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The completion of the internal market :
results of macroeconomic model simulations (*)

by Michel Catinat, Eric Donni
and Alexander Italianer

Internal paper

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Contents

List of tables

INTRODUCTION

The analysis presented in this article forms part of the research project on the "Costs of Non-Europe" which was chaired by Mr. Paolo Cecchini. The project as a whole included the reports of some thirty consultancy firms and economic research institutes in several countries, a survey of some 11 000 firms and a wide-ranging comparison of prices between Member States. The purpose of the present article is to describe the gains which may be expected from completing the internal market in terms of macroeconomic aggregates: consequences for GDP, employment or inflation, and impacts on the key macroeconomic equilibria such as budget or external balances. It synthesises the primary effects quantified by the various external consultants and institutes on the partial areas covered by their analyses, and also takes account of the repercussions between partial effects through macroeconomic interrelationships.

The methodology for quantifying the macroeconomic consequences is complex; it is described first (section 1). The article goes on to present the macroeconomic impacts for four large areas: the abolition of customs controls, the opening up of public procurement, the liberalization of financial services and capital movements, and the "supply effects" (sections 2 to 5 respectively). The final section is devoted to the overall analysis of the consequences of the large internal market. The geographical coverage is chiefly the Community as a whole. However, when information was available, the analysis also made it possible to analyse the macroeconomic consequences country by country, in particular for the Federal Republic of Germany, France, Italy and the United Kingdom.

1. METHODOLOGY

The macroeconomic assessment of completing the internal market which is presented here is based on simulations made with the help of macroeconometric models.

They have been used under rather special circumstances, since, because of the way in which they are constructed, these models cannot describe in an endogenous manner all the consequences of measures such as those covered by the White Paper programme. It was therefore decided to proceed in two stages: firstly the studies made by various external consultants commissioned for the requirements of the research on the cost on non-Europe were used to assess quantitatively the primary effects of completion of the large internal market on the partial fields covered by each of those studies (see Annex 5 for list of studies used). Secondly, these effects assessed "upstream" from the models were fed into the latter, thereby inducing certain changes in mechanisms or behaviour. In this way, the inability of the econometric models to describe the primary effects was circumvented. On the other hand, full use was made of their ability to simulate secondary effects - i.e. the usual macroeconomic mechanisms (multiplier and accelerator effects, income-sharing effects, price competitiveness effects, inflation mechanisms, capital accumulation, growth potential, etc.), and their transmission from one country to another through international trade or movements in exchange rates.

The introduction of the primary effects into the models is presented extensively in Catinat and Italianer (1988). This paper summarises only briefly each of the shocks (see Annex 1 for a list of the main shocks).

The macroeconomic simulations made are "scenarios" in the sense that the consequences described are conditioned by the primary "shocks" quantified "upstream" from the models. Only the macroeconomic feedback effects are simulated, and in particular the effects on the easing of various macroeconomic constraints (improvement in budgetary and external deficits, reduction in inflationary dangers). Being scenarios, the simulations thus describe potentialities, i.e. likely macroeconomic effects if the White Paper proposals are implemented completely. Furthermore, the results of these scenarios should be considered as lying in the middle of a range which is defined by a margin of uncertainty of +/- 30%. This range results from the aggregation of the uncertainty ranges on each of the primary shocks as derived from the consultancy studies, cf. Catinat and Italianer (1988).

Despite the methodology used and the precautions taken, the results provided by the models are likely to err on the side of conservatism: because of the model design, past behaviour as reflected in behavioural equations is assumed to continue and structural effects are poorly represented. The simulated consequences should therefore be regarded as covering the medium/long term (five to ten years). Beyond that time horizon, the structural changes should be analyzed more precisely.

Two econometric models were used: the Commission's HERMES model and the OECD's INTERLINK model, used on the Commission's sole responsability. The fact that they are complementary made it possible to explore the principal effects which may be expected. Their characteristics and their dynamic or variant properties are analyzed in detail in Valette and Zagamé (1988) and Richardson (1987) respectively.

The analysis first proceeds with the identification of four areas: the elimination of frontier controls, the opening up of public procurement, the liberalization of financial services and capital movements, and what is called the "supply effects", i.e. the strategic reactions of firms faced with a new economic and financial environment. These areas are defined on the basis of economic criteria (Catinat (1988)) and are distinct from the classification used in the White Paper which mentions three kinds of barrier: physical barriers, techrical barriers and fiscal barriers. The four areas in fact cover the physical and technical kinds of barrier only; the proposals for removing fisca. barriers are presented eleswhere (Commission of the EC (1987)), and will not be reexamined here.

These four areas are sufficiently "separable" for each of them to be analysed in turn: the macroeconomic consequences which they induce have their own logic and dynamic. The impacts of these four areas, defined and simulated so as to be independent[1], are then combined to provide an overall assessment of the gains which can be expected from the completion of the internal market. The structure of this article follows the same approach: the consequences of completing the internal market are first analysed area by area (Sections 2 to 5), then globally (Section 6).

For each of the four fields analysed, the discussion first concentrates on a description of the macroeconomic consequences for the Community as a whole. Subsequently, a comparison of the impacts on a country-by-country basis is attempted. But before taking a look at the individual country results, a word of caution concerning their interpretation seems necessary and should be kept in mind. The individual country results are substantially influenced not only by uncertainty surrounding the model inputs, but also by the specifications of the country models used for simulation. The same model input for one country would, if inserted into another country model, almost certainly produce a different outcome. As far as differences in models account for differences in country specificities this is justified, but what if models reflect a different theoretical stance? The HERMES model clearly incorporates such cases as the latter. For some countries (e.g. Belgium, France, Italy, United Kingdom) the models are macrosectoral, but for others, in particular for Germany, the model is macroeconomic[2]. The Interlink model also incorporates such cases. The supply blocks of the models for the larger countries (Germany, France, Italy, the United Kingdom) are more developed than those for the others, for instance. Therefore, where the Community result may be interpreted as a sample mean which is more or less unbiased, the individual results may not be entirely comparable.

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[1] In particular, due care has been taken, in running the simulations, to avoid double counting.

[2] Updated national blocks of the Comet IV models have been used and linked with the others when the national blocks of the Hermes model were not yet available.

Some basic assumptions were made for all the simulations, except when stated otherwise:

- <u>nominal</u> exchange rates are unchanged (i.e. they have the same evolution over time as in the baseline)

- <u>real</u> government expenditures are unchanged (consumption and investment)

- <u>real</u> interest rates are unchanged ex post (accommodation of the real money stock)

- it was assumed that all political and legislative measures needed to implement the internal market were taken in <u>one</u> particular year within the 1988-1992 period. Furthermore, the <u>static</u> reactions of economic agents were taken to be <u>immediate</u> (e.g. the reduction of intra-Community transport costs after the removal of customs controls), while the <u>dynamic</u> effects were spread out over a <u>five-year</u> period (e.g. the exploitation of economies of scale in the integrated market). Together, these assumptions amount to an acceleration of the implementation and consequences of the White Paper proposals. Consequently, the "medium term" effects which result technically from a simulation over 6 years, should in reality be extended to the medium/long run (approximately 10 years).

All the simulations were performed in a linked mode, which means endogenous and coherent changes in the trade of goods and services, factor income and capital flows[1]. Table 1.1 gives per area an overview of which models were given shocks for the simulations.

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[1] Trade in services, factor income and and capital flows were treated coherently in the Interlink model only

Table 1.1
Overview of the models which were given shocks for simulations of the internal market

Area	B	D	E	F	I	NL	UK	% 1985 EUR12 GDP
1. Customs barriers	HERMES	Comet	—	HERMES	HERMES	Comet	HERMES	88%
2. Public markets	HERMES	Comet	—	HERMES	HERMES	—	HERMES	83%
3. Financial services	Interlink	Interlink	Interlink	Interlink	Interlink	Interlink	Interlink	95%
4. Supply effects	—	Comet	—	HERMES	HERMES	—	HERMES	80%

Note: These models have all been simulated in linked mode. If a particular model of the linked HERMES or Interlink systems was not given a shock (mostly due to lack of information), this still implied that the reactions in such a model upon the shocks in other countries were endogenous.

2. THE ELIMINATION OF CUSTOMS CONTROLS

The first stage in the integration of the Community market is the elimination of customs controls. The consequences will be psychological (evidence of the irreversibility of the process, firms' expectations) as much as economic. Without ignoring the importance of the first aspect, we shall concentrate chiefly on the second.

2.1 Simulation characteristics

The existence of intra-Community frontiers gives rise to two types of costs:

- delays at customs and especially the administrative formalities of customs clearance are estimated to cost between 7,9 and 8,3 billion ECU in 1987 (0,23 and 0,24% of Community GDP), the administrative cost being partly borne by exporting firms and partly paid to customs agents;

- the employment of customs officials at intra-Community frontiers: the cost to governments is estimated at between 0,5 and 1 billion ECU in 1987 (0,02 to 0,03% of Community GDP).

The removal of intra-Community frontiers would have as a direct result a reduction in the price of intra-Community trade, since the extra costs of delays or administrative formalities are paid either directly or indirectly by importing firms. The consultant Ernst & Whinney has estimated the direct costs of customs formalities for intra-Community trade in goods as given in Table 2.1.

