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Research Report

Trade in Services: Note on the Measurement and Quality of Data Sources

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This note gives a comprehensive overview of the currently available international databases on trade in services. Notwithstanding problems in data collection arising from the very wide definition of trade in services (i.e. the four GATS modes in contrast to what is traditionally considered as trade in merchandise goods), we identify a considerable room for improvement of the data situation also with respect to Balance of Payments based data. In this paper we survey IMF, OECD, Eurostat and OENB data at the most detailed sector level. We further give a short descriptive overview of Austria's relative position in service trade flows compared to its major trading partners.

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Trade in Services Note on the Measurement and Quality of Data Sources

by
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and
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Vienna, February 2008

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This note gives a comprehensive overview of the currently available international databases on trade in services. Notwithstanding problems in data collection arising from the very wide definition of trade in services (i.e. the four GATS modes in contrast to what is traditionally considered as trade in merchandise goods), we identify a considerable room for improvement of the data situation also with respect to Balance of Payments based data. In this paper we survey IMF, OECD, Eurostat and OENB data at the most detailed sector level. We further give a short descriptive overview of Austria's relative position in service trade flows compared to its major trading partners.

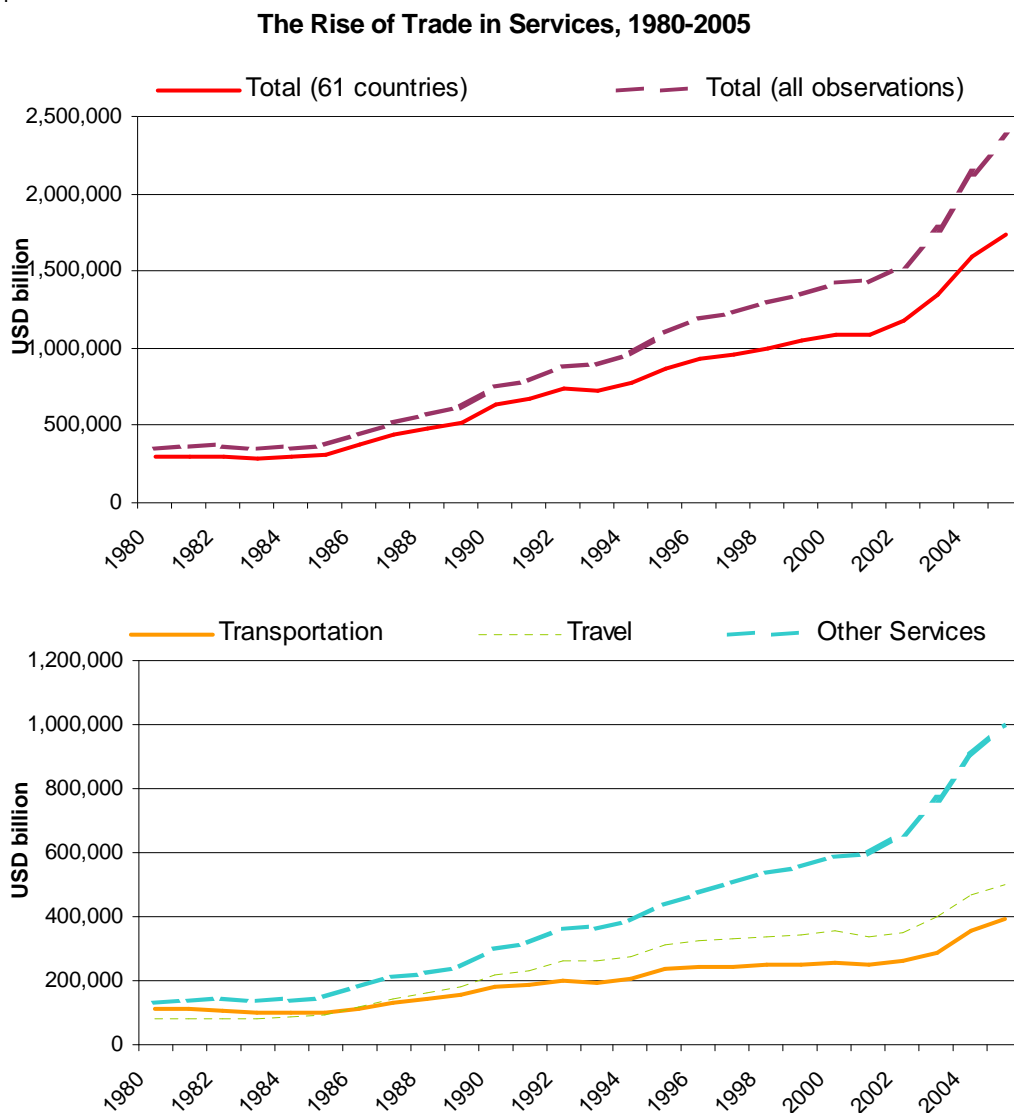
Keywords: services trade data, services FDI data, Austria

JEL codes: F14, F21

1. Introduction

Services have long been considered as natural “non-tradeables” given their characteristic of being intangible, non-storable, their need for highly differentiated products by individual customers and most importantly, often requiring joint production, i.e. the personal, face-to-face interaction between producer and consumer. This last point is a characteristic of what Bhagwati (1984) termed “bound” services, as opposed to unbound services which can be delivered over a physical distance (i.e. a software-solution, accounting services, etc.) Two secular developments have rendered services increasingly tradeable. Technological progress, in particular in information and communication technologies, together with an increasing disintegration of production (i.e. outsourcing of service activities) have led to a rise in services trade across international borders.

Figure 1



Note: The lower panel of this graph is based on the 61 countries, which report trade data for all categories throughout the entire period.

Source: IMF Balance of Payments Statistics.

This is reflected in Figure 1, which further distinguishes between the three main service sectors in the lower panel. The upper panel provides a comparison of the data coverage over time. The slashed line represents the growth of services trade as reported by the IMF Balance of Payments database, however with an increasing number of reporting countries over time. The solid line gives the rise in trade in services when taking into account only the 61 countries (out of a maximum of roughly 160 countries) which continuously reported their service trade flows between 1980 and 2005 for all three sub-sectors. The comparison makes clear that the general rise in services trade is not just a statistical phenomenon, arising from better reporting by IMF-member countries, but a genuine trend which has showed considerable acceleration since the beginning of the 1990s. The lower panel of Figure 1 further underlines that this increase stems mostly from increased trade in other services. Hence, a secular decline in the importance of transportation and travel services can be observed. The importance of the “ICT-revolution” – the rapid technological progress in information and communication technologies – as one of the influential causes behind this development is thus reflected in the sharp increase of other services as opposed to a more moderate growth in the other two sectors.

Indirectly, the graph also reveals the high global concentration in services trade. The 61 “best reporting” countries, representing a third of all observations, account for 75% of world service exports in 2005.

However, the above figures represent only a fraction of what the GATS (General Agreement on Trade in Services, an Annex to the WTO Treaty) defines as trade in services. Taking into account the specific characteristics of services, this agreement also allows for trade in bound services by explicitly distinguishing four modes of delivery across international borders. These are:

- Mode 1 – Cross-border: services supplied from the territory of one country into the territory of another.
- Mode 2 – Consumption abroad: services supplied in the territory of a nation to the consumers of another.
- Mode 3 – Commercial presence: services supplied through any type of business or professional establishment of one country in the territory of another (i.e., FDI).
- Mode 4 – Presence of natural persons: services supplied by nationals of a country in the territory of another.

Table 1 summarizes the four modes of delivery and refers to the databases containing information on each mode. While the coverage of modes 1 and 2 is roughly satisfactory, it is still difficult to capture mode 3 in quantitative terms. Finally, definitions as to what should be regarded as mode 4 trade are still mostly lacking. According to the GATS, mode 4 refers to “temporary” migration in order to deliver a service abroad (in EU- terminology it

would thus fall under the free movement of services and not under the free movement of people). No universally adopted definition exists however as to which time period shall be considered as “temporary” as opposed to “permanent”. Further, the EU services directive recognizes that not only the duration, but also the regularity, periodical nature or continuity of the service determines whether it falls into the free movement of services or rather under the freedom of establishment which would translate into a mode 3 trade rather than a mode 4 trade. This further complicates the statistical recording of such transactions.

Table 1

Modes of Service Provision across International Borders

GATS supply mode	Definition	Category	Data Source	Measurement
Mode 1	Cross border	Transport & other commercial services	BOP	ok
Mode 2	Consumer movement	Travel	BOP	partly ok
Mode 3	Commercial presence	Sales by foreign affiliates	FATS	statistics mostly missing
Mode 4	Temporary entry	Compensation of employees	?? Remittances	definition not clear yet

Table 2 lists estimates of the relative magnitude of all four modes of delivery. Following this broader definition, balance of payments statistics only record about half of all service trade flows worldwide.

Table 2

Volume of Services Trade by Mode of Delivery

GATS supply mode	Definition	1997		2006	
		Value USD billion	Share (%) in per cent	Value USD billion	Share (%) in per cent
Mode 1	Cross border	890	41.0	2000	41.2
Mode 2	Consumer movement	430	19.8	750	15.5
Mode 3	Commercial presence	820	37.8	2000	41.2
Mode 4	Temporary entry	30	1.4	100	2.1
Total services		2170	28.3	4850	28.7
Total merchandise exports		5488		12058	

Source: Deardorff and Stern (2005); Estimates by Bernard Hoekman, based on WTO (2007).

