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■ AN EVALUATION OF THE ECONOMIC EFFECTS OF AUSTRIA'S EU MEMBERSHIP

An interim appraisal of six years of EU membership yields the following conclusions: Austria's economy and economic policy had to adjust to the regime of the Single Market. This meant the surrender of autonomous economic policy-making to community responsibility in foreign trade policy, agricultural policy, competition law, regional policy, and, through the accession to the Economic and Monetary Union, also in monetary policy. As the fourth richest EU country, Austria is a net contributor of 0.4 percent of GDP. The Single Market is not yet fully developed in many areas. In the telecommunications and energy sectors, liberalisation has only just begun. EU membership produced welfare effects of about 2 percent of GDP, and allowed higher economic growth of about 1/2 percent per year.

Austria has been a member of the European Union since 1995. With the entry into the Economic and Monetary Union (EMU) on 1 January 1999, Austria began a new chapter of European integration. This period was characterised by a familiarisation with the Single Market and EMU as well as the corresponding adjustment requirements. The accession to the Single Market meant a dramatic change of regimes in many areas of economic policy. National responsibilities were transferred to the Community (common trade policy, common agricultural policy, competition policy, regional policy, EU budget contributions, etc.). Some of these changes, however, had already taken place through Austria's participation in the European Economic Area (EEA) from 1 January 1994 onwards. Even though the EEA treaty provided for the „four freedoms“ between the EEA and EU, their implementation was incomplete. There was no customs union and border controls remained intact; agricultural trade was also excluded. The primary components of the EEA were a unified competition law, the participation in EU research programs, and the adoption of around two thirds of the „acquis communautaire“ (see box „Austria's Road to the EU“). Furthermore, entry into the EMU meant a transfer of responsibilities for monetary policy to the European Central Bank (ECB; Breuss, 2000).

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<i>Austria's road to the EU</i>		
	Events in Austria	Other Events
1989	17 July: on the basis of article 237 EEC Treaty, Austria applies for EC membership (with a reservation concerning its neutrality)	Collapse of the planned economy system in Eastern Europe – “opening-up of the East” The EU concludes trade treaties with the CEECs
1990	4 November: full liberalisation of the international payment system and of the movement of capital	1 July: first stage of the EMU takes effect (liberalisation of the movement of capital within the EU)
1991	31 January: European Commission gives positive avis on Austria's membership application	1 July: Sweden applies for EC membership, Liechtenstein becomes a member of EFTA, conclusions of EEA negotiations
1992		EC membership applications: 18 March Finland, 26 May Switzerland, 25 November Norway 17 September: first EMS crisis – Italy and the U.K. withdraw from the exchange rate mechanism, strong depreciation of the lira, pound, peseta, escudo December 1992: Switzerland rejects EEA participation in a referendum – new negotiations over the EEA treaty From 1992 to 1996: Europe Agreements with the CEECs 11-12 December: the European Council in Edinburgh decides to begin accession negotiations with Austria, Sweden, Finland and Norway
1993	1 February: Austria, Sweden and Finland begin accession negotiations with the European Commission	1 January: the EC Single Market comes into effect, realisation of the 4 basic freedoms 2 August: second EMS crisis – bandwidths for intervention in the frame work of the exchange rate mechanism are widened from ± 2.25 percent to ± 15 percent 1 November: the Maastricht Treaty (Treaty of the European Union) takes effect. 3 pillars: <ul style="list-style-type: none"> • Economic and Monetary Union (EMU) • Common Foreign and Security Policy (CFSP) • Co-operation in the fields of Justice and Home Affairs (CJHA)
1994	1 January: as an EFTA country, Austria participates in the EEA 12 April: EU Accession Treaty (conclusion of accession negotiations) 5 May: the Austrian parliament passes the Accession Constitutional Law by 140 against 35 votes 12 June: referendum over EU accession (66.6 percent in favour of accession) 24 June: European Council in Corfu: signing of Accession Treaty 11 November: Austrian parliament ratifies Accession Treaty by 141 against 40 votes	5 April: begin of accession negotiations with Norway 1 January: European Economic Area (EEA) comes into effect (12 EU members and 6 EFTA members – Switzerland excluded) 1 January: second stage of EMU takes effect – establishment of the European Monetary Institute in Frankfurt 16 October: referendum over EU accession in Finland (57 percent in favour) 13 November: referendum over accession in Sweden (52.2 percent for accession) 27-28 November: referendum over accession in Norway (52.5 percent against accession)
1995	1 January: Austria becomes a member of the EU	1 January: Finland and Sweden become members of the EU (EU 15) 1 January: WTO (World Trade Organisation) takes effect
1996-97	Preparation for entry into EMU: compliance with convergence criteria requires consolidation of national budget (fiscal criteria: deficit no higher than 3 percent of GDP, national debt no higher than 60 percent of GDP)	Similar efforts in all EU countries – restrictive fiscal policy
1998	1 May: the Council chooses Austria as an EMU candidate Second half of 1998: Austria takes over EU council presidency	24 March: convergence reports by European Commission and European Monetary Institute 1-2 May: Council composed of heads of state and government decides that 11 EU members will join EMU as of 1 January 1999 2 May: European Monetary Institute, Ecofin: announcement of bilateral conversion rates of 11 EMU members for the calculation of the ECU on 31 December 1998 1 July: establishment of European Central Bank (ECB) 10 November: begin of detailed accession negotiations with 5 CEEC countries and Cyprus (“Luxembourg group”) 31 December: fixing of official ECU exchange rates
1999	1 January: Austria joins EMU with an irreversible rate of 13.7603 ATS for one euro	1 January: begin of third EMU stage with 11 EU members; the exchange rates of the currencies to the euro correspond to the irreversibly fixed ECU rates of 31 December 1998 ECB begins its work (common monetary policy for the euro zone – euro system) 1 May: Amsterdam Treaty takes effect December: European Council in Helsinki decides that accession negotiations will also be held with the second group of 5 plus Malta (“Helsinki group”) from February 2000 onwards. Turkey is accorded the status of a membership candidate.

An ex-post evaluation of the extremely complex integration process faces the additional problem that it is not possible to precisely ascertain the “pure” effects of the accession to the Single Market and the EMU, because there are always special effects present which blur the picture. These include strong exchange rate fluctuations (as a result of previous crises in the EMS), the effects of the opening-up of the East, and the preparation for entry into the EMU (compliance with the convergence and especially fiscal criteria). Although the years 1994 and 1995 formally signified a dramatic change of regimes for Austria, Austria managed to adapt quite readily to the EU’s rules of the game. This was largely due to the fact that, in terms of economic policy, the course had already been set in earlier years (the Free Trade Agreement of 1972, EEA participation), and that the currency had already been unilaterally pegged to the DEM. At the same time, adjustment pressures were somewhat moderated by the fact that not all EU regulations were implemented at once; on the other hand, this may have also delayed the integration effects (Kramer, 1999).

It is against this background that the current report attempts to evaluate Austria’s EU membership from an economic point of view¹. To begin with “stylised” facts are employed to identify possible integration effects: trade effects and the effects of EU membership on Austria’s attractiveness as a location of business activity. This is followed by a discussion of the indicators that are meant to show the integration effects proper, i.e., “competition effects”. Finally, the survey deals with the consequences of the regime change in terms of economic policy, and the implications of EU membership for Austria’s budget. The economic effects of EU regional policy are examined as a special case. The survey then develops a new EU accession model for the final comparison between the ex-ante estimates of the EU accession effects in 1994 and current estimates (ex-post evaluation). Although there are certain deviations due to some unexpected events, most integration effects were estimated correctly for the time frame of 1995 to 2000.

¹ The first evaluation of the effects of EU’s Single Market was commissioned by the EU member states (Council Decision 1218/92) and carried out by the European Commission in 1996 (EU, 1996). Its evaluation was positive (even though most data were available only up to 1993-94), but it also exposed numerous flaws in the Single Market (EU, 1998A). To make it more effective, the Commission therefore promised an “Action Plan for the Single Market” (at the European Council in Dublin, December 1996). One of the Commission’s pilot projects is named SLIM (Simpler Legislation for the Single Market). For Austria, see Breuss (1999).

TRADE EFFECTS AND THE ATTRACTIVENESS OF AUSTRIA AS A BUSINESS LOCATION

As a result of Austria’s integration into the Single Market, imports from the EU grew faster than Austria’s exports to the EU. Austria was barely able to strengthen its position in the EU Single Market. Overall economic welfare increased by about 2 percent of GDP, partly because of price cuts, partly through increased imports from the EU.

As a rule, deeper economic integration should lead to an intensification of trade. The theoretical literature identifies many specific effects of integration (a survey is given in Breuss, 1996). Direct trade effects, as summarised in Table 1, are the simplest effects.

TRADITIONAL TRADE EFFECTS

TRADE CREATION AND TRADE DIVERSION

Integration through elimination of trade barriers causes both a reallocation of production and a shift of demand. The last non-tariff trade barriers (NTB) were eliminated with accession to the EU (elimination of border controls for movement of goods; the free trade agreement from 1972 had already provided for a free trade area – for industrial goods, but not agricultural products – between the EU and EFTA from 1977 onwards). Domestic production that had previously been protected (e.g., in the food industry) was thereby exposed to competition through imports. Cheaper imports cause domestic production to fall and demand for goods from the area of integration to rise (trade creation, TC effect). At the same time one would expect that goods previously obtained from third countries (possibly cheaper) would now be imported from the area of integration (trade diversion, TD effect; Table 1).

Table 1 also illustrates the implications of changes of trade barriers towards third countries. Austria became a member of the EU’s customs union (Common Commercial Policy), and thus had to cut its tariffs (10.5 percent before the Uruguay Round) to the lower EU external customs tariff (5.7 percent; GATT/WTO, 1994, p. 69). This (together with a facilitation of imports within the framework of the Europe Agreements) caused an external TC effect, with the consequence that imports from third countries (primarily Eastern Europe) grew and crowded out domestic production (e.g., in the low-wage sector) to a certain extent. In a country where the import tariff is lower than the common

Table 1: Direct integration effects of EU membership for Austria

Welfare effects

	Theory ¹		Empiricas ²			
	Apparent consumption ²	Imports		Apparent consumption ² , value	Imports, value	
		EU	Other countries		Goods and services	EU	Goods
As a percentage of apparent consumption						
Change 1995-1999 over 1976-1994 in percentage points						
Economic impact of integration						
Trade creation – TC	–	+	–6.04	+6.04	+1.56	–0.06
Trade diversion – TD		+				
External trade creation	–					+0.65
External trade diversion		–				
Trade suppression/erosion	+					
Net welfare	as a percentage of GDP				+1.50 (1.56 – 0.06)	+1.79 (1.56 – 0.06 + 0.65)

¹ Allen – Gasiorek – Smith (1998, p. 444). – . . . negative effects, + . . . positive effects. – ² WIFO calculations; as apparent consumption nearly equals GDP, welfare effects can also be read as a percentage of GDP. – ³ GDP minus exports (goods and services).

external tariff of the EU, entering the EU would also cause an external TD effect. This was the case in Sweden, but not in Austria.

An interpretation of the empirical evidence must first take into account the long-term trend towards trade liberalisation, a trend that was continued through EU accession. The share of imports (goods and services) in aggregate “apparent consumption” rose from 32.8 percent in 1976 to 45.5 percent in 1999. Consequently the share of domestic production (GDP minus exports) in “apparent consumption” fell from 67.2 to 54.4 percent. Table 1 shows these allocation effects. They indicate the changes in the share “apparent consumption” (or in GDP), that occurred between the period before and after EU accession. Overall, the share of domestic production shrank by 6 percentage points.

If one distinguishes between merchandise imports from the EU and from third countries (including Eastern Europe), it is possible to determine the internal TC effects/TD effects, as well as an external TC effect vis-à-vis Eastern Europe. Overall, one can derive a direct “net welfare effect” (TC minus TD) of 1½ percent of GDP from EU trade, or, if trade with Eastern Europe is taken into account (external TC effect), of 1¾ percent of GDP. This calculation assumes that without EU accession and the lowering of tariffs towards third countries the import shares would have continued to follow their previous trend. These effects are not quite comparable to theoretical welfare measures (consumer rent and producer rent). Such a calculation would require more precise information about the extent of the reduction of trade barriers towards the EU and Eastern Europe, respectively, as well as their price effects and the reaction of demand. Assuming perfect com-

petition, static equilibrium analyses usually result in welfare effects of less than 1 percent of GDP².

WEAK COMPETITIVE POSITION IN THE EU SINGLE MARKET

While the theoretical focus has largely been on the welfare effects of integration – a widening of the range of available consumer goods through trade (imports), intensified domestic competition (“pro-competitive effect” of free trade) –, the economic policy debate has tended to emphasise the question of competitiveness (competitive position of a new Single Market member).

A country’s competitive position in foreign trade is reflected by its share of exports, its market share, or its net exports (balance of trade). Table 2 presents the most important indicators of Austrian foreign trade in terms of its regional composition.

Since its EU accession, Austria was not able to further strengthen its market position. Both its export and import shares reached their highest level in 1995 (Table 2). After decreasing in the following years, export shares rose more strongly than import shares in 1998, only to fall again in 1999.

Indicators of market shares give an even clearer representation of competitive weakness (Figure 1). Market shares in

² The “New View” of foreign trade also accounts for the more realistic scenario of imperfect (monopolistic) competition with economies of scale and product differentiation. In this case, full market integration, i.e., the participation in the EU Single Market means that market segmentation would largely disappear. The corresponding welfare effects would then be much higher than the traditional TC and TD effects derived above (see Norman, 1995, pp. 26-27).