Table 2.1 Direct cost of customs formalities for intra-Community trade in goods (billion ECU in 1987)

Administrative costs for firms	
-internal	5,9
-external	1,6
-total	7,5
Costs associated with frontier delays for firms	0,4 to 0,8
Total costs for firms[1]	7,9 to 8,3
Administrative costs for public authorities[2]	0,5 to 1,0
Total costs of customs formalities	8,4 to 9,3

Source: Ernst & Whinney
[1] i.e. between 1,6 and 1,7% of total intra-Community trade
[2] i.e. between 0,3 and 0,6% of the average public deficit in 1987

Additional information was available concerning the administrative costs borne by firms: Ernst & Whinney estimated these costs per consignment for the importers and the exporters of each of the countries analysed and for different products. This primary quantitative information provided the basis for deduction of the share of these costs in the value of bilateral trade flows between Community countries in the HERMES sectoral nomenclature which, after addition of the costs associated with customs delays, gave the share of the total cost of customs controls in this value. Table 2.2 gives these total customs formalities' cost shares in the bilateral trade flow values, taking all products together (see Catinat and Italianer (1988) for a sectoral breakdown at the HERMES nomenclature level).

Table 2.2 Share of the cost of the administrative formalities borne by firms in the value of bilateral trade flows - all products taken together

(%)

Exporter \ Importer	B	D	F	I	NL	UK	Other Community countries	EUR12
B	–	0,84	1,21	1,42	0,94	0,84	1,01	1,02
D	1,45	–	2,10	2,17	1,82	1,67	1,85	1,87
F	1,64	1,72	–	2,25	1,84	1,72	1,69	1,83
I	1,76	2,25	2,30	–	1,95	1,83	1,80	2,11
NL	1,05	1,22	1,40	1,59	–	1,27	1,35	1,26
UK	1,87	1,20	1,55	1,91	1,33	–	1,76	1,54
Other Community countries	1,49	2,02	2,10	2,14	1,73	1,79	1,82	1,93
EUR12	1,46	1,53	1,84	2,04	1,55	1,58	1,71	1,67

Source: Catinat and Italianer (1988).

The procedure for putting these values in the model was based on the assumption that it is reasonable to believe that the elimination of these costs would be passed on in prices. The bilateral import prices from Community countries for the countries analysed were thus reduced accordingly, as indicated in Table 2.2.

But this fall in prices would be partly achieved by job losses estimated at around 17 500 in exporting firms and at around 40 000 for private agents dealing with customs formalities. Due to lack of information, the job losses were assigned respectively to the competitive branches and to transport in proportion to the corresponding employment provided by each of the sectors in each country. Similarly, the costs borne by the public authorities would imply a decrease in public employment of a little over 0,1% (see Table 2.3).

Table 2.3 Inputs for the "customs barriers" simulation								
	B	D	F	I	NL	UK	EUR12	EUR12 (as % of GDP)
Customs barriers								
Average fall in the prices of intra-Community imports (%)	1,46	1,53	1,84	2,04	1,55	1,58	1,67	-
Job losses (thousands)								
-exporting firms	Distributed in proportion to						17,5	-
-customs clearing agents	the corresponding employment						40,0	-
	in each country							
-customs officers (as a % of public employment)	0,41	0,06	0,21	0,06	0,22	0,07	0,11	-
Total shock (% of GDP)	-	-	-	-	-	-	-	0,26

Source: Catinat and Italianer (1988)

2.2 Simulation results

2.2.1 The Community as a whole

The reduction in the price of intra-Community imports would give rise to two types of substitution for each Member State:

- substitution between national production and imports from the Community in favour of the latter;

- substitution between extra-Community imports and intra-Community imports in favour of the latter.

Each Member State would benefit from improved terms of trade brought about by the fall in import prices (0,6% in the medium term in average - see Table A3.2 in Annex 3). The effect on their trade balance in volume terms is more difficult to determine in advance, because of two conflicting phenomena: the increase of imports and, symmetrically, the increase in exports (counterpart of the increase in the imports of the other Member States).

On the other hand, for the Community as a whole, the resultant impact is unambiguous: the first substitution effect is neutral in terms of volume but beneficial in terms of price (improvement in each country's terms of trade); the second is favourable in terms of volume, since it increases the Community's trade balance in volume terms, and neutral in terms of price. In the medium term, the HERMES simulations confirm this analysis: the Community's external balance improves by 0,16 percentage point of GDP (see Table 2.4).

In addition, the substitution between national production and imports from the Community also has favourable effects on the costs of firms, because it brings down the prices of imported intermediate consumption. These cost reductions passed on in prices would spread to the whole of the economy through intersectoral trade. Even if the upturn in activity is likely to increase the dangers of demand pull inflation, the disinflationary effect seems to prevail, perhaps slightly in the short term (consumer prices and the GDP deflator falling by 0,21% and 0,01% respectively), but significantly in the medium term (1,02% and 0,85% respectively for the Community as a whole). The Community's price-competitiveness would be increased, and as a result the improvement in the external balance would be strengthened.

The consequences for activity of the elimination of frontier controls would come about by means of different mechanisms: external trade would have a direct positive effect on growth, while the relative fall in consumer prices would have a favourable impact by boosting the purchasing power of households. However, the initial job losses (ex-ante loss of more than 80 000 private and public jobs[1]) would have the consequence of reducing personal disposable incomes and of counteracting the positive effects described above: according to the HERMES model simulations, Community GDP could fall slightly in the short term. This could be the price to pay. But this adjustment cost is the condition on which, in the medium term, the abolition of customs controls can contribute to upturn in activity. The HERMES simulations are clear on this point: Community GDP could increase by almost 0,4% in the medium term.

Table 2.4 "Customs barriers" simulation: main macro-economic results for EUR12

	Year1	Year2	Year3	Year4	Year5	Year6
Percentage differences						
Gross domestic product	-0,01	0,10	0,20	0,27	0,33	0,36
Private consumption price	-0,21	-0,41	-0,61	-0,78	-0,92	-1,02
GDP deflator	-0,01	-0,23	-0,42	-0,60	-0,74	-0,85
Real wage rate	0,06	0,10	0,15	0,20	0,25	0,29
Labour productivity/head	0,05	0,13	0,18	0,19	0,20	0,20
Employment	-0,06	-0,03	0,03	0,08	0,13	0,16
Absolute differences						
Employment ('000)	-67	-32	33	102	164	211
Budget surplus % GDP	0,03	0,08	0,12	0,16	0,19	0,21
External balance % GDP	0,17	0,16	0,16	0,16	0,16	0,16

Source: HERMES simulation

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[1] It must be stressed that, for technical reasons, these job losses were concentrated at the beginning of the period analysed. In fact, they will probably be spread over a period of time.

Employment would follow the same momentum: job losses in the short term (around 70 000 for the Community thus slightly less than the initial shock), but net job creation in the medium term as a result of the upturn in activity (over 200 000 for the Community as a whole).

The general government balance should improve in the short and medium term although for different reasons (0,03% of GDP in the short term and 0,21% of GDP in the medium term): in the short term this would result mainly from the budgetary savings made through the abolition of jobs in the customs service; in the medium term, it would stem largely from the upturn in economic activity and the consequent increase in tax revenue.

With an upturn in activity (0,36% of GDP in the medium term), job creation (+210 000 jobs in the medium term), disinflation (consumer price inflation down by 1% in the medium term) and an easing of budgetary and external constraints, (respective improvements of 0,21 and 0,16 of a percentage point of GDP in the medium term), the abolition of customs barriers has the characteristic of being benefical whatever aggregate is considered for the Community as a whole.

2.2.2 Individual country results

As already stated above in section 1, a comparison of individual country results has to be done with caution in order not to attribute differences in simulation results to differences in shocks while in reality they are due to model behavioural differences. Keeping this in mind, the medium term effects for a number of important variables are compared in Table 2.5 among the six countries which have been given shocks (more detailed results are given in Table A2.1 in Annex 2).

Since two of the three employment shocks have been equally distributed among the countries, the differences among country results arise mainly from different changes in the (bilateral) intra-Community cif import prices (apart from behavioural differences). These price decreases bear no one-to-one relationship with the effects on GDP, however, since they touch several vital parts of the economy simultaneously. For instance, there is a negative effect on GDP from the import substitution provoked by the lower import prices. On the other hand, this import increase will favour exports of Community countries more than those of third countries since only intra-Community import prices are decreasing, therefore largely offsetting the initial loss through export increases. These export increases are not only directly proportional with the relative price decreases of each country, but also with its intra-EC trade share, thus introducing another differential element. At the same time, the import price decreases start off a disinflationary wage-price spiral which, depending on patterns of wage formation, may lead to differences in real wage increases. While the lower prices enhance competitiveness and boost exports, the real wage increases affect private spending through increased real disposable income and the substitution of labour for capital, pushing up investment.

Strongly positive effects on private spending are notably visible for Germany and the Netherlands, which would consequently experience the highest GDP increases with 0,57% and 0,45% respectively. These results may partly be attributed to behavioural differences compared to other

countries, the wages in these two countries reacting fairly strong to productivity and unemployment changes. The increases in GDP for <u>Belgium</u>, <u>France</u> and the <u>United Kingdom</u> would be close to each other, somewhat above 0,3%. The relatively strong increase of the (nominal) trade balance in Belgium is mostly due to terms of trade increases, the real trade balance being hardly affected. The equally strong rise in the budget balance may be attributed mainly to the decrease in customs officials for this country (cf. Table 2.3), which would cut government employment at least twice as much as in the other countries anal˜sed. The smallest growth (0,24%) would be experienced in Italy, and this fact seems to be due to a negative contribution of the real trade balance. The costs of customs formalities for trade with Italy being high, there is a larger scope for a decrease in intra-EC import prices in Italy than in the other countries analysed. Consequently, relatively more import substitution is likely to take place, thus resulting in a negative real trade balance effect.

