995-2005. Section 2 gives a detailed description of the databases used and points towards unavoidable shortcomings in the data which are due to changes in the reporting practice by individual EU member states at different points in time. Section 3 gives a detailed overview of Austria's relative standing in services trade, with a special focus on changes that occurred due to the new compilation practice in use since 2006. Section 4 identifies determinants of competitiveness in services within the EU and Section 5 concludes.

2. Data Sources

We collected data from various sources (see Pindyuk and Woerz, 2007 for a detailed description of the database). Services trade flows are taken from Eurostat's ITS database, supplemented by data from the IMF BoP statistic where necessary for international comparisons. Time series trade data for Austria are taken from the regional breakdown of

the Austrian Balance of Payments for the years 1995-2005.¹ The year 2006 marks a fundamental change in the reporting practice by the Austrian National Bank with respect to the BoP statistic. Prior to 2006, data were collected from financial institutions through which payments occurred. Since 2006, direct reporting by enterprises through a survey is used. The new compilation practice further reports a more detailed breakdown of individual service categories, in particular of other business services. Up to the end of February 2008, data for the years 2004-2006 were published according to the new compilation system. However, the bilateral breakdown by partners and sectors has not yet been published. While we have updated the data for this paper using the newly available figures wherever possible, we sometimes have to resort to data stemming from the old compilation system for our econometric analysis. We consider this an acceptable shortcoming, since Austria is one of 25 observations in every year, and hence a maximum of 4% of all observations is affected by this methodological change.² In order to be able to assess the qualitative changes we can expect with respect to our findings that are due to statistical reasons, we discuss changes in the structure of Austrian trade under the new and old method in Section 3.

We further used data from the EU KLEMS database (www.euklems.org) for output, factor inputs and employment levels by serviced sectors and from Eurostat's labour force surveys (LFS) for information on skill levels in individual sectors.

Because of the limitations in data availability, we focus here on two modes of transactions, namely cross-border trade (Mode 1) and movement of consumers (Mode 2). Due to the lack of FATS statistics for the countries covered in this sample, we did not attempt to add Mode 3 (foreign establishment). FDI data are often used to proxy for the sales of foreign affiliates. However, this is not entirely adequate since FDI flows reflect, on the one hand, more than trade in services (they also include financial flows between mother and daughter companies, such as intercompany loans, repayments of loans and repatriation of funds) and, on the other hand, less (an FDI flow in one year may lead to a continuous flow of services delivered over many subsequent years). Given the current state of internationally available comparable statistics, this is however the only existing alternative. We also did not include Mode 4 (temporary movement of persons). Apart from the even more severe problems of data availability for a comprehensive representation of this form of service provision, the latter would further imply a rather different discussion and notion of competitiveness.³

¹ I would like to thank Dieter Kreuz (OeNB) for kindly providing me with these data.

² Since we have only anecdotal knowledge about other countries and when they have reformed their compilation methods, the figure may be even less than 4%. It is highly likely that in earlier years, all countries have adopted an indirect reporting system, hence reducing this figure and making the sample in fact more homogenous.

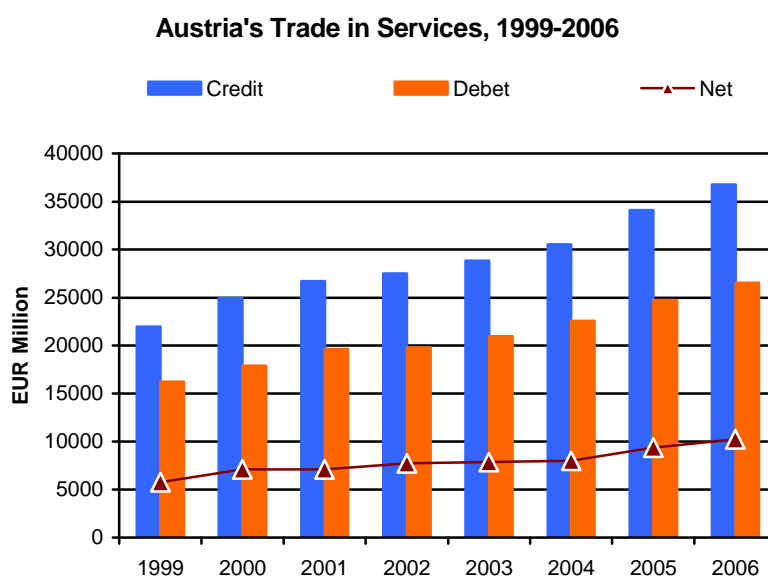
³ I.e. a competitive country would presumably attract many foreign workers. However, not only does the general public not unambiguously agree with this definition of competitiveness, it is further not straightforward how to measure temporary migration and to attach it to employment in the services sector.

3. Austria's Comparative Performance in Services Trade

3.1 Structure of Austria's Trade in Services

1999-2006 data for trade with the world according to the new compilation practice of the Austrian BoP were released by the end of February 2008. An overview of these data is given in Table 1 and Figure 1. This reveals that in contrast to results under the old methodology, the Austrian trade surplus in services was rising steadily from EUR 5,700 million in 1999 to EUR 10,000 million in 2006. While the value of exports rose by 67% over this period, imports expanded more moderately, by 64%. The increasing overall surplus stems from rising net exports in both travel and other business services. By contrast, the surplus in transport services was shrinking steadily from 2002 onwards.

Figure 1



Source: OeNB, 2008.

As can be seen from Table 1 as well as Figure 2, the expansion of exports was particularly strong in transport services. These are still the least important of the three main categories, with exports totalling EUR 8 billion in 2006. However, despite the category's declining share in global trade, its importance rose for Austria from 18% in 1999 to 22% in 2006, albeit accompanied by the observed declining net surplus. The structural change in Austrian services trade has been substantial. Over time, other services have become the most important category: the value of these exports reached EUR 15 billion in 2006. Previously, travel services were dominating the Austrian services trade balance. With exports worth EUR 13 billion in 2006, their share in total services declined from 46% in 1999 to 36%. This is not to say that travel services have lost their importance for Austria. Despite their falling share, the contribution to the trade surplus has continuously increased over time.