We can see from the table above that trade through mode 3 appears to have grown most dynamically. We further see a relative decline of mode 2 trade, which is related to the

decreasing importance of travel services arising from rising trade in other, mainly producer related services. As a result, the share of mode 1 transactions has not lost shares in total services trade, while mode 3 transactions have gained momentum. Finally, according to the (admittedly shaky) estimates of mode 4 trade, this form of delivery plays a very small role up to date.

The last two lines compare the value of trade in services to the value of global merchandise trade. The ratio of services to merchandise trade (taking into account all four modes of delivery, while only cross-border merchandise trade is considered) has been stable at roughly 28% over the past decade. This is an important observation since it demonstrates that trade in services has not expanded more than trade in general. Trade growth (in nominal terms) has been extremely high over the past decades and has by far outstripped the growth of world production of goods and services. Trade in services has grown proportional to the general trend of ongoing global integration, but not more.

In this note we will discuss the statistical evidence on trade in services, considering all four modes of delivery. This comprehensive definition opens up the discussion, why merchandise trade is not defined so extensively. Statistical sources, as well as the general consideration of trade in goods usually refers to the cross-border provision of goods only. Including sales of foreign affiliates would increase the merchandise trade volume dramatically. It would however also introduce some fuzziness into the definition, since foreign affiliates, especially in the primary and secondary sector of an economy, are established for various reasons. Only one of these is the market-seeking motive, others include resource seeking and strategic motives. Thus, a substantial part of their sales might be sourced from local inputs and hence not fall within the strict definition of trade. The same does of course apply to services trade, where it is much harder to define inputs. In what follows, we refer to the GATS definition of services trade for the following reasons: despite problems with the definition of trade in the strict sense, the provision of services through foreign establishments often constitutes the only possibility to provide the service in a foreign country. Hence, this is a phenomenon of global economic integration and should thus be part of any, in particular any policy oriented, analysis.

2. Statistical Coverage and Data Sources

As mentioned above, the main source of information on trade in services is balance of payments statistics. Up to date, all IMF member countries have adopted the 5th edition of the Balance of Payments Manual (BPM5) from 1993, setting common standards for the compilation of balance of payments data. The BPM5 has also assured the highest degree of possible consistency between the balance of payments and the System of National Accounts in its version from 1993 (SNA93) which has been implemented by the EU in 1995 through the ESA95. Currently, BPM5 is being revised without aiming at major changes. The main focus is on a better recording of direct investment transactions.

However, the BPM6, to be released by the end of 2008 will also bring more sector details on the coverage of cross border service trade flows.

In order to capture mode 3 trade of services, an optimal source is Foreign Affiliate Trade Statistics (FATS). These data are collected by some countries (above all the US), but not by many. For instance the UK has stopped collecting this information, while other countries claim to compile it but do not publish it for a wide public. Other sources of data that can proxy for mode 3 trade are foreign direct investment statistics. The above mentioned balance of payments statistics usually cover economy wide FDI data and do not disaggregate by main sectors. UNCTAD is the best source for detailed FDI data on a global basis. Further, UNCTAD has also set common definitions for the recording and compilation of FDI data through its widely adopted definition of FDI. In our analysis we are using the OECD International Direct Investment Statistic (IDI) which offers a greater deal of both sectoral and bilateral disaggregation as compared to UNCTAD, even though it covers fewer countries.

As a general remark, the bilateral breakdown by service activities (i.e. the recording of trade data by individual partners and for individual sectors) is hardly available. This is one of the shortcomings for the global analysis of trade in services up to date. The Eurostat International Trade in Services (ITS) is one of the few sources to publish for a range of countries (the 27 EU members plus Croatia, Japan, Norway, Turkey and the US) a bilateral breakdown of trade in services (from balance of payments statistics, i.e. relating to modes 1 and 2) by individual service sectors. However, the quality of the data is still rather poor. The number of non-missing observations is smaller than the number of missing observations for the years up to 1999. From 2000 onwards, the quality of the database improves. Nevertheless, an underlying problem is the fact that individual countries use different underlying compilation concepts. As an example, Hungary has started to use direct reporting of enterprises in 2004, while Austria has relied on information gathered from financial institutions up until 2005. From 2006 onwards also direct reporting by enterprises is used (together with underlying changes in the benchmarks above which a financial transaction has to be reported). As a consequence, it is not clear for the user of the Eurostat ITS database whether the reported figures are directly comparable across countries.

In the following we will briefly describe Austria's relative standing in services trade as can be read from the existing data sources. A particular complication is introduced by the revision of the Austrian Balance of Payments Statistics which took effect in 2006. For information on Austria and its bilateral trade flows with individual partner countries, we use the regional breakdown of the balance of payments which has been published for the years 1995 to 2005. Although this is based on the old compilation practice, it nevertheless allows us to evaluate the dynamics of Austrian bilateral services trade flows given the relatively long time

series available. We compare of course these results to the newly published, revised balance of payments data which have been released on February 27, 2008.

We further use a database (Trade in Services database, TSD)¹ which has been established by wiiw in collaboration with CEPII and Trade Partnership Worldwide, LLC. Data on cross border trade and on FDI in services has been assembled from various sources (Eurostat ITS, IMF BOP and OECD IDI) to give the greatest possible coverage of countries, years, sectors and modes. This database is used to embed Austria's performance in trade in services into a broader international perspective. Cross-border trade in services was analyzed for years 1995-2005, while for FDI in services, due to lack of the data in 2004, we had to limit ourselves to the 1995-2003 time span. The sector breakdown follows the BOP classification and we are using nine service sectors: transportation, travel, communication, construction, insurance, finance, computer and information, royalties and license fees, other business services.

3. Major Trends in Cross-Border Trade in Services

In this section we present the major trends in the development of the EU services trade with special focus on Austria's trade developments in comparison with its major trading partners. For comparative analysis we selected 5 EU countries – France, Germany, Italy, Netherlands and the UK – which are the major trading partners of Austria (see Fig. 2 and 3). Besides, we compare indicators for the EU15 (the “old” EU) and EU12 (new member states), the USA and Japan to obtain a regional and global perspective of services trade developments.

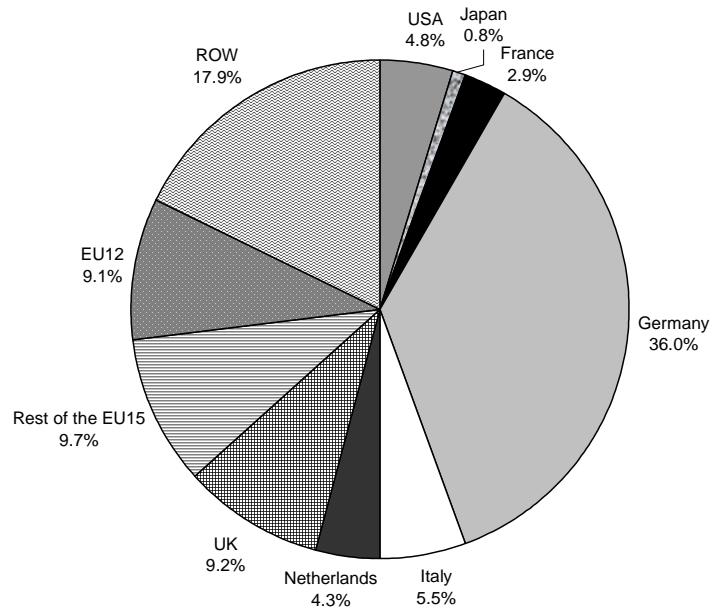
The EU25 accounts for the large majority of global service trade flows. With exports of 1,276 billion USD in 2006, 51% of global service exports originated from the EU (imports were 1,140 billion USD or 48%). Inside the EU the bulk of services trade occurs between the “old” EU member states (87% in 2005). The selected 6 EU member states export services intra-EU primarily to each other (the share of services export inside this sub-region in the total exports to the EU27 ranges from 54% for the UK to 72% for Austria); while services imports are more diversified geographically. The EU12 countries trade services mostly with the EU15, which accounted for 84% of their services export and 80% of service imports in 2005.

The UK is the biggest exporter of services intra-EU27, closely followed by Germany (see Fig. 5). These two countries also show the largest shares in extra-EU27 services export, with the share of the UK reaching 24%. Both the UK and Germany have noticeably bigger shares in extra-EU services export, than in intra-EU, while Spain, Austria, Ireland and Belgium specialize more in intra-EU exports. Among the EU12 countries only Bulgaria and Lithuania export more services extra-EU than intra-EU.

¹ More information about the database can be found in the Appendix 1.