Table 2: Regional structure of Austria's foreign trade

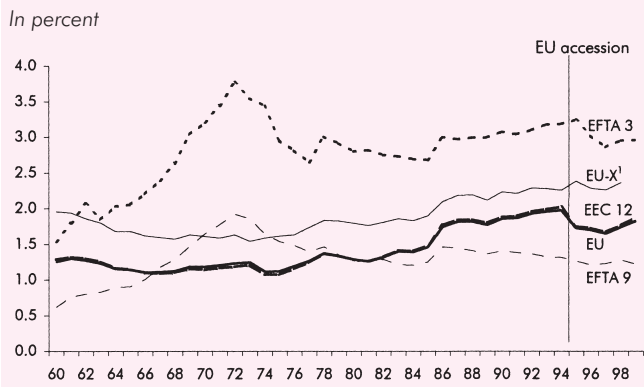
	1971	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	As a percentage of total exports											
America	7.2	4.1	4.7	4.2	4.1	4.9	5.2	4.6	5.0	5.7	5.9	6.3
Asia	4.2	6.8	6.8	7.1	7.0	7.6	7.0	6.6	6.8	6.2	5.2	5.7
Oceania	0.5	0.3	0.5	0.4	0.5	0.4	0.5	0.6	0.7	0.6	0.5	0.5
Africa	2.5	4.5	1.6	1.6	1.3	1.4	1.5	1.2	1.0	1.0	1.0	1.0
Europe	85.6	84.3	86.4	86.7	87.1	85.7	85.8	87.0	86.5	86.5	87.4	86.5
Western Europe	70.1	70.1	75.9	75.6	75.4	72.9	72.1	72.7	71.0	68.9	70.8	70.5
EU	57.1	61.0	67.9	68.0	68.1	65.5	64.8	65.9	64.1	62.0	63.9	62.8
EFTA	12.5	8.6	7.5	7.0	6.6	6.8	6.9	6.3	6.1	5.9	5.9	6.9
Eastern Europe	15.4	13.9	10.4	11.0	11.6	12.7	13.6	14.2	15.4	17.6	16.6	16.0
10 CEECs					9.2	10.3	10.8	11.2	12.1	13.6	13.4	13.3
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	As a percentage of total imports											
America	6.4	5.7	5.2	5.4	5.4	5.6	6.1	5.5	5.8	6.7	6.2	6.5
Asia	4.4	9.1	9.3	10.1	10.1	10.4	10.4	7.2	7.1	7.2	7.1	7.5
Oceania	0.3	0.3	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Africa	1.9	3.3	2.4	2.1	1.9	2.0	1.6	1.5	1.8	1.8	1.2	1.2
Europe	87.0	81.6	83.0	82.2	82.5	81.9	81.8	85.8	85.2	84.2	85.5	84.7
Western Europe	77.4	71.7	76.1	75.1	75.2	74.2	73.3	76.8	75.2	73.2	73.9	73.2
EU	68.9	66.1	71.1	70.2	70.4	69.3	68.4	72.2	70.8	69.0	69.6	68.8
EFTA	7.9	5.3	4.6	4.5	4.3	4.4	4.4	4.1	3.8	3.6	3.7	3.7
Eastern Europe	9.6	9.9	6.8	7.0	7.3	7.6	8.5	8.9	10.0	11.0	11.5	11.6
10 CEECs					5.5	5.8	6.3	6.7	7.7	8.6	9.2	9.4
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Trade balance in billion ATS											
America	- 1.02	- 8.87	- 6.89	- 12.21	- 11.89	- 8.94	- 11.57	- 9.64	- 10.46	- 12.54	- 6.03	- 6.04
Asia	- 1.31	-13.51	-20.14	- 26.05	- 25.86	-23.10	- 29.21	- 9.39	- 9.35	- 12.16	-19.42	-20.49
Oceania	0.15	0.04	1.72	1.29	1.46	1.25	1.48	2.49	3.30	3.33	2.97	3.99
Africa	0.01	- 0.32	- 6.09	- 4.99	- 4.58	- 4.86	- 2.46	- 2.93	- 6.22	- 6.74	- 2.09	- 2.42
Europe	-23.31	-67.01	-58.77	- 70.91	- 65.49	-62.08	- 74.61	- 68.55	- 77.84	- 47.12	-42.82	-44.52
Western Europe	-25.44	-67.71	-69.61	- 81.33	- 78.99	-78.59	- 91.29	- 91.32	-100.92	- 86.08	-74.30	-73.23
EU	-26.91	-70.78	-79.22	- 89.42	- 85.93	-85.39	- 97.83	-100.03	-112.11	-101.41	-90.44	-97.57
EFTA	1.67	2.57	9.39	6.84	6.42	6.67	7.89	9.26	10.01	13.43	14.47	23.58
Eastern Europe	2.08	0.56	10.44	11.01	12.95	16.32	16.55	22.72	22.95	38.78	31.27	28.52
10 CEECs	.	.	.	.	11.97	15.32	15.50	20.54	19.44	28.89	26.34	25.93
World	-25.49	-89.68	-90.17	-112.87	-106.37	-97.74	-116.36	- 88.02	-100.57	- 75.23	-67.39	-69.48
	Trade balance as a percentage of GDP											
EU 14	- 6.14	- 6.63	- 4.28	- 4.51	- 4.10	- 3.94	- 4.29	- 4.21	- 4.57	- 4.02	- 3.46	- 3.63
Eastern Europe	0.48	0.05	0.56	0.55	0.62	0.75	0.73	0.96	0.94	1.54	1.20	1.06
World	- 5.82	- 8.65	- 4.87	- 5.69	- 5.07	- 4.51	- 5.10	- 3.71	- 4.10	- 2.98	- 2.58	- 2.58

Source: WIFO Economic Data Bank. Eastern Europe: 10 CEECs, former USSR and former Yugoslavia.

the EU fell between 1995 and 1997, and only rose slightly in 1998 (1999 1.7 percent). To some extent, this is the result of a change in the way foreign trade data are compiled (in the EU, intra-EU trade is recorded on the exporters' side, and trade flows with third countries are monitored at the border in Extrastat). This statistical break is more strongly pronounced in the import shares (EU imports from Austria as a percentage of total EU imports) than in exports. Measured in terms of export shares (Austrian exports to the EU as a percentage of OECD exports to the EU), Austria's competitive position is somewhat better. But here too, a slight increase in 1995 was followed by stagnation. The integration effects since the 1960s are clearly demonstrated by the development of market shares in the same period: While Austria gained market shares in EFTA, discrimination resulted in losses in the EU market, especially in the markets of its major trading partners, Germany and Italy.

Austria's relative competitive weakness is also indicated by the development of its balance of trade with the EU, relative to that of its total foreign trade (Table 2). Since 1995, the balance of trade with the EU is significantly less favourable than that of total foreign trade. Previously, the opposite had been true. Since the shock of accession in 1995-96, Austria's trade deficit with the EU has decreased slightly. The improvement in the total balance of trade was caused primarily by a trade surplus with Eastern Europe. Austria's EU accession therefore revealed its competitive position in the Single Market, but helped it to gain ground in Eastern Europe. Part of this success was due to the liberalisation measures contained in the Europe Agreement concluded by the EU with 10 CEECs (Central and Eastern European countries; asymmetrical tariff reductions, introduction of the Pan-European Accumulation System in the EU-EFTA-CEEC area in 1997, which created a large free trade area).

Figure 1: Market shares in foreign trade of goods with EU and EFTA



Source: OECD, WIFO. Market shares . . . imports of one region from Austria as a percentage of total imports of this region. -¹ Measured by exports (exports of Austria to EU as a percentage of OECD exports to the EU).

A less aggregated examination (at the SITC 1-digit level; Figure 2) better indicates Austria’s weaknesses in its EU trade. While its competitive position improved in trade with miscellaneous manufactured articles and manufactured goods, it remained unchanged in the area of machinery and transport equipment, and worsened in EU trade with chemical products, fuels and energy, and especially agricultural trade (foodstuff).

Austria’s integration into the CAP (Common Agricultural Policy) resulted in a marked worsening of the balance of agricultural trade with the EU. The deficit rose from ATS 13 billion in 1994 to ATS 16.9 billion in 1995. It reached its peak in 1997 with ATS 19.9 billion. Since then, the agricultural deficit has progressively diminished (ATS 15.8 billion in 1999). The increasing trade surplus in agriculture with Eastern Europe has helped to mitigate the deterioration of the total balance of agricultural trade (ATS –18.6 billion in 1994, ATS –17.2 billion in 1999).

EFFECTS BASED ON MODERN TRADE THEORY

Béla Balassa developed the idea that economic integration leads to trade of more and more similar goods. However, if all participant countries (e.g., in the EU Single Market) supply the same (or at least similar) goods, traditional explanations of integration effects based on comparative advantage, fail (Ricardo or Heckscher – Ohlin). The “New View”, developed during the last decades, explains modern foreign trade, i.e., the exchange of similar goods between industrial nations with similar production factors and technical capabilities (“intra-industrial” trade), by reference to the use of economies of scale, monopolistic competition (product differentiation) and differing consumer preferences.

The empirical measurement of “intra-industrial” trade is difficult. Though some authors see it as an empirical arti-

Figure 2: Trade balance by commodities vis-à-vis the EU (SITC 1-digit)



Source: Statistics Austria, WIFO.

fact, it has become a well-accepted element in the literature. The simplest measurement index (Grubel-Lloyd Index) measures the share of intra-industrial trade in total trade, using the following formula for good *i*:

$$IIT_i = 100 - \frac{|X_i - M_i|}{(X_i + M_i)} 100.$$

If a certain good’s exports are equal to its imports, this index gives the value of 100, i.e., the entire foreign trade is intra-industrial. If exports or imports of a certain good category are zero, the index will produce the value 0, i.e., the entire foreign trade is inter-industrial. The IIT index can be aggregated over all goods by several methods (weighted, adjusted for imbalances in the trade account).

In what follows, the Grubel-Lloyd Index is calculated for trade of EU countries amongst themselves (intra-EU trade) at the SITC 3-digit level (Table 3). The more the trade data are disaggregated, the more the value of the IIT index converges towards zero (giving rise to the objection that intra-industrial trade is a “statistical artifact”).

After a kink in 1995 (possibly caused by the changeover in the foreign trade statistics), Austria recorded a strong rise in the IIT index, whereas the positions of the other new EU members, Finland and Sweden, worsened slightly. There-

Table 3: Intra-industrial trade of EU countries with EU

	1970	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	Grubel-Lloyd Index (IIT) for manufactured goods											
Germany	72.0	78.4	74.8	80.8	79.1	77.0	77.9	77.3	77.9	77.1	74.7	.
France	77.3	82.4	79.0	79.5	81.6	84.7	84.0	82.0	82.5	82.4	83.2	.
Italy	57.4	55.3	61.7	61.8	60.7	59.7	59.7	60.8	61.0	60.0	61.5	.
Belgium, Luxembourg	62.8	70.4	70.4	71.8	71.3	73.2	72.1	71.7	74.3	76.0	74.2	.
The Netherlands	68.4	73.0	76.6	77.6	78.2	77.4	78.2	77.8	76.8	72.3	75.4	.
Denmark	56.9	63.1	63.5	64.8	64.4	64.5	64.1	62.5	63.2	65.9	66.8	.
U.K.	71.4	78.7	75.1	79.5	79.7	77.5	78.0	78.3	78.8	78.2	77.9	.
Ireland	47.0	60.3	53.1	55.4	57.6	53.9	50.7	49.6	45.8	47.6	44.4	.
Greece	15.0	17.9	23.2	23.5	22.1	22.3	23.9	24.1	24.0	23.6	23.3	.
Spain	38.6	58.0	65.6	63.7	66.7	67.7	66.6	67.8	69.5	69.2	69.9	.
Portugal	24.4	30.5	40.3	41.1	40.6	41.6	43.0	48.6	49.6	49.0	52.9	.
Austria	61.8	70.9	70.2	70.5	70.9	71.2	71.2	67.9	73.1	75.6	74.7	75.1
Finland	34.3	48.3	48.3	51.9	48.4	49.3	48.2	47.2	47.4	47.1	.	.
Sweden	65.4	65.8	66.0	66.0	66.0	65.0	65.7	63.1	62.4	62.8	62.6	.
EU	53.8	60.9	62.0	63.4	63.4	63.2	63.1	62.8	68.2	68.2	70.1	.

Source: WIFO calculations with data from the UNO databank, SITC-3 digit: 5 to 9, $IIT_i = 100 - \frac{|X_i - M_i|}{(X_i + M_i)} \cdot 100$, X . . . exports, M . . . imports, i . . . country.

fore, at first, Austria's competitive position did not improve through EU accession. It is, however, increasingly supplying goods to the Single Market that are characterised by economies of scale, product differentiation and monopolistic market structures. All in all, this diagnosis fits well with the "pure Single Market effects", still to be discussed, i.e., the significant growth of overall economic efficiency and productivity, respectively.

AUSTRIA'S INCREASING ATTRACTIVENESS AS A BUSINESS LOCATION ENCOURAGES FOREIGN DIRECT INVESTMENT

One of the most important arguments in favour of EU accession concerned the opportunities for Austria as a business location. It was widely feared that Austria's position would be weakened if it did not join. On the one hand, foreign investors would not invest in Austria anymore, and on the other hand, there would be a strong trend for Austrian businesses to move away. EU membership has indeed improved the locational attractiveness of Austria. Since 1995, foreign businesses have directly invested much more in Austria than Austrian businesses abroad (Figure 3).

Although both flows of investment had already been following a positive trend, foreign direct investment (FDI) in Austria increased stronger than Austria's investment abroad. Foreign businesses' FDI in Austria amounted to 1.1 percent of GDP in 1994, while the FDI of Austrian businesses abroad was only 0.6 percent. While the former had almost tripled by 1998 (to 2.8 percent of GDP), the latter had only doubled (1.4 percent of GDP). The year 1999 saw slightly less foreign investment in Austria (1.4 percent of GDP), and a stagnation of Austrian business investment abroad (1.3 percent of GDP). In its

"Cardiff-II Report", the European Commission (EU, 1999A, p. 4) shows that Austria's share of the inflow of FDI from other member countries amounted to 2.2 percent between 1992 and 1997 (3.1 percent in 1998, 0.3 percent in 1999³; 1.0 percent in Finland and 4.9 percent in Sweden between 1992 and 1997). This corresponds to 0.7 percent of Austria's GDP.

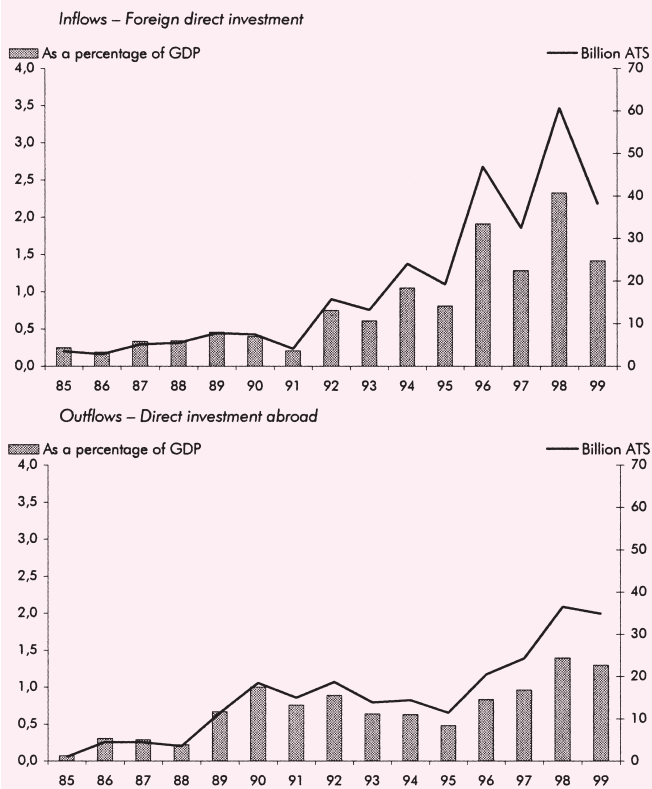
German firms remain the most important foreign investors in Austria. After EU accession, their involvement increased especially in the trade sector (REWE-Billa, REWE-Meinl).

The extent to which FDI produced additional investment and therefore dynamic integration effects (accumulation effects) in the recipient country is controversial. FDI involvement is often associated only with a change in ownership or the financial engagement of foreigners in domestic businesses. In the ex-ante estimates of the effects of EU accession (Breuss – Kratena – Schebeck, 1994, p. 23), WIFO assumed that foreign FDI could indirectly compensate for Austria's poor standing in research and development (compared to other similar industrial countries). This would in turn stimulate economic growth. According to the model estimates, stronger FDI activities in Austria would cause private investment in fixed capital to grow by ½ percentage point faster per year, so that real GDP accumulated over six years would be 0.6 percent higher. Ex post it is very difficult to verify this assumption⁴.