Table 2.5 "Customs barriers" simulation: comparison of medium term results among countries

	B	D	F	I	NL	UK	EUR12
Percentage differences							
Gross domestic product	0,34	0,57	0,34	0,24	0,45	0,31	0,37
Private consumption	0,41	0,61	0,27	0,42	0,55	0,28	0,40
Total fixed investment	0,61	0,76	0,45	0,20	0,93	0,29	0,47
Consumption price	-1,25	-1,27	-1,09	-0,68	- 0,94	-1,21	-1,02
GDP deflator	-0,55	-1,10	-0,98	-0,43	- 0,51	-1,15	-0,84
Real wage rate	0,10	0,55	0,10	0,37	0,51	0,18	0,31
Labour productivity/head	0,14	0,23	0,30	0,08	0,29	0,12	0,19
Employment	0,13	0,34	0,03	0,10	0,15	0,20	0,17
Absolute differences							
Employment ('000)	5	89	6	21	8	58	215
Budget surplus as % of GDP	0,67	0,21	0,15	0,22	0,32	0,21	0,21
External balance as % of GDP	0,77	0,03	0,27	0,16	0,11	0,15	0,16
Reminder							
Shocks as % of GDP	-	-	-	-	-	-	0,26

Source: HERMES simulation

3. OPENING UP OF PUBLIC PROCUREMENT

Public purchasing covers all purchases - intermediate consumption or investment - made by government but also by the "public enterprises" which, by virtue of their status, the public nature of their production or their strategic importance, are in a relatonship of dependence on the public authorities. The opening up of public contract procurement covers only part of these purchases: those which give rise to calls for tender or for negotiation, since the other purchases are made by order or direct payment at a level which is necessarily local. Public (contract) procurement represented around 55% of public purchasing in 1986 (cf. Commission of the EC, 1988, p. 54).

3.1 Simulation characteristics

3.1.1 Quantitative information available

Atkins-Planning, the consultant asked to produce a study of public procurement, distinguishes three types of effect which may be generated by the opening up of such markets:

- a static effect due to increased penetration by foreign products. Through buying from cheaper foreign suppliers, governments and public enterprises would spend less for a given quantity of goods. The static effect pre-supposes that there will be no price change for either imported goods or those produced within the country. The effect is thus purely structural - substitution between domestically produced and imported goods.

- a competition effect, since, faced with increased competition in previously protected markets, national firms should be forced to lower their prices to compete with the prices of imported goods.

- a restructuring effect; under the pressure of competition some supply sectors[1] would be induced to restructure (mergers, exploitation of economies of scale, removal of X-inefficiency, reduction of monopoly rents) and to increase productivity. The reduction in production costs would lead to a parallel reduction in production and import prices.

Formally, these three effects are analysed as follows:

For a given product traded through public contracts, initial expenditure is equivalent to:

(1) $pQ + p_mM$ where Q = volume of products purchased of national origin
M = volume of imported products of foreign origin
p = price of purchases of national origin
p_m = price of imported purchases.

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[1] Essentially equipment goods branches: metal products (boilers, etc.), electrical equipment (turbine generators, telephone switching) or transport equipment (locomotives).

After the opening up of public procurement, under the assumption that domestic prices in the end are aligned to foreign prices, expenditure becomes:

(2) $(p_m + dp_m) (Q + dQ) + (p_m + dp_m) (M + dM)$

The difference between the initial and final expenditure values is the sum of three factors:

(3) $(p_m + dp_m) (Q + dQ) + (p_m + dp_m) (M + dM) - (pQ + p_mM) =$

$p(Q + dQ) + p_m (M + dM) - (pQ + p_mM)$	Static effect: the additional purchasing from abroad implies that $dM > 0$ and $dQ < 0$
$+ p_m (Q + dQ) - p(Q + dQ)$	Competition effect: national producers align their price on import price; p becomes equal to p_m
$+ dp_m (Q + dQ) + dp_m (M + dM)$	Restructuring effect: the price of national production ($p = p_m$) and import prices fall by $dp_m < 0$

The effects quantified by Atkins-Planning are therefore both static and dynamic (competition and restructuring effects). Several scenarios were envisaged whereby the consultant could scan the range of possibilities and evaluate the sensitivity of the figures to changes in the parameters (level of penetration of public markets, sectoral coverage, competitors' price levels).

For the purpose of the simulation exercises, the following - medium - scenario only was chosen:

* 80% of public purchasing of manufactured products, construction products and business services are considered to be potentially accessible to foreign bidders; the remaining 20% can be provided only by local bidders[1].

* For each product analysed, it is assumed that the level of penetration of public markets converges with the penetration of the equivalent private markets.

In the case of this scenario, the potential savings are shown in Table 3.1.

For the Community as a whole, the savings achievable by government and public enterprises will probably amount to 12,7 billion ECU or 0,50% of GDP, of which 0,22% of GDP would be attributable to the static effect, 0,03% to the competition effect and 0,25% to the restructuring effect.

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[1] This restriction concerns the static effects only.

The Atkins-Planning study provides no breakdown between public administration and enterprises or between intermediate consumption and investment at the sectoral level chosen for the basic calculations (the three-digit NACE-CLIO level).

For the purposes of the simulations, this breakdown had to be carried out.

The products at the three-digit level and the savings relating to them were generally considered as investment if they corresponded to equipment goods or to construction products; the others were allocated solely to the intermediate consumption of public administrations[1]. Also, the possible savings on investments were broken down between public administrations and enterprises on the basis of their headings: telephone switching gear was allocated to public telecommunications enterprises, turbine generators to energy enterprises, locomotives to transport enterprises, etc. Where the allocation of products was less obvious than in the above examples, they were by preference allocated to public administrations.

This breakdown is probably biased in favour of the public administrations (overvaluation of savings) to the detriment of the public enterprises (undervaluation by the same amount).

Quantitatively, the savings in expenditure achievable by public administrations and enterprises could be those from Table 3.1.

Table 3.1 Savings achievable by public administrations and enterprises as a result of the opening up of public procurement – medium scenario

	Effect :	static	competition	restructuring	total
Belgium	mio 1984 ECU	403	62	491	956
	% GDP	0,42	0,06	0,51	0,99
France	mio 1984 ECU	387	132	1599	2118
	% GDP	0,06	0,02	0,26	0,34
F.R. of Germany	mio 1984 ECU	2599	235	1135	3969
	% GDP	0,33	0,03	0,14	0,50
Italy	mio 1984 ECU	981	228	828	2037
	% GDP	0,19	0,04	0,16	0,39
U.K.	mio 1984 ECU	1180	115	2305	3600
	% GDP	0,22	0,02	0,43	0,67
Total	mio 1984 ECU	5550	772	6358	12680
	% GDP[1]	0,22	0,03	0,25	0,50

[1] As percentage of the 5 industrialized countries.

[1] For the sake of simplicity. But it also seemed that public enterprises were all liable to favour domestic suppliers for their investment purchases, but that they were, by contrast, unlikely to do so for their purchases of intermediate goods.

3.1.2 Introduction of the shocks into the models

The introduction of these effects into the models is complex[1]. It will merely be summarized here.

The static effects were simulated, in the HERMES model, by altering the level of import penetration of public markets (see Table 3.2) and thus substituting purchases of lower-priced imported products for those provided by domestic producers. The volume of imports was thus increased, as was their price elasticity since it is assumed that the public agents who are initially insensitive to price differences (zero price elasticity) will in future make their choices in the light of these differences (the same price elasticity as private agents for similar products). The other two effects of competition and restructuring were introduced by changing prices, of production in the first case, of production and of imports in parallel with the reduction of unit cost as a result of restructuring, in the second case[2]. Reductions in prices on the supply side have as their counterpart reductions in prices for public purchasing (in this instance for purchases of equipment goods): the prices of equipment goods for government and public enterprises have thus been reduced proportionately (see Table 3.2).

Table 3.2 Shocks introduced into the HERMES model
         Opening up of public procurement

	B	D	F	I	UK	EUR12	EUR12 % GDP
Static effects							
Increase in the level of import penetration of public markets (percentage points)	8,2	8,5	5,5	4,1	3,9	5,6	0,22
Competition and restructuring effects							
Fall in prices of equipment goods on public markets (%)							0,28
-public administration	0,03	0,13	0,03	0,07	0,12	–	
-public enterprises							
*energy	1,6	1,5	1,7	1,1	1,1	–	
*transport and telecom	8,5	7,8	7,6	11,4	7,2	–	
Total shock as % of GDP	0,99	0,50	0,34	0,39	0,67	–	0,50

Source: Catinat and Italianer (1988)

[1] The main difficulty lies in the fact that the static effects result from a difference in price levels (domestic prices and import prices), but the prices in the models are indices which conform with national accounts concepts. See Catinat and Italianer (1988) for a full description of the method of implementation.

[2] The consequences for employment of the restructuring of industries have not been taken into account ex ante. Therefore, the simulation results for employment might be biased upwards.

During the calculations, it was assumed that all enterprises in the energy and transport and telecommunications branches were public enterprises. This assumption results in an overvaluation of the effects which becomes greater to the extent that the energy and transport and telecommunication branches contain a larger proportion of private enterprises.

The central simulation was based on the assumption that the opening up of public procurement was of benefit to Community suppliers only.

An alternative scenario was also simulated in which it was assumed that intra-Community public procurement would be opened up to the rest of the world without reciprocity, without the protection of public procurement outside the Community being reduced[1].

3.2. Simulation results

3.2.1 The Community as a whole

The macroeconomic consequences of the opening up of public procurement will spread throughout the economy through three channels: public contract suppliers, public enterprises and public administrations.