Table 1

Austria's Trade in Services, 1999-2006

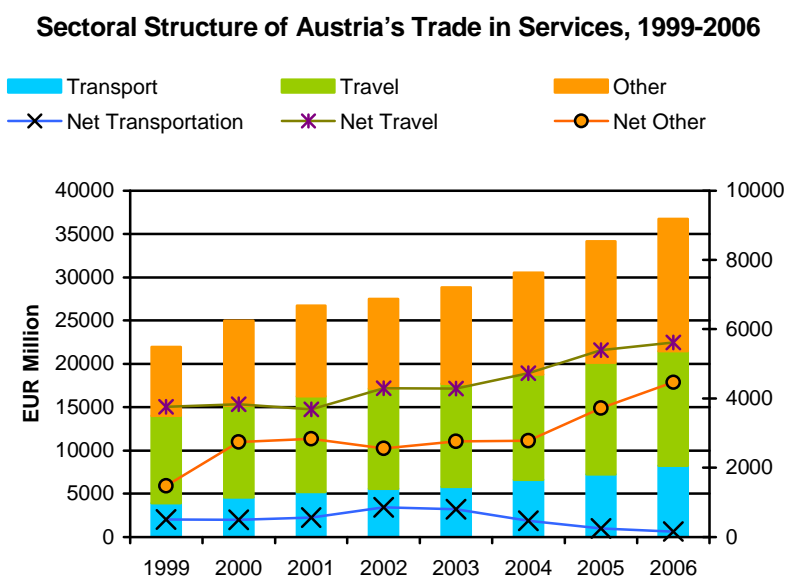
Exports	1999	2005	2006	1999	2006	2006	2006
	EUR million			Shares in % of Total		1999=100	y-o-y change in %
Total Services	21959	34132	36772	100.0	100.0	167.5	7.7
Transport	3919	7225	8203	17.8	22.3	209.3	13.5
Travel	10085	12904	13255	45.9	36.0	131.4	2.7
Communication	402	810	1079	1.8	2.9	268.4	33.2
Construction	664	795	770	3.0	2.1	116.0	-3.1
Insurance	494	647	598	2.2	1.6	121.1	-7.6
Finance	624	741	635	2.8	1.7	101.8	-14.3
Computer & Information	232	1001	1200	1.1	3.3	517.2	19.9
Royalties & Licence Fees	113	315	427	0.5	1.2	377.9	35.6
Other Business Services	5008	9192	10053	22.8	27.3	200.7	9.4
<i>of which:</i>							
<i>Merchandising</i>	1056	2029	2274	4.8	6.2	215.3	12.1
<i>Other Trade Related</i>	514	645	607	2.3	1.7	118.1	-5.9
<i>Operational Leasing</i>	366	312	331	1.7	0.9	90.4	6.1
<i>Misc. Business Services</i>	3072	6206	6842	14.0	18.6	222.7	10.2
Pers., Cultural & Recr.	141	191	205	0.6	0.6	145.4	7.3
Government Services	277	311	347	1.3	0.9	125.3	11.6
Imports	1999	2005	2006	1999	2006	2006	2006
	EUR million			Shares in % of Total		1999=100	y-o-y change in %
Total Services	16226	24760	26544	100.0	100.0	163.6	7.2
Transport	3409	6975	8051	21.0	30.3	236.2	15.4
Travel	6332	7506	7641	39.0	28.8	120.7	1.8
Communication	492	662	876	3.0	3.3	178.0	32.3
Construction	519	680	611	3.2	2.3	117.7	-10.1
Insurance	167	748	874	1.0	3.3	523.4	16.8
Finance	617	599	487	3.8	1.8	78.9	-18.7
Computer & Information	394	762	847	2.4	3.2	215.0	11.2
Royalties & Licence Fees	583	1080	1053	3.6	4.0	180.6	-2.5
Other Business Services	3410	5080	5419	21.0	20.4	158.9	6.7
<i>of which:</i>							
<i>Other Trade Related</i>	723	528	461	4.5	1.7	63.8	-12.7
<i>Operational Leasing</i>	95	148	151	0.6	0.6	158.9	2.0
<i>Misc. Business Services</i>	2591	4404	4807	16.0	18.1	185.5	9.2
Pers., Cultural & Recr.	194	583	600	1.2	2.3	309.3	2.9
Government Services	109	85	85	0.7	0.3	78.0	0.0

Source: OeNB 2008.

About 90% of other services (or 40% of total services) are producer-related services such as communication, insurance, financial, computer and information services, royalties and licence fees and other business services (merchandising, other trade-related, operational leasing and miscellaneous business services such as legal, consulting, advertising, management and other professional and technical services). Among these, we see a

dominance of other, in particular miscellaneous business services (27% and 19% respectively). All other categories reach shares of below 4% and often below 2% in total Austrian services exports and imports. Hence, compared to the EU average, in particular categories such as financial, computer and information services and royalties and licence fees are strongly under-represented in Austria's services exports. Also on the import side, we observe an under-representation of categories such as financial and other business services and royalties and licence fees. On the other hand, Austria imports more insurance and computer services than the average EU member state.

Figure 2

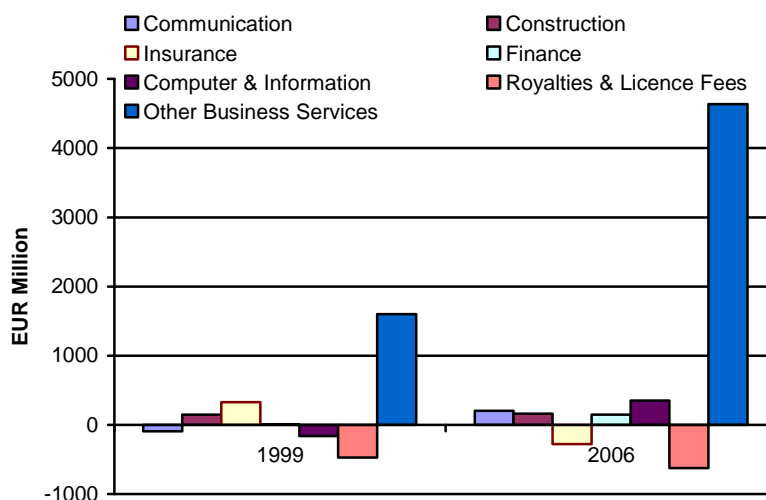


Source: OeNB, 2008.

Figure 3 reveals the increasingly strong positive contribution of other business services to the overall services balance. Recently also computer and information, communication and financial services show a surplus, which in 2006 amounted to 29%, 19% and 23% respectively of the export volume in each category. This testifies to a quite good performance. Construction services have always shown a surplus, their contribution has slightly declined in relative terms. Insurance services and royalties and licence fees are traditionally in deficit. The relatively poor performance of Austria in these categories is reflected not only in their small share in services exports, but also in the fact that the deficit amounted to 46% and 147% of the export value in either category. Since these categories represent important knowledge-intensive activities (i.e. royalties and licence fees can be taken as a proxy for technological progress), the increasing deficit in these positions raises concerns about Austria's future prospects in knowledge- and technology-intensive service activities.

Figure 3

Balance of Austria's Producer Services Trade, 1999 and 2006



Source: OeNB, 2008.