Figure 2

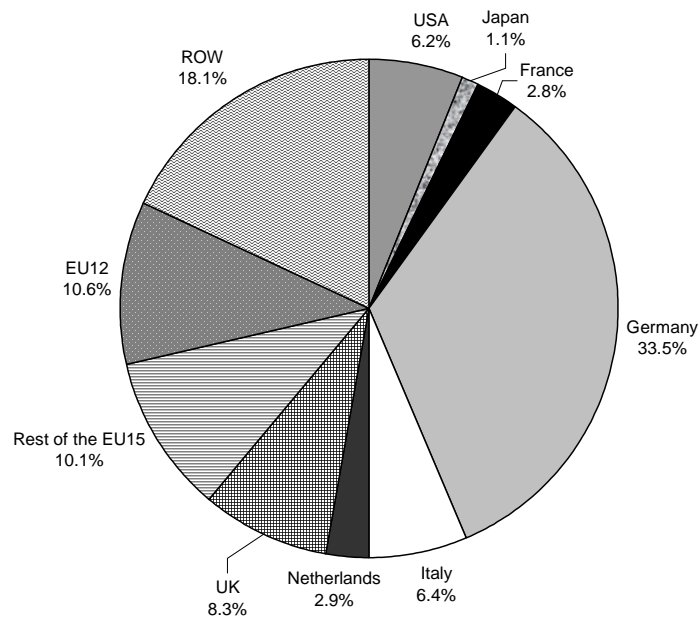
Geographic Structure of Austria's Services Exports in 2005



Source: OENB 2005

Figure 3

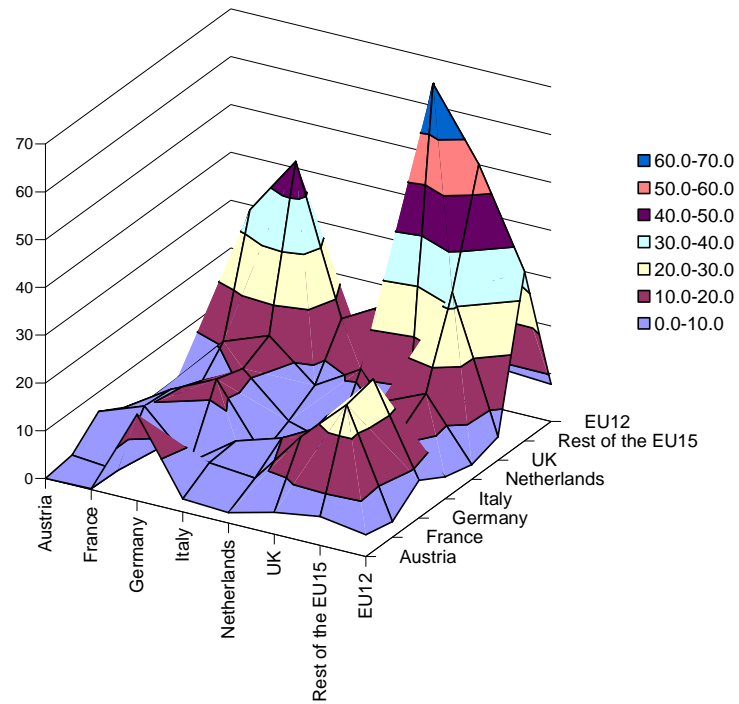
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Source: OENB 2005

Figure 4

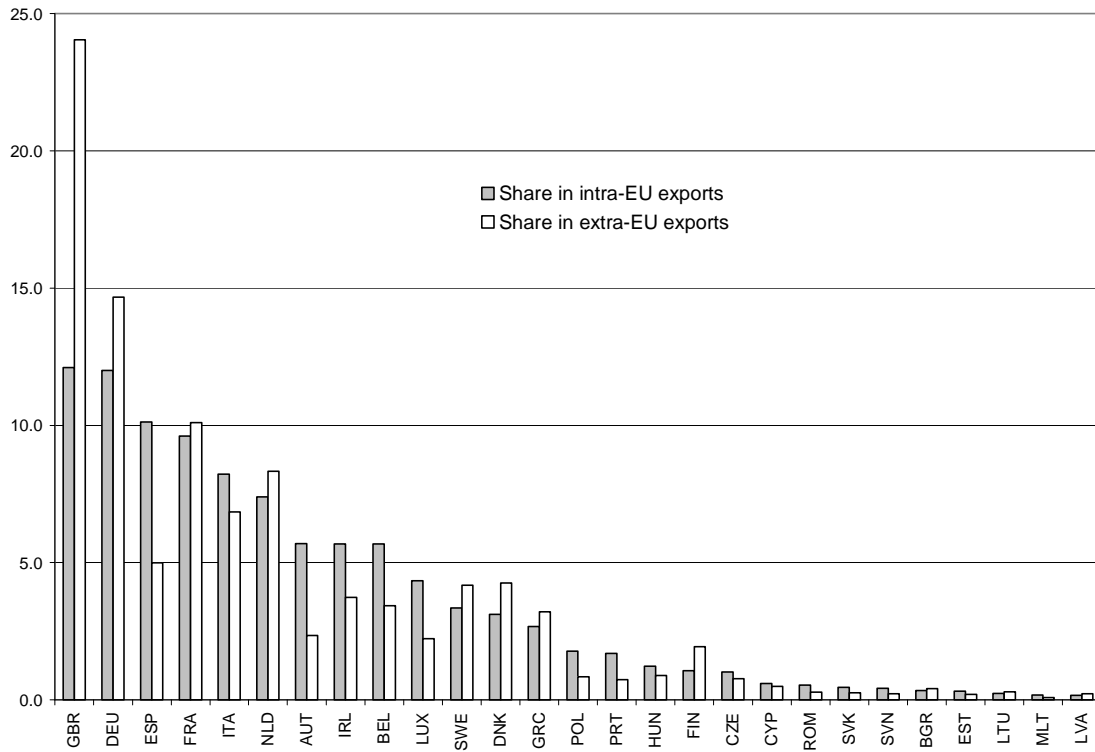
Network of the Intra-EU Services Trade by Region, 2005 (Exports in Billion USD)



Source: OENB 2005, TSD

Figure 5

Shares of the EU Member States in Intra- and Extra-EU Services Export in 2005, %

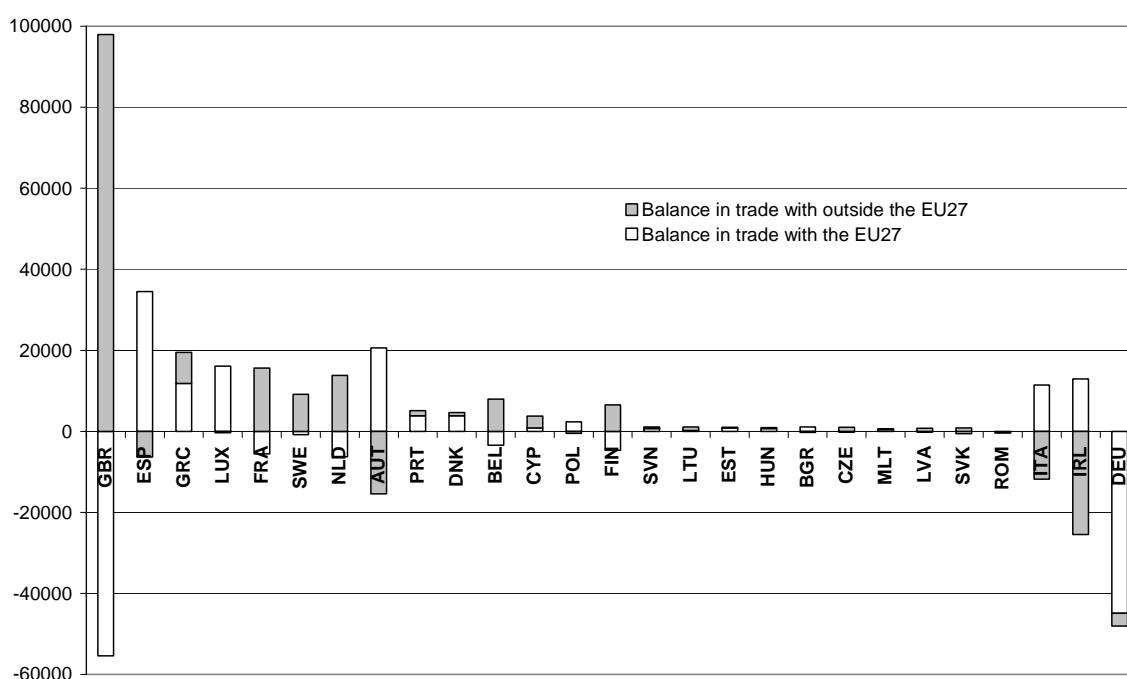


Source: OENB 2005, TSD

Most of the EU member states (apart from Germany, Ireland, Italy and Romania) have positive balances in services trade (see Fig. 6); however 17 out of 27 EU member states have balances of opposite signs in services trade intra- and extra-EU, presumably reflecting different patterns of specialization. Austria, likewise Spain, Luxembourg, Poland and Bulgaria, is overall a net exporter of services, but a net importer in extra-EU services trade. The UK, France, Netherlands and some other countries, which also have positive total balances in services trade, on the contrary, are net importers of services in intra-EU trade. Germany, regardless its high volumes of services exports, is a net importer of services both extra- and intra-EU.

Figure 6

Balances in Intra- and Extra-EU Trade in Services in 2005, USD mln



Source: OENB 2005, TSD

The importance of services trade is considerably higher for the EU than for the US and Japan (measured as the shares of services exports and imports in GDP – see Tables 3 and 4). Notably, the EU12 has approximately the same intensity of cross-border trade in services as the EU15. Over 1995-2005, shares of cross-border services trade in GDP increased in most of the countries analyzed (apart from services exports in Italy and the EU12).

Austria stands out among its major trade partners as a country with the highest services exports and imports to GDP ratios (almost twice as high as the EU15 average – see Tables 3 and 4), closely followed by the Netherlands which is comparable in size. France,

Germany and Italy have significantly lower shares of services exports and imports in GDP than the EU15 average. This situation perhaps reflects differences in countries' territories with bigger countries trading services more inside the borders. The same tendency is found for merchandise exports, where again the Netherlands, Belgium and Austria – all being rather small countries - show the highest merchandise export to GDP ratios among the EU members, especially compared to the UK, France and Italy. The specialization of the UK on services trade (in particular financial services) becomes clear from this comparison, while Germany represents itself as a more manufacturing based economy with a rather high merchandise export to GDP ratio (38%) compared to a low importance of services trade.