In the case of public contract suppliers, the pressure of competition should trigger necessary restructuring and contraction — in some cases sharp — of their production costs. The direct beneficiaries of this would of course be governments and public enterprises. It is probable, however, that this restructuring would also affect products not exclusively intended for public agencies. In that case, beneficial effects could appear directly on private markets.

In the case of public administrations, the opening up of public procurement would entail budgetary savings and would therefore help to cut public deficits.

Lastly, in the case of public enterprises, the opening up of public procurement would entail reductions in the average cost of investment spending, since, according to Atkins-Planning, public enterprises could save chiefly on their purchases of equipment goods, by inviting a wider range of foreign suppliers to tender. For the public enterprises, the result would therefore be a fall in their production costs which, it has been assumed, will be passed on in their selling prices (competition policy in the public energy, transport and telecommunications services). These public services have a substantial power of dissemination to the whole of the economy, via the intermediate consumption of the other productive branches and via households. The falls in production cost, starting in these public services, would therefore spread to all the productive branches. The overall effect could therefore well be a slowdown in the general rate of price inflation.

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[1] A third scenario corresponds to the opening up of Community public procurement negotiated on the principle of reciprocity with the signatories of the GATT Code. The consequences of such a scenario could be similar to those of the central scenario (opening up of public procurement limited to the Community area).

- 21 -

According to the central HERMES simulation where the opening up benefits Community suppliers only (cf. Table 3.3 and Table A3.2 in Annex 2 for individual country results), prices would fall progressively in line with the restructuring of the supplier sectors and its spread to all the productive branches and to final demand: around -0,3% in the short term and -1,5% in the medium term for both the deflators of GDP and of consumption (on average over the Community).

Table 3.3 "Public procurement" simulation: main macro-economic results for EUR12

	Year1	Year2	Year3	Year4	Year5	Year6
Percentage differences						
Gross domestic product	0,20	0,25	0,31	0,37	0,45	0,55
Private consumption price	-0,30	-0,48	-0,67	-0,91	-1,17	-1,46
GDP deflator	-0,35	-0,62	-0,86	-1,11	-1,35	-1,58
Real wage rate	0,18	0,11	0,12	0,15	0,20	0,26
Labour productivity/head	0,15	0,13	0,16	0,18	0,23	0,27
Employment	0,05	0,12	0,15	0,19	0,23	0,28
Absolute differences						
Employment ('000)	62	143	192	238	290	356
Budget surplus % GDP	0,11	0,21	0,23	0,26	0,29	0,34
External balance % GDP	-0,01	0,02	0,03	0,05	0,06	0,09

Source: HERMES simulation

The lower rate of inflation, all other things being equal, is a factor which favours growth: the purchasing power of personal disposable income increases and external price competitiveness improves[1]. In the scenario where the opening up of public procurement is limited to the Community area, ex-hypothesis, there is no loss of market share with regard to public contract procurement, taking the average between countries. Everything therefore helps to support activity: according to the HERMES simulations, Community GDP could increase by 0,55% in the medium term. As a result, over 350 000 jobs could be created in the medium term.

The opening up of public procurement would take pressure off the budget deficits. First, it would do so directly, since it is synonymous with budget savings if the quantity of purchases remains unchanged. Second, it would do so indirectly, because the upturn in economic activity and lower inflation are both factors which favour an improvement in budget balances (the tax and parafiscal base expands in real terms, interest charges on the public debt decline).

According to the HERMES simulations, the improvement in budget balances is a large one: of the order of 0,35% in the medium term for the whole of the Community. It is all the larger because the scenario in question implicitly assumes that the public administrations will wish to reduce their debt and will not use the budgetary savings to support demand directly by Keynesian reflation.

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[1] With an unchanged exchange rate, as has been assumed.

The consequences for the external balance depend on the conditions on which public procurement is opened up: an improvement probably results if opening up is limited to the Community area, since the restructuring of the supplier branches on the internal market leads to increases in competitiveness on the external markets.

If public procurement is opened up unilaterally without reciprocity from the rest of the world, the external balance will probably deteriorate because of an increase in the penetration of the internal market with no equivalent increase in the penetration of external markets. Also, the improvement in the budget balance could be very substantially reduced (divided by 2 according to the HERMES simulations): the substitution of imports from outside the Community for domestic production would deprive government of tax revenue, which in certain cases may even exceed the initial budget savings. The activity-bolstering effect described above could be reduced by 25% to 50%, according to exploratory simulations carried out with the help of the HERMES model[1].

3.2.2 Individual country results

The macroeconomic consequences by country are given in Table 3.4 for the scenario in which opening up is limited to the Community area. This means that, ex ante, what is gained by some corresponds to what is gained by others. However, ex post, restructuring in the supplier branches would enable European industrialists to win back market shares on external markets: the size of the market to be shared would increase over time.

With all the precautions which should be taken when comparing the macroeconomic consequences by country (see section 1 on methodology), one observation seems irrefutable: the consequences for activity (GDP or employment) are in magnitude largely determined by the initial shocks quantified upstream of the models (see Table 3.4).

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[1] This alternative simulation (not shown here) assumed that the relative shares of intra- and extra-Community imports in public markets would be the same as in the equivalent private markets. Despite the increase in competition which would result from a penetration of public markets by extra-Community suppliers, the simulation assumed, due to lack of information, that prices would fall by the same amount as if the opening up of procurement were limited to the Community area. In this respect for this alternative scenario, the favourable aspects of opening up public procurement are liable to be undervalued.

Table 3.4 "Public procurement" simulation: comparison of medium term results among countries

	B	D	F	I	UK	EUR12
Percentage differences						
Gross domestic product	0,78	0,56	0,50	0,39	0,70	0,55
Private consumption	0,02	0,56	0,30	0,33	0,71	0,46
Total fixed investment	1,25	1,52	0,48	0,31	0,97	0,88
Consumption price	-0,30	-2,15	-0,42	-0,45	-2,92	-1,46
GDP deflator	-0,57	-1,79	-0,49	-0,84	-3,41	-1,58
Real wage rate	-0,31	0,37	0,26	0,04	0,42	0,26
Labour productivity/head	0,17	0,29	0,24	0,15	0,62	0,27
Employment	0,66	0,27	0,26	0,20	0,32	0,28
Absolute differences						
Employment ('000)	23	70	57	44	90	356
Budget surplus as % of GDP	0,76	0,23	0,37	0,19	0,51	0,34
External balance as % of GDP	0,80	0,15	0,26	0,02	-0,26	0,09
Reminder						
Shocks as % of GDP	0,99	0,50	0,34	0,39	0,67	0,50

Source: HERMES simulation

The apportionment of the beneficial effects between Community countries will substantially depend on the nationality of the firms currently most efficient in supplying the public markets. The presence in a country of such firms is likely to limit the level of penetration of its market while enabling its public agencies to benefit from price reductions brought about by the increase in competition. It also favours gains in market share on foreign public markets. Lastly it is a factor in the control of industrial restructuring.

The differentiation of consequences by country is therefore determined more by their industrial characteristics or by the extent to which their public market is currently protected, than by the indirect macroeconomic mechanisms brought into play.

According to the HERMES simulations, the multiplier effect (ratio of the relative increase in GDP to the initial shock) is highest in France and lowest in Belgium. The reasons are difficult to determine and this observation would require more detailed analyses. Beyond the primary effects, the logic of which is described in the Atkins-Planning report, three macroeconomic mechanisms seem to predominate:

- the size of the increases in productivity created; they are partly the result of the degree of restructuring of the national firms which supply the public markets; they range from 0,6% in the medium term in the United Kingdom to some 0,15% in Belgium and Italy. The higher they are, the

more they permit the redistribution of surpluses in the form of profits, wages or lower prices.

- the size of the fall in prices. They are a factor in competitiveness and favour external growth. The reductions in prices are large for the United Kingdom and the Federal Republic of Germany, but are distinctly smaller for the other countries.

- the size of the increases in real wages. Where they are high, they support domestic growth. This is the case for France, Germany and the United Kingdom.

These three mechanisms are interdependent; they operate to a greater or lesser degree depending on the country.

The improvement of budget balances is also a factor to be taken into account. A substantial easing of this constraint is equivalent to increased potential for growth in the more or less distant future, because it permits the implementation of a less restrictive economic policy. On the basis of this criterion, Belgium and the United Kingdom seem as though they ought to benefit more than the other countries from the opening up of public procurement, although the United Kingdom will see its room for manoeuvre on the external balance becoming narrower.

4. FINANCIAL SERVICES AND CAPITAL MARKET INTEGRATION

The liberalisa⋅:'ɔn of financial services has implications both for consumers and producers of these services. Producers will be able to sell their services in all Ccᴍmunity countries under conditions equivalent to those in their home countries (free market entry). Consumers will benefit from the enhanced competition in this field through a larger range of products and lower prices. The full liberalisation of capital, which is a prerequisite for the liberalisation of financial services, will encourage capital movements toward countries or regions with the highest real interest rates, implying an equalisation of the latter in the long run, as for the marginal efficiency of capital[1]. Simulating the liberalisation of capital and financial services therefore amounts to simulating the effects of competition-induced price decreases for financial services, as well as a movement for real interest rates towards convergence. Section 4.1 describes the simulation characteristics used for the simulation of these effects, while the simulation results themselves are presented and discussed in section 4.2.