³ Eurostat, Statistics in Focus, Subject 2-28/2000.

⁴ The question of whether FDI is a catalyst for output growth, capital accumulation and technical progress, is less controversial in theoretical than empirical terms. In an econometric analysis with a dynamic panel approach for OECD and non-OECD countries, De Mello (1999) concludes that the possible long-term effect of production increases through FDI will be weaker in technologically advanced than in technologically less advanced countries. The effect of FDI on economic growth therefore seems to be inversely related to the technology gap. Although De Mello

Figure 3: Direct investment position of Austria



Source: OECD, International Direct Investment Statistics Yearbook 1998, Paris, 1999; Austrian National Bank.

COMPETITION EFFECTS OF THE SINGLE MARKET

The central integration and competition effects of the Single Market Programme concern overall economic productivity gains. They are at the root of higher economic growth, an improved competitive position and price reductions. Through EU membership, accumulated real GDP has been about 3 percent higher over the last six years. Price effects were slightly higher than suggested by ex-ante estimates, but only after EMU membership.

The aim of the Single Market Programme (see box "The EU Single Market") is to increase efficiency in the European economy through restructuring. Although the EEA,

(1999, p. 138) identifies a significantly negative trend of capital investment in Austria, he finds no equivalent trend for output or FDI. There is therefore no indication of a linear endogenous growth effect resulting from the inflow of FDI between 1970 and 1990. Since EU accession, the trend has become strongly positive. Growth effects – as far as there are any – will, however, only be felt in the medium term.

which Austria joined as an EFTA member on 1 January 1994, is also a Single Market, its many shortcomings make it incomplete. The four freedoms were established as a goal in the EEA treaty in analogy to the EU Single Market, but because a customs union between EU and EFTA never materialised, differential tariffs and border controls remained intact in the EFTA. Furthermore, it is only EU members that adopt other community policies such as the CAP, regional policy, and the Common Commercial Policy. Only competition policy was unified⁵. Austria has therefore become a full member of the Single Market only through its EU membership.

The elimination of all technical and physical trade barriers is meant to bring about an intensification of intra-EU trade, and thus of competition ("pro-competitive effect" of free trade), as well as a reduction in the cost-price mark-up. Stronger competition should also contribute to the restructuring of the economy (production and services). Both the direct influence as well as the resulting restructuring effect will increase efficiency (productivity gains, exploitation of economies of scale). The Single Market Programme should therefore improve supply side conditions through the elimination of barriers to market access.

The process of adaptation to the Single Market continues not only in the three new member countries but also in the original EU 12. Many elements and regulations of the Single Market have not yet been put in place; many directives have only been implemented insufficiently or not at all. Towards the end of 1999, only 3.6 percent of Single Market regulations were still open in Austria (according to the European Commission, GD XV), 0.7 percent in Finland, and 1.3 percent in Sweden.

The competition effects of the implementation of the Single Market can be assessed in a number of ways. Using several indicators, the following section will show to what extent competitive pressures have increased in Austria since its EU accession: directly in the development of consumer prices, and indirectly in the increase of business mergers (an indicator of economies of scale). The negative effects of competitive pressures are reflected in the number of insolvency cases that exceed the normal level over the business cycle. Competition in public procurement is still very limited. Finally, an attempt will be made to measure the effects of efficiency gains using econometric equations⁶.

⁵ The efficiency of the competition policy pursued by the EU is also demonstrated by the restraints imposed on state assistance (subsidies): they were reduced from 1.7 percent of EU GDP in the period of 1992-1994 to 1.4 percent in the period of 1994-1996 (EU, 1999A, p. 8, 1999B).

⁶ Using a detailed econometric analysis of 15 industrial sectors in 4 EU countries (Germany, France, Italy and Great Britain), Allen – Gasiorek –

The EU Single Market

Individual programme areas

- Removal of physical barriers (customs union)
- Removal of technical barriers

Implementation of the four freedoms: free movement of goods, free movement of labour (free movement of workers and freedom of establishment), active and passive right to vote (elimination of physical frontiers: Schengen Treaty)¹, freedom to provide services (audio-visual media, telecommunications: creation of a liberalised and harmonised European telecommunications market by 1 January 1998 and full liberalisation by the end of 2001, financial services: banks and insurance agencies, commercial communication: sponsoring, advertisement), free movement of capital ("money laundering regulation", problem of anonymous savings accounts in Austria)

Company law: unification of stock corporation law, commercial register, annual accounts, etc.

Intellectual and industrial property rights: harmonisation in the areas of trademarks, patents and copyrights

EU-wide call for tenders in public procurement

- Elimination of fiscal frontiers:

Indirect taxes: harmonisation of value added tax (minimum rate of 15 percent), excise taxes

Attempts to harmonise direct taxation (capital income taxes, fair taxation of the corporate sector)

Additional aspects of the Single Market Programme

- *Competition:* strengthened and harmonised competition law (against monopolies, state subsidies), regula-

tion of mergers (reg. (EEC) No. 4064/89 of the Council, changed by reg. (EC) 1310/97 of the Council)

- *Transport:* competition in railway transport was intended to be intensified by the end of 1997 (regulations concerning issuance of permits to railway companies, capacity controls and the calculation of fees for the use of railway tracks have not been yet sufficiently implemented); EU goal: progressive liberalisation of railway transport by 2010; in Austria, the Austrian Federal Railways were removed off-budget in 1996

The liberalisation of air traffic in the EU completed in April 1997 (all airlines in the EU have free access to all air traffic routes within the community)

- *Energy supply:* Single Market for electricity and gas

Electricity market: regulation 96/92/EC of 19 December 1996 took effect on 19 February 1999 (Step 1), additional implementation steps to follow in February 2000 and February 2003

Gas market: liberalisation in the EU begins in August 2000

Other state monopolies:

- *Postal services:* EU goal – liberalisation of postal services by 1 January 2003, with free market access scheduled to rise from a current 3 to 23 percent; in Austria, the Postal Service was moved off-budget and into a separate PTA holding in 1996 (Telekom, Mobilkom, Datakom, Postal Services Corporation)
- *Public broadcasting:* state financing is allowed (under the mandate to foster social and cultural activities – "fulfilment of the public service remit"; separate protocol in the Amsterdam Treaty)

¹ In Austria, the Schengen Treaty came into effect on 1 December 1997 for air traffic, and on 1 April 1998 for inland transport. In total, the Schengen Treaty (which was incorporated into the Amsterdam Treaty) applies to thirteen countries (with the exception of the U.K. and Ireland), but has so far been implemented in only nine countries (and Greece).

EFFECTS OF EU ACCESSION ON CONSUMER PRICES

An intensification of competition should have a major impact on prices. The period of 1995 to 1999 was charac-

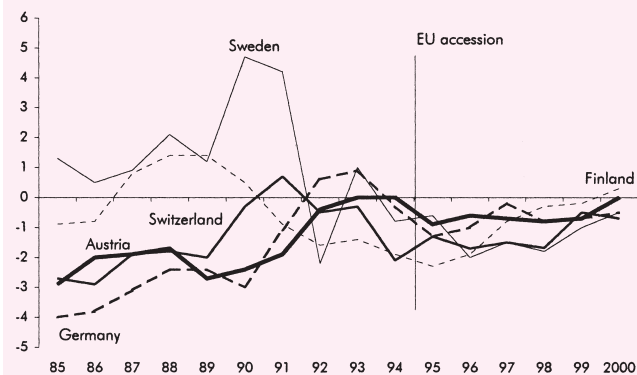
Smith (1998) tried to establish the effects of the implementation of the Single Market Programme. They constructed a model consisting of two equations for demand and supply of imperfectly competitive sectors. dummy variables are used for estimating price mark-ups for the "period of the Single Market 1992-1994". The authors find only very small demand effects, but significant welfare effects as the result of the elimination of national price segmentation.

terised by an EU-wide slowdown in consumer price increases and an alignment of inflation rates; the reduction in inflation in Austria corresponds to this scenario. In order to identify "integration related" price effects, Austria's inflation rate can be compared with that of other new EU members and/or other countries of reference (such as Germany, or Switzerland as a non-EU country; Figure 4).

Measured in terms of the deviation from the EU average, the reduction in the inflation rate was most pronounced in Finland and Sweden, especially during the period of 1995-96. Switzerland also recorded a better performance

Figure 4: Inflation performance

Deviations from EU inflation (CPI) in percentage points



Source: OECD, Statistics Austria, WIFO.

than Austria. It was only after 1997, not least because of the overall efforts to join the EMU, that Austria caught up with Germany. According to this method of comparison, EU accession had no significant price effects, at least in its initial phase⁷, but preparation for EMU membership with its restrictive budget policy did bring about a significant slowdown in inflation.

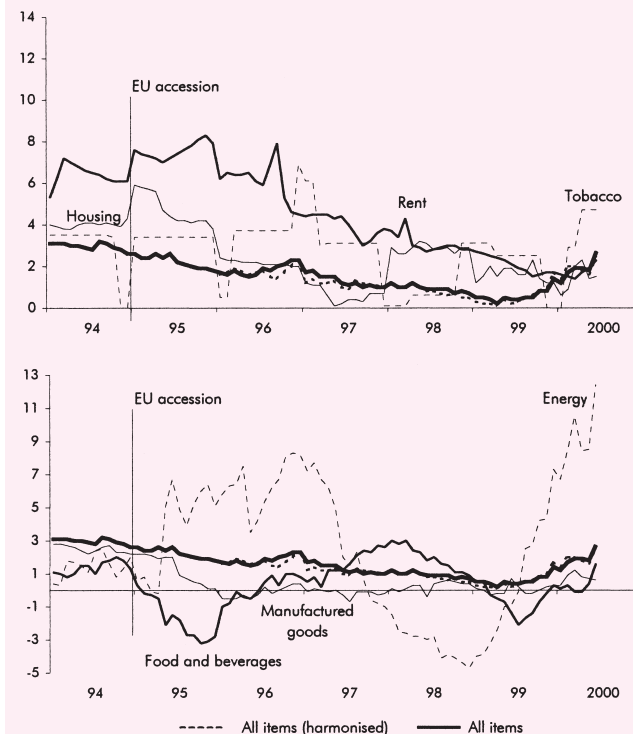
The price decline was more pronounced than that of the CPI on average in only two items: food and beverages (3.2 percent up to October 1995) and, somewhat smaller and with a longer delay, manufactured goods (-0.5 percent up to January 1996, Figure 5). In both cases, price development normalised again in subsequent years. The dampening of prices of food and beverages and manufactured goods more than made up for the higher inflation rates for other items that had not yet been subjected to the Single Market (services, rents, tobacco, energy). Schneider (1997, p. 161) establishes that the fall in agricultural producer prices by 22 percent (resulting from the transition to the CAP in 1995; -24.5 percent according to Eurostat) was only partially passed on to consumers. The competitive pressure in the various distribution stages was not yet sufficient to ensure a speedy pass-through. The doubling of crude oil prices from 1999 to 2000 drove up the energy components (petrol, etc.) of the consumer price index.

Price comparisons that the Chamber of Labour in Vienna carried out for selected items between Vienna and Berlin in the autumn of 1994, the spring of 1995 and in 1996, did not produce a consistent picture (Pollan, 1998). However, on average there was an alignment between prices

⁷In a comparison of the price developments in Germany and Austria, Pollan (1996, p. 578) establishes an EU price effect of about -1/2 percentage point in the items of foodstuff, services as well as industrial goods in the years 1995 and 1996.

Figure 5: Consumer prices by items

Percentage changes from previous year



Source: Statistics Austria, WIFO.

in Vienna and the lower Berlin prices (especially for food and beverages). In its "Cardiff-II Report" (EU, 1999A, p. 21), the European Commission notes that product markets have not yet become fully functional after the implementation of the Single Market. The reduction in price differences by 3.8 percent (according to the GDP deflator between 1985 and 1996) is a result, for example, of the narrowing of price differences in private consumption by 6 percent (as measured by the private consumption deflator). This decrease, however, was partly compensated by an increase in the price differences in public consumption and investments (as measured by the appropriate deflators). Market integration seems to be concentrated in the consumer goods market, while other areas, public procurement in particular, are less affected.

INCREASE IN BUSINESS MERGERS

Since its announcement in the White Paper of 1985, the Single Market has caused a wave of mergers and acquisitions, by which large European businesses wanted to consolidate their competitive positions in the future Single Market. Mergers increased significantly from the mid-1980s until the beginning of the 1990s, resulting in a considerable rise of FDI in the EU (EU, 1996). The wave

Table 4: Mergers and acquisitions in Austria

	1993	1994	1995	1996	1997	1998	1999
	Total number of transactions (purchases and sales)						
Mining	–	–	1	3	1	3	–
Quarrying	23	16	26	21	21	24	23
Manufacture of basic metals	13	15	12	18	15	14	12
Manufacture of chemicals and pharmaceuticals	4	10	5	11	7	8	5
Manufacture of plastic products	5	13	6	9	9	14	6
Manufacture of machinery and equipment	12	10	18	15	19	19	25
Electronic engineering and electronics industry	10	7	12	13	10	0	6
Telecom	–	–	–	–	7	–	8
Transport equipment	5	7	8	8	6	6	–
Industrial process control equipment	3	4	7	7	5	–	–
Food production and processing	21	20	25	21	21	21	10
Manufacture of textiles and footwear	8	5	6	1	13	4	3
Manufacture of wood	3	4	6	4	9	–	–
Manufacture of paper	9	9	14	11	18	5	8
Print and publishing	3	3	5	7	9	10	7
Manufacture of sports equipment	2	1	6	–	–	–	–
Construction and building completion	7	15	12	10	9	4	5
Wholesale trade	14	24	14	19	18	10	7
Retail trade	7	7	18	15	13	21	28
Hotels and restaurants	5	5	3	8	13	6	3
Travel	9	7	5	4	5	5	–
Transport and storage	5	5	9	1	7	4	5
Monetary intermediation	14	7	12	9	14	9	11
Insurance	–	5	1	4	–	–	–
Financial intermediation	4	6	4	6	3	4	–
Advertising	–	–	1	5	3	3	4
Software, data systems technology	7	5	3	3	8	9	16
Sewage and refuse disposal, recycling	8	7	6	8	8	8	6
Entertainment industry (radio, movie, TV)	–	–	–	–	–	–	3
Other private services	2	4	3	5	7	3	–
Consultancy	–	–	–	–	–	3	–
Electricity, gas and water supply	–	5	3	–	–	3	3
Others ¹	18	14	9	14	12	15	15
Total	221	240	259	257	289	242	225
Cross-border	149	150	181	201	220	174	173

Source: Moschner (2000).

¹ Industries with less than 3 transactions.

of mergers and acquisitions subsided somewhat with the implementation of the Single Market in 1993 (among other reasons also because of the economic recession), but has grown stronger again since the mid-1990s. On the one hand, this development is a reaction to stronger competition and the pressure to exploit economies of scale in the Single Market; on the other, it reflects the globalisation of the world economy.