Table 2

Geographical Structure of Austria's Trade in Services, 2006

in % of Trade with World	EU-27		EU-15		EU-12	
	Exports	Imports	Exports	Imports	Exports	Imports
Total	76.0	72.3	63.7	56.2	12.2	16.1
Transport	75.4	68.4	63.7	47.8	11.7	20.6
Travel	85.2	69.8	76.1	56.7	9.2	13.1
Communication	80.0	75.4	67.7	61.6	12.3	13.8
Construction	68.8	80.6	47.9	61.8	20.8	18.8
Insurance	87.8	78.6	74.3	57.1	13.5	21.5
Financial Services	44.5	55.0	36.8	38.0	7.7	17.0
Computer & Information	74.7	78.3	61.2	65.5	13.5	12.8
Royalties & Licence Fees	61.1	88.9	36.1	87.3	25.0	1.6
Other business Services	67.8	74.4	51.8	63.6	16.1	10.8
Personal, Cultural, Recreational	83.2	93.9	78.4	27.8	4.8	66.1
Government, n.i.e.	25.0	41.9	21.3	31.1	3.7	10.8

Source: OeNB, 2008.

A regional breakdown of Austria's trade in services has not yet been published, but with respect to very broad groups of partner countries some information is available.⁴ Table 2 displays Austria's persistently strong concentration on partners within the EU. The EU-27 accounts for roughly three quarters of all services exports and imports. Within the EU-27, the 'old' member states are responsible for the vast majority of services trade flows. 64% of

⁴ I would like to thank Patricia Walter (OeNB) for kindly providing me with these data.

Austria's total services exports go to the EU-15 (Germany, Belgium, Denmark, Finland, France, Greece, Ireland, Italy, the Netherlands, Luxembourg, Portugal, Spain, Sweden and the United Kingdom), while only 56% of total services imports originate from these countries. This results from the high value of travel exports to the old EU member states. The post-2004 EU members (Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovak Republic, Slovenia) account for about 12% of services exports but as much as 16% of Austria's imports. Thus, currently their share is higher in Austrian services imports than in exports. The trade balance with this group is still positive, due to positive net exports to Romania and Bulgaria. Looking at the ten members which joined the EU in 2004, Austria recorded already in 2006 a small deficit of EUR 28 million. Information gathered from the regional breakdown of the Austrian BoP based on the old compilation practice indicates that the share of new members has risen steadily since 1995. The deteriorating trade balance with these countries deserves more scrutiny.

Table 3

Sectoral Structure of Austria's Trade in Services by Partner Regions, 2006

% of Total Services	EU-15		EU-12	
	Exports	Imports	Exports	Imports
Transport	22.2	25.4	21.2	38.3
Travel	42.8	28.9	26.8	23.3
Communication	3.1	3.7	2.9	2.9
Construction	1.6	2.6	3.5	2.7
Insurance	2.6	3.1	2.4	4.0
Financial Services	1.0	1.3	1.1	2.0
Computer & Information	3.1	3.8	3.6	2.6
Royalties & licence Fees	0.7	6.3	2.4	0.4
Other business Services	22.1	23.6	35.6	14.1
Personal, Cultural, Recreational	0.7	1.1	0.2	9.5
Government, n.i.e.	0.3	0.2	0.3	0.2

Source: OeNB, 2008.

Table 3 gives the sectoral breakdown of Austria's services trade by the two partner regions, old and new members. Clearly, exports of travel services play a greater role in trade with the old members, while exports of other business services feature much more importantly in trade with the new members. On the import side, we also see large differences in the three broad categories transport, travel and other services. Imports of transport services from the new member states account for 39% of all imports from these countries (compared to 25% from the old members), while Austria imports considerably less other services, especially business services, from these countries. Equally low shares are observed for other producer-related service categories for imports from the old and the new members states. Exceptions to note are royalties and licence fees, which are imported

almost exclusively from old members, and other business services, which again are imported mostly from old members. The comparatively high share of financial services imports from the new members may result from Austria's strong outward FDI to the region. Hence, this may reflect trade between foreign affiliates and Austrian mother banks at home. As such, it hints towards high Austrian exports in this services sector through Mode 3.

In general, the revision of the BoP Statistics for Austria implies some notable changes in the sectoral composition of trade in services, but it does not result in a radically different picture in qualitative terms. The services trade balance has improved under the new methodology, not least due to considerably higher net exports in travel services. In contrast to the global trend, Austria shows a persistent and strong reliance on travel and transport services. While the surplus in the former category is rising, the latter experiences a considerable reduction of the initial surplus, which is related to high transport imports from the new member states. Austria's performance in producer-related services appears to be improving as indicated by a rising surplus in almost all categories, except royalties and licence fees and insurance services. The geographical structure of Austria's services trade emerges as relatively robust to the methodological changes. We still see a clear differentiation in trade with Eastern and Western EU member states. While travel services are exported mostly towards Western partners, other business services are often sourced from Western partners and exported to Eastern partners.

3.2 Competitiveness as Revealed by Comparative Advantage

In this section we describe Austria's competitive position within the European Union as revealed by trade flows. The concept of competitiveness is only meaningful in a relative sense, i.e. by comparing a country's performance with its competitors' performance. As a result, the calculations in this section are based on data drawn from the Eurostat ITS statistics, with the values for Austria updated by the figures based on the new compilation method. In this section we apply the principle of comparative advantage – i.e. relative advantages arising from lower costs in the production of goods due to differences in endowments, different technologies or other factors – to trade in services. Comparative advantages in the provision of services can arise from differences in endowment with human capital, legal and institutional differences and the like. However, in general these are difficult if not impossible to measure. Therefore, Balassa (1965) used trade flows, which are well measured in goods trade, to draw conclusions on the underlying factors that determine competitiveness. Despite the fact that trade in services is less obvious to measure, we are using our data – reflecting mostly Mode 1 and Mode 2 trade – to calculate these 'revealed comparative advantages' for the analysis of competitiveness in services. The index is calculated as follows:

$$RCA_k^i = RXA_k^i - RMA_k^i$$

where

$$RXA_k^i = \frac{X_k^i / X_n^i}{X_k^r / X_n^r}$$

and RMA_k^i is defined analogously. X_k^i are total exports (respectively imports) of country i in industry k . Superscript r denotes all countries, and subscript n refers to all industries. The index reflects the relative representation of a country's exports and imports in one industry compared to the average representation of that industry in total trade of the sample as a whole (Vollrath, 1991); i.e., it compares a country's trade share to the average share of the rest of the sample. This measure of revealed comparative advantage (RCA) incorporates both, relative demand and supply dimensions and reflects a country's net world market position in the respective industry relative to its size. It can thus be considered as an index of competitiveness and has consequently also been labelled 'relative trade advantage' or 'revealed competitive advantage'. It is recommended for analysing highly disaggregated trade flows, where some goods or services in our case may not be exported (or imported) at all by some countries.

A positive index reveals a competitive advantage, or an above-average relative net market share in the specific industry, whereas a negative index reveals a competitive weakness. The index is unbounded and symmetric around zero. The RCA may hide extreme sectoral specialization if it is equally strong in exports and imports, therefore we always have to consider both components. Each component will take a value between zero and infinity, with values greater than one indicating a specialization of exports or imports in the respective industry and values below one indicating below-average trade flows.

