EASTERN ENLARGEMENT OF THE EU: ECONOMIC COSTS AND BENEFITS FOR THE EU PRESENT MEMBER STATES?

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> *" ...... one of the greatest tasks for the EU is to heal the division of Europe and to extend the same peace and prosperity to the central and eastern European countries that the present EU countries have" (Agenda 2000).*

INTRODUCTION AND CONCLUSIONS

This report examines the economic implications of European enlargement on the European Union and in particular on the Italian economy. An investigation has already been carried out for a number of individual Member States (see, for example, Keuschnigg and Kohler's 1999 study on Austria and Germany), and for the European Union (EU) as a whole (see CEC, DGEFA, 2001a). [1] Here, we examine the same issue for the EU Member State of Italy.

First of all, many of the enlargement effects on the EU economy have already been generated insofar as the Europe Agreements, which constitute part of the negotiation on Eastern European Enlargement, have been effective as of 1993. Secondly, we have focussed on the economic implications of enlargement, but the scenario is complicated by the demographic, institutional and political factors, together with the increasing trade among Eastern and Western European countries. In order to evaluate the empirical relevance of each type of factor on economic performance, we need to disentangle this scenario, and in order to do so we will examine those factors which exert the greatest influence on the economic performance of the EU Members States.

The Central and Eastern European Countries (CEECs) included in the enlargement process may be grouped according to their official applicant status (actual or desired). The pace with which applicants are currently moving towards specified EU economic standards renders the group highly heterogeneous and, unless the enlargement is postponed, it is realistic to assume that the group will be split into frontrunners and latecomers. Following the report by Keuschnigg and Kohler (1999)[2] where the effects of Eastern enlargement on Austria were investigated, we examine the CEECs as a whole and focus particularly on Poland, Hungary, the Czech Republic,

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[1] There has been a great deal of research on the issue of European enlargement. In this report, however, our focus is on those mentioned above which privilege the purely economic impact on EU Member States and constitute excellent benchmarks for evaluating the results of the present study.

[2] Meanwhile, these Authors have produced numerous publications on this topic. The references can be found on http://www.economics.uni-linz.ac.at/members/kohler/eustud.htm.

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Estonia and Slovenia (CEEC5) as the frontrunners applicants. The relative size of the impact of the applicants which have joined the CEEC5 according to the Strategy Paper on Enlargement (CEC, 2001d) is also evaluated.

Enlargement may be treated as the merging of two countries, that is, the EU15 and the CEECs. The main factor to be considered here is the creation of a Customs Union plus Single market implied by such an enlargement.

From a methodological perspective, the economic impact of this kind of enlargement may be evaluated for the new economic area as a whole or for each Member State individually. The subsequent accession, provided it takes place in the proper institutional framework, will foster economic growth and prosperity in both the candidate country and the existing Member States. Clearly, the impact will be unbalanced insofar as the positive impact will be much more significant for the applicant countries than for the existing EU countries. Let us assume the point of view of one partner: that of the EU15.

Focussing on the first wave of new entrants, we can see that the CEEC5 GDP accounts for about 3.3 per cent of EU15 GDP and that the Enlarged Europe will have a population of 350 million equivalent to an increase of about 16.5 per cent (29 per cent when the enlargement includes the other CEECs which have already started negotiations). Previous enlargements have been more balanced according to the relative weights of the new entrants. For instance, the merging of the EU and Spain, Portugal and Greece, which took place in the 1980s, generated an economic enlargement of about 15 per cent in GDP and 22 per cent (59 million) in population. The transition was relatively smooth and in the light of this experience many assume that the impact of the proposed enlargement will be correspondingly negligible. For this reason, the Eastern European enlargement is mainly analysed within the framework of the adoption of the *acquis communautaire* rather than in the *aseptic* field of economic performance. While this may well be the correct approach to the problem, in view of the geographical and industrial structure of the EU15 in comparison with that of the potential new entrants, it would be unwise to argue that the effects of the Eastern enlargement on Western Europe will necessarily be modest.

The proposed European enlargement implies an eastward extension of the EU15 and it is reasonable to expect a more visible impact of the new neighbours on the two current Eastern EU Member States. As a consequence it has been instinctive to start the research with an examination of Germany and Austria, but it would be unreasonable to treat the issue as a simple question of boundaries.

The results of this, as any other, piece of research, need to be carefully read in the context of the instruments applied, the level of aggregation adopted, and the data employed if we are to obtain a correct reading of the analysis.

The availability of a multi-sectoral model of the Italian economy and of a significant group of similar models of key countries has made possible the present study. The Italian model is named INTerindustry Italian MOdel or INTIMO. The group of the models – including INTIMO – constitute the INFORUM (INterindustry FORecasting at University of Maryland)[3] system of

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[3] The INFORUM works on economic modelling and forecasting is documented at the web site inforumweb.umd.edu

models, and all of which are linked by means of an international trade model which makes the country multi-sectoral model a 'true' interlinked system.. Thanks to this system of models, our report is able to present unprecedented results relating to the effects of the EU enlargement on a specific Member State, i.e. Italy.

The Italian model has been built and implemented during the last two decades. As with any other model in the Inforum system, it is neither definitive nor totally satisfactory insofar as the creation of a *testable model* is something of a never-ending adventure. Working with such models does, however, help the researcher understand how modern economies really work; but being testable, once we apply such models to questions of policy and forecasting, we can obtain a better understanding of the "modelled" economy and experience the continuous stimulus to improve the quantitative structure of the model itself.

Furthermore, in contrast to a 'stand alone' model, the one used in this study allows us to measure a number of indirect effects on the Italian economy arising from the applicants impact over the other European Member States. These effects may be as important as the direct ones, in particular for those Member States which are located far from the present eastern boundaries of the EU. The magnitude of these indirect effects provides evidence of the opportunity to carry on analogous research for other EU Member States as well as for those where only direct effects have been considered to date.

Furthermore, from a macroeconomic perspective, the economic impact of the enlargement process on a Member State's economy, whilst modest, may effect the industrial structure. An investigation in this direction requires the use of specific analytical instruments and in our case this has been done by means of a special multi-sectoral econometric country models system.

The present study, which spans a period of ten years (2001-2010) refers to a baseline scenario where the applicants follow a growth path not strengthened by the benefits of improved economic integration. In the alternative scenarios, these advantages are assumed to increase the applicants GDP rates of growth by about 2 per cent annually; this is a widespread assumption which makes our simulations easily comparable with those of previous (and forthcoming) studies. Although applicant countries have made considerable progress towards the full participation in a single market under the Europe Agreements, trade is still restricted by the existence of a range of border and non-border measures and a bundle of tariffs mainly concentrated on agricultural and food products. The study investigates the impact of the complete removal of these residual barriers to free trade among the EU15 and the frontrunner applicants.

Focussing on the Italian economy, a first conclusion reached in the study concerns the evaluation of the direct and indirect impact of the assumed increase of the applicant country's GDP growth rates. Since the econometric model of the Italian economy (as every other model in the system) is based on the sectoral detail of the country input-output tables, we have used the detailed sectoral representation of the economy to measure the impact of the applicant demand for goods and services; namely, their import structure. Since the historical data on trade between the CEECs and the EU indicates a process of concentration of the import-export flows in a clearly defined bundle of commodities, we have investigated the effect of this trade specialization on the performance of the Italian economy.

The simulation design allows us to compare the impact of the Italy-CEEC5 relationship with regard to trade with Italy and the impact on Italy obtained from the more significant impact of the EU15-CEEC5 trade. In the first case, we have two countries, Italy and the CEEC5, and in the second case, we have two countries, EU15 and CEEC5, with Italy constituting a single region of the EU. This second case allows us to measure the indirect effect of the Eastern European enlargement on Italy. Furthermore, there is a third case where the trend in the composition of the CEEC5 imports is considered. This experiment provides evidence that in the case of Italy – which whilst it is not on the Eastern EU border is nevertheless not far from it – the indirect impact on the GDP rate of growth is even more important than the direct one. We can say that the transmission of the increase generated by enlargement is as important as the direct trade with the new entrants. Since the effect of the increase on exports induced by a growing demand for goods by the CEEC5 is preserved along the simulation period, we can see (Table 14, Product Account) that the increase is doubled by the indirect effect and that the specialization in CEEC5 imports generates a further increase in the GDP rate of growth; so that, the total increase amounts to a factor of circa 2.6 with respect to that found in the case of Italy-CEEC5.

This result clearly demonstrates that the Eastern enlargement is not simply a question of boundaries. In particular, it is clear that – for countries such as Spain – the indirect effect of Eastern enlargement may be much more significant than the direct effect. Furthermore, the sectoral analysis of foreign trade – together with the sectoral evaluation of its impact – is crucial for understanding the effects of enlargement.

The importance of a sectoral representation of the economy becomes clearer when the removal of tariffs and non-tariff barriers, which mainly concern agriculture and food industry products, have been evaluated. Non-tariff barriers still apply and constitute the bulk of measures hampering international trade between the CEECs and the EU. Moreover, these measures are concentrated on particular products. For example, the international trade model used in this study examines information on 120 commodities; here, the non-tariff barriers – specifically singled out for simulating their removal – account for about 15 per cent of the range of commodities considered by the model.

As regards the simulation results for the removal of tariffs and non-tariff barriers, two alternative scenarios have been formulated: in the case of non-tariff barriers it is impossible to measure the precise size of their mark-up on price formation; the two scenarios refer to a generous effect in terms of Baldwin's hypothesis (1997) which assumes an overall reduction of 10 per cent, and to a conservative hypothesis similar to that proposed by Keuschnigg and Kohler (1999).

The analysis of welfare reveals that EU enlargement has had a positive impact on Italian households insofar as the quantities consumed in simulated scenarios are always greater than those consumed in a 'non-enlargement' scenario. The welfare improves in both sets of simulations. When we consider the *scenarios for CEEC growth effects*,(the effects of the growth of CEEC demand for imports/the impact of increased CEEC demand for imports) the expansionary effect on Italian exports will increase production, employment, and private disposable income so that a positive income effect will boost consumption without generating relevant change in consumer prices. In the second set of experiments, we introduce the *removal of trade barriers* in addition to the post-enlargement effects of the growth of CEEC demand. The reduction of import prices will reduce the consumer prices of imported goods and, for some commodities, also the domestic

price due to reduced cost of inputs. Therefore, we may conclude that Italian households will benefit from EU enlargement through an increase of their disposable income and consumption.

The impact on National Budget has been investigated focussing on the 'use of income account of government'. The overall effect of the enlargement clearly swells the total volume tax base. Tax bases for *ad valorem* taxes obtained by a real and price component also increase. Moreover, household disposable income grows and, consequently, we obtain an increase in income tax revenue. In general, National Budget benefits from enlargement, at least insofar as the 'use of income account' is concerned. The scenarios used in this report do not provide evidence of a noticeable impact of expenditures such as government consumption and investments. In any case, the impact of the enlargement on National Budget appears to be very modest with respect to the effect of the reform of the pension system which is currently high in the government agenda.

1. THE IMPACT ON INTERNATIONAL TRADE

1.1 Italy and the CEECs

The statistics provided by SISTAN (*Sistema Statistico Nazionale,* National Statistical System) and ISTAT (*Istituto Nazionale di Statistica,* National Statistical Institute) contained in the Italian Trade Center (ITC) Report (2000) cover a sizeable amount of data on Italy's trade patterns (exports and imports), including information on commodities for 19 economic sectors and for Italian trade partners, in particular, detailed import-export statistics reported for the top 20 (TOP20) countries. In Tables 1 and 2, exports and imports of the TOP20 have been respectively converted into shares of the total flows: TOP20 flows are largely over 95 per cent of the total trade flows. Each table reports the top three countries by relative share and ranking; in the far right columns the share and ranking of the CEECs are listed if they are present in the ITC Tables.

As regards export shares (see Table 1), Germany is Italy's main destination market and indeed appears to be its most important commercial partner in 14 out of the 19 sectors, whereas as regards import shares, Germany is Italy's prime supplier in only 8 sectors (see Table 2). This difference suggests that the destination of Italian exports is much more concentrated than the origin of its imports. On the export side, the countries listed in the first three positions are the same across almost all sectors with France, the United Kingdom and the Unites States figuring as the main destination countries in addition to Germany. On the import side, countries in the first three positions belong to a larger set including – in addition to neighbouring Germany and France – imports from Romania, Algeria, the Netherlands, Libya, China, Austria, and Spain. While CEECs are not listed among the top three Italian destination markets, Italian imports are supplied by a number of CEECs, some of which rank among the top three countries for specific sectors. Some trade flows may be influenced by the kind of commodity, for example, Libya, Russia and Algeria are the three top-ranking origin countries for the production of methane, Austria has traditionally been the main supplier of wood, while Italy maintains a high quality in the artisan furniture industry. In general, the origin of imports and the destination of exports indicate that Italy absorbs inputs from a range of countries and sells outputs to a small and prosperous group of countries.

Regarding the rating and shares of the CEECs in the TOP20 (see Tables 1-2, right-hand columns), although the shares rapidly decline after the top three positions, the CEECs are present throughout the TOP20 export and imports flows. Although the EU applicants never reach positions close to the top three, their aggregate share may compete with the dominant origin and destination countries. For example, the aggregate share of 'wood' product imports from Croatia, Hungary, Slovenia, Poland and Romania is greater than the share of the United Kingdom, which ranks third as an origin country. On the export side, the aggregate share of 'petroleum products' for Malta, Slovenia, Romania, Turkey and Croatia is greater than that of the largest destination country, i.e. Spain. Furthermore, we should stress the prominent position of Romania which ranks as the primary supplier of 'textiles', 'clothing' and 'leather' products whilst importing precisely the same products from Italy, although not in a prominent position among the importers. These trade flows are generated by 'outward processing' which is well established between Italy and Romania. We argue that the outward processing in the CEECs is widespread and well supported through the Italian relevant flows of FDI.

In the 1900s, as a result of the agreements with the EU and the opening up to international markets, trade between the CEECs and the EU has developed rapidly. The volume of EU15 exports to the CEECs and the volume of EU15 imports from them grew respectively at annual rates of 15 and 12 per cent. Although the EU15 is now the most important trading partner for the CEECs, these countries still represent a small proportion of the EU15 foreign trade. Whereas the EU15 accounts for over 60 per cent of the CEECs foreign markets, the latter account for only 10 per cent of EU15 international trade (CEC, DGEFAa, 2001). If we consider a single Member State, the CEECs may even rank among the residual trade partners. Tables 1 and 2 clearly show how each CEEC represents, in general, a negligible foreign market.

Although the comparison among aggregate trade flows allows us to say that the impact of Eastern enlargement on a single Member State economy can be assumed to be modest, the structure of sectoral trading is highly significant in some industries. For example, due to enlargement, the CEECs will not benefit from an increase in the export of 'mining' and 'petroleum products' to Italy. On the export side, Italy will not receive any direct positive stimulus from the CEECs demand for 'food', 'clothing', 'other transport equipment', 'non-metal and mineral products' and 'other manufactured products'.

If we focus on the CEEC5 group, we note that a maximum of 3 out of the total are listed in the Italian exports TOP20, and that 4 of the 5 are among the main Italian suppliers. In both cases, the candidates rank mainly at the bottom (see Tables 1-2, position column) of the TOP20 list. However, we note that Slovenia and Poland are the Italian main export markets in the CEEC5 area while Hungary and Slovenia are the main suppliers.
Considering the economic weight of the CEEC5 based on their population, it is surprising to find a small country like Slovenia prevailing over the CEEC5 as both a destination and origin country for a number of Italian trade flows. However, among the CEEC5, Slovenia is the only country which borders with Italy and, of course, in this case geographical proximity appears to be an important determinant of trade flows.

Table 1 - Italian exports to its main 20 markets, 1998

Sectors	First		Second		Third		Central and Eastern European Countries															
	Count	Share	Count	Share	Count	Share	Po.	Count	Share	Po.	Count	Share	Po.	Count	Share	Po.	Count	Share	Po.	Count	Share
AgrForFish	Ger	0.40	Fra	0.12	UK	0.06	11	SIve	0.01	13	Pol	0.012	15	CzR	0.011	16	Croz	0.010			
Mining	Ger	0.21	Sp	0.11	Fra	0.09	12	Tur	0.03	17	SIve	0.019									
FoodTob	Ger	0.24	Fra	0.15	USA	0.12	20	SIve	0.01												
Text	Ger	0.24	Fra	0.15	UK	0.08	12	Rom	0.02	16	Tur	0.020	17	Pol	0.018	19	Hun	0.013			
Cloth	Ger	0.18	USA	0.15	Jap	0.09	14	Rom	0.02												
Leath	Ger	0.19	USA	0.15	Fra	0.11	8	Rom	0.04	17	Hun	0.015	18	Pol	0.014	19	Tur	0.014			
Wood	Ger	0.27	Fra	0.11	USA	0.08	14	SIve	0.02	17	Tur	0.016	20	Hun	0.008						
PaperProd	Fra	0.24	Ger	0.22	UK	0.10	11	Pol	0.02	14	SIve	0.013	15	Tur	0.011	20	Croz	0.008			
PetroProd	Sp	0.14	Braz	0.09	Fra	0.09	7	Malta	0.05	11	SIve	0.040	13	Rom	0.030	14	Tur	0.020	20	Croz	0.010
Chem	Ger	0.16	Fra	0.14	USA	0.10	9	Tur	0.03	14	Pol	0.010	20	SIve	0.011						
RubPlast	Fra	0.21	Ger	0.21	Sp	0.10	11	Pol	0.02	14	Tur	0.012	17	CzR	0.010	20	SIve	0.008			
NMetProd	Ger	0.25	USA	0.16	Fra	0.14	12	Pol	0.02												
MetProd	Ger	0.23	Fra	0.19	Sp	0.09	11	Tur	0.02	12	Pol	0.018	14	SIve	0.016						
Mach	Ger	0.16	Fra	0.14	USA	0.11	6	Tur	0.04	7	Pol	0.032									
PrecInst	Ger	0.20	Fra	0.20	UK	0.09	9	Tur	0.02	16	Pol	0.016	17	Hun	0.012						
MotorVh	Ger	0.23	Fra	0.19	UK	0.12	7	Pol	0.03	11	Tur	0.020	19	Hun	0.008	20	CzR	0.007			
OthTransp	USA	0.20	Lbr	0.15	Fra	0.12	13	Malta	0.01												
Furn	Ger	0.24	USA	0.14	Fra	0.13	14	SIve	0.02	16	Pol	0.012	19	Croz	0.011						
OthManuf	USA	0.27	Ger	0.10	Fra	0.09	19	Tur	0.01												

Table 2 - Italian imports from its main 20 markets, 1998

Sectors	First		Second		Third		Central and Eastern European Countries																			
	Count	Share	Count	Share	Count	Share	Po	Count	Share	Po	Count	Share	Po.	Count	Share	Po.	Count	Share	Po.	Count	Share	Po.	Count	Share	Po.	Count	Share
AgrForFish	Fra	0.27	Sp	0.08	Nth	0.07	13	Tur	0.020	17	Pol	0.019	18	Hun	0.018												
Mining	Lib	0.19	Rus	0.18	Alg	0.16																					
FoodTob	Ger	0.20	Nth	0.18	Fra	0.17	18	Tur	0.007																		
Text	Fra	0.16	Ger	0.15	Chi	0.09	5	Tur	0.060	12	Rom	0.020	20	Hun	0.010												
Cloth	Rom	0.15	Chi	0.14	Tun	0.11	10	Hun	0.030	14	Tur	0.020	17	Slvc	0.019	18	Croz	0.018	19	Bulg	0.017						
Leath	Rom	0.17	Chi	0.14	Braz	0.07	12	Hun	0.030	14	Bulg	0.020															
Wood	Astr	0.28	Ger	0.09	USA	0.08	8	Croz	0.030	12	Hun	0.028	13	Slve	0.025	19	Pol	0.016	20	Rom	0.016						
PaperProd	Ger	0.19	Fra	0.12	USA	0.10	19	Slve	0.009	20	CzR	0.008															
PetroProd	Lib	0.17	UK	0.15	Alg	0.09																					
Chem	Ger	0.23	Fra	0.15	BgLx	0.10	16	Hun	0.006	20	Croz	0.004															
RubPlast	Ger	0.25	Fra	0.19	UK	0.08	15	Tur	0.013	19	Slve	0.008															
NMetProd	Fra	0.24	Ger	0.23	UK	0.07	9	CzR	0.022	10	Tur	0.019	14	Slve	0.015	15	Pol	0.012	16	Hun	0.012	18	Croz	0.009	19	Rom	0.008
MetProd	Ger	0.20	Fra	0.13	Swtz	0.11	15	Rom	0.016	16	Tur	0.015															
Mach	Ger	0.33	Fra	0.12	USA	0.09	17	CzR	0.006	18	Slve	0.005	19	Pol	0.005	20	Rom	0.005									
PrecInst	Ger	0.21	Fra	0.14	Nth	0.13	19	Hun	0.007																		
MotorVh	Ger	0.36	Fra	0.17	Sp	0.11	7	Pol	0.020	12	Slve	0.010	13	CzR	0.009	16	Slvc	0.009	18	Tur	0.003	19	Hun	0.002			
OthTransp	USA	0.32	Fra	0.17	Ger	0.09																					
Furn	Fra	0.19	Ger	0.17	Sp	0.07	4	Rom	0.050	11	Slve	0.030	12	Pol	0.020	15	Croz	0.019	16	Tur	0.017	17	Slovc	0.017	19	Hun	0.013
OthManuf	Chi	0.26	BgLx	0.10	Ger	0.09	20	Hun	0.009																		

Key to Tables 1 and 2

Sectors			*Countries*	
AgrForFish	Agriculture, Forestry, Fishery		**Alg**	Algeria
Mining	Mining		**Astr**	Austria
FoodTob	Food & Tobacco		**BgLx**	Belgium and Luxembourg
Text	Textiles		**Braz**	Brazil
Cloth	Clothing		**Bulg**	Bulgaria
Leath	Leather		**Chi**	China
Wood	Wood		**Croz**	Croatia
PaperProd	Paper products		**CzR**	the Czech Republic
PetroProd	Petroleum products		**Fra**	France
Chem	Chemical		**Ger**	Germany
RubPlast	Rubber & Plastic products		**Hun**	Hungary
NMetProd	Non-metal min&prod		**Jap**	Japan
MetProd	Metal products		**Lbr**	Liberia
Mach	Machinery		**Lib**	Libya
PrecInst	Precision instruments		**Malta**	Malta
MotorVh	Motor vehicles		**Nth**	the Netherlands
OthTransp	Other transport equipment		**Pol**	Poland
Furn	Furniture		**Rom**	Romania
OthManuf	Other manufactured products		**Rus**	Russia
			Slvc	the Slovak Republic
			Slve	Slovenia
			Sp	Spain
			Swtz	Switzerland
			Tun	Tunisia
			Tur	Turkey
			UK	the United Kingdom
			USA	USA

1.2 CEEC5 trade with EU countries: the gravity effect

We can claim that the Newtonian theory of gravity has stimulated the invention of gravity models to explain trade among countries or, more precisely, between two countries in the framework of bilateral trade models. Mass, distance and force are the three key elements of the law of gravity. A gravity model is formulated by considering a measure of the size of an economy as the mass, using the relative position of two countries on the globe as the distance between two bodies, and assuming the trade as the force attracting the two bodies In the wake of the recent revival of this approach, Nilsson (2000) has used a gravity model to analyse the integration of the CEECs. In particular, he has investigated the position of these countries along their transition from centrally planned economies to market economies.

De Grauwe and Skudelny (1994) employed the same approach when the gravity model had already been submitted to a theoretical reshaping by, among others, Bergstrand (1985, 1989). Later these foundations were improved (Deardoff 1995), and subsequently Nilsson, who adopts an ordinary gravity model, defined the scope of his research recalling that his model:

> *may be interpreted as providing a long-run view of trade patterns. Prices are excluded from the model due to its long-run nature, since in a general equilibrium, setting prices are endogenous and simply balance to equate supply and demand. The exclusion of price variables does not imply that prices are not effective in allocating resources. Prices are assumed to adjust quickly, and supply and demand are assumed to be sufficiently responsive to price changes to generate an equilibrium quickly.* (Nilsson 2000)

This set of implications is certainly redundant with respect to the body of studies carried out in the framework of the gravity model approach, and are simply the price paid to the theoretical foundations introduced to incorporate the gravity approach into the neoclassical niche.

Indeed, recent researches based upon the gravity approach generally take imports into an importing country from an exporting country as the dependent variable; while the independent variables are: a) GDP and population of the two countries; b) the distance between them; and c) a number of dummies used to detect particular qualitative factors. Although the gravity model belongs to a bilateral trade approach, the design of the experiments as well as lack of data may well lead to pooled regression where coefficients which are not necessarily country-specific can be estimated. In general, the results confirm our expectations and the explanatory power of the model proves to be good. We do not insist on using regression models to test the gravity theory of international trade, but instead, examine the map of Europe and compare the trade flows between countries. We focus on the CEEC5 group, and bilateral trade between EU members and these countries is then compared to the geographical distance between them.

Tables 1 and 2 demonstrate that Slovenia often ranks among the Top20 import-export partners with Italy. Since Slovenia is the only CEEC5 which borders Italy, one can expect the international trade gravity theory to work as well for Italy as for any other Western European country.

Figures 1-5 report imports for each of the CEEC5 for the period 1990-1998[4] to Portugal, Spain, France, Italy, Austria Germany and 'other EU'. The Western countries have been chosen from both East-West extremes of the EU15. Since the aim is to look for 'first glance' empirical evidence of the gravity effect, we assume that the other EU15 countries would not add any relevant insight to the available findings.

The top graph of each set of figures gives the export share of the candidate country to EU countries. In each year the shares sum up to 1. Indeed, the gravity effect is quite clear from the far West (Portugal) to far East EU15 countries (Germany and Austria). The Czech Republic (Figure 1) is so firmly wedged between Germany and Austria as to be considered much more than a border country. Its exports to the EU countries go mostly to Germany and subsequently to the other countries following a path which is negatively correlated to the distance involved. The share of exports to the rest of EU15 is around 15 per cent so that Germany's share soars over 50 per cent. Similar to the Czech Republic, Polish exports go mostly to Germany and to the selected EU countries but with a slight preferences for the rest of EU15. The patterns for Hungary and Slovenia are not much different from those described above (see Figures 3 and 4). Estonia confirms the gravity effect indicating the rest of EU15 as its main European market (see Figure 5). Among the rest of the EU15 countries, Finland and Sweden can be expected to be the main Estonian importers. The negative correlation between export share and distance is clearly shown in each figure.

To date, Germany appears to be the main European trading partner of the CEEC5, but constitutes the largest market with its population of 82m , as shown in the following table.

Table 3 - Population of selected EU Member States, 2000

Population, million inhabitants	
Germany	82
France	58.9
Italy	57.5
Spain	39.9
Portugal	10
Austria	8.1

Source: United Nations, 2000b

A more adequate measure of the gravity effect should be based on a weighted measure of import demand. One way to achieve such a rough measure is to compute per capita import flows (or GDP flows) for each importing country. These (weighted) import flows are shown in the bottom graph of each set of figures. Here the evidence of the gravity effect is startling. Austria now ranks as the first destination country for exports to the EU from Hungary, Slovenia and the Czech Republic, whilst Germany slips into second place preserving the first position for Estonia and Poland.

Assuming the gravity effect to be true, a simple look at the map of Europe should be sufficient

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[4] The graphs are reported according to the available time series (Comext database, EUROSTAT).

to obtain the present results. Now, we have the support of the empirical evidence and must keep this in mind when formulating scenarios to evaluate the impact of European enlargement on the Italian economy. We should stress that the enlargement effects impact on Italy both directly and indirectly through the other EU14 countries. In fact, the analysis demonstrates that the CEEC5 share of Italian imports and exports are, in general, very modest. Nevertheless, Germany and France are Italy's main trading partners, hence, the indirect effects of European enlargement may carry as much weight as the direct ones.

This rough gravity approach has been used to obtain initial suggestions for the simulation design but does not constitute the basis of our trade model because it is more useful in explaining the static structure of trade rather than the prediction and consistency of prediction of total world trade.

Figures 1 - the Czech Republic / EU Trade Flows

Imports from Czech. Republic to TOT EU

Imports from Czech. Republic (per- capita values, 1000 ECU)
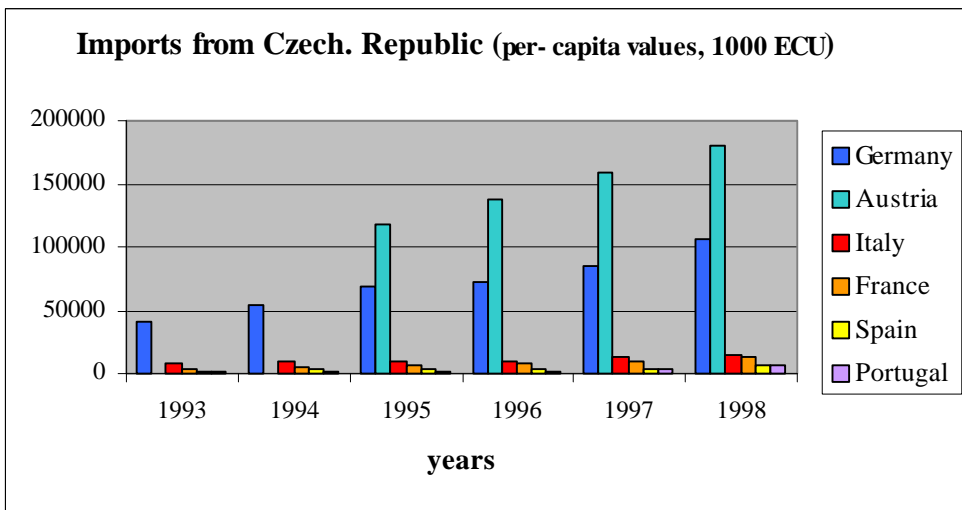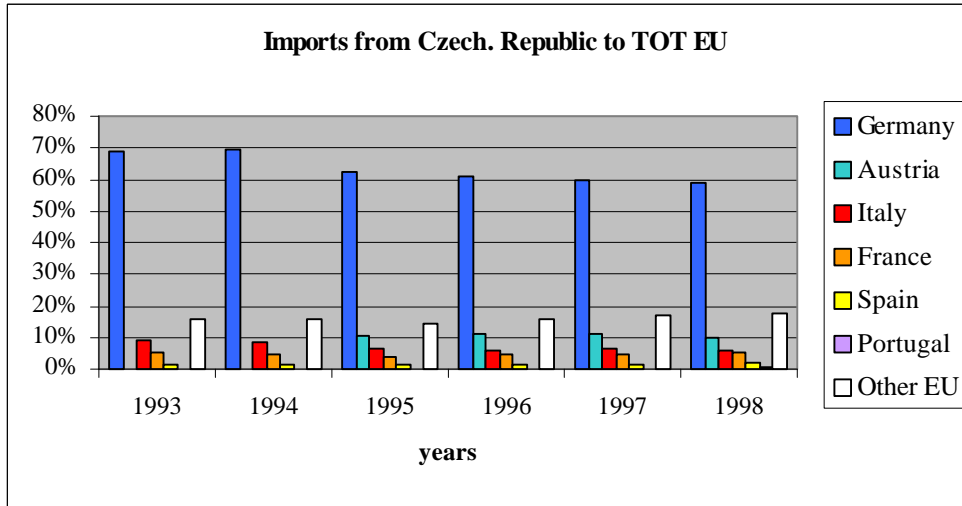
Source: based on data taken from the COMEXT database, Eurostat.

Figures 2 - Poland / EU Trade Flows

Imports from Poland to total EU

Imports from Poland 1990-1998 (per-capita values, 1000 ECU)
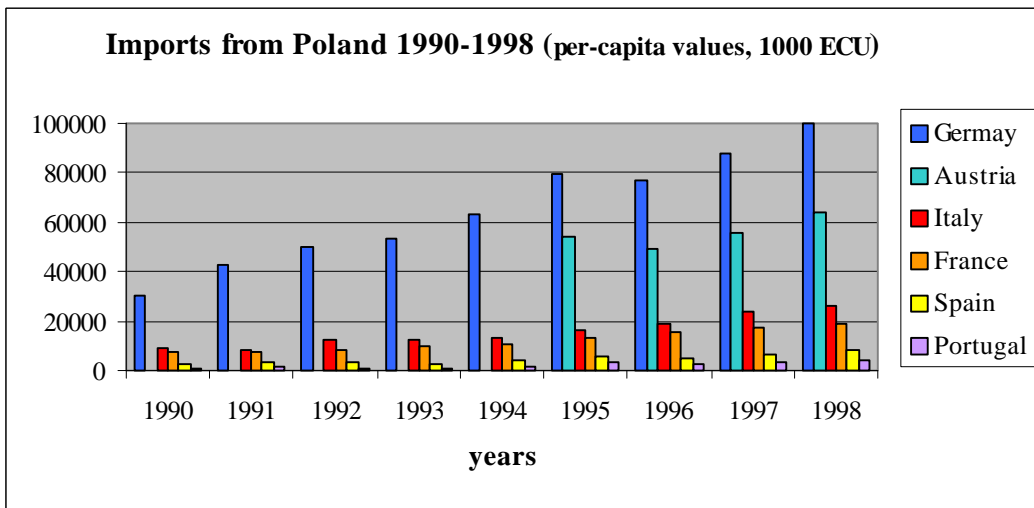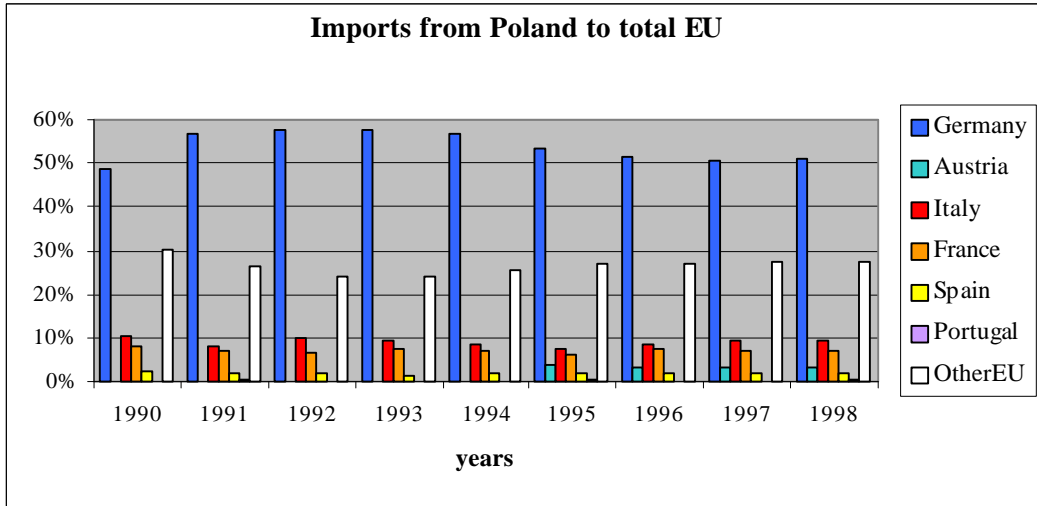
Source: based on data taken from the COMEXT database, Eurostat.

Figures 3 - Hungary / EU Trade Flows

Imports from Hungary to total EU

Imports from Hungary (per capita values, 1000 ECU)
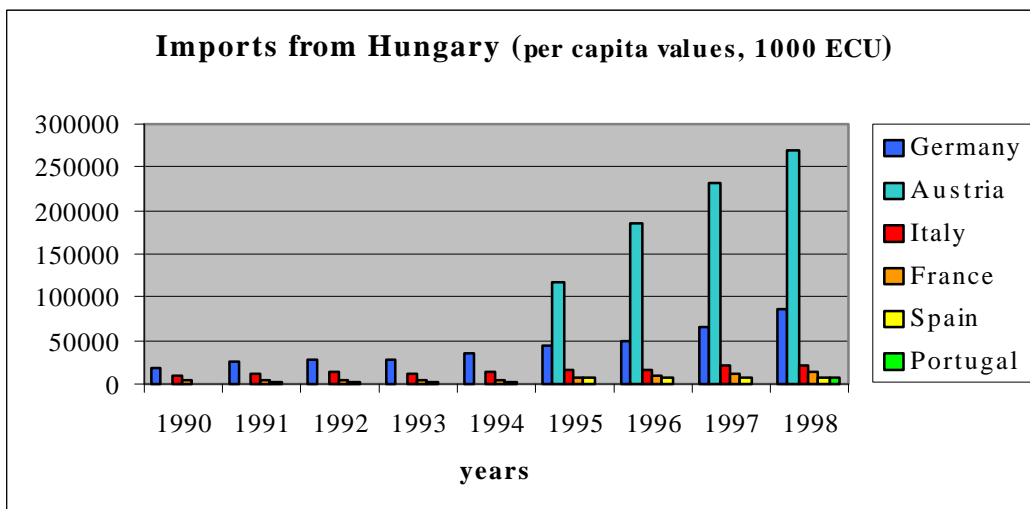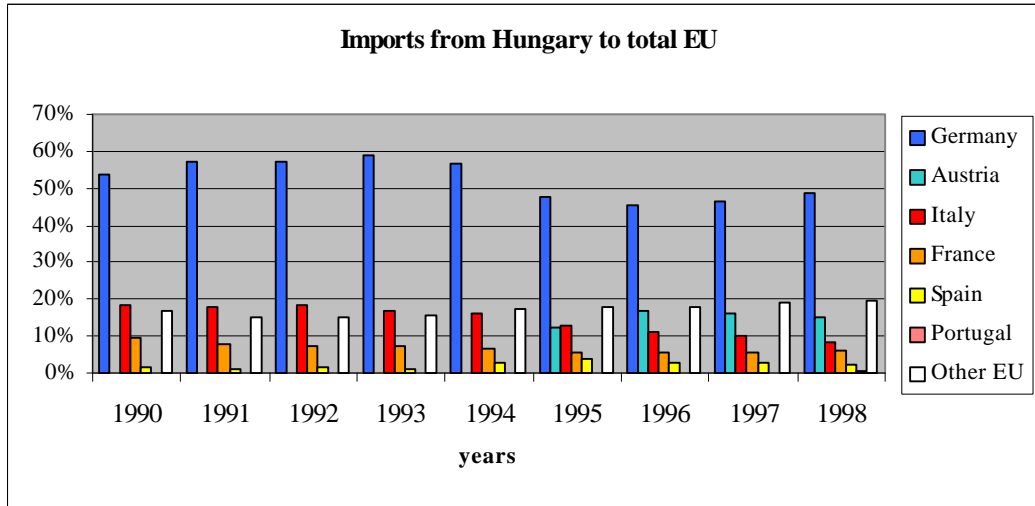
Source: based on data taken from the COMEXT database, Eurostat.

Figures 4 - Slovenia / EU Trade Flows

Imports from Slovenia to TOT EU

Imports from Slovenia (per-capita values, 1000 ECU)
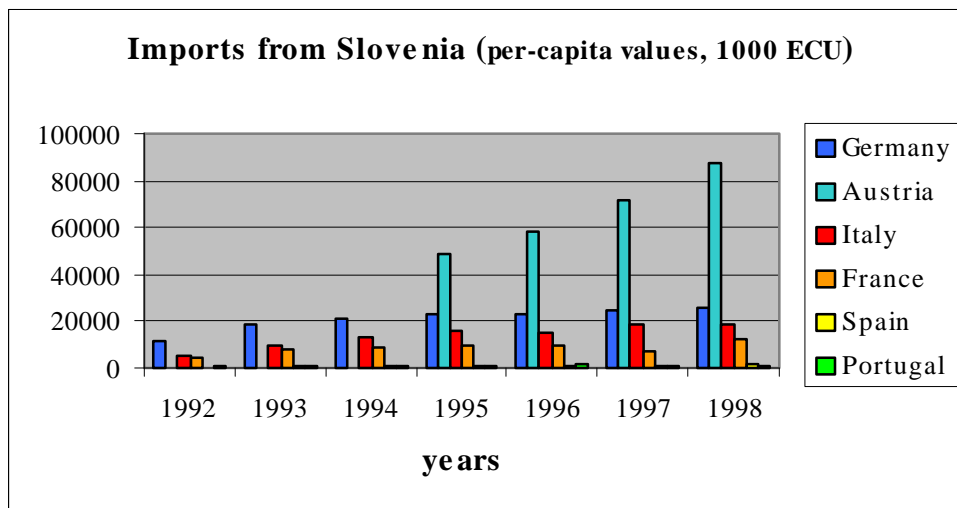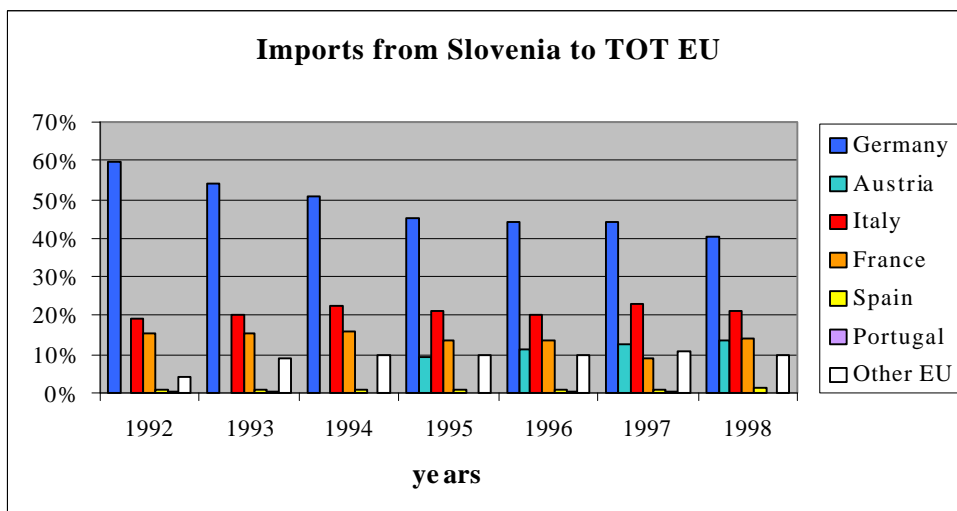
Source: based on data taken from the COMEXT database, Eurostat.