Since its EU accession, Austria has also seen a significant rise of M&A activities⁸ (Table 4). The total number of mergers and acquisitions rose from 221 in 1993 to 289 in 1997, and then fell to 242 in 1998 (225 in 1999). The proportion of cross-border mergers (i.e., with foreign involvement) grew from 67 percent in 1996 to 78 percent in 1999. In 1999, for example, Germany was the domi-

⁸ According to the "Cardiff-II Report" (EU, 1999A, p. 5), between 1995 and 1998, Austria accounted for 2.2 percent of total cross-border M&A in the EU, in which EU businesses participated (passive M&A). The proportion of active M&A (participation of Austrian businesses) amounted to 1.6 percent of the corresponding EU activities (Finland 3.8 and 3.1 percent, Sweden 4.9 and 8.1 percent).

nant country of origin, followed by the USA, France and Switzerland. Germany was also on top of the list of destination countries for Austrian involvement (Moschner, 2000, p. 521). M&A activities were concentrated in the branches of building materials and basic materials, food production and processing (this sector faced severe pressures with the adoption of CAP), as well as retail and wholesale trade (Table 4).

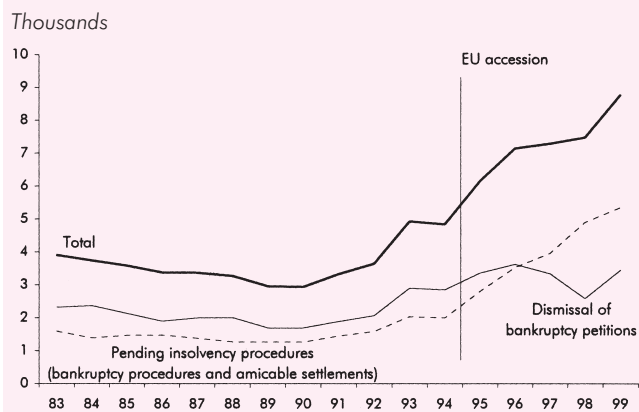
Since the Single Market has taken effect, there has been a strong concentration in the European as well as the Austrian retail trade sector. The three largest food retail chains have a market share of 95 percent in Sweden, 80 percent in Finland, 76 percent in Austria and 53 percent in Germany (AC Nielsen; quoted in the Kurier, 20 May 1999, p. 17).

Concentration in the area of financial services has also grown strongly. The number of banks fell from 9,938 in 1994 to 8,618 in 1998. In Austria, the number decreased from 1,018 in 1994 to 925 in 1998 (excluding postal offices). Luxembourg has the highest density of banks with 20.9 per 100,000 inhabitants. Austria is second with 11.4 banks. In Finland, the number is only half (2.4 in Sweden, 3.8 in Germany, 1.8 in France, 0.9 in the U.K.). In the whole EU, the density of banks is 2.3 per 100,000 inhabitants (1998). France saw the strongest fall in the number of banks between 1994 and 1998 (–25.9 percent). With a drop of 9.1 percent, Austria is in the lower third of the EU countries⁹. It is possible to derive the degree of concentration in the national bank markets (and therefore indirectly the intensity of competition) from the amount of interest income and commissions per credit institution. With EUR 87 million (1998), Belgium is first, followed by U.K. (74) and France (24). In Germany this number is 20, in Austria 7 (Finland 7, Sweden 26). The EU average is 26.

The insurance sector has seen a similar process of concentration. With increasing competition, the number of businesses is falling. The total number of businesses directly involved in the insurance sector in the EU fell from 3,099 in 1996 to 2,995 in 1997 (–3.4 percent). With –11.2 percent, Greece saw the highest reduction. By contrast, the number of insurance businesses rose by 10.9 percent in Ireland, and by 8.2 percent in Sweden. In Austria, there were 59 insurance companies in 1997, implying a fall of 4.8 percent from 1996 (Eurostat, News Release, No. 2/99, 11 January 1999). The decline of the number of firms can also be explained by the fact that firms are now more operating under a single licence also abroad without being registered as a separate affiliation.

⁹ Eurostat, Statistics in Focus, Subject 4-9/2000.

Figure 6: Insolvencies in Austria



Source: Alpenländischer Kreditorenverband (AKV), Vienna.

INSOLVENCIES AS A RESULT OF COMPETITIVE PRESSURES

Ex-ante studies on the Single Market (“Cecchini Report”) had already emphasised that stronger competition will force firms to adjust. By using economies of scale through mergers and acquisitions lower costs through an increase in efficiency can be achieved. Inefficient firms may increasingly be forced out of the market.

Normally, there is an inverse relationship between the number of insolvencies and the business cycle: during recessions, relatively many businesses are forced out of the market, during economic booms, new businesses join the market. However, if the number of insolvencies is independent of the business cycle, this indicates a structural change in the basic framework. Austria has seen such a development since the mid 1990s. It is therefore likely that many firms became insolvent because they were not able to withstand higher competitive pressure resulting from Austria’s participation in the Single Market. Both the number and the value (liabilities as a percentage of GDP) of insolvencies have rapidly increased since the 1990s (Figure 6).

LOW COMPETITION INTENSITY IN PUBLIC PROCUREMENT

Until now, public procurement was a market that was strongly segmented along national borders. Through liberalisation, the Single Market was meant to produce additional competition in this sector. The EU-wide invitation of tenders for large scale public projects raised expectations of a decline in prices, increased competitive pressures on domestic suppliers, and an overall relief for the national budget through a reduction in investment outlays. In the “Cecchini Report”, the market potential for public tenders was estimated at about 12 percent of the EU’s GDP. Up to

now, however, this liberalisation programme got stuck¹⁰. In Austria, for example, the rules governing public procurement are set down in the Federal Procurement Act 1997 and further complicated by nine provincial laws. Furthermore, it is possible that the Austrian public procurement law is incompatible with EU law (i.e., the respective directives; Kurier, 11 June 1999, p. 21)¹¹.

The European Commission has tried to better control the implementation of the various directives regarding public procurement (Service contracts: 92/50/EEC, building contracts: 93/36/EEC, water supply, energy supply, transport as well as the telecommunications sector: 93/37/EEC, 93/98/EEC)¹², as well as establishing an easier and more flexible legal framework to simplify the procedure. At the same time, the directives should be harmonised with the corresponding rules of the Uruguay Round (WTO).

It seems that up to now, the economic effects that the “Cecchini Report” anticipated for the liberalisation in public procurement (+0.5 percent of the EU’s GDP) have not been realised, neither in the EU 12 nor in Austria.

OTHER ELEMENTS OF THE SINGLE MARKET: TELECOMMUNICATIONS AND ENERGY

Apart from the four freedoms that are meant to be realised in the Single Market (see box “The EU Single Market”), liberalisation is also supposed to extend to areas that had previously been completely or partially under state control (state monopolies), and therefore beyond free market competition. This includes the railways, parts of air traffic, postal services, the energy sector (electricity and gas), as well as public broadcasting. The latter falls under the mandate to fulfil the social and cultural needs of each society, and is still excluded from liberalisation (see protocol in the Amsterdam Treaty). Since 1997, the other sectors have been progressively exposed to market forces. Economic effects, such as a fall in prices that was seen in the telecommunications sector since 1998, can only be expected in the long run.

¹⁰ The Commission’s “Cardiff-II Report” (EU, 1999A, p. 7) also laments the lack of liberalisation in public procurement.

¹¹ Complaints against Austria for violation of EU rules (preferential treatment of Austrian businesses in the construction of the governmental quarters in St. Pölten) have been filed with the European Court of Justice (1996). Two other cases (Government Printing Office, Kapsch – eco-points) are pending. The European Commission has brought forth new charges against Austria concerning the implementation of public procurement regulations. According to WTO rules, public tenders must also be opened to third countries (Canada, USA, South Korea, Hong Kong; Kurier, 9 July 2000, p. 17).

¹² See Green Paper: Public Procurement in the European Union – Exploring the Way Forward, Brussels, 1996; Special Sectorial Report No. 1: Public Procurement, Brussels, 1997.

In 1999, former monopolies (postal services) in the EU still held a market share of 91 percent (96 percent in 1997) in the EU telecom market, which is estimated to be worth EUR 160 billion (*Neue Zürcher Zeitung*, 13 July 2000, p. 10). The European Commission has proposed additional steps for liberalisation from 1 January 2003 onwards. In Austria, the state owned postal service (state monopoly) was transformed into the Post und Telekom Austria AG (PTA) in 1996 (opening balance sheet as of 1 May 1996). This legally independent company includes the areas of telecommunications, mobile communications, data communications, as well as postal and bus services (there are plans to contract out the bus service).

Since 1 April 1996, the Austrian Federal Railways has been removed from the Federal budget. Liberalisation in the railway sector has been proceeding rather sluggishly in Europe. It was only recently that an agreement among EU transportation ministers concerning the liberalisation of freight traffic failed due to French resistance. Private providers should also be able to participate in cross-border freight traffic; national railway companies would have to provide track and time capacities (railroad tracks).

Even though Austrian electricity suppliers have not yet been able to agree on a competitive bidding association, the first stage of liberalisation took effect on 19 February 1999 (Electricity Sector Organisation Act – Elektrizitätswirtschaftsorganisationsgesetz – ElWOG)¹³. Currently, the 75 large customers (consuming more than 40 GWh per year) are able to choose between domestic and foreign suppliers (degree of market opening 26.7 percent). The second stage, starting in February 2000, will also benefit private customers consuming more than 20 GWh per year (degree of market opening 30.9 percent). February 2003 will mark the third stage, in which the market will be opened to consumers of over 9 kWh per year (market opening of up to 35 percent)¹⁴. Eventually, electricity will be traded in a separate stock exchange. The gas market was liberalised by August 2000.

PRODUCTIVITY GAINS AS THE MAJOR SINGLE MARKET EFFECT

It is very difficult to quantify the complex effects of intensified competition that resulted from the implementa-

tion of the Single Market on private and formerly state-owned sectors. As various indicators of competitiveness demonstrate, they can be identified in the form of “stylised” facts. The increase in total economic efficiency can be characterised as the core of the Single Market effects. It can be measured by total factor productivity (TFP) for the whole economy or by labour productivity (as estimates of the capital stock always involve measurement errors). As TFP and productivity of capital only apply to the business sector, the total economic productivity of labour will be used here (defined as GDP per employment; effects from increased part time workers are neglected).

In the following, the “EU accession effects” will be measured by an equation of the productivity of labour on the basis of the Verdoorn relation. According to this approach, the rate of change of labour productivity depends primarily on the growth of real GDP. The productivity shock that was caused by Austria’s accession to the Single Market is well captured by dummy variables. The result is an isolated integration effect of about $\frac{3}{4}$ percentage point for the years 1995 and 1996, respectively. Within the context of an economic model it is clear that the positive feedback from an increase in GDP tends to strengthen the productivity gains, so that they are actually higher than in the isolated case. We can expect further increases in TFP to result from EMU membership, as the Single Market will become fully efficient only with the introduction of the single currency (*Breuss*, 1998, pp. 217-219).

As the model shows (see appendix), the total economic productivity gains increase real GDP, dampen unit labour costs and therefore also consumer prices. However, the productivity shock, as well as lay-offs in the public sector (“Austerity Package” 1996-97), have caused a slowdown in employment growth.

According to the “Cecchini Report” (*EU*, 1988), the Single Market Programme is expected to generate an increase in total economic efficiency. Depending on the growth model that is chosen (*Bretschger*, 1999) Single Market accession could either cause a one-time increase in GDP that does not affect the long-term growth rate, or, after an initial adjustment phase, induce the capital stock to grow, which in turn will accelerate GDP growth (“growth bonus” according to *Baldwin*, 1989, 1994).

gree was only 30 percent. The EU average of openness in the electricity market is 65 percent. The fall of prices has therefore varied accordingly. In the EU on average, prices declined by 15.1 percent for households, by 18.4 percent for small businesses, and by 16.2 percent for industry between 1996 and 1999 (*Neue Zürcher Zeitung*, 17 May 2000, p. 10).

¹³ The Commission is currently examining whether the transitional regulations (compensation for stranded investments) in Austria and five other EU countries are compatible with competition laws concerning state subsidies.

¹⁴ The degree of liberalisation in the area of electricity production varies strongly in the EU. By mid of 2000, markets in Germany and U.K. were 100 percent open. In France, Italy and also Austria, the de-

MULTIPLE REGIME CHANGES IN ECONOMIC POLICY

Several national economic policy agenda have been transferred to Community responsibilities since the EU accession. In particular, this applies to Common Commercial Policy (CCP), Common Agricultural Policy (CAP), regional policy and a common competition policy in the EU. Furthermore, EU members participate in the budget of the community; "rich" countries tend to be net contributors, "poorer" (cohesion) countries net recipients. With entry into the EMU, monetary policy was also taken over by the ECB.

ENTRY INTO THE EU CUSTOMS UNION

For Austria, EU accession signified Austria's entry into the EU customs union. This step also meant that it had to hand over competence for foreign trade policy to the European Community (where the European Commission is responsible); Austria also became part of the Common Commercial Policy (CCP). This implied, as a first step, an adjustment of foreign tariffs. According to GATT/WTO calculations (1994, p. 69), before the Uruguay Round, Austria's trade-weighted average tariff for manufactured goods was 10.5 percent, that of the EU was 5.7 percent (see also Stankovsky, 1994, p. 38). Because the conclusion of the Uruguay Round of GATT coincided with Austria's EU accession, Austria was forced to implement both steps at the same time: the reduction of tariffs to the level of the Common Customs Tariff (CCT) of the EU, and, in conjunction with the EU, the reduction of tariffs as dictated by the Uruguay round (reduction of tariffs by 37 percent to a level of 3.6 percent within five years).

Since the beginning of the 1970s, the implicit tariff rates (tariff revenues as a percentage of imports from third countries) have been cut twice. In 1977-78, the reduction of tariffs was concluded within the framework of the free trade agreement with the EEC (from 2.4 to 1.5 percent). In 1994-95, Austria entered the customs union of the EU. The implicit rates, based on customs revenues, declined from 1.5 percent in 1994 to 0.8 percent in 1995; the implicit rates, based on import levies (customs and other import levies, import dependent excise taxes, export promotion levies, road use fees, etc.) fell from 3 to 2.5 percent.

The adjustment of Austrian tariffs to the CCT of the EU constituted a one-sided tariff concession of about 4.8 per-

centage points to third countries. Assuming that the reduction of tariffs is fully passed on to import prices, and that imports reacted to price changes in the usual way, it is possible to estimate the welfare gains to consumers. In 1994, Austrian imports from third countries (excluding EU and EFTA) constituted 27.2 percent of total merchandise imports (26.7 percent in 1998). Because tariffs vis-à-vis Eastern Europe were reduced through the Europe Treaties, and general preference tariffs that are much lower than MFN tariffs (Most Favoured Nations treatment) apply to African countries, the share of imports from third countries subject to MFN tariffs was only 17.1 percent in 1994. Measured by the share of total merchandise imports in GDP (28.1 percent), we arrive at a hypothetical welfare gain for the Austrian consumers (consumer rent, analogous to the estimates of Flam, 1995) of 0.23 percent of GDP ($(0.048 \times 0.171 \times 0.281) \times 100$). In reality, however, this welfare gain is likely to be lower because the tariff reduction only applies to non-agricultural imports, and demand for imports from third countries has fallen slightly. In terms of consumer rent, the drop in government revenues is equal to the rise in consumer rent (Table 7).