4.1 Simulation characteristics

This section summarizes the inputs and assumptions used for the simulations concerning the liberalisation of capital and financial services (for a detailed analysis, see Catinat and Italianer (1988)). The simulations themselves were carried out, under the responsibility of the Commission's services, on the Interlink model of the OECD (for a description see OECD (1988) or Richardson (1987) and the references cited therein). Apart from the simulation shocks, the simulations were performed on the assumption of unchanged policy. In addition, the model was used with the options described in the methodological section, in particular with unchanged <u>real</u> interest rates, i.e. accommodation of the real money stock.

This assumption of unchanged real interest rates implies that <u>ex ante</u> shocks in real interest rates (as given in this exercise) are also true <u>ex post</u>. The option of unchanged nominal exchange rates with fixed <u>real</u> interest rates is justified if one is ready to accept that real exchange rates follow interest rate parity.

The liberalisation of capital and financial services was simulated by giving shocks to seven EC countries simultaneously, i.e. Belgium, Germany, Spain, France, Italy, the Netherlands and the United Kingdom[2]. The shocks were introduced once and for all in the first period, and simulated over a period of six years[3]. A comparison of the simulation results with and without the shocks enables one to evaluate the macro-economic impact of the liberalisation on a number of countries sufficiently large to represent the total Community (95% of 1985 EUR12 GDP).

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[1] Cf. Commission of the EC (1988), Section 5.1

[2] Although simulation inputs for Luxembourg were available, they were not used for simulation, except for the total average price decrease, which was incorporated in the trade effects for the Belgium-Luxembourg Economic Union.

[3] Since the main interest of the exercise lies in the medium run effects, the gradual, as opposed to instantaneous, introduction of the effects was not considered as being meaningful.

The shocks given to the Interlink model derive mainly from increased competition for the financial services which squeezes the monopoly rents provoked by the existence of a segmented European market. Gradually, the costs of financial intermediation will converge toward the cost level of the most efficient producers, i.e. those producing at the lowest cost. On the basis of this reasoning, the consultants Price Waterhouse have calculated that, on average, the price of financial services in Europe could decrease by as much as 10%.

This result, which is the middle of a range of likely price falls, was arrived at after a price comparison of sixteen representative financial products, cf. Price Waterhouse (1988). The price decreases for these sixteen products could be translated into shocks for five important macroeconomic (model) variables, i.e. short and long term interest rates for households, the long term interest rate for firms, the price of financial services (other than borrowing costs) for households and the price of intermediary consumption of financial services (excluding borrowing costs) for enterprises[1]. To the decrease in the long term interest rate for firms were added the changes in the real interest rates to be expected from the convergence of real interest rates following the integration of capital markets. The shocks given are summarized in Table 4.1. It should be noted that the interest rate decreases (except for the convergence effect) represent decreases in margins of financial intermediation, and do not affect the underlying (money market) rates. In terms of GDP, the shocks represent 0,7% of GDP on average, based on a range from 0,2% (for the Netherlands) to 1,3% (for Spain).

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[1] Cf. Catinat and Italianer (1988). Note that since real interest rates are kept constant, ex ante changes in (real) interest rates are equal to the ex post changes in real interest rates.

Table 4.1 Simulation inputs for financial liberalisation

	B	D	E	F	I	L	NL	UK	EUR8
A.Decreases in interest rate margins (percentage points):									
- short-term consumer rate for households	0,7	2,2	0,7	1,8	2,6	0	0,6	1,9	1,9
- mortgage rate for households	0,2	0,3	1,0	0,6	0	0,3	0	0	0,2
- long-term rate for firms (including interest rate convergence)	1,2	0,2	0,2	0,5	0,7	1,3	0,9	0,4	0,5
B.Price decreases (%):									
- other financial services for households	16,4	3,4	18,9	10,0	19,8	13,2	3,8	2,8	7,9
- other intermediary financial services for firms	17,7	8,0	26,0	14,3	18,4	6,3	7,5	3,9	10,4
TOTAL									
- average price decrease (%)	11,4	10,3	20,7	12,2	14,3	8,5	4,4	6,7	10,3
- as % of 1985 GDP	0,6	0,6	1,3	0,5	0,7	1,3	0,2	0,8	0,7

Source: Catinat and Italianer (1988). The averages for the eight countries (column "EUR8") have been calculated using 1985 data on value added in the financial service branch as weights. The bottom line was obtained through multiplication of the 1985 share of value added in financial services in GDP by the average price decrease.

4.2 Simulation results

4.2.1 The Community as a whole

Extrapolating the individual country results to EUR12 one obtains the macro-economic effects of financial liberalisation of Table 4.2[1] (Table A2.3 in annex 2 gives the individual country results). In the medium run, the "multiplier" effect is high, with a shock of 0,7% of GDP generating a 1,5% increase in real GDP. The main contributors to this considerable growth result are the decreases in the long-term interest rates for households and firms, boosting both residential and productive investment, suggesting a total investment increase of 2,4% in the medium term (government investment is kept constant in real terms). In addition, demand would be sustained through 1% more private consumption, stimulated in part

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[1] The simulation results have been slightly adjusted in order to abstract from historical trade integration effects present in the import equation elasticities.

by the lower consumer credit rates, and in the longer run by the increase of 0,9% in real disposable income. The latter effect is due to the disinflationary process set in motion through the price decreases, for financial services other than borrowing, which are diffused throughout the productive system and finally would lead to a 1,4% decrease in domestic prices. These price decreases also enhance competitiveness, resulting in a positive contribution of net exports, leading to an increase in the trade balance to GDP ratio of 0,3 percentage point.

For households, the decrease in long-term interest rates for firms implies that capital becomes cheaper than labour, ceteris paribus. Therefore, labour will be substituted by capital due to relative price effects. This effect on employment is clearly present in the first two years of the simulation. After this period, demand is strong enough to compensate for the initial loss in employment, and would result in 440 thousand new jobs in the medium term. In reality the initial negative employment effect is likely to be mitigated through the fact that the liberalisation will only take place gradually instead of instantaneously as introduced in the model simulations. Therefore less emphasis should be put on the short-term simulation results from this point of view.

Table 4.2 "Financial liberalisation" simulation: main macro-economic results for EUR12

	Year1	Year2	Year3	Year4	Year5	Year6
Percentage differences						
Gross domestic product	0,43	1,06	1,33	1,36	1,39	1,46
Private consumption price	-0,47	-0,78	-1,01	-1,19	-1,32	-1,38
GDP deflator	-0,47	-0,77	-1,00	-1,17	-1,31	-1,37
Real wage rate	0,26	0,26	0,28	0,33	0,38	0,42
Labour productivity/head	0,63	1,11	1,19	1,12	1,10	1,11
Employment	-0,20	-0,05	0,14	0,24	0,29	0,36
Absolute differences						
Employment ('000)	-245	-65	171	294	361	440
Budget surplus % GDP	0,02	0,28	0,60	0,78	0,92	1,06
External balance % GDP	-0,03	-0,02	0,15	0,22	0,25	0,26

Source: Interlink simulation on the responsability of the Commission's services

In the medium term, the government budget balance as a percentage of GDP might improve by more than 1 percentage point. With nominal GDP approximately constant, this is mainly the result of lower nominal wage rates and prices paid by the public authorities, in the medium run supported by a lower volume of recipients of unemployment benefit and lower interest payments on government debt.

For the Community as a whole, the medium term effects of the liberalisation of financial services and capital market seem unequivocally positive. The level of output would increase by 1,5%, prices would decrease by 1,4%, while employment could step up by 440 thousand manyears. At the same time

there could be an alleviation of the internal and external macro-economic constraints, with the government budget constraint and external balance improving with more than 1 and 0,3 percentage point, respectively.

However, these positive results apply only to the medium term. In the short-run the effects are smaller or even negative, as in the case of employment. The indications above showed that this could be due to the instantaneous shocks in the model, affecting the relative price of labour before the price decreases were able to work themselves through as increased demand expectations, with a subsequent offsetting effect on labour demand.

4.2.2 Individual country results

As before, and indicated in the methodological remarks, individual country results (Table A2.3 in Annex 2) are likely to be substantially influenced not only by uncertainty surrounding the model inputs, but also by the specifications of the country models used for simulation. Nevertheless an attempt has been made to compare the medium term individual country results (cf. Table 4.3).

Table 4.3 "Financial liberalisation" simulation: comparison of medium term results

	B	D	E	F	I	NL	UK	EUR12
Percentage differences								
Gross domestic product	1,22	0,96	0,71	1,77	3,01	0,85	0,84	1,46
Private consumption	0,72	0,86	0,73	0,80	1,81	0,46	0,72	0,95
Total fixed investment	2,21	1,04	0,33	3,95	5,00	0,96	1,02	2,42
Consumption price	-1,28	-0,48	-1,59	-0,86	-4,19	-0,82	-0,74	-1,38
GDP deflator	-1,27	-0,10	-1,65	-0,83	-5,03	-0,66	-0,41	-1,37
Real wage rate	1,17	0,66	0,66	0,26	-0,14	0,65	0,56	0,42
Labour productivity/head	0,69	0,54	0,89	1,36	2,55	0,26	0,53	1,11
Employment	0,52	0,42	-0,18	0,41	0,45	0,59	0,31	0,36
Absolute differences								
Employment ('000)	19	108	-21	87	104	28	78	440
Budget surplus % GDP	0,97	0,63	-0,01	1,23	2,50	0,50	0,65	1,06
Trade balance % GDP	0,37	0,20	0,12	0,15	0,52	0,39	0,21	0,26
Reminder								
Shocks as % of GDP	0,6	0,6	1,3	0,5	0,7	0,2	0,8	0,7