Figures 5 - Estonia / EU Trade Flows

Imports from Estonia to TOT EU

Imports from Estonia (per-capita values, 1000 ECU)
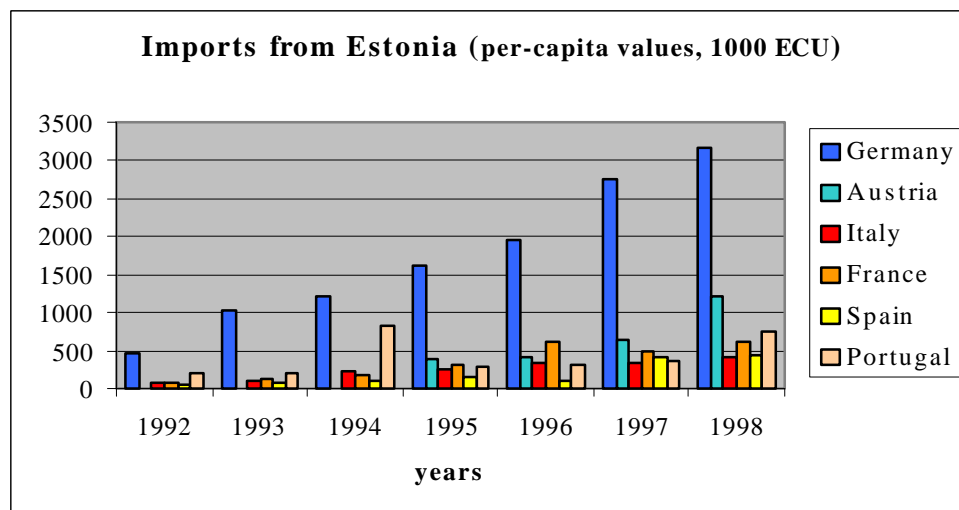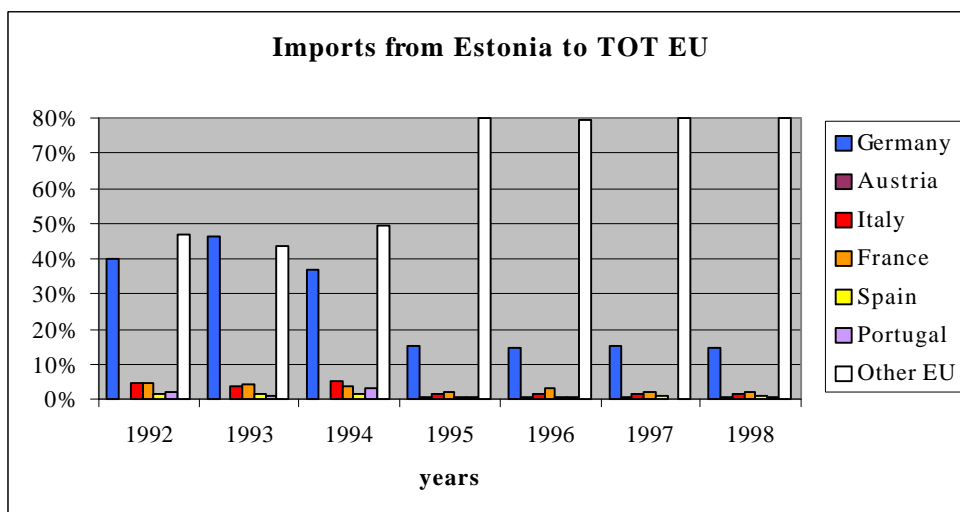
Source: based on data taken from the COMEXT database, Eurostat.

1.3 The structure of Italy-CEEC5 imports and exports

The import/export structure of the CEEC5 with respect to Italy is shown in Tables 5a-5j. In each table, the left column contains the 'Chapters of the Combined Nomenclature' (CCN) of Harmonised System listed in Table 4. The import and export shares for each country are relative to their annual total flows. In each table, import or export shares are shown for a number of years. The CCN are sorted in descending order with respect the shares for 1998; only the commodities with a share of over 1 per cent of the total flow in the year 1998 are reported.

The shares recorded in the 1990s provide striking evidence of the rapid transition of the Eastern economies. The switching from the economic area dominated by the ex-USSR to market economies implies a different international trade structure. The exports to Italy of the four major countries - Poland, Czech Republic, Hungary and Slovenia - reveal a similar pattern for the dominant products. The four most important CCN for each of these countries are:
(84) "nuclear reactors, boilers, machinery and mechanical appliances, and parts"; (87) "vehicles other than railway or tramway rolling-stock, and parts and accessories"; (85) "electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers and parts and accessories of such articles"; (39) "plastic and plastic products". "wood and wood articles of wood" (44) also ranks among the most important CCN and is the most important Estonia export flow to Italy. Apart the export structure recorded for 1990 at the beginning of the transition, it seems that the composition of CEEC5 exports shows a rooted specialization which may be even re-enforced in the next decade.

The import structure for Poland, the Czech Republic, Hungary and Slovenia resembles their export structure. Not surprisingly, Estonia's import and export structures differ. In fact, Italy – a Mediterranean country – does not export "wood and wood articles", while it may well export "furniture" thanks to a well established industry which transforms "wood". Machinery and mechanical appliances, vehicles, electrical machinery and plastic products still constitute the most important trade flows. This is evidence of a significant intra-trade as well as cases of 'outsourcing processing'.

The CCNs export and import shares between each CEEC5 country and the EU15 are shown respectively in Tables 6a and 6b, for the year 1998. These tables provide evidence of the dominance of mostly the same Chapters in the CEEC5 trade flows from and to the EU15. In particular, the CEEC5 imports are generally more concentrated than the CEEC5 exports. In fact, CCN exports and imports with shares of over 1 per cent of the total flows amount to circa 75 per cent and 85 per cent respectively.

Table 4 - Chapters of Combined Nomenclature (CCN) of Harmonised System: two-digit code description

Code	Description
1	Live animals
2	Meat and edible meat offal
3	Fish and crustaceans, molluscs and other aquatic invertebrates
4	Dairy products; bird's eggs; natural honey; edible products of animal origin, not elsewhere included
5	Products of animal origin not elsewhere specified
6	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage
7	Edible vegetables and certain roots and tubes
8	Edible fruit and nuts; peel of citrus fruits and tubers
9	Coffee, tea, mace and spices
10	Cereals
11	Products of the milling industry; malt; starches; inulin; wheat gluten
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medical plants; straw and fodder
13	Lacs; gums; resins and other vegetable saps and extracts
14	Vegetable plaiting materials; vegetable products not elsewhere specified or included
15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes
16	Preparation of meat, fish or crustaceans, molluscs or other aquatic invertebrates
17	Sugar and sugar confectionery
18	Cocoa and cocoa preparations
19	Preparations of cereals, flour, starch or milk; pastry products
20	Preparations of vegetables, fruit, nuts or other parts of plants
21	Miscellaneous edible preparations
22	Beverages, spirits and vinegar
23	Residues and waste from the food industries; prepared animal fodder
24	Tobacco and manufactured tobacco substitutes
25	Salt; sulphur; earths and stone; plastering material, lime and cement
26	Ores, slag and ash
27	Mineral fuels, mineral oil and product of their distillation; bituminous substances, mineral waxes
28	Inorganic chemicals; organic or inorganic compounds of precious metals, or rare-earth metals, of radioactive elements or isotopes
29	Organic chemicals
30	Pharmaceutical products
31	Fertilizers
32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigment and other colouring matter; paints and varnishes; putty and other mastics; inks
33	Essential oils and resinoids; perfumery, cosmetics or toilet preparations
34	Soaps, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, shoe polish, scouring powder and the like, candles and similar products, modelling pastes, dental wax and plaster-based
35	Albuminous substances; modified starches; glues; enzymes

36	Explosives; pyrotechnic products; matches; pyrophoric alloys; combustible materials
37	Photographic or cinematographic products
38	Miscellaneous chemical products
39	Plastic and plastic products
40	Rubber and article thereof
41	Hides and skins (other than furs) and leather
42	Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)
43	Furs and artificial fur; articles thereof
44	Wood and articles of wood; wood charcoal
45	Cork and articles of cork
46	Wickerwork and basketwork
47	Pulp of wood or of other fibrous cellulosic material; waste and scrap of paper or paperboard
48	Paper and paperboard; articles of paper pulp or paperboard
49	Books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans
50	Silk
51	Wool, fine and coarse animal hair, tarn and fabrics of horsehair
52	Cotton
53	Other vegetable textile fibres; paper yarn woven fabrics of paper yarn
54	Man-made filaments
55	Man-made staple fibres
56	Wadding, felt and non-wovens; special yarns; twine, cordage, rope and cable and article thereof
57	Carpets and other textile floor coverings
58	Special woven fabrics, tufted textile products; lace; tapestries, trimmings; embroidery
59	Impregnated, coated, covered or laminated textile fabrics; articles for technical use of textile materials
60	Knitted or crocheted fabrics
61	Articles of apparel and clothing accessories, knitted or crocheted
62	Articles of apparel and clothing accessories, not knitted or crocheted
63	Other made up textile articles; sets; worn clothing and worn textile articles; rags
64	Footwear, gaiters and the like; part of such articles
65	Headgear and parts thereof
66	Umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof
67	Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles of human hair
68	Articles of stone, plaster, cement, asbestos, mica or similar materials
69	Ceramic products
70	Glass and glassware
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin
72	Iron and steel
73	Articles of iron or steel
74	Copper and articles thereof
75	Nickel and articles thereof
76	Aluminium and articles thereof

78	Lead and articles thereof
79	Zinc and articles thereof
80	Tin and articles thereof
81	Other base metals; cermets; articles thereof
82	Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal
83	Miscellaneous articles of base metal
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles
86	Railway or tramway locomotives, rolling-stock and parts thereof; railway or tramway track fixtures and fittings and parts thereof; mechanical, including electro-mechanical, traffic signaling equipment of all kinds
87	Vehicles other than railway or tramway rolling-stock. And parts and accessories thereof
88	Aircraft, spacecraft, and parts thereof
89	Ships, boats and floating structures
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof
91	Clocks and watches and parts thereof
92	Musical instruments; parts and accessories thereof
93	Arms and ammunition; parts and accessories thereof
94	Furniture; medical and surgical furniture; bedding, mattresses, mattress support, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified; illuminated signs, illuminated name-plates and the like; prefabricated
95	Toys, games and sports requisites; parts and accessories thereof
96	Miscellaneous manufactured articles
97	Works of art, collectors' pieces and antiques
98	Component of complete industrial plants of chapters 63; power production, incl. Production and distribution of steam and hot water
99	Other products

Table 5a - Sectoral Shares of Italian total imports from POLAND

CCN (*)	1990	1992	1994	1996	1998
87	9.45	27.43	30.98	37.32	41.73
85	2.06	2.46	4.98	8.15	10.41
01	29.35	20.05	16.14	10.91	7.62
84	4.14	3.09	5.22	4.09	4.75
44	1.79	3.00	3.13	2.95	3.11
48	0.31	2.84	3.62	3.79	3.04
73	1.36	1.61	1.46	2.28	2.22
62	2.10	2.57	2.41	1.9	2.03
61	0.27	0.94	1.31	1.55	1.54
40	0.58	0.74	1.04	1.35	1.46
29	1.97	1.68	1.60	1.85	1.46
72	12.21	5.40	2.85	1.62	1.42
94	0.52	0.70	0.88	0.99	1.39
41	3.15	4.96	2.63	1.64	1.38
64	0.38	1.49	1.68	2.16	1.33
02	3.63	1.95	1.41	1.27	1.21
31	0.47	1.52	1.48	1.14	1.16
69	0.45	0.89	1.26	1.47	1.07
39	0.99	0.64	0.59	0.93	1.06
54	0.33	0.18	0.17	0.62	1.03
total	75.52	84.13	84.84	87.98	90.42

Table 5b - Sectoral Shares of Italian total imports from the CZECH REPUBLIC

CCN (*)	1990	1992	1994	1996	1998
87	-	-	5.22	9.61	25.21
84	-	-	5.31	10.89	10.61
73	-	-	4.55	7.00	6.28
29	-	-	7.49	6.86	4.47
70	-	-	3.93	5.11	4.29
85	-	-	2.86	3.40	3.91
44	-	-	5.05	5.50	3.65
48	-	-	4.75	3.31	3.65
39	-	-	4.36	5.02	3.24
72	-	-	16.23	7.67	3.07
64	-	-	3.60	3.60	3.03
40	-	-	1.69	2.83	2.21
52	-	-	2.60	2.01	1.92
28	-	-	2.08	1.81	1.73
32	-	-	2.32	2.46	1.59
47	-	-	1.40	1.35	1.57
62	-	-	1.94	2.10	1.50
51	-	-	1.56	2.01	1.36
58	-	-	1.69	1.22	1.19
total			78.63	83.75	84.47

Source: Eurostat, COMEXT.
Note: Shares are ranked in descending order with respect to their values in 1998. Shares below 1.0 in 1998 are   not reported.
(*) Chapters of Combined Nomenclature, see Table 4.

Table 5c - Sectoral Shares of Italian total imports from HUNGARY

CCN (*)	1990	1992	1994	1996	1998
85	2.63	1.90	3.17	7.40	11.88
44	8.24	8.87	7.01	7.11	7.99
62	1.71	6.70	7.48	6.53	7.36
84	2.68	5.24	4.77	4.02	7.3
39	3.96	11.05	7.54	7.38	7.15
72	11.71	8.03	12.91	9.52	6.13
64	0.50	4.38	5.11	6.42	5.90
87	0.21	1.46	1.10	2.34	4.60
02	16.41	9.35	5.80	6.70	4.25
29	8.18	6.31	6.00	4.96	3.86
61	0.40	1.75	1.63	2.57	3.57
01	10.77	8.54	8.25	5.73	3.52
42	0.53	1.62	1.41	1.76	2.37
10	0.59	0.56	2.55	0.44	2.29
76	3.09	0.95	3.12	2.34	1.90
54	0.85	0.17	1.56	1.67	1.59
52	0.64	0.59	1.36	1.24	1.58
95	0.03	0.54	1.53	2.07	1.54
28	1.04	0.59	1.23	1.81	1.23
40	0.81	0.68	0.77	1.41	1.11
70	0.84	2.89	1.88	1.86	1.10
total	75.83	82.18	86.18	85.29	88.25

Table 5d - Sectoral Shares of Italian total imports from SLOVENIA

CCN (*)	1990	1992	1994	1996	1998
87	–	6.03	9.03	16.21	21.14
76	–	6.93	9.92	8.49	8.88
85	–	5.14	5.99	5.75	6.91
84	–	6.32	6.98	6.62	6.62
44	–	10.56	9.21	7.34	6.43
72	–	4.35	4.82	4.91	4.21
48	–	5.23	4.59	3.58	3.57
39	–	1.77	2.73	2.96	3.35
54	–	1.62	2.01	3.45	3.01
52	–	0.72	2.01	2.81	2.63
90	–	1.17	1.67	2.12	2.62
94	–	3.31	3.11	2.80	2.6
41	–	4.85	4.11	3.41	2.18
73	–	3.13	2.39	2.27	1.96
40	–	1.69	1.48	1.92	1.73
61	–	2.03	1.38	1.46	1.45
28	–	2.27	2.69	1.75	1.36
02	–	2.84	1.79	0.88	1.33
62	–	2.58	1.72	2.00	1.22
70	–	0.99	1.08	1.11	1.21
83	–	0.35	0.99	1.10	1.06
total		73.88	79.71	82.95	85.45

Source: Eurostat, COMEXT.
Note: Shares are ranked in descending order with respect to their values in 1998. Shares below 1.0 in 1998 are not reported.
(*) Chapters of Combined Nomenclature, see Table 4.

Table 5e - Sectoral Shares of Italian total imports from ESTONIA

CCN (*)	1990	1992	1994	1996	1998
44	-	0.45	6.49	14.30	31.18
52	-	7.22	8.17	17.63	16.33
64	-	16.81	28.38	29.16	15.66
95	-	0.51	8.12	8.80	7.80
43	-	2.34	0.27	0.90	4.41
27	-	0.53	0.05	1.30	3.69
84	-	0.00	0.78	1.26	3.50
41	-	15.20	29.27	5.68	3.49
62	-	0.00	0.03	2.74	2.32
71	-	0.00	0.00	0.00	2.28
48	-	0.00	0.00	1.80	1.48
61	-	0.00	0.00	1.02	1.15
total		43.07	81.55	84.59	93.29

Table 5f - Sectoral Shares of Italian total exports to POLAND

CCN (*)	1990	1992	1994	1996	1998
84	43.57	30.18	29.44	30.70	32.08
87	4.43	14.13	15.3	17.56	15.30
85	6.58	6.42	5.70	6.49	6.18
39	2.05	5.25	6.03	4.63	4.33
73	2.48	2.74	2.81	3.65	3.83
94	0.57	2.78	2.68	2.59	3
69	0.78	2.28	2.98	2.94	2.77
64	2.23	2.03	1.67	2.29	2.34
76	0.27	0.74	1.07	1.58	1.85
51	0.91	1.77	1.41	1.4	1.76
61	1.37	1.34	2.15	2.34	1.60
90	2.77	1.87	1.42	1.27	1.49
48	0.92	2.58	2.02	1.76	1.40
41	1.18	0.59	1.15	1.25	1.35
32	0.97	1.34	1.23	1.43	1.23
30	1.05	0.52	1.41	1.57	1.13
40	1.08	1.48	1.17	0.86	1.11
83	0.33	0.88	0.84	0.90	1.03
49	0.28	1.16	0.88	0.59	1.01
total	73.83	80.07	81.35	85.8	84.78

Source: Eurostat, COMEXT.
Note: Shares are ranked in descending order with respect to their values in 1998. Shares below 1.0 in 1998 are not reported.
(*) Chapters of Combined Nomenclature, see Table 4.

Table 5g - Sectoral Shares of Italian total exports to the CZECH REPUBLIC

CCN (*)	1990	1992	1994	1996	1998
84	−	−	30.07	29.76	28.53
87	−	−	6.66	14.43	9.96
85	−	−	5.01	5.07	6.48
39	−	−	3.92	4.28	5.91
94	−	−	6.24	5.15	5.09
73	−	−	3.88	4.01	3.87
64	−	−	5.08	3.38	3.35
90	−	−	2.51	1.61	2.09
8	−	−	3.54	2.54	2.05
69	−	−	2.45	1.95	1.82
62	−	−	1.52	1.42	1.67
32	−	−	2.15	1.62	1.67
41	−	−	1.57	1.56	1.52
95	−	−	0.89	1.30	1.27
48	−	−	0.93	1.08	1.21
83	−	−	0.96	1.24	1.21
51	−	−	0.76	0.91	1.14
52	−	−	0.75	0.61	1.12
30	−	−	1.22	1.00	1.01
71	−	−	1.54	1.22	1
total			81.67	84.13	81.95

Table 5h - Sectoral Shares of Italian total exports to HUNGARY

CCN (*)	1990	1992	1994	1996	1998
84	29.25	21.69	21.05	19.55	22.14
87	5.53	9.78	8.32	6.74	8.16
85	4.36	4.95	5.38	6.53	7.55
64	4.18	4.73	4.30	4.67	4.16
94	1.17	4.41	5.12	4.13	4.06
41	4.65	2.96	2.97	4.30	3.92
39	2.80	2.60	3.29	3.86	3.87
73	3.71	3.26	3.78	3.69	3.41
62	1.83	3.3	3.25	3.56	3.13
69	3.86	3.33	3.94	2.97	3.03
72	3.39	1.57	2.26	2.32	2.50
61	1.98	1.67	1.79	2.17	2.15
52	1.35	1.56	1.42	1.85	2.14
29	2.11	4.29	2.93	3.27	1.97
48	2.09	1.57	1.83	1.86	1.81
55	1.27	1.81	1.30	2.15	1.81
54	1.00	1.63	1.74	1.89	1.79
51	2.03	2.51	1.59	1.63	1.64
90	1.83	2.35	2.05	1.68	1.38
95	0.28	2.41	1.47	1.61	1.25
83	1.02	0.86	1.05	0.98	1.14
76	0.60	0.54	0.79	1.17	1.03
60	0.46	0.58	0.63	0.57	1.00
total	80.77	84.37	82.23	83.15	85.05

Source: Eurostat, COMEXT.
Note: Shares are ranked in descending order with respect to their values in 1998. Shares below 1.0 in 1998 are not reported.
(*) Chapters of Combined Nomenclature, see Table 4.

Table 5j - Sectoral Shares of Italian total exports to SLOVENIA

CCN (*)	1990	1992	1994	1996	1998
84	–	13.87	13.96	15.05	14.37
87	–	6.63	8.87	7.19	7.14
94	–	1.67	3.63	6.99	6.60
85	–	5.61	6.18	6.26	5.80
39	–	4.73	5.06	4.62	4.80
27	–	4.85	2.25	4.05	4.74
73	–	2.84	3.09	3.47	4.02
72	–	3.58	3.63	3.41	3.96
62	–	2.05	2.77	2.48	2.71
64	–	3.36	3.11	3.09	2.54
61	–	1.54	1.84	2.52	2.52
48	–	3.57	2.55	2.82	2.43
28	–	3.38	2.25	0.68	1.95
69	–	1.07	1.50	1.83	1.89
76	–	1.49	1.66	1.76	1.83
90	–	1.14	1.24	1.35	1.82
44	–	1.19	1.66	1.34	1.30
41	–	3.56	2.55	1.69	1.30
08	–	0.97	1.48	1.15	1.28
29	–	3.83	2.68	1.45	1.27
54	–	1.31	1.24	1.11	1.26
68	–	0.95	0.98	1.06	1.19
83	–	0.91	1.03	1.01	1.07
32	–	1.30	1.13	1.12	1.00
total		75.40	76.34	77.48	78.78

Table 5i - Sectoral Shares of Italian total exports to ESTONIA

CCN (*)	1990	1992	1994	1996	1998
84	-	55.63	19.94	24.18	23.34
94	-	0.81	4.29	7.29	10.49
64	-	5.15	13.13	8.64	10.07
85	-	2.96	6.84	6.08	5.30
39	-	6.22	7.34	5.01	5.02
69	-	0.12	5.54	4.73	4.80
61	-	0.57	2.13	5.60	4.78
87	-	1.80	2.40	3.48	4.58
30	-	0.00	0.15	1.00	2.89
73	-	0.03	1.24	2.48	2.50
95	-	0.00	0.65	1.40	1.99
51	-	0.00	1.42	2.03	1.84
22	-	1.74	3.44	2.29	1.76
62	-	3.35	1.81	0.86	1.41
54	-	0.78	0.85	2.18	1.36
83	-	0.09	1.22	1.82	1.28
48	-	0.09	1.37	0.69	1.26
90	-	1.11	0.90	2.23	1.24
68	-	0.39	0.32	2.50	1.15
total		80.82	74.99	84.46	87.05

Source: Eurostat, COMEXT.
Note: Shares are ranked in descending order with respect to their values in 1998. Shares below 1.0 in 1998 are not reported.
(*) Chapters of Combined Nomenclature, see Table 4.

Table 6a - CEEC5 imports from the EU, 1998

Eu-Poland		Eu-Czech Rep.		Eu-Hungary		Eu-Slovenia		Eu-Estonia	
CCN	per cent values	CCN	per cent values	CCN	per cent values	CCN	per cent values	CCN	per cent values
84	20.25	84	18.86	84	21.14	84	15.76	85	21.81
87	11.53	85	15.77	85	18.97	87	14.11	84	12.59
85	10.63	87	9.86	87	15.59	85	8.91	87	8.93
39	5.89	39	5.92	39	4.19	39	5.44	39	3.79
48	3.56	73	3.08	48	2.77	72	3.29	27	3.26
73	3.18	90	2.84	73	2.45	73	3.10	73	3.17
30	2.85	72	2.67	90	2.25	94	2.54	48	2.99
90	2.06	48	2.44	30	2.07	48	2.48	94	2.14
72	1.87	30	2.40	72	1.49	27	2.37	90	2.10
27	1.85	94	1.86	94	1.42	90	2.30	72	2.09
38	1.73	38	1.71	38	1.29	40	1.48	30	1.53
94	1.59	32	1.49	41	1.24	30	1.47	62	1.50
32	1.59	40	1.48	40	1.07	51	1.42	32	1.47
76	1.29	27	1.32	29	1.03	44	1.39	22	1.44
55	1.27	76	1.11			29	1.31	17	1.32
52	1.16	83	1.08			76	1.27	64	1.21
33	1.13					38	1.25	44	1.18
54	1.10					59	1.21	33	1.11
29	1.02					32	1.20		
23	1.01					61	1.19		
						62	1.13		
						54	1.00		
tot	**76.55**		**73.89**		**76.99**		**75.62**		**73.64**

Source: based on data taken from the COMEXT database.

Table 6b - European imports from CEEC5 for 1998

Eu-Poland		Eu-Czech		Eu-Hungary		Eu-Slovenia		Eu-Estonia	
sector	per cent	sectors	per cent	sectors	per cent	sector	per cent	sectors	per cent
85	11.06	87	16.90	84	28.98	87	19.37	44	18.27
87	9.53	84	13.05	85	21.71	85	11.31	85	15.10
62	9.35	85	12.77	87	6.83	84	10.70	27	14.81
94	9.02	73	6.05	62	4.42	94	8.25	94	7.03
27	5.77	94	4.62	39	2.57	62	5.86	62	6.75
84	5.56	72	3.84	61	2.40	44	4.28	84	6.17
44	5.20	44	3.56	76	2.31	76	3.77	72	3.25
73	5.02	39	3.13	94	2.31	72	2.96	73	2.60
72	3.40	27	2.46	02	2.05	48	2.95	52	2.46
74	2.80	40	2.38	64	1.88	90	2.62	63	2.08
61	2.05	70	2.28	73	1.88	39	2.55	61	1.95
39	1.83	62	2.19	72	1.86	40	2.16	64	1.48
48	1.75	90	1.47	44	1.73	73	2.12	90	1.34
08	1.51	29	1.46	27	1.73	61	1.92	03	1.18
40	1.46	76	1.26	29	1.40	64	1.32	28	1.17
63	1.34	48	1.17	90	1.13	54	1.23	04	1.00
76	1.20	69	1.11	40	1.11	28	1.22		
99	1.17	61	1.08			83	1.11		
71	1.16					68	1.03		
29	1.15								
31	1.14								
70	1.01								
tot	83.46		80.77		86.30		86.72		86.64

Source: based on data taken from the COMEXT database.

2. THE IMPACT ON MIGRATION

The accession of the CEECs to the EU is likely to have a significant impact on the conditions of migration. The free movement of workers is defined by Art. 39 (*ex* Art. 48) of the EC Treaty and is one of the fundamental liberties granted under Community law. As well described by the DG for Economic and Financial Affairs in a document on enlargement, "indeed, given that barriers to trade, FDI and other capital movements have already been largely removed, the free movement of persons and workers constitutes the probably most significant dimension in economic integration to change after accession compared to the status quo" (CEC, DGEFA 2001a, 40). Not surprisingly, a debate on the consequences of potential migration has provoked the fear in many countries that the increase in EC populations due to Eastern labour flows may lead to a deterioration of the labour-market position of the local workforce and to wage reduction and job losses. In response, several proposals have been put forward in order to introduce a flexible system of transitional arrangements such as those applied at the accession of Greece, Portugal, and Spain. These concerns are particularly acute in countries which are likely to be net recipients of migratory flows, such as Germany and Austria. In spite of the central role played by migration in the negotiations by this matter, migration research suggests that the overall impact of enlargement on the EU15 labour market will be limited and that migratory flows will be concentrated in specific Member States. This section gives a brief overview of the situation of immigrants from the CEECs in EU countries followed by forecasts of potential post-enlargement migration based on the existing theoretical and empirical literature and a discussion of potential factors accounting for labour migration. Particular attention will be paid to Italy and the present structure of inflows of workers from CEECs and other labour-exporting countries. The section concludes with an assumption for the simulation scenarios.

2.1 Potential migration from the CEECs: theoretical reasons and stylized facts

Research in the field of migration identifies some general influences on the incentive to emigrate. These factors are difficult to quantify and their interaction is complex, so that knowledge on motivations to emigrate and relative consequences remains fairly thin, despite a growing body of literature. In general, one can classify these influences as supply-side or 'push' factors that affect the willingness to emigrate from the country of origin, or demand-side or 'pull' factors that concern the demand for immigrants in the destination/host country (OECD 2000; CEC 2001). The most important economic push factors are: a) relative anticipated income discrepancies, approximated by the proportion of per capita income in the source countries relative to the host country; b) the labour market situation characterized by high unemployment rates in the source countries; and c) poor economic expectations in the potential migrant's own country. However, non-economic factors are also important in migratory decisions. We need to take into account not only the psychological costs of living in another country with another language and culture, but also the costs and benefits associated with applications for political or humanitarian asylum as factors influencing the likelihood of migration. These costs may be partially diminished by the presence in the host country of existing networks of migrants from the same source country. Indeed, there is much empirical evidence to suggest that existing immigrants tend to attract others

from the same origin. In general, there is a clear distinction between migration on economic grounds on the one hand, and asylum, or more politically-related reasons for migratory choices, on the other. In fact, the motivations differ and we may argue that only the former is relevant when considering potential migration flows in the wake of enlargement.

On the demand side, the economic cycle may cause labour shortages in specific sectors that exert a pull effect on migrants with the required skills. In recent decades, migrant workers in many host countries have filled positions in the service sector and in some industries, with a recent shift in labour demand towards skilled immigrants. Another important but often neglected factor is the dynamics of demographic trends, in particular population decline and ageing. A recent study by the United Nations (UN 2000) addresses the question of whether replacement migration is a solution to these trends. This analysis implies that countries with ageing populations may try to attract migrants to obtain demographic objectives through a specific immigration policy. This requires that economic conditions and demographic trends in the source countries are compatible with such a policy.

Numerous studies have been made on the impact of post-enlargement labour migration generally analysing the problem with reference to the set of factors described above and forecasts vary according to the methodology used and the underlying assumptions made.[5] After accession, the early annual flows from the CEEC10[6] are estimated at around 120,000 workers (or 335,000 persons) in the oft-quoted study by the European Integration Consortium (EIC 2000). This figure declines until the end of the decade to 50,000 workers (or 145,000 persons). The empirical model specified in the EIC study is an error-correction model estimated on long time-series data on migrants in Germany, the country where two-thirds of the migrants from the CEECs settled in 1998. The dependent variable in the model is the annual change in the ratio of the stock of migrants to the home/domestic population. The explanatory variables are the following: 1) the differential of per capita GDP between the home and the host country; 2) the employment rate in both countries; 3) the lagged ratio of the stock of migrants to the home population; and 4) institutional variables to capture the removal of institutional barriers to the movement of labour. Results show that all these variables have significant coefficients and with the expected signs.

Then, the results estimated for Germany have been extrapolated to the EU-15, based on the 1998 distribution of migrants from the CEEC10 across the Member States. Following the assumptions implicit in the model, around two-thirds of the annual flow will be absorbed by Germany, whilst one-tenth will be accounted for by Austria, the second highest recipient. The aggregate projections obtained are those reported above, while some details regarding the estimates for Italy are presented in the following paragraph. It goes without saying that any projection of migration flows is subject to a considerable degree of uncertainty, and other studies estimate higher figures of migrant annual flows.

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[5] For the summarized results from some of the main studies, see CEC (2001). One of the most detailed works is a study commissioned by DG for Employment and Social Affairs, European Integration Consortium (2000). See also, Bauer and Zimmermann (1999) and Salt *et al.* (1999).

[6] The Czech Republic, Hungary, Poland, Slovenia, Slovakia, Estonia, Latvia, Lithuania.

The cited study assumes that the present distribution of candidate country nationals among EU Member States will remain unchanged. It could be argued that this assumption may,"distort the picture somewhat insofar as the present distribution and employment rate are the result of quite different historical circumstances and migration patterns than those that will prevail after accession in a context of free movement" (CEC 2001, 8). In fact, the relatively generous immigration policies of Austria and Germany have affected the past distribution of immigrants from the CEECs within the EU. These two countries have bilateral agreements with some candidate countries: under these schemes, commuters, "posted workers" and trainee workers from Eastern European countries enjoy priority access to the German and Austrian labour markets. These bilateral agreements will no longer exist after enlargement, given the right of all EU citizens to seek work and take up employment in any Member State. However, another factor shaping the present distribution of CEEC migrants within the EU15 is that of geographical proximity. Although distance is not a crucial factor for the traditional migrant, in the present case of enlargement geography may play a key role in migration decisions. In fact, this situation is characterized by a relevant gap in per capita incomes over a short geographical distance. Thus, as argued by EIC (2000), regions bordering the CEECs may be expected to take the bulk of post-enlargement migration.

With reference to some of the factors listed above, we may note that, despite the disparities in per capita income and wages between the EU15 and the CEECs, recent immigration from these countries to the EU has been very low. The 1980s were marked by a mass exodus of Poles, of whom almost 60 per cent went to Germany and 10 per cent to the United States. The Poles, followed by the Romanians, constitute the largest communities of CEEC citizens in Western countries. The presence of these pre-established migrant networks helps explain the direction, nature and size of the East-West flows after 1989. In the years 1989-1990, after the opening of the borders, the flows of migrants intensified particularly to Germany, Finland and Turkey, and declined sharply after 1993. Very rapidly, due largely to the restrictive policies implemented in the principal host countries and to bilateral agreement between EU members and single CEECs, temporary migration increased at the expense of permanent migration. Since 1996, the number of annual permanent migrants has been around 20,000 persons, a level comparable with that at the beginning of the 1990s (OECD 2001). Therefore, the emigration flows from CEECs have displayed a downward trend and the nature of these flows has altered, and are now characterised principally by short and frequent movements both from East to West and between the CEECs themselves. [7] According to EIC (2000), "the number of nationals from the CEECs residing in the EU can be estimated at around 850,000 persons in 1998. With shares of 0.2 to 0.3 per cent in the EU population and in the EU employment respectively, the number of registered immigrants from the CEECs is - given the disparity in per capita incomes - surprisingly low at the present stage. Around 80 per cent of the immigrants from the CEECs reside in Austria and Germany. Still, even in these countries the share of immigrants from the CEECs in the workforce is, at 1.1 and 0.5 per cent, rather modest." (EIC 2000, 31).

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[7] For a recent report on migration in Central and Eastern Europe, see OECD (2001).

Another relevant factor for migration is the dynamics of demographic trends both in the host and source countries. As shown in Table 7, demographic projections for CEECs present similar characteristics with those of most Western countries: population decline and population ageing. In Poland and Romania, the most populated candidate countries, the expected population reduction by the year 2050 will be approximately 13 and 19 per cent, respectively. If these projections are confirmed in the future, applicants will no longer have a positive demographic surplus to export. In addition, the 'catching-up process' will narrow income disparities between the CEECs and EU15 members and will increase labour demand in the candidate countries, thus absorbing a higher proportion of the workforce. Therefore, even though the persistence of permanent emigration in a context of continual decline in the rate of population's natural increase deserves to be highlighted (OECD 2001, 38), in our opinion the projected demographic trends have to be taken into account when sketching out the shape of future migration.

Table 7 - Demographic Projections for the CEEC10, Italy, and the EU

	Population (Thousands)		Difference		Percentage aged 60 or over	
	2000	2050	Absolute	Percentage	2000	2050
Poland	38605	33370	-5235	-13.6	16.6	35.6
Slovenia	1988	1527	-461	-23.2	19.2	42.4
the Czech Republic	10272	8429	-1842	-17.9	18.4	40.1
Hungary	9968	7486	-2481	-24.9	19.7	36.2
Estonia	1393	752	-642	-46.1	20.2	35.9
Total 1st Wave	64226	53614	-10612	-16.5		
Romania	22438	18150	-4288	-19.1	18.8	34.2
Bulgaria	7949	4531	-3419	-43	21.7	38.6
Slovakia	5399	4674	-724	-13.4	15.4	36.8
Latvia	2421	1744	-677	-28	20.9	37.5
Lithuania	3696	2989	-707	-19.1	18.6	37.3
Total 2nd Wave	41903	32088	-9815	-23.4		
Total CEEC10	106129	85702	-20427	-19.2		
Italy	57530	42962	-14568	-25.3	24.1	42.3
European Union (*)	375276	331307	-43969	-11.7	21.9	35.3

Source: United Nations (2000b), "World Population Prospects: The 2000 Revision. Highlights".

(*) United Nations (2000a), "Replacement Migration: is it a solution to Ageing Populations?".

2.2 Migration between the CEECs and Italy

The situation of legal migrants in Italy, with special reference to the CEECs and other relevant source countries, is presented in the following table.

Table 8 - Stock of foreigners with residence permits from the CEEC10 and the Balkans in Italy, Several Years [1]

	December 31^s, 1991 [2]	January 1st, 1997 [2]	January 1st, 2000 [2]	Percentage over the total foreign residents, year 2000
Poland	12139	23163	29478	2.20
Slovenia		3575	3720	0.28
the Czech Republic		4866	3429	0.25
Hungary		3428	3690	0.28
Estonia		181	226	0.02
Total 1st Wave	**12139**	**35213**	**40543**	**3.02**
Romania	8250	26894	61212	4.57
Bulgaria	2530	4435	7378	0.55
Slovakia	2381 [3]	2489	2087	0.16
Latvia		187	333	0.02
Lithuania		317	450	0.03
Total 2nd Wave	**13161**	**34322**	**71460**	**5.33**
Total CEEC10	**25300**	**69535**	**112003**	**8.35**
Percentage of Total CEEC10 over home population	0.04	0.12	0.19	
Albania	24886	66608	133018	9.92
Former Yugoslavia	26727	74761	92791	6.92
Total Yugoslavia and Albania	**51613**	**141369**	**225809**	**16.84**
Total residence permits in Italy	648935	986020	1340655	

Source: Presidenza del Consiglio dei Ministri, Department of Economic Affairs (2001), *Allargamento a est dell'Unione Europea: sfide e opportunità per l'Italia.*

Notes: [1] The statistics for 'residence permits' differ from those for 'foreign residents' because the former do not take into account, if not marginally, foreign minors. In fact, the law does not require residence permits for the children of migrants following their parents to Italy.
[2] ISTAT elaborations on data of Ministry of the Interior.
[3] Refers to those from the former Czechoslovakia.

The most substantial migratory flows from candidate countries are those from Poland and Romania. For most of the CEECs, the numbers are only in the hundreds and the annual flows amount to little more than a few dozen individuals. Between 1992 and 2000, the most relevant

changes in the stock of legal migrants are due to legal procedures to "regularize" the presence of previously illegal and unregistered immigrants residing in Italy which were passed at the end of 1995 and in 1998. The effects of the first measure are evident in the stock of residence permits registered at 1.1.1997 with an increase of 35 per cent with respect to the previous year. The most recent measure shows similar effects.

During the last decade, migrants from Poland and Bulgaria more than doubled but, at present, the largest community from a candidate country is that of Romanians, with a substantial increase in the last decade. This case is explained by the growing economic and commercial connections between Italian firms and Romania, by the economic recession in Romania after 1997 combined with some non-economic factors of cultural and language proximity. In North-Eastern Italy where there is a shortage of labour, Romanians have a good reputation as manual workers and are much appreciated by local entrepreneurs.

It is important to note that the number of legal foreigners residing in Italy and coming from CEECs amounts only to 8.35 per cent of the total number of resident migrants. The remaining percentage is mainly from others: Albania, the former Yugoslavia, Africa and Asia. The most recent information indicates that indigenous migration flows from Albania are drying up and that Italy is fast becoming a transitory destination for migrants from the Middle East and Asia.

According to the EIC study, the stock of residents from the CEEC10 in Italy will follow the path shown below:

Table 9 - Baseline Projections: Stock of Residents from the CEEC10

	residents from the CEEC10							
	Historical Data	EIC Model Projections						
	1998	**2002**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**
Italy	34490	46888	80359	117538	138956	150456	155790	157359
EU15	853128	1159804	1987718	2907367	3437146	3721613	3853542	3892345

Source: EIC (2000).

At this point, we should make some preliminary remarks about the data. The historical data shown in Table 9 have been used in the EIC study to compute the 1998 distribution of migrants from the CEEC10 across the Member States. In the case of Italy, the report specifies early on that in fact the figure refers to the year 1996 and, more precisely, we may add that it is the stock of residence permits at December 31st , 1995.[8] This explains the major difference between the EIC figure

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[8] For the difference between 'residence permits' and 'foreign residents', see notes below Table 8.

(34,490 persons), and the number of residence permits from the CEEC10 at January 1st, 1997 as shown in Table 8 (69,535 legal migrants residing in Italy). Therefore, the EIC model based on these 'outdated' historical data projects the stock of foreign migrants in the future producing results for the year 2010 which are not far from the data registered at the beginning of the year 2000 (that is 117,538 migrants compared with 112,003 residence permits registered by the Italian Ministry of the Interior at January 1st, 2000). Hence, absolute values of projections are inconsistent with reality which has been deeply affected by domestic decisions in migration policy. These considerations should be added to those already expressed about the significance of the model's results and we agree with the authors that "the projections should therefore only be seen as a clue to the magnitude of future migration from the CEECs, in particular not as a point-forecast." (EIC 2000, page *i*, Introduction to the Final Report).