The entry into the EU's customs union and the Single Market also meant the elimination of border controls for freight transport. As a result, the administrative costs for exports as well as imports fell (the elimination of transaction costs due to waiting times, customs clearance). Based on a business survey by Ernst & Whinney, the "Cecchini Report" (EU, 1988, p. 216) estimates that these costs add up to 8 billion ECU or 0.2 percent of the EC's GDP. In Austria, these costs would amount to ATS 4½ to 5 billion per year in the period of 1995-1999 (or about ¾ percent of both imports and exports, or about 1 percent of EU trade). More exact estimates are not available for Austria.

The cost reduction through the elimination of border controls (at least in the beginning) was partially compensated by the additional costs that firms incurred through reporting data to Intrastat. Since its accession to the Single Market, Austria must now compile two sets of foreign trade statistics: intra-EU trade is recorded in Intrastat, trade with third countries in Extrastat. Intra-EU trade is reported directly by domestic firms to Statistics Austria, third country trade is still registered at the border. This resulted in a break in the data series, because Intrastat is not a complete survey, and there were significant adjustment problems.

After a long transitional phase, the system of duty-free shops at airports and ferry ships was finally abolished on 1 July 1999, because it was not compatible with the Single Market Programme. Even though the additional costs incurred at external EU borders resulting from the obliga-

Changes in Costs of Trade Barriers as a Result of EU Accession

- Entry into the customs union: reduction of tariffs from 10.5 percent to the CCT of the EU of 5.7 percent
- Abolition of duty-free trade for intra-EU traffic at airports as of 1 July 1999
- Elimination of border controls (for exports as well as imports): benefits are estimated at ATS 4.5 to 5 billion per year (about 0.2 percent of the GDP), or $\frac{3}{4}$ percent of total exports or imports (about 1 percent of foreign trade with the EU)
- Change-over of foreign trade statistics to Intrastat and Extrastat, additional costs for firms from Intrastat reporting
- Schengen Treaty: between 1996 and 2000, costs of border patrols are estimated for Austria at ATS 2.733 billion for the years 1996-2000; intangible benefits result from discriminating border stops
- Pan-European accumulation system between EU, EFTA and CEEC effective since 1 January 1997: European free trade system in which the same rules of origin apply (Turkey became part of this system in 1998); accession removes disadvantages in outward processing, particularly for textiles and clothing, between EFTA countries in the EEA and the EU

tions of the Schengen Treaty do not directly affect private businesses, they are a burden on the public sector (see box "Changes in the Costs of Barriers as a Result of EU Accession") and therefore also on overall welfare.

The "Pan-European" cumulation system has been in effect since 1 January 1997. As EFTA and CEE countries are both part of a unified system of rules of origin, businesses in this new free trade area are treated in the same way in outward processing arrangements (see box "Changes in the Costs of Trade Barriers as a Result of EU Accession"). The discrimination of EFTA vis-à-vis EU businesses (to which Austria was subjected before its EU accession) was therefore eliminated.

PARTICIPATION IN THE COMMON AGRICULTURAL POLICY

With its entry into the EU, Austria became part of the EU's Common Agricultural Policy (CAP). Agriculture only amounts to about 1.7 percent of the EU's GDP and employs only some 5 percent of its labour force. With 46 percent of the EU budget, however, the CAP consti-

tutes the largest expenditure item, followed by structural policy. The CAP is a system that provides price support and direct payments to farmers in order to stabilise farm income and the market (its goals are defined in article 33 ECT)¹⁵. For various reasons (lower productivity, protected market, high subsidies), Austrian farmers achieved higher prices and incomes than the EU average before Austria's EU accession. Entry into the EU therefore meant an immediate adjustment of prices and incomes to the lower level of the EU.

In 1993, the size of subsidies received by Austrian farmers – the Producer Subsidy Equivalent (PSE) as calculated by the OECD – amounted to 56 percent of the value of agricultural production (67 percent in Finland, 52 percent in Sweden). In the EU this rate reached 48 percent (23 percent in the USA; OECD, 1994). In the same year, the volume of implicit taxes that consumers had to pay for agricultural policy (welfare loss) – the Consumer Subsidy Equivalent (CSE) – amounted to 53 percent in Austria (66 percent in Finland, 45 percent in Sweden, 39 percent in the EU, 12 percent in the USA). As a result, subsidies to farmers had to be reduced by 8 percentage points. A new, somewhat differently defined measure of agricultural subsidies – the Producer Support Estimate (PSE) of the OECD – fell from 47 percent (1991-1993) to 44 percent (1997-1999) in the EU (38 percent in 1997, 45 percent in 1998, 49 percent in 1999; OECD, 2000, p. 163); the Consumer Support Estimate (CSE) was also reduced from 38 percent (1991-1993) to 31 percent in the period of 1997-1999 (25 percent in 1997, 33 percent in 1998, 36 percent in 1999).

Through adoption of the CAP, the responsibility for market regulations and also for budgeting (price subsidies, direct payments to farmers) was taken over by the European Commission. In order to mitigate the loss of income, supportive transitional measures (assistance in devaluation of stocks, degressive compensation payments over four years, national compensation payments to mountain farmers and other businesses in disadvantaged areas, implementation of the environmental programme, increase in agriculture support, etc.; Schneider, 1997, p. 156) were negotiated in the EU accession treaty of April 1994. Most agricultural prices fell with the EU accession. According to Eurostat, prices for agricultural products in Austria fell by 24.5 percent between 1994 and 1995 (–22 percent according to Schneider, 1997, p. 157). During the following years, prices stabilised (+0.9 percent in 1996, +2.2 percent in 1997, –6.5 percent in 1998,

¹⁵ According to the new numbering system of the EC treaty (Treaty of Amsterdam, taking effect on 1 May 1999).

–3.8 percent in 1999)¹⁶. However, most of this drastic price reduction was not passed on to consumer prices; in 1995, food prices dropped by at most 3.2 percent.

Measured by real net value added at factor costs per full-time job (indicator 1 of Eurostat), Austrian agricultural incomes rose by 4.4 percent between 1994 and 1995, and then declined steadily (–18.1 percent between 1994 and 1998; *Schneider, 1999*). The initial income gains were a result of the compensation measures that ended in 1998. In Austria, the level of real income in 1998 (measured by indicator 1) was 6½ percent below the level of 1989–1991; the decrease amounted to 10½ percent in Finland, and to 26 percent in Sweden; the EU average in 1998 was 11¾ percent above the level of 1989–1991. In 1999, agricultural income in the EU fell by 3 percent, in Austria only by 1 percent¹⁷.

The resulting welfare losses for Austrian farmers (producer rent) amounted to 0.59 percent of GDP, or ATS 7.9 billion, measured as the difference between the contribution of agriculture and forestry to the national income of 1994 (ATS 39,100 million, 1.75 percent of GDP) and 1999 (ATS 31,200 million, 1.16 percent; *Schneider, 2000*).

With a full passing on, the reduction in agricultural prices could have resulted in consumer welfare gains (consumer rent) of 0.44 percent of GDP (assuming that farmers receive 30 percent of all food expenditures and that the share of consumer expenditure for food amounts to 6 percent of GDP ($(0.245 \times 0.30 \times 0.06) \times 100$; *Flam, 1995, p. 460*). In fact, the price cuts were not fully passed on from producer (–24.5 percent) to consumer (–3.2 percent), i.e., CAP integration resulted in a much lower consumer rent of only 0.06 percent. In the period of 1995 to 1998, this amounted to a welfare gain of ATS 450 per household. The rent that was withheld from consumers accrued to the domestic food processing and distribution sector (Table 7).

With the entry into the CAP, state aid to agriculture and forestry was systematically taken over by the EU. In 1994, total subsidies of agriculture and forestry (at the central, state and local level) amounted to ATS 20,1 billion. In 1995, they totalled ATS 36,8 billion (ATS 13,6 billion from the EU; ATS 14,7 billion from the central government, and ATS 8,5 billion from the state governments). By 1997, the amount had been reduced to ATS 29,0 billion (ATS 13,5 billion from the EU; ATS 8,7 billion from the central government, and ATS 6,8 billion from the state governments; *Lehner, 1999, Table 7*). This trend contin-

ued in 1998. In total, financial assistance to agriculture and forestry fell by about ATS 5 billion (or by a quarter) between 1994 and 1998¹⁸. The welfare gains for general government (reduction in government spending on agriculture and forestry) amounted to 0.78 percent of GDP (in 1994, subsidies in Austria reached ATS 20.1 billion, or 0.9 percent of GDP, in 1999 ATS 17.3 billion (*Schneider, 2000, p. 463*), with EU payments amounting to ATS 14.1 billion; Austria's share was ATS 3.2 billion or 0.12 percent of GDP (Table 7).

ADJUSTMENT OF REGIONAL POLICY

One of the European Community's aims is the strengthening of economic and social cohesion, in order to encourage harmonious development (article 158 ECT). The Community supports its member states with structural funds¹⁹.

Since its EU accession, Austria's regional policy is subject to the strict legal competition framework of the EU. Business subsidies are only permitted in regions that are deemed worth subsidising by the EU Commission in its decision on areas eligible for EU regional aid (passed in 1994, effective until the end of 1999). 35.2 percent of Austria's population lives in targeted regions. The maximum intensity of permitted subsidies differs. In the Objective-1 region Burgenland, business investments can be subsidised by up to 40 percent of the investment costs (net subsidy equivalent), in the Waldviertel area up to 20 percent, and in the Tyrolian Oberland up to 15 percent²⁰.

Objective-1 and 2 regions are eligible to receive transfers from the EU Structural Fund. With the Agenda 2000, the European Commission limited the scope for regional policy further. The number of categories of objective regions was reduced from seven to three, and the maximum of the population quota in assisted areas was also decreased. The maximum population residing in Objective-2 regions was fixed at 1.995 million, or 25 percent of the total population; thus, the area eligible for regional aid was re-

¹⁸ The expenditures for the transitional measures (devaluation of stocks, depressive price compensation between 1995 and 1998) were shared between the central and state government in the ratio of 60 : 40. In 1995, the state government only had to contribute to the depressive price compensation scheme (ATS 0.64 billion) and for the devaluation of stocks (ATS 1 billion). The focus of expenditures was on structural and environmental measures (ÖPUL; *Lehner, 1999, p. 26*).

¹⁹ European Agriculture Guidance and Guarantee Fund, EAGGF – Guidance Section, European Social Fund (ESF), European Funds for Regional Development (EFRD), Cohesion Fund for the cohesion member states Greece, Ireland, Portugal and Spain (art. 159 and art. 161 ECT).

²⁰ The map of the assisted areas in Austria is shown on the homepage of the DG IV of the European Commission (http://europa.eu.int/comm/dg04/regaid/1999/de/html/at_page3.htm).

¹⁶ Eurostat, *Statistics in Focus: Agriculture and Fisheries, 1998*, (11) p. 5; Eurostat, News Release, No. 128/99 of 21 December 1999.

¹⁷ Eurostat, News Release, 36/00 of 23 March 2000.

Table 5: Funds resources for structural policy in Austria: 1995-2000

	Financial framework 1995-2000 ¹				EU transfers to Austria ²		Implementation (up to 30 June 2000)												
	At 1995 prices						Granted			Payments			Structural Funds						
	EU	Total	EU	Total	Up to 30 June 2000	EU	Total	Structural Funds			EU	Total	Structural Funds						
	Million EUR (planned)	Million ATS	Million ATS	As a percentage of EU	Million ATS	Million ATS	ERDF Utilisation in percent	ESF	EAGGF	Million ATS	ERDF Utilisation in percent	ESF	EAGGF						
Objectives, total	1,461	4,206	20,098	57,875	17,857	0.89	20,208	56,629	0.98	1.07	0.92	0.96	16,317	46,192	0.80	0.67	0.92	0.79	
Objective 1	166	449	2,279	6,176	2,163	0.95	2,361	5,970	0.97	0.96	0.82	1.12	1,689	4,222	0.68	0.65	0.82	0.70	
Objective 2	101	289	1,390	3,979	1,031	0.74	1,450	4,215	1.06	1.08	1.01		1,035	2,948	0.74	0.65	1.01		
Objective 3	334	779	4,596	10,719	4,338	0.94	4,703	10,342	0.96		0.96		4,653	10,311	0.96	0.96			
Objective 4	61	171	839	2,353	792	0.94	814	1,627	0.69		0.69		807	1,613	0.69	0.69			
Objective 5a	388	1,425	5,339	19,608	5,081	0.95	5,002	18,370	0.94		0.94		4,212	16,760	0.85			0.85	
Objective 5b	411	1,093	5,655	15,039	4,451	0.79	5,878	16,004	1.06	1.14	0.96	1.03	3,921	10,338	0.69	0.68	0.96	0.59	
Community initiatives ³	146	299	2,010	4,109	1,489	0.74	1,826	4,075	0.99	1.21	0.64	1.09	985	2,198	0.53	0.49	0.64	0.38	
Programmes, total	1,607	4,505	22,108	61,985	19,345	0.88	22,033	60,604	0.98	1.09	0.90	0.97	17,302	48,390	0.78	0.64	0.90	0.78	
Pilot projects	16				16														
Total	1,623	4,505	22,108	61,985	19,361	0.88	22,033	60,604											

Source: Austrian Federal Chancellery, Department IV4, August 2000. – ¹ Conversion: 1 Euro = 13.7603 ATS. – ² Conversion with daily exchange rates. – ³ Interreg IIa (EU transfers: up to 30 June 2000: 429.7 million ATS, Utilisation 73 percent), Interreg IIc (44.6 million ATS, 53 percent), Urban (143.7 million ATS, 79 percent), SME (71.5 million ATS, 59 percent), Retex (25.2 million ATS, 71 percent); Resider (54.9 million ATS, 78 percent), Rechcar (12.5 million ATS, 51 percent); Leader (265.4 million ATS, 73 percent); Employment (291.5 million ATS, 81 percent); Adapt (149.8 million ATS, 82 percent).

Objective 1: Regions at NUTS level II whose per-capita GDP is less than 75 percent of the Community average (Burgenland).

Objective 2: Regions with declining industrial areas (outside Objective 1 regions) which belong to NUTS level III with: an average rate of unemployment above the Community average, a percentage share of industrial employment in total employment equal to or greater than the Community average, an observable fall in industrial employment.

Objective 3: Combat long-term unemployment and facilitate the integration into working life of young people and of persons exposed to exclusion from the labour market.

Objective 4: Facilitate the adaptation of workers of either sex to industrial change and/or changes in production systems.

Objective 5a: Promotion of rural areas (assistance with adaptation of agricultural structures according to CAP).

Objective 5b: Promotion of rural areas (facilitate the adaptation of agricultural structures in rural areas outside Objective 1 regions with: low socio-economic development (GDP per capita) and low level of agricultural income, high share of agricultural employment in total employment, low population density and/or a significant depopulation trend (e.g., alpine regions).

ERDF . . . European Regional and Development Fund, ESF . . . European Social Fund, EAGGF . . . European Agricultural Guidance and Guarantee Fund, FIAF . . . Financial Instrument for Fisheries Guidance.

duced by one quarter. During 1994 to 1999 41 percent of the population lived in Objective-1 and 2 regions. From 2000 to 2006 the population quota will be lowered to 28 percent²¹.