Table 3

Share of Services Export in GDP, %

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2005-1995, p.p.
Austria	11.7	12.4	13.3	13.9	14.7	16.2	17.3	17.1	16.8	16.7	16.5	4.8
France	5.4	5.3	5.7	5.8	5.7	6.1	6.0	5.9	5.5	5.3	5.5	0.1
Germany	3.3	3.5	3.9	3.9	4.0	4.6	4.7	5.1	5.0	5.2	5.6	2.3
Italy	5.3	5.6	6.1	5.5	4.9	5.2	5.2	4.9	4.8	4.9	5.1	-0.2
Netherlands	11.1	11.6	12.8	12.6	13.0	13.6	12.8	12.8	13.2	14.0	14.7	3.6
UK	6.7	7.4	7.5	7.7	8.1	8.3	8.3	8.5	8.8	9.3	9.2	2.5
EU15	6.0	6.3	6.9	6.9	7.3	8.1	8.2	8.1	8.0	8.4	8.7	2.7
EU12	10.3	10.2	9.9	9.6	9.0	9.9	9.4	9.0	9.1	9.2	9.3	-1.0
Japan	1.2	1.5	1.6	1.6	1.4	1.5	1.6	1.7	1.8	2.1	2.4	1.2
USA	3.0	3.1	3.1	3.0	3.0	3.0	2.8	2.8	2.7	2.9	3.0	0.1

Source: Eurostat, WDI, TSD

Table 4

Share of Services Import in GDP, %

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2005-1995, p.p.
Austria	9.8	10.5	12.9	12.8	13.9	15.4	16.3	16.8	16.1	15.8	14.8	5.0
France	4.2	4.3	4.5	4.6	4.4	4.6	4.7	4.7	4.6	4.8	5.0	0.8
Germany	5.1	5.3	5.8	6.0	6.8	7.5	7.5	7.2	7.1	7.1	7.3	2.2
Italy	5.2	5.4	5.9	5.2	4.8	5.1	5.2	5.2	4.9	4.8	5.1	0.0
Netherlands	10.6	10.7	11.7	11.7	12.4	13.8	13.4	13.1	13.2	13.1	13.5	2.9
UK	5.8	6.1	5.9	6.2	6.6	6.9	7.0	7.0	7.1	7.0	7.3	1.5
EU15	5.8	6.0	6.5	6.6	7.1	7.9	8.0	7.7	7.6	7.7	8.0	2.1
EU12	7.2	7.2	6.8	6.8	7.1	7.7	7.3	7.3	7.6	7.7	7.7	0.5
Japan	2.3	2.8	2.9	2.9	2.6	2.5	2.7	2.8	2.6	3.0	3.0	0.6
USA	1.9	1.9	2.0	2.1	2.2	2.3	2.2	2.2	2.3	2.5	2.5	0.6

Source: Eurostat, WDI, TSD

Next, we look at the sectoral structure of services trade. The EU15 services export structure in 2005 was dominated by other business services, travel and transport services (together these three sectors account for 72% of total services exports). The EU15 specializes significantly more – relative to the US and Japan – in exports of financial and computer and information services, while the latter countries have much bigger shares of royalties and license fees in their services export. The EU12 has quite different services export structure than the EU15, with the shares of travel and transport services being 12 p.p. and 8 p.p. respectively higher than in the EU15, and the share of other business services being 8 p.p. lower than in the EU15.

Due to the limitations of the old reporting system in Austria, a relatively big share of services (as compared with other countries) remained non-allocated before the revision of the compilation practice (18.4% in exports and 30.2% in imports). Therefore we report the structure of services trade separately for Austria, based on the recently released balance of payments data from Oesterreichische Nationalbank in Table 5² and based on Eurostat and IMF data for the remaining countries in Tables 6 and 7 (for these we have longer time series available, but we report here 2005 as the latest available year for all countries).

Table 5

Sectoral Structure of Austria's Trade in Services, 2006.

	Global		EU-15		EU-12	
	Credit	Debet	Credit	Debet	Credit	Debet
			% of Total			
Transportation	22.2	29.9	22.2	25.4	21.2	38.3
Travel	35.8	28.6	42.8	28.9	26.8	23.3
Communication	2.9	3.4	3.1	3.7	2.9	2.9
Construction	2.1	2.4	1.6	2.6	3.5	2.7
Insurance	2.2	3.0	2.6	3.1	2.4	4.0
Financial Services	1.7	1.9	1.0	1.3	1.1	2.0
Computer & Information	3.2	3.3	3.1	3.8	3.6	2.6
Royalties & License Fees	1.2	4.1	0.7	6.3	2.4	0.4
Other Business Services	27.2	20.9	22.1	23.6	35.6	14.1
Personal, Cultural, Recreational	0.6	2.3	0.7	1.1	0.2	9.5
Government, n.e.	0.9	0.3	0.3	0.2	0.3	0.2

Source: OENB.

Austria's service exports are up to date very concentrated in travel services. A rough differentiation between Western and Eastern EU members (the EU27 accounts for 76% of total Austrian service exports and 85% of travel exports) shows that this predominance of travel exports is only with respect to Western European partners, while other business

² The time series of Austria's trade in services structure, based on the old compilation practice is included in Figures 10-13 in Appendix 2.

services clearly dominate exports to the new member states. Thus, apart from the dominant role of travel exports versus the EU-15, Austria's service trade structure is broadly comparable to the EU-15 average. However, financial services, computer and information services and royalties and license fees feature less prominently in Austrian exports than for the old member states on average. A similar structure is observed for service imports. Again, Austria shows a clear differentiation between imports from the old and the new EU members with transportation services being imported more strongly from the new members.

France and Italy are also characterized by relative specialization in exports of travel services (which account for more than one third of total exported services). The UK stands out among the EU15 as the major financial services exporter (21% share in total export of services), while Netherlands export relatively much of royalties and license fees and other business services.

Table 6

Sectoral Structure of Services Export in 2005, %

Sector code	Sector	FRA	DEU	ITA	NLD	GBR	EU15	EU12	JPN	USA
205	Transport	23.4	24.6	17.1	23.3	16.3	21.6	29.7	32.4	16.8
236	Travel	36.4	18.8	39.2	11.4	15.1	24.0	36.4	11.3	27.1
245	Communication	1.5	1.4	1.5	0.5	1.4	2.1	0.4	0.8	1.8
249	Construction	3.0	2.2	2.4	4.1	2.7	2.5	2.8	0.4	1.3
253	Insurance	3.1	4.9	2.4	3.0	0.5	2.1	2.9	6.6	1.1
260	Financial	1.2	4.1	1.4	1.2	20.8	8.4	2.2	4.6	7.8
262	Computer & Information	1.4	5.3	0.7	4.0	5.2	5.2	2.3	1.0	1.6
266	Royalties and License Fees	5.1	4.4	1.2	11.1	6.5	4.2	1.5	16.0	15.2
268	Other Business Services	22.1	29.9	32.1	38.3	27.9	26.1	17.9	24.8	19.4
	Not Allocated	2.7	4.6	2.0	3.0	3.5	3.7	3.9	2.2	7.9

Source: TSD.

Other business services, travel and transport services account for the bulk of the EU15 service imports as well. Similar to the situation with exports, the EU15 imports relatively more – as compared to the US and Japan – financial and computer and information services, while the latter countries have much bigger shares of royalties and license fees in their services import. It is noteworthy, that the EU12 and EU15 have rather similar services import structures, with major shares belonging to travel and other business services (in contrast to rather big differences in services export structure).

The UK is the biggest travel services importer among 6 countries of the EU15 (in terms of shares in total imports), followed by Germany, while the share of financial services in the UK imports is only slightly higher than the EU15 average indicator.

Table 7

Sectoral Structure of Services Import in 2005, %

Sector code	Sector	FRA	DEU	ITA	NLD	GBR	EU15	EU12	JPN	USA
205	Transport	27.0	21.5	24.1	17.7	22.9	22.2	25.8	30.0	28.0
236	Travel	29.4	35.8	24.7	19.1	37.2	27.4	27.1	28.0	23.4
245	Communication	2.7	2.4	2.1	1.0	1.0	2.5	2.3	1.4	9.1
249	Construction	2.0	2.4	3.4	3.8	3.0	2.7	3.2	0.5	1.7
253	Insurance	1.5	3.2	2.4	1.7	0.5	1.7	2.7	3.6	0.3
260	Financial	2.2	2.1	1.3	1.9	5.5	4.3	3.7	2.0	2.1
262	Computer & Information	1.7	4.2	1.7	4.4	2.4	2.9	3.3	1.8	0.8
266	Royalties and License fees	3.0	3.3	2.1	10.2	5.6	5.8	4.8	10.9	7.8
268	Other Business Services	26.6	22.9	34.8	38.2	18.1	26.5	22.4	19.8	16.0
	Not Allocated	3.8	2.3	3.5	2.2	3.8	4.1	4.7	2.1	10.9

Source: TSD.

Over 1995-2005, Austria' service exports and imports have been growing on average just a little bit slower than the relevant indicators of the EU15 (see Tables 8 and 9). The UK has been the leader in both export and import growth, while France and Germany increased their cross-border trade significantly slower than the EU15 on average. The EU12 expanded their service exports almost as fast as the EU15, while services import growth in the former was 2.2 p.p. higher than in the latter.