To summarize, we may conclude that various forecasts of enlargement-generated migration suggest that the number of migrants from the CEECs to EU15 will be very limited. Most presumably, these flows will follow well-established migratory paths and migrants will tend to settle within country-specific migrant communities. Therefore, Germany and Austria will be the countries more affected by migration after enlargement. Moreover, demographic projections for the CEECs indicate declining trends in population growth in those countries as well as in the rest of Europe, thus the surplus of migrants will drop. In addition, the economic situation of candidate countries is expected to improve thus reducing the incentive to emigrate. Finally, in the past Italy has not been a migratory pole for Eastern migrants, given its geographical location and prevailing economic conditions, and there is little reason to believe that this framework will change dramatically in the near future. Therefore, in our study we assume no change of migration flows in the simulation scenarios based on the hypothesis that any potential variation in the number of migrants will be so low as to leave the labour market and the economy as a whole largely intact.

3. THE IMPACT ON FOREIGN DIRECT INVESTMENTS

Over the last decade, FDI inflows in CEECs countries have ranged between 3 and 5 per cent in terms of their GDP, depending on the year and the country considered. Two-thirds of FDI originated from EU Member States, with Germany being the main investor. According to Eurostat, in the period 1994-99 the cumulative flows of FDI from the EU-15 countries amounted to 36,320 million Euros if the CEEC5 countries are taken into account, and to 40,695 million Euros for the CEEC10 countries. In fact, the importance of FDI for the EU economies was small as it represented less than 1 per cent of gross fixed investment over the 1990s (see Brenton 1999; EC 2001). Italy contributed to European FDI with only 1,546 million Euros over the period 1994-99, indeed a very modest 3.8 per cent of the total, a share even lower than that of Belgium and Sweden. If we look at Italian ICE statistics based on UIC data and reported in Table 10, the cumulative flows of FDI appear even lower. The reason is that national statistics do not yet report the acquisition of Bank Pekao, one of the major Polish banks, for about 1,000 million Euros which accounts for about two-thirds of total Italian FDI over the period examined. When the latter investment is not considered Hungary remains the main recipient country of Italian investments with one-third of the total, followed by Poland, the Czech Republic and Romania. Table 11 shows that the greater part of Italian investments have been directed towards labour-intensive sectors: 40 per cent for machinery and motor vehicles; 19 per cent for the food industry; and 17 per cent for the clothing and textile sectors.

Quite significantly, European FDI appears to have been motivated more by the desire to increase market shares in the CEECs than by export substitution (see EC/CEC 2001). As a result of privatisation, nearly half of the FDI has been directed to non-tradeable sectors such as public utilities. One fifth of EU FDI occurs in labour-intensive sectors such as textiles, clothing, electrical machinery and motor vehicles in order to exploit wage differentials. This suggests that whilst FDI has not negatively affected the volume of EU exports and employment in those sectors, it may have had a negative effect on low-skilled labour within the EU.

There is little consensus in the literature as to the consequences of enlargement for the evolution of FDI flows. Some economists (see, for example, Sinn and Weichenrieder, 1997) contend that the volume of FDI into the CEECs has been below potential and thus that FDI will surge once constraints are removed, whilst others (see, for example, Brenton 1999) forecast no major effect due to enlargement.

We have not made any specific provision for FDI in our simulations of enlargement effects for two reasons. First, because if FDI may continue to flow into the CEECs at the current pace representing no more than 1 per cent of the gross fixed capital investment of EU countries. Secondly, and more importantly, because the impact of FDI on the Italian economy is likely to remain relatively low, as the limited propensity to invest is explained by the small size of Italian firms and by a specialisation in mature products. As a consequence, we have decided to take FDI as one of a number of factors potentially leading to the higher rate of growth for the CEECs, modelled in the *'Specializing CEECs'* scenario, rather than as the sole or dominant factor.

Whilst it is difficult to predict whether or not FDI will continue to rise at the current pace or will boom following enlargement, Brenton (1999) demonstrates that in 1995 Hungary and the Czech Republic already had a stock of FDI owned by EU companies that was in per capita terms already higher than that of Greece and equivalent to 75 per cent of that for Spain. This suggests that even if the stock of FDI may well raise the CEECs to the level of EU countries, Hungary and the Czech Republic have already closed the gap. The situation in 1995 differed for Poland, Romania and Bulgaria which lagged far behind Hungary and the Czech Republic. Indeed, since 1995 the FDI flows of these two countries have been relatively constant in terms of GDP, as opposed to Poland and Romania where FDI has been on an upward trend (see CEC 2001). Using a gravity model, Brenton estimates that FDI inflows into the more advanced CEECs are not below what is the expected level, given income, market size and geographical proximity, and concludes that a surge in FDI as a result of accession is unlikely in the case of Hungary, the Czech Republic and Poland.

Table 10 - Italian FDI by Country of Destination (million euros)

			Cumulated	Percent of Total
		1999	1994-98	94-98
Czech Rep.	32,3	n.a.	75,4	16
Estonia	1,4	n.a.	6,5	1
Hungary	13,8	37,8	157,4	34
Poland	27,7	25,9	94,9	21
Slovenia	2,7	2,6	31,0	7
CEEC5	**77,9**	**66,2**	**365,2**	**80**
Bulgaria	1,2	n.a.	4,3	1
Latvia	0,2	n.a.	0,2	0
Lithuania	1,2	n.a.	2,5	1
Romania	35,8	30,7	67,5	15
Slovakia	3,2	n.a.	19.5	4
CEEC10	**119.5**	**96,9**	**459,2**	**100**

Source: UIC (Ufficio Italiano Cambi) and ICE (Istituto per il Commercio Estero).

Table 11 - Italian net FDI by industry (percentage), year 1999

Energy	2.1
Metals and Minerals	8
Chemical products	7.1
Machinery and Motor Vehicles	40
Food products	19.2
Clothing and Textile	17.6
Construction	1.1
Others	4.9
Total	100

Source: ICE (Istituto per il Commercio Estero).

4. A BRIEF DESCRIPTION OF THE SIMULATION MODELS

This research concerns the impact of European enlargement on the Italian economy. The scenarios implied by this perspective have been evaluated using a system of econometric models. This system is made up by country models which are linked by means of a world commodity trade model.

The country models belong to the Inforum (Interindustry FORecasting at the University of Maryland) system; each country model has been constructed by the country partner so that it embodies the peculiarities of the economy as observed and understood by the model builder. The system consists of multisectoral models of Western Europe (Germany, France, Spain, Austria, the United Kingdom, Belgium, Italy), the Far East (China, Japan, South Korea, Taiwan), and Central-North America (Canada, United States, Mexico). As described in Grassini (2001), a more descriptive name for this might be Interindustry Macroeconomic Models (IM) or Multisectoral Macroeconomic Models (MM); 'interindustry' and 'multisectoral' stress the presence of an input-output structure and the detailed representation of the industries in the economy; and 'macroeconomic' emphasizes that the usual variables of macroeconomics are covered. In the same way as macroeconometric models, they use regression analysis of time-series. A distinctive property of these model is their bottom-up approach; that is, the macro totals are obtained by summing the industry details.[9] Hence, the model builder is forced to look very closely at the economic statistics for a better understanding of the economy and its working. Of course, these models are well suited for analyzing structural changes.

In these models, the foreign trade flows have a distinctive feature. They are driven by a world commodity trade model, the Bilateral Trade Model (BTM) created and originally estimated by Qiang Ma (1996).[10] The basic idea underlying this trade model was formulated many years ago (see Armington (1969a, 1969b) and Rhomberg (1970,1973)); subsequently, a number of studies tackled estimation problems involved in the construction of this kind of trade models (see, for example, Nyhus (1975), Fair (1983)). These analyses focused on modelling trade shares by using relative prices as explanatory variables; the BTM model shares the basic characteristic of earlier works and contains interesting innovations which will be discussed later on. For an overview of the Italian Multisectoral model and of the Bilateral Trade model, see below.

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[9] Here, we do not compare the peculiarities of this kind of models with those of other macroeconomic or multisectoral models. However, see West (1995) for a synoptic presentation of Computable General Equilibrium models, Classic Input-output models and Input-output+econometrics models. A comparison among macroeconomic models is also in Almon (1991). Furthermore, see Monaco (1997) who presents an interesting evaluation of different kinds of macroeconomic multisectoral models from a model builder's and user's point of views.

[10] It has subsequently been revised and updated with more recent data. This is a model of bilateral trade flow in merchandise at the level of 120 products. The list of the products is in the Annex.

4.1 A walk around the Italian Model

The accounting structure and data

A structural model of an economy begins with an accounting system, and indeed an accounting system is already a model, since each balance in the accounts is an equation. The number of equations is also the number of endogenous variables which are automatically accompanied by a large number of exogenous variables. Adding econometrically estimated equations among variables in the accounting system reduces the number of exogenous variables, but at the same time reveals the thinking of the model builder. We shall therefore begin with a description of the accounting framework and then move to the econometric equations.

INTIMO – the <u>Int</u>erindustry <u>I</u>talian <u>Mo</u>del – begins from the Italian input-output table and the institutional accounts. The input-output table used in the model has 44 sectors, 40 of which represent the private component of the economy, 4 of which represent non-market sectors, of which 3 are governmental and 1 is non-profit. The table distinguishes between domestic and foreign production in each cell, and the model preserves this distinction.

In this table non-deductible value added taxes (VAT) have been removed from the calculations for intermediate and final demand flows. A basic assumption of input-output is that a lira's worth of a particular product requires the same inputs irrespective of where that lira of sales occurs across the product's row. This assumption is flagrantly violated in the tables published with flows including non-deductible VAT. For example, paper sold to firms appears without VAT while the same paper sold to households appears with VAT. The removal of the non-deductible VAT, therefore, makes the input-output calculations move valid and moves the table much closer to a factor-cost rather than a market-price basis. In addition to the VAT matrix, the bundle of excise and other *ad valorem* taxes has been represented in a matrix specifically built for the model which lists about 30 different indirect taxes.

The 'institutional accounts' have been aggregated into three sectors: 'enterprises', 'households' and 'government'. In the European System of Accounts (ESA) there are seven institutional accounts: 1) production; 2) generation of income; 3) distribution of income; 4) use of income; 5) capital; 6) financial; and 7) current transactions (with rest of the world). The input-output table and the 'institutional accounts' are closely linked. Aggregates from the intermediate consumption and value added matrixes in the input-output table go into the first two accounts, 'production' and 'generation of income'. INTIMO then models the third and seventh accounts, the 'distribution of income' and 'current transactions' accounts to calculate disposable income. The 'use of income' and 'capital' accounts allow computation of macroeconomic variables such as saving, investment, consumption, inventory changes in nominal terms. Needless to say, the household disposable income which results from the computation in the institutional accounts is not necessarily that assumed in the computation of households in the input-output accounts. The model must be solved iteratively to ensure that the two are equal.

Equations from input-output identities
In an input-output table there are two sets of accounting identities:

$$Aq \ + \ f \ = \ q \qquad\qquad A \ p \ + \ v \ = \ p \qquad\qquad (1)$$

where q is the (column) vector of sectoral outputs, f is the vector of final demand, the sum of consumption, investment, inventory changes and net exports, v is the value added vector per unit of output, p is the vector of sectoral prices and, finally, $A = [a_{ij}]$ is the matrix of coefficients so that $q_j {*} a_{ij} = q_{ij}$ where q_{ij} is the flow from sector i to sector j in the input-output table; matrix A is also known as the 'input-output technical coefficient matrix'. The set of equations on the left side are known as the 'fundamental equation in the input-output analysis' or 'the Leontief equation'; the set of equations on the right side are known as the 'Leontief price equation'.

In INTIMO, all these variables should have also a t subscript to emphasize that they vary over time, so that the equation for the determination of output would be

$$q_t \ = \ A_t q_t \ + \ f_t. \qquad\qquad (2a)$$

In the determination of prices, the distinction between foreign and domestic products is important. For the price equations, we need to separate the A_t into a matrix of domestic inputs, H_t and imported inputs, T_t, such that $A_t = H_t + T_t$. The resulting equation for determining domestic prices is

$$p_t \ = \ H_t p_t \ + \ T_t \ p^m_t \ + \ v_t \qquad\qquad (2b)$$

where p_t^m is the vector of import prices. While the elements of matrix A may be interpreted as 'technical' coefficients, H and T matrices simply distinguish the origin of inputs, a distinction which is useful for analyzing the impact of foreign prices on domestic prices but independent of any technological consideration. There are no annual input-output tables for Italy, but we do have historical series on outputs, final demand, imports, domestic prices, and foreign prices. From these series and the 1988 input-output table, we have made a series of *A, H,* and *T* tables from which we project future tables.

Behavioural equations
In very general terms, the real and price sides of INTIMO (or any MM model) can be presented in the following form

$$q \ = \ Aq \ + \ f(q,p,z_R) \qquad\qquad p = \ Hp \ + \ T p^m \ + \ v(p,q,z_N) \qquad\qquad (3)$$

where z_R and z_N are vectors of variables not appearing in the input-output table, such as interest rates, money supply, or population. Note the 'crossovers'; prices appear in the final demands and physical outputs appear in the price equations. We omit the t subscripts which should be understood on each matrix or vector. We have not included a dependence of the matrices on

prices because that dependence has not been built into the present version of INTIMO. Whilst there is no problem in principle or theory in doing so, it would involve very substantial empirical problems. Besides these equations, there are others that do not have a sectoral dimension, such as those for collecting personal taxes or government accounting.

We now turn to the forms and content of the various behavioural equations that make up the f and v functions.

Let us begin with the description of a demand system used to model *Personal Consumption Expenditure*. It is difficult to judge the usefulness of a demand system without any reference to the precise context in which it is used. Thus, an MM model is a good testing ground for a demand system because it is fairly clear what it has to do. It will be used for relatively long-term growth studies so it must have an analytical form able to deal with significant growth in real income, with demographic and other trends, and with changes in relative prices. It must allow both complementarity and substitution among the different goods examined. Prices should affect the marginal propensity to consume with respect to income and the extent of that influence should be an empirical question and not determined by the form of the function. Following the same reasoning, income will certainly make the demand for a given good vary according to its specific propensity to consume, but increasing income should not make any demand negative.

The INTIMO model now uses the *Perhaps Adequate Demand System* (PADS) (Almon 1996). PADS demand equations have a form with a multiplicative relation between the income term and the price term. The income term has a linear form with a constant, real income per capita, its first difference and a time trend. By use of adult equivalency weights, the effect of the age structure of the population on consumption is reflected in the forecasts. This age structure is in turn derived from a demographic submodel in INTIMO which computes population year-by-year in 100 single-year cohorts on the basis of fertility by age, net immigration by age, and survival rates from one age group to the next.

The price term in PADS is non-linear and designed to allows every product to have its own price elasticity and to exploit the idea of groups and sub-groups of closely related commodities where within group complementarity or substitutability may be important. Not all commodities need be forced into a group, and some of them, given the detail of the available statistics, do not fit into any specific group. Other commodities or services such as 'medical services' and 'education' are recorded as household consumption expenditure although they are mainly 'government' expenditure so that they do not fall under the consumer's budget constraint. They can be given special treatment.

The PADS system in INTIMO models 40 items of Personal Consumption Expenditures registered in the National Accounts. This vector is then multiplied by a 'bridge matrix' to convert these consumption categories into the 44 sectors of economic activities of the input-output table.

Investment equations are based on capital stock gross investment data available for 21 sectors

which are easily related to the 44 sectors of the input-output table. Gross investment is assumed to be composed of expansion investments and replacement investments. The latter are considered equal to the amount of investments required to maintain the level of capital stock constant; these investments are related to capital stock by means of a replacement rate implied by investments and ISTAT capital stock data. The capital stocks are, in fact, computed according to the perpetual inventory principle so that, given the investments and the stocks, the 'average' replacement rate can be calculated. The expansion investments are dependent on changes in output with lags of up to three to four years. No other explanatory variables are used. We are, of course, aware that investment functions should consider the cost of capital, but we do not have such information at the sectoral level and the use of aggregate measures has not been particularly fruitful.

These equations explain investment demanded by the purchasing industry. As in the case of personal consumption expenditure, a bridge matrix converts investment by purchaser into investment by type of product purchased.

Imports are modelled by import-share equations. The share is the ratio of sectoral imports to sectoral domestic demand. These shares are not constant over time and are modeled by a price term and a particular time trend. The price term for each sector is a moving average of the ratio of import price to domestic price for that sector, and the moving average covers the current and two previous years. The domestic price is computed by the model while the import price is supplied by the Bilateral Trade Model. The 'particular time trend', known as a Nyhus's trend, is obtained by cumulating the variable 1 - *s* over time, where *s* is the import share. If the import share is close to zero, this variable grows by nearly 1 each year and thus almost constitutes a time trend. If, however, the import share rises, this 'time' slows down, and if the share reaches 1, this 'time trend' stops growing altogether.

Exports are supplied by the Bilateral Trade Model

Government expenditure, which is represented here in term of sectoral purchases, is treated as an exogenous variable; it belongs to the scenario variables and allows us to investigate the impact on the economy when level or structure of expenditure changes. For example, it can be used to study the industrial effects of a shift of government expenditure between defense and education.

Labour productivity for each sector is modelled with the rate of sectoral output growth and either the level of output or a time trend. However, this device is not our favorite theory. We hope to connect labour productivity with investment. In the U.S. Inforum group, for example, the connection between investment and productivity has been estimated by using cross-section across firms within an industry. In the past, INTIMO used an equation based on 'Verdoorn's law' (Verdoorn, 1949) which states that empirical evidence supports 'a fairly constant relation over a long period between the growth of labour productivity and the [cumulated] volume of industrial production'. This idea was abandoned when it became clear that the equations were such that increasing outputs reduced employment in many industries.

We have investigated a number of other analytical forms for modelling labour productivity. We have tried labour-capital ratios, that is, a step towards the Total Factor Productivity definition. In many cases, the estimation of the labour productivity equations initially appeared to be successful. Unfortunately, good fitting and excellent statistical testing do not prevent the equation from giving anomalous results in simulation. We consider modelling labour productivity to be one of the most challenging topics in building an MM model (Wilson 2001). Promising results in estimating labor productivity equations for the Italian model have recently been achieved by Iommi (2001).

Wages are modeled at both the sectoral and aggregate levels. There are 42 sectoral equations and a single macro equation. The macro equation is for wages in 'industry' -- the 'energy', 'manufacturing' and 'construction' sectors. It explains the index of nominal wage as a function of the personal consumption deflator and labour productivity defined as the ratio of total output over employment. Both variables enter the equation with the current and one lagged value. The macro equation has been designed for long-term forecasting. The personal consumption deflator represents wage indexation, either as a legal *scala mobile* (wage indexation) or merely as the functioning of labour markets. Labour productivity appears in the equation because productivity increases are often used as an argument for wage increases in labour negotiations. The structure of this equation reflects what we have learnt from the history. Because of the recent structural changes occurred in the Italian labour market and of the expected reforms which are still under scrutiny, aggregate wages belongs to the set of the scenario variables.

In addition to the macro equation, there are sectoral equations for each industry, with the exception of the government sectors which have been aggregated into a single sector. The dependent variable in these equations is the ratio of the sectoral wage index over the aggregate wage index. There are two types of sectoral equations. One uses the rates of growth of employment and output plus a trend. The other uses the ratios between sectoral employment and sectoral output to employment and output of 'industry' as defined above.

Social security contributions are computed at the sectoral level. A time series of social securities rates has been computed from the time series of (sectoral) wage and social security contributions. These rates are exogenous variables which vary over time to reflect policy actions. Social security contributions for social security are derived by applying such rates to sectoral wages.

Gross operating surplus, profits for short, are explained at the sectoral level, the same 42 sectors for which wages were computed. The profit equations work in terms of profits per unit of output and list among the explanatory variables sectoral price, change in sectoral output, sectoral foreign price for non-sheltered sectors, and a time trend.

In addition to the many equations which explain a single cell in the input-output accounting scheme, INTIMO has a growing number of equations dealing with variables from the institutional accounts. (Their number is growing because these accounts have only recently been incorporated into INTIMO.) The institutional accounts properly belonging to the model are the 'distribution of income' and 'current transactions' accounts. Within these, the institutions have been

aggregated into 'enterprises', 'government', and 'households'. The 'households' account has received special attention in order to model 'household disposable income' (the balance line) which enters the Personal Consumption Expenditure demand system. Some items (which are macroeconomic variables) of this account are obtained aggregating sectoral flows; for example, 'gross operating surplus', 'compensation of employees' and 'actual social contribution'. Other items need to be modelled. In some cases, a simple relationship among macroeconomic variables suffices. For example, 'profits distributed to employees' can be taken as a proportion of the 'gross operating surplus' of the private sector. In other cases modelling the item may be more complex, for example, 'social benefits' and 'current taxes on income and wealth' both deserve special attention.

The model has the real side and the nominal side strictly integrated. This property must be borne clearly in mind when the simulations of this study will be used to evaluate the effect of the Eastern enlargement of the EU on the Italian economy. Furthermore, the model incorporate a very advanced treatment of the indirect taxes (see, Bardazzi (1992), Bardazzi *et al.* (1991), Bardazzi & Grassini(1993), Bardazzi (1996), Grassini (2001)); in particular, the model explicitly shows the impact of the tax burden on the (sectoral) production side and the corresponding impact in terms of revenues on the national budget.

4.2 The Bilateral Trade Model (BTM)

BTM is estimated by using a bilateral database, WTDB, released by Statistics Canada and made available to the INterindystry FORecasting at University of Maryland (INFORUM). This database provides high quality and up-to-date information on commodity trade, which covers all the world commodity trade and makes the bilateral model genuinely 'global'. The raw data set has been submitted to two aggregations. One concerns the commodity classification where the large number of commodity flows have been reduced to a set of 120 trade flows. The second is geographical so that the number of trading countries has been reduced from 200 to about 60; they include the countries of the system of multisectoral models and other countries or groups of them countries (for instance, the transitional economies in the Eastern Europe, OPEC countries, South Africa, other developing Asian countries, and major South American countries). The data allows us to construct bilateral trade flows matrices for 120 commodity groups. Each matrix has a number of rows and columns which are related to the above 60 countries. If the BTM database is ready for hosting this huge number of countries, the present working version is tailored on the existing country models in the system..[4] The structure of the data allows us to investigate the trade structure of other countries not yet included in system of models and, hence, to tackle problems such as those considered in the present research..

The BTM works as follows. It takes the sectoral imports from each country model and allocates

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[4] The United States, Mexico, Canada, Japan, South Korea, China, Taiwan, United Kingdom, France, Germany, Italy, Spain, Austria, Belgium and two areas: the rest of the OECD countries and 'the rest of the world'.

them to the exporting countries within the system; this allocation is done by means of import share matrices computed from the trade flows matrices; imports demanded to a country turns out to sum up to its exports. Hence, this model ensures the balance of imports demanded to a given country with its exports; this balance is obtained for each commodity group.

Then, the key work of the model is to calculate the movement in 120 import-share matrices. First of all, imports by product, prices by product, and capital investment by industry are taken from the national models. Then the model allocates the imports of each country among supplying countries by means of the import share matrices mentioned above. In any one of these matrices, which we denote by S (for share), the element S_{ijt} is the share of country i in the imports of country j of the product in question in year t. (t is 0 in 1990). The equation in the BTM for this typical element is

$$S_{ijt} = \beta_{ij0} * \left(\frac{P_{eit}}{P_{wit}}\right)^{\beta_{ij1}} * \left(\frac{K_{eit}}{K_{wit}}\right)^{\beta_{ij2}} * e^{\beta_{ij3} T_t}$$

where,

P_{eit}	=	the effective price of the good in question in country i (exporter) in year t, defined as a moving average of domestic market prices for the last three years;
P_{wjt}	=	the world price of the good in question as seen from country j (importer) in year t (see description below);
K_{eit}	=	an index of effective capital stock in the industry in question in country i in year t, defined as a moving average of the capital stock indices for the last three years;
K_{wjt}	=	an index of world average capital stock in the industry in question as seen from country j in year t (see description below);
T_t	=	Nyhus trend variable, set to zero in the base year, 1990.

β_{ij0}, β_{ij1}, β_{ij2}, β_{ij3} are estimated parameters.

The world price, P_{wjt}, is defined as a fixed-weighted average of effective prices in all exporting countries of the good in question in year t:

$$P_{wjt} = \sum_i S_{ij0} P_{eit} \; ; \quad \sum_i S_{ij0} = 1$$

and the world average capital stock, K_{wjt}, is defined as a fixed-weighted average of capital stocks in all exporting countries of the sector in question in year t:

$$K_{wjt} = \sum_i S_{ij0} K_{eit}$$

The fixed weights in the definition of the world price and the world average capital stock, the S_{ij0}, are the trade shares for the base year 1990. The use of the fixed weights ensures that the share

equation satisfies the 'homogeneity' condition as suggested by the demand theory. For example, if all effective domestic prices, P_{eit}, are doubled, then a doubling of the world prices as seen by each importing country (or its import prices) leaves the price ratio unchanged.

The BTM work begins with the collection of prices, imports and capital investments, but we see that the share equations require capital stock data which are intentionally not collected from the country models, even if they are endogenously computed. Capital stock data made available by official statistical national institutes are largely based upon different criteria, so that they may be not comparable (as it is required in the above equation). Consequently, we chose to compute capital stock directly from statistics taken from a 'comparable' perpetual inventory model where comparability is mainly based on the use of a common depreciation rate.

The idea behind a relative capital stock as explanatory variable is that (new) investments contain embodied technical progress. A capital stock which contains more recent investments may make the industry more competitive. In other words, an industry can buy market shares by investing. In order to stress this assumption, capital stock is computed from investments, and the depreciation rate is consequently chosen as strategic variable. At present, it is equal to 8 per cent.

These parameters were estimated using Ordinary Least Squares (OLS) in the following specification:

$$\log S \ = \ \alpha \ + \ \beta_1 \log P \ + \ \beta_2 \log K \ + \ \beta_3 T$$

where, for simplicity's sake, we have dropped the time and country subscripts (*t, i, j*) and let P and K denote the relative price ratio and relative capital stock ratio, respectively. Qiang Ma (1996) searched the parameter space for estimates of β_{ij0}, β_{ij1}, β_{ij2}, and β_{ij3}, and only included estimates with correct signs. The search procedure explored seven alternative functional forms as follows, beginning with the above typical equation. If the estimated price parameter or capital parameter was of the wrong sign, various combinations of a subset of the three explanatory variables were then used in the regression. If a wrong sign persisted in either the price parameter or capital parameter, the share equation was regressed on the Nyhus trend variable alone, because there was no sign restriction on the Nyhus trend variable.

It should be noted that in any forecast period each trade share must be non-negative, and the sum of shares from all sources in a given market must add up to 1 (i.e. $\sum_i S_{ij} = 1$ for all j and t). The non-negativity condition is automatically satisfied through the use of the logarithmic functional form, but the adding-up condition is not. A way must, therefore, be found to modify the forecast trade shares so that the adding-up condition is met. Estimates of all of the *n* shares are made separately and subsequently adjusted to meet the adding-up condition. In this way, the forecast shares in each market will satisfy both the adding-up condition and the non-negativity condition. In scaling the forecast shares to meet the adding-up condition in each import market, those with the best fits should be adjusted proportionally less than those with poor fits. There is a set of good weights at hand: the standard errors of the estimated equations. Thus, the adding-up condition in

each import market is imposed by distributing the residual in proportion to the standard error of each estimated share equation.

Qiang Ma estimated equations for over 19,000 trade flows. The capital term entered equations accounting for some 60 per cent of total trade flow. We should emphasize that the estimation uses time-series, not cross-section, data. Thus, the coefficients showing the effect of investment in Italy on Italian shares in the imports of other countries only reflects the Italian experience. It is not based on, for example, the effects of German investment on Germany exports.

5. SIMULATION SCENARIOS OF EU ENLARGEMENT: THE CEECS GROWTH EFFECTS

5.1 The 'baseline' scenario

5.1.1 Exports
As mentioned above, BTM distributes the imports of each country among supplying countries. This means that each country model endogenously computes (sectoral) import requirements; BTM converts these requirements into exports of the other countries. Symmetrically, each country model in the system receives from BTM its (sectoral) exports as the sum of the imports requirements of the other countries. The amount of (sectoral) exports of each country will vary according to the shares it captures of the imports of each other country in the system.

5.1.2 The CEEC5 growth scenario in the baseline
In the baseline, the GDP growth in the CEEC5 is assumed to follow the average rate of growth of other countries in the system. In other words, we assume that the CEEC5 grow at a pace close to that of the main industrialized countries -- Western Europe, the United States, Canada and Japan.

5.1.3 The exchange rate scenario
5.1.3.1 The exchange rate for key currencies
The exchange rates among the key currencies in the baseline as well as in the other scenarios are assumed not to vary much over time. The Euro/US-Dollar exchange rate rises steadily from the present 0.90 to 1.00 by 2010 on the assumption that the widely held view that the Euro is undervalued is not just wishful thinking in the EU. The Euro/Pound ratio remains constant at 0.630 on the expectation that the UK will watch this rate closely and try to keep it, rather than the Pound/Dollar ratio, constant. The Euro/Yen ratio rises from 110 to 117 in 2010 to express a slight progressive weakening of the Japanese currency.

5.1.3.2 The prices in the CEEC5 relative to those in the present members
At present BTM details exchange among 14 countries and two regions, 'other OECD', and 'the rest of the world'. The 14 country models each produce sectoral price projections. For BTM, these are adjusted by assumed exchange rates to produce indexes of effective prices. Industry-specific trade-weighted averages of these country prices are then taken as the prices of the two remaining regions. Since all of the CEEC5 countries fall into one or the other of these two regions, the fundamental assumption of the baseline is that these countries have 'average' prices relative to those in countries in the model, where 'average' is the average over the 14 included countries.

This rather neutral role of prices is not inconsistent with what has taken place in the recent past.

When the CEEC began the transition from their past economic system towards a market-oriented economy ten years ago, there was an acute crisis of the their former economic and political

system. After an immediate downward plunge, the recovery was characterized by GDP rates of growth higher than the ones of EU countries. The transition immediately aimed at a close economic integration with Western Europe. The countries with the best economic performance took reform seriously and were supported by the EU Commission through the Phare Program and Structural Funds as well as by substantial flows of foreign direct investment (FDI). Despite the good performance in GDP growth, the depth of the structural changes produced disequilibria that led to high inflation rates (see Tables 12 and 13). Present and expected inflation would be likely to damage the competitiveness of these countries were it not offset by a drop in the value of their currencies. We assume that this drop declines will cancel out the inflation so that the effective prices of imports from these countries will be about average for the countries in the BTM.

Table 12 - Growth in real GDP in Central and Eastern Europe

	1989	1990	1991	1992	1994	1996	1998	2000	1989=100
Czech Republic	1.4	-1.2	-12	-0.5	2.2	4.8	-2.2	2	95
Estonia	8.1	-6.5	-14	-14	-2	3.9	4.7	5	77
Hungary	0.7	-3.5	-12	-3.1	2.9	1.3	4.9	6	99
Poland	0.2	-12	-7	2.6	5.2	6.1	4.8	5	122
Slovenia	-1.8	-4.7	-8.9	-5.5	5.3	3.5	3.8	5.1	109

Source: EBRD Transition Report 2000.

Table 13 - Inflation in Central and Eastern Europe

	1989	1990	1991	1992	1994	1996	1998	2000 projection
Czech Republic	1.4	9.7	52	11.1	10	8.8	10.7	3.9
Estonia	6.1	23.1	211	1076	47.7	23.1	8.2	3.8
Hungary	17	28.9	35	23	18.8	23.6	14.3	9.5
Poland	251	586	70.3	43	32.2	19.9	11.8	9.9
Slovenia	1306	550	118	207	21	9.9	8	8.6

Source: EBRD Transition Report 2000

5.1.4 Wages

In a former version of the INTIMO model, wages were completely endogenous. There was an aggregate equation for industrial wages and other equations for sectoral wages relative to that

aggregate. Sectoral output and employment were used in the equations for the relative sectoral wages. This approach was chosen because there are not as many labour markets as there are sectors; in fact, the labour supply is not sector-specific. It is well known that trade unions in Italy strongly influenced income distribution at the aggregate level. The aggregate equation was for industrial wages because workers involved in the negotiations were mainly employees of industry — manufacturing, mining, and the utilities.

The aggregate wage equation previously used reflected the well-known Italian *scala mobile* or wage indexation that moved wages up with a short lag behind inflation. It also allowed for deviations from past inflation to reflect increases in productivity. It did *not* use unemployment, as would any version of the Phillips curve. I have long considered the standard Phillips curve inadequate for interpreting wage movements (Grassini, 1976); and, in particular, it is hard to include it in any econometric model describing the Italian economy, where the unemployment rate is an ambiguous indicator of the labor supply pressure. My approach was previously plainly proposed by Kuh (1967); unfortunately, his stimulating intuition was obscured by the success of the Phillips curve in some countries.

During the last decade, however, the Italian labour market has undergone episodes that may well constitute structural changes. When, in September1992, the lira suffered a sharp devaluation, past experience led to expectations of a strong acceleration in inflation. For the first time in forty years, trade unions decided to share the responsibility to tackle the consequences of that supply shock. The secretary of the biggest Italian union, Bruno Trentin, announced a 'New Deal' and convinced workers to accept an uncommonly low wage growth. Consequently, there was no substantial increase in inflation, and the long-standing correlation between imported and domestic inflation broke down.

Later in the 1990s, under the center-left governments, for the first time since the end of World War II, wages grew less than inflation. In spite of positive productivity growth, workers accepted a clear reduction of their purchasing power while cooling down any social conflict.

This recent experience has made the time series on labour market variables too heterogeneous for investigating any structural wage equation. The labour market is presently undergoing institutional reforms, and the role of the trade unions in this process is not yet well delineated. The old aggregate wage equation does not fit recent data, and we do not have enough data to fit a new one.
Thus, we prefer to assume an exogenous aggregate wage growth rate. More precisely, the basic assumption is that it will be about 3.6 per cent per year. This assumption combines the target inflation and productivity growth widely assumed in the present debate.

While the aggregate wage index is assumed exogenously, sectoral wage indexes are allowed to vary relative to it. In other words, the sectoral wage indexes follow their own paths around the given aggregate wage index.

5.1.5 Government expenditure

In the multisectoral model there are 4 collective final demand components. Government is divided into three components: (1) general administration; (2) education; and (3) national health services. Furthermore, there is a relatively modest (4) non-profit services component. These four parts of collective consumption are listed among the final demand components in the input-output table and in the national accounts. The multisectoral model is, of course, grounded in the sectoral accounts — the input-output table. It also uses the structure of the institutional accounts. A simple summation of sectoral variables fit right into the institutional accounts for 'production and generation of income' (also called the Distribution of GDP account). These accounts open the way to the 'distribution of income' account. Here, the government budget is modeled as far as the definition of its disposable income. The next step should provide the allocation of this disposable income and, in particular, the amount used for government expenditure (the 'use of income' account). In this way, government expenditure would become an endogenous variable.

Unfortunately, the last step is not yet feasible. It should not be difficult to find some rule to estimate and predict the nominal government expenditure; but to make it an endogenous variable we need to compute its deflator. At present, I have not yet found a good procedure to compute a reliable government expenditure deflator; I hope that when proper and useful information about the structure of such a deflator will be available, it will be possible to model it and to finally make government expenditure correctly endogenous.

Meanwhile, I assume that the stability and growth pact, which imposes budgetary discipline and improvement on the budgetary procedure, will force country governments to limit their expenditure to a growth rate approximately equal to or slightly lower that expected for GDP. Considering the amount of the Italian public debt, a low profile growth in government expenditure may be realistic. In the present scenario as well as in the other scenarios designed in the present study, the rate of growth of real government expenditure is assumed constant during the simulation period and equal to 2.2 per cent.

5.1.6 Savings rate

The question of how to split household disposable income between consumption and saving is a challenge for every macroeconomic model builder. The saving rate is the key to the problem, but the real problem is to model the saving rate. The saving rate may be simply considered a *great ratio* (Klein, 1982), or may be explained by means of simple or complicated econometric equations. Thirty years ago, Italy ranked among the economies with very high saving rates (20-25 per cent); later in the 1980s, the Italian savings rate began to shrink; in the 1990s, it fell below 10 per cent. In appears that the Italian economy has suffered a genetic mutation! But this structural change has been shared by many others economies. Recently, the Centro Europa Ricerche (CER, 2001) has reported that widespread public budget tightness in the United States and in the Euro area in the 1990s has been accompanied by a reduction of the private saving rate. This reduction has been even stronger in the United States than in Europe, a fact which is particularly salient in explaining the different economic performances of the two areas.

The United States economy abruptly decelerated in the second half of 2000, and many European economies are currently facing a declining GDP rate of growth. According to the CER analysis, if the government budget constraint is relaxed and government spending increased, a declining private savings rate can be expected, whereas if private demand is stimulated by credit expansion, we may assume a decreasing private savings rate.

In this uncertainty, it seemed best to leave the savings ratio as exogenous as a *behavioural proportion* (Almon, 1995). In this scenario, we will make it constant and equal to its average value in the 1990s. A reliable economic policy outlook could have given us the basis for varying the rate over the future period.

5.1.7 Population
The model includes a well-elaborated Demographic Projections Model (DPM). The role played by DPM is to produce projections of population by age and gender. As with any other demographic model, DPM is tailored to generate medium to long-run projections. Its performance has already been compared with the official demographic projections produced by the Italian National Statistical Institute (ISTAT), and we can say that it mimics perfectly those results. DPM relies upon scenarios concerning fertility rates by age, mortality rates from one age to the next, and net immigration by age and gender. For these variables, we have assumed the middle series assumptions expressed and used by ISTAT. As for the mortality rates, ISTAT has produced estimates with a parametric model: these results indicate that for the future decades the survival of Italians is going to increase along the present trend. The fertility rates for the future have been produced by assuming a further reduction of fertility by cohort as projected from the recent trend. Migrations have been studied with extrapolative models; the central hypothesis forecasts a constant influx of about 100,000 per year immigrants for the forecast horizon. Emigrants are supposed to decrease from 50000 per year to 43000 by 2020 and to remain constant thereafter. The hypothesis regarding net immigration is the most unpredictable of the components of population projections. The working assumption employed by ISTAT is based on past behaviour and cannot take into account other potential factors that may heavily influence future migrations. The hypotheses summarized above cover the period 1996-2020. For the remaining period to 2050 birth rates, death rates, and net migration rates are all assumed fixed at their 2020 values (see Bardazzi, 2001).

5.1.8 The horizon
INTIMO is a dynamic multisectoral econometric model. The other models in the system are also fully dynamic, as is the BTM. Hence, the evaluation of different scenarios has to be done year-by-year over a future period. In fact, different shocks may take place in different future years, and their effects need to be evaluated year-by-year over the period of the simulation.
In the present study, the simulation interval goes from 2001 to 2010.

5.2 The first scenario: Italy and CEEC5 countries *vis-à-vis*

The objective of the CEEC5 to attain full integration in the EU common market as rapidly as possible is taken as given. The recovery of their economies in terms of real GDP has been, on average, completed in the last decade. Indeed, their economies seem to have grown more rapidly than the present EU area, and we can assume that the higher growth in real GDP will continue in the near future. The more rapid growth of the applicant countries in terms of GDP growth should be considered an appropriate assumption; in fact, the EU enlargement clearly assumes that economic integration implies that the newcomers' economies will be hauled towards EU levels of prosperity level, which means a faster GDP rate of growth for over another decade.

In the baseline scenario, the CEEC5 GDP grows closely to the average EU GDP. In this first alternative scenario, we assume that CEEC5 GDP will grow by 2 per cent more rapidly annually than in the baseline. Since we do not have models of the CEEC, nothing can be said about the shifts in the composition of final demand. On the resource side, however, we assume that imports will grow as fast as GDP, so that the resource structure remains unchanged. (?? Nota)

Higher CEEC5 imports will turn out to be higher exports for the countries in the model system. This first alternative scenario, referred to as *vis-à-vis*, only considers the direct effect of the CEEC's increase in imports on the Italian economy in terms of Italian exports to these countries. In other words, given the increase in Italian exports due to the increase in CEEC5 demand, the Italian model is run alone. No account is taken of the effect of the enlargement on other economies.

5.3 The second scenario: EU and CEEC5 vis-à-vis

This scenario considers the impact of the increase in CEEC5 imports on the export structure of all models in the system. The model system, including BTM and country-specific models, is run. In this case, the effect of the growth in exports to the CEEC5 will effect every model in the system. Each country will receive the impact of the changes in the outputs, and therefore imports, of each other country. In this case, Italian exports will be determined by changes in demand for imports by all the countries in the system.

Basically in the first and second scenarios, the CEEC5 countries' growth scenario is the same. In the first scenario the Italian model runs alone (Italy and CEEC5 ignore the rest of the world), whereas in the second scenario it runs together with its most important trade partners.

5.4 The third scenario: specializing CEEC5

In the 1990s, frontrunner CEECs have overcome the deep crisis which occurred after the crash

of the socialist economies. During this decade, the trade between EU and CEEC5 increased as the 'catching up' of the applicants took off. By looking at the merchandise composition of trade flows, one notes that a structural change has occurred. When the transition positive trend began, the import-export composition was concentrated on a small group of 'chapters', and exports and imports grew strongly for the following:

    a) boilers, machinery and mechanical appliances;
    b) electrical machinery and equipment, television image and sound recorders and reproducers;
    c) vehicles other than railway or tramway rolling-stock;
    d) plastics and plastic products;
    e) iron or steel products.

Furthermore, the CEEC5 imports were characterized by remarkable flows of:

    a) furniture, medical and surgical furniture;
    b) articles of apparel and clothing accessories;
    c) wood and wood articles;
    d) mineral fuels, mineral oils and distilled products.

Exports were concentrated also on:

    a) paper and paperboard;
    b) pharmaceutical products;
    c) precision and medical instruments.

During the transition, these commodities have maintained and even increased their importance in trade with the EU countries, accounting for about 60 per cent of the total commodity trade.

The data reveals a concentration of import-export flows in a small bundle of commodities. Since this specialization occurred during a period of restructuring towards market-oriented economies, in this scenario we will assume that this specialization will persist in the near future, that is, over the time span of the present study.