Source: Interlink simulation on the responsability of the Commission's services

At first sight, the correlation between, say, the GDP results and the level of the shock is non-existent: The rank correlation coefficient is even (insignificantly) negative, at -.39. Part of this disparity may indeed be attributed to differences in model behaviour, but another part is certainly related to the differences between the five different shocks as given in Table 4.1. In Italy, the country which would experience, with 3%, the

highest increase in GDP level, the total shock (as a % of GDP) equals the Community average, but the price decrease of financial services (other than the cost of borrowing) to households is the highest among the eight countries considered. This decrease in consumer prices leads to a strong increase in real disposable income which fuels private consumption, together with a strong decrease in the costs of consumer credit. A similarly large decrease in the price of intermediate financial services to firms is passed through in substantially lower domestic and export prices, causing substitution of imports by domestic production and enhanced competitiveness on foreign markets, permitting gains in market shares (in the medium run, Italian export prices decrease almost three times the European average). The enhanced competitiveness is also due to the fact that productivity increases in Italy are not reflected in wages, such that the real wage rate hardly changes, and even turns slightly negative. Therefore, despite the absence of incentives to residential investment through mortgage cost decreases (bringing down the level of the total shock), it is possible that a total shock equal to the Community average could lead to the strongest results for growth and employment. Similarly, it is equally possible that the country with the largest total shock in terms of GDP, i.c. Spain, is suggested to experience the lowest growth rate and even negative effects on unemployment. This is mainly due to the fact that price decreases are concentrated in the costs of financial services other than borrowing. Therefore, productive investment is much less stimulated than in the other countries. At the same time, the consumer price decreases are only slowly compensated in nominal wages, such that real wages increase, influencing employment negatively. The latter increases labour productivity, which in its turn continues to push real wages, leading to even more unemployment and so on. Spain is therefore an example of a country which does not seem to be able to compensate the negative effect of real wages on employment through increased demand.

France, with a total shock below the Community average, nevertheless would achieve the second best effect on GDP. This is caused exclusively by the strong growth of both residential and productive investment. For residential investment this follows from the relatively strong decrease in the mortgage rates, whereas productive investment is spurred by the relatively fast adjustment of the capital stock to its new equilibrium value as determined by the decrease in the interest rate and thus the user cost of capital.

Apart from France and Italy, all other countries experience GDP increases in the medium run below the Community average. In this group, Belgium would see the strongest effect on GDP with 1,2%, mainly caused by the decrease in the long term interest rate for firms by 1,2 percentage points. The remaining countries (excluding Spain, which was discussed above) fall more or less in the same range, where it is surprising to see the achievement of the Netherlands, despite a total shock of only 0,2% of GDP. As for Belgium, this result can be explained by the more-than-average decline in the interest rate for firms, with 0,9 percentage points. The result for the United Kingdom is influenced by the fact that the relatively efficient financial sector does not leave much room for increases in domestic demand, while the small share of financial services in external trade does not allow this efficiency to be translated in a sizeable contribution of net external trade increases to GDP.

5. SUPPLY EFFECTS

The generic term "supply effects" is used to analyse the consequences of the strategic reactions of firms faced with the change in environment which will be created by the large internal market. Although these changes are of many kinds, they can be grouped under two headings:

- market size effects. The abolition of non-tariff barriers immediately places firms on a market which is the size of the Community. Exporting to other Community countries or producing for a national destination should become one and the same thing[1].

- the intensification of competition, also as a result of the elimination of non-tariff barriers which at present segment markets and favour the existence of protected situations.

5.1 The construction of an illustrative scenario

A scenario describing the macroeconomic consequences which could result from "supply effects" was constructed step by step. This scenario is illustrative and represents both optimistic and pessimistic hypotheses. It is called illustrative since it describes phenomena which could happen but which are not completely forseeable; optimistic because it presupposed the success of the strategic reactions of firms to the newly created opportunities; finally, it is said to be pessimistic because it does not include certain dynamic phenomena which are felt to be important but which are particularly difficult to quantify: the effects of competition on innovation (Geroski (1988)) and on investment, experience and learning by doing which are particularly important in the high technology industries.

Three stages can be identified.

1. The first stage is confined to the effects quantified by the external consultants. Its sectoral coverage is limited: food manufacturing and processing industries (Group MAC), the building materials sector (BIPE), the pharmaceuticals industry (EAG), telecommunications services and equipment (DIW), the motor vehicle industry, including components, (Ludvigsen), textiles and clothing (IFO and Prometeia) and the business services sector (Peat Marwick). These sectors taken together cover about 25% on non-agricultural non-financial market production. But they are far more representative - although they do not provide an exhaustive picture - of the total supply effects which can be expected from the large internal market, because of the criteria on which they were selected. Apart from textiles and clothing, they have all in fact been chosen because of the scale of the non-tariff barriers which are now on record[2], and therefore the scale of the consequences which would flow from their elimination.

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[1] Apart from the cultural or linguistic differences.

[2] Textiles and clothing was, on the contrary, chosen as an example of a sector in which a large internal market had already been virtually achieved.

The supply effects quantified by the consultants are either direct or indirect. Taking the direct effects, these are equivalent to a fall in prices of intermediate consumption[1]. It is in this way that the fall in unit costs of the related sectors have been simulated. Taking the indirect effects, they are imposed through gains in productivity caused by the restructuring of the processes of production or by a better exploitation of economies of scale. In this case the productivity of the factors of production was increased: the productivity of capital was increased ex-ante in parallel with the introduction of new vintage investments in the capital stock[2], the productivity of labour was increased ex-post. When the sectoral analyses by the consultants provided quantitative information concerning the changes in internal or external market share which could be caused by restructuring, these have been integrated. A summary of the shocks is provided in Table 5.1.

Table 5.1 Decrease in unit costs of production for the industrial branches

	Weight of the branch in % of total industry(1)	D	F	I	UK
Foodstuff industries	18,9	0,79	0,77	0,77	0,76
Building materials produced by the sector of	D F I UK				
-intermediate goods	3,7 3,0 4,7 2,5	0,01	0,27	0,13	0,03
-equipment goods	1,0 0,8 2,3 0,7	0,10	0,23	0,36	0,04
-consumption goods	1,9 0,8 0,7 0,6	0,10	0,13	0,05	0
Automobile	7,1	0,21	0,32	0,35	0,22
Textiles and clothing	6,7	0,03	0,03	0,03	0,07
Total		1,24	1,75	1,69	1,12
Equivalent in bn ECU 1985			29,0		
%point of GDP			0,97		

Source: Catinat and Italianer (1988)
(1) Due to lack of country-by-country information, the share of each branch in total industrial production was assumed to be the same among countries, except for building materials.

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[1] Reduced cost of ingredients for food-processing industries, cuts in the prices of building materials for the construction sector, reduced prices of intermediate consumption of market services for producer branches generally, etc.

[2] It is in this way that the dynamic related to the restructuring or to the exploitation of the economies of scale, has been incorporated in the models. This supposes implicitly that the latter requires an investment effort (and that they therefore cannot be brought about only by disinvestment or the closures of plants) and that these effects should occur at the same rate as investment. All this is, of course, schematic and formal when compared to economic reality. Less unrealistic, however, than a direct increase in the productivity of existing capital because in this latter case no costs (on investment in particular) are taken into account. For more detail, see Catinat and Italianer (1988).

2. The second stage concentrated solely on economies of scale effects. For the industrial sectors[1] not covered by the first stage, a greater exploitation of the existing potentialities has been assumed. The hypothesis has been that the average size of the establishments concerned will converge, for each detailed sector (analysed at the three-digit NACE level), towards the minimum efficient technical scale[2]. The estimates thus obtained represent, from the range of possibilities, the upper end of that range. However, it was not possible to cover all the detailed sectors of industry because of a lack of statistical and quantitative information. On average, for industry, the hypotheses for economies of scale therefore do not lead to an overvaluation of potentialities.

Technically, the procedure for implementing these effects into the model is identical to that described previously for the first stage (see Table 5.2). It is assumed that the strategies for exploiting economies of scale are successful: additional production capacities give rise to an increase in external market share: that is to say, for the Community taken as a whole, the Community market share with the rest of the world, increases.

Table 5.2 Scenario of a greater exploitation of economies of scale
        Decrease in unit costs of production

Decrease in unit costs of production in %	For all countries
Energy products	-0,42
Industrial products	-1,52
- branch of intermediate goods	-2,23
- branch of equipment goods	-2,36
- branch of consumption goods	-0,48

Source: Catinat and Italianer (1988)

3. Lastly, the third stage seeks to describe the pure effects of the increased competition which would be caused by the large internal market. More precisely, it is concerned with the consequences of increased competition on monopoly rents and X-inefficiency. The decline in monopoly rents should imply a fall in sales prices by a decline, pure

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[1] For the other branches, the service branch in particular, the quantitative information was too fragmentary to permit quantification of economies of scale effects.

[2] A survey carried out by Pratten (1988) has provided, according to the engineering estimates, an evaluation of the optimum production sizes for the major part of the detailed industrial sectors where technical economies of scale are substantial.

and simple, in firms' profit margins. X-inefficiency should also decline, but by elimination of inefficient areas of activity and so of a reduction in unit costs. The quantitative estimations upstream, as it were, from the models have been made in a deductive way, by using the differences in prices now observed between Member States as an indicator of future competitive pressures; by using the results of the Smith-Venables model (1988); and finally by using the specialist knowledge of experts[1]. These basic estimates at the company level or at the detailed branch level could have been extrapolated to the macroeconomic level, but this would have given rise to unrealistic figures. Consequently, these extrapolations have been significantly reduced. Technically, the procedure for implementing these results into the models was to lower the producer prices of the market branches (simulation of the reduction of X-inefficiency), as given in Table 5.3. Experts have estimated that all these falls in the costs of production may be considered to come from an increase in the productivity of labour (by reorganizing managerial teams).