Table 8

Average Annual Growth of Services Export in 1995-2005, %

Sector code	Sector	AUT	FRA	DEU	ITA	NLD	GBR	EU15	EU12	JPN	USA
200	Total	6.1	3.3	4.2	6.5	6.7	10.3	7.7	7.4	5.4	5.7
205	Transport	11.5	2.9	0.3	6.8	1.1	6.9	6.7	9.4	4.7	3.5
236	Travel	1.8	4.4	2.6	4.9	4.8	5.0	4.8	6.9	14.4	3.2
245	Communication	13.4	22.1	22.3	5.3	10.2	13.4	12.5	7.5	-2.4	3.6
249	Construction	3.0	1.6	-3.7	3.7	19.8	-10.6	0.2	-4.5	0.9	5.0
253	Insurance	12.1	-0.6	1.0	5.4	-1.7	-3.0	7.1	-9.8	11.4	18.5
260	Financial	10.5	-5.7	-7.3	10.0	11.7	21.2	13.5	15.3	32.1	15.3
262	Computer & Information	18.1	16.6	14.0	19.2	19.7	19.2	22.0	48.6	-0.9	9.6
	Royalties and License										
266	Fees	3.3	12.3	2.4	8.0	15.8	11.0	11.9	41.3	11.3	6.6
268	Other Business Services	7.1	3.3	16.7	7.7	10.3	14.5	10.8	12.3	1.1	9.6

Source: OENB, TSD

In Austria's services exports the highest growth was recorded in computer and information, communication and insurance services (with growth in insurance service exports being much higher than in the major trading partners); in imports the fastest growing sectors were again computer and information and insurance, but also royalties and license fees. This pattern of growth approximately corresponds to the average for the EU15, though in the EU15 cross-border trade in financial services grew faster – primarily owing to the UK, the financial hub of the region. Besides, in the EU15 growth of transport services cross-border trade was noticeably lower than in Austria, while growth of travel services – on the contrary, higher.

Table 9

Average annual growth of services import in 1995-2005, %

Sector code	Sector	AUT	FRA	DEU	ITA	NLD	GBR	EU15	EU12	JPN	USA
200	Total	6.8	4.8	4.5	4.7	6.3	9.4	7.1	9.3	0.9	8.3
205	Transport	8.8	3.0	-0.6	6.3	0.8	7.9	5.8	9.3	1.2	7.8
236	Travel	0.6	6.7	5.8	3.0	3.3	9.2	5.5	10.8	0.2	4.7
245	Communication	8.3	17.9	17.2	5.3	-1.1	9.9	11.8	9.1	-3.1	-3.8
249	Construction	4.0	4.7	3.6	1.0	16.8	-11.2	-0.3	-3.1	4.1	11.5
253	Insurance	10.1	6.3	10.2	12.6	-1.3	8.0	10.2	3.2	-2.5	18.7
260	Financial	5.7	0.1	-12.2	22.5	14.2	16.5	10.8	15.7	19.2	10.2
262	Computer & Information	14.0	13.0	12.6	15.7	21.4	7.3	13.7	34.1	0.0	24.1
266	Royalties and license fees	10.2	3.3	1.7	1.1	11.1	12.3	9.7	29.1	4.5	13.5
268	Other business services	6.7	5.9	13.6	5.3	10.7	15.2	10.3	11.7	-1.8	10.7

Source: OENB, TSD

4. Major Trends in FDI in Services

First, we look at the shares of inward and outward FDI in GDP in 1994-2003 (see Tables 10 and 11) to have an idea on the degree of the analyzed countries' openness to capital flows. The EU15 had been investing much more intensively abroad than the US and obviously the EU12; it had been also significantly more active in attracting FDI than the latter two regions. Austria has lower shares of both outward and inward FDI stock in GDP compared to the EU15, among its major trading partners only Italy performs worse. The most active countries in investing abroad are the Netherlands and the UK. The Netherlands also have the highest share of inward FDI stock in GDP, followed by Germany.

It is noteworthy, that starting from 2001, Austria has sped up growth of its inward and outward FDI, with the latter growing faster, so that in 2002 the country became a net donor of FDI.

With respect to the sectoral structure of FDI stock, Austria invests most strongly into financial services (especially in Eastern European countries), followed by trade and repair services— together these two sectors accounted for more than half of the outward FDI stock in 2003 (see Figure 8). However, the importance of trade and repair services in outward FDI had been decreasing, while the share of financial services in the outward FDI stock increased over 1994-2003 almost twofold. Real estate services, the third biggest sector of outward FDI, started to lose its share since 2000. In 2003, Austria started to invest into insurance and communications services abroad.

Table 10

Shares of Outward FDI Stock in GDP, %

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Austria	3.1	3.4	3.8	4.7	5.8	6.6	9.6	10.8	16.2	17.3
France	10.4	10.4	9.4	10.4	12.6	14.8	24.5	30.9	33.0	32.7
Germany	6.6	6.9	7.6	9.0	10.6	13.5	19.2	23.5	25.0	24.7
Italy	4.8	5.5	5.3	6.5	8.5	8.3	10.2	9.7	9.2	9.4
Netherlands	20.5	20.4	22.7	26.0	29.2	33.5	44.3	46.4	51.1	57.4
UK	11.2	10.8	11.8	12.7	16.0	24.3	39.7	34.6	38.6	42.3
EU15	7.4	7.4	7.5	8.7	10.9	13.8	20.6	21.9	23.5	24.0
EU12	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.6	0.6	0.7
USA	4.1	5.0	5.4	5.8	6.6	8.3	8.9	10.1	9.9	11.4

Source: Eurostat, WDI, TSD

In inward FDI stock the biggest share in 2003 belonged to the trade and repair services sector. The financial services sector was the second largest recipient, but its share in 2003 was 43% lower than that of the trade and repair sector. Likewise in the outward FDI stock structure, insurance and communications sectors appeared as investment destinations in 2003.

Table 11

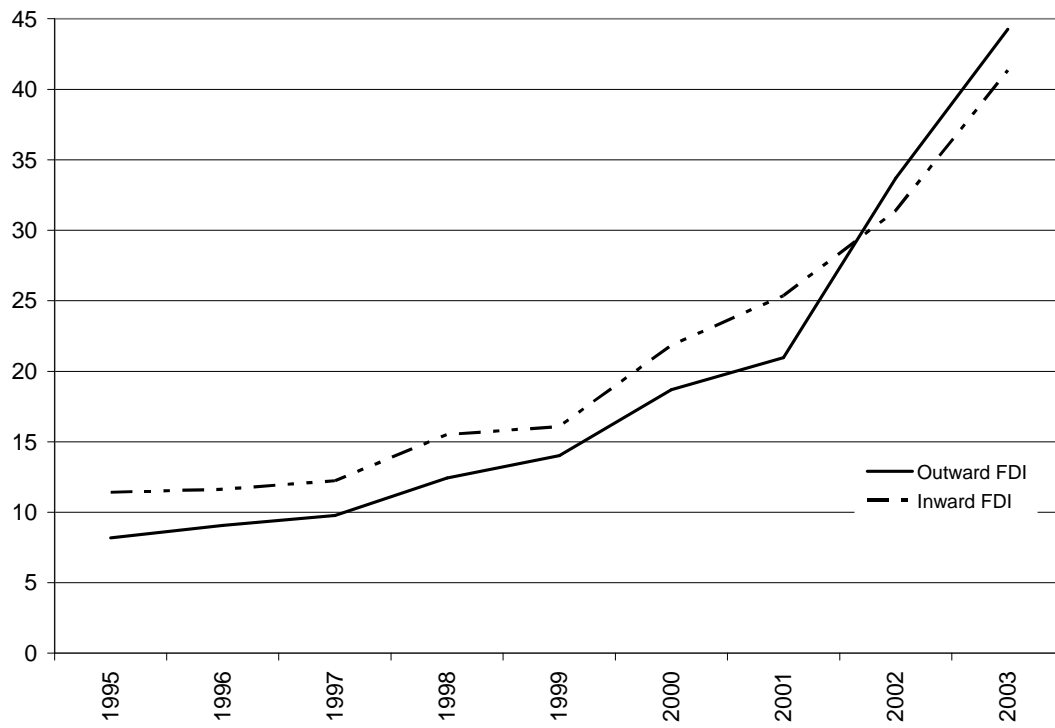
Shares of Inward FDI Stock in GDP, %

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Austria	3.9	4.8	4.9	5.9	7.3	7.5	11.3	13.1	15.1	16.1
France	8.0	8.2	8.7	9.6	12.1	12.6	15.0	17.9	21.0	23.3
Germany	5.6	5.8	6.1	7.1	9.5	11.8	22.2	19.8	23.4	24.2
Italy	3.2	3.1	3.3	3.9	5.1	5.3	5.8	5.4	5.6	6.5
Netherlands	14.7	15.6	16.4	17.8	22.7	28.7	41.6	45.5	50.9	53.8
UK	7.7	8.2	9.6	10.8	12.6	16.6	20.5	21.5	21.8	22.3
EU15	5.6	6.0	6.3	7.3	9.6	11.4	16.0	16.3	18.2	19.0
EU12	1.3	1.5	1.5	2.6	3.8	3.0	3.9	7.4	9.5	8.1
USA	3.4	3.5	3.5	4.1	4.2	5.5	7.5	8.1	7.7	7.6