Indeed, this specialization has been detected in a number of EU countries. In Germany import-export flows show the same — albeit less sharp — trend towards specialization; in France and Italy the trend of import-export flows are very similar; and in Spain import-export flows concentrate on a remarkably limited bundle of commodities. At this stage, we notice that the evolution of the composition of Italian import-export flows appears to rank around the European average. In any case, the observed structural change in the EU-CEEC trade flows merits closer investigation, with special attention being placed on all those studies where the sectoral composition of the economy is properly taken into account. This evidence builds on research carried out in 1997 by Baldone *et al.* who detected emerging patterns of trade specialization in EU-CEECs already in the early 1990s.

Indeed, this trend toward specialization may well be the result of the good use the applicants have made of their negotiations with the EU and programs such as Phare. Other advantages will come from their access to the Structural Funds; indirect advantages came from FDI flows which are expected to remain substantial as the CEEC5 policy will continue to aim at integration with the

western European countries. All of these elements generate investments. Many of the 'chapters' listed above relate to equipment or to its production. The concentration in trade may therefore be related to the accumulation process.

Hence, this scenario may be appropriate to investigate the effects of the CEEC5 import structural changes (not only) on the Italian economic structure.

5.5 Analysis of the three scenarios

The three scenarios are designed for an initial investigation of the effect of EU enlargement on Italy. The contrast between the first two scenarios highlights the relevance of the indirect effect of the EU enlargement on a single Western European country, namely Italy. The third scenario — to be compared with the second — allows us to see the significance, if any, of the change in the import structure of the CEEC5 (see Tables 15-18).

These scenarios may be all be viewed as standard Keynesian, demand-oriented experiments. In fact, an increase of CEEC5 imports actually induces an increase of Italian exports. Whatever the sectoral output increases, they are unlikely to have a significant impact on domestic prices because (a) the CEEC5 prices do not change in any scenario, and (b) the increase in final demand is modest and does not noticeably affect productivity, which is the main factor influencing price formation.

5.5.1 How to read the tables in this report

Each table of results has a heading such as the following:

```
                         Titles of Alternate Runs
          Line 1: Baseline
          Line 2: Italy and CEEC5 vis-a'-vis - difference from baseline
          Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from baseline
          Line 4: Specialising CEEC5 - difference from baseline


Alternatives are shown in deviations from base values.
```


Under the heading, the items on the left side correspond to variables contained in the model. Along the line of the each item there are the simulation values of the scenario named in Line 1; the values correspond to the years or periods listed at the top of the table. In the tables below, the figures along the first line for each item are the simulation values of the baseline scenario. The results for the other scenarios are given below, line-by-line. There are three ways in which these results can be shown:

(1) the *value* of the item in the alternative scenario;
(2) the *deviation* of the value from that in the first line;
(3) the *percentage deviation* of the value from that in the first line.

In the first of the following tables the heading cites:

```
Alternatives are shown in deviations from base values.
```

so we know that a particular table uses the second way of showing the results. So, when we see in this table the lines,

```
                 RATES OF GROWTH


         PRODUCT ACCOUNT

                        01-02   02-03   03-04   04-05   05-06   05-06   06-07   07-08   08-09   09-10


            RESOURCES
Gross Domestic Product   3.121   2.432   1.679   1.877   1.667   1.667   1.434   1.897   1.845   1.786

                         0.198   0.181   0.191   0.163   0.131   0.131   0.132   0.134   0.148   0.146
```

we know that from 2001 to 2002 the rate of growth of real GDP was equal to 3.121 in the 'baseline run'; in 'alternative 1', it was 0.198 higher between those two years.

5.5.2 What can we learn from the gravity effect in a multilateral context

As already noted, European enlargement affects each Member State directly and indirectly, irrespective of its geographical distance from any given CEEC. In other words, where the gravity model approach tends to weaken the bilateral link as the distance increases, we instead argue that the indirect effects may be even more important than the direct ones. San Marino may have no bilateral link with Hungary; but the linkages between Hungary and Germany and Germany and Italy may link up San Marino to Hungary in unexpected ways. This is an extreme case where only the indirect effect of the link matters.

Scenarios 1 and 2 have been designed to highlight the relative importance of the indirect impact with respect to a simple bilateral connection between Italy and the CEEC5.

5.5.3 Does the import structure of the CEEC5 matter for Italian economic performance?

This question may be answered by comparing scenarios 2 and 3. Indeed, scenario 3 has been designed to investigate the effect of the persistence of the trend in the composition of CEEC5 imports. Here, we are not repeating the arguments supporting this scenario, but commenting on the simulation results in order to select a scenario which will help us move towards ever more effective simulations for evaluating tariffs and non-tariffs scenarios.

5.5.4 The multilateral context and the structure of CEEC5 imports: the GDP profile

In the Table 14, the comparison of the three scenarios may be carried out by examining rates of growth. The GDP rates of growth in the second scenario always outstrip those of the first

scenario. The comment is easy and clear: the multilateral context doubles the European enlargement impact on the Italian economy (at least, in terms of GDP growth).

From the comparison of the second and third scenarios, we can see that the Italian economy benefits from the specialization of the CEEC5.

The GDP growth rates for the three scenarios are plotted in the following two figures. The increase in GDP is modest but more relevant than expected. In the scenario for 'Italy and the CEEC5 vis-a-vis', the increase in GDP is very modest; and falls from 0.2 to 0.13 along the simulation interval. In the second scenario, the increase in GDP is roughly twice the previous one at the beginning of the simulation interval; the increase in GDP develops smoothly up to a maximum of a factor of about 2.5 at the end of the period. In the third scenario, where the CEEC5 are assumed to increase their imports only for those commodities with the largest shares and covering about 60 per cent of total imports, the increase in GDP is close to 0.5.

In the product account, exports and imports reveal the highest difference with respect to the baseline scenario. In particular, taking the third scenario, there is a divergence of over 1 per cent from the baseline for the increase in exports. The increase in imports is much lower, at about 0.6 per cent. The trade balance produces an increase in GDP; consequently, the accelerator pushes investments up and the increase in disposable household income —   which implies an increase in household consumption — adds another stimulus to the GDP growth.

Tables 15-18 provide detailed information on the sectoral data on which Table 14 Product account comparisons are based. Table 15 contains the key data of a multisectoral macroeconomic model (sectoral outputs) and highlights the analytical properties of a model must have in order to evaluate the sectoral 'specialization' under investigation (in the present case, the concentration of the CEEC5 imports on a limited bundle of commodities). It is clear that the commodities involved in the specialization process perceive the highest multiplicative effect, as in the case of the 'motor vehicles' sector; commodities with relative modest share in the import-export trade may even suffer a serious contraction of the growth path as in the case of the sector 'stone, clay and glass products'.

Tables 16 and 17 contain the sectoral data relative to foreign trade. Both total trade flows may be related to imports and import in Table 14. The figures differ slightly insofar as the total in these two tables concern commodities, while in the Table 14 — Product account — the flows consider both commodities and services. The export flows clearly reflect the scenarios assumptions. The sectors/products 'electrical goods', 'paper and printing products' and 'motor vehicles' reveal the implication of the specialization scenario. Products which are not in the bundle of specialized goods such as 'chemical products' may even perform worse than in the 'Italy versus CEEC5' scenario. Table 17 reveals the corresponding impact on imports as modeled in INTIMO. Tables 16 and 17 and Table 18 on 'household consumption' present the sectoral data on which Table 14 is based; since the INTIMO model is strictly based on a bottom-up approach, the sectoral data are particularly useful for a better understanding of the macro aggregate, the working of the model

and the plausibility of the modeled functioning of the true economy.

5.6 First selection

Given the baseline, the first selection concerns which scenario will be the benchmark for the subsequent step. We have seen that the differences in the scenarios have a clear impact on the results for the simulation. In particular, the first scenario implies an increase of GDP rates of growth of about .15 per cent for the entire the simulation period. The second scenario, which also takes into account the indirect effects of the EU enlargement, generates an increase of GDP close to 0.4 per cent for the period 2000-2010. The third scenario pushes up that increase by another 0.10 per cent.

Clearly, the first scenario demonstrates that a comparison of Italy versus the CEEC5 is not adequate. The second and the third scenarios provide evidence of the relevance of the detected trade specialization between (not only) Italy and the most important applicants. At the end of the first round of simulation, we then start to investigate the effect of other factors relative to the third scenario (and, of course, to the baseline).

Table 14 - Product Account

Alternatives are shown in deviations from base values.

RATES OF GROWTH

	01-02	02-03	03-04	04-05	05-06	05-06	06-07	07-08	08-09	09-10
RESOURCES										
Gross Domestic Product	3.12	2.43	1.68	1.88	1.67	1.67	1.43	1.90	1.85	1.79
	0.20	0.18	0.19	0.16	0.13	0.13	0.13	0.13	0.15	0.15
	0.39	0.34	0.37	0.39	0.35	0.35	0.38	0.36	0.38	0.36
	0.45	0.39	0.43	0.48	0.47	0.47	0.51	0.49	0.51	0.42
Imports	6.29	6.29	4.69	4.95	4.18	4.18	3.66	4.64	4.52	4.48
	0.28	0.25	0.29	0.22	0.15	0.15	0.14	0.14	0.17	0.17
	0.54	0.46	0.52	0.50	0.40	0.40	0.45	0.42	0.41	0.41
	0.63	0.56	0.63	0.63	0.57	0.57	0.64	0.62	0.61	0.50
USES										
Consumption	1.74	1.81	1.63	1.63	1.64	1.64	1.55	1.71	1.76	1.74
	0.08	0.08	0.08	0.07	0.05	0.05	0.05	0.04	0.05	0.06
	0.15	0.14	0.14	0.15	0.13	0.13	0.14	0.12	0.12	0.11
	0.17	0.17	0.17	0.18	0.18	0.18	0.20	0.18	0.18	0.14
Household consumption	1.61	1.70	1.47	1.47	1.48	1.48	1.37	1.58	1.64	1.61
	0.10	0.10	0.10	0.09	0.06	0.06	0.06	0.06	0.07	0.07
	0.19	0.17	0.18	0.19	0.17	0.17	0.18	0.15	0.16	0.14
	0.22	0.21	0.21	0.23	0.24	0.24	0.25	0.23	0.23	0.18
Government expenditure	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Private collective consumption	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Fixed capital formation	7.90	9.08	4.06	4.75	2.87	2.87	1.26	3.92	3.02	2.54
	0.37	0.25	0.32	0.13	-0.08	-0.08	-0.05	-0.08	-0.04	0.04
	0.70	0.52	0.57	0.35	0.00	0.00	0.05	0.07	-0.08	0.12
	0.78	0.61	0.67	0.46	0.08	0.08	0.17	0.18	0.02	0.11
Changes in inventories	7.52	6.04	4.37	4.79	3.79	3.79	3.18	4.18	4.16	4.21
	0.50	0.44	0.46	0.37	0.30	0.30	0.30	0.29	0.31	0.29
	0.96	0.78	0.85	0.88	0.77	0.77	0.84	0.73	0.77	0.69
	1.05	0.87	0.95	1.02	0.97	0.97	1.07	0.97	0.97	0.67
Exports	5.93	2.81	2.83	3.19	3.21	3.21	3.43	3.47	3.75	3.94
	0.41	0.40	0.42	0.42	0.44	0.44	0.42	0.44	0.45	0.37
	0.84	0.74	0.83	0.99	1.05	1.05	1.11	1.01	1.12	0.94
	0.98	0.86	0.99	1.23	1.37	1.37	1.42	1.36	1.44	1.10

Figure 6

GDP

Rates of Growth

Figure 7

GDP

Rates of growth differences from the Baseline

Table 15 - Total Output, Rates of Growth

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                    Titles of Alternate Runs
          Line 1: Baseline
          Line 2: Italy and CEEC5 vis-a'-vis - difference from base
          Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
          Line 4: Specialising CEEC5 - difference from base


Alternatives are shown in deviations from base values.
```

	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
TOTAL	2.40	1.60	1.83	1.55	1.28	1.79	1.74	1.69
	0.21	0.22	0.19	0.15	0.16	0.16	0.18	0.17
	0.39	0.43	0.45	0.41	0.45	0.42	0.45	0.43
	0.45	0.50	0.56	0.55	0.60	0.58	0.60	0.50
1 Agriculture,Forestry,Fishery	-0.24	-0.38	-0.48	-0.41	-0.41	-0.02	0.23	0.39
	0.18	0.18	0.16	0.15	0.15	0.15	0.17	0.16
	0.33	0.38	0.40	0.35	0.36	0.33	0.39	0.36
	0.28	0.32	0.34	0.32	0.33	0.30	0.33	0.21
4 Coal,Oil,Petroleum Ref.Products	3.68	1.85	1.46	3.17	4.37	4.95	5.05	4.74
	0.17	0.20	0.21	0.20	0.16	0.13	0.12	0.12
	0.28	0.40	0.56	0.60	0.53	0.44	0.44	0.47
	0.14	0.35	0.68	0.74	0.49	0.32	0.26	0.33
5 Electricity,Gas,Water	1.89	1.36	1.44	1.13	0.93	1.33	1.32	1.32
	0.19	0.20	0.17	0.14	0.15	0.15	0.17	0.16
	0.36	0.38	0.41	0.37	0.41	0.38	0.42	0.39
	0.41	0.43	0.47	0.47	0.53	0.51	0.54	0.43
MANUFACTURING	2.16	1.34	1.64	1.08	0.81	1.36	1.41	1.50
	0.30	0.32	0.28	0.26	0.26	0.27	0.30	0.28
	0.57	0.64	0.69	0.65	0.72	0.67	0.74	0.67
	0.68	0.77	0.84	0.86	0.96	0.95	1.01	0.81
7 Primary metals	3.16	2.10	2.53	1.83	1.51	2.19	2.13	2.13
	0.34	0.38	0.32	0.29	0.31	0.31	0.34	0.33
	0.70	0.79	0.81	0.74	0.82	0.76	0.82	0.75
	0.82	0.93	0.99	0.95	1.08	1.04	1.09	0.91
8 Stone,Clay & Glass products	3.66	2.16	2.76	2.17	1.44	2.22	1.68	1.44
	0.21	0.22	0.17	0.10	0.13	0.12	0.14	0.16
	0.40	0.43	0.42	0.29	0.38	0.36	0.35	0.44
	0.30	0.31	0.33	0.21	0.29	0.27	0.23	0.16
9 Chemical Products	0.71	0.51	0.65	0.38	0.22	0.44	0.54	0.49
	0.26	0.27	0.25	0.24	0.25	0.25	0.28	0.24
	0.46	0.51	0.55	0.52	0.57	0.52	0.63	0.55
	0.38	0.41	0.46	0.46	0.51	0.48	0.54	0.29
10 Metal Products	3.87	1.67	2.08	1.04	0.55	1.58	1.31	1.33
	0.35	0.41	0.33	0.25	0.28	0.28	0.32	0.32
	0.69	0.81	0.79	0.70	0.79	0.73	0.75	0.72
	0.94	1.10	1.13	1.10	1.25	1.23	1.26	1.09
11 Agric. & Indus. Machinery	3.74	1.42	2.23	0.93	0.62	1.61	1.64	2.14
	0.39	0.47	0.37	0.30	0.30	0.32	0.35	0.32
	0.97	1.13	1.10	1.08	1.20	1.15	1.13	0.80
	1.48	1.75	1.81	1.92	2.14	2.18	2.28	2.21
12 Office,Precision,Opt.Instruments	2.00	1.42	1.77	1.48	1.51	1.34	1.66	1.81
	0.42	0.46	0.46	0.46	0.50	0.52	0.55	0.51
	0.63	0.71	0.74	0.75	0.84	0.80	0.91	0.83
	0.66	0.71	0.72	0.73	0.81	0.77	0.82	0.35
13 Electrical Goods	2.66	1.42	1.56	0.75	0.45	0.84	0.71	0.75
	0.37	0.39	0.35	0.33	0.30	0.33	0.32	0.29
	0.66	0.73	0.78	0.75	0.84	0.74	0.81	0.78
	1.15	1.27	1.39	1.45	1.62	1.54	1.59	1.28
14 Motor Vehicles	0.10	0.55	0.17	-0.54	-1.25	-0.65	-0.69	-0.73
	0.43	0.46	0.44	0.49	0.49	0.57	0.67	0.61
	0.81	0.83	1.04	1.07	1.21	1.18	1.28	1.35
	1.34	1.38	1.67	1.89	2.14	2.17	2.39	2.24
15 Other Transport Equipment	3.52	3.92	4.52	4.13	3.96	3.98	4.46	5.02
	0.25	0.23	0.22	0.20	0.18	0.20	0.19	0.18
	0.51	0.47	0.55	0.59	0.60	0.59	0.67	0.60
	0.39	0.35	0.43	0.51	0.55	0.58	0.67	0.21

Titles of Alternate Runs
Line 1: Baseline
Line 2: Italy and CEEC5 vis-a'-vis - difference from base
Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
Line 4: Specialising CEEC5 - difference from base

Alternatives are shown in deviations from base values.

	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
16 Meat & Preserved Meat	-0.41	-0.51	-0.46	-0.36	-0.41	-0.04	0.18	0.39
	0.15	0.15	0.14	0.12	0.11	0.11	0.12	0.11
	0.25	0.29	0.33	0.32	0.33	0.30	0.34	0.33
	0.22	0.25	0.29	0.30	0.31	0.28	0.29	0.07
17 Milk & Dairy Products	0.81	0.63	0.66	0.76	0.67	0.92	1.02	1.10
	0.14	0.14	0.13	0.11	0.11	0.11	0.12	0.12
	0.25	0.28	0.32	0.30	0.32	0.30	0.32	0.30
	0.24	0.26	0.30	0.32	0.34	0.32	0.32	0.25
18 Other Foods	0.70	0.61	0.60	0.68	0.62	0.92	1.07	1.08
	0.16	0.17	0.16	0.15	0.14	0.15	0.17	0.17
	0.25	0.30	0.34	0.33	0.35	0.32	0.37	0.32
	0.21	0.24	0.28	0.30	0.31	0.27	0.28	0.15
19 Alcohol & Non Alcoh. Beverages	1.59	1.30	1.11	1.20	1.11	1.43	1.50	1.53
	0.16	0.16	0.14	0.12	0.12	0.12	0.14	0.13
	0.26	0.28	0.31	0.29	0.30	0.26	0.29	0.25
	0.26	0.27	0.30	0.31	0.33	0.29	0.30	0.21
20 Tobacco	-2.23	-2.67	-2.97	-3.21	-3.53	-3.48	-3.61	-3.84
	0.11	0.11	0.09	0.07	0.06	0.06	0.07	0.08
	0.19	0.20	0.22	0.20	0.20	0.18	0.20	0.18
	0.24	0.26	0.28	0.29	0.31	0.29	0.30	0.27
21 Textile & Clothing	0.78	0.85	0.73	0.33	0.26	0.67	1.05	0.91
	0.28	0.29	0.28	0.28	0.28	0.28	0.33	0.27
	0.46	0.49	0.54	0.55	0.61	0.54	0.74	0.70
	0.15	0.16	0.19	0.21	0.26	0.20	0.32	0.14
22 Leather, Shoes & Footwear	-0.36	0.12	0.34	0.47	0.60	1.56	2.36	3.36
	0.24	0.23	0.21	0.22	0.18	0.16	0.16	0.10
	0.41	0.52	0.63	0.68	0.75	0.76	0.94	1.04
	0.17	0.24	0.31	0.34	0.38	0.38	0.49	-0.81
23 Timber, Wooden Product & Furniture	3.46	2.26	2.73	2.00	1.39	1.84	1.70	1.52
	0.25	0.27	0.23	0.20	0.22	0.23	0.26	0.26
	0.31	0.43	0.52	0.44	0.51	0.43	0.53	0.48
	0.19	0.30	0.40	0.34	0.39	0.32	0.30	0.11
24 Paper & Printing Products	1.52	1.14	1.30	1.01	0.91	1.19	1.36	1.43
	0.25	0.26	0.24	0.24	0.25	0.26	0.29	0.28
	0.50	0.57	0.62	0.60	0.64	0.61	0.72	0.74
	0.64	0.74	0.81	0.84	0.91	0.93	1.04	1.03
25 Plastic Products & Rubber	1.98	1.53	1.81	1.46	1.23	1.34	1.37	1.33
	0.36	0.37	0.37	0.36	0.38	0.39	0.43	0.39
	0.65	0.70	0.77	0.74	0.81	0.74	0.89	0.79
	0.82	0.88	0.98	1.01	1.08	1.03	1.14	0.89
26 Other Manufacturing Industry	2.73	3.64	4.46	4.83	5.27	5.51	5.94	6.43
	0.19	0.17	0.16	0.15	0.13	0.11	0.09	0.06
	0.25	0.28	0.39	0.34	0.31	0.16	0.24	0.15
	0.14	0.18	0.30	0.32	0.29	0.20	0.23	-0.05
27 Building & Construction	6.26	3.59	4.76	4.05	2.34	3.68	2.57	1.64
	0.07	0.07	0.00	-0.11	-0.06	-0.07	-0.07	-0.01
	0.16	0.11	0.03	-0.16	-0.10	-0.05	-0.18	-0.04
	0.19	0.11	0.07	-0.16	-0.09	-0.05	-0.19	-0.06
SERVICES	2.09	1.53	1.65	1.46	1.24	1.61	1.60	1.57
	0.17	0.18	0.15	0.12	0.12	0.12	0.14	0.14
	0.31	0.33	0.36	0.32	0.35	0.32	0.34	0.32
	0.37	0.40	0.44	0.44	0.48	0.47	0.48	0.39
28 Recovery & Repair Services	0.15	-0.62	-0.67	-1.14	-1.56	-1.35	-1.47	-1.66
	0.22	0.23	0.21	0.18	0.18	0.19	0.21	0.20
	0.41	0.45	0.49	0.46	0.50	0.47	0.51	0.48
	0.49	0.53	0.60	0.61	0.67	0.66	0.69	0.58
29 Wholesale & Retail Trade	1.67	0.98	1.17	0.92	0.67	1.12	1.11	1.07
	0.18	0.20	0.17	0.14	0.14	0.14	0.16	0.16
	0.34	0.37	0.40	0.36	0.40	0.37	0.39	0.37
	0.40	0.45	0.49	0.49	0.54	0.53	0.54	0.45

Line 1: Baseline
Line 2: Italy and CEEC5 vis-a'-vis - difference from base
Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
Line 4: Specialising CEEC5 - difference from base

Alternatives are shown in deviations from base values.

	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
30 Hotels & Restaurants	2.28	2.02	1.90	2.04	1.84	2.13	2.15	2.14
	0.12	0.12	0.10	0.07	0.07	0.07	0.08	0.08
	0.20	0.21	0.22	0.20	0.21	0.18	0.19	0.16
	0.25	0.25	0.27	0.27	0.29	0.27	0.27	0.20
31 Inland Transport Services	2.83	1.94	2.23	1.90	1.60	2.16	2.09	2.04
	0.22	0.23	0.20	0.16	0.16	0.17	0.18	0.18
	0.41	0.45	0.48	0.43	0.47	0.44	0.46	0.44
	0.49	0.54	0.60	0.58	0.64	0.62	0.64	0.53
32 Sea & Air Transport Services	0.71	0.54	0.64	0.59	0.57	0.71	0.76	0.80
	0.10	0.11	0.11	0.10	0.10	0.11	0.12	0.11
	0.19	0.22	0.25	0.26	0.28	0.27	0.31	0.28
	0.23	0.26	0.32	0.34	0.38	0.38	0.41	0.35
33 Auxiliary Transport Services	2.18	1.54	1.74	1.50	1.29	1.70	1.69	1.67
	0.18	0.19	0.17	0.14	0.14	0.15	0.16	0.16
	0.34	0.38	0.41	0.37	0.41	0.38	0.41	0.38
	0.42	0.47	0.52	0.52	0.57	0.56	0.58	0.49
34 Communication	3.26	2.79	2.85	2.68	2.51	2.78	2.78	2.74
	0.16	0.16	0.14	0.11	0.11	0.11	0.13	0.12
	0.28	0.30	0.33	0.30	0.32	0.29	0.31	0.28
	0.34	0.37	0.40	0.41	0.45	0.43	0.44	0.35
35 Banking & Insurance	2.37	1.80	1.99	1.79	1.60	1.97	1.97	1.96
	0.19	0.20	0.18	0.16	0.16	0.16	0.18	0.17
	0.36	0.40	0.44	0.41	0.45	0.42	0.45	0.42
	0.42	0.47	0.54	0.54	0.60	0.58	0.61	0.50
36 Other Private Services	2.29	1.46	1.73	1.37	1.06	1.56	1.49	1.45
	0.22	0.23	0.20	0.17	0.17	0.18	0.19	0.19
	0.41	0.46	0.48	0.44	0.49	0.45	0.49	0.46
	0.49	0.55	0.60	0.60	0.66	0.65	0.67	0.56
37 Real Estate	2.62	2.29	2.27	2.17	2.02	2.25	2.25	2.23
	0.12	0.12	0.10	0.07	0.07	0.07	0.08	0.08
	0.21	0.21	0.22	0.20	0.21	0.19	0.20	0.18
	0.25	0.26	0.27	0.28	0.30	0.28	0.29	0.23
38 Private Education Services	2.06	1.68	1.77	1.60	1.52	1.77	1.84	1.87
	0.18	0.19	0.17	0.14	0.14	0.14	0.16	0.15
	0.33	0.35	0.38	0.35	0.38	0.34	0.38	0.34
	0.41	0.43	0.48	0.49	0.53	0.51	0.53	0.41
39 Private Health Services	3.02	2.72	2.68	2.49	2.28	2.40	2.40	2.36
	0.10	0.10	0.09	0.06	0.06	0.06	0.06	0.07
	0.19	0.19	0.19	0.17	0.18	0.16	0.16	0.15
	0.23	0.22	0.24	0.24	0.25	0.24	0.24	0.20
40 Recreation & Culture	1.77	1.51	1.53	1.53	1.44	1.70	1.73	1.75
	0.13	0.13	0.12	0.09	0.09	0.09	0.10	0.10
	0.23	0.24	0.26	0.24	0.25	0.23	0.24	0.22
	0.28	0.29	0.32	0.33	0.35	0.34	0.35	0.28
SERVICES NON-MARKET	2.12	2.11	2.11	2.11	2.11	2.12	2.12	2.11
	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
41 General Public Services	1.84	1.84	2.04	2.08	2.21	2.31	2.48	2.62
	0.23	0.24	0.25	0.26	0.25	0.27	0.28	0.24
	0.43	0.48	0.58	0.61	0.66	0.62	0.70	0.61
	0.49	0.57	0.71	0.80	0.86	0.84	0.91	0.73
42 Public Education	2.06	1.84	1.84	1.84	1.83	2.01	2.08	2.06
	0.10	0.10	0.09	0.06	0.06	0.06	0.07	0.07
	0.18	0.18	0.19	0.17	0.18	0.15	0.16	0.14
	0.22	0.22	0.23	0.23	0.25	0.23	0.23	0.18
43 Public Health Services	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44 Non-profit Institutions	1.28	1.08	0.98	1.06	0.87	1.05	1.08	0.96
	0.10	0.10	0.09	0.06	0.06	0.06	0.07	0.07
	0.17	0.18	0.19	0.17	0.18	0.15	0.16	0.14
	0.21	0.21	0.22	0.23	0.25	0.23	0.23	0.18

Table 16 - Exports, Rates of Growth

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                        Titles of Alternate Runs
            Line 1: Baseline
            Line 2: Italy and CEEC5 vis-a'-vis - difference from base
            Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
            Line 4: Specialising CEEC5 - difference from base

Alternatives are shown in deviations from base values.
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	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
TOTAL	5.76	2.77	2.79	3.14	3.16	3.37	3.41	3.68	3.87
	0.38	0.39	0.40	0.41	0.43	0.41	0.42	0.43	0.36
	0.79	0.72	0.80	0.96	1.01	1.07	0.97	1.07	0.90
	0.92	0.83	0.96	1.18	1.32	1.37	1.31	1.38	1.05
1 Agriculture,Forestry,Fishery	3.68	1.56	2.17	2.52	3.10	3.52	4.39	5.13	5.49
	0.42	0.42	0.40	0.36	0.38	0.35	0.33	0.33	0.25
	0.77	0.62	0.64	0.73	0.66	0.65	0.48	0.54	0.31
	0.30	0.15	0.17	0.29	0.29	0.24	0.12	0.11	-0.07
4 Oil,Petroleum Refining Products	29.61	6.72	1.32	-0.26	6.82	11.31	11.72	11.49	10.10
	0.27	0.16	0.28	0.39	0.39	0.18	0.07	0.03	0.03
	0.80	0.18	0.63	1.22	1.29	0.77	0.49	0.41	0.56
	0.77	-0.53	0.33	1.52	1.53	0.35	-0.14	-0.27	0.18
5 Electricity,Gas,Water	22.44	20.27	22.21	14.54	11.26	10.91	13.96	14.48	13.43
	0.04	0.05	0.05	-0.01	0.03	0.00	0.01	-0.02	-0.05
	0.86	1.63	1.81	1.33	1.17	1.46	1.60	1.25	0.66
	1.05	1.84	2.04	1.62	1.39	1.73	1.83	1.34	0.66
7 Primary metals	3.62	1.71	2.44	2.91	2.94	3.14	3.03	3.37	3.08
	0.47	0.50	0.53	0.53	0.57	0.61	0.63	0.67	0.62
	0.91	0.89	0.96	1.07	1.11	1.24	1.17	1.35	1.23
	0.52	0.48	0.50	0.64	0.65	0.87	0.73	0.84	0.52
8 Stone,Clay & Glass products	3.18	1.91	1.50	1.96	1.88	2.35	2.19	2.25	2.85
	0.34	0.36	0.37	0.37	0.38	0.38	0.37	0.39	0.35
	0.69	0.65	0.74	0.88	0.85	0.95	0.90	0.97	1.00
	0.31	0.20	0.26	0.39	0.43	0.49	0.42	0.46	0.15
9 Chemical Products	2.60	0.31	1.14	1.43	1.16	1.25	1.24	1.62	1.62
	0.46	0.49	0.49	0.50	0.51	0.53	0.54	0.60	0.46
	0.81	0.83	0.91	1.00	0.99	1.10	0.99	1.27	1.00
	0.28	0.25	0.29	0.36	0.40	0.47	0.39	0.57	-0.12
10 Metal Products	5.06	3.35	2.81	3.46	3.16	3.25	2.92	2.72	2.70
	0.44	0.51	0.51	0.55	0.57	0.61	0.65	0.69	0.63
	0.83	0.83	1.00	1.14	1.21	1.30	1.25	1.36	1.29
	1.12	1.16	1.37	1.59	1.76	1.88	1.90	1.99	1.44
11 Agric. & Indus. Machinery	6.21	3.33	3.38	4.27	3.43	3.01	3.05	3.11	3.68
	0.34	0.35	0.37	0.35	0.36	0.37	0.42	0.41	0.36
	0.88	0.97	1.02	1.11	1.23	1.36	1.32	1.32	0.83
	1.47	1.63	1.74	1.93	2.18	2.41	2.50	2.62	2.51
12 Office,Precision,Opt.Instruments	6.82	3.59	3.42	3.60	3.43	3.61	3.02	3.40	3.46
	0.44	0.47	0.50	0.51	0.53	0.54	0.55	0.56	0.50
	0.74	0.68	0.75	0.81	0.83	0.89	0.83	0.95	0.82
	0.76	0.68	0.73	0.77	0.80	0.84	0.78	0.84	0.29
13 Electrical Goods	4.33	2.72	2.57	2.86	2.47	2.68	2.12	2.10	2.20
	0.44	0.46	0.48	0.47	0.52	0.45	0.51	0.47	0.39
	0.87	0.77	0.87	1.02	1.07	1.17	1.02	1.16	1.06
	1.60	1.56	1.72	1.96	2.12	2.25	2.16	2.22	1.69
14 Motor Vehicles	5.06	0.83	2.25	2.08	1.93	1.27	1.33	1.32	1.12
	0.50	0.53	0.54	0.56	0.65	0.63	0.73	0.82	0.72
	1.12	0.98	0.94	1.29	1.37	1.50	1.43	1.53	1.56
	1.86	1.71	1.69	2.12	2.38	2.59	2.60	2.81	2.56
15 Other Transport Equipment	6.97	5.13	6.09	7.58	7.48	7.53	6.90	7.27	7.91
	0.29	0.28	0.28	0.25	0.27	0.23	0.27	0.25	0.20
	0.57	0.58	0.58	0.69	0.76	0.76	0.73	0.84	0.69
	0.27	0.32	0.37	0.49	0.63	0.68	0.69	0.84	0.17
16 Meat & Preserved Meat	2.80	3.84	4.38	4.73	4.89	4.82	4.83	5.09	5.36
	0.45	0.43	0.40	0.36	0.34	0.33	0.28	0.26	0.21
	0.64	0.54	0.63	0.80	0.80	0.77	0.64	0.63	0.51
	0.18	0.08	0.19	0.37	0.47	0.44	0.32	0.30	0.18

(Continued ...)

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                             Titles of Alternate Runs
                Line 1: Baseline
                Line 2: Italy and CEEC5 vis-a'-vis - difference from base
                Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
                Line 4: Specialising CEEC5 - difference from base


Alternatives are shown in deviations from base values.
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	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
17 Milk & Dairy Products	3.15	4.26	4.61	4.75	4.84	4.62	4.44	4.42	4.89
	0.44	0.42	0.41	0.39	0.40	0.38	0.38	0.41	0.35
	0.80	0.80	0.98	1.23	1.18	1.19	1.22	1.24	1.15
	0.38	0.38	0.55	0.78	0.83	0.83	0.81	0.85	0.74
18 Other Foods	2.88	2.07	2.74	2.80	3.00	3.09	3.42	3.85	3.90
	0.39	0.40	0.41	0.41	0.47	0.44	0.47	0.51	0.44
	0.65	0.51	0.69	0.89	0.92	0.95	0.89	1.01	0.84
	0.25	0.07	0.24	0.39	0.48	0.46	0.34	0.36	0.01
19 Alcohol & Non Alcoh. Beverages	2.00	1.09	0.95	0.67	0.96	1.40	1.81	2.15	2.55
	0.41	0.42	0.45	0.47	0.49	0.54	0.55	0.62	0.46
	0.66	0.63	0.69	0.86	0.91	1.03	0.85	1.09	0.88
	0.30	0.24	0.27	0.41	0.48	0.51	0.39	0.54	0.28
20 Tobacco	15.93	5.16	4.65	3.53	2.62	1.80	1.67	1.43	2.23
	0.34	0.35	0.35	0.34	0.32	0.32	0.30	0.32	0.26
	0.60	0.73	0.81	1.15	1.23	1.31	1.21	1.29	1.10
	0.35	0.55	0.62	0.96	1.11	1.19	1.16	1.29	1.09
21 Textile & Clothing	3.89	1.67	2.15	1.94	1.25	1.22	1.72	2.35	2.16
	0.42	0.43	0.43	0.43	0.45	0.44	0.44	0.49	0.38
	0.72	0.66	0.70	0.78	0.82	0.92	0.81	1.11	1.02
	0.18	0.04	0.04	0.08	0.13	0.22	0.12	0.34	0.06
22 Leather, Shoes & Footwear	3.31	1.54	2.48	2.78	3.00	3.24	4.46	5.41	6.62
	0.31	0.30	0.28	0.25	0.26	0.20	0.16	0.16	0.06
	0.50	0.51	0.65	0.77	0.85	0.92	0.90	1.11	1.19
	0.13	0.11	0.22	0.30	0.34	0.39	0.40	0.54	-1.19
23 Timber, Wooden Product & Furniture	3.67	3.96	3.08	3.78	3.45	3.40	2.86	3.24	3.10
	0.35	0.36	0.37	0.37	0.41	0.41	0.46	0.47	0.44
	0.56	0.27	0.44	0.73	0.80	0.85	0.71	0.90	0.67
	0.22	-0.11	0.06	0.37	0.48	0.48	0.31	0.29	-0.09
24 Paper & Printing Products	5.44	3.05	3.16	3.36	2.96	3.11	3.10	3.66	3.86
	0.42	0.44	0.46	0.45	0.50	0.50	0.53	0.57	0.52
	0.84	0.96	1.11	1.17	1.18	1.20	1.16	1.38	1.43
	1.14	1.30	1.50	1.62	1.70	1.75	1.83	2.03	2.10
25 Plastic Products & Rubber	6.12	3.33	3.41	3.81	3.71	3.66	3.28	3.38	3.23
	0.47	0.50	0.51	0.52	0.54	0.55	0.56	0.60	0.53
	0.89	0.85	0.87	0.98	0.95	1.03	0.91	1.14	0.96
	1.08	1.05	1.09	1.21	1.28	1.29	1.20	1.35	1.03
26 Other Manufacturing Industry	6.64	4.70	6.19	7.06	7.49	8.07	8.13	8.57	9.02
	0.26	0.22	0.19	0.17	0.17	0.13	0.11	0.08	0.03
	0.35	0.24	0.24	0.39	0.36	0.32	0.13	0.22	0.08
	0.09	0.04	0.07	0.23	0.31	0.27	0.17	0.21	-0.12

Table 17 - Imports, Rates of Growth
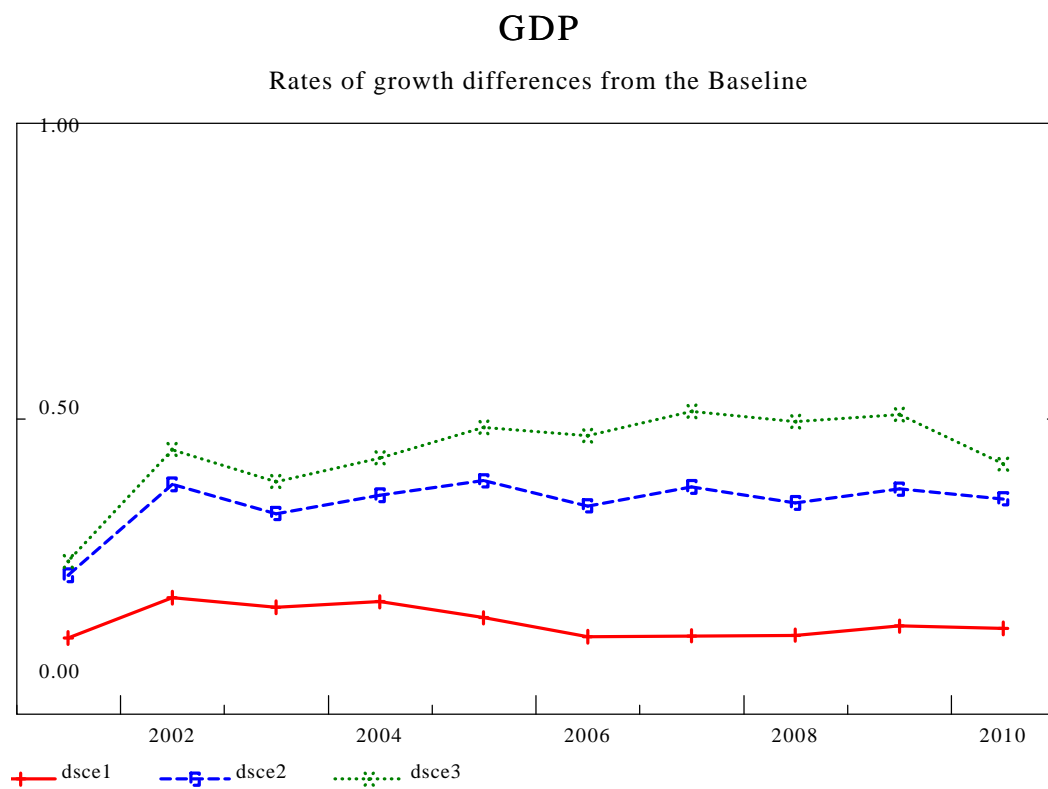
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                              Titles of Alternate Runs
                Line 1: Baseline
                Line 2: Italy and CEEC5 vis-a'-vis - difference from base
                Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
                Line 4: Specialising CEEC5 - difference from base


Alternatives are shown in deviations from base values.
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	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
TOTAL	6.10	6.10	4.58	4.83	4.09	3.60	4.54	4.42	4.39
	0.26	0.24	0.28	0.21	0.14	0.13	0.13	0.16	0.16
	0.51	0.43	0.49	0.48	0.39	0.43	0.40	0.39	0.39
	0.59	0.52	0.60	0.60	0.54	0.62	0.59	0.58	0.47
1 Agriculture,Forestry,Fishery	2.40	2.82	2.66	2.91	2.92	2.67	2.90	2.92	2.82
	0.15	0.15	0.15	0.14	0.12	0.12	0.12	0.13	0.13
	0.25	0.16	0.14	0.23	0.29	0.31	0.26	0.27	0.21
	0.22	0.12	0.09	0.19	0.26	0.29	0.23	0.21	0.08
4 Oil,Petroleum Refining Products	2.59	1.55	0.94	1.13	1.18	1.09	1.50	1.57	1.51
	0.19	0.17	0.19	0.17	0.14	0.14	0.13	0.15	0.14
	0.39	0.32	0.36	0.40	0.38	0.41	0.38	0.40	0.40
	0.44	0.33	0.40	0.47	0.46	0.48	0.45	0.45	0.40
5 Electricity,Gas,Water	5.80	5.42	4.88	4.97	4.67	4.46	4.85	4.84	4.84
	0.20	0.19	0.20	0.17	0.14	0.15	0.15	0.17	0.16
	0.38	0.35	0.38	0.40	0.37	0.41	0.37	0.41	0.38
	0.42	0.41	0.43	0.47	0.47	0.53	0.51	0.53	0.43
7 Primary metals	4.20	3.47	1.99	2.68	2.11	1.70	2.44	2.34	2.41
	0.34	0.31	0.35	0.29	0.24	0.24	0.25	0.27	0.26
	0.67	0.57	0.61	0.63	0.59	0.69	0.62	0.64	0.56
	0.84	0.76	0.83	0.89	0.91	1.05	1.01	1.03	0.86
8 Stone,Clay & Glass products	7.32	7.51	5.72	6.64	5.97	4.85	5.93	5.29	4.82
	0.21	0.16	0.17	0.11	0.02	0.06	0.04	0.05	0.09
	0.39	0.26	0.24	0.22	0.10	0.18	0.16	0.11	0.20
	0.40	0.26	0.23	0.23	0.11	0.21	0.19	0.11	0.13
9 Chemical Products	4.40	3.70	3.29	3.44	3.22	3.03	3.31	3.35	3.27
	0.22	0.21	0.22	0.20	0.18	0.19	0.19	0.21	0.19
	0.41	0.38	0.41	0.44	0.41	0.45	0.41	0.48	0.43
	0.42	0.38	0.41	0.46	0.46	0.51	0.48	0.52	0.38
10 Metal Products	10.54	10.05	7.43	7.80	6.58	5.90	7.28	6.98	6.99
	0.37	0.31	0.38	0.27	0.17	0.17	0.17	0.20	0.22
	0.74	0.65	0.75	0.69	0.55	0.63	0.57	0.55	0.52
	0.95	0.87	1.01	0.99	0.91	1.05	1.01	1.02	0.94
11 Agric. & Indus. Machinery	11.15	12.44	5.56	6.20	3.77	3.31	6.45	6.23	6.35
	0.60	0.46	0.69	0.42	0.21	0.17	0.09	0.17	0.20
	1.18	0.92	1.29	1.06	0.73	0.79	0.63	0.49	0.55
	1.44	1.17	1.66	1.45	1.19	1.30	1.13	1.01	0.88
12 Office,Precision,Opt.Instruments	6.39	7.23	4.81	5.55	4.40	2.78	3.93	3.02	2.60
	0.24	0.17	0.22	0.12	0.01	0.06	0.05	0.07	0.11
	0.43	0.33	0.38	0.26	0.08	0.17	0.17	0.12	0.21
	0.50	0.42	0.46	0.34	0.15	0.27	0.29	0.24	0.23
13 Electrical Goods	7.93	7.95	5.77	5.87	4.73	3.87	5.11	4.87	4.79
	0.31	0.28	0.31	0.22	0.12	0.12	0.11	0.13	0.15
	0.60	0.53	0.57	0.51	0.37	0.42	0.37	0.33	0.35
	0.78	0.74	0.79	0.75	0.66	0.76	0.71	0.66	0.56
14 Motor Vehicles	7.76	7.47	6.25	5.52	3.67	2.53	3.92	3.52	3.57
	0.29	0.25	0.29	0.19	0.09	0.10	0.09	0.14	0.16
	0.55	0.45	0.50	0.43	0.28	0.34	0.32	0.28	0.34
	0.71	0.61	0.65	0.59	0.49	0.61	0.59	0.57	0.52
15 Other Transport Equipment	8.53	8.48	7.85	7.62	6.90	6.30	7.00	7.38	7.51
	0.17	0.21	0.18	0.17	0.12	0.09	0.09	0.08	0.09
	0.31	0.40	0.33	0.37	0.35	0.31	0.29	0.26	0.25
	0.28	0.40	0.30	0.34	0.35	0.34	0.33	0.28	0.12
16 Meat & Preserved Meat	1.64	1.51	1.34	1.46	1.58	1.47	1.78	1.89	1.94
	0.13	0.13	0.13	0.11	0.09	0.09	0.08	0.09	0.09
	0.22	0.18	0.19	0.22	0.24	0.27	0.25	0.27	0.27
	0.22	0.17	0.17	0.21	0.24	0.28	0.25	0.26	0.02

Titles of Alternate Runs
Line 1: Baseline
Line 2: Italy and CEEC5 vis-a'-vis - difference from base
Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
Line 4: Specialising CEEC5 - difference from base

Alternatives are shown in deviations from base values.

	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
17 Milk & Dairy Products	0.99	0.98	0.74	0.77	0.86	0.73	0.99	1.06	1.05
	0.12	0.12	0.12	0.10	0.08	0.08	0.08	0.09	0.09
	0.21	0.19	0.20	0.22	0.21	0.22	0.19	0.20	0.18
	0.23	0.22	0.22	0.24	0.26	0.28	0.25	0.25	0.18
18 Other Foods	3.45	3.52	3.33	3.33	3.39	3.25	3.47	3.51	3.49
	0.13	0.13	0.13	0.11	0.10	0.09	0.09	0.11	0.10
	0.23	0.21	0.23	0.25	0.23	0.24	0.22	0.24	0.21
	0.23	0.21	0.23	0.25	0.26	0.28	0.25	0.26	0.18
19 Alcohol & Non Alcoh. Beverages	3.03	3.26	3.22	3.67	4.02	3.68	3.81	3.85	3.85
	0.12	0.12	0.12	0.11	0.08	0.08	0.07	0.09	0.09
	0.21	0.17	0.18	0.20	0.20	0.23	0.19	0.21	0.19
	0.22	0.19	0.19	0.22	0.25	0.30	0.27	0.28	0.22
20 Tobacco	-0.68	2.00	2.16	2.74	3.17	3.34	3.65	3.73	3.68
	0.10	0.11	0.10	0.09	0.06	0.06	0.06	0.07	0.07
	0.19	0.14	0.11	0.13	0.13	0.15	0.12	0.12	0.11
	0.19	0.12	0.08	0.11	0.14	0.17	0.15	0.14	0.07
21 Textile & Clothing	4.10	3.85	3.64	3.84	3.67	3.46	3.68	3.79	3.67
	0.19	0.19	0.20	0.19	0.17	0.17	0.17	0.19	0.15
	0.33	0.27	0.28	0.32	0.34	0.40	0.35	0.42	0.36
	0.22	0.16	0.15	0.19	0.23	0.28	0.23	0.26	0.14
22 Leather, Shoes & Footwear	5.60	5.51	5.36	5.40	5.34	5.15	5.45	5.61	5.69
	0.17	0.16	0.17	0.15	0.14	0.12	0.12	0.13	0.12
	0.29	0.25	0.30	0.35	0.36	0.41	0.40	0.49	0.54
	0.21	0.17	0.19	0.24	0.26	0.30	0.28	0.31	-0.17
23 Timber, Wooden Product & Furniture	6.47	6.99	5.93	6.79	6.09	5.25	5.92	5.44	5.05
	0.25	0.22	0.24	0.19	0.13	0.16	0.15	0.17	0.19
	0.43	0.20	0.20	0.29	0.30	0.40	0.33	0.32	0.24
	0.37	0.14	0.13	0.23	0.25	0.35	0.27	0.18	0.02
24 Paper & Printing Products	4.75	4.53	3.93	4.18	3.98	3.73	3.96	3.93	3.85
	0.20	0.20	0.21	0.19	0.17	0.17	0.18	0.20	0.19
	0.39	0.35	0.38	0.42	0.41	0.46	0.42	0.47	0.45
	0.46	0.43	0.47	0.53	0.56	0.63	0.62	0.66	0.59
25 Plastic Products & Rubber	5.85	5.68	5.06	5.58	5.32	5.02	5.47	5.34	5.23
	0.26	0.25	0.28	0.25	0.23	0.23	0.24	0.26	0.25
	0.48	0.41	0.47	0.53	0.52	0.61	0.56	0.58	0.56
	0.62	0.55	0.62	0.71	0.76	0.87	0.84	0.86	0.68
26 Other Manufacturing Industry	4.39	5.18	4.73	4.73	4.63	4.45	4.72	4.91	4.90
	0.14	0.14	0.16	0.13	0.10	0.10	0.11	0.12	0.13
	0.24	0.15	0.13	0.15	0.17	0.24	0.22	0.18	0.13
	0.27	0.17	0.11	0.14	0.19	0.27	0.26	0.21	0.14

Table 18 - Household Consumption, Rates of Growth

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                        Titles of Alternate Runs
            Line 1: Baseline
            Line 2: Italy and CEEC5 vis-a'-vis - difference from base
            Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
            Line 4: Specialising CEEC5 - difference from base


Alternatives are shown in deviations from base values.
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	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
TOTAL	1.687	1.460	1.458	1.472	1.359	1.563	1.622	1.596
	0.103	0.102	0.088	0.063	0.059	0.057	0.067	0.071
	0.170	0.175	0.188	0.170	0.175	0.150	0.157	0.139
	0.209	0.210	0.228	0.234	0.251	0.230	0.226	0.178
Foods & Beverages	-0.190	-0.433	-0.404	-0.343	-0.429	-0.175	-0.100	-0.104
	0.104	0.102	0.088	0.063	0.060	0.058	0.067	0.071
	0.168	0.175	0.189	0.172	0.178	0.149	0.154	0.128
	0.209	0.211	0.230	0.238	0.256	0.232	0.227	0.169
-Foods	-0.112	-0.355	-0.321	-0.256	-0.341	-0.082	-0.005	-0.008
	0.104	0.102	0.088	0.063	0.060	0.058	0.067	0.071
	0.168	0.175	0.189	0.172	0.178	0.149	0.153	0.127
	0.209	0.211	0.231	0.239	0.257	0.232	0.227	0.168
-Bread & Cereals	0.552	0.344	0.370	0.417	0.350	0.614	0.682	0.645
	0.104	0.102	0.088	0.063	0.058	0.056	0.067	0.070
	0.167	0.175	0.188	0.170	0.175	0.142	0.153	0.127
	0.206	0.210	0.228	0.235	0.251	0.223	0.223	0.167
-Meat	-0.796	-1.053	-1.017	-0.955	-1.049	-0.803	-0.736	-0.741
	0.103	0.101	0.088	0.062	0.060	0.057	0.066	0.069
	0.160	0.170	0.186	0.170	0.176	0.143	0.142	0.110
	0.200	0.206	0.227	0.236	0.253	0.225	0.216	0.153
-Fish	-0.467	-0.725	-0.707	-0.633	-0.732	-0.470	-0.394	-0.393
	0.104	0.102	0.088	0.064	0.061	0.060	0.068	0.073
	0.173	0.178	0.192	0.174	0.182	0.156	0.161	0.138
	0.214	0.215	0.234	0.242	0.262	0.240	0.237	0.180
-Dairy products	0.420	0.164	0.195	0.275	0.176	0.437	0.515	0.530
	0.104	0.102	0.088	0.064	0.060	0.059	0.067	0.074
	0.174	0.176	0.191	0.175	0.181	0.154	0.157	0.135
	0.215	0.213	0.233	0.242	0.261	0.238	0.232	0.169
-Oil	-1.142	-1.405	-1.396	-1.377	-1.501	-1.279	-1.235	-1.287
	0.104	0.102	0.088	0.063	0.059	0.058	0.067	0.071
	0.170	0.176	0.190	0.172	0.178	0.149	0.155	0.131
	0.211	0.213	0.232	0.239	0.257	0.232	0.229	0.172
-Fruits & Vegetables	-0.198	-0.455	-0.421	-0.356	-0.438	-0.178	-0.091	-0.086
	0.104	0.102	0.088	0.063	0.060	0.059	0.067	0.072
	0.173	0.178	0.191	0.174	0.180	0.154	0.158	0.136
	0.214	0.215	0.234	0.241	0.260	0.238	0.234	0.178
-Potatoes	0.014	-0.261	-0.226	-0.156	-0.260	-0.011	0.066	0.068
	0.104	0.102	0.088	0.064	0.060	0.060	0.067	0.072
	0.173	0.179	0.193	0.175	0.182	0.157	0.159	0.136
	0.215	0.217	0.236	0.243	0.262	0.241	0.236	0.180
-Sugar	0.065	-0.126	-0.109	-0.091	-0.169	0.054	0.118	0.099
	0.103	0.102	0.087	0.063	0.059	0.057	0.067	0.071
	0.169	0.174	0.188	0.170	0.175	0.149	0.157	0.139
	0.208	0.208	0.226	0.233	0.250	0.228	0.225	0.177
-Coffee, tea & cocoa	0.156	-0.072	-0.054	-0.014	-0.099	0.153	0.219	0.189
	0.104	0.102	0.088	0.063	0.059	0.057	0.068	0.071
	0.169	0.176	0.189	0.171	0.177	0.146	0.156	0.132
	0.209	0.211	0.229	0.237	0.254	0.228	0.227	0.172
-Other products	1.497	1.271	1.293	1.338	1.248	1.495	1.556	1.519
	0.104	0.102	0.088	0.063	0.059	0.057	0.068	0.072
	0.169	0.176	0.189	0.171	0.177	0.146	0.156	0.132
	0.209	0.212	0.229	0.237	0.254	0.229	0.228	0.172
-Beverages & Tobacco	-0.732	-0.980	-0.985	-0.963	-1.063	-0.844	-0.788	-0.809
	0.103	0.102	0.088	0.063	0.059	0.058	0.067	0.071
	0.171	0.175	0.189	0.171	0.178	0.151	0.156	0.136
	0.210	0.211	0.229	0.236	0.255	0.232	0.228	0.175

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                                                            (Continued...)
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Line 1: Baseline
Line 2: Italy and CEEC5 vis-a'-vis - difference from base
Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
Line 4: Specialising CEEC5 - difference from base

Alternatives are shown in deviations from base values.

	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
-Non alcoholic	2.916	2.638	2.613	2.631	2.493	2.675	2.703	2.673
	0.103	0.102	0.088	0.063	0.060	0.058	0.066	0.072
	0.172	0.176	0.189	0.170	0.180	0.152	0.156	0.134
	0.211	0.212	0.230	0.236	0.258	0.233	0.229	0.171
-Alcoholic	-2.380	-2.720	-2.782	-2.843	-3.052	-2.936	-2.983	-3.112
	0.104	0.102	0.088	0.063	0.060	0.058	0.067	0.071
	0.171	0.177	0.190	0.172	0.180	0.153	0.156	0.134
	0.212	0.213	0.232	0.239	0.258	0.235	0.231	0.175
-Tobacco	-1.277	-1.533	-1.578	-1.591	-1.694	-1.489	-1.457	-1.513
	0.103	0.102	0.087	0.063	0.059	0.057	0.067	0.071
	0.169	0.174	0.188	0.170	0.175	0.149	0.157	0.139
	0.208	0.208	0.226	0.233	0.250	0.228	0.225	0.177
Durables, non dur. & Services	2.077	1.844	1.828	1.825	1.699	1.887	1.936	1.900
	0.103	0.102	0.087	0.063	0.058	0.057	0.067	0.071
	0.170	0.175	0.188	0.170	0.175	0.150	0.158	0.141
	0.209	0.209	0.227	0.233	0.250	0.229	0.226	0.179
-Clothing & Shoes	0.577	0.316	0.372	0.408	0.326	0.563	0.646	0.545
	0.104	0.102	0.088	0.064	0.059	0.057	0.079	0.076
	0.168	0.169	0.184	0.166	0.171	0.139	0.178	0.145
	0.200	0.198	0.218	0.227	0.245	0.222	0.224	0.177
-Clothing	0.613	0.337	0.399	0.425	0.345	0.582	0.661	0.562
	0.104	0.102	0.088	0.064	0.060	0.057	0.080	0.077
	0.169	0.169	0.183	0.167	0.172	0.140	0.183	0.150
	0.199	0.194	0.214	0.225	0.243	0.219	0.224	0.179
-Shoes	0.431	0.232	0.261	0.342	0.254	0.487	0.584	0.475
	0.102	0.101	0.088	0.064	0.059	0.057	0.073	0.076
	0.164	0.170	0.185	0.165	0.168	0.137	0.155	0.128
	0.205	0.210	0.233	0.239	0.252	0.231	0.225	0.168
-Housing	2.529	2.303	2.208	2.113	1.993	2.192	2.212	2.204
	0.104	0.101	0.087	0.063	0.058	0.057	0.066	0.069
	0.186	0.182	0.188	0.172	0.179	0.158	0.166	0.149
	0.229	0.215	0.224	0.235	0.258	0.239	0.242	0.193
-House rent	2.733	2.474	2.401	2.334	2.200	2.385	2.399	2.371
	0.104	0.102	0.088	0.064	0.058	0.057	0.065	0.068
	0.184	0.184	0.192	0.173	0.177	0.157	0.164	0.149
	0.224	0.219	0.232	0.236	0.253	0.237	0.238	0.193
-Heating & Electricity	1.698	1.600	1.406	1.187	1.115	1.366	1.399	1.469
	0.107	0.099	0.084	0.060	0.061	0.058	0.070	0.071
	0.194	0.172	0.172	0.166	0.187	0.160	0.176	0.150
	0.249	0.198	0.188	0.229	0.279	0.246	0.262	0.192
-Furniture & Services	1.136	0.926	0.948	0.953	0.857	1.033	1.110	1.125
	0.104	0.102	0.088	0.064	0.059	0.058	0.065	0.072
	0.170	0.175	0.188	0.171	0.178	0.153	0.153	0.139
	0.210	0.210	0.228	0.237	0.256	0.233	0.229	0.179
-Furniture	0.676	0.457	0.518	0.515	0.419	0.589	0.672	0.677
	0.104	0.102	0.088	0.064	0.060	0.059	0.069	0.073
	0.172	0.173	0.187	0.170	0.177	0.150	0.162	0.145
	0.210	0.206	0.225	0.233	0.253	0.230	0.229	0.179
-Household equipment	2.958	2.713	2.668	2.462	2.381	2.446	2.543	2.595
	0.103	0.102	0.087	0.063	0.059	0.059	0.051	0.066
	0.167	0.180	0.194	0.176	0.185	0.164	0.124	0.127
	0.220	0.227	0.243	0.250	0.271	0.248	0.235	0.178
-Appliances	1.498	1.187	1.288	1.205	1.137	1.337	1.430	1.434
	0.103	0.101	0.087	0.063	0.059	0.057	0.068	0.071
	0.160	0.172	0.189	0.170	0.176	0.151	0.157	0.132
	0.197	0.206	0.228	0.235	0.252	0.230	0.225	0.175
-Glasswork and Pottery	0.584	0.288	0.401	0.329	0.214	0.350	0.406	0.360
	0.104	0.102	0.088	0.065	0.059	0.059	0.069	0.073
	0.154	0.170	0.191	0.174	0.179	0.148	0.155	0.139
	0.193	0.207	0.233	0.240	0.255	0.231	0.224	0.182