Table 5.3 Consequence of the strengthening of competition

Branches of HERMES model	Int. goods	Eqp. goods	Cons. goods	Industrial average	Transp +telec (3)	Market serv. (3)
Fall in production prices in % (1)	1,8	1,5	0,7	1,23	1,0	1,0
Decrease in unit costs of production in % (2)	0,72	0,60	0,28	0,50	1,0	1,0

Source: Catinat and Italianer (1988)
(1) By reduction of monopoly rents and X-inefficiencies.
(2) By reduction of X-inefficiencies.
(3) For the service branches, it is assumed that, due to lack of information, the falls in the production prices resulted directly and only from the reduction of X-inefficiencies.

The above tables set out in summary form the principal hypotheses used for the simulation exercises. The procedure for implementing them into the models is complex; it is presented exhaustively in Catinat and Italianer (1988). Only the basic ideas have been set out here.

The time path of supply effects is also complex. Conventionally, due to lack of more precise information, it has been assumed that they would develop gradually over 5 years. This clearly implies a substantial acceleration in their dynamic, in particular for the exploitation of economies of scale or the restructuring of the processes of production.

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[1] By examination of audits in firms for the evaluation of X-inefficiency.

5.2 Economic consequences

5.2.1 The Community as a whole

Whatever the supply effects, they all result in the reduction of firms' production costs. The origins of these effects are probably extremely diverse, as is the time-scale on which they appear: the possibility of using less costly ingredients (the case of the food-processing industries), the possibility of low-cost imports (the case of building materials), less need to differentiate products (standardization or mutual recognition), greater potential for exploiting economies of scale, reduction of X-inefficiency under competitive pressure.

All these phenomena will probably combine to reduce production costs. It is very probable that lower costs will be passed on in producer prices in significant proportions since the large internal market should increase competition as a result of the abolition of non-tariff barriers and free access to markets. The fall in prices could even be greater than the fall in costs in cases where strong initial monopolistic powers are dismantled under the pressure of competition. According to the simulations carried out (see Table 5.4), the fall in prices would be very significant in the medium term: averaging -2,3% for consumer prices, and -2,6% for the GDP deflator of the Community of Twelve.

Table 5.4 "Supply effects" simulation: main macro-economic results for EUR12

	Year1	Year2	Year3	Year4	Year5	Year6
Percentage differences						
Gross domestic product	0,51	0,90	1,31	1,64	1,93	2,14
Private consumption price	-0,60	-1,01	-1,41	-1,78	-2,08	-2,29
GDP deflator	-0,85	-1,32	-1,76	-2,14	-2,44	-2,65
Real wage rate	0,26	0,32	0,56	0,80	1,04	1,25
Labour productivity/head	0,75	0,97	1,18	1,31	1,42	1,47
Employment	-0,23	-0,07	0,13	0,33	0,51	0,68
Absolute differences						
Employment ('000)	-284	-86	156	409	647	859
Budget surplus % GDP	-0,03	0,15	0,23	0,37	0,49	0,62
External balance % GDP	0,18	0,23	0,29	0,34	0,40	0,45

Source: HERMES simulation

Part of the supply effects stem from an increase in the productivity of the factors of production, labour in particular. These gains in productivity would make it possible not only to reduce inflationary strains, but also to satisfy real wage claims without aggravating unit costs. The Community's internal demand would therefore be stimulated by an improvement in real incomes, while foreign demand would be stimulated by improvements in competitiveness. This would produce an activity bolstering effect: Community GDP could increase by around 2,1% in the medium term. Comparing this result with the inital shock introduced into the HERMES

model, i.e. 3,2% of Community GDP[1], the macroeconomic mechanisms have a low multiplier effect. This stems from ex-ante losses of employment caused by the increase in the productivity of labour. Fewer jobs mean less income and therefore an attenuation of the favourable effects of the improvement of supply: when GDP increases by 2,1% in the medium term, employment rises only some 860 000, or 1,2% of Community employment. In the short term, the weakness of the employment content of supply effects is even still more striking: a 0,5% increase in Community GDP would be matched by a loss of employment of almost 300 000 jobs. These losses are unavoidable, and an attempt to avoid them would lead to a rejection of the improvement in supply conditions.

Lastly, two beneficial effects should be stressed: the external and budget balances would simultaneously improve by 0,4 and 0,6 of a percentage point of GDP respectively in the medium term for the Community as a whole. The former improvement would result from the increases in competitiveness induced by the greater dynamism of the productive system (fall in prodution costs, increased flexibility, stimulus to product innovation and differentiation[2]). The latter is due to a favourable mechanical effect on budget resources of the upturn of activity.

5.2.2 Individual country results

In the case of supply effects, the quantitative information available related only to the four large Community countries: the Federal Republic of Germany, France, Italy and the United Kingdom. Only the data provided by the external consultants made it possible to introduce different shocks per country. For the economy of scale effects and for the pure competition effects, the same shocks have been introduced for each of the different countries analysed. Overall, the shocks introduced are therefore very close for each country.

The macroeconomic consequences simulated by the HERMES model are set out in detail in Table A2.4 in annex 2. Table 5.5 compares the medium term results for some important variables among the four countries.

They are very broadly similar qualitatively and quantitatively: an increase in GDP in the medium term (from 1,8% for Italy to 2,4% for France), a fall in prices (from -1,8% for Italy to -2,6% for the United Kingdom in the case of consumer prices), creation of employment, improvement of budget and external balances (from 0,4% of GDP for the United Kingdom to 0,9% for France, from 0,3% for Germany to 0,7% for France respectively).

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[1] Cf. Catinat and Italianer (1988).

[2] Technically, only the first factor - the fall in production costs - is endogenous to the simulation.

Table 5.5 "Supply effects" simulation: comparison of medium term
         results among countries

	D	F	I	UK	EUR12
Percentage differences					
Gross domestic product	2,10	2,45	1,82	2,15	2,14
Private consumption	1,55	1,04	1,23	1,20	1,27
Total fixed investment	1,88	1,90	1,41	1,13	1,63
Consumption price	-2,26	-2,53	-1,75	-2,56	-2,29
GDP deflator	-2,21	-3,33	-2,04	-3,09	-2,65
Real wage rate	1,56	0,88	0,94	1,55	1,25
Labour productivity/head	1,45	1,64	1,10	1,62	1,47
Employment	0,65	0,87	0,64	0,56	0,68
Absolute differences					
Employment ('000)	170	192	139	159	859
Budget surplus as % of GDP	0,45	0,89	0,73	0,43	0,62
External balance as % of GDP	0,32	0,66	0,34	0,48	0,45
Reminder					
Shocks as % of GDP	-	-	-	-	3,24

Source: HERMES simulation

It is difficult to attribute these differences to genuine differences in
macroeconomic mechanisms or to fortuitous differences in the specifications
of national models. In the case of Italy, the impacts generally seem to be
weaker than for the other countries. Technically this is due to relatively
small ex-post increases in the productivity of labour (despite a relatively
strong ex-ante shock). To go further than this statement would require an
entirely separate comparative analysis.

6. COMPLETING THE INTERNAL MARKET: OVERALL ASSESSMENT AND INTERCOUNTRY COMPARISON

The four simulation exercises which were presented in the previous sections all concerned separate aspects of the internal market programme. Care has been taken not to include in one simulation effects that were also included in another one. As a consequence, there is no overlapping, and from the sum of the simulation results one can form a global picture of the macro-economic implications of the completion of the internal market. On the other hand, some consequences of the White Paper have not been covered, such as the effects of stronger competition on innovation, or the learning effects (dynamic economies of scale)[1]. While the total result will, due to such omissions, probably underestimate the gains to be achieved, it is equally true that the included effects were simulated on the premiss of success for the corresponding business strategies, thus balancing the results.

This section presents the aggregation of the simulation results for the four areas which were simulated (customs barriers, public markets, financial services and capital market liberalization and supply effects), and furthermore attempts to compare the aggregate results among the four largest economies of the Community: Germany, France, Italy and the United Kingdom[2]. Finally, some comments are made on the likely structure of increases in employment.

6.1 The impact of the internal market on the Community as a whole

Table 6.1 gives the total effects on the Community if the extrapolated results for EUR 12 of the four areas are aggregated. The medium term macro-economic effects would unequivocally be positive: the level of GDP could increase by 4,5%, domestic prices decrease by more than 6% while more than 1,8 million new jobs could be created. At the same time the government budget constraint (as a % of GDP) would improve by 2,2 percentage points, while the external balance (also as a % of GDP) gains 1 percentage point.

Of the increase in GDP, more than 40% is due to the increase in private consumption of 3,1% (see Annex 3 for the detailed macroeconomic results). The completion of the internal market enhances labour productivity through economies of scale, restructuring and the elimination of X-inefficiency. About two-thirds of the increase in labour productivity is passed on to households in the form of real wage increases, thus reducing the labour share in national income. The ensuing rise in real disposable income then becomes the main driving force in pushing up private consumption. Other factors which exert a positive influence on consumption are the lower interest rates and the real wealth effects induced by the general price decreases.

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[1] Furthermore, the approximation of indirect taxation has not been analysed in this paper, but to the extent that the proposal of the Commission aimed at provoking the budgetary impact to be as weak as possible on average for the Community, it is likely that the macroeconomic consequences of this approximation should also be small.

[2] These were the only four countries for which all four areas were simulated.