Source: Eurostat, WDI, TSD

Figure 7

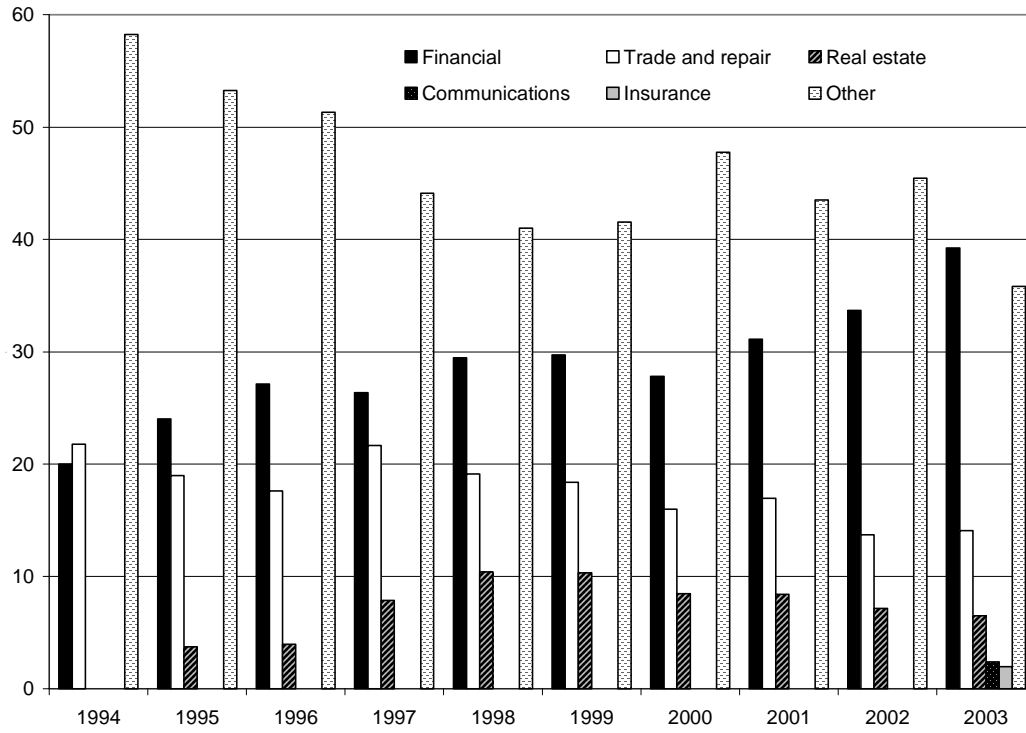
FDI Stock in Austria in 1995-2003, USD bn



Source: TSD

Figure 8

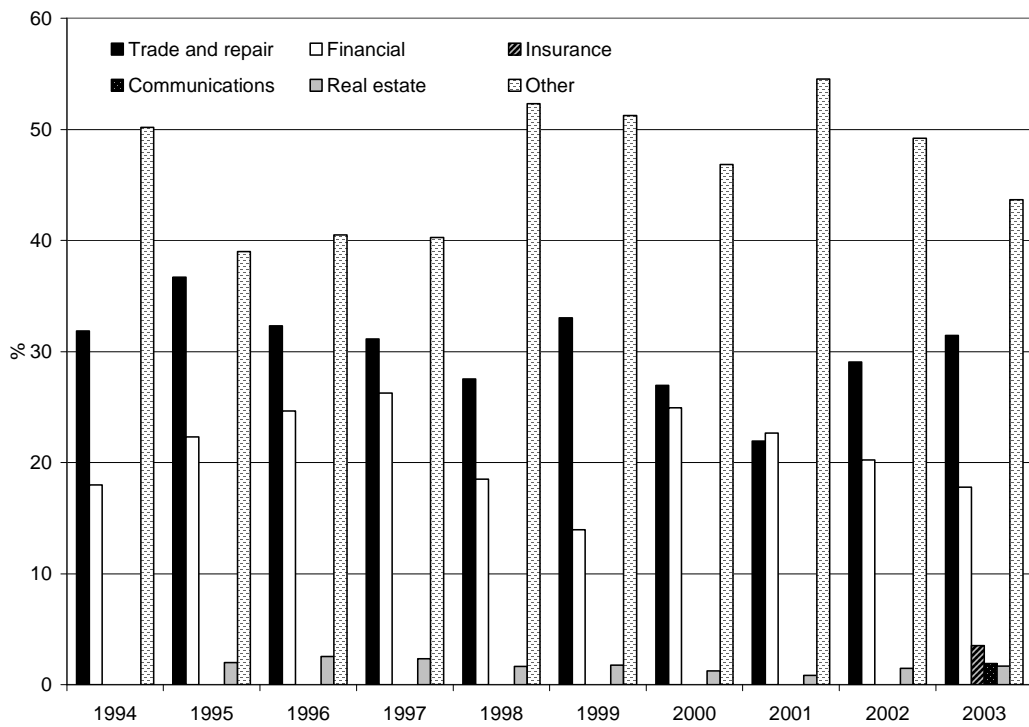
Sectoral Structure of Outward FDI Stock in Austria in 2003, %



Source: TSD

Figure 9

Sectoral Structure of Inward FDI Stock in Austria in 2003, %



Source: TSD

5. Conclusion

In conclusion we can maintain that despite a range of data sources providing internationally comparable data on trade in services, there is still large room for improvement in terms of the coverage and quality of the data. While it is common to have detailed information on bilateral trade flows of goods at the very detailed product level, such information is so far mostly lacking for services trade flows.

A more general problem arises from the unclear and sometimes ambiguous definitions with respect to what constitutes a trade flow in services. The GATS - being mostly influenced by legal rather than economic considerations (which is appropriate in view of trade liberalization negotiations) – provides a very far reaching definition of trade in services. It distinguishes between four different modes of delivery multiplied by roughly 150 individual service sectors. However, this detailed breakdown by modes and sectors is not yet compatible with existing statistical information on services trade. While modes 1 and 2 are fairly well captured at a somewhat satisfactory level of disaggregation through existing balance of payments statistics, mode 3 is not and can in most cases only be proxied for rather crudely by FDI statistics. With respect to mode 4, the situation is even more problematic, as no unique standards have yet been defined internationally with respect to the meaning of “temporary” for the movements of service providers.

All this points towards two shortcomings with severe negative consequences for the scientific analysis of trade in services: First, the definitions of what constitutes trade (in particular in comparison to the existing definitions of trade in merchandise goods) are not clear. Hence, there is a certain lack of a unifying theoretical concept when dealing with trade in services as soon as this includes also sales through foreign affiliates. Secondly, one-to-one concordances between various classifications such as the transaction based BOP classification and the industry or activity based ISIC (or its European counterpart: NACE) classification do not exist. There are concordances between both, BOP-codes and ISIC (or NACE) codes to CPC (a detailed internationally accepted product code). However, they are not unique for either BOP codes or GATS codes. Some activities enter partly into two or more CPC-categories, ruling out a one-to-one correspondence between different data sources. This problem exists mainly for sectors like tourism and financial and insurance services.

The UN Manual on Statistics of international trade in services, a joint effort of the United Nations, the European Commission, the International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations Conference on Trade and Development and the World Trade Organization published in 2002, is a first attempt to solve these inconsistencies by proposing an extended balance of payments classification (EBOPS). It is highly ambitious in scope and depth of the statistical recording of trade in

services, and its implementation will be one of the major challenges for national data compiling authorities in the years to come.

As the most urgent steps in order to improve the data situation and thus the basis for the scientific and policy oriented analysis we can identify the following two issues: The regular publication of a bilateral breakdown of individual service activities by national as well as international sources. The Eurostat ITS database is a valuable start which has to be continued and improved in terms of both, country and time coverage as well as quality (coherent and internationally comparable concepts and definitions and sector breakdown). Secondly, the compilation and publication of FATS statistics aggregated into service activities that can be mapped into either the BOP classification or the ISIC (or NACE) classification. With this information at hand, pressing questions on the importance of service trade for the economy, linkages between service sector openness and its employment and efficiency effects for the rest of the economy, the interaction of different modes of supply, etc. could be analysed in a much better way.

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Francois, J, J. Hoffmann, O. Pindyuk, C. Schwellnus, J. Woerz (2008), "Data on International Trade and FDI in Services", wiiw mimeo.

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Appendix 1

The Trade in Services database contains information on four indicators for international transactions on the service sector: services exports (credits), services imports (debits), FDI inward stock, and FDI outward stock:

Table 12

Coverage of the Trade in Services Database

variable name	description
country_code	ISO 3-digit code for reporting country
partner_code	ISO 3-digit code for partner country
sector_code	BOP Manual 5 3-digit code for service activity
year	year
sm	Services exports (credits)
sx	Services imports (debits)
fdi_inw	FDI inward stock
fdi_outw	FDI outward stock
sm_datasource	data source (credits)
sx_datasource	data source (debits)
fdi_inw_datasource	data source (FDI inward)
fdi_outw_datasource	data source (FDI outward)

The core time period covers 1994-2005/06, we have however left in the data for earlier years where we had collected them. The country coverage varies from data for 30 OECD members (for cross border trade and FDI) to 64 countries (cross border trade only) with bilateral breakdown, and to 188 countries (again cross-border trade only) for which no dual breakdown is available. All data are given in million USD at current exchange rates and have been recoded into BOP sectors where necessary, thus allowing for direct comparisons between modes 1, 2 and 3. To our knowledge, this collection of data is the first attempt to give a comprehensive picture over these three modes of international service delivery in a unified data set for such a wide range of countries.

3.1 Cross-Border Trade in Services

Data for cross-border trade in services as well as for exports and imports of travel services are based on balance of payment statistics and correspond mainly to GATS modes 1 – cross border trade - and 2 – movement of consumers. Data are usually reported for total services trade flows on a bilateral basis or for trade flows to the world broken down by sectors. Eurostat provides data on services trade flows on a dual breakdown, by partners and sectors at the same time. Thus, we use this source first and then augment our database by including additional reporters (not included in the Eurostat data) in such a way

that we fill in row and column sums (i.e. bilateral total flows as well as flows to the world by sector/activity) from the IMF BOP database.

Eurostat covers 64 reporting countries and 64 partner countries (see below) over a total period of 15 years (1992-2006). Bilateral services trade flows are classified into 11 economic activities according to the BOP Manual 5 classification. Table 13 summarizes the coverage of this data source. This core data can be extended by additional data on services trade flows from the IMF Balance of Payments Statistics. The trade data reported here is again broken down by the 11 economic activities as the Eurostat data, however not on a bilateral basis.