```
                              Titles of Alternate Runs
                    Line 1: Baseline
                    Line 2: Italy and CEEC5 vis-a'-vis - difference from base
                    Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
                    Line 4: Specialising CEEC5 - difference from base

Alternatives are shown in deviations from base values.

                         02-03   03-04   04-05   05-06   06-07   07-08   08-09   09-10

    -Domestic Servant     1.283   1.077   0.981   1.062   0.874   1.054   1.076   0.963
                          0.104   0.102   0.087   0.063   0.059   0.057   0.067   0.071
                          0.174   0.176   0.187   0.170   0.177   0.151   0.160   0.140
                          0.214   0.209   0.224   0.234   0.254   0.231   0.230   0.179
    ----------------------------------------------------------------------------------
    -Other durable & Services  0.590  0.433  0.444  0.555  0.474  0.694  0.762  0.830
                          0.104   0.103   0.088   0.064   0.060   0.058   0.066   0.074
                          0.174   0.175   0.188   0.171   0.178   0.153   0.156   0.143
                          0.212   0.207   0.224   0.235   0.253   0.230   0.226   0.179
    ----------------------------------------------------------------------------------
    -Health               3.191   2.904   2.879   2.733   2.577   2.702   2.743   2.664
                          0.103   0.101   0.087   0.063   0.057   0.056   0.065   0.068
                          0.180   0.181   0.191   0.172   0.175   0.154   0.161   0.146
                          0.219   0.217   0.232   0.235   0.250   0.234   0.233   0.189
    ----------------------------------------------------------------------------------
    -Medicines            3.459   3.183   3.165   3.070   2.980   3.112   3.198   3.066
                          0.103   0.102   0.087   0.063   0.059   0.057   0.067   0.071
                          0.169   0.174   0.188   0.170   0.175   0.149   0.157   0.139
                          0.208   0.208   0.226   0.233   0.250   0.228   0.225   0.177
    ----------------------------------------------------------------------------------
    -Therap. instruments  2.646   2.426   2.484   2.376   2.229   2.363   2.409   2.340
                          0.103   0.102   0.087   0.063   0.059   0.057   0.067   0.071
                          0.169   0.174   0.188   0.170   0.175   0.149   0.157   0.139
                          0.208   0.208   0.226   0.233   0.250   0.228   0.225   0.177
    ----------------------------------------------------------------------------------
    -Medical services     3.239   2.896   2.825   2.634   2.415   2.512   2.511   2.492
                          0.103   0.101   0.087   0.063   0.056   0.056   0.064   0.066
                          0.189   0.188   0.194   0.174   0.175   0.159   0.164   0.153
                          0.229   0.225   0.237   0.237   0.250   0.238   0.240   0.200
    ----------------------------------------------------------------------------------
    -Hospital             2.616   2.395   2.418   2.225   2.027   2.180   2.186   2.106
                          0.103   0.101   0.087   0.063   0.056   0.056   0.064   0.066
                          0.189   0.188   0.193   0.173   0.175   0.159   0.164   0.152
                          0.229   0.224   0.236   0.237   0.251   0.238   0.240   0.199
    ----------------------------------------------------------------------------------
    -Transports & Communications  2.604  2.337  2.379  2.302  2.152  2.283  2.321  2.237
                          0.102   0.102   0.087   0.063   0.058   0.056   0.066   0.069
                          0.149   0.165   0.185   0.166   0.168   0.143   0.147   0.136
                          0.180   0.196   0.223   0.224   0.236   0.214   0.205   0.173
    ----------------------------------------------------------------------------------
    -Auto & Cycles        1.942   1.794   2.022   1.642   1.377   1.293   1.307   1.168
                          0.096   0.097   0.081   0.059   0.052   0.052   0.059   0.061
                          0.080   0.115   0.158   0.139   0.137   0.115   0.103   0.122
                          0.093   0.129   0.176   0.177   0.187   0.155   0.132   0.154
    ----------------------------------------------------------------------------------
    -Running costs        2.341   2.016   2.019   2.074   1.967   2.156   2.227   2.151
                          0.102   0.103   0.089   0.064   0.057   0.056   0.066   0.070
                          0.167   0.179   0.194   0.172   0.171   0.145   0.153   0.134
                          0.200   0.216   0.241   0.236   0.241   0.223   0.216   0.171
    ----------------------------------------------------------------------------------
    -Transportation Services  2.604  2.338  2.383  2.349  2.229  2.480  2.502  2.451
                          0.105   0.106   0.091   0.067   0.063   0.063   0.072   0.075
                          0.186   0.195   0.204   0.182   0.191   0.168   0.178   0.162
                          0.225   0.235   0.253   0.252   0.270   0.254   0.254   0.204
    ----------------------------------------------------------------------------------
    -Communications       4.188   3.880   3.744   3.677   3.517   3.656   3.625   3.537
                          0.104   0.102   0.087   0.063   0.060   0.058   0.069   0.073
                          0.168   0.170   0.184   0.169   0.177   0.147   0.159   0.135
                          0.208   0.202   0.218   0.232   0.255   0.228   0.227   0.170
    ----------------------------------------------------------------------------------
    -Recreation & Education  2.411  2.160  2.150  2.150  2.066  2.255  2.282  2.236
                          0.104   0.103   0.088   0.064   0.059   0.057   0.067   0.072
                          0.168   0.176   0.191   0.172   0.178   0.152   0.158   0.143
                          0.205   0.211   0.230   0.236   0.254   0.231   0.227   0.182
    ----------------------------------------------------------------------------------
    -Radio, TV, Records, Hifi  3.056  2.731  2.706  2.631  2.484  2.612  2.617  2.505
                          0.103   0.101   0.087   0.063   0.059   0.058   0.068   0.072
                          0.153   0.169   0.188   0.170   0.178   0.149   0.155   0.135
                          0.189   0.202   0.226   0.233   0.252   0.227   0.221   0.174
    ----------------------------------------------------------------------------------
    -Books, Magazines & Newspapers  1.111  0.858  0.877  0.923  0.859  1.110  1.190  1.168
                          0.103   0.102   0.089   0.063   0.061   0.060   0.067   0.082
                          0.172   0.173   0.189   0.172   0.179   0.152   0.154   0.157
                          0.212   0.210   0.230   0.238   0.257   0.231   0.223   0.188
    ----------------------------------------------------------------------------------
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                          Titles of Alternate Runs
               Line 1: Baseline
               Line 2: Italy and CEEC5 vis-a'-vis - difference from base
               Line 3: Italy-EU and CEEC5 vis-a'-vis - difference from base
               Line 4: Specialising CEEC5 - difference from base


Alternatives are shown in deviations from base values.


                      02-03    03-04    04-05    05-06    06-07    07-08    08-09    09-10



  -Education & Textbooks      2.056    1.836    1.845    1.835    1.831    2.013    2.078    2.065
                             0.104    0.102    0.087    0.063    0.058    0.056    0.065    0.068
                             0.180    0.182    0.191    0.172    0.176    0.153    0.161    0.144
                             0.218    0.216    0.229    0.235    0.252    0.231    0.232    0.183
-------------------------------------------------------------------------------------------------
  -Theatre, and Other Recreation  2.073    1.928    1.910    2.008    1.992    2.252    2.273    2.315
                             0.106    0.105    0.090    0.065    0.058    0.057    0.066    0.069
                             0.187    0.189    0.197    0.177    0.180    0.157    0.166    0.150
                             0.226    0.224    0.237    0.242    0.256    0.237    0.238    0.192
-------------------------------------------------------------------------------------------------
 -Other Goods and Services   1.805    1.599    1.537    1.684    1.511    1.725    1.780    1.772
                             0.101    0.101    0.088    0.063    0.058    0.056    0.063    0.071
                             0.171    0.176    0.190    0.170    0.173    0.149    0.150    0.133
                             0.213    0.215    0.235    0.237    0.251    0.231    0.224    0.168
-------------------------------------------------------------------------------------------------
  -Cleaning & Toilet Articles  1.861    1.659    1.606    1.674    1.594    1.804    1.850    1.860
                             0.105    0.104    0.089    0.065    0.059    0.057    0.066    0.071
                             0.181    0.183    0.192    0.174    0.179    0.156    0.162    0.146
                             0.221    0.217    0.231    0.238    0.256    0.235    0.234    0.186
-------------------------------------------------------------------------------------------------
  -Hotels & Restaurants      2.262    2.087    1.908    2.118    1.926    2.184    2.216    2.208
                             0.103    0.101    0.087    0.062    0.056    0.052    0.061    0.065
                             0.174    0.177    0.185    0.166    0.168    0.140    0.146    0.116
                             0.213    0.211    0.221    0.227    0.242    0.216    0.214    0.149
-------------------------------------------------------------------------------------------------
  -Other Goods               0.359    0.017    0.297    0.361    0.090    0.151    0.281    0.217
                             0.093    0.098    0.090    0.066    0.064    0.069    0.064    0.095
                             0.145    0.159    0.201    0.173    0.178    0.168    0.137    0.168
                             0.199    0.225    0.280    0.265    0.274    0.271    0.242    0.204
-------------------------------------------------------------------------------------------------
  -Financial Services        2.384    2.241    2.122    2.128    2.027    2.160    2.134    2.105
                             0.105    0.108    0.094    0.070    0.064    0.063    0.069    0.075
                             0.195    0.204    0.209    0.188    0.194    0.178    0.181    0.170
                             0.235    0.243    0.257    0.256    0.273    0.262    0.260    0.210
-------------------------------------------------------------------------------------------------
  -Other Services            0.899    0.641    0.623    0.597    0.527    0.744    0.820    0.822
                             0.104    0.101    0.087    0.063    0.059    0.057    0.068    0.071
                             0.174    0.175    0.186    0.170    0.177    0.151    0.161    0.140
                             0.214    0.208    0.223    0.233    0.255    0.231    0.231    0.179
-------------------------------------------------------------------------------------------------
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6. SIMULATION SCENARIOS FOR EU ENLARGEMENT: THE REMOVAL OF TRADE BARRIERS

6.1 The Design of Scenarios

Under the Europe Agreements custom tariffs on EU imports from the CEECs countries and vice-versa have been eliminated for practically all industrial goods with very few exceptions, such as Polish tariffs on automobiles which will be removed in 2002. On the other hand, custom tariffs are still imposed on agricultural products and fisheries both in CEECs countries and in the EU, that is on products listed in Chapters 1 to 24 of the Harmonized System coding.

We have estimated the structure of custom tariffs for agricultural products imposed by the EU on imports from the CEECs and by these countries on imports from EU for the first 24 sectors of the Harmonized System using data on custom duties at the 8-digit level of disaggregation. Custom duties imposed by CEECs countries have been approximated by the import-weighted average of tariff rates set by the Czech Republic, Hungary and Poland. We have first calculated the average tariff rate on imports originating from the EU for each country at the 4-digit level as a simple average of the tariff rates on the single products of those sectors[5]. Then, for each of the three CEECs, the average tariff rates for the 24 agricultural sectors (2-digit sectors) have been computed as a weighted average of the 4-digit rates, using as weights the value of Italian exports to the country in question (see Table 19, first column).[6]

To estimate the structure by sector of the Italian custom tariffs on products originating in the Czech Republic, Hungary and Poland we have used data on EU custom duties reported in the TARIC Consultation database[7]. We have used the same procedure as in the case of CEECs' tariffs; we start from an estimation of custom tariffs at the 4-digit level by simple averages of more disaggregated information on tariff rates at the level of 8-digits and, then compute the weighted average rate per sector using data on Italian imports for the three countries under examination. In addition to the presence of tariff quotas for a few agricultural products (which, however, also affect the estimation of CEECs' tariff rates), the estimation of Italian tariffs is based on a number of approximations which are determined by the particular characteristics of the EU tariff system. In particular, approximations are required because of
     a) the seasonal dependence of some tariffs;
     b) the fact that some tariffs are volume duties rather than *ad valorem;* and above all,
     c) products where tariffs depend on their Agricultural Element in their composition.

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[5] Data have been taken from the database of the EU available at the web site: www.mkaccdb.eu.int.

[6] Data on Italian exports have been taken from the COMEXT database.

[7] This database can be found at the web site http://europa.eu.int/comm/taxation_customs/dds/cgi-bin/tarchap of the European Commission or at the web site www.finanze.it of the Italian Ministry of Finance.

For instance, in the case of volume duties we computed total tariff revenues using the volume of Italian imports of the particular product from the COMEXT database and then constructed the *ad valorem*-equivalent tariff rate. The average tariff rates by sector are reported in the second column 2 of Table 19.

Table 19 - Average tariffs rates on Italian Trade with the Czech Republic, Hungary and Poland
Percentage values

Sectors	on exports to CZH-HU-POL	on imports from CZH-HU-POL
Unmilled cereals	36	21
Fresh fruits, vegetables	12	13
Other crops	3	6
Livestock	17	12
Fishery	5	9
Meat	32	21
Dairy products and eggs	24	64
Preserved fruits, vegetables	24	14
Preserved seafood	28	16
Vegetable, animal oils, fats	8	1
Grain mill products	18	31
Bakery products	24	16
Sugar	35	18
Cocoa, chocolate, etc	25	11
Food products n.e.c.	17	7
Prepared animal feeds	6	1
Alcoholic beverage	34	6
Non-alcoholic beverage	34	6
Tobacco products	31	29
Paints, varnishes, lacquers	1	1
Scrap, used, unclassified	1	0
Average on above sectors	20	14

Source: EU Market Access Database and TARIC Consultation.

The picture which emerges is a familiar one. The Italian average tariff rates are still high in few sensitive sectors, such as dairy products and eggs (64%), grain mill products (31%), and tobacco products (29%); unmilled cereals (21%), meat (21%), and sugar (18%), and moderately high, i.e. 10-16 per cent, for bakery products, fruits and vegetables, livestock and preserved seafood. As far as the Czech Republic, Hungary and Poland are concerned, the most protected sectors --with tariff rates ranging from 31 to 36 per cent- are unmilled cereals, meat, sugar, beverages and tobacco. Sectors such as dairy products and eggs, preserved fruits and vegetables and preserved seafood, bakery products, cocoa and chocolate are also protected. Interestingly, the estimated tariff structure is quite similar in the EU and the CEECs and marked differences only occur in a few sectors such as dairy products and eggs, unmilled cereals, meat, sugar, cocoa, preserved fruits and vegetables, grain mill products, cocoa, and

beverages. In particular, protection is higher in the EU for dairy and grain products while the CEECs tend to afford more protection to unmilled cereals, sugar, beverages, preserved fruits, vegetables and seafood.

The impact of the complete removal of tariff barriers on trade, which will take place with the accession of CEECs to the Single Market must then be estimated using the Bilateral Trade Model. Import equations for the CEECs countries are however not yet available. This prevents us from estimating the effect on Italian exports of the elimination of trade protection by CEECs countries. Therefore, the results of our simulations do not provide a full assessment of the effects of trade liberalisation; results are best viewed as providing a lower bound for the estimation of the beneficial impact of liberalisation. It is however worth recalling that the impact on EU exports growth from removal of trade protection by the CEECs is usually estimated to be small relative to the effect on the exports growth of the CEECs because of the difference in the GDPs of the two areas (see Baldwin *et al.* 1997).

Since the front end effect of the elimination of EU tariffs on CEECs' products is equivalent to a reduction in import prices of the same percentage, we model such an effect as a reduction in the relative prices of Italian imports in the import equation of the Bilateral Trade model. (More precisely, a reduction of the average tariff rate per sector from its actual level to zero is considered equivalent to a change in the relative price of imported goods of the corresponding sector.) This allows us to evaluate the effect, at the sectoral level, of the removal of the remaining tariffs. It is worth noting that we do not consider the potential effect on Italian exports of the removal of tariffs by CEECs on products originating in Italy. Therefore, the potentially negative impact on Italian output from accession is likely to be overestimated by our simulation.

While custom tariffs do not directly affect trade in industrial sectors, the impact of Non Tariff Barriers (NTBs) should prove more pervasive. Indeed, impediments to trade and distortions may arise because of quantitative restrictions, price control measures, import licensing, different standard and other technical requirements and custom procedures. Although it is difficult to quantify NTBs it is commonly held that the effect of their removal should be substantial. For instance, Baldwin *et al.* (1997) contend that the elimination of NTBs between the EU and CEECs could be assimilated to a 10 per cent reduction in trade costs, that is, equivalent to a 10 per cent reduction in custom duties. Keuschnigg and Kohler (1999) opt for a more conservative 5 per cent.

It is difficult to evaluate the impact of the removal of NTBs implied by participation in the Single Market. First, available information on NTBs is mostly qualitative; the different kinds of restrictions are not easily comparable and thus are difficult to be captured by a single index. However, the main problem is to measure the impact of NTBs on trade. This explains why it is not uncommon in the literature to model the effect of NTBs by relying on pure judgement. In our analysis we take the same approach as Baldwin *et al.* (1997) and assimilate the elimination of NTBs imposed by the EU on the products of CEECs to a given reduction in tariff rates (or trade costs). However, our study is innovative in two respects. First, we provide estimates for two different scenarios so as to evaluate the sensitivity of trade flows and thus results to alternative hypotheses on the effect of the removal of NTBs. We compare results from simulations under alternative hypotheses of the tariff equivalent of NTBs. Secondly, we take

into account that the incidence of NTBs differs across sectors and thus distinguish between three different *ad valorem* equivalents of NTBs so as to develop the full potential of our sectoral model.

To evaluate the extent to which EU imports are subject to NTBs in the various sectors, we use 'trade coverage ratios' for each EU sector as in Keuschnigg and Kohler (1999), though following a different approach. Coverage ratios are provided by Wang (2000) who uses information on NTBs indicators contained in the Trade Analysis and Information System (TRAINS) database of UNCTAD. TRAINS provides information for each Harmonized System item (6-digit level) on the presence of NTBs. 'Coverage ratios' for each (2-digit) sector are computed as the percentage of imports (per sector) that are covered by at least one of the following NTBs:

a) Tariff Measures (other than ad *valorem*) such as tariff quota and temporary duties;

b) Price Control Measures countering the damage caused by the application of unfair practice of foreign trade;

c) Standards and Other Technical Requirements, including quality, safety, health and other regulations;

d) Automatic Licensing Measures;

e) Monopolistic Measures;

f) Quantity Control measures that are however absent in EU-CEECs trade, being lifted by the Europe Agreements.

Depending on the corresponding 'trade coverage ratios' we distinguish between three types of sectors, heavily, mildly and not protected by NTBs (see Table 20).

Table 20 - NTBs Coverage Ratios by Sectors

Heavily Protected Sectors	NTBs
2 Fruits and Vegetables	34
6 Cotton	53
7 Wool	27
12 Coal	52
18 Meat	19
27 Food Products n.e.c.	64
29 Alcoholic Beverages	20
32 Yarns and Threads	81
33 Cotton Fabrics	52
34 Other Textile Products	88
36 Wearing Apparel	88
49 Synthetic resins, man-made fibres	79
57 Product of coal	52
65 Basic iron and steel	10
67 Aluminium	50
Mildly Protected Sectors	
3 Other crops	1
10 Fishery	6
28 Prepared animal feed	3
35 Floor coverings	1
47 Basic chemicals	3
52 Soap and toiletries	2
53 Chemical products, n.e.c.	1
58 Tyres and tubes	1
59 Rubber products, n.e.c.	1
73 Metal containers	5
75 Hardware	5
93 Radio, TV, phonograph	1
94 Other telecomm. Equipment	1
106 Motor vehicles	2
107 Motorcycles and bicycles	2
108 Motor vehicle parts	2

Source: TRAINS and Wang (2000).

6.2 The two scenarios

To estimate the impact of the reduction of the NTBs imposed by the EU we consider two scenarios:

1) A first *conservative* scenario (see Keuschnigg and Kohler, 1999) assumes that the removal of NTBs is equivalent to the abatement of a 10 per cent tariff rate in the heavily affected sectors and to the abatement of a 5 per cent tariff rate in the mildly affected sectors.

2) A second *generous* scenario (see Baldwin *et al.* 1997) assumes that all sectors are to a certain extent protected by NTBs, whose effect is on average equivalent to a 10 per cent tariff rate. Such scenario assumes that the removal of NTBs is equivalent to the abatement of custom tariffs equivalent to 15, 10 and 5 per cent in the heavily, mildly and (apparently) unprotected sectors, respectively.

In the next section we examine the effect of removing trade protection in the form of both custom tariffs and NTBs. In order to highlight the negative impact of trade liberalisation on some sectors of the Italian economy we present such effects as deviations from the «Specialising CEECs scenario». It is worth noting that such a negative impact would not be immediately evident if we presented results, as in other parts of the report, for the combined scenario of «Specialising CEECs plus trade protection removal» as deviations from the baseline scenario, since the effect of Specialisation would offset the effect of trade liberalisation.

6.3 Analysis of the two scenarios

The effect of removing trade protection through the elimination of both custom tariffs and NTBs is displayed in Tables 21 and 22 (results from simulations that distinguish between custom tariffs and NTBs are also available).

The second line for each sector in Table 21 shows the effect on the growth of household consumption deflators *as a deviation from the "Specialising CEECs scenario"* of a removal of trade protection for the conservative scenario while the third line does the same for the generous scenario. The impact is clearly stronger in those sectors where the extent of protection is greater and in particular in the 'tobacco' sector where the inflation rate is reduced by 1.5 percentage points in the conservative scenario. The reduction in price growth for the accession year 2004 is also substantial, that is, between 0.40 and 0.65 percentage point in the conservative scenario, in 'bread and cereals', 'dairy products', 'meat' and 'sugar' which are sectors protected by high custom tariffs, besides NTBs. Obviously, the effect is stronger in the generous scenario (see third line for each sector). The effect of accession to the Single Market is less evident but still sizable, that is, between 0.15 and 0.30 percentage points (in the conservative scenario) for sectors such as 'oil', 'coffee, tea and cocoa', 'alcoholic and non-alcoholic beverages', 'clothing', 'footwear' and 'auto and cycles', the latter three reflecting the removal of NTBs. Again, the impact is stronger in the generous scenario. However, in all sectors the impact on price growth reflects the initial (once-and-for-all) cut in tariff rates and NTBs and is, therefore, short-lived in terms of growth rates; the growth effect vanishes altogether after 2004 (though levels are permanently affected).

Table 22 (Total Output Rates of Growth) shows the impact on the growth rate of output by sector arising from the elimination of custom tariffs and NTBs. The second line for each sector shows the effect *as a deviation from the 'Specialising CEECs scenario'* of a removal of trade protection for the 'conservative scenario' that consider a removal of NTBs as equivalent to a cut of custom tariffs of 10 and 5 per cent for the heavily and mildly protected sectors, respectively. The third line for each sector shows the effect as a deviation from *'Specialising CEECs scenario'* of a removal of trade protection for the 'generous scenario' that consider a removal of NTBs as equivalent to a cut of custom tariffs of 15, 10 and 5 per cent for the heavily, mildly and (apparently) unprotected sectors, respectively.

As shown by the disaggregation by main product groups (see top of Table 21) the negative effect on the rate of growth of 'agriculture, forestry and fishery' is substantial with a peak of about 0.5 a percentage point in 2005 (more precisely 0.38 and 0.61 for the conservative and generous scenario, respectively). The agricultural sector will indeed be affected negatively by the removal of both custom tariffs and NTBs. Output growth also falls in the product group 'coal, oil, petroleum ref. products', but the reduction, of about 0.30 percentage points, is apparent only in the generous scenario when the removal of NTBs on 'coal and coal products' is equated to a tariff cut of 15 per cent. The impact of removing trade protection is instead negligible in the case of 'electricity, gas and water' and moderate in 'manufacturing', that is, between 0.17 and 0.27 depending on the scenario. Therefore, the agricultural sector is the most affected by the elimination of trade restrictions with regard to the CEECs. This result reflects the still very high protection in the form of custom tariffs.