EU regional development is based on co-financing: the European Commission finances those projects to which Austria also contributes from its own budget. The degree of co-financing is determined by the classification of objective areas (it is highest in the Objective-1 region). In the period of 1995 to 1999, co-financed projects amounted to a total of ATS 32.36 billion (European Regional and Development Funds – ERDF financed projects were ATS 15.07 billion, European Social Funds – ESF financed projects were ATS 17.29 billion). ATS 14.0 billion came from the EU Structural Fund (ATS 5.90 billion from ERDF, ATS 8.10 billion from ESF), ATS 12.99 billion from the national budget (ATS 4.16 billion from ERDF, ATS 8.83 billion from ESF), and ATS 5.37 billion from the state governments (ATS 5.01 billion from ERDF, ATS 0.36 billion

from ESF; *Lehner, 1999, Table 8*). In the period of 1995 to 1999, Burgenland alone had to raise ATS 1.67 billion for Objective-1 projects.

Only about 88 percent of the funds of ATS 22.1 billion (at 1995 prices) that were agreed to in the EU Accession Treaty of 1994 for the period of 1995 to 1999 have been used so far (Table 5). According to the Federal Chancellery's office, 98 percent of the projects financed by regional EU subsidies and national co-financing were authorised by mid of 2000, but only 78 percent of the funds were received up to now. The highest utilisation rate was achieved in the Objective regions 3 and 5a, in the Objective-1 region Burgenland the rate was only 68 percent. However, Austria still has access to subsidies from the Structural Fund until 2001.

The question of whether Austria benefited by the transition from national to EU regional aid is still unresolved. Using the WIFO macroeconomic model – assuming that Austria would have received no EU structural funds without EU membership, and would have continued its own structural aid at the same rate as before 1995 – an initial estimate indicates the following effects of EU regional aid: between 1995 and 1999, gross fixed capital investment was by at least ½ percent higher than in the baseline scenario. As a consequence, real GDP rose by about 0.1 percent, resulting in employment growth of about 2,000. Participation in

²¹ The average transfer from the EU Structural Fund to Austria will be reduced from EUR 228 million in the period of 1994 to 1999 to EUR 210 million in the period of 2000 to 2006 (at 1999 prices). For the period of 2000 to 2006, Austria will receive a total (excluding funds for Community initiatives) of EUR 1,473 million (at 1999 prices) from the Structural Fund (during the period of 1995 to 1999 the total amount received was EUR 1,516 million in 1999 prices; http://europa.eu.int/employment_social/empl&esf/news/funds_de.htm).

EU regional policy thus stimulated the Austrian economy only moderately.

Austria's main benefit of being involved in EU regional policy is that decision making regarding state aid takes place at a more objective level (Mayerhofer, 1995). As a wealthy EU member, Austria also contributes to redistribution measures benefiting the cohesion countries.

PARTICIPATION IN THE EMU

Along with 10 other EU member states, Austria entered the third stage of the Economic and Monetary Union (EMU) on 1 January 1999. The entry condition was the fulfilment of the convergence criteria. Austria had no problems with the inflation, interest rate and EMS participation criteria. The fiscal criterion, however, was more problematic (a deficit of less than 3 percent of GDP, and public debt of less than 60 percent of GDP). A radical consolidation programme (1996-97) was able to reduce the deficit from 5.1 percent of GDP in 1995 to 1.9 percent of GDP in 1997. This restrictive fiscal policy dampened aggregated demand, and had a negative impact on employment and income in the public sector, in particular. However, these measures also significantly slowed inflation. By entering the EMU, members surrendered authority over monetary policy to the ECB. A common currency (euro) requires a unified and centrally directed monetary policy for the euro area. In order to ensure the primary aim of price stability, fiscal policy (for which member states are still formally responsible) is incorporated into the framework of a comprehensive co-ordination process. Such a mechanism is provided by the Growth and Stability Pact, which includes a multi-level supervision and co-ordination process (Breuss, 2000). As part of this process, EU members have to produce annual stabilisation programmes (participants of EMU) or convergence programmes (those EU countries that are not yet participants of EMU), in which they commit themselves to balance their budgets in the medium term. As a result, the EMU has led to a significant transformation of economic policy in the EU. In the case of Austria, participation in the EMU, brief though it is, lowered inflation and reduced unemployment, according to estimates obtained from the EU accession model.

AUSTRIA AS A NET CONTRIBUTOR

With a GDP of 23,600 EUR per capita, Austria is the fourth richest EU country behind Luxembourg, Denmark, the Netherlands, but before Germany (according to Eurostat data for 1999, at purchasing power parities). The EU average is 21,100 EUR. Through its budget, the EU di-

rects EU-wide redistribution measures with the aim of ". . . raising economic and social cohesion and solidarity among member states" (art. 2, ECT). Richer countries are therefore net contributors and poorer countries net recipients from the EU budget. Furthermore, the extent of agricultural subsidies (dependent on the share of agriculture

Between 1995 and 1999, Austria contributed on average ATS 11 billion, or 0.4 percent of its GDP to the EU budget. Without EU budget transactions, the general government deficit (according to the national accounts) would have been lower by an equivalent amount.

to total value added) also affects the position of a country. The EU accession has not only incorporated Austria into the budgetary system of the EU, but has also required certain changes in the financial policy interaction between the central, state and local governments.

After the Communities' Own Resources Decisions of 1988 and 1994, a new system of own resources was put in place retroactively on 1 January 1995. The following components therefore constitute EU own resources (Table 6; EU, 1998B):

1. *Traditional own resources (TOR)* – customs duties, agricultural duties, and sugar levies: all corresponding incomes from member states are fully transferred to the EU budget (a rebate of 10 percent is granted for the transfer). The reduction of tariffs through the Uruguay Round reduces the yield from TOR.
2. *Value Added Tax (V.A.T.)*: in 1988 it was decided to limit the V.A.T. assessment base to 55 percent of GNP. Since 1995, this reduction rate was gradually lowered from 54 to 50 percent (1999); for cohesion countries, this rate had already been limited to 50 percent in 1995. In 1994 it was also decided to lower the rate of call²² for the V.A.T. resource from 1.4 percent in 1995 to 1 percent in 1999. The actual maximum rate of call, however, is lower (0.84 percent in 1999, 1.25 percent in 1995). As a result of these changes, the share of V.A.T. own resources fell steadily.
3. *GNP*: the GNP own resources that were introduced in 1988 fulfil the function of financing any budgetary gap. The unified GNP rate of call is fixed according to the annual requirement of resources. In 1995, it was 0.339 percent, in 1997 0.403 percent (0.534 percent in 1999). With a falling share of TOR and V.A.T., the share of GNP in the EU budget is increasing; this

²² The share of the V.A.T. base that is transferred to the EU budget.

Table 6: Austria's budgetary transactions with the EU

	1995	1996	1997	1998	1999
			Billion ATS		
1. Opening stock as of January 1	0.000	- 4.825	- 3.398	- 1.332	- 3.163
2. Disposable accounts for commitments vis-à-vis the EU	-18.754	-26.937	-31.563	-26.225	-29.152
3. Austria's payments (own resources commitments vis-à-vis the EU)	-23.579	-25.510	-29.498	-28.055	-29.867
Customs duties	- 3.015	- 3.314	- 3.318	- 3.099	- 3.078
Agricultural duties	- 0.091	- 0.165	- 0.188	- 0.200	- 0.190
Sugar levies	- 0.135	- 0.454	- 0.396	- 0.422	- 0.472
Budgetary compensation for the U.K.	- 0.488	- 1.387	- 1.136	- 0.966	- 1.636
U.K. correction for 1992		- 0.116			
U.K. correction for 1993			- 0.230		
U.K. correction for 1994 and 1995					- 0.528
V.A.T. own resources	-14.596	-12.696	-14.292	-11.523	-11.130
GNP own resources	- 5.254	- 7.379	- 9.938	-11.844	-12.833
4. Stock as of December 31 (3. - 2. + 1.)	- 4.825	- 3.398	- 1.332	- 3.163	- 3.878
5. Repayments from the EU to Austria	10.113	22.134	17.573	16.478	16.762
Rebates	1.458	16.625	12.193	12.041	12.512
10 percent rebate for collecting traditional own resources (TOR)	0.324	0.393	0.390	0.372	0.374
Agricultural funds (EAGGF-G, Section: Guarantee)	1.134	16.232	11.803	11.669	12.138
Payments from the EU budget	8.656	5.510	5.380	4.437	4.250
Accession treaty, article 81 D	7.602	1.402	0.976	0.486	
Agricultural funds (EAGGF-G and FIAF, Section: Guidance)	0.424	1.532	1.369	1.435	1.948
Regional funds (ERDF)		0.981	1.215	0.997	0.835
Social funds (ESF)	0.630	1.594	1.819	1.518	1.467
EEA repayment	0.001				
6. Net financial transactions vis-à-vis the EU according to balance of payments (3. + 5.)	-13.466	- 3.376	-11.925	-11.577	-13.106
As a percentage of GDP	- 0.57	- 0.14	- 0.47	- 0.44	- 0.49
Transactions according to current account	-13.466	- 3.376	-11.925	-13.858	-15.585
Transactions according to capital account				2.281	2.479

Source: Austrian National Bank, Statistics Austria.

strengthens the redistribution effects from richer to poorer countries.

4. *Other miscellaneous revenues*: in addition to the own resources, the EU budget is fed by fines, interest on late payments, taxes on salaries of the employees of the European Institutions, proceeds from borrowing and lending operations, etc.

Austria has transferred own resources of between ATS 23.6 billion (1995) and ATS 29.9 billion (1999; Table 6) to the EU budget. The state and local governments had initially contributed ATS 10 billion in 1995 (ATS 5.25 billion by the state governments, including Vienna; ATS 4.75 billion by the local governments). In fact, the payment burden was less. The share of Austrian payments to the EU budget provided by the state governments was about 21 percent in 1995, 20.7 percent in 1996 and 18.1 percent in 1997 (Lehner, 1999, p. 26). The share of the state government is determined both by the V.A.T.'s and GNP's share of own resources and a fixed sum, that was set at ATS 8 billion in 1995, and is raised by 3 percent annually (Lehner, 1999, p. 25)²³.

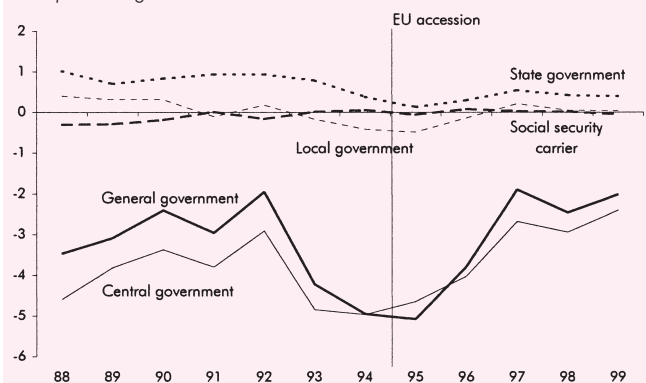
²³ The adjustment of the turnover tax following EU accession resulted in temporary income losses. The import turnover tax was eliminated for imports from EU countries, and a new tax was introduced. Because of the temporal adjustment, two months' revenues were lost in 1995: revenues from the turnover tax dropped by ATS 12 billion, with the state governments' share amounting to ATS 2.2 billion (Lehner, 1999, p. 8).

The repayments are smaller than the own resources obligations; Austria is one of the five most important net contributors of the EU: in 1997, the Netherlands contributed a net sum of 0.73 percent of GDP to the EU budget, Germany 0.60 percent, Sweden 0.59 percent, Belgium 0.52 percent and Austria 0.47 percent (EU, 1998B). The cohesion countries, by contrast, are net recipients: Ireland (4.82 percent of GDP), Greece (4.12 percent), Portugal (3.11 percent) and Spain (1.27 percent). Finland is a net recipient to the extent of only 0.04 percent.

According to welfare theory, Austria's position as a net contributor means a loss (of national income to other countries) to the extent of 0.4 percent of GDP (Table 7). However, the EU-wide redistribution process also offers great opportunities to Austria as an export country: to supply a larger (and wealthier) market, thereby increasing its own GDP. Nevertheless, the Commission (charged with this task by the European Council on a German initiative) has worked out proposals concerning a reform of the EU's self-financing system, in order to spread the financial burden more equitably and remove imbalances (EU, 1998B): revenues could be raised through widening the assessment base of taxation (correction of the rebate for the U.K., environmental tax) and acquiring new own resources (modified V.A.T. resources, introduction of a progressive element through a higher share in GNP). Expenditures could be lowered through a partial co-financing of the

Figure 7: General government financial balances by sector (Maastricht definition)

As a percentage of GDP



Source: Statistics Austria, WIFO.

CAP (this would benefit Germany, but put France at a disadvantage). At the summit meeting of the European Council in Berlin, March 1999, these imbalances between net contributors and net recipients were only marginally reduced (Stankovsky, 1999).

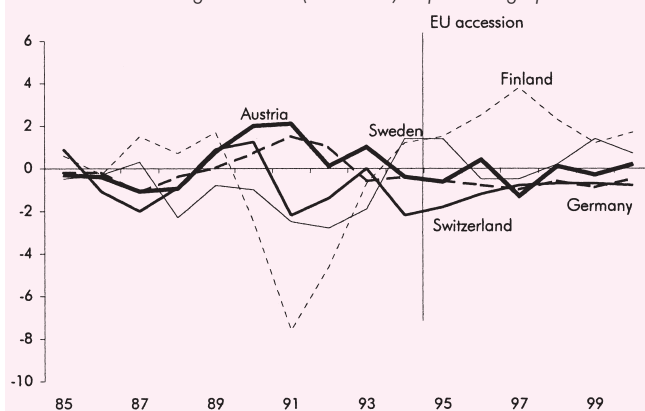
CHANGES IN AUSTRIA'S FISCAL POLICY

Austria's incorporation into the EU budget has changed fiscal relations between the central, state and local governments. On the one hand, this applies to the distribution of the burden of own resource obligations to the EU, on the other hand, the compliance with financial balance ceilings of public budgets (firstly the fulfilment of the convergence criteria for entry into the EMU, then, in the third stage from 1999 onwards, within the framework of the Growth and Stability Pact): the national deficit must not exceed 3 percent of GDP; in the medium term, the Growth and Stability Pact even demands a balanced budget.

In order to ensure the achievement of this goal, the domestic Austrian "Stability Pact" (BGBl. I, No. 35/1999, effective as of 15 January 1999) – an "agreement between the central, state and local governments concerning consultation mechanism and a future Stability Pact between territorial authorities" (Primosch, 2000) – establishes a constitutionally based division of the reference value between different administrative units. Informally, it was agreed already on 22 February 1996 that the central government would be allowed to post a deficit (corresponding to the convergence criteria of the Maastricht Treaty) of 2.7 percent of GDP. The state and local governments together were allowed a deficit of 0.3 percent of GDP. This leeway for new debt of 0.3 percent of GDP was allocated in the following way: state governments (excluding Vienna)

Figure 8: Growth performance

Deviations from EU growth rate (real GDP) in percentage points



Source: OECD, WIFO.