A choice had to be taken as to which should be the correct reference market. We calculated both, RCAs with the world as reference and RCAs with the EU-25 as reference.⁵ The differences between these two choices were negligible for our sample of EU countries. For all three components (imports, exports and the RCA) and for all sectors, the correlation was one or close to one throughout the whole period. This is to be expected considering the fact that most EU trade in services takes place within the European Union. As already mentioned, Austria sells 76% of its total services within the EU – this share has been stable over the past decade – and sources more than 70% from the EU – here with a rising trend.

⁵ Romania and Bulgaria are not present as reporters in the Eurostat ITS database for our observation period, therefore we restrict the sample here to the EU-25.

Table 4

Relative Comparative Advantages of EU-25 Countries in Trade in Services, 1995 and 2005

1995	Transport			Travel			Other services		
	Export	Import	RCA	Export	Import	RCA	Export	Import	RCA
AT	0.49	0.49	0.01	1.29	1.20	0.10	1.11	1.20	-0.09
BE	1.57	1.16	0.41	0.52	0.93	-0.41	.	.	.
CY	0.77	2.44	-1.67	1.65	0.76	0.89	0.68	0.38	0.30
CZ	0.93	0.68	0.25	1.33	1.02	0.31	0.84	1.23	-0.39
DK	1.89	1.85	0.04	0.75	0.93	-0.18	0.75	0.60	0.15
EST	0.67	1.25	-0.59	1.94	0.60	1.34	0.51	1.22	-0.70
EE	1.82	1.84	-0.02	1.26	0.55	0.71	0.40	0.91	-0.51
FI	1.19	0.92	0.26	0.69	0.72	-0.04	1.19	1.32	-0.13
FR	1.04	1.32	-0.28	1.02	0.76	0.26	1.01	1.05	-0.04
UK	0.85	1.06	-0.21	0.80	1.15	-0.36	1.29	0.89	0.40
DE	1.06	0.74	0.32	0.70	1.39	-0.69	1.25	0.89	0.36
GR	0.17	1.13	-0.96	1.34	0.92	0.41	1.26	1.03	0.22
HU	0.34	0.52	-0.18	1.76	1.19	0.58	0.83	1.18	-0.35
IE	0.91	0.65	0.25	1.37	0.55	0.82	0.82	1.62	-0.80
IT	0.75	1.00	-0.25	1.45	0.82	0.63	0.85	1.19	-0.34
LT	2.52	2.42	0.11	0.49	0.65	-0.16	0.59	0.49	0.10
LU	0.29	0.36	-0.07	0.49	0.48	0.01	1.83	1.84	-0.02
LV	3.90	2.57	1.34	0.09	0.30	-0.22	0.13	0.68	-0.55
MT	1.06	1.69	-0.63	1.95	0.92	1.02	0.29	0.70	-0.41
NL	1.67	1.16	0.51	0.44	0.79	-0.35	1.10	1.12	-0.02
PL	1.21	1.02	0.19	0.67	0.17	0.50	1.18	1.70	-0.52
PT	0.78	1.06	-0.28	1.82	0.97	0.85	0.54	1.04	-0.50
SK	1.10	0.69	0.42	0.81	0.53	0.28	1.14	1.61	-0.48
SI	1.06	1.25	-0.19	1.66	1.21	0.45	0.51	0.73	-0.22
SE	1.35	1.16	0.19	0.69	0.96	-0.27	1.09	0.98	0.11

2005	Transport			Travel			Other services		
	Export	Import	RCA	Export	Import	RCA	Export	Import	RCA
AT	0.96	1.26	-0.29	1.54	1.11	0.43	0.77	0.83	-0.06
BE	1.26	1.16	0.10	0.73	1.07	-0.35	1.10	0.97	0.13
CY	1.21	1.92	-0.72	1.47	1.28	0.19	0.77	0.53	0.25
CZ	1.54	0.87	0.67	1.77	0.90	0.87	0.51	1.18	-0.68
DK	2.23	1.97	0.27	0.61	0.77	-0.17	0.70	0.70	0.00
EST	0.83	1.30	-0.47	2.10	0.85	1.24	0.62	1.03	-0.40
EE	2.00	2.12	-0.13	1.24	0.77	0.46	0.58	0.72	-0.14
FI	0.73	1.28	-0.56	0.53	0.75	-0.22	1.39	1.09	0.30
FR	1.18	1.30	-0.12	1.50	1.09	0.40	0.77	0.89	-0.12
UK	0.80	1.09	-0.29	0.61	1.35	-0.74	1.33	0.84	0.49
DE	1.24	1.04	0.20	0.78	1.33	-0.55	1.08	0.88	0.21
GR	2.56	2.54	0.02	1.63	0.77	0.87	0.18	0.55	-0.36
HU	0.78	0.85	-0.07	1.37	0.91	0.46	0.98	1.19	-0.21
IE	0.23	0.17	0.07	0.34	0.32	0.02	1.67	1.80	-0.13
IT	0.88	1.18	-0.30	1.61	0.92	0.70	0.83	1.04	-0.22
LT	2.59	2.11	0.48	1.22	1.34	-0.12	0.37	0.41	-0.05
LU	0.30	0.21	0.09	0.37	0.44	-0.08	1.63	1.72	-0.09
LV	2.85	1.56	1.30	0.65	1.39	-0.74	0.53	0.62	-0.09
MT	1.16	1.09	0.07	1.87	0.86	1.01	0.60	1.11	-0.51
NL	1.36	0.99	0.37	0.54	0.82	-0.28	1.15	1.18	-0.03
PL	1.70	1.12	0.58	1.59	1.13	0.46	0.53	0.95	-0.42
PT	1.07	1.47	-0.40	2.15	1.13	1.01	0.51	0.80	-0.29
SK	2.15	1.39	0.76	0.99	0.65	0.34	0.58	1.04	-0.46
SI	1.46	1.08	0.38	1.86	1.21	0.65	0.50	0.92	-0.43
SE	1.03	0.79	0.24	0.70	1.14	-0.44	1.20	1.09	0.11

Note: Reference market is the EU-25, 2004 values for DK in 2005 and 2003 values for SK in 2005.

Source: Trade in Services Database (TSD), wiiw.

Given the concentration on the EU market, in particular of Austrian trade in services, we report here the RCAs relative to the EU-25 as the reference market.⁶ Table 4 contains the results for the years 1995 and 2005. Let us briefly discuss the results by sectors. We clearly see the Baltic countries' specialization on transport services, which is especially pronounced in Latvia. Estonia, which due to its geographical position along the major oil pipelines and shipping routes from Russia and Finland is expected to show a strong specialization on transport services, shows in addition a strong specialization on the import side, resulting in a negative RCA in this category. Over the past decade, the specialization of Northern European countries such as Denmark, Sweden and the Netherlands has declined, while Southern European countries – Greece, Cyprus and Malta – and especially Eastern European countries – Slovakia and Slovenia besides the Baltic States – increasingly specialize in exports of transport services. Austria initially shows a comparative advantage in transport services, with a moderate degree of specialization on the export and the import side compared to the sample as a whole. However, over time this advantage has been eroded resulting in a competitive weakness for Austria in this category by 2005.