Interestingly, the results of simulations only appear sensitive to the assumption made for the effect of NTBs removal in some cases. For instance, as regards the product group 'coal, oil, petroleum ref. Products' an increase in the tariff equivalent of NTBs from 10 to 15 per cent leads to a fall in output growth from about 0.10 to 0.30 percentage points which is not negligible. By contrast, the sensitivity of the manufacturing sector to the alternative scenarios is instead much smaller with a fall in output growth which goes from 0.17 to 0.26 in the year 2005, but disappears in the following period.

In Table 22 provides an analysis of the effects of trade liberalisation disaggregated by sector. A strong fall in output growth — up to 1 per cent in the generous scenario — due to the accession of the CEECs to the Single Market is felt by 'milk and dairy products'. This is not surprising given an average tariff rate of over 60 per cent. The impact of trade liberalisation is even greater in the 'tobacco' industry with a fall in output growth exceeding 1.5 per cent since 2005, a fact that can be explained by a tariff rate of about 30 per cent. Among sectors affected by the removal of custom tariffs on agricultural products, it is worth noting the output fall in the 'meat and preserved meat' sector, which is between 0.20 and 0.40 depending on the scenario. Output growth in the 'alcohol and non-alcoholic beverages' sector shows instead a moderate decline, mostly due to the removal of NTBs.

The removal of NTBs on products such as 'basic iron, steel and aluminium', as well as on 'metal containers' and 'other hardware products' is also expected to have an impact on the output growth of sectors such as 'primary metals' and 'metal products'. Indeed, the rate of output growth is lower in both sectors. The effect is stronger in 'primary metals' with a reduction between 0.20 and 0.30 percentage points in the conservative scenario and above

0.40 percentage points in the generous scenario. The reduction in output growth in 'metal products' is lower initially but exceeds 0.40 percentage points at the end of the period.

The slowdown in output growth is also noticeable in three sectors which are mildly protected by NTBs: 'agricultural and industrial machinery', 'electrical goods' and 'motor vehicles'. The latter, in particular, experiences a fall in output growth which almost reaches 1 per cent at the end of the period. The impact on output growth is instead smaller, around 0.35 percentage points in the 'electrical goods' sector. Finally, it is worth noting that the impact of trade liberalisation is negligible in the 'textile and clothing' sector. This result is somewhat surprising given the presence of NTBs on textile products, but it can be explained with the strong reliance of the Italian clothing industry on imported textile products which benefit from NTBs removal. The impact of protection removal is also absent or very mild in all the remaining sectors, and especially so in Services. Indeed, most of such sectors are not protected by NTBs (besides custom tariffs) and thus, in the conservative scenario, are not directly affected by a removal of trade restrictions.

To conclude, while the impact of trade liberalisation is very mild in most sectors and in the aggregate, the import-substitution effect appears substantial on the growth of specific sectors, in particular, those relying on 'agricultural and metal products', 'motor vehicles' and 'machinery'. Clearly, the elimination of custom tariffs for agricultural products and NTBs in specific sectors, implied by the accession to a Single Market, leads to an increase in the relative demand of foreign versus domestic goods which negatively affects the Italian production in the sensitive sectors noted above.

Table 21 - Household Consumption Deflators, Rates of Growth

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                        Titles of Alternate Runs
          Line 1: Specialising CEEC5
          Line 2: Specialising CEEC5 + Removal of trade barriers (0-5-10) - difference from base
          Line 3: Specialising CEEC5 + Removal of trade barriers (5-10-15)- difference from base
```

Alternatives are shown in deviations from base values.

	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
-Bread & Cereals	3.04	2.89	2.71	2.21	2.17	1.97	1.98	2.27
	0.00	-0.40	-0.03	-0.03	-0.06	-0.07	-0.04	-0.04
	0.00	-0.56	-0.05	-0.07	-0.09	-0.12	-0.03	-0.06
-Meat	3.56	3.59	3.34	2.79	2.83	2.69	2.68	2.69
	0.01	-0.65	-0.03	0.00	-0.01	-0.01	-0.03	-0.03
	0.00	-0.80	-0.05	-0.03	-0.03	-0.04	-0.05	-0.05
-Fish	3.51	3.68	3.50	2.93	3.00	2.85	2.82	2.89
	0.01	-0.14	-0.01	0.00	0.00	-0.01	-0.01	-0.03
	0.00	-0.20	-0.03	-0.02	-0.02	-0.04	-0.02	-0.04
-Dairy products	3.37	3.52	3.33	2.81	2.91	2.77	2.75	2.75
	0.01	-0.46	-0.02	0.02	0.00	0.00	0.00	-0.05
	0.00	-0.53	-0.03	0.00	-0.02	-0.02	-0.02	-0.07
-Oil	3.29	3.34	3.14	2.62	2.66	2.50	2.49	2.61
	0.01	-0.33	-0.02	-0.01	-0.02	-0.03	-0.02	-0.04
	0.00	-0.43	-0.04	-0.03	-0.05	-0.06	-0.03	-0.05
-Fruits & Vegetables	3.49	3.66	3.46	2.90	2.98	2.83	2.80	2.86
	0.01	-0.15	-0.02	0.00	0.00	-0.01	-0.01	-0.03
	0.00	-0.22	-0.03	-0.02	-0.02	-0.04	-0.03	-0.04
-Potatoes	3.52	3.72	3.52	2.96	3.05	2.90	2.87	2.91
	0.01	-0.13	-0.02	0.01	0.00	-0.01	0.00	-0.02
	0.00	-0.19	-0.03	-0.02	-0.02	-0.03	-0.03	-0.04
-Sugar	3.01	2.86	2.68	2.18	2.14	1.94	1.95	2.25
	0.00	-0.40	-0.03	-0.03	-0.06	-0.07	-0.04	-0.04
	0.00	-0.57	-0.05	-0.07	-0.09	-0.12	-0.03	-0.05
-Coffee, tea & cocoa	3.22	3.17	3.01	2.47	2.46	2.27	2.27	2.51
	0.00	-0.30	-0.02	-0.02	-0.04	-0.05	-0.03	-0.04
	0.00	-0.43	-0.04	-0.05	-0.07	-0.09	-0.02	-0.05
-Other products	3.23	3.19	3.03	2.50	2.49	2.30	2.31	2.53
	0.00	-0.29	-0.02	-0.02	-0.04	-0.05	-0.02	-0.04
	0.00	-0.41	-0.04	-0.05	-0.07	-0.09	-0.02	-0.05
-Non alcoholic	3.59	3.46	3.28	2.70	2.67	2.66	2.64	2.67
	0.00	-0.35	-0.01	0.00	-0.02	-0.01	-0.01	-0.04
	0.00	-0.48	-0.03	-0.03	-0.03	-0.03	-0.02	-0.05
-Alcoholic	3.48	3.53	3.32	2.77	2.82	2.73	2.70	2.73
	0.01	-0.25	-0.02	0.00	-0.01	-0.01	-0.01	-0.03
	0.00	-0.35	-0.03	-0.02	-0.02	-0.03	-0.03	-0.04
-Tobacco	1.70	1.80	1.78	1.74	1.82	1.90	1.97	2.09
	0.00	-1.53	0.00	0.00	0.01	0.01	0.02	0.01
	0.00	-1.78	-0.01	0.00	0.01	0.01	0.02	0.01
-Clothing	3.23	3.30	3.04	2.42	2.37	2.16	2.21	2.58
	-0.02	-0.30	-0.06	-0.04	-0.05	-0.05	-0.02	-0.04
	0.00	-0.39	-0.05	-0.06	-0.08	-0.09	0.08	-0.03
-Shoes	2.99	2.82	2.72	2.29	2.35	2.31	2.30	2.53
	0.02	-0.28	0.01	0.02	0.01	0.00	0.00	-0.02
	0.00	-0.41	-0.01	-0.01	-0.01	-0.02	-0.02	-0.04
-House rent	1.75	1.79	1.83	1.85	1.89	1.93	1.97	2.01
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-Heating & Electricity	1.21	0.90	2.18	3.14	2.91	2.72	2.92	2.57
	-0.03	-0.16	0.05	-0.02	-0.05	-0.02	-0.04	-0.01
	-0.03	-0.19	0.05	-0.02	-0.05	-0.03	-0.04	-0.01

Titles of Alternate Runs
Line 1: Specialising CEEC5
Line 2: Specialising CEEC5 + Removal of trade barriers (0-5-10) - difference from base
Line 3: Specialising CEEC5 + Removal of trade barriers (5-10-15)- difference from base

Alternatives are shown in deviations from base values.

	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
-Furniture	3.14	2.99	2.80	2.33	2.31	2.34	2.38	2.49
	0.00	-0.10	0.01	0.00	-0.02	-0.02	-0.02	-0.02
	0.00	-0.24	-0.01	-0.02	-0.04	-0.04	-0.03	-0.03
-Household equipment	3.22	3.23	2.97	2.40	2.36	2.20	2.24	2.54
	-0.02	-0.25	-0.04	-0.03	-0.05	-0.04	-0.02	-0.04
	0.00	-0.35	-0.04	-0.05	-0.07	-0.07	0.06	-0.03
-Appliances	2.86	2.71	2.48	2.05	2.08	2.06	2.12	2.24
	0.01	-0.19	-0.01	0.00	0.00	0.00	0.00	-0.02
	0.00	-0.34	-0.01	-0.01	-0.01	-0.01	0.00	-0.02
-Glasswork and Pottery	3.13	3.01	2.79	2.37	2.33	2.33	2.38	2.42
	0.00	-0.15	-0.01	-0.01	-0.02	-0.02	0.00	-0.04
	0.00	-0.26	-0.01	-0.02	-0.03	-0.02	0.00	-0.04
-Domestic Servant	2.21	2.25	2.29	2.33	2.37	2.42	2.46	2.50
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-Other durable & Services	3.36	3.17	3.10	2.61	2.53	2.48	2.50	2.46
	0.00	-0.17	0.00	0.00	-0.02	-0.01	-0.01	-0.04
	0.00	-0.26	0.00	-0.01	-0.03	-0.01	-0.01	-0.04
-Medicines	3.44	3.25	3.14	2.71	2.64	2.55	2.53	2.47
	0.00	-0.23	0.00	0.00	-0.03	-0.01	-0.01	-0.06
	0.00	-0.35	-0.01	-0.02	-0.04	-0.02	-0.02	-0.07
-Therap. instruments	3.04	2.97	2.74	2.25	2.23	2.11	2.15	2.36
	-0.01	-0.20	-0.03	-0.03	-0.03	-0.03	-0.01	-0.03
	0.00	-0.34	-0.03	-0.04	-0.05	-0.05	0.04	-0.03
-Medical services	1.71	1.75	1.79	1.83	1.88	1.92	1.96	2.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-Hospital	1.71	1.75	1.79	1.83	1.88	1.92	1.96	2.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-Auto & Cycles	3.09	2.56	2.29	1.96	1.93	1.93	2.03	2.10
	0.00	-0.30	-0.04	-0.03	-0.04	-0.02	-0.01	-0.02
	0.01	-0.41	-0.04	-0.03	-0.03	-0.02	0.00	0.00
-Running costs	2.46	2.15	2.97	3.29	3.13	3.01	3.17	2.97
	-0.02	-0.20	0.03	-0.02	-0.04	-0.02	-0.02	-0.01
	-0.02	-0.27	0.03	-0.02	-0.04	-0.02	-0.02	-0.01
-Transportation Services	1.83	1.87	1.65	1.55	1.64	1.52	1.52	1.58
	0.00	-0.03	0.02	0.02	-0.01	0.00	0.01	-0.01
	0.00	-0.04	0.02	0.01	-0.02	-0.01	0.00	0.00
-Communications	1.71	1.75	1.79	1.83	1.87	1.92	1.96	2.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-Radio, TV, Records, Hifi	3.18	3.08	2.88	2.43	2.46	2.40	2.43	2.51
	0.01	-0.18	-0.01	0.00	-0.01	-0.01	0.00	-0.03
	0.00	-0.30	-0.02	-0.02	-0.02	-0.02	-0.01	-0.03
-Books, Magazines & Newspapers	3.40	3.55	3.32	2.79	2.76	2.60	2.58	2.59
	0.01	-0.08	0.00	0.00	-0.01	-0.02	-0.02	-0.04
	0.00	-0.17	-0.01	-0.01	-0.03	-0.04	-0.03	-0.06
-Education & Textbooks	3.24	3.12	3.15	2.68	2.67	2.73	2.78	2.76
	0.00	-0.02	0.01	0.00	-0.01	0.00	0.00	-0.01
	0.00	-0.02	0.02	0.00	0.00	0.00	0.00	-0.01
-Theatre, and Other Recreation	3.29	3.11	3.22	2.57	2.48	2.52	2.61	2.57
	0.00	-0.03	0.01	0.01	0.00	0.00	0.00	-0.01
	0.00	-0.04	0.02	0.02	0.00	0.00	0.00	-0.01
-Cleaning & Toilet Articles	3.34	3.16	3.19	2.62	2.53	2.54	2.59	2.55
	0.00	-0.10	0.01	0.01	-0.01	0.00	0.00	-0.02
	0.00	-0.15	0.01	0.01	-0.01	-0.01	-0.01	-0.03
-Hotels & Restaurants	2.44	2.23	2.30	1.71	1.64	1.67	1.67	1.62
	0.00	-0.19	-0.02	-0.04	-0.04	-0.04	-0.06	-0.08
	0.00	-0.27	-0.04	-0.05	-0.04	-0.06	-0.06	-0.10

(Continued...)

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                    Titles of Alternate Runs
          Line 1: Specialising CEEC5
          Line 2: Specialising CEEC5 + Removal of trade barriers (0-5-10) - difference from base
          Line 3: Specialising CEEC5 + Removal of trade barriers (5-10-15)- difference from base
```

Alternatives are shown in deviations from base values.

	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
-Other Goods	3.32	3.20	3.06	2.61	2.64	2.60	2.61	2.70
	0.01	-0.15	0.00	0.01	0.00	0.00	0.00	-0.02
	0.00	-0.26	-0.01	-0.01	-0.02	-0.02	-0.01	-0.04
	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
-Financial Services	3.98	3.53	3.60	3.14	3.12	3.11	3.26	3.29
	0.00	0.00	0.01	0.01	0.01	0.01	0.00	-0.03
	0.00	0.00	0.02	0.01	0.01	0.00	0.00	-0.03
-Other Services	4.81	4.52	4.70	4.26	4.18	4.35	4.50	4.41
	-0.01	-0.02	0.00	-0.02	0.00	0.01	-0.01	-0.04
	0.00	-0.04	-0.01	-0.01	0.01	0.02	0.00	-0.05

Table 22 - Total Output, Rates of Growth

```
        Title of Alternate Runs
    Line 1: Specialising CEEC5
    Line 2: Specialising CEEC5 + Removal of trade barriers (0-5-10)
    Line 3: Specialising CEEC5 + Removal of trade barriers (5-10-15)
```

Alternatives are shown in deviations from base values.

	02-03	03-04	04-05	05-06	00-05
TOTAL	2.85	2.10	2.39	2.10	2.81
	0.00	0.02	-0.11	-0.17	-0.02
	0.00	-0.06	-0.18	-0.19	-0.05
1 Agriculture,Forestry,Fishery	0.04	-0.05	-0.14	-0.09	0.20
	0.00	-0.06	-0.38	-0.28	-0.09
	0.00	-0.24	-0.61	-0.44	-0.17
4 Coal,Oil,Petroleum Ref.Products	3.82	2.20	2.14	3.91	5.29
	0.00	-0.07	-0.09	-0.13	-0.03
	-0.04	-0.32	-0.30	-0.28	-0.12
5 Electricity,Gas,Water	2.29	1.79	1.91	1.61	2.24
	0.00	0.06	-0.08	-0.14	0.00
	0.00	-0.01	-0.17	-0.17	-0.03
MANUFACTURING	2.84	2.11	2.48	1.94	3.02
	0.00	-0.01	-0.17	-0.25	-0.04
	0.00	-0.13	-0.26	-0.27	-0.08
7 Primary metals	3.98	3.03	3.52	2.78	4.22
	0.00	-0.20	-0.29	-0.32	-0.10
	-0.01	-0.43	-0.53	-0.43	-0.19
8 Stone,Clay & Glass products	3.96	2.47	3.08	2.38	3.29
	0.00	0.18	0.06	-0.04	0.05
	0.00	-0.06	-0.17	-0.20	-0.04
9 Chemical Products	1.09	0.92	1.11	0.84	1.48
	0.00	0.09	-0.03	-0.06	0.01
	0.00	-0.17	-0.26	-0.23	-0.08
10 Metal Products	4.80	2.76	3.21	2.15	4.13
	0.00	-0.10	-0.28	-0.43	-0.08
	-0.01	-0.13	-0.28	-0.33	-0.08
11 Agric. & Indus. Machinery	5.22	3.16	4.03	2.85	5.23
	0.00	-0.51	-0.36	-0.62	-0.17
	-0.01	-0.41	-0.21	-0.36	-0.12
12 Office,Precision,Opt.Instruments	2.66	2.13	2.49	2.21	3.89
	0.00	0.24	0.12	0.05	0.07
	-0.01	0.01	-0.09	-0.11	-0.02
13 Electrical Goods	3.81	2.70	2.95	2.20	3.89
	0.00	-0.20	-0.36	-0.45	-0.11
	0.00	0.01	-0.14	-0.15	-0.02
14 Motor Vehicles	1.44	1.93	1.85	1.35	2.42
	0.00	-0.31	-0.75	-0.88	-0.21
	0.00	-0.11	-0.45	-0.46	-0.10
15 Other Transport Equipment	3.91	4.27	4.95	4.64	4.76
	0.00	0.19	0.20	0.13	0.08
	0.00	-0.07	-0.05	-0.10	-0.02

(Continued ...)

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                Title of Alternate Runs
            Line 1: Specialising CEEC5
            Line 2: Specialising CEEC5 + Removal of trade barriers (0-5-10)
            Line 3: Specialising CEEC5 + Removal of trade barriers (5-10-15)


Alternatives are shown in deviations from base values.
```

	02-03	03-04	04-05	05-06	00-05
16 Meat & Preserved Meat	-0.19	-0.26	-0.17	-0.06	-0.20
	0.00	0.22	-0.26	-0.19	-0.01
	0.00	0.15	-0.40	-0.29	-0.05
17 Milk & Dairy Products	1.05	0.89	0.96	1.08	0.91
	0.00	-0.75	-0.87	-0.68	-0.32
	0.00	-0.87	-1.01	-0.78	-0.37
18 Other Foods	0.91	0.85	0.88	0.98	0.97
	0.00	0.29	-0.14	-0.11	0.03
	0.00	0.15	-0.31	-0.24	-0.03
19 Alcohol & Non Alcoh. Beverages	1.86	1.57	1.42	1.51	1.71
	0.00	0.10	-0.18	-0.15	-0.02
	0.00	0.03	-0.32	-0.25	-0.06
20 Tobacco	-1.99	-2.41	-2.68	-2.92	-1.76
	0.00	-0.61	-1.86	-1.30	-0.49
	0.00	-0.70	-2.22	-1.55	-0.58
21 Textile & Clothing	0.93	1.01	0.92	0.54	1.45
	0.00	0.26	0.16	0.12	0.08
	0.00	-0.05	-0.16	-0.15	-0.04
22 Leather, Shoes & Footwear	-0.19	0.37	0.66	0.81	0.94
	0.00	0.55	0.28	0.22	0.16
	0.00	0.24	0.00	0.01	0.05
23 Timber, Wooden Product & Furniture	3.65	2.56	3.13	2.34	3.27
	0.00	0.50	0.13	0.02	0.13
	-0.01	0.11	-0.23	-0.26	-0.02
24 Paper & Printing Products	2.16	1.88	2.11	1.86	2.55
	0.00	-0.07	-0.21	-0.27	-0.06
	0.00	-0.27	-0.32	-0.28	-0.12
25 Plastic Products & Rubber	2.79	2.41	2.78	2.48	3.55
	0.00	-0.07	-0.20	-0.25	-0.05
	0.00	-0.13	-0.21	-0.18	-0.07
26 Other Manufacturing Industry	2.87	3.82	4.76	5.15	4.33
	0.00	0.43	0.20	0.12	0.13
	-0.01	0.11	-0.09	-0.08	0.00
27 Building & Construction	6.46	3.70	4.82	3.89	4.47
	0.00	0.01	0.03	-0.10	0.01
	0.00	-0.01	-0.04	-0.11	-0.01
SERVICES	2.46	1.93	2.09	1.90	2.37
	0.00	0.07	-0.07	-0.13	0.00
	0.00	0.04	-0.12	-0.14	-0.01
28 Recovery & Repair Services	0.64	-0.09	-0.07	-0.53	0.70
	0.00	0.03	-0.11	-0.17	-0.01
	0.00	-0.03	-0.19	-0.19	-0.04
29 Wholesale & Retail Trade	2.07	1.43	1.67	1.41	1.92
	0.00	0.08	-0.07	-0.15	0.00
	0.00	0.05	-0.13	-0.16	-0.02

```
                    Title of Alternate Runs
              Line 1: Specialising CEEC5
              Line 2: Specialising CEEC5 + Removal of trade barriers (0-5-10)
              Line 3: Specialising CEEC5 + Removal of trade barriers (5-10-15)

Alternatives are shown in deviations from base values.


                                    02-03   03-04   04-05   05-06   00-05

   30 Hotels & Restaurants          2.53    2.28    2.17    2.32    2.35
                                    0.00    0.14   -0.03   -0.07    0.02
                                    0.00    0.16   -0.05   -0.08    0.02
   ------------------------------------------------------------------------
   31 Inland Transport Services     3.32    2.48    2.82    2.48    3.22
                                    0.00    0.02   -0.11   -0.18   -0.02
                                    0.00   -0.06   -0.18   -0.20   -0.05
   ------------------------------------------------------------------------
   32 Sea & Air Transport Services  0.94    0.80    0.96    0.93    1.11
                                    0.00   -0.01   -0.06   -0.08   -0.01
                                    0.00   -0.05   -0.08   -0.09   -0.03
   ------------------------------------------------------------------------
   33 Auxiliary Transport Services  2.60    2.00    2.25    2.01    2.56
                                    0.00    0.03   -0.09   -0.15   -0.01
                                    0.00   -0.01   -0.14   -0.16   -0.03
   ------------------------------------------------------------------------
   34 Communication                 3.61    3.16    3.25    3.09    3.58
                                    0.00    0.10   -0.06   -0.12    0.01
                                    0.00    0.09   -0.10   -0.12    0.00
   ------------------------------------------------------------------------
   35 Banking & Insurance           2.80    2.27    2.53    2.33    2.88
                                    0.00    0.02   -0.09   -0.15   -0.01
                                    0.00   -0.05   -0.16   -0.17   -0.04
   ------------------------------------------------------------------------
   36 Other Private Services        2.78    2.00    2.33    1.96    2.73
                                    0.00    0.01   -0.10   -0.18   -0.02
                                    0.00   -0.07   -0.17   -0.19   -0.05
   ------------------------------------------------------------------------
   37 Real Estate                   2.87    2.55    2.54    2.45    2.74
                                    0.00    0.10   -0.03   -0.08    0.01
                                    0.00    0.10   -0.06   -0.09    0.01
   ------------------------------------------------------------------------
   38 Private Education Services    2.47    2.11    2.25    2.09    2.52
                                    0.00    0.07   -0.07   -0.13    0.00
                                    0.00    0.05   -0.11   -0.13   -0.01
   ------------------------------------------------------------------------
   39 Private Health Services       3.25    2.94    2.91    2.73    3.10
                                    0.00    0.08   -0.02   -0.07    0.01
                                    0.00    0.08   -0.05   -0.08    0.01
   ------------------------------------------------------------------------
   40 Recreation & Culture          2.05    1.80    1.85    1.85    1.98
                                    0.00    0.10   -0.05   -0.10    0.01
                                    0.00    0.09   -0.08   -0.10    0.00
   ------------------------------------------------------------------------
      SERVICES NON-MARKET           2.14    2.13    2.12    2.13    2.13
                                    0.00    0.01    0.00    0.00    0.00
                                    0.00    0.01    0.00    0.00    0.00
   ------------------------------------------------------------------------
   41 General Public Services       2.33    2.41    2.75    2.89    3.11
                                    0.00   -0.04   -0.13   -0.17   -0.03
                                   -0.01   -0.16   -0.18   -0.18   -0.07
   ------------------------------------------------------------------------
   42 Public Education              2.27    2.05    2.07    2.07    2.10
                                    0.00    0.13   -0.02   -0.07    0.02
                                    0.00    0.15   -0.05   -0.07    0.02
   ------------------------------------------------------------------------
   43 Public Health Services        2.18    2.18    2.18    2.18    2.18
                                    0.00    0.00    0.00    0.00    0.00
                                    0.00    0.00    0.00    0.00    0.00
   ------------------------------------------------------------------------
   44 Non-profit Institutions       1.50    1.29    1.20    1.30    1.32
                                    0.00    0.16   -0.02   -0.06    0.03
                                    0.00    0.19   -0.04   -0.07    0.03
```

7. EVALUATING THE IMPACT ON WELFARE

7.1 Welfare measures

The classical literature on welfare economics cites different ways to deal with the issue.[8] The answer to the question, "what amount of compensation would the consumers require in order to forego the change brought by the enlargement?", implies the computation of *equivalent variation* (EV). This measure uses the base year prices and asks what income change at these prices would be equivalent to the proposed change in terms of its impact on utility. In much the same way, we consider the minimum amount of income the consumer would be willing to accept in order to forgo the transition from situation 1 to situation 2. An alternative welfare measure is the *compensating variation* (CV). This uses the new (simulated) prices as the base and asks what income change would compensate the consumer for the price change (the compensating variation uses post-change prices given that compensation occurs after some change).[9] Both CV and EV are good measures of the welfare effect of a price change. Their size generally differs according to the relevant prices, but their sign remains constant. Which measure is the most appropriate depends on what question is posed. If we are simply trying to obtain a reasonable measure of "willingness to pay", the equivalent variation is probably better for two reasons. First, the EV measures the income change at current prices, and it is much easier to judge the value of money at current prices than at hypothetical prices. Second, if we compare more than one proposed policy scenario, the compensating variation uses different base prices for each new scenario while the equivalent variations maintains the base prices at the status quo level. Thus, the EV is more suitable for comparisons for a range of different scenarios (Varian, 1992).

Difficulties may arise in the practical application of these two measures. First, the information required to obtain exact measures of welfare change, such as CV or EV, is very demanding . Hence it is often necessary to resort to empirical approximations in applied work. Moreover, these are measures of the change in the well-being of *an individual household* between two situations where, for simplicity's sake, the two situations refer to different bundles of commodities consumed. In order to adapt welfare change measures for a single household to welfare change measures for the economy as a whole we need to make some approximations to make the measures empirically applicable, and some value judgments in order to move from single-household measures to multi-household aggregates.

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[8] This section is based on the analysis of welfare measures presented by Boadway and Bruce (1984) and Varian (1992).

[9] Following alternative analytical derivations , it can be shown that:

$$EV = \sum p_i^1 \Delta x_i + R$$

$$CV = \sum p_i^2 \Delta x_i + R$$

where p^1 and p^2 are the price vectors in situations 1 and 2, $\Delta x_i = (x^2 - x^1)$ where x^1 and x^2 are the consumption vectors in the same situations, and R is the sum of all terms higher than first order of a Taylor series expansion of the expenditure function.

Regarding the first kind of problem, a common way of constructing approximations to EV or CV is to compute quantity indices. These indices are designed to indicate how much the quantities consumed have changed between the two situations using a single measure. The two methods commonly used are the *Laspeyres quantity index Q_L* and the *Paasche quantity index Q_P*, defined as follows:

$$Q_L = \frac{\sum p_i^1 x_i^2}{\sum p_i^1 x_i^1}$$

$$Q_P = \frac{\sum p_i^2 x_i^2}{\sum p_i^2 x_i^1}$$

The Laspeyres quantity index is the weighted ratio of quantities consumed in the two periods, where the weights are the initial prices. The Paasche quantity index uses the new prices.
An alternative way of looking these indices is to write them in the following level form:

$$\sum p_i^1 x_i^2 - \sum p_i^1 x_i^1 = \sum p_i^1 \Delta x_i \approx EV$$

$$\sum p_i^2 x_i^2 - \sum p_i^2 x_i^1 = \sum p_i^2 \Delta x_i \approx CV$$

These indices are first order approximations of equivalent variation (EV) and compensating variation (CV). If we take the true quantity index at the prices p^1 as being EV in ratio form, the Laspeyres quantity index is an overestimate of the true index. Similarly, the true quantity index using the new prices can be considered as CV in ratio form and the Paasche index is an underestimate of the true index.
If $Q_p > 1$ so $\sum p_i^2 x_i^2 > \sum p_i^2 x_i^1$, this indicates that the disposable income in the new situation is more than sufficient to purchase the old set of goods at the new prices. In other words, x^1 was within the budget constraint in situation 2. In a situation where the consumer could purchase x^1 or x^2 , x^2 turns out to be the preferred choice. Alternatively, x^2 could not have been purchased when x^1 was purchased, therefore $\sum p_i^1 x_i^2 > \sum p_i^1 x_i^1$, or $Q_L > 1$.

The welfare change measures developed so far have been constructed on the assumption that we could aggregate all consumers into a single representative consumer for welfare measurement purposes. Treating a multi-person economy as if it were a single-person economy implies first and foremost that aggregate demand functions have the same properties as individual demand functions. That is, the aggregate demand function represents an aggregate preference ordering, or a set of social indifference curves. Aggregate welfare change measure has normative significance if we assume a Social Welfare Function to choose both the optimal quantity for each price either the optimal distribution of income. Alternatively, we can treat aggregate demand as representative of the sum of individual

demands if we assume that individual preferences are identical and homothetic for all persons.[10]

Nonetheless, most practitioners of applied welfare economics measure welfare change by simply aggregating CVs (EVs) over individuals. The argument runs that this is a less than adequate measure of social welfare in the sense that if aggregate CV (EV) rises society must be better off, whereas it should instead be read as an indication of whether or not there has been a Pareto improvement in social welfare (where the winners can hypothetically compensate the losers). However, the use of the unweighted sum of household compensating or equivalent variations as a necessary and sufficient indicator of potential Pareto improvement is highly problematic. At best such measures can be used as a preliminary attempt to rank social states (Boadway and Bruce 1984, 271).

By using individual data the welfare variations can be calculated for homogenous groups of individuals and aggregated with specific Social Welfare Functions. In particular, disaggregated data on household consumption may be used to estimate demand function for groups of households with similar characteristics. Then, CVs (EVs) could be computed and aggregated by using an additive SWF to sum the variations for homogenous groups of households attaching to the CVs distributional weights. In particular, weights reflect the proportion of each class of goods on total expenditure for different types of households.

It is thus clear that an exhaustive analysis of welfare effects is only possible using individual data and by estimating the demand function for homogenous groups of households. The demand system endogenously estimated in INTIMO is based on time-series data for personal consumption. Therefore individual data are not directly involved in the model although INTIMO uses survey data to estimate household consumption within a cross-section/time-series approach as described in Bardazzi and Barnabani (2001). The reasons for this procedure are manifold, but mainly relate to the need for accounting consistency within the multisectoral model which is guarantee by the time-series data and not by the survey data (Bardazzi 2000). Therefore, using the data available in our multisectoral model, we can compute a first-order approximation of welfare variations by assuming all the restrictive hypotheses listed above (representative consumer, identical and homothetic preferences, etc.) or, at best, a second-order approximation by using the estimated substitution effects for the demand system. We concluded that the latter was not worth the effort required insofar as the additional information thus obtained added little extra information to the results. Therefore, we have computed Laspeyres and Paasche indices as measures of welfare changes in different scenarios. The information contained in these indices, albeit limited, is worth examining: the interrelations among real and nominal variables which are a unique feature of the INFORUM models are also reflected in the estimation of household consumption. The simultaneity of model solution generates impacts on household consumption due to changes not only in prices, but also in disposable income, labour market, investments, international trade flows and so forth. It is with the structure of the model in mind that we proceed to the analysis of our findings.

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[10] A second measure could be estimated by using not only the variations of prices and quantities but also the substitution effects. Demand functions for different goods and Slutsky matrices of substitution effects should be estimated. This term should be added to the formulas of the indices to compute a second order approximation of EV and CV.

7.2 Welfare Effects

The welfare effects resulting from changes in household consumption are presented in Tables 23-26 which report the Laspeyres and Paasche indices for all scenarios (their value is 1.0 at the base year). The Eastern enlargement is said to be welfare increasing when the differences between the simulation scenario and the baseline - the last three columns of the tables - are positive for each year. In fact, if these differences are positive it means that quantities consumed in the case of enlargement are larger then those consumed in a 'non-enlargement' scenario. Our model provides data on prices and consumption for forty categories of goods. Household consumption is estimated with PADS and population projections for the demand system have been made using a demographic projection model.[11] In these equations, household disposable income and a price term are the most important independent variables. Household disposable income is modelled in the accountant as the sum of 'resources' (such as compensation of employees, property income and transfer payments) minus 'uses' (such as taxes, social security contributions and transfers to others) of the Income Distribution Account for Households. For example, an increase in exports will generate an increase in employment which will in turn boost the compensation of employees and personal consumption expenditure. On the other hand, a price increase will reduce consumption, but this effect is expected to be very low in these simulations, as explained above.

The first set of tables and figures (Tables 23, 24 and Figures 8, 9) presents results for the *CEECs growth effects scenarios*. These simulation scenarios do not include changes in prices due to the reduction of tariffs or trade barriers so that the economic effects are due to changes in demand and an increase in CEEC5 imports will mean an increase of Italian exports. For simplicity's sake, it should be noted that in addition to the baseline scenario we have formulated the following scenarios for this first set of simulations:

- *Italy/CEEC5 countries vis-à-vis* where the growth of GDP rates for the CEEC5 is about 2 per cent higher with respect to the baseline and the Italian model is run alone;
- *EU/CEEC5 countries vis-à-vis* considering *the impact of the increase of CEEC imports over the export structure of all the models in the system* using the BTM model and the country-specific models;
- *Specializing CEEC5* where the growth rate of GDP for the CEEC5 is the same as in the previous scenarios but the overall growth rate is the result of obtained by a specialization of imports in specific sectors.

A second set of results refers to another groups of simulations dealing with the *removal of trade barriers*. In particular, we have formulated two alternatives:[12]

- a *conservative scenario* which assumes the removal of tariffs and a 'mild' reduction of NTBs;
- a *generous scenario* which assumes a higher abatement of NTBs.

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[11] It should be noted that within the demographic projections model, we have assumed no change in net immigration due to EU enlargement.

[12] For a detailed description of all scenarios and assumptions, see sections 5 and 6.

The simulations in this last group include the CEECs growth effects as in *specializing CEEC5*. The welfare effects for this second set of scenarios are shown in Tables 25, 26 and Figures 10, 11.

Results suggest that the Eastern enlargement will generate an increase of welfare for the Italian economy. Laspeyres and Paasche quantity indices for the base simulation, compared with similar indices for the simulation scenarios with the EU enlargement, are always lower. The main reason for the improvement in welfare is that personal consumption increases for almost all items. In all enlargement scenarios the aggregate household consumption rate of growth is higher than in the baseline. Welfare increases progressively throughout all three scenarios: the most welfare improving scenario being the 'specialising CEEC5' in the first set of simulations (see Tables 23 and 24, column (3)), and the 'generous scenario' of abatement of tariffs and NTBs in the second group (see Tables 25 and 26, column (5)).

However, we may observe that also the second scenario ('EU/CCEC5 vis-à-vis') reveals differences with the baseline that are approximately twice as large as the differences between the first scenario and the baseline (see figures in columns (2) and (1)). The reason is that the increase in foreign demand for the Italian economy is larger in scenarios 2 and 3. In both these scenarios ('EU/CEEC5 countries via-à-vis' and 'specialising CEEC5'), Italian exports increase not only due to CEEC5 imports, but also due to the demand of other EU members insofar as integration implies an expansionary effect for all European Member States and Italy is directly and indirectly affected as a result of international trade flows. Moreover, when CEEC5 imports growth is simulated in some specialized commodity groups, the effect on Italian exports is higher because some of these are leading Italian exporting sectors (textiles, wood, clothing).[13]

The second set of simulations concerning the *removal of trade barriers* add a price effect to the growth effects of the first scenarios. In particular, removing trade protection through the elimination of both custom tariffs and NTBs reduces the relative prices of Italian imports from CEECs. The impact on welfare, reported as our aggregate indexes, is not as large as the effect of growth expansion due to the enlargement. Indeed, Laspeyers and Paasche indexes of columns (3) (Tables 23 and 24) are equal to the same indexes of columns (4) and (5) (Tables 25 and 26) up to the year 2003 because the removal of trade barriers removal will take place in 2004. Thus, a slight increase in household consumption will lead to a welfare improvement in the following years to reach the end of the simulation horizon with a 0.6 per cent increase in the difference from the baseline with respect to the indexes of the 'specialising CEEC5' scenario.[14] Turning to the commodity household consumption (Table 27, Household Consumption Growth Rates), we can observe an increase in the demand of some goods such as 'bread and cereals', 'meat', 'dairy products', 'fruit and vegetables', 'tobacco', 'vehicles' and others, that may be explained by the reduction of tariffs and prices (see Table 21, Household Consumption Deflators). The household consumption of some services also

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[13] For the macroeconomic results of all scenarios, see Table 14 and 29 of this report.

[14] For the Laspeyres indexes, compare the percentage difference with the baseline of 2.05 for the "Specialising CEEC5" and 2.65 for the "generous scenario of trade barriers removal". Similarly for the Paasche indexes.

increases: in this case, an income effect due to the rise of private disposable income prevails over a negligible price effect.

These welfare effects can be presented in a different way, if we express the aggregate measures (*EV* and *CV*) in percent of GDP. In this case we obtain a measure which is roughly comparable with the aggregate welfare measure reported in the study by Keuschnigg and Kohler (1999). We have computed this value for the scenarios *Italy/CEEC5 countries vis-à-vis, Specializing CEEC5* and *Removal of Trade Barriers (generous scenario)*. In these cases, the value of *EV* as a percentage of GDP at the year 2010 is respectively equal to 0.3, 0.8 and 0.9. As we may notice, the largest increase in welfare is due to the interaction of economic effects between Italy and other EU members whereas the gain after the removal of trade barriers is small.

Figures 8-11 show the growth rates of our quantity indices for all scenarios. For the *CEECs growth effects scenarios* (Figures 8, 9), the growth rates present the same pattern: they are all in the range from 1.4 to 1.9 percentage points, with a peak around the year 2003, followed by a slow down to the lowest value after 2006, and an upturn at the end of the period. This pattern is explained mainly by the behaviour of investments (see Table 14, Production Account). In most cases, the lines do not cross and the ranking is the same as that observed in the tables: the slowest growth of welfare indices is in the baseline, the fastest in the third scenario.
The behaviour of growth rates is slightly different for the scenarios for the *removal of trade barriers*. Although the turning points occur in the same years, in this case the range is wider (from 1.7 to 2.2 for the Laspeyres indexes) with an acceleration in growth after 2007.

Table 23 - Laspeyres indices for the *CEECs growth effects scenarios* (2000-2010) and differences from the baseline scenario

	Laspeyres Indices for the baseline and the simulation scenarios				Differences from the baseline scenario (%) (*)		
	QL(0)	QL(1)	QL(2)	QL(3)	(1)	(2)	(3)
2000	1.000	1.000	1.000	1.000			
2001	1.016	1.017	1.017	1.017	0.10	0.10	0.10
2002	1.033	1.034	1.035	1.036	0.10	0.19	0.29
2003	1.050	1.053	1.055	1.056	0.29	0.48	0.57
2004	1.066	1.070	1.073	1.074	0.38	0.66	0.75
2005	1.082	1.087	1.091	1.093	0.46	0.83	1.02
2006	1.098	1.104	1.109	1.112	0.55	1.00	1.28
2007	1.113	1.120	1.126	1.130	0.63	1.17	1.53
2008	1.131	1.138	1.146	1.150	0.62	1.33	1.68
2009	1.150	1.158	1.167	1.172	0.70	1.48	1.91
2010	1.169	1.177	1.187	1.193	0.68	1.54	2.05

Note: (0) Baseline Scenario
(1) Italy/CEEC5 vis-à-vis Scenario
(2) EU/CEEC5 vis-à-vis Scenario
(3) Specializing CEEC5 Scenario
(*) $100*(QL_t(scenario)-QL_t(0))/QL_t(0)$

Table 24 - Paasche indices for the *CEECs growth effects scenarios* (2000-2010) and differences from the baseline scenario

	Paasche Indices for the baseline and the simulation scenarios				Differences from the baseline scenario (%) (*)		
	QP(0)	QP(1)	QP(2)	QP(3)	(1)	(2)	(3)
2000	1.000	1.000	1.000	1.000			
2001	1.016	1.016	1.017	1.017	0.00	0.10	0.10
2002	1.032	1.034	1.035	1.036	0.19	0.29	0.39
2003	1.050	1.053	1.055	1.056	0.29	0.48	0.57
2004	1.065	1.069	1.072	1.073	0.38	0.66	0.75
2005	1.081	1.085	1.089	1.091	0.37	0.74	0.93
2006	1.096	1.102	1.107	1.110	0.55	1.00	1.28
2007	1.111	1.117	1.124	1.127	0.54	1.17	1.44
2008	1.128	1.135	1.143	1.148	0.62	1.33	1.77
2009	1.147	1.155	1.163	1.169	0.70	1.39	1.92
2010	1.165	1.174	1.183	1.189	0.77	1.55	2.06

Note: (0) Baseline Scenario
(1) Italy/CEEC5 vis-à-vis Scenario
(2) EU/CEEC5 vis-à-vis Scenario
(3) Specializing CEEC5 Scenario
(*) $100*(QP_t(scenario)-QP_t(0))/QP_t(0)$

Figure 8 - Laspeyres Indices Annual Growth Rates (%) for the Baseline and the *CEECs Growth Effects* Scenarios
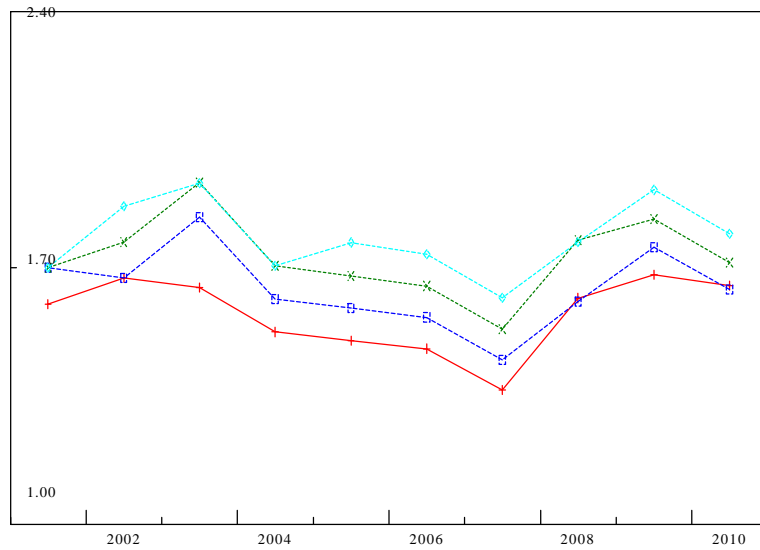
Note:
+: Baseline Scenario
□: Italy/CEEC5 vis-à-vis Scenario
×: EU/CEEC5 vis-à-vis Scenario
◇: Specializing CEEC5 Scenario

Figure 9 - Paasche Indices Annual Growth Rates (%) for the Baseline and the *CEECs Growth Effects* Scenarios

Note:
+: Baseline Scenario
□: Italy/CEEC5 vis-à-vis Scenario
×: EU/CEEC5 vis-à-vis Scenario
◇: Specializing CEEC5 Scenario

95
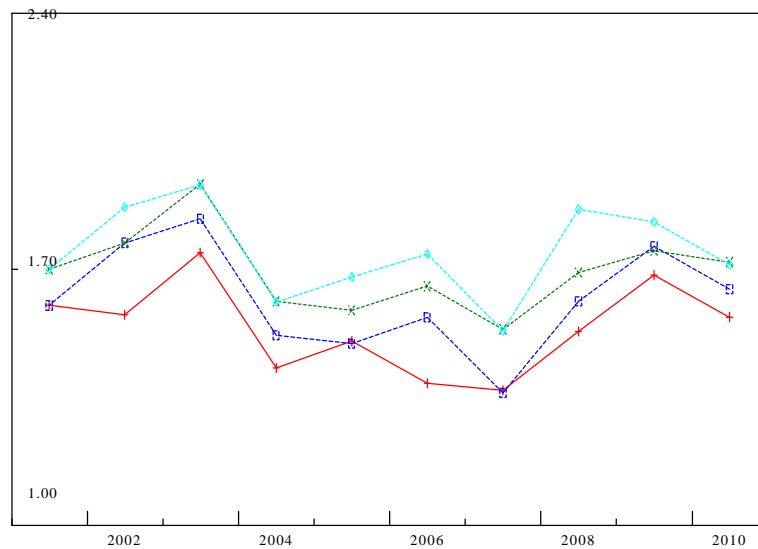
Table 25 - Laspeyres indices for *trade barriers removal* scenarios (2000-2010) and differences from the baseline scenario

	Laspeyres Indices for the baseline and the simulation scenarios			Differences from the baseline scenario (%) (*)	
	QL(0)	QL(4)	QL(5)	(4)	(5)
2000	1.00	1.00	1.00		
2001	1.016	1.017	1.017	0.10	0.10
2002	1.033	1.035	1.035	0.19	0.19
2003	1.050	1.056	1.056	0.58	0.58
2004	1.066	1.075	1.076	0.84	0.94
2005	1.082	1.093	1.094	1.02	1.02
2006	1.098	1.112	1.112	1.28	1.28
2007	1.113	1.130	1.130	1.53	1.53
2008	1.131	1.151	1.152	1.77	1.86
2009	1.150	1.173	1.174	2.00	2.09
2010	1.169	1.198	1.200	2.48	2.65

Note: (0) Baseline Scenario
 (4) Removal of Trade Barriers (0-5-10) Scenario
 (5) Removal of Trade Barriers (5-10-15) Scenario
 (*) $100*(QP_t(scenario)-QP_t(0))/QP_t(0)$

Table 26 - Paasche indices for *trade barriers removal* scenarios (2000-2010) and differences from the baseline scenario

	Paasche Indices for the baseline and the simulation scenarios			Differences from the baseline scenario (%) (*)	
	QP(0)	QP(4)	QP(5)	(4)	(5)
2000	1.000	1.000	1.000		
2001	1.016	1.017	1.017	0.10	0.1
2002	1.032	1.036	1.036	0.39	0.39
2003	1.050	1.056	1.056	0.57	0.57
2004	1.065	1.075	1.075	0.94	0.94
2005	1.081	1.092	1.093	1.02	1.11
2006	1.096	1.111	1.111	1.37	1.37
2007	1.111	1.128	1.128	1.53	1.53
2008	1.128	1.149	1.149	1.86	1.86
2009	1.147	1.170	1.171	2.01	2.09
2010	1.165	1.195	1.196	2.58	2.66

Note: (0) Baseline Scenario
 (4) Removal of Trade Barriers (0-5-10) Scenario
 (5) Removal of Trade Barriers (5-10-15) Scenario
 (*) $100*(QP_t(scenario)-QP_t(0))/QP_t(0)$

Figure 10 - Laspeyres Indices Annual Growth Rates (%) for the Baseline and the *Trade Barriers Removal* Scenarios
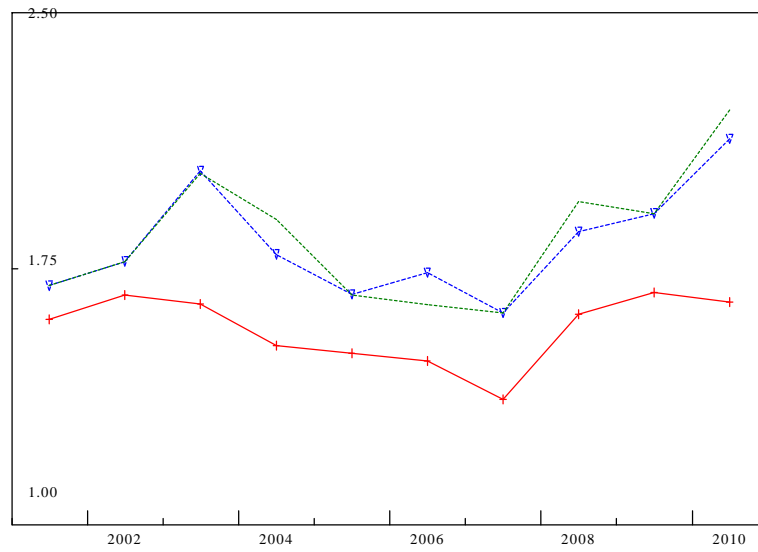
Note:
+: Baseline Scenario
▽: Removal of Trade Barriers (0-5-10) Scenario
no mark: Removal of Trade Barriers (5-10-15) Scenario

Figure 11 - Paasche Indices Annual Growth Rates (%) for the Baseline and the *Trade Barriers Removal* Scenarios
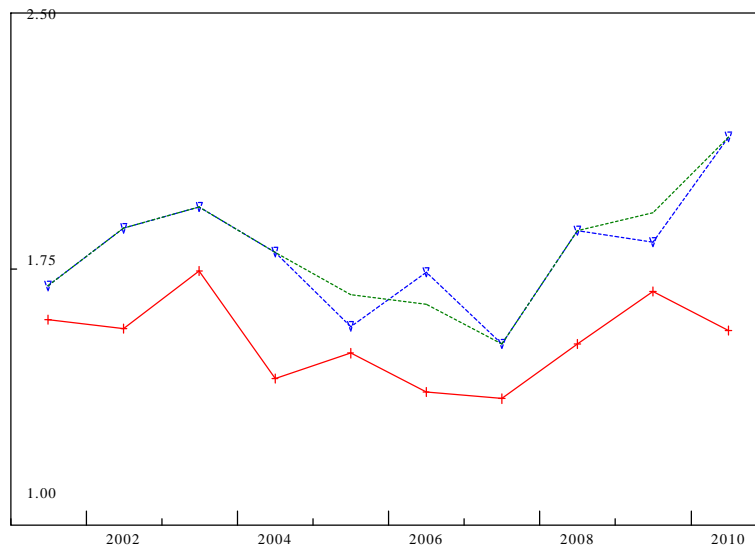
Note:
+: Baseline Scenario
▽: Removal of Trade Barriers (0-5-10) Scenario
no mark: Removal of Trade Barriers (5-10-15) Scenario

Table 27 - Household Consumption, Rates of Growth

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                        Titles of Alternate Runs
            Line 1: Baseline
            Line 2: Specialising CEEC5
            Line 2: Specialising CEEC5 + Removal of trade barriers (0-5-10) - difference from base
            Line 4: Specialising CEEC5 + Removal of trade barriers (5-10-15)- difference from base


Alternatives are shown in deviations from base values.
```