0.11 percent, Vienna 0.09 percent, and the local governments (excluding Vienna) 0.1 percent. The state and local governments earmark 10 percent of their total share (0.03 percent of GDP) as room for manoeuvre for special circumstances (Lehner, 1999, p. 5). During the last few years, the state and local governments have contributed a budget surplus of 0.5 percent of GDP to the reduction in the general government deficit. In future, this "solidarity contribution" is scheduled to be doubled, in order to reduce the general government deficit to zero by 2002.

In the first year of EU membership (1995), the general government financial balance reached a deficit of ATS 119 billion, or 5.1 percent of GDP. For the first time, it was higher than that of the central government. Since 1992, it had more than doubled, after having risen significantly between 1993 and 1994 in the course of the 1994 tax reform. The net lending of the state governments decreased as well (Figure 7).

Austria's intention of participating in the first stage of the EMU in 1999 required a consolidation of the national budget (fiscal criteria of art. 121 ECT). With the consolidation programme of 1996-97 (austerity package), it was possible to lower the deficit to less than 2 percent of GDP in two years, and also to fulfil the criterion regarding national debt. With savings of ATS 114 billion in 1996 and 1997, the consolidation measures resulted in a dampening of private consumption and a slowdown of GDP and employment growth (Rechnungshof, 1999)²⁴.

²⁴ According to Marterbauer – Walterskirchen (1999), the effect of the budgetary consolidation measures implemented by the EU countries on economic growth was less than feared. Consumers adjusted their savings patterns, and devaluations in countries with high consolidation requirements mitigated any negative effects.

Table 7: Welfare effects of EU membership for Austria 1995-1999

	As a percentage of GDP, cumulative
Net payment position	-0.42
Transaction costs in foreign trade	+0.20
General government	+0.55
Agriculture (diminished national expenses for subsidies due to transition to CAP)	+0.78
Customs duties (diminished receipts)	-0.23
Consumer's surplus	+1.79
Food (price reduction due to participation in CAP)	+0.06
Tariff reduction vis-à-vis third countries (entrance in the customs union of EU)	+0.23
Other TC and TD effects	+1.50
Producer's surplus	-0.21
Agriculture (income loss)	-0.59
Agrarian distribution (income gain) ¹	+0.38
Total welfare effects	+1.91
	ATS (rounded)
Consumer's surplus per household	18,000
Price reduction for food	450
Total welfare effect per capita	6,300

¹ Gain by not passing on the reduction of producer prices in the agricultural sector to consumers (hypothetical consumer's surplus when totally passed to the consumers minus actual consumer's surplus).

MACROECONOMIC EFFECTS OF EU MEMBERSHIP

Since 1995, Austria's economy (measured in terms of growth performance – GDP growth in relation to the EU average; Figure 8) has been expanding by about ½ percentage point faster than Germany's. Finland's performance was substantially better; Sweden only performed above average at the beginning of EU membership; among the countries compared here, Switzerland – as a non-EU country – did worst in terms of growth performance. As GDP is affected by many other factors, it is obviously not permissible to draw conclusions about EU membership effects from this simple comparison of GDP growth.

WELFARE EFFECTS

On the basis of the "back-of-the-envelope method" (without an elaborate economic model, in the tradition of *Flam*, 1995), the above cited welfare effects can be summarised as follows (as a percentage of GDP; Table 7):

- The Austrian position of net contributor means a welfare loss of 0.4 percent of GDP.
- The reduction in costs of barriers through the abolition of border controls increases welfare by about 0.2 percent.
- Through participation in the CAP, the member state needs to spend less on agriculture (+0.78 percent), but at the same time loses customs revenues (-0.23 per-

cent). In total, these two changes imply welfare gains of 0.55 percent.

- For a number of reasons, consumer rent improves by an overall of 1.79 percent of GDP:

Because price cuts in the food sector were passed on to consumers on a limited scale, the participation in the CAP only raised the consumer rent by 0.06 percent.

The entry into the EU customs union (reduction of customs tariffs by about 5 percentage points) resulted in a consumer rent of 0.23 percent.

The overall effects of trade creation and trade diversions amount to 1.5 percent²⁵.

- The producer rent decreased by a total of 0.1 percent. The loss of income from farmers amounted to 0.48 percent. Because of the fact that the price advantages resulting from membership in the CAP were only passed on incompletely, a producer rent of 0.38 percent accrued to the food production and distribution sector.

Overall, the calculated welfare effects depend on whether one takes into account theoretical (hypothetical) or realistic effects, i.e., which theoretical concept is used as a basis, for example, for the estimation of competition effects (standard customs union with perfect competition, or market integration with imperfect competition; see for example *Norman*, 1995). Using the traditional approach, the overall effects amount to 1.9 percent of GDP (Table 7).

THE EU ACCESSION MODEL: COMPARISON BETWEEN THE EX-ANTE AND EX-POST EVALUATION

Ex post, it is not possible to model integration effects of EU accession on the basis of quantitative inputs (macro or general equilibrium models). Rather, one should try to isolate "EU effects" from the development of the most important variables relevant for integration. To this purpose, a

²⁵ According to the new foreign trade theory (monopolistic competition, economies of scale, product differentiation), the competition effects of membership in the EU Single Market could be estimated in an alternative manner to the traditional effects of trade creation and trade diversion. Competition effects would be estimated at 3.7 percent (with product differentiation), or 2.6 percent (without product differentiation) of GDP.

Theoretically and quantitatively, the microeconomic effects have a purely illustrative character. They are based on the following assumptions: as a result of the reduction in the costs of barriers (customs union, abolition of border controls), domestic production increases by 15 percent, that of foreign enterprises (imports) by 10 percent. Every domestic enterprise has a market share of 20 percent, every foreign enterprise of 10 percent. The share of imports is 20 percent (equations (7) and (8) in *Norman*, 1995).

separate EU accession model is constructed and behavioural equations are estimated for the relevant variables. The model allows to simulate their interaction including potential EU benefits.

Macroeconomic variables that are directly or indirectly related to Austria's integration in the Single Market were tested for (short-term) structural breaks occurring during the period since 1995 that could be traced to EU accession: First, the equations were estimated up to 1994. The Chow forecast test was applied to determine how well the economic development since EU accession (1995) could be explained by these variables. Significant deviations indicate a structural break (or a change of regime) in relation to EU accession (Log-likelihood-ratio test). The estimation results of the single equations are summarised in the appendix.

As was explained above, the most important effects of the Single Market are total productivity gains. In the tradition of the Verdoorn relationship, that basically explains productivity growth by the growth of real GDP, the productivity equation (2) takes into account the EU effect through a common dummy variable for the years 1995 and 1996. The direct "EU accession effect" of about $\frac{2}{3}$ percentage point in both years reflects the productivity shock (adjustment to the intensification of competition in the Single Market). Productivity growth is the "motor" of the integration effects: via unit labour costs (equation (8)) and labour productivity (GDP per dependent employment, equation (3)), it enters into the price equation (6), and into the equation for real GDP (1). The development of wages is estimated using a Phillips Curve relationship (equation (7)).

In equation (1) the growth rate of real GDP is a function of the following factors: development of demand in the EU, the changes in aggregate labour productivity ("technical progress"), the terms of trade, a time trend, the long-term interest rate and the general government financial balance (fiscal policy). The Chow forecast test suggests the use of two dummy variables for the years 1996 and 1997 in the GDP equation; the dummy variables capture the negative effect of the "austerity package" (reduction in economic growth of 0.8 percentage point in 1996 and 1.1 percentage points in 1997). Apart from its impact on real GDP, the "austerity package" 1996-97 was also felt directly in the development of wages, effects that are represented by a dummy variable for the years 1996 and 1997. Growth of wages and salaries per employee was thereby reduced by about 2 percentage points per year, with further consequences for disposable income and private consumption.

The rate of inflation (CPI) – one of the core variables in the integration process – is explained in a standard equation

(6) by the usual determinants (unit labour costs and import prices). The price dampening effect of the preparation for the EMU and the price cuts during the first year of EMU membership (to the extent of 1.2 percentage points per year) is captured by a dummy variable for the years 1998 and 1999. Unit labour costs (which, via gains in labour productivity, reflect the Single Market effect proper) and import prices (price reductions as a result of the intensification of competition) indirectly take into account the "price effects" on the consumer level caused by membership in the Single Market. Interaction with other determinants, especially labour productivity, generate the "integration effects" of the Single Market on prices.

The development of employment can be derived from estimates of real GDP and labour productivity (per employment, equation (9)). Since 1995 employment growth has been curbed by the rapid productivity growth in the private sector and the modest employment expansion in the public sector²⁶.

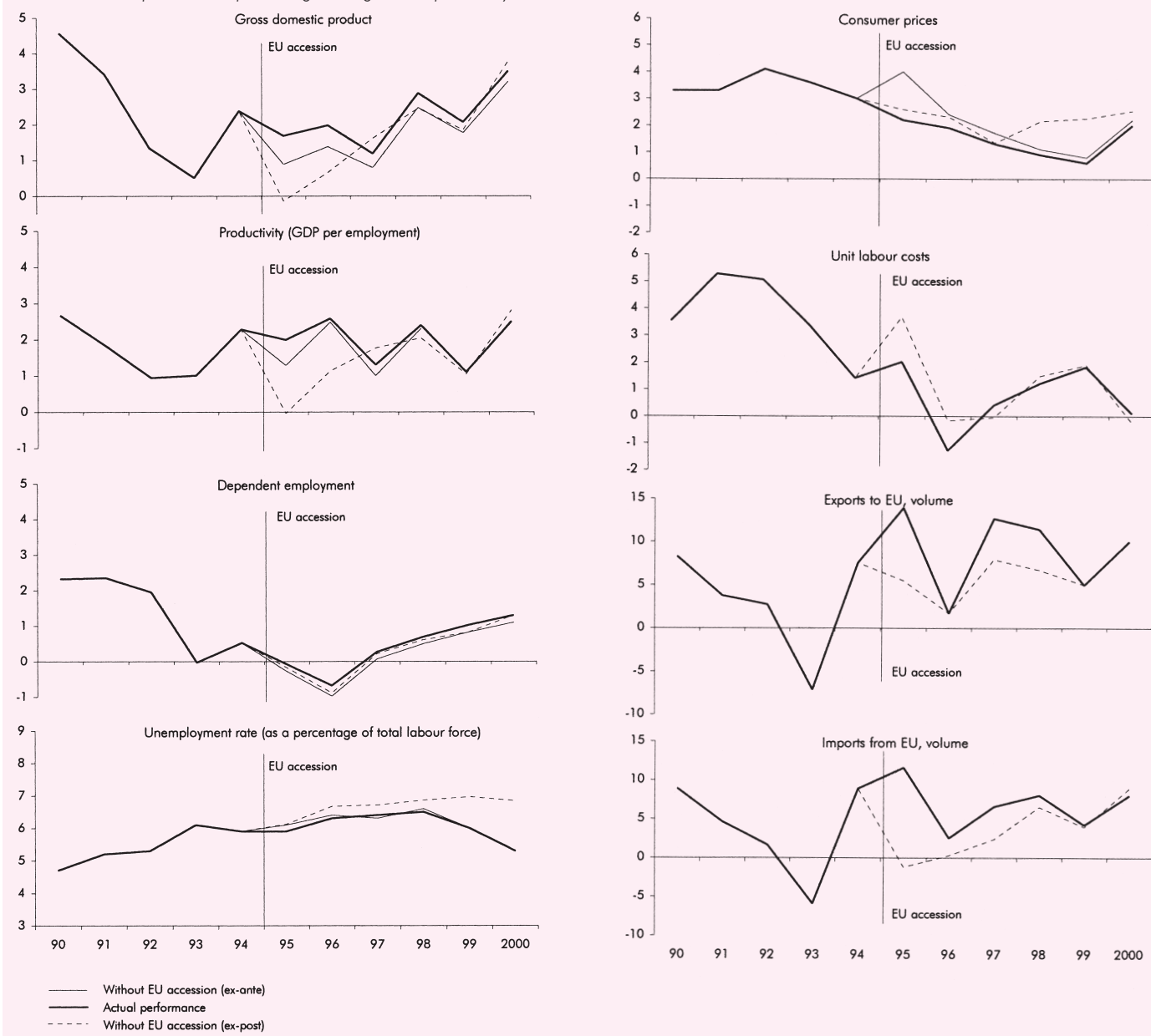
The EU effect on unemployment was estimated on the basis of the Okun relationship (equation (10)): a change in the unemployment rate is negatively related to the growth of real GDP. Entry into the EMU requires dummy variables for the years 1999 and 2000. A more favourable economic climate and the active measures within the framework of the comprehensive economic policy co-ordination within the EMU (National Action Plan, etc.) have lowered the unemployment rate by 0.6 percentage point in 1999 and 2000, respectively.

Austrian trade relations with the EU were included in the model through real exports to the EU (11), and real imports from the EU (12), with income and relative prices the only determinants in both equations. In both equations, dummy variables were necessary. The EU accession of 1995 resulted in a surge in exports that continued in 1997-98 after a temporary drop. These trade creation effects on the export side are represented by dummy variables. In 1995, there was a surge in the demand for imports (trade creation effect) that continued until 1997. This effect is captured by dummy variables for these years. Without EU accession, exports would have grown by about 3 percentage points less, and import pressure would have been lower by about 3.5 percentage points per year. This finding confirms the rela-

²⁶As a result of the budget consolidation ("austerity package" 1996-97), employment growth in the public sector slowed down from an average of 21,570 per year up to 1994 to 5,000 in 1995-1997. The number of employees in the public sector increased again more rapidly in 1998 (+12,200 compared to 1997). Since 1995, this policy has reduced employment growth in the whole economy by 0.5 percentage point.

Figure 9: Integration effects in model simulation

Ex-ante versus ex-post results, percentage changes from previous year



tively strong trade creation effect observed since EU accession (Figure 9). Net exports to the EU would have grown by around $\frac{1}{2}$ percentage point faster without EU accession.

If the dummy variables are set to zero for the years 1995 to 1998, one arrives at the solution to the model without EU accession ("anti-monde"). A comparison of this solution with the actual development of the variables (including EU accession) indicates the macroeconomic EU membership effect (Figure 9, Table 8). In the simulation the negative effects of the "austerity package" 1996-97 were not attributed to the EU membership effects.

With +3 percentage points accumulated over six years ($\frac{1}{2}$ percentage point per year)²⁷, the effects on real GDP largely correspond to the ex-ante estimate of Breuss – Kratena – Schebeck (1994)²⁸. The growth of labour pro-

²⁷ If the effects of the "austerity package" 1996-97 were attributed to the EU accession (with the argument, that these measures were related to the preparation for EMU membership), the annual GDP effect would only amount to +0.2 percentage point.

²⁸ Breuss – Kratena – Schebeck (1994) estimated the EU accession effects with the WIFO macro model. Keuschnigg – Kohler (1996) calculated the long-term integration effects of Austria's EU accession using a calibrated dynamic CGE model (long-term real GDP +1.6 percent, welfare effect per year 1.1 percent of GDP).