Turning to the next category, the usual suspects are leading the list of countries with a comparative advantage in travel services: Spain, Portugal, Malta, Greece, the Czech Republic (somewhat surprising) and Italy all display strong competitive positions in travel services. In 1995, Austria shows one of the lowest comparative advantages of those 15 EU members specializing in travel services. By 2005, Austria had improved its position and ranked above countries such as France, Slovakia, Cyprus and Ireland. This also reflects the still growing importance of travel services for Austria.

Finally, Austria has a relatively weak competitive position in other services. Out of the 25 member states only seven countries showed a comparative advantage. In 2005 these were, in decreasing order, the United Kingdom, Finland, Cyprus, Germany, Belgium, Sweden and, very weakly so, Denmark. Austria ranked 12th in 1995. However, there is a clear trend towards an improvement of Austria's competitive position in this category over time. By 2005, Austria moved up to rank 10 among the 25 EU member states. This is also reflected in a slight improvement in its RCA from -0.09 to -0.06 .

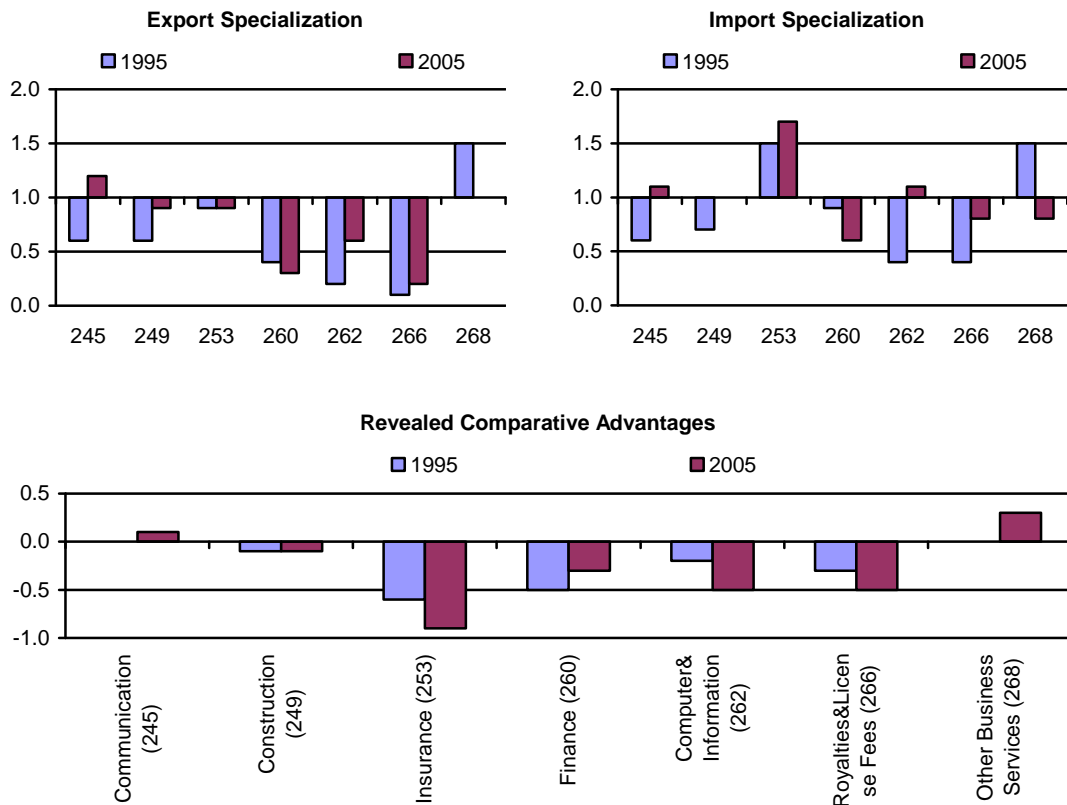
Figure 4 below plots individual developments for Austria within the seven producer-related categories included in other services. On both the export and the import side, almost all producer services are under-represented in Austria's services trade flows as compared to the EU-25 on average. Only exports and imports of other business services, in 2005 also

⁶ We have also calculated comparative advantages relative to the whole world. While in general the difference between the choice of reference market is negligible (which is argued by the high concentration of services trade on partners in the EU), there are marked differences between sectors for individual countries. Austria's competitive position differs strongly depending on the reference market in insurance services and in some years also in construction services. In fact, this hinges more or less on the inclusion or exclusion of the US in the reference group.

in communication services, as well as imports of insurance services are above the EU-25 average. With relatively more imports than exports in the latter category, Austria reveals however a comparative disadvantage in insurance services. By contrast, we can see a notable improvement in Austria's competitive position in other business and communication services, with a switch-over to a comparative advantage over the past decade. In all other producer services the weak competitive position is deteriorating over time. This is especially true for royalties and licence fees and computer and information services. An exception is the trend in financial services, where the disadvantage is diminishing due to weakening import demand. Since this development is not based on strengthening exports, it does not really reflect an improvement in Austria's competitive position in this category.⁷

Figure 4

**Revealed Comparative Advantages of Austria versus EU-25
in Producer-Related Services, 1995 and 2005**



Source: wiiw.

⁷ With respect to financial services in particular, the omission of trade through foreign affiliates might bias the picture against Austria. Strong outward FDI in this sector in Central and Eastern Europe would most likely reveal a stronger competitive position of Austria in financial services.

The pattern of revealed comparative advantage within Europe has remained qualitatively stable during the past decade. It is, however, interesting to note that the degree of specialization has increased. This is a more general trend which stands in contrast to developments in goods trade.⁸ For Austria, specialization within the EU-25 is more pronounced than globally. Also, in 1995 Austria showed a comparative disadvantage in travel services when compared to the world average, while it has always had a comparative advantage in this category within the EU. By 2005 these qualitative differences disappeared, revealing that Austria's attractiveness for tourism has increased globally. Austria now shows a revealed comparative advantage in travel services even when tourist destinations such as the Dominican Republic, the Maldives, etc. are included in the benchmark.

3.3 Contributions to the Trade Balance

The trade balance indicator developed by CEPII (Centre d'Etudes Prospectives et d'Informations Internationales, Paris) identifies each individual sector's relative contribution to the overall trade balance, correcting for the sign of the total balance and for the volume of trade in each sector in relation to the total import and export volume. When calculating this index over all sectors, the sum of all contributions is zero. Thus, it tells us whether a service sector could possibly add more or less to the overall services trade balance given its size in total exports and imports. The improvement in Austria's performance in other services is also reflected in a positive contribution to the total balance by 2006 in contrast to a rather large initial negative contribution in 1995. Table 5 shows that the contribution of travel services to the overall surplus has further risen, underlining their increasing importance. On the other hand, transport services emerge increasingly as a drain on Austria's net profit from trade in services. In other words, the performance of transport services is falling short of its potential, given the volume of exports and imports in this category.