	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
TOTAL	1.687	1.460	1.458	1.472	1.359	1.563	1.622	1.596
	0.209	0.210	0.228	0.234	0.251	0.230	0.226	0.178
	0.211	0.364	0.209	0.169	0.215	0.213	0.207	0.184
	0.210	0.397	0.184	0.164	0.239	0.265	0.261	0.220
Foods & Beverages	-0.190	-0.433	-0.404	-0.343	-0.429	-0.175	-0.100	-0.104
	0.209	0.211	0.230	0.238	0.256	0.232	0.227	0.169
	0.212	0.422	0.215	0.173	0.221	0.217	0.210	0.177
	0.211	0.462	0.193	0.171	0.249	0.273	0.267	0.216
-Foods	-0.112	-0.355	-0.321	-0.256	-0.341	-0.082	-0.005	-0.008
	0.209	0.211	0.231	0.239	0.257	0.232	0.227	0.168
	0.212	0.427	0.216	0.173	0.221	0.217	0.211	0.176
	0.211	0.467	0.193	0.172	0.249	0.273	0.268	0.216
-Bread & Cereals	0.552	0.344	0.370	0.417	0.350	0.614	0.682	0.645
	0.206	0.210	0.228	0.235	0.251	0.223	0.223	0.167
	0.209	0.416	0.213	0.174	0.222	0.215	0.208	0.176
	0.208	0.462	0.191	0.173	0.251	0.274	0.263	0.214
-Meat	-0.796	-1.053	-1.017	-0.955	-1.049	-0.803	-0.736	-0.741
	0.200	0.206	0.227	0.236	0.253	0.225	0.216	0.153
	0.203	0.485	0.215	0.172	0.217	0.211	0.203	0.162
	0.202	0.538	0.194	0.172	0.246	0.267	0.262	0.202
-Fish	-0.467	-0.725	-0.707	-0.633	-0.732	-0.470	-0.394	-0.393
	0.214	0.215	0.234	0.242	0.262	0.240	0.237	0.180
	0.217	0.377	0.217	0.175	0.225	0.225	0.218	0.187
	0.216	0.408	0.194	0.174	0.253	0.281	0.275	0.225
-Dairy products	0.420	0.164	0.195	0.275	0.176	0.437	0.515	0.530
	0.215	0.213	0.233	0.242	0.261	0.238	0.232	0.169
	0.218	0.445	0.218	0.173	0.223	0.219	0.213	0.180
	0.217	0.477	0.195	0.171	0.250	0.275	0.270	0.220
-Oil	-1.142	-1.405	-1.396	-1.377	-1.501	-1.279	-1.235	-1.287
	0.211	0.213	0.232	0.239	0.257	0.232	0.229	0.172
	0.213	0.412	0.216	0.174	0.222	0.218	0.212	0.180
	0.212	0.450	0.194	0.172	0.250	0.275	0.268	0.218
-Fruits & Vegetables	-0.198	-0.455	-0.421	-0.356	-0.438	-0.178	-0.091	-0.086
	0.214	0.215	0.234	0.241	0.260	0.238	0.234	0.178
	0.216	0.386	0.218	0.174	0.222	0.222	0.216	0.185
	0.216	0.417	0.195	0.172	0.250	0.277	0.273	0.223
-Potatoes	0.014	-0.261	-0.226	-0.156	-0.260	-0.011	0.066	0.068
	0.215	0.217	0.236	0.243	0.262	0.241	0.236	0.180
	0.218	0.381	0.220	0.175	0.223	0.224	0.218	0.186
	0.217	0.411	0.197	0.173	0.250	0.279	0.276	0.224
-Sugar	0.065	-0.126	-0.109	-0.091	-0.169	0.054	0.118	0.099
	0.208	0.208	0.226	0.233	0.250	0.228	0.225	0.177
	0.210	0.370	0.209	0.168	0.215	0.212	0.207	0.183
	0.209	0.403	0.184	0.163	0.240	0.265	0.260	0.220
-Coffee, tea & cocoa	0.156	-0.072	-0.054	-0.014	-0.099	0.153	0.219	0.189
	0.209	0.211	0.229	0.237	0.254	0.228	0.227	0.172
	0.212	0.402	0.213	0.173	0.222	0.217	0.211	0.180
	0.211	0.442	0.190	0.172	0.250	0.274	0.266	0.218
-Other products	1.497	1.271	1.293	1.338	1.248	1.495	1.556	1.519
	0.209	0.212	0.229	0.237	0.254	0.229	0.228	0.172
	0.212	0.402	0.213	0.174	0.223	0.218	0.211	0.180
	0.211	0.442	0.191	0.172	0.251	0.275	0.266	0.218
-Beverages & Tobacco	-0.732	-0.980	-0.985	-0.963	-1.063	-0.844	-0.788	-0.809
	0.210	0.211	0.229	0.236	0.255	0.232	0.228	0.175
	0.212	0.388	0.212	0.170	0.219	0.216	0.210	0.182
	0.211	0.425	0.188	0.167	0.245	0.269	0.265	0.219

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                                                              (Continued ...)
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                          Titles of Alternate Runs
              Line 1: Baseline
              Line 2: Specialising CEEC5
              Line 2: Specialising CEEC5 + Removal of trade barriers (0-5-10) - difference from base
              Line 4: Specialising CEEC5 + Removal of trade barriers (5-10-15)- difference from base


Alternatives are shown in deviations from base values.
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	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
-Non alcoholic	2.916	2.638	2.613	2.631	2.493	2.675	2.703	2.673
	0.211	0.212	0.230	0.236	0.258	0.233	0.229	0.171
	0.214	0.413	0.213	0.171	0.223	0.217	0.210	0.178
	0.213	0.455	0.190	0.169	0.248	0.271	0.267	0.217
-Alcoholic	-2.380	-2.720	-2.782	-2.843	-3.052	-2.936	-2.983	-3.112
	0.212	0.213	0.232	0.239	0.258	0.235	0.231	0.175
	0.214	0.398	0.216	0.173	0.222	0.219	0.213	0.181
	0.214	0.435	0.193	0.170	0.248	0.273	0.270	0.219
-Tobacco	-1.277	-1.533	-1.578	-1.591	-1.694	-1.489	-1.457	-1.513
	0.208	0.208	0.226	0.233	0.250	0.228	0.225	0.177
	0.210	0.370	0.209	0.168	0.215	0.212	0.207	0.183
	0.209	0.403	0.184	0.163	0.240	0.265	0.260	0.220
Durables, non dur. & Services	2.077	1.844	1.828	1.825	1.699	1.887	1.936	1.900
	0.209	0.209	0.227	0.233	0.250	0.229	0.226	0.179
	0.211	0.353	0.209	0.168	0.214	0.212	0.207	0.185
	0.210	0.384	0.183	0.163	0.238	0.264	0.260	0.221
-Clothing & Shoes	0.577	0.316	0.372	0.408	0.326	0.563	0.646	0.545
	0.200	0.198	0.218	0.227	0.245	0.222	0.224	0.177
	0.203	0.387	0.206	0.169	0.217	0.214	0.203	0.186
	0.202	0.428	0.181	0.165	0.244	0.270	0.239	0.219
-Clothing	0.613	0.337	0.399	0.425	0.345	0.582	0.661	0.562
	0.199	0.194	0.214	0.225	0.243	0.219	0.224	0.179
	0.201	0.379	0.205	0.170	0.219	0.215	0.203	0.189
	0.201	0.418	0.179	0.164	0.244	0.270	0.236	0.221
-Shoes	0.431	0.232	0.261	0.342	0.254	0.487	0.584	0.475
	0.205	0.210	0.233	0.239	0.252	0.231	0.225	0.168
	0.207	0.419	0.211	0.166	0.210	0.211	0.202	0.173
	0.206	0.467	0.189	0.167	0.241	0.271	0.252	0.213
-Housing	2.529	2.303	2.208	2.113	1.993	2.192	2.212	2.204
	0.229	0.215	0.224	0.235	0.258	0.239	0.242	0.193
	0.233	0.334	0.201	0.169	0.221	0.220	0.223	0.194
	0.232	0.350	0.175	0.161	0.243	0.269	0.276	0.228
-House rent	2.733	2.474	2.401	2.334	2.200	2.385	2.399	2.371
	0.224	0.219	0.232	0.236	0.253	0.237	0.238	0.193
	0.227	0.330	0.211	0.170	0.214	0.217	0.217	0.193
	0.226	0.343	0.184	0.162	0.236	0.266	0.270	0.227
-Heating & Electricity	1.698	1.600	1.406	1.187	1.115	1.366	1.399	1.469
	0.249	0.198	0.188	0.229	0.279	0.246	0.262	0.192
	0.257	0.352	0.160	0.167	0.250	0.231	0.248	0.196
	0.256	0.376	0.134	0.160	0.273	0.282	0.301	0.231
-Furniture & Services	1.136	0.926	0.948	0.953	0.857	1.033	1.110	1.125
	0.210	0.210	0.228	0.237	0.256	0.233	0.229	0.179
	0.213	0.361	0.207	0.169	0.219	0.214	0.209	0.184
	0.212	0.398	0.182	0.164	0.243	0.266	0.267	0.222
-Furniture	0.676	0.457	0.518	0.515	0.419	0.589	0.672	0.677
	0.210	0.206	0.225	0.233	0.253	0.230	0.229	0.179
	0.213	0.368	0.208	0.168	0.217	0.214	0.208	0.186
	0.212	0.408	0.183	0.163	0.242	0.266	0.260	0.222
-Household equipment	2.958	2.713	2.668	2.462	2.381	2.446	2.543	2.595
	0.220	0.227	0.243	0.250	0.271	0.248	0.235	0.178
	0.223	0.354	0.210	0.169	0.219	0.216	0.219	0.177
	0.222	0.392	0.187	0.167	0.245	0.266	0.299	0.220
-Appliances	1.498	1.187	1.288	1.205	1.137	1.337	1.430	1.434
	0.197	0.206	0.228	0.235	0.252	0.230	0.225	0.175
	0.199	0.356	0.209	0.171	0.221	0.217	0.207	0.181
	0.198	0.390	0.185	0.168	0.247	0.271	0.260	0.219
-Glasswork and Pottery	0.584	0.288	0.401	0.329	0.214	0.350	0.406	0.360
	0.193	0.207	0.233	0.240	0.255	0.231	0.224	0.182
	0.195	0.358	0.213	0.172	0.219	0.215	0.204	0.184
	0.194	0.409	0.189	0.170	0.248	0.271	0.259	0.222

Line 1: Baseline
Line 2: Specialising CEEC5
Line 2: Specialising CEEC5 + Removal of trade barriers (0-5-10) - difference from base
Line 4: Specialising CEEC5 + Removal of trade barriers (5-10-15)- difference from base

Alternatives are shown in deviations from base values.

	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
-Domestic Servant	1.283	1.077	0.981	1.062	0.874	1.054	1.076	0.963
	0.214	0.209	0.224	0.234	0.254	0.231	0.230	0.179
	0.217	0.371	0.205	0.169	0.219	0.215	0.212	0.185
	0.216	0.402	0.180	0.164	0.243	0.268	0.265	0.221
-Other durable & Services	0.590	0.433	0.444	0.555	0.474	0.694	0.762	0.830
	0.212	0.207	0.224	0.235	0.253	0.230	0.226	0.179
	0.214	0.356	0.203	0.167	0.219	0.211	0.206	0.188
	0.213	0.391	0.176	0.160	0.242	0.262	0.261	0.225
-Health	3.191	2.904	2.879	2.733	2.577	2.702	2.743	2.664
	0.219	0.217	0.232	0.235	0.250	0.234	0.233	0.189
	0.221	0.336	0.211	0.169	0.212	0.214	0.212	0.190
	0.220	0.353	0.185	0.161	0.234	0.264	0.265	0.225
-Medicines	3.459	3.183	3.165	3.070	2.980	3.112	3.198	3.066
	0.208	0.208	0.226	0.233	0.250	0.228	0.225	0.177
	0.210	0.370	0.209	0.168	0.215	0.212	0.207	0.183
	0.209	0.403	0.184	0.163	0.240	0.265	0.260	0.220
-Therap. instruments	2.646	2.426	2.484	2.376	2.229	2.363	2.409	2.340
	0.208	0.208	0.226	0.233	0.250	0.228	0.225	0.177
	0.210	0.370	0.209	0.168	0.215	0.212	0.207	0.183
	0.209	0.403	0.184	0.163	0.240	0.265	0.260	0.220
-Medical services	3.239	2.896	2.825	2.634	2.415	2.512	2.511	2.492
	0.229	0.225	0.237	0.237	0.250	0.238	0.240	0.200
	0.231	0.306	0.214	0.169	0.208	0.215	0.217	0.196
	0.230	0.308	0.186	0.159	0.229	0.263	0.270	0.229
-Hospital	2.616	2.395	2.418	2.225	2.027	2.180	2.186	2.106
	0.229	0.224	0.236	0.237	0.251	0.238	0.240	0.199
	0.231	0.308	0.213	0.169	0.209	0.216	0.217	0.196
	0.231	0.311	0.186	0.160	0.230	0.264	0.270	0.229
-Transports & Communications	2.604	2.337	2.379	2.302	2.152	2.283	2.321	2.237
	0.180	0.196	0.223	0.224	0.236	0.214	0.205	0.173
	0.180	0.371	0.211	0.163	0.203	0.199	0.186	0.179
	0.179	0.410	0.185	0.156	0.226	0.249	0.238	0.211
-Auto & Cycles	1.942	1.794	2.022	1.642	1.377	1.293	1.307	1.168
	0.093	0.129	0.176	0.177	0.187	0.155	0.132	0.154
	0.090	0.345	0.177	0.130	0.165	0.143	0.114	0.157
	0.088	0.415	0.149	0.117	0.180	0.183	0.161	0.170
-Running costs	2.341	2.016	2.019	2.074	1.967	2.156	2.227	2.151
	0.200	0.216	0.241	0.236	0.241	0.223	0.216	0.171
	0.200	0.382	0.227	0.171	0.205	0.208	0.196	0.179
	0.200	0.414	0.203	0.167	0.230	0.261	0.249	0.216
-Transportation Services	2.604	2.338	2.383	2.349	2.229	2.480	2.502	2.451
	0.225	0.235	0.253	0.252	0.270	0.254	0.254	0.204
	0.227	0.340	0.225	0.178	0.231	0.231	0.230	0.205
	0.226	0.348	0.197	0.173	0.257	0.285	0.286	0.239
-Communications	4.188	3.880	3.744	3.677	3.517	3.656	3.625	3.537
	0.208	0.202	0.218	0.232	0.255	0.228	0.227	0.170
	0.211	0.399	0.201	0.170	0.224	0.215	0.211	0.180
	0.210	0.443	0.177	0.166	0.250	0.270	0.263	0.218
-Recreation & Education	2.411	2.160	2.150	2.150	2.066	2.255	2.282	2.236
	0.205	0.211	0.230	0.236	0.254	0.231	0.227	0.182
	0.208	0.346	0.209	0.170	0.219	0.215	0.208	0.186
	0.207	0.379	0.183	0.164	0.243	0.266	0.261	0.222
-Radio, TV, Records, Hifi	3.056	2.731	2.706	2.631	2.484	2.612	2.617	2.505
	0.189	0.202	0.226	0.233	0.252	0.227	0.221	0.174
	0.192	0.349	0.207	0.169	0.220	0.213	0.202	0.179
	0.191	0.394	0.182	0.164	0.245	0.266	0.254	0.216
-Books, Magazines & Newspapers	1.111	0.858	0.877	0.923	0.859	1.110	1.190	1.168
	0.212	0.210	0.230	0.238	0.257	0.231	0.223	0.188
	0.215	0.343	0.209	0.171	0.221	0.216	0.206	0.197
	0.214	0.378	0.185	0.166	0.247	0.270	0.263	0.236

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                            Titles of Alternate Runs
                Line 1: Baseline
                Line 2: Specialising CEEC5
                Line 2: Specialising CEEC5 + Removal of trade barriers (0-5-10) - difference from base
                Line 4: Specialising CEEC5 + Removal of trade barriers (5-10-15)- difference from base


Alternatives are shown in deviations from base values.


                              02-03    03-04    04-05    05-06    06-07    07-08    08-09    09-10

        -Education & Textbooks    2.056    1.836    1.845    1.835    1.831    2.013    2.078    2.065
                                  0.218    0.216    0.229    0.235    0.252    0.231    0.232    0.183
                                  0.221    0.345    0.207    0.169    0.216    0.212    0.212    0.187
                                  0.220    0.365    0.180    0.161    0.237    0.262    0.264    0.221
        -----------------------------------------------------------------------------------------------
        -Theatre, and Other Recreation  2.073    1.928    1.910    2.008    1.992    2.252    2.273    2.315
                                  0.226    0.224    0.237    0.242    0.256    0.237    0.238    0.192
                                  0.229    0.342    0.213    0.173    0.217    0.217    0.218    0.194
                                  0.228    0.358    0.184    0.162    0.239    0.266    0.271    0.228
        -----------------------------------------------------------------------------------------------
        -Other Goods and Services    1.805    1.599    1.537    1.684    1.511    1.725    1.780    1.772
                                  0.213    0.215    0.235    0.237    0.251    0.231    0.224    0.168
                                  0.215    0.347    0.214    0.169    0.211    0.213    0.208    0.179
                                  0.214    0.384    0.190    0.167    0.237    0.266    0.266    0.222
        -----------------------------------------------------------------------------------------------
        -Cleaning & Toilet Articles    1.861    1.659    1.606    1.674    1.594    1.804    1.850    1.860
                                  0.221    0.217    0.231    0.238    0.256    0.235    0.234    0.186
                                  0.224    0.351    0.208    0.170    0.219    0.216    0.214    0.191
                                  0.223    0.375    0.181    0.162    0.242    0.266    0.268    0.227
        -----------------------------------------------------------------------------------------------
        -Hotels & Restaurants    2.262    2.087    1.908    2.118    1.926    2.184    2.216    2.208
                                  0.213    0.211    0.221    0.227    0.242    0.216    0.214    0.149
                                  0.216    0.369    0.206    0.171    0.212    0.207    0.207    0.167
                                  0.215    0.401    0.183    0.166    0.235    0.261    0.261    0.209
        -----------------------------------------------------------------------------------------------
        -Other Goods    0.359    0.017    0.297    0.361    0.090    0.151    0.281    0.217
                                  0.199    0.225    0.280    0.265    0.274    0.271    0.242    0.204
                                  0.198    0.281    0.243    0.157    0.193    0.221    0.196    0.200
                                  0.197    0.357    0.223    0.176    0.239    0.284    0.276    0.253
        -----------------------------------------------------------------------------------------------
        -Financial Services    2.384    2.241    2.122    2.128    2.027    2.160    2.134    2.105
                                  0.235    0.243    0.257    0.256    0.273    0.262    0.260    0.210
                                  0.237    0.306    0.229    0.183    0.226    0.234    0.234    0.214
                                  0.236    0.301    0.197    0.171    0.245    0.281    0.290    0.251
        -----------------------------------------------------------------------------------------------
        -Other Services    0.899    0.641    0.623    0.597    0.527    0.744    0.820    0.822
                                  0.214    0.208    0.223    0.233    0.255    0.231    0.231    0.179
                                  0.217    0.376    0.204    0.169    0.221    0.216    0.213    0.185
                                  0.216    0.409    0.179    0.164    0.246    0.270    0.266    0.221
        -----------------------------------------------------------------------------------------------
```

8. THE IMPACT ON THE NATIONAL BUDGET

Direct effects generated by trade pass through the real impact on macro aggregates recorded in the Product account (see Table 29). As already noted, the increase in sectoral outputs and the growth of imports and exports lead to an increase of GDP; household consumption benefits from the prosperity induced by European enlargement and from the removal of tariffs and non-tariff barriers. In particular, we should stress that the reduction in import prices implied by the removal of tariffs and non-tariff barriers does not influence the trend in household consumption. Thus, the impact on household consumption is not evident in the aggregate, but will, of course, effect the allocation of real household disposable income among consumption items. Thus, from the Product account it is evident that, in general, volume tax bases swell.

The removal of trade barriers have a clear impact on price formation. The removal of trade barriers' scenario simulations provide evidence of a reduction in prices. However, when we consider the effect of higher demand (specialising CEECs), together with the removal of trade protection, the overall effect on output is positive. Because of the increase in volume and the concurrent drop in prices, the *ad valorem* tax bases are no longer unequivocally determined; in this case, we can deduce the impact of enlargement just looking at the tax revenues. On the contrary, purely nominal tax bases do not suffer from this sort of ambiguity. For example, household disposable income gives precise information on the amount of income tax revenues (once the distribution effect, if any, is removed); in this case purely nominal tax bases do not suffer from ambiguity.

Government expenditure and investments both play a key role in the evaluation of any impact on national budget. In the baseline and other scenarios, government expenditure has been assumed to be independent in real terms of the effect of the enlargement. However, nominal government expenditure is allowed to vary. Real government investments are endogenously determined as follows. First, an aggregate investment function provides the total investments which constitute a benchmark for the individual investors. Then, an investment function is modelled for each investor. This approach allows us to assign an anti-cyclical role to government investment: government invests more when the private sector invests less and vice versa. However, the impact of investments on the national budget is measured in nominal terms so that the price and the real effects are merged.

Table 31 (Government Expenditure and Investment, Household Disposable Income) reveals what lies behind the simulations shown above. Government expenditure has a real component which is not influenced by price changes. The real effect due to the increase in trade - the 'specialising CEEC5 scenario' - is modest throughout the simulation period. The conservative and generous scenarios of removal of trade barriers reveal the impact of prices on nominal government expenditure. Prices decrease and expenditure consequently shrinks, although modestly. Government expenditure on investments decreases even where total investment grows faster than in the baseline. This is due to the anti-cyclical role mentioned above. Household disposable income benefits from the import prices reduction considered in the scenarios related to the removal of trade barriers; indeed, it suffers a decrease in nominal terms with respect to the case of 'specialising CEEC5', but gains in real terms as can be seen from the household consumption rates of growth in the second part of the simulation period.

The budget implications of European enlargement can moreover be investigated by examining the 'use of income account' of government (see Table 30). On the resources side, and in the context of enlargement, the rise in the growth rate of indirect taxes is between 1 to 3 per cent in the simulation period (2004-2010). The growth rates are slightly smaller for the third scenario, due to the negative effect on the VAT tax base of the decrease in relative prices. As regards direct taxes (taxes on income and wealth), we can observe the same range in the growth rate differentials (between 1 to 3 per cent), but differences between scenarios are in this case negligible. This rise in the growth rate differentials is consistent with the dynamics of total wages (a proxy of the labour income tax base), and exports (a proxy of firm's profits tax base). The same trend characterises social contributions, which are the sum of actual and imputed contributions: in all enlargement scenarios the rate of growth of aggregate contributions is higher than in baseline (1.1 per cent in the first year, around 3 per cent at the end of the period).

On the expenditure side, the table shows that the 'general government' interest payments are higher in the enlargement scenarios (1.3 per cent more in the first year of simulation), with a negligible difference between the three hypotheses. As regards social benefits, enlargement appears to reduce this expenditure. Indeed, this result is strictly determined by the underlying hypothesis on which this expenditure has been modelled. In fact, social benefits are mainly resources generated within the framework of the welfare state. Social benefits belong to the category of transfers where what is collected by government is defined as equivalent to what has been paid for by the other sectors. From a budgetary perspective, however, what matters is the difference between the social benefits and the amount of social contributions collected – at least in part – for their funding. This difference is soaring and the reform of the pension system is high on the government agenda. Meanwhile, we have assumed that social benefits in volume will maintain their present trend. The corresponding nominal expenditure is then computed inflating it with the personal consumption expenditure deflator (endogenously determined). Consequently, the volume of social benefits does not change with the scenarios, but the expenditures are influenced by the personal consumption expenditure deflator which is simulation specific. It is clear that social benefits are independent of the macro economic real performance and vary according to the consumer price deflator. Needless to say, the much anticipated reform of the pension system should produce an effect which will tend to obscure the effects of European enlargement.

Although the effect of the enlargement on the national budget clearly involves the production, distribution, and use (consumption and investments) of government income, we prefer to focus on the determination of government disposable income. Government disposable income constitutes the balance line of the 'use of income' account where this account records the distribution of income effect among institutions. Within this account we can detect the impact of many policy levers managed by government and other institutions, for instance, the EU. (The EU's own resources are recorded as a use in the present account). The use of government disposable income is considered in the subsequent accounts which deal with, inter alia, consumption and investment and on the basis of which the final balance --deficit or surplus-- is computed. While consumption investment is generated by the allocation of government's own resources, disposable income is the aggregate produced by the distribution of income among institutions (households, enterprises, etc.). Following this, we compare the

simulations in terms of their effect on government disposable income which — in this case — is a more representative benchmark in the government budget.

Table   28 - Government disposable income percentage difference from the baseline

	Scenarios	
year	Conservative	Generous
2001	0.4	0.4
2002	1.2	1.3
2003	1.9	1.9
2004	2.8	2.7
2005	3.4	3.3
2006	3.9	3.7
2007	4.5	4.3
2008	5.0	5.0
2009	5.5	5.6
2010	5.9	6.1

Table 28 shows the percentage difference of government disposable income of the 'generous' and 'conservative' scenarios with respect to the baseline. The two scenarios differ with regard to the removal of trade barriers. The 'conservative' scenarios reports a slightly higher increase of government disposable income than in the 'generous' scenario as of 2003. The 'generous' scenario produces a deceleration in the increase in government disposable income, but after the year 2008 we see that the results for the 'generous' scenario outpace those for the 'conservative' scenario.

The overall positive effect of the proposed enlargement induces a swelling in the tax base so that, in nominal terms, government resources increase even where there is a reduction in prices. Even if the direction of global outcome is clearly-defined direction, one may detect short-term differences which are relevant for policy-making.

Table 29 - Product Account

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                          Titles of Alternate Runs
              Line 1: Baseline
              Line 2: Specialising CEEC5 - difference from base
              Line 3: No tariffs and NTB - difference from base
              Line 4: No tariffs and NTB - difference from base


Alternatives are shown in deviations from base values.


                                RATES OF GROWTH


                     01-02  02-03  03-04  04-05  05-06  05-06  06-07  07-08  08-09  09-10
        RESOURCES
Gross Domestic Product 3.12   2.43   1.68   1.88   1.67   1.67   1.43   1.90   1.85   1.79
                       0.45   0.39   0.43   0.48   0.47   0.47   0.51   0.49   0.51   0.42
                       0.45   0.39   0.46   0.40   0.32   0.32   0.45   0.45   0.46   0.41
                       0.46   0.39   0.40   0.33   0.30   0.30   0.49   0.53   0.55   0.44
Imports                6.29   6.29   4.69   4.95   4.18   4.18   3.66   4.64   4.52   4.48
                       0.63   0.56   0.63   0.63   0.57   0.57   0.64   0.62   0.61   0.50
                       0.63   0.56   0.70   0.61   0.39   0.39   0.53   0.53   0.53   0.50
                       0.64   0.56   0.67   0.57   0.38   0.38   0.58   0.67   0.70   0.57


        USES
Consumption            1.74   1.81   1.63   1.63   1.64   1.64   1.55   1.71   1.76   1.74
                       0.17   0.17   0.17   0.18   0.18   0.18   0.20   0.18   0.18   0.14
                       0.17   0.17   0.29   0.17   0.13   0.13   0.17   0.17   0.16   0.14
                       0.18   0.17   0.32   0.15   0.13   0.13   0.19   0.21   0.21   0.17
 Household consumption 1.61   1.70   1.47   1.47   1.48   1.48   1.37   1.58   1.64   1.61
                       0.22   0.21   0.21   0.23   0.24   0.24   0.25   0.23   0.23   0.18
                       0.22   0.21   0.37   0.21   0.17   0.17   0.22   0.22   0.21   0.19
                       0.22   0.21   0.40   0.19   0.17   0.17   0.24   0.27   0.27   0.22
 Government expenditure 2.20  2.20   2.20   2.20   2.20   2.20   2.20   2.20   2.20   2.20
 Private collective consumption 2.20 2.20 2.20 2.20 2.20 2.20 2.20 2.20 2.20 2.20

Fixed capital formation 7.90  9.08   4.06   4.75   2.87   2.87   1.26   3.92   3.02   2.54
                       0.78   0.61   0.67   0.46   0.08   0.08   0.17   0.18   0.02   0.11
                       0.79   0.61   0.67   0.45  -0.17  -0.17   0.02   0.10  -0.01   0.30
                       0.80   0.62   0.63   0.31  -0.23  -0.23   0.01   0.28   0.23   0.45
Changes in inventories 7.52   6.04   4.37   4.79   3.79   3.79   3.18   4.18   4.16   4.21
                       1.05   0.87   0.95   1.02   0.97   0.97   1.07   0.97   0.97   0.67
                       1.05   0.88   1.12   0.91   0.72   0.72   0.99   0.92   0.95   0.71
                       1.07   0.87   0.90   0.72   0.63   0.63   1.02   1.05   1.09   0.77
Exports                5.93   2.81   2.83   3.19   3.21   3.21   3.43   3.47   3.75   3.94
                       0.98   0.86   0.99   1.23   1.37   1.37   1.42   1.36   1.44   1.10
                       0.98   0.86   0.86   1.00   1.08   1.08   1.32   1.24   1.31   0.96
                       1.00   0.84   0.63   0.91   1.07   1.07   1.44   1.38   1.46   0.95
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Table 30 - Use of Income Account, Government, in million Euro

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                                   Titles of Alternate Runs
                        Line 1: Baseline
                        Line 2: Specialising CEEC5 - difference from base
                        Line 3: Specialising CEEC5 + Removal of trade barriers (0-5-10) - difference from base
                        Line 4: Specialising CEEC5 + Removal of trade barriers (5-10 -15) - - difference from base


Alternatives are shown in deviations from base values.
```

RESOURCES										
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Gross operating surplus and										
Withdrawals from the entrepr.	4590	4929	5291	5681	6099	6492	6909	7354	7827	8330
	0	0	0	0	1	1	1	1	1	2
	0	0	0	0	1	1	1	1	1	2
	0	0	0	0	1	1	1	1	1	2
Tax linked to prod.&imports(no VAT)	164825	178142	189600	199519	210657	220739	230517	241875	254747	267808
	442	1175	1778	2558	3622	4708	5742	6804	7931	9136
	445	1178	1780	2394	3258	4006	4865	5783	6766	7943
	477	1239	1826	2203	2848	3436	4263	5238	6315	7520
Actual interest	8412	8935	9449	9937	10466	10947	11424	11964	12532	13117
	15	49	84	126	175	224	279	337	400	462
	15	49	84	127	170	205	251	303	360	418
	15	49	85	122	158	191	240	299	365	429
Income from land and intang.assets	2380	2528	2674	2812	2962	3098	3233	3386	3546	3712
	4	14	24	36	49	63	79	95	113	131
	4	14	24	36	48	58	71	86	102	118
	4	14	24	34	45	54	68	85	103	121
Dividends and other income dis.	2018	2164	2307	2444	2598	2727	2855	3003	3153	3308
	4	14	24	36	51	65	81	98	118	136
	4	14	24	37	49	59	74	89	107	125
	4	14	24	35	46	55	70	88	109	128
Accident insurance claims	371	394	416	438	461	482	503	527	552	578
	1	2	4	6	8	10	12	15	18	20
	1	2	4	6	7	9	11	13	16	18
	1	2	4	5	7	8	11	13	16	19
Current taxes an income & wealth	186915	197117	207505	217492	228117	238260	248405	259660	271573	283940
	270	947	1715	2575	3566	4579	5701	6904	8216	9480
	265	942	1712	2609	3499	4237	5173	6238	7404	8584
	264	949	1716	2540	3319	4006	5003	6235	7621	8925
Actual social contribution	153660	161541	169670	177554	185768	194314	202989	212392	222536	233175
	187	681	1278	1928	2667	3446	4290	5207	6203	7181
	184	678	1276	1926	2600	3183	3861	4658	5532	6418
	182	681	1279	1890	2496	3049	3777	4701	5748	6735

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                                        Titles of Alternate Runs
                        Line 1: Baseline
                        Line 2: Specialising CEEC5 - difference from base
                        Line 3: Specialising CEEC5 + Removal of trade barriers (0-5-10) - difference from base
                        Line 4: Specialising CEEC5 + Removal of trade barriers (5-10 -15) - difference from base


Alternatives are shown in deviations from base values.