Table 13

Services Trade Data - Coverage by Source

Data Source			Data Coverage		
	reporters	partners	time period	economic activities	
				BOP code	description
Eurostat	EU27, HRV, JPN, NOR, TUR, USA	ALB, ARG, AUS, AUT, BEL, BGR, BLR, BRA, CAN, CHE, CHL, CHN, COL, CYP, CZE, DNK, EGY, ESP, EST, FIN, FRA, GBR, GRC, HKG, HRV, HUN, IDN, IND, IRL, IRN, ISL, ISR, ITA, JPN, KOR, LIE, LTU, LUX, LVA, MAR, MEX, MLT, MYS, NLD, NOR, NZL, PHL, POL, PRT, ROU, RUS, SCG, SGP, SVK, SVN, SWE, THA, TUR, TWN, UKR, URY, USA, VEN, ZAF, World	1992 – 2005	200	total
			2006 – data for	205	transport
			the EU27 and	236	travel
			the USA on	245	communication services
			trade with the	249	construction services
			World	253	insurance services
				260	financial services
				262	computer & inf. services
				266	royalties and license fees
				268	other business services
				287	pers.,cult. & recreation
	291	government services			
	981	all services, not included in 205 or 236			
IMF	188 reporters	World	1994 - 2005	200	total
				205	transport
				236	travel
				245	communication services
				249	construction services
				253	insurance services
				260	financial services
				262	computer & inf. services
				266	royalties and license fees
				268	other business services
				287	pers., cult. & recreat.
291	serv. government services				
982	not allocated				

3.2 FDI data in services

As for mode 3 trade we are constrained for the moment to use FDI stock data as a very crude proxy for the activities of foreign affiliates abroad. We collected the inward and outward FDI stock data from the OECD (for the OECD member countries) for the period 1982-2004. Though FDI flows provide in general a greater coverage and are more up to date, stock data are often preferred in the analysis, since they are less volatile. Another consideration relates to the fact that FDI stock generates continuous transactions abroad and so captures better the type of trade that we ideally want to measure more accurately (i.e. by FATS-statistics). In contrast FDI flow data, measuring only capital transactions in a given year, would greatly underestimate the longer lasting trade relationships established through foreign affiliates. The data are originally classified according to an OECD classification scheme based on ISIC, revision 3. For our purposes and in order to generate a consistent data set, we re-classified this to BOP categories. The conversion key is given in Table 14. More details on the coverage for FDI data are reported in Table 15.

Table 14

Correspondence Key between ISIC, Revision 3 Sectors and BOP, Manual 5 Positions

bop_code	isic	INDUSTRIAL_SECTOR
200		SERVICE SECTOR
205	60_61_62	TOTAL land, sea and air transport
236	6300	Supporting and auxiliary transport activities; activities of travel agencies
245	64	Post and telecommunications
246	6410	Post and courier activities
247	6420	Telecommunications
249	45	CONSTRUCTION
253	6600	Insurance
260	65	FINANCIAL INTERMEDIATION
260	6700	Activities auxiliary to financial intermediation
263	7200	Computer activities
268	7400	Other business activities
269	50_51_52	TRADE AND REPAIRS
272	7100	Renting of machinery and equipment without operator and of personal and household goods
275	7410	Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy
276	7410	
277	7410	
278	7430	Advertising
279	7300	Research and development
284	7000	Real estate
284	7499	Other real estate & business activities
287	9200	Recreational, cultural and sporting activities

It should be mentioned that the quality of the FDI part of our database seems to be not very high as there are many missing values for the years at the beginning and end of the reporting period. Besides, data on FDI in the communication sector sometimes appear to be inconsistent, as there are cases when value of FDI in sector 245 is lower than in its 247 subsector.

Table 15

FDI Data - Coverage by Source

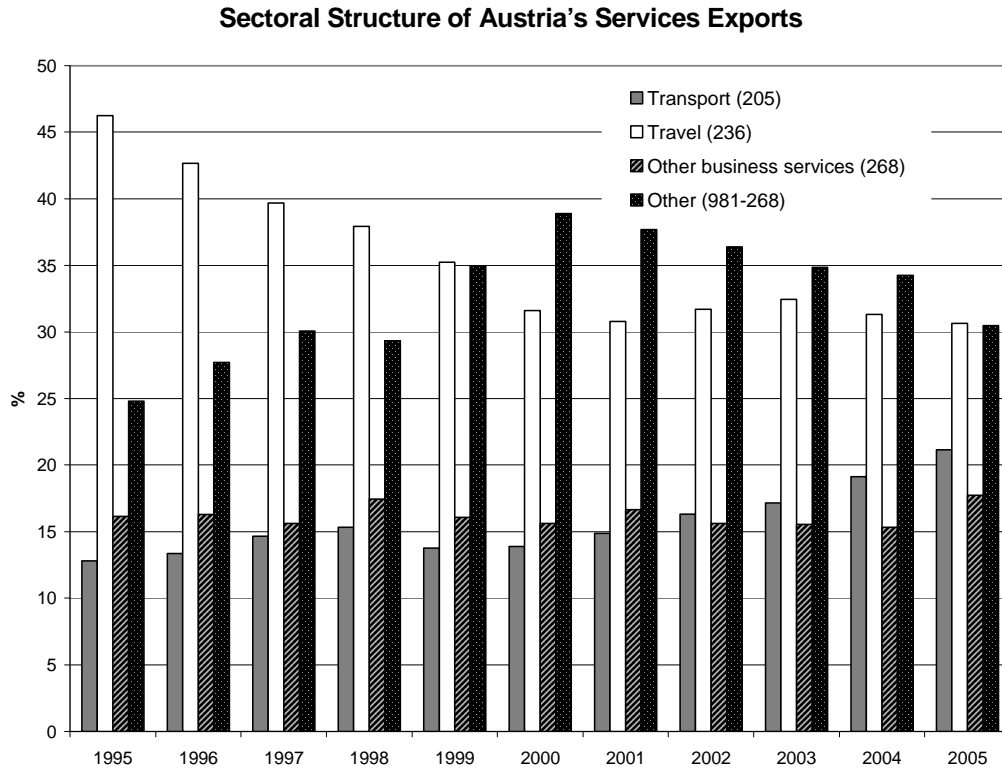
<i>Data Source</i>	<i>Data Coverage</i>				
	reporters	partners	time period	economic activities	
				BOP code	description
OECD	all 30 OECD	World	1982 – 2004	200	total
				205	transport
				236	travel
				245 ³	communication
				246	postal and courier
				247	telecom
				249	construction services
				253	insurance services
				260	financial services
				262	computer & information
				269 ⁴	trade & repair
				272	rental services
				278	advertising
				279	R&D
				284	real estate

³ 246 and 247 are subsectors of 245.

⁴ 269, 272, 278, 279, and 284 are subsectors of 268 (other business services).

Appendix 2

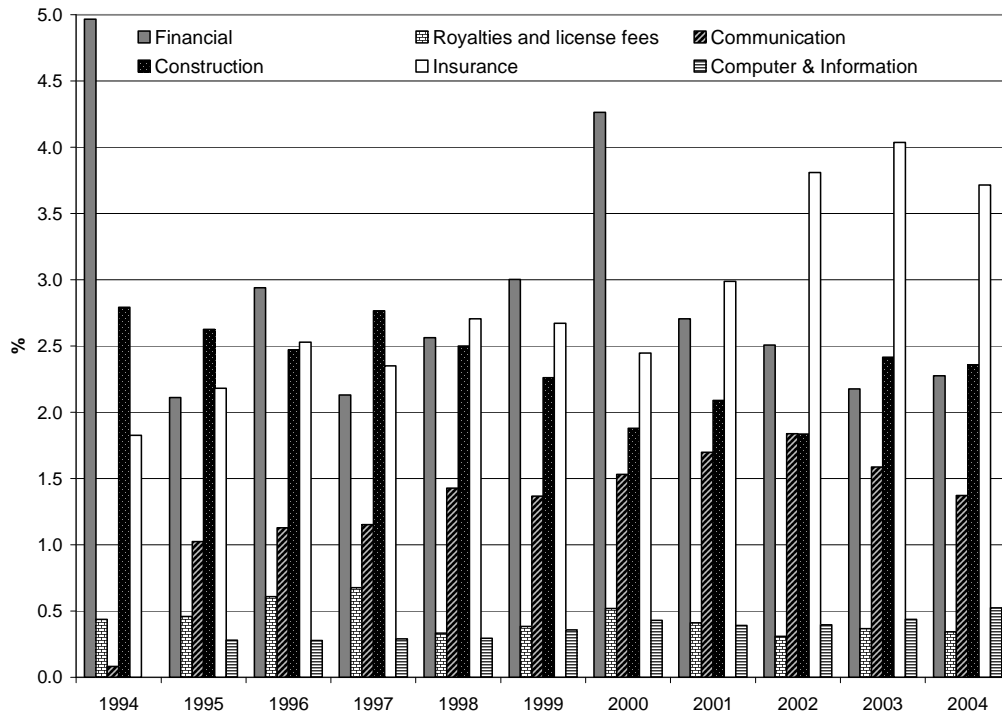
Figure 10



Source: OENB 2005.