Let us look in more detail into the performance of producer services. Other business services contribute more than expected to the overall surplus in the trade balance given their share in the total trade volume. This positive contribution of other business services arises to a large extent from merchanting and less from the quantitatively more important sub-sector of miscellaneous business, professional and technical services. All other producer services, and in particular royalties and licence fees as well as insurance services, fall short of their potential contribution to the Austrian services trade balance.

⁸ It is a common finding that specialization patterns in goods trade have become more similar in the OECD and a clear tendency of de-specialization and convergence in trade patterns could be observed in the late 1990s (see Timmer, 2000 and Woerz, 2005).

Table 5

Contribution to Austria's Services Trade Balance by Sectors (CEPII Index), 1999 and 2006

	1999	2006
Transport	-15.5	-39.1
Travel	33.7	35.4
Communication	-5.9	-1.8
Construction	-0.9	-1.0
Insurance	6.0	-8.1
Finance	-4.7	-0.5
Computer & Information	-6.7	0.4
Royalties & Licence Fees	-15.0	-13.7
Other Business Services	8.8	33.7
<i>Merchanting</i>	23.5	30.1
<i>Other Trade Related</i>	-10.3	-0.4
<i>Operational Leasing</i>	5.3	1.6
<i>Misc. Business Services</i>	-9.7	2.4
Pers., Cultural & Recr.	-2.7	-8.3
Government Services	2.9	3.0

Source: wiiw.

3.4 Specialization Patterns in Austrian Trade in Services

In this part we will look at specialization in services exports and imports from the Austrian perspective. Figure 5 plots the same type of RCA measure which was used in Section 2.1 above, however, this time based on the regional breakdown of the Austrian BoP by the two partner regions: old EU members and new EU members. The difference to the calculations from Section 2.1 above is that now X_k^i represents Austria's exports in sector k to country i , subscript n stands for total services again while subscript r stands for Austria's exports to the world. Thus, in this case we can speak of specialization of Austrian services trade flows between different partners when interpreting the index. The benchmark is the Austrian trade structure, hence a positive deviation means that exports in a specific services sector to the respective partner are above the importance of this sector in Austria's services trade balance.

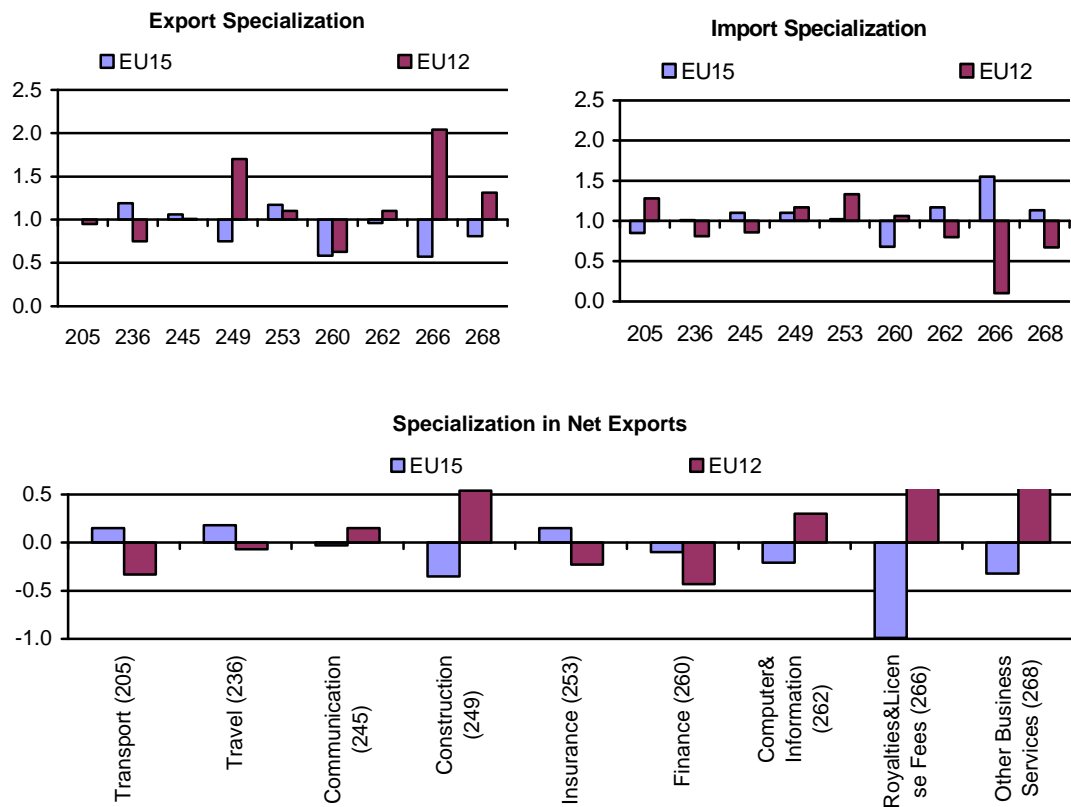
The first point to note from Figure 5 is the contrast in specialization patterns between Western and Eastern European trading partners. Thus, we can speak of an East-West differentiation in Austria's services trade. The differences in specialization patterns are more pronounced on the import side, where we clearly observe strong imports of producer-related services – such as communication, computer and information, royalties and licence fees, and other business services – from the old EU member states and likewise strong imports of transport and construction services from the new member states. Two notable

exceptions are insurance and financial services, where imports from the new members are considerably above the Austrian average. Again, we refer here to strong Austrian outward investment in these countries, resulting in trade flows back to the mother companies which show up here in the BoP figures.

On the export side we also observe a differentiation, with producer-related services being exported mainly to the new members, and travel services being exported primarily to old EU members. The two categories of insurance and financial services again show the same specialization with respect to both groups. The positive specialization in insurance services means that Austria exports these services mostly within the EU, while the negative specialization in financial services implies that Austria's exports in this sector go mainly to partners outside the EU. It is further interesting to note that we see an indication of strong intra-industry trade in construction services between Austria and the new EU member states.

Figure 5

Trade Specialization of Austria by Sectors, 2006



Source: wiiw.

4. Determinants of Competitiveness in Services

Having described at length Austria's strengths and weaknesses in trade in services, we now turn more generally to potential determinants of the competitive position of countries. In this section, we investigate the driving factors behind services sector competitiveness in the EU member states. We employ a simple empirical model to our panel data set containing 25 EU members over the period 1995-2005. Our estimating equation is given by the equation below:

$$RCA_{it}^k = \alpha + \beta_1 LP_{it}^k + \beta_2 ULC_{it}^k + \beta_3 Size_{it}^k + \beta_4 Open_{it}^k + \beta_5 Skills_{it}^k + \gamma_i^k + \varepsilon_{it}^k$$

where *RCA* stands for revealed comparative advantage, *LP* denotes labour productivity growth within the sector, *ULC* are unit labour costs, *Open* measures openness of the services sector through its exports-to-output ratio and *Skills* is a measure of the skill intensity of the sector (we will use two different measures: skills measured by education levels and by occupations). Table 6 reports the results of the random effects estimation, pooled across all sectors. Controlling for the openness of the respective industry (through the ratio of each industry's exports to its value added) clearly emerges as an important omitted variable from comparing specifications 1 and 2. We see the strong bias that is introduced when we omit this variable in the coefficients of labour productivity as well as unit labour costs. Controlling for export orientation yields plausible signs, namely a positive impact of higher labour productivity and a negative impact of higher unit labour costs. We can also see that larger industries (measured by employment levels) tend to be statistically more competitive than smaller industries within the EU. This is an important message with implications for industrial policies.