                                  2001     2002     2003     2004     2005     2006     2007     2008     2009     2010

Imputed social contribution       3454     3631     3814     3991     4176     4368     4563     4774     5002     5242
                                     4       15       29       43       60       77       96      117      139      161
                                     4       15       29       43       58       72       87      105      124      144
                                     4       15       29       42       56       69       85      106      129      151
Current internat. co-operation     393      417      441      464      489      511      533      559      585      613
                                     1        2        4        6        8       10       13       16       19       22
                                     1        2        4        6        8       10       12       14       17       20
                                     1        2        4        6        7        9       11       14       17       20
Miscellaneous current transfers  27052    28717    30308    31714    33231    34600    35914    37459    39062    40713
                                    67      207      366      545      751      961     1195     1456     1749     2033
                                    67      207      366      506      678      825     1021     1248     1506     1762
                                    67      209      367      461      606      739      946     1200     1497     1764


                    USES

                                  2001     2002     2003     2004     2005     2006     2007     2008     2009     2010

Production subsides              19943    21626    23226    24694    26489    27806    28854    30091    31603    33163
                                    53      171      297      447      632      819     1029     1255     1514     1750
                                    52      170      297      447      590      715      906     1115     1357     1588
                                    52      171      297      418      525      630      823     1050     1314     1555
Actual interest                 140193   148912   157485   165609   174440   182447   190400   199404   208859   218611
                                   249      812     1404     2094     2913     3736     4648     5616     6673     7699
                                   245      809     1402     2109     2828     3416     4191     5053     5995     6970
                                   248      821     1409     2030     2641     3176     3992     4979     6086     7146
Income from land and intang.assets  60       63       67       70       74       77       81       85       89       93
                                     0        0        1        1        1        2        2        2        3        3
                                     0        0        1        1        1        1        2        2        3        3
                                     0        0        1        1        1        1        2        2        3        3
Net accident insurance premium     371      394      416      438      461      482      503      527      552      578
                                     1        2        4        6        8       10       12       15       18       20
                                     1        2        4        6        7        9       11       13       16       18
                                     1        2        4        5        7        8       11       13       16       19
Current taxes an income and wealth 1581     1668     1755     1840     1930     2016     2102     2197     2298     2402
                                     2        8       15       22       30       39       48       58       70       80
                                     2        8       14       22       30       36       44       53       63       73
                                     2        8       15       21       28       34       42       53       64       76
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                                                                                                              (Continued ...)



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                                  Titles of Alternate Runs
                        Line 1: Baseline
                        Line 2: Specialising CEEC5 - difference from base
                        Line 3: Specialising CEEC5 + Removal of trade barriers (0-5-10) - difference from base
                        Line 4: Specialising CEEC5 + Removal of trade barriers (5-10 -15) -  difference from base


Alternatives are shown in deviations from base values.

                                    2001     2002     2003     2004     2005     2006     2007     2008     2009     2010

Social benefits                   222396   229958   237294   244770   252452   259731   267262   274669   282378   290350
                                      -2      -78      -63      -46      -58     -137     -280     -350     -416     -396
                                      14      -63      -54     -595     -640     -733     -936    -1068    -1180    -1261
                                      12      -66      -56     -780     -834     -956    -1198    -1391    -1529    -1663
Current transf.to priv. non-profit  5319     5483     5653     5810     5969     6072     6169     6281     6397     6512
                                       5       19       34       50       68       86      106      126      147      165
                                       5       19       34       55       72       85      103      121      140      157
                                       5       19       34       55       71       83      102      124      147      166
Current international co-operation   5471     5811     6146     6463     6807     7120     7430     7782     8151     8531
                                      10       32       55       82      114      146      181      219      260      300
                                      10       32       55       82      110      133      164      197      234      272
                                      10       32       55       79      103      124      156      194      237      279
Miscellaneous current transfers     4892     5193     5481     5735     6009     6257     6494     6774     7064     7362
                                      12       37       66       99      136      174      216      263      316      368
                                      12       37       66       91      123      149      185      226      272      319
                                      12       38       66       83      110      134      171      217      271      319
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Table 31 - Government expenditure and investments, household disposable income

```
                          Titles of Alternate Runs
              Line 1: Baseline
              Line 2: Specialising CEEC5 - difference from base
              Line 3: No tariffs and NTB - difference from base
              Line 4: No tariffs and NTB - difference from base


Alternatives are shown in deviations from base values.



                        2001    2002    2003    2004    2005    2006    2007    2008    2009    2010

Government expenditure  187664  197057  207007  217393  228282  239493  251206  263524  276498  290089
                            -2      -5      15      25      27      23       6       6      15      36
                            -2      -5      17     -33     -36     -46     -73     -80     -79     -78
                            -2      -5      17     -70     -77     -92    -122    -133    -135    -145

GovernmentInvestments    22082   23367   25666   27829   30797   33692   35511   37545   38845   39691
                          -126    -180    -233    -362    -581    -887   -1163   -1418   -1749   -2001
                          -126    -180    -234    -365    -534    -823   -1089   -1304   -1614   -1824
                          -126    -180    -239    -332    -477    -741   -1014   -1237   -1554   -1757

Household disposable income 789481 826081 863249 899364 937076 973764 1010754 1050457 1092781 1136680
                           735    2570    4811    7278   10064   12855   15819   19090   22635   26159
                           735    2570    4811    6771    9253   11261   13587   16383   19460   22614
                           735    2570    4825    6410    8577   10405   12854   16051   19730   23201
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9. STRUCTURAL CHANGES IN THE ITALIAN ECONOMY

Given that *structural changes* are detected in terms of changes in the composition of aggregated economic variables, we have used a multisectoral macroeconomic model to investigate structural changes. Indeed, the analysis of structural changes requires a bottom-up approach to modelling and the INTIMO model is well suited for this purpose.

Over time every economy faces structural change. The sectoral composition of any country economy observed one century ago appears very different from the present structure. The transition from the old to the new structure may be a relatively smooth process. The mutation of an economic sectoral structure is determined by different and changing sectoral rates of growth (see Tables 32a-c for the 25 sectors with the highest output rates of growth values).

Table 32a reports the most rapidly growing sectors in the years 2001-2003 and those with the highest rates of growth in the third scenario ('specialising CEEC5') for 2008-2010. 'Building & construction' is the sector with the highest growth rate for the period 2001-2003, but falls to the 21st position in the years 2008-2010. This sector is stimulated by investments; and throughout the decade we witness a drop in the growth rate of investments and consequently 'building & construction' drops towards the bottom of the list together with '*s*tone, clay & glass products' which supplies intermediate input to 'building & construction'. The growth of 'metal products' and 'electrical goods' slows down while some services sectors ('communication', 'inland transport services', 'banking & insurance', 'private health services', 'hotels & restaurants') have risen towards the top of the list. The sector of 'motor vehicles' halves its growth rate, dropping to last position. 'Other manufacturing industry' and 'other transport equipment', which occupy the first and second place respectively with growth rates of around 6 per cent annually, appear to be the winners in the coming structural change.

Table 32b reports the average rates of growth of the sectoral output respectively for the 'specialising CEEC5' scenario and 'non-tariff' scenario for the years 2008-2010. The 'removal of trade barriers' scenario is based on a reduction on import prices from CEEC5 for those sectors where tariffs still apply. Although the reduction in import prices due to the removal of residual tariffs only concerns a small group the 'agricultural' and 'food industry' sectors directly, we can also detect changes in the ranking of a large range of industries. These changes are modest, but noticeable; for example, 'electrical goods' report a rate of growth reduction of 0.4 per cent.

The structural changes in the 'removal of trade barriers' scenarios are shown in Table 32c. The conservative scenario is on the left side and the generous is on the right side. We see many changes in the two lists, but there is no relevant shuffling. By the way, if we consider the highest and the lowest rates of growth in each list, we can say that the range of rates of growth narrows as we move from the conservative to the generous assumption. This allows us to say that the higher the import prices reduction due to the removal of trade barriers, the lower the process of structural change. In the present simulation experiments, looking at the output or at the GDP, we can also deduce that the intensity of the structural change is correlated with the performance of the economy.

Table 32a

Structural changes in the Specialising CEEC5 scenario
Top 25 sectors in descending order with respect to the output rate of growth

BASELINE average output rates of growth in years 2001-2003		Specialising CEEC5 average output rates of growth in years 2008-2010	
27 Building & Construction	6.272	26 Other Manufacturing Industry	6.277
11 Agric. & Indus. Machinery	6.064	15 Other Transport Equipment	5.180
10 Metal Products	5.229	11 Agric. & Indus. Machinery	4.129
15 Other Transport Equipment	4.908	34 Communication	3.154
7 Primary metals	4.704	7 Primary metals	3.126
13 Electrical Goods	4.368	22 Leather, Shoes & Footwear	2.701
8 Stone,Clay & Glass products	4.207	31 Inland Transport Services	2.651
12 Office,Precision,Opt.Instruments	3.925	39 Private Health Services	2.599
34 Communication	3.822	35 Banking & Insurance	2.519
25 Plastic Products & Rubber	3.743	37 Real Estate	2.498
31 Inland Transport Services	3.719	10 Metal Products	2.495
26 Other Manufacturing Industry	3.706	24 Paper & Printing Products	2.430
23 Timber, Wooden Product & Furniture	3.654	30 Hotels & Restaurants	2.382
39 Private Health Services	3.216	25 Plastic Products & Rubber	2.365
35 Banking & Insurance	3.201	38 Private Education Services	2.327
36 Other Private Services	3.198	12 Office,Precision,Opt.Instruments	2.322
33 Auxiliary Transport Services	2.911	33 Auxiliary Transport Services	2.217
14 Motor Vehicles	2.907	13 Electrical Goods	2.167
37 Real Estate	2.883	36 Other Private Services	2.088
38 Private Education Services	2.738	40 Recreation & Culture	2.055
24 Paper & Printing Products	2.659	27 Building & Construction	1.983
30 Hotels & Restaurants	2.505	23 Timber, Wooden Product & Furniture	1.811
29 Wholesale & Retail Trade	2.297	19 Alcohol & Non Alcoh. Beverages	1.771
40 Recreation & Culture	2.121	8 Stone,Clay & Glass products	1.753
19 Alcohol & Non Alcoh. Beverages	1.892	14 Motor Vehicles	1.606

Table 32b

Structural changes in the Specialising CEEC5 and no tariffs scenarios
Top 25 sectors in descending order with respect to the output rate of growth

Specialising CEEC5 average output rates of growth in years 2008-2010		No tariffs average output rates of growth in years 2008-2010	
26 Other Manufacturing Industry	6.277	26 Other Manufacturing Industry	6.343
15 Other Transport Equipment	5.180	15 Other Transport Equipment	5.366
11 Agric. & Indus. Machinery	4.129	11 Agric. & Indus. Machinery	3.695
34 Communication	3.154	7 Primary metals	3.121
7 Primary metals	3.126	34 Communication	3.112
22 Leather, Shoes & Footwear	2.701	22 Leather, Shoes & Footwear	2.817
31 Inland Transport Services	2.651	31 Inland Transport Services	2.595
39 Private Health Services	2.599	39 Private Health Services	2.577
35 Banking & Insurance	2.519	37 Real Estate	2.472
37 Real Estate	2.498	35 Banking & Insurance	2.469
10 Metal Products	2.495	12 Office,Precision,Opt.Instruments	2.456
24 Paper & Printing Products	2.430	30 Hotels & Restaurants	2.361
30 Hotels & Restaurants	2.382	38 Private Education Services	2.276
25 Plastic Products & Rubber	2.365	10 Metal Products	2.241
38 Private Education Services	2.327	24 Paper & Printing Products	2.232
12 Office,Precision,Opt.Instruments	2.322	25 Plastic Products & Rubber	2.190
33 Auxiliary Transport Services	2.217	33 Auxiliary Transport Services	2.157
13 Electrical Goods	2.167	23 Timber, Wooden Product & Furniture	2.036
36 Other Private Services	2.088	36 Other Private Services	2.024
40 Recreation & Culture	2.055	40 Recreation & Culture	2.022
27 Building & Construction	1.983	27 Building & Construction	2.011
23 Timber, Wooden Product & Furniture	1.811	8 Stone,Clay & Glass products	1.885
19 Alcohol & Non Alcoh. Beverages	1.771	19 Alcohol & Non Alcoh. Beverages	1.823
8 Stone,Clay & Glass products	1.753	13 Electrical Goods	1.781
14 Motor Vehicles	1.606	29 Wholesale & Retail Trade	1.531

Table 32c

Structural changes in the No tariffs and NTBL and NTBH scenarios
Top 25 sectors in descending order with respect to the output rate of growth

No tariffs and NTBL(0-5-10) average output rates of growth in years 2008-2010		No tariffs and NTBH(5-10-15) average output rates of growth in years 2008-2010	
26 Other Manufacturing Industry	6.330	26 Other Manufacturing Industry	6.311
15 Other Transport Equipment	5.332	15 Other Transport Equipment	5.266
11 Agric. & Indus. Machinery	3.711	11 Agric. & Indus. Machinery	3.995
7 Primary metals	3.126	34 Communication	3.183
34 Communication	3.125	7 Primary metals	3.180
22 Leather, Shoes & Footwear	2.826	22 Leather, Shoes & Footwear	2.785
31 Inland Transport Services	2.607	31 Inland Transport Services	2.682
39 Private Health Services	2.586	39 Private Health Services	2.629
37 Real Estate	2.483	35 Banking & Insurance	2.536
12 Office,Precision,Opt.Instruments	2.482	37 Real Estate	2.530
35 Banking & Insurance	2.477	10 Metal Products	2.492
30 Hotels & Restaurants	2.379	12 Office,Precision,Opt.Instruments	2.435
38 Private Education Services	2.288	30 Hotels & Restaurants	2.431
10 Metal Products	2.277	38 Private Education Services	2.350
24 Paper & Printing Products	2.231	24 Paper & Printing Products	2.347
25 Plastic Products & Rubber	2.218	25 Plastic Products & Rubber	2.333
33 Auxiliary Transport Services	2.168	33 Auxiliary Transport Services	2.236
23 Timber, Wooden Product & Furniture	2.065	27 Building & Construction	2.113
36 Other Private Services	2.036	36 Other Private Services	2.111
27 Building & Construction	2.035	13 Electrical Goods	2.090
40 Recreation & Culture	2.032	40 Recreation & Culture	2.083
8 Stone,Clay & Glass products	1.903	23 Timber, Wooden Product & Furniture	2.000
19 Alcohol & Non Alcoh. Beverages	1.835	8 Stone,Clay & Glass products	1.900
13 Electrical Goods	1.825	19 Alcohol & Non Alcoh. Beverages	1.852
29 Wholesale & Retail Trade	1.545	29 Wholesale & Retail Trade	1.616

10. FINAL REMARKS

The impact of the European enlargement on Italy has been evaluated by disentangling the scenarios into the effect of the new prosperity of the applicants and the removal of persisting trade barriers.

The effect of the new prosperity of the applicants has been directly taken as the increase of their imports from the EU and not in terms of the effect of the enlargement on the applicant countries .This is characteristic of all studies of enlargement viewed exclusively from one side of the participants; in this case, the Member States. Although an applicant-oriented investigation should be in order, the adoption of ESA 95 definitions is still incomplete (see European Commission DGEFA, 2001c), or the available data may fall short of what is needed to build the sort of multisectoral dynamic econometric models which these investigations demand.

The realisation of the Europe Agreements, the financial assistance in the Accession Partnership programme, the hauling of the newcomers towards Member-State levels of prosperity as stated in the Agenda 2000, and a remarkable flow of FDI, have all stimulated the growth of the CEEC economies since the mid-1990s. Despite the marked deterioration of the international economic environment in 2000 and the downward economic growth forecasts, the CEEC GDP rate of growth is still expected to be noticeably higher than the GDP forecasts for the EU-15 (CEC, DGEFA, 2001b, 2001c; see Table 33).   Among the transition accession countries, Poland has a very low rate of GDP growth This is probably a consequence of very tight monetary conditions introduced to correct a previous poorly coordinated policy mix, and Poland is expected to fall into line with the pace of other transition economies once the desired economic conditions are in place. Since Poland represents about one quarter of the GDP of these countries, it exerts considerable influence on the rate of GDP growth in transition accession countries. If we exclude Poland, the hypothesis of CEECs growing faster by about 2 per cent becomes a theoretical – albeit questionable – possibility. The EU is in the business of addressing regional economic differences; a task which will certainly become 'tougher after the enlargement because per capita incomes in the applicant countries are only one third of the Union's average'(*Agenda 2000*). In this sense, a 2 per cent difference in the GDP rate of growth can be seen as the sort of desired minimum needed to tackle a cohesion target.

In the first place, the effect of an increase in CEEC imports from EU has been simulated considering the case of a) Italy vs. the CEECs, and b) the EU-15 vs. the CEECs; and then going on to focus on the specific effect of b) on the Italian economy. From this comparison we learn that the effect of the enlargement, which reaches the Italian economy indirectly through the impact on the other European economies, is about the same (in size) of the direct effect. Furthermore, a concentration of the CEECs imports (as well as exports) in a small group of commodities reveals a trend in 'specialisation' which indeed affects all EU countries. This evolution of the CEEC demand for   (EU) imports adds a further modest but clear benefit to the Italian economy.

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Table 33 - GDP at constant prices (annual per cent change)

Years	estimates	forecasts	unchanged policies scenario
	2001	2002	2003
Bulgaria	4.2	3.6	4.4
The Czech Republic	3.5	3.8	4.2
Estonia	5.3	4.7	5.4
Hungary	3.6	3.2	4.6
Latvia	7.9	4.5	6.5
Lithuania	4.5	3.5	4.3
Poland	1.5	1.9	3.4
Romania	4.6	4.4	4.8
Slovakia	2.7	3.5	4
Slovenia	3.7	3.3	4
<u>Transition accession</u> <u>countries</u>	3.1	3.1	4.1
Cyprus	4	3.3	3.9
Malta	2.4	3.3	3.5
Turkey	-6.8	2.7	4.2
EU-15	1.7	1.4	2.9
USA	0.9	0.5	3.4
Japan	-0.6	-0.9	0.5

Source: *Commission services' Autumn 2001 forecasts*

The removal of trade barriers has been modelled distinguishing between tariff barriers and non-tariff barriers. Current tariff barriers constitute a modest residual of those in effect at the beginning of the transition. These tariffs concern agricultural, some food industry products, and – for some countries – other specific products. These barriers which will be inevitably removed with accession. This event has been modelled for the Luxembourg group. Recently, the Strategy Paper 2001 has posed a redefinition of the frontrunners. Slovakia, Latvia and Lithuania have been added to the Luxembourg group; indeed, and as a result of their good performance Cyprus and Malta look set to join this group in the near future. If the results of the Report of the European Commission on the progress towards accession hold good and the negotiations are completed as expected in the year 2002, then in 2004 the enlargement should involve all the countries listed above. In this case, the dimension of the enlargement will be greater than that considered in the present study. Tables 34a and 34b report the trade shares of the frontrunners CEEC5 (the Czech Republic, Estonia, Hungary, Poland and Slovenia), and the NEW5 (Latvia, Lithuania, Slovakia, Malta and Cyprus) which have gained a good position for accession in 2004. The NEW5 trade covers about one sixth of the expected 2004 enlargement. The NEW5 trade shares with each EU-15 country differ from a minimum of 11.5 to a maximum of 70.6 per cent of export flows and from 8.8 to 24.2 per cent respectively of

import flows. Within these intervals, those shares which are far from the average may be easily explained. Greek exports to Cyprus represent a well established destination market for this peripherical EU Member State; albeit to a lesser extent, Greece is more oriented to import from some of the NEW5 than any other EU Member State. The United Kingdom has a good economic relationship with Malta and Cyprus, and the Baltic Republics are certainly – together with Denmark and Sweden – more important markets than Slovenia. As an importer, Portugal, is a good example of the relevance of the distance effect which is the cornerstone of the gravity models.

Table 34a - EU countries export shares, 1998

	CEEC5	NEW5	Total
FRANCE	82.3	17.7	100
BELGIUM AND LUX.	86.8	13.2	100
NETHERLANDS	84.7	15.3	100
GERMANY	86.2	13.8	100
ITALY	81.1	18.9	100
UNITED KINGDOM	77.6	22.4	100
IRELAND	86	14	100
DENMARK	72.1	27.9	100
GREECE	29.4	70.6	100
PORTUGAL	81.8	18.2	100
SPAIN	80.6	19.4	100
SWEDEN	80	20	100
FINLAND	81.7	18.3	100
AUSTRIA	88.5	11.5	100
EU15	83.6	16.4	100

Table 34b - EU countries import shares, 1998

	CEEC5	NEW5	Total
FRANCE	83.1	16.9	100
BELGIUM AND LUX.	85.5	14.5	100
NETHERLANDS	82.4	17.6	100
GERMANY	86.5	13.5	100
ITALY	83.7	16.3	100
UNITED KINGDOM	75.8	24.2	100
IRELAND	85.4	14.6	100
DENMARK	81.4	18.6	100
GREECE	77.8	22.2	100
PORTUGAL	91.2	8.8	100
SPAIN	82.5	17.5	100
SWEDEN	81.5	18.5	100
FINLAND	89.7	10.3	100
AUSTRIA	87.3	12.7	100
EU15	84.8	15.2	100

Source: Eurostat, *COMEXT*

The removal of outstanding barriers to trade concerns tariffs and non-tariff barriers. The tariff barriers, which mainly effect agricultural and food industry commodities, have been estimated at a very detailed level and, according to the commodity detail of the Bilateral Trade Model used here, effect a total of 22 sectors. As regards the simulation results for the removal of

non-tariff barriers, two alternative scenarios have been formulated. Since in the case of non-tariff barriers it is impossible to measure the precise size of their mark-up on price formation, the two scenarios refer to a generous effect in terms of Baldwin's hypothesis (1997) which assumes an overall reduction of 10 per cent, and to a conservative hypothesis similar to that proposed by Keuschnigg and Kohler (1999). The cumulative impact on the Italian economy of the new prosperity of the applicants (measured as an increase in import growth rates), and the removal of tariffs and non-tariff barriers proves to be undoubtedly positive.

The study highlights the impact of the enlargement on the structure of the Italian economy. Clearly, some sectors are better off, others do not benefit very much from the re-shaping of the EU, and those directly hit by a reduction of imports prices – agriculture and food industries – suffer a temporary drop in competitiveness (see Table 35). The table reports the comparisons of the output rates of growth of the generous scenario with respect to the baseline. For sake of simplicity, by using the channel 'method', one can chose the reduction of import prices to figure out the sequence: the drop in import prices makes imported commodities more competitive, the increase of imports substitutes domestic output, production decreases, income decreases and finally consumption shrinks. On the other hand, the drop in import prices reduces the growth of domestic prices; if the imported commodities are mainly input which are processed by the domestic industries, then the (sectoral) outputs gain in competitiveness, the exports grow, income grows and finally consumption swells (however, changes in relative prices will modify the composition of consumption). However, many other channels can be posited. The channel 'method' is generally used to support an *ex-post evaluation* of a study, or is imposed as a predetermined thesis which proves to be independent of any appropriate investigation. The channel 'method' is appropriate only if the model at hand is strictly recursive. However, this is normally not the case; in particular, when the model is macroeconomic and necessarily based on national accounts data, the time interval will not be short enough to allow the use of a recursive modelling approach. In these cases what matters is the simultaneity. Given the changes in CEEC5 import prices and the increase of their imports (EU exports), the impact on a country economy will 'simultaneously' involve all the 'endogenous' variables in the model (and the set of them is a characteristic of the model used). The channel 'method' may be used for an *ex-post evaluation* of the present study, but it *cannot* provide the necessary understanding of the excellent properties of the multisectoral model which constitutes the cornerstone of this research.

A key property of the model is the nature of the forecasting horizon. As an econometric model estimated using time series, the time is not a mere fiction. The historical value of time series data allows us to refer to future historical values as we move from description to the prediction – a property which is crucial in policy-making. Indeed, information about an equilibrium in a undefined horizon is of little help when tackling disequilibria and critical events which occur as a consequence of a 'shock'. Table 35 highlights the results of Table 22 showing the evolution of the increments of the rates of growth under the 'generous scenario'. If we compare these differences with those of the 'specialising CEEC5 scenario' in Table 15, we notice that the removal of trade barriers does not damage the economy as a whole at the end of the 2000s, but that it has a very marked effect at the anticipated time of the first wave of enlargement.

Table 35 - Total Output Rates of growth

```
                                  Titles of Alternate Runs
              Line 1: Baseline
              Line 2: No tariffs and NTB - difference from base


Alternatives are shown in deviations from base values.


                              02-03  03-04  04-05  05-06  06-07  07-08  08-09  09-10

         TOTAL                 2.40   1.60   1.83   1.55   1.28   1.79   1.74   1.69
                               0.45   0.44   0.37   0.35   0.58   0.62   0.65   0.51
    ----------------------------------------------------------------------------------
      1 Agriculture,Forestry,Fishery   -0.24  -0.38  -0.48  -0.41  -0.41  -0.02   0.23   0.39
                               0.28   0.09  -0.27  -0.13   0.31   0.31   0.34   0.30
    ----------------------------------------------------------------------------------
      4 Coal,Oil,Petroleum Ref.Products   3.68   1.85   1.46   3.17   4.37   4.95   5.05   4.74
                               0.10   0.03   0.38   0.46   0.41   0.26   0.21   0.37
    ----------------------------------------------------------------------------------
      5 Electricity,Gas,Water    1.89   1.36   1.44   1.13   0.93   1.33   1.32   1.32
                               0.41   0.43   0.30   0.30   0.51   0.55   0.58   0.46
    ----------------------------------------------------------------------------------
         MANUFACTURING          2.16   1.34   1.64   1.08   0.81   1.36   1.41   1.50
                               0.68   0.64   0.58   0.60   0.94   0.99   1.07   0.78
    ----------------------------------------------------------------------------------
      7 Primary metals          3.16   2.10   2.53   1.83   1.51   2.19   2.13   2.13
                               0.81   0.50   0.46   0.52   1.02   1.08   1.14   0.97
    ----------------------------------------------------------------------------------
      8 Stone,Clay & Glass products   3.66   2.16   2.76   2.17   1.44   2.22   1.68   1.44
                               0.30   0.26   0.16   0.01   0.25   0.32   0.30   0.38
    ----------------------------------------------------------------------------------
      9 Chemical Products       0.71   0.51   0.65   0.38   0.22   0.44   0.54   0.49
                               0.38   0.24   0.20   0.24   0.52   0.52   0.59   0.44
    ----------------------------------------------------------------------------------
     10 Metal Products          3.87   1.67   2.08   1.04   0.55   1.58   1.31   1.33
                               0.93   0.97   0.85   0.77   1.17   1.29   1.37   0.97
    ----------------------------------------------------------------------------------
     11 Agric. & Indus. Machinery   3.74   1.42   2.23   0.93   0.62   1.61   1.64   2.14
                               1.47   1.34   1.60   1.56   2.07   2.22   2.34   1.88
    ----------------------------------------------------------------------------------
     12 Office,Precision,Opt.Instruments   2.00   1.42   1.77   1.48   1.51   1.34   1.66   1.81
                               0.65   0.72   0.64   0.62   0.82   0.82   0.90   0.49
    ----------------------------------------------------------------------------------
     13 Electrical Goods        2.66   1.42   1.56   0.75   0.45   0.84   0.71   0.75
                               1.15   1.28   1.25   1.30   1.59   1.61   1.69   1.02
    ----------------------------------------------------------------------------------
     14 Motor Vehicles          0.10   0.55   0.17  -0.54  -1.25  -0.65  -0.69  -0.73
                               1.35   1.28   1.23   1.42   2.14   2.19   2.45   1.58
    ----------------------------------------------------------------------------------
     15 Other Transport Equipment   3.52   3.92   4.52   4.13   3.96   3.98   4.46   5.02
                               0.39   0.29   0.37   0.42   0.48   0.54   0.66   0.39
    ----------------------------------------------------------------------------------
     16 Meat & Preserved Meat   -0.41  -0.51  -0.46  -0.36  -0.41  -0.04   0.18   0.39
                               0.22   0.40  -0.11   0.00   0.27   0.29   0.31   0.14
    ----------------------------------------------------------------------------------
     17 Milk & Dairy Products   0.81   0.63   0.66   0.76   0.67   0.92   1.02   1.10
                               0.25  -0.60  -0.71  -0.46   0.23   0.26   0.26   0.26
    ----------------------------------------------------------------------------------
     18 Other Foods             0.70   0.61   0.60   0.68   0.62   0.92   1.07   1.08
                               0.21   0.39  -0.03   0.05   0.31   0.31   0.28   0.29
    ----------------------------------------------------------------------------------
     19 Alcohol & Non Alcoh. Beverages   1.59   1.30   1.11   1.20   1.11   1.43   1.50   1.53
                               0.27   0.30  -0.02   0.06   0.30   0.32   0.34   0.33
    ----------------------------------------------------------------------------------
     20 Tobacco                -2.23  -2.67  -2.97  -3.21  -3.53  -3.48  -3.61  -3.84
                               0.25  -0.44  -1.94  -1.26   0.00   0.03   0.03  -0.01
    ----------------------------------------------------------------------------------
     21 Textile & Clothing      0.78   0.85   0.73   0.33   0.26   0.67   1.05   0.91
                               0.15   0.10   0.03   0.06   0.34   0.29   0.36   0.40
    ----------------------------------------------------------------------------------
     22 Leather, Shoes & Footwear   -0.36   0.12   0.34   0.47   0.60   1.56   2.36   3.36
                               0.17   0.48   0.32   0.35   0.37   0.39   0.55  -0.70
    ----------------------------------------------------------------------------------
     23 Timber, Wooden Product & Furniture   3.46   2.26   2.73   2.00   1.39   1.84   1.70   1.52
                               0.18   0.41   0.17   0.08   0.35   0.38   0.39   0.39
    ----------------------------------------------------------------------------------
     24 Paper & Printing Products   1.52   1.14   1.30   1.01   0.91   1.19   1.36   1.43
                               0.64   0.47   0.49   0.56   0.86   0.91   1.04   0.86
    ----------------------------------------------------------------------------------
     25 Plastic Products & Rubber   1.98   1.53   1.81   1.46   1.23   1.34   1.37   1.33
                               0.81   0.75   0.77   0.83   1.11   1.09   1.21   0.75
    ----------------------------------------------------------------------------------
     26 Other Manufacturing Industry   2.73   3.64   4.46   4.83   5.27   5.51   5.94   6.43
                               0.13   0.29   0.21   0.25   0.29   0.22   0.26   0.00
    ----------------------------------------------------------------------------------
```

```
27 Building & Construction          6.26   3.59   4.76   4.05   2.34   3.68   2.57   1.64
                                     0.19   0.10   0.03  -0.28  -0.15   0.03  -0.12   0.13
--------------------------------------------------------------------------------------------
   SERVICES                         2.09   1.53   1.65   1.46   1.24   1.61   1.60   1.57
                                     0.37   0.44   0.32   0.30   0.46   0.50   0.52   0.41
--------------------------------------------------------------------------------------------
28 Recovery & Repair Services        0.15  -0.62  -0.67  -1.14  -1.56  -1.35  -1.47  -1.66
                                     0.48   0.50   0.41   0.42   0.64   0.69   0.73   0.58
--------------------------------------------------------------------------------------------
29 Wholesale & Retail Trade          1.67   0.98   1.17   0.92   0.67   1.12   1.11   1.07
                                     0.40   0.50   0.36   0.33   0.52   0.56   0.59   0.47
--------------------------------------------------------------------------------------------
30 Hotels & Restaurants              2.28   2.02   1.90   2.04   1.84   2.13   2.15   2.14
                                     0.25   0.41   0.22   0.20   0.29   0.31   0.32   0.25
--------------------------------------------------------------------------------------------
31 Inland Transport Services         2.83   1.94   2.23   1.90   1.60   2.16   2.09   2.04
                                     0.48   0.49   0.42   0.38   0.61   0.66   0.69   0.55
--------------------------------------------------------------------------------------------
32 Sea & Air Transport Services      0.71   0.54   0.64   0.59   0.57   0.71   0.76   0.80
                                     0.23   0.21   0.23   0.25   0.37   0.38   0.42   0.32
--------------------------------------------------------------------------------------------
33 Auxiliary Transport Services      2.18   1.54   1.74   1.50   1.29   1.70   1.69   1.67
                                     0.41   0.45   0.38   0.36   0.55   0.59   0.62   0.49
--------------------------------------------------------------------------------------------
34 Communication                     3.26   2.79   2.85   2.68   2.51   2.78   2.78   2.74
                                     0.34   0.45   0.30   0.29   0.44   0.47   0.48   0.37
--------------------------------------------------------------------------------------------
35 Banking & Insurance               2.37   1.80   1.99   1.79   1.60   1.97   1.97   1.96
                                     0.42   0.42   0.38   0.37   0.57   0.61   0.64   0.50
--------------------------------------------------------------------------------------------
36 Other Private Services            2.29   1.46   1.73   1.37   1.06   1.56   1.49   1.45
                                     0.49   0.48   0.43   0.41   0.64   0.68   0.72   0.56
--------------------------------------------------------------------------------------------
37 Real Estate                       2.62   2.29   2.27   2.17   2.02   2.25   2.25   2.23
                                     0.26   0.36   0.21   0.19   0.28   0.31   0.32   0.26
--------------------------------------------------------------------------------------------
38 Private Education Services         2.06   1.68   1.77   1.60   1.52   1.77   1.84   1.87
                                     0.41   0.48   0.37   0.36   0.52   0.54   0.57   0.41
--------------------------------------------------------------------------------------------
39 Private Health Services            3.02   2.72   2.68   2.49   2.28   2.40   2.40   2.36
                                     0.23   0.31   0.19   0.16   0.23   0.26   0.27   0.23
--------------------------------------------------------------------------------------------
40 Recreation & Culture              1.77   1.51   1.53   1.53   1.44   1.70   1.73   1.75
                                     0.28   0.39   0.24   0.23   0.34   0.37   0.38   0.30
--------------------------------------------------------------------------------------------
   SERVICES NON-MARKET               2.12   2.11   2.11   2.11   2.11   2.12   2.12   2.11
                                     0.01   0.02   0.01   0.01   0.01   0.02   0.02   0.01
--------------------------------------------------------------------------------------------
41 General Public Services           1.84   1.84   2.04   2.08   2.21   2.31   2.48   2.62
                                     0.49   0.41   0.53   0.63   0.85   0.85   0.91   0.64
--------------------------------------------------------------------------------------------
42 Public Education                  2.06   1.84   1.84   1.84   1.83   2.01   2.08   2.06
                                     0.22   0.37   0.18   0.16   0.24   0.26   0.26   0.22
--------------------------------------------------------------------------------------------
43 Public Health Services            2.18   2.18   2.18   2.18   2.18   2.18   2.18   2.18
                                     0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
--------------------------------------------------------------------------------------------
44 Non-profit Institutions           1.28   1.08   0.98   1.06   0.87   1.05   1.08   0.96
                                     0.22   0.40   0.18   0.16   0.24   0.27   0.26   0.22
```

If we examine sectoral performance, we notice that 'milk & dairy products' suffered an upsurge of (foreign) competitiveness thus losing the gains generated by the expansion of the CEEC economies and subsequently falling during recession. The sector 'other manufacturing industry' does not appears to have been much affected by the enlargement and preserves the nature of a highly dynamic sector. Other sectors tend to decelerate after the removal of trade barriers (see Table 22), and subsequently regain a good pace of growth (see Table 35).

Sectoral growth paths are not at all steady' over time with accelerations, decelerations, recessions, and recoveries leading to different 'final' scores. Table 36 presents an evaluation of the enlargement considered in this research with two columns respectively headed 'average' reporting the percentages of the difference between the cumulated outputs of the 'generous scenario' and the cumulated outputs of the 'baseline' in the interval 2001-2010, and the column '2010' reporting percentages relative to the difference of total outputs in the last year

examined. In general, the average values are lower than those measured in '2010' . This is because the 'average' contains the structural shocks generated by the removal of trade barriers. The column '2010' gives a good picture of the effects of the enlargement according to the scenarios considered.

Table 35 allows us to evaluate the progressive annual impact of enlargement. This allows us to consider the potential policy actions to deal with undesired and unexpected sectoral behaviours. Table 36 presents an interesting picture of the simulation results. In particular, the real effects of the enlargement are measured by cumulating the annual gains (or losses) in order to obtain a more informative accurate impression of the impact in a given year. Although a number of studies conclude that the impact of the enlargement (on the EU-15 countries or groups as well as single countries) is expected to be modest, we should stress that if the impact turns out to have a given sign, what matters is its cumulative effect along a give horizon. In the Italian case a relatively substantial expansion will affect some sectors ('agriculture and industrial machinery', 'electrical goods', 'motor vehicles, 'metal products'), whilst others (mainly food industries and tobacco) will lose their relative importance in the Italian economic structure. A cumulative output rate of growth of over 10 per cent (at the end of the 2000s) will indicate a sizeable sectoral impact.

Table 36 - Generous scenario vs. Baseline-Sectoral output per cent difference, averages refer to the period 2001-2010

Sectors	average	2010
TOTAL	2.5	4.9
Agriculture,Forestry,Fishery	0.7	1.6
Coal,Oil,Petroleum Ref.Products	2.4	3.7
Electricity,Gas,Water	2.2	4.2
MANUFACTURING	3.9	7.7
Primary metals	4.1	8.2
Stone,Clay & Glass products	1.4	2.5
Chemical Products	1.8	3.8
Metal Products	5.4	10.4
Agric. & Indus. Machinery	9.1	18.5
Office,Precision,Opt.Instruments	3.9	7.1
Electrical Goods	7.2	13.8
Motor Vehicles	8.2	17.4
Other Transport Equipment	2.0	4.0
Meat & Preserved Meat	1.0	1.9
Milk & Dairy Products	-0.3	-0.2
Other Foods	1.1	2.2
Alcohol & Non Alcoh. Beverages	1.1	2.3
Tobacco	-1.5	-3.0
Textile & Clothing	0.9	2.1
Leather, Shoes & Footwear	1.4	2.2
Timber, Wooden Product & Furniture	1.5	2.9
Paper & Printing Products	3.4	7.1
Plastic Products & Rubber	4.8	9.2
Other Manufacturing Industry	1.1	1.9
Building & Construction	0.3	0.2
SERVICES	2.1	4.0
Recovery & Repair Services	2.6	5.4
Wholesale & Retail Trade	2.3	4.5
Hotels & Restaurants	1.4	2.6
Inland Transport Services	2.7	5.3
Sea & Air Transport Services	1.4	2.9
Auxiliary Transport Services	2.4	4.7
Communication	2.8	3.8
Banking & Insurance	1.4	4.8
Other Private Services	2.3	5.4
Real Estate	1.2	2.6
Private Education Services	1.6	4.4
Private Health Services	0.1	2.2
Recreation & Culture	3.2	3.0

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ANNEX
Table 1A The Bilateral Trade Model: Sectoral and Country Composition

<u>Sectoral Composition</u>

SECTOR	SECTOR TITLE	SECTOR	SECTOR TITLE
1	Unmilled cereals	61	Glass
2	Fresh fruits and vegetables	62	Cement
3	Other crops	63	Ceramics
4	Livestock	64	Non-metallic mineral products nec.
5	Silk	65	Basic iron and steel
6	Cotton	66	Copper
7	Wool	67	Aluminum
8	Other natural fibers	68	Nickel
9	Crude wood	69	Lead and zinc
10	Fishery	70	Other Non-ferrous metal
11	Iron ore	71	Metal furnitures and fixtures
12	Coal	72	Structural metal products
13	Non-ferrous metal ore	73	Metal containers
14	Crude petroleum	74	Wire products
15	Natural gas	75	Hardware
16	Non-metallic ore	76	Boilers and turbines
17	Electrical energy	77	Aircraft engines
18	Meat	78	Internal combustion engines
19	Dairy products	79	Other power machinery
20	Preserved fruits and vegetables	80	Agricultural machinery
21	Preserved seafood	81	Construction,mining,oilfield eq
22	Vegetable and animal oils and fats	82	Metal and woodworking machinery
23	Grain mill products	83	Sewing and knitting machines
24	Bakery products	84	Textile machinery
25	Sugar	85	Paper mill machines
26	Cocoa, chocolate,etc	86	Printing machines
27	Food products nec.	87	Food-processing machines
28	Prepared animal feeds	88	Other special machinery
29	Alcoholic beverage	89	Service industry machinery
30	Non-alcoholic beverage	90	Pumps,ex measuring pumps
31	Tobacco products	91	Mechanical handling equipment
32	Yarns and threads	92	Other non-electrical machinery
33	Cotton fabric	93	Radio,TV,phonograph
34	Other textile products	94	Other telecommunication equipment
35	Floor coverings	95	Household electrical appliances
36	Wearing apparel	96	Computers and accessories
37	Leather and hides	97	Other office machinery
38	Leather products ex. footwear	98	Semiconductors & integrated circuits
39	Footwear	99	Electric motors
40	Plywood and veneer	100	Batteries
41	Other wood products	101	Electric bulbs,lighting eq.
42	Furnitures and fixtures	102	Electrical indl appliance
43	Pulp and waste paper	103	Shipbuilding and repairing
44	Newsprint	104	Warships
45	Paper products	105	Railroad equipment
46	Printing, publishing	106	Motor vehicles
47	Basic chemicals ex. fertilizers	107	Motorcycles and bicycles
48	Fertilizers	108	Motor vehicles parts
49	Synthetic resins, man-made fibers	109	Aircraft
50	Paints, varnishes and lacquers	110	Other transport equipment
51	Drugs and medicines	111	Professional measurement instruments
52	Soap and other toilet preparations	112	Photographic and optical goods
53	Chemical products nec.	113	Watches and clocks
54	Petroleum refineries	114	Jewellery and related articles
55	Fuel oils	115	Musical instruments
56	Product of petroleum	116	Sporting goods
57	Product of coal	117	Ordnance
58	Tyre and tube	118	Works of art
59	Rubber products,nec.	119	Manufactured goods nec.
60	Plastic products,nec.	120	Scraps,used,unclassified