Figure 11

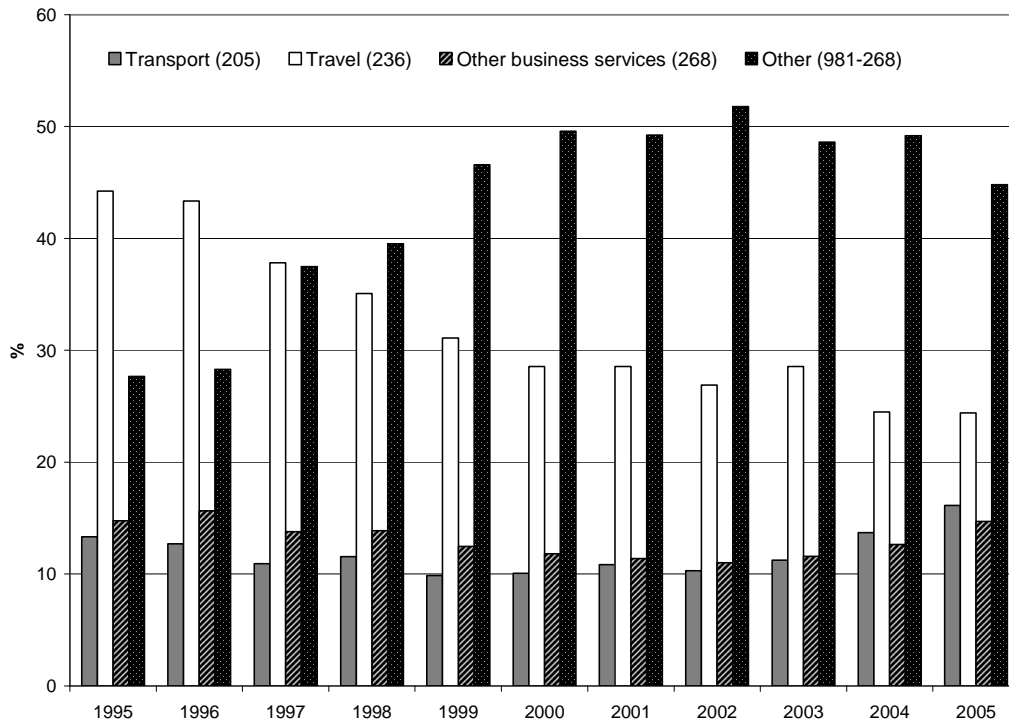
Sectoral Structure of Austria's Producer Related Services Exports (apart from 268)



Source: OENB 2005.

Figure 12

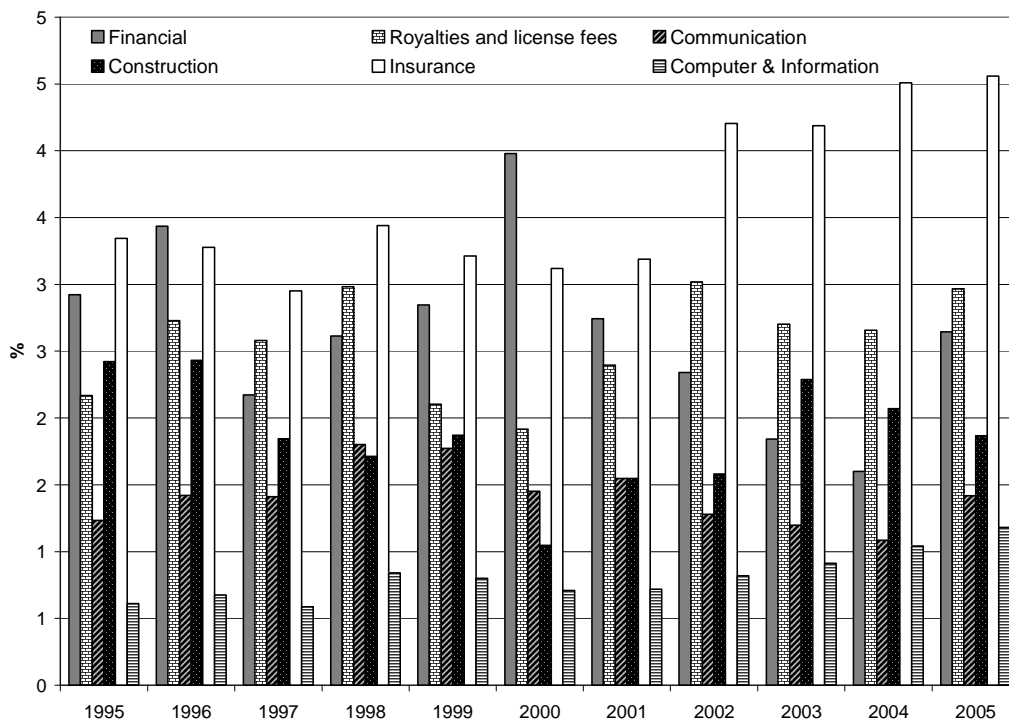
Sectoral Structure of Austria's Services Imports



Source: OENB 2005

Figure 13

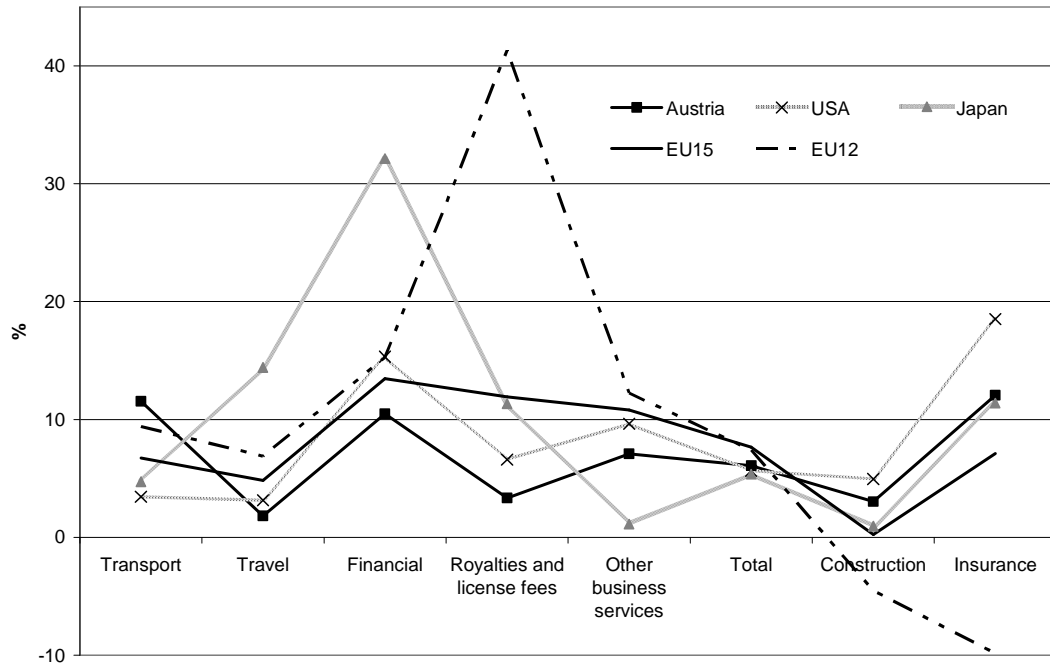
Sectoral Structure of Austria's Producer Related Services Imports (apart from 268)



Source: OENB 2005

Figure 14

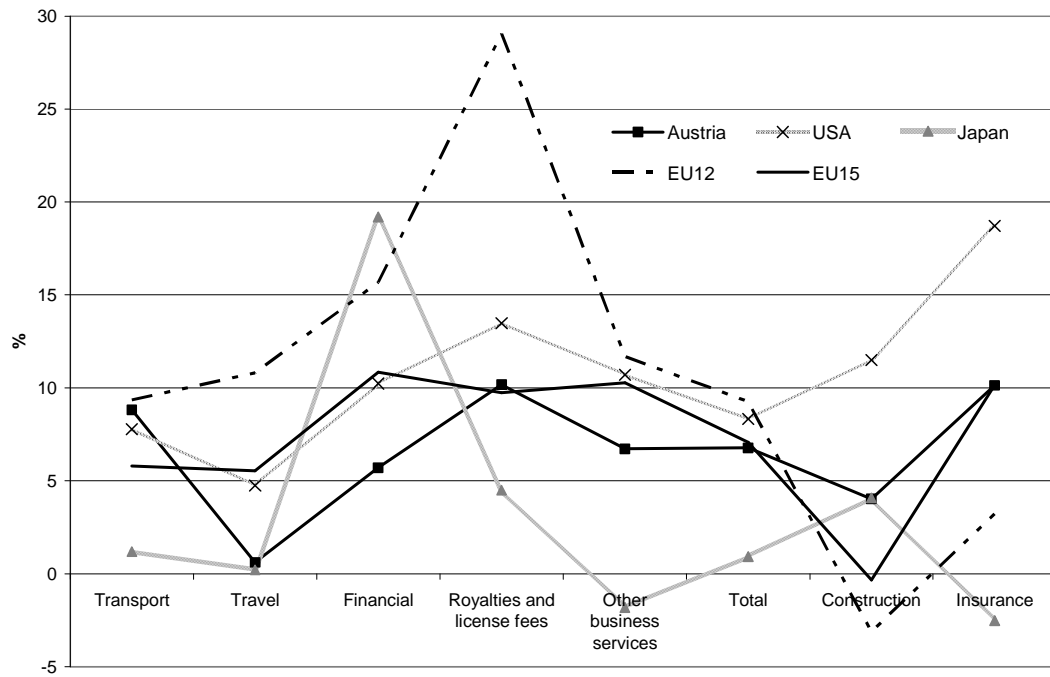
Average Annual Growth of Services Export in 1995-2005, %



Source: OENB, TSD

Figure 15

Average Annual Growth of Services Import in 1995-2005, %



Source: OENB, TSD