As mentioned, export orientation is the single most important determinant.⁹ Including this variable improves the explanatory power of the model by 20 percentage points. We further observe certain services sectors that are characterized by a generally higher level of competitiveness (in specifications 3 and 4). These are communication and construction services. Insurance services are generally less competitive compared to other sectors within the EU. Finally we turn to our skill variables (specification 4). A higher skill intensity of an industry or country does not result in higher competitiveness according to these results, regardless of whether we measure skills by education levels or by occupation groups. This surprising result (with a small negative impact on an industry's competitiveness from a higher share of people with tertiary education in the workforce) is modified when we look at Western and Eastern EU members separately. Specification 5

⁹ Since higher export orientation may well be the result of strong competitiveness rather than its cause, this variable may introduce endogeneity into the estimation. Therefore we experimented with different measures of trade openness. For instance, the share of the industry's exports in total exports showed a strong indication of endogeneity. We therefore used here the ratio of exports to value added (we also tried the ratio of exports to employment by industry with similar results) in order to avoid this problem.

includes a dummy variable for new EU members (EU-East) and old EU members without the Southern cohesion countries (EU-North). Interestingly, both groups show a higher level of competitiveness compared to the cohesion countries Portugal, Spain and Greece. There is no statistically significant difference in the competitiveness of old and new EU members. Nevertheless, stratifying the sample into these two subgroups reveals interesting differences in the determinants of competitiveness between the two groups.

Table 6

Determinants of Service Sector Competitiveness (Robustness)

	(1)	(2)	(3)	(4)	(5)
Labour productivity level	0.0199	0.0695 ***	0.1015 ***	0.1332 ***	0.0633 **
	0.52	2.05	3.06	3.47	1.78
Unit labour costs	0.1598 ***	-0.1022 ***	-0.1132 ***	-0.0848 *	-0.1061 ***
	3.13	-2.2	-2.5	-1.5	-2.28
Size of service sector	0.0994 ***	0.0744 ***	0.0219	0.0427 *	0.0922 ***
	3.71	3.12	0.88	1.62	3.49
Openness		0.3776 ***	0.3999 ***	0.3225 ***	0.3795 ***
		23.49	24.16	15.84	23.55
<i>Sector dummies:</i>					
Transport			-0.0314	-0.0204	
			-0.2	-0.13	
Communication			0.4771 ***	0.4431 ***	
			2.9	2.67	
Construction			1.0323 ***	0.7830 ***	
			6.03	4.53	
Insurance			-0.3991 ***	-0.2826 *	
			-2.32	-1.52	
Finance			-0.0332	-0.1126	
			-0.2	-0.63	
Computer and Information			-0.0716	-0.0208	
			-0.42	-0.11	
Royalties and Licence Fees			0.2051	0.1234	
			1.24	0.72	
Tertiary education share				-0.0555 *	
				-1.6	
Share of white collar, high-skill workers				0.0305	
				1.27	
EU-North					0.4030 **
					2.72
EU-East					0.4965 **
					3.27
Constant	-0.5696 ***	0.0163	0.0445	-0.2856	-0.4332 **
	-2.83	0.09	0.21	-1.16	-1.94
Overall R2	0.0600	0.2500	0.3792	0.3468	0.2750
Observations	1839	1839	1839	1399	1839
Observations per group	194	194	194	191	194

Source: wiiw.

We see from Table 7 that the determinants of services sector competitiveness differ between old and new EU member states. As a first observation, the fit of the model is much higher for the sub-sample of new members, while the explanatory power of the model for the old members is rather low. Other factors, not included here, seem to be more

important in explaining competitiveness of services trade by the old member states.¹⁰ Higher labour productivity and low unit labour costs are highly significant determinants of strong competitiveness for the new members. Openness is important in both sub-samples. Industry size shows a weakly negative coefficient in the sub-sample of Northern EU members, which is surprising. We can also distinguish certain services industries that are more competitive in one sub-sample but not in the other. For example, royalties and licence fees are characterized by above-average levels of competitiveness in the old member states, but not so in the new members. These rather show below-average competitiveness in insurance services. This explains the surprisingly negative coefficient in specifications 3 and 4 from Table 6 above (the latter is identical to the first column in Table 7). The two sub-samples also share similarities. For both samples, communication

Table 7

Determinants of Service Sector Competitiveness by Regions

	EU-25	EU-North	EU-East
Labour productivity level	0.1332 *** 3.47	-0.0399 -0.7	0.2064 *** 2.68
Unit labour costs	-0.0848 * -1.5	0.0735 1.01	-0.2767 *** -2.81
Size of service sector	0.0427 * 1.62	-0.0867 *** -2.15	0.1260 *** 2.33
Openness	0.3225 *** 15.84	0.2031 *** 7.74	0.3499 *** 7.83
<i>Sector dummies:</i>			
Transport	-0.0204 -0.13	0.2466 1.05	0.0668 0.33
Communication	0.4431 *** 2.67	0.6471 *** 2.62	0.4459 ** 1.9
Construction	0.7830 *** 4.53	0.7930 *** 3.19	0.6158 *** 2.46
Insurance	-0.2826 * -1.52	0.0924 0.35	-0.5394 ** -1.74
Finance	-0.1126 -0.63	0.1429 0.56	-0.2363 -0.87
Computer and Information	-0.0208 -0.11	0.1472 0.55	-0.0139 -0.05
Royalties and Licence Fees	0.1234 0.72	0.4836 ** 1.97	-0.1827 -0.75
Tertiary education share	-0.0555 * -1.6	0.0101 0.27	-0.0037 -0.05
Share of white collar, high-skill workers	0.0305 1.27	0.0130 0.47	0.1614 *** 3.11
Constant	-0.2856 -1.16	0.8034 *** 2.1	-0.4032 -0.93
Overall R2	0.3468	0.1630	0.5579
Observations	1399	780	414
Observations per group	191	91	76

Source: *wiiw*.

¹⁰ It would be interesting to analyse the impact of differences in regulatory regimes in this respect.

and construction services emerge as the most competitive services sectors. Further, openness is again one of the most important and most decisive factors in explaining competitiveness. As a last interesting observation from these results, we see a significantly positive effect from more high-skill employment (measured by occupation shares) on competitiveness only in the new member states.