Table 8: Macroeconomic impact of Austria's EU membership 1995-2000

Total effects

	Estimate (ex ante) 1994		Evaluation (ex post) 2000	
	Cumulative Deviations from baseline scenario "EEA" in percentage points	Annual	Cumulative Deviations from baseline scenario "anti-monde" in percentage points	Annual
GDP, volume	+2.80	+0.47	+ 3.12	+0.52
Labour productivity (GDP per employment)	+1.40 ¹	+0.23 ¹	+ 3.11	+0.52
Dependent employment	+1.30	+0.22	+ 0.65	+0.11
Unemployment rate	-0.30	-0.05	- 3.76	-0.63
Inflation (CPI)	-3.30	-0.55	- 4.29	-0.71
Unit labour costs	-3.60	-0.60	- 2.32	-0.39
Compensation per employee, volume	+1.20	+0.20	+ 4.43	+0.75
Household disposable income, volume	+3.40	+0.57		
Terms of trade	-0.30	-0.05	- 2.42	-0.40
Exports of goods and services, volume	+2.90	+0.48		
To EU			+17.89	+2.98
Imports of goods and services, volume	+6.10	+1.02		
From EU			+20.16	+3.36
Net exports to EU, volume			- 2.26	-0.38
Current balance, as a percentage of GDP	-1.70	-0.28		

Source: Estimate (ex ante) 1994 (Breuss – Kratena – Schebeck, 1994, p. S27) with combined WIFO-Macro- and Input-Output model, valuation (ex post) 2000 with specific EU accession model (see Appendix). – ¹ GDP per dependent employment.

ductivity was underestimated in 1994 – the cumulative effect amounts to about 3 percentage points, the ex-ante estimate was +1½ percentage points. Other influences, however, seem to have been captured by the dummy variables: parallel to the EU integration, the opening-up of Eastern Europe also required an increase in efficiency; as a result, the employment effect was overestimated ex ante. In fact, total effects related to the EU membership (increased productivity growth) resulted in employment growth (0.1 percentage point per year)²⁹ that was only half as high as estimated in 1994. As a result of integration (especially since EMU membership), unemployment is estimated to have fallen more significantly than expected. The slight reduction in employment and unemployment (caused by EU integration) means that the supply of labour must have fallen somewhat during the last four years. Integration-induced price effects followed a different path than originally expected. In 1994, a strong one-off effect (a cut in consumer price index by 1.8 percentage points in 1995, on the assumption that price reduction of agricultural products would be passed on to consumers) was anticipated. In fact, the major part of the price effects of EU integration were only achieved at the time of EMU participation.

²⁹ If the effects of the "austerity package" 1996-97 were considered as integration effect, employment would have fallen by 0.2 percentage point annually.

REFERENCES

Allen, C., Gasiorek, M., Smith, A., "The Competition Effects of the Single Market in Europe", *Economic Policy*, 1998, (27), pp. 440-486.

Baldwin, R.E., "The Growth Effects of 1992", *Economic Policy*, 1989, (9), pp. 247-282.

Baldwin, R.E., *Towards an Integrated Europe*, CEPR, London, 1994.

Bretschger, L., "Dynamik der realwirtschaftlichen Integration am Beispiel der EU-Osterweiterung", *Jahrbücher für Nationalökonomie und Statistik*, 1999, 218(3-4), pp. 276-293.

Breuss, F., "Der aktuelle Stand der integrationstheoretischen Diskussion", *WIFO-Monatsberichte*, 1996, 69(8), pp. 525-544.

Breuss, F., *Außenwirtschaft, Band II: Monetärer Teil – Schwerpunkt Wirtschafts- und Währungsunion*, SpringerNotes Wirtschaftswissenschaften, Springer, Vienna-New York, 1998.

Breuss, F., "Gesamtwirtschaftliche Evaluierung der EU-Mitgliedschaft Österreichs", *WIFO-Monatsberichte*, 1999, 72(8), pp. 551-575.

Breuss, F., "Wirtschafts- und Währungsunion und ihre Folgen", in Breuss, F., Fink, G., Griller, S. (Eds.), *Vom Schuman-Plan zum Vertrag von Amsterdam*, Springer-Verlag, Vienna, 2000.

Breuss, F., Kratena, K., Schebeck, F., "Effekte eines EU-Beitritts für die Gesamtwirtschaft und für die einzelnen Sektoren", *WIFO-Monatsberichte, Sonderheft*, May 1994, pp. S18-S33.

De Mello, L.R., "Foreign Direct Investment-led Growth: Evidence from Time Series and Panel Data", *Oxford Economic Papers*, 1999, 51(1), pp. 133-151.

EFTA, *Thirty-Eight Annual Report*, Brussels, 1998.

EU, "Europas Zukunft – Binnenmarkt 1992", *Europäische Wirtschaft*, 1988, (35).

EU, "Economic Evaluation of the Internal Market", *European Economy, Reports and Studies*, 1996, (4).

EU (1998A), "Fünftehnter Jahresbericht über die Kontrolle der Anwendung des Gemeinschaftsrechts – 1997", *Mitteilungen der Kommission*, KOM(1998) 317 final, of 27 May 1998.

EU (1998B), *Finanzierung der Europäischen Union. Bericht der Kommission über das Funktionieren des Eigenmittelsystems*, Brussels, 1998.

EU (1999A), "Bericht über Wirtschafts- und Strukturreformen in der EU", *Europäische Wirtschaft, Beiheft A*, 1999, (1).

EU (1999B), *Die Wettbewerbspolitik der Europäischen Gemeinschaft 1998*, Brussels, 1999.

Flam, H., "From EEA to EU: Economic Consequences for the EFTA Countries", *European Economic Review*, 1995, 39(3-4), pp. 457-466.

GATT/WTO, *The Results of the Uruguay Round of Multilateral Trade Negotiations: Market Access for Goods and Services. Overview of the Results*, Geneva, 1994.

Keuschnigg, C., Kohler, W., "Austria in the European Union: Dynamic Gains from Integration and Distributional Implications", *Economic Policy*, 1996, (22), pp. 155-211.

Kramer, H., "Economic Aspects of Tax Co-ordination in the EU", in Austrian Federal Ministry of Finance, *Austrian Institute of Economic Research, Tax Competition and Co-ordination of Tax Policy in the European Union. Conference Proceedings*, Vienna, 1998, pp. 51-62.

Kramer, H., "Die Auswirkungen der Mitgliedschaft Österreichs in der EU – eine Zwischenbilanz", in Khol, A., Ofner, G., Stirnemann, A. (Eds.), *Österreichisches Jahrbuch für Politik 1998*, Vienna-Munich, 1999, pp. 515-528.

APPENDIX: EU ACCESSION MODEL

Equations

$$(1) \quad y = + 0.33 y^{EU} + 0.89 q - 0.19 d - 0.15 tot + 0.02 T - 0.07 r + 1.81 D_{90} + 1.70 D_{91} - 0.76 D_{96} - 1.06 D_{97}$$

(5.6) (15.2) (3.8) (4.6) (3.0) (2.7) (4.9) (4.6)
(2.0) (2.7)

$$R^2 = 0.97 \quad DW = 2.23$$

$$(2) \quad q = + 2.48 + 0.72 y - 0.67 y_{-1} - 0.05 T + 0.50 q_{-1} - 1.07 D_{76} - 1.00 D_{84} + 0.70 D_{95,96}$$

(7.1) (16.7) (7.7) (6.1) (4.9) (2.3) (2.2) (2.2)

$$R^2 = 0.96 \quad DW = 1.73$$

$$(3) \quad qb = + 0.85 q - 1.62 D_{73} - 1.34 D_{92} - 0.07 qb_{-1}$$

(30.5) (4.2) (3.5) (2.1)

$$R^2 = 0.95 \quad DW = 1.55$$

$$(4) \quad tot = p^x - p^m$$

$$(5) \quad p^x = + 0.68 p + 4.33 D_{74} - 3.72 D_{86} - 3.52 D_{92} - 3.50 D_{93} - 0.41 p^x_{-2}$$

(8.3) (2.7) (2.6) (2.4) (2.4) (3.7)

$$R^2 = 0.73 \quad DW = 1.70$$

$$(6) \quad p = + 1.09 + 0.23 ulc + 0.16 p^m - 1.17 D_{98,99} + 0.37 p_{-1}$$

(3.4) (4.2) (4.3) (1.8) (4.1)

$$R^2 = 0.84 \quad DW = 2.49$$

$$(7) \quad w = + 1.12 + 10.90 \frac{1}{u} + 0.24 p_{-1} - 3.00 D_{79} + 2.34 D_{91} - 1.97 D_{96,97}$$

(2.4) (12.0) (2.2) (2.6) (2.0) (2.3)

$$R^2 = 0.90 \quad DW = 1.67$$

$$(8) \quad ulc = w + b - y$$

$$(9) \quad b = y - qb$$

$$(10) \quad u = + 0.50 - 0.12 y + 0.88 D_{82} + 0.52 D_{83} + 0.55 D_{90} + 0.52 D_{91} - 0.59 D_{99} - 0.63 D_{2000} + 0.98 u_{-1}$$

(4.6) (6.1) (4.4) (2.6) (2.7) (2.6) (2.9)
(3.1) (48.0)

$$R^2 = 0.99 \quad DW = 2.38$$

$$(11) \quad x^{EU} = + 2.62 y^{EU} - 0.35 e + 9.33 D_{76} - 5.45 D_{93} + 8.45 D_{95} + 4.72 D_{97,98}$$

(14.5) (1.7) (3.2) (2.0) (3.1) (2.4)

$$R^2 = 0.81 \quad DW = 2.21$$

$$(12) \quad m^{EU} = + 2.76 y - 0.76 y_{-1} + 0.45 e + 7.79 D_{65} - 12.11 D_{74} - 6.61 D_{93} + 7.73 D_{95} + 6.39 D_{97}$$

(10.6) (2.8) (1.7) (2.2) (3.3) (1.9) (2.2) (1.8)

$$R^2 = 0.76 \quad DW = 2.03$$

$$(13) \quad hb^{EU} = x^{EU} - m^{EU}$$

All variables (if not indicated otherwise) are annual values for Austria (percentage changes from previous year); numbers in italics in brackets . . . *t*-statistic; estimation period for most equations: 1960-2000.

b . . . dependent employment, *D_{jj}* . . . dummy variable for the year *jj*, *d* . . . general government financial balance (as a percentage of GDP; deficit: +), *e* . . . real effective exchange rate, *hb^{EU}* . . . net exports to

the EU (percentage points), *m^{EU}* . . . Austria's imports from the EU (volume), *p* . . . consumer prices, *p^m* . . . import prices, *p^x* . . . export prices, *q* . . . labour productivity (GDP per employment), *qb* . . . labour productivity (GDP per employee), *r* . . . long-term interest rate (in percent), *T* . . . time trend, *tot* . . . terms of trade, *u* . . . unemployment rate (in percent), *ulc* . . . unit labour costs, *w* . . . compensation per employee (value), *x^{EU}* . . . Austria's exports to the EU (volume), *y* . . . real GDP, *y^{EU}* . . . real GDP of EU.

- Lehner, G., Veränderungen im Finanzausgleichsgefüge 1992/1997, Study of WIFO commissioned by Verbindungsstelle der österreichischen Bundesländer, Vienna, 1999.
- Marterbauer, M., Walterskirchen, E., "Gesamtwirtschaftliche Auswirkungen der Budgetkonsolidierungspolitik in der EU", WIFO-Monatsberichte, 1999, 72(4), pp. 305-314.
- Mayerhofer, P., "Österreichs Regionalförderung nach dem EU-Beitritt. Bedeutungsgewinn oder Verlust an Autonomie?", WIFO-Monatsberichte, 1995, 68(5), pp. 343-355.
- Moschner, M., "Österreichs M&A-Markt 1999", BankArchiv, 2000, 48, pp. 519-522.
- Norman, V.D., "The Theory of Market Integration. A Retrospective View", in Ems, E. (Ed.), 35 Years of Free Trade in Europe. Messages for the Future, Proceedings of EFTA's 35th Anniversary Workshop, EFTA, Genoa, 1995.
- OECD, Agricultural Policies, Markets and Trade. Monitoring and Outlook 1994, Paris, 1994.
- OECD, Agricultural Policies in OECD Countries. Monitoring and Evaluation 2000, Paris, 2000.
- Pollan, W., "Der Verlauf der Verbraucherpreise nach dem EU-Beitritt", WIFO-Monatsberichte, 1996, 69(9), pp. 573-581.
- Pollan, W., "Große Preisunterschiede zwischen Einzelhandelsgeschäften", WIFO-Monatsberichte, 1998, 71(9), pp. 627-637.
- Primosch, E.G., Stabilitätspakt – Konsultationsmechanismus, Verlag Österreich, Vienna, 2000.
- Rechnungshof, Wahrnehmungsbericht des Rechnungshofes über die Konsolidierungspakete, Reihe Bund 1999/2, Rechnungshof 29860001/002-Pr/8/99.
- Schneider, M., "Chancen und Risiken der Landwirtschaft im EU-Binnenmarkt", WIFO-Monatsberichte, Sonderheft, May 1994, pp. S46-S61.
- Schneider, M., "Österreichs Landwirtschaft unter EU-Bedingungen", WIFO-Monatsberichte, 1997, 70(3), pp. 155-170.
- Schneider, M., "Entwicklung der Land- und Forstwirtschaft 1998/99 und aktuelle agrarpolitische Fragen", WIFO-Vorträge, 1999, (83).
- Schneider, M., "Agrarsektor 1999: Produktion steigt, Einkommensdruck hält an: Entwicklung der Land- und Forstwirtschaft in den Bundesländern", WIFO-Monatsberichte, 2000, 73(7), pp. 455-466.
- Stankovsky, J., "Österreich als Teil der EU-Zollunion", WIFO-Monatsberichte, Sonderheft, May 1994, pp. S34-S45.
- Stankovsky, J., "Agenda 2000: Neuregelung der EU-Finanzierung", WIFO-Monatsberichte, 1999, 72(7), pp. 489-497.

An Evaluation of the Economic Effects of Austria's EU Membership – Summary

After six years of membership in the European Union, an interim balance can be drawn as follows: Austrian businesses and the country's economic policy had to adapt to the new regime of the single market. This meant on the one hand that the government had to cede economic policy competences to the Community in the fields of foreign trade, agriculture, competition and regional policies. On the other hand Austria, as the fourth-richest EU member state, is a net payer to the EU budget of 0.4 percent of its GDP.

Implementation of the internal market in Austria is still incomplete in many fields. Liberalisation has only just started in the telecoms and energy markets.

The central effect of integration on competition caused by its participation in the single market is reflected in an increase of overall economic productivity, which in turn has stimulated economic growth, improving the cost position

and pushing down prices. EU membership appears to have raised real GDP by about 3 percentage points, in cumulated terms, over the past six years. The price effects were somewhat stronger visible than had been expected before Austria joined the EU. This is mainly due to the preparation for EMU participation. Productivity increases and a slower pace of employment in the public sector in the wake of integration made for more muted employment growth. At the beginning, EU membership ignited a strong push in productivity; at the end of the 1990s unemployment petered out and the inflation rate came down. Participation in the internal market caused imports from the EU to grow at a faster pace than Austrian exports into the EU. There was little room for improving Austria's market share position in the EU single market. Overall welfare appears to have risen by about 2 percentage points of GDP, partly as a result of price cuts, partly due to intensified imports from the EU (trade creation effects).