5. Conclusions

While accounting for the vast majority of domestic value added, services are so far still under-represented in international trade flows. However, trade in services is a rapidly growing phenomenon and hence, the question of international competitiveness in the sector receives growing interest. In this paper we add two new aspects to this discussion. First, being confronted with a recent reform of the Austrian Balance of Payments Statistics, this paper is one of the first to provide an overview of Austria's performance in trade in services according to the new figures. Second, we also identify important input-oriented factors that are influential in determining the output-oriented notion of competitiveness.

With respect to Austria's trade in services, the methodological changes that took effect at the beginning of 2006 resulted in a notable improvement in Austria's services trade balance which is to a large extent due to increased net exports in travel services. Qualitatively we see the same picture of a considerable structural change between individual services sectors as prior to the reform. The geographical structure of Austria's services trade emerges as relatively robust to the methodological changes.

Concerning Austria's sectoral composition of services exports, we see a persistent, strong and increasing reliance on travel and transport services. These are both categories that are characterized by a relative decline in their global importance. While the surplus in the former category is rising, the latter experiences a strong reduction of the initial surplus which is related to high transport imports from the new EU member states. In the European context, Austria thus shows a comparative disadvantage in transport services by 2005, while it has a clear comparative advantage in travel services (even in a worldwide comparison). Austria's relatively poor performance in producer-related services appears to be improving over time as indicated by a rising surplus in almost all categories, except royalties and licence fees and insurance services. Also the comparative disadvantage as measured by net exports in this category improved slightly over the period under investigation, resulting in a lower negative index of competitiveness in 2005 as compared to 1995.

Nevertheless, we can observe that up to date almost all producer services are under-represented in Austria's services trade flows (imports and exports) as compared to

the EU-25 average. Only exports and imports of other business services, recently also exports of communication services, as well as imports of insurance services are above the EU-25 average. With relatively more imports than exports in the latter category, Austria reveals however a comparative disadvantage in insurance services. For communication services, we observe a recent switch in comparative advantage from a competitive weakness to a weak but positive comparative advantage. Likewise, we also observe a notable improvement in Austria's competitive position in other business services, also with a switch to a comparative advantage over the past decade. In all other producer services the weak competitive position is deteriorating over time. This is particularly true for royalties and licence fees, and computer and information services. An exception is the trend in financial services, where the disadvantage is diminishing due to weakening import demand. Since that development is not based on strengthening exports, it does not really reflect an improvement in Austria's competitive position in this category based on cross-border trade flows alone.

With respect to Austria's regional trade structure in services, we see a clear differentiation between trade with Eastern and Western EU members. While travel services are exported mostly towards Western partners, other business services are often sourced from Western partners and exported to Eastern partners. The strong imports of financial services from the new member states hint towards a good competitive position of Austria with respect to trade through foreign affiliates (which we do not consider in this analysis due to data constraints).

In the second part of this study, we identify common factors that are influencing the ranking of competitiveness in services (as measured through trade flows). Interestingly, we found no robust and strong impact of skill endowments on competitiveness. High-skill employment had a positive effect on competitiveness only in the sub-sample of new EU member states. High levels of labour productivity along with low unit labour costs showed a positive influence on revealed comparative advantages. This little surprising result is, however, again confirmed only for the new member states, while the significant relationship disappears in the sub-sample of old members. Hence we conclude that other factors, possibly institutional features and regulatory regimes, play a greater role in these economies.

Despite falling into the group of old member states, Austria's performance in trade in services is consistent with its performance in price-related measures of competitiveness. For the EU as a whole, we observe rather large differences in both labour productivity and unit labour costs.¹¹ (EU KLEMS database). Austria's labour productivity in the services sector reaches about half the average EU level in the service sectors. In terms of efficiency

¹¹ Data on productivity and unit labour costs are calculated from value added, employment and wage data by individual service sectors from the EU KLEMS database (EU KLEMS database 2007).

in service production Austria is performing rather badly. In contrast, Austria's unit labour costs in services correspond to the European average. In some industries – communication, insurance, computer and information, and other business services – unit labour costs are even well below the European average. With the exception of computer and information services, all these are also the sectors where labour productivity is among the highest for Austria. Thus, we can explain Austria's recently obtained comparative advantage in communication services and other business services by improvements in labour productivity and unit labour costs. However, insurance services pose a puzzle. According to input measures, this should be an internationally competitive industry in Austria. Nevertheless, it is characterized by a high and growing comparative disadvantage as measured by trade flows. Other factors, not analysed in this study, must be responsible for this differing performance on input and output measures of competitiveness. Clearly, the outstanding performance of the UK in this particular industry also explains the high comparative disadvantage in trade flows to some extent.

Also travel services, so far Austria's backbone in services trade, show a – relatively speaking – high labour productivity. On the other hand, the transportation sector is characterized by extremely low productivity levels (less than a third of the EU-25 average) and above-average unit labour costs. As a general word of caution, Austria should put more emphasis on gaining competitiveness in dynamically growing producer-related services sectors rather than on the traditionally important categories of travel and transport services. While due to its geographical central location in Europe, the volume of transport services will naturally increase further, Austria is not well equipped to meet the comparative advantages of its Eastern European neighbours in this category. In particular the Czech Republic and Slovakia, besides the Baltic States with a considerably smaller relevance for Austria, have recently emerged as very strong European-wide competitors in this sector.

The weak performance in financial services (through Mode 1 = cross-border trade) is also correlated with high above-average unit labour costs and a low relative productivity level. We are confident that the inclusion of Mode 3 (trade through foreign affiliates) in the analysis would improve Austria's ranking within Europe in this service sector. This improved competitiveness in the sector is already reflected in the relatively high imports of such services from Eastern Europe, where most of Austria's outward FDI in the sector is going. However, this type of trade implies that jobs are potentially lost to the host countries of the daughter companies. More research into the overall implications is needed here in order to assess the overall level of competitiveness and the welfare implications of trade through different modes.

Apart from economic variables such as price and cost indicators, skill endowments, etc., the impact on competitiveness in the services sector of institutional factors and regulatory regimes and differences among the individual countries deserves further analysis. This is

not touched upon here, but a potential trade-hindering impact of regulation on Austria's trade in services appears to be rather small, reflecting a sound and appropriate regulatory regime in general.¹² While no improvement is to be expected from regulatory reform in transport services, we can expect some improvements in competitiveness in insurance, communication and other business services.

In summary, we observe that Austria's competitive strengths and weaknesses are mostly determined by structural features of the economy and of the individual services sectors. This is good and bad news at the same time. It implies that the legal and regulatory environment is generally well-suited to allow Austrian service firms to reach their full potential. It also means that economic policy can only indirectly and only in the longer run influence Austria's competitiveness in individual service categories, which is still unacceptably low in most producer-related services.

¹² For an explicit assessment of this factor see Brandicourt, Schwellnus and Woerz (2008).

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