After private consumption, private investment by households and firms accounts for approximately 25% of the increase in GDP. Private investment is stimulated through increased demand expectations and a decrease in the cost of capital relative to other production factors. The decrease in the relative cost of capital is partially brought about by decreases in the cost of financial intermediation, implying also lower mortgage rates for households, for instance.

Of the remaining part of the increase in real GDP, again approximately 25% is due to an improvement in the real foreign balance. The price decreases which were caused by the abolition of customs formalities, enhanced competition and productivity increases translate into improvements in price competitiveness with respect to third countries, thus permitting gains in market shares.

It is important to note that almost three quarters of the predicted increase in Community production is due to increases in domestic demand. Therefore it is clear that the completion of the internal market is a vital instrument in promoting European growth which is internally stimulated and less dependent on developments in the rest of the world economy. At the same time, however, higher European growth contributes to an increase in international trade.

The 1,8 million new jobs that are to be expected in the medium run correspond to an increase in employment of 1,5%. With GDP increasing by 4,5% it is thus clear that factors come into play which exert a detrimental effect on the labour demand arising from increases in GDP alone (the elasticity of labour demand with respect to production is often assumed to be equal to one). The main factor which slows down labour demand is the increase in labour productivity, which is a typically supply-oriented consequence of the completion of the internal market. In order to render this supply policy more employment-creating, it should be accompanied by appropriate demand policies. Demand may be increased by transferring the productivity increases to households in the form of higher real wages, or by using the alleviation of macro-economic constraints, such as the government's budget deficit, to stimulate growth. The former approach requires a delicate balance between the stimulus to demand from increased purchasing power and the offsetting effects on employment if real wages become too high (classical unemployment). As may be seen from Table 6.1, it results from the model simulations that about 50-70% of the productivity increases are reflected in higher real wages[1], thus implying at the same time a stimulus to demand and some real wage moderation. While the distribution of productivity increases among wages, profits or lower prices is not really an issue policy makers decide upon, the contrary is the case for what concerns the use of extra room for manoeuvre created if the government budget balance ameliorates. With an average improvement of 2,2 percentage points, there is indeed a large scope for the European governments to stimulate demand, potential output and employment. Since the choice among the different possible uses of the extra room for economic policy is a political one, it will not be pursued any further here[2].

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[1] Next to productivity, lower unemployment also puts some upward pressure on real wages.

[2] Cf. Commission of the EC (1988), Ch.10, where some calculations in this field are presented.

Table 6.1 Completion of the internal market: aggregation of main
macro-economic results

	Year1	Year2	Year3	Year4	Year5	Year6

EUR12

Percentage differences

Gross domestic product	1,13	2,31	3,16	3,64	4,10	4,52
Private consumption price	-1,58	-2,68	-3,71	-4,66	-5,49	-6,16
GDP deflator	-1,68	-2,93	-4,04	-5,02	-5,84	-6,45
Real wage rate	0,77	0,80	1,11	1,48	1,86	2,22
Labour productivity/head	1,57	2,35	2,72	2,81	2,95	3,04
Employment	-0,44	-0,03	0,45	0,83	1,16	1,47

Absolute differences

Employment ('000)	-533	-40	552	1043	1462	1866
Budget surplus % GDP	0,13	0,72	1,19	1,57	1,89	2,22
External balance % GDP	0,30	0,39	0,63	0,76	0,86	0,95

F.R. OF GERMANY

Percentage differences

Gross domestic product	1,22	1,97	2,57	2,89	3,52	4,20
Private consumption price	-0,74	-1,46	-2,30	-3,52	-4,90	-6,16
GDP deflator	-0,45	-1,09	-1,74	-2,82	-4,10	-5,20
Real wage rate	0,44	0,91	1,44	1,87	2,48	3,14
Labour productivity/head	1,53	1,84	2,07	2,08	2,32	2,51
Employment	-0,31	0,14	0,50	0,80	1,19	1,68

Absolute differences

Employment ('000)	-78	34	129	208	311	438
Budget surplus % GDP	0,13	0,55	0,77	0,95	1,18	1,52
External balance % GDP	0,49	0,53	0,69	0,73	0,68	0,70

FRANCE

Percentage differences

Gross domestic product	1,09	1,97	2,88	3,65	4,41	5,05
Private consumption price	-1,00	-1,64	-2,43	-3,27	-4,12	-4,89
GDP deflator	-1,53	-2,19	-3,07	-3,97	-4,86	-5,63
Real wage rate	0,43	0,34	0,48	0,74	1,09	1,51
Labour productivity/head	1,37	2,00	2,56	2,95	3,30	3,54
Employment	-0,28	-0,02	0,34	0,73	1,15	1,57

Absolute differences

Employment ('000)	-60	-5	73	159	250	342
Budget surplus % GDP	0,04	0,40	0,90	1,45	2,05	2,64
External balance % GDP	0,42	0,57	0,82	0,98	1,15	1,35

ITALY

Percentage differences

Gross domestic product	1,35	3,25	4,54	5,15	5,41	5,46
Private consumption price	-2,30	-4,04	-5,55	-6,55	-7,02	-7,07
GDP deflator	-2,58	-4,59	-6,38	-7,58	-8,19	-8,34
Real wage rate	0,91	0,96	1,07	1,19	1,19	1,21
Labour productivity/head	1,94	3,41	4,20	4,34	4,18	3,89
Employment	-0,62	-0,22	0,26	0,70	1,08	1,40

Absolute differences

Employment ('000)	-136	-50	53	150	236	308
Budget surplus % GDP	0,28	1,36	2,17	2,82	3,30	3,65
External balance % GDP	0,34	0,37	0,79	0,90	1,00	1,03

UNITED KINGDOM

Percentage differences

Gross domestic product	0,81	2,44	3,29	3,59	3,79	4,00
Private consumption price	-2,55	-4,33	-5,57	-6,39	-6,96	-7,43
GDP deflator	-2,52	-4,72	-6,26	-7,14	-7,66	-8,06
Real wage rate	0,94	0,65	1,12	1,83	2,40	2,71
Labour productivity/head	1,79	2,95	3,10	2,93	2,89	2,91
Employment	-0,64	-0,08	0,65	1,07	1,26	1,39

Absolute differences

Employment ('000)	-157	-16	167	285	342	385
Budget surplus % GDP	-0,06	0,71	1,32	1,61	1,69	1,80
External balance % GDP	-0,33	-0,32	-0,02	0,28	0,49	0,61

6.2 The internal market in the four major European economies

For Germany, France, Italy and the United Kingdom, simulation results are available for all four areas which were simulated; for the other member countries, one or more of the areas could not be simulated, due to lack of information. Given that the simulation inputs do not overlap, it is possible to calculate the macro-economic effects of completion of the internal market for these four countries, and to compare them to each other. The corresponding results are presented in Table 6.1. In Table 6.2 an attempt is made to relate the input shocks (as a % of GDP) to the medium term effects on GDP. It should be stressed that expressing the shocks as a % of GDP does not imply that the effect on GDP may be interpreted as a Keynesian (expenditure) multiplier. The shocks merely represent cost decreases and only bear partial resemblance to standard multiplier shocks. This was illustrated in the section on the simulation of financial services. In this instance, therefore, "multiplier" means specifically the ratio of the effect and the shock, both as a percentage of GDP.

Table 6.2 Comparison of model inputs with medium run effects on GDP, four major countries and EUR12

Item	Germany S	Germany E	France S	France E	Italy S	Italy E	UK S	UK E	EUR12 S	EUR12 E
1. Customs barriers	0,21	0,57	0,23	0,34	0,21	0,24	0,18	0,31	0,26	0,36
2. Public markets	0,50	0,56	0,34	0,50	0,39	0,39	0,67	0,70	0,50	0,55
3. Financial services	0,55	0,96	0,53	1,77	0,69	3,01	0,79	0,84	0,66	1,46
4. Supply effects	3,09	2,10	3,48	2,45	3,43	1,82	3,00	2,15	3,24	2,14
Total	4,35	4,20	4,58	5,05	4,72	5,46	4,64	4,00	4,66	4,52

S = Shock: simulation inputs as a % of 1985 GDP (cost decrease)
E = Effect: % increase in real GDP after 6 years

Notwithstanding, it may be seen that on average the increases in GDP are reasonably close to the input shocks. For the Community as a whole, for instance, a shock of 4,7% would generate a GDP increase of 4,5%, suggesting a "multiplier" value close to one. Still for the Community as a whole, the shock-effect relationships for the four areas individually also seem to make sense. The "multipliers" for customs barriers and public markets are in the middle of the range, with values of 1,4 and 1,1. The value 2,2 for financial services is high but not exceptional given that financial services permeate throughout the whole economic system, as was described in the corresponding section above. In this simulation, price decreases were seen to influence private consumption, fixed capital formation, the costs of living and costs of production at the same time, thus touching all vital parts of the macro-ecnomic linkages simultaneously. The low value 0,7 of the shock-effect multiplier for the supply simulations is not a surprise either, since the supply effects bear mainly on the optimal allocation of production factors, and depend heavily on the extend to which production

efficiency is passed on to households. Furthermore, the initial decrease in employment following labour productivity increases spills over to domestic demand, thus reducing the medium term effect on GDP as well. Thus, while the relationship between shocks and effects does seem to make sense at an aggregate level (the last row and column of Table 6.2, say), it seems to be less evident at the level of individual areas and countries.

The implication of the existence of this loose band between shocks and results is that differences in simulation results between countries can only partially be explained on the basis of differences in input shocks expressed as a % of GDP. A more precise explanation should take account of the heterogeneity of the shocks and differences in size.

The simulated medium term effects on GDP range from a 4,0% increase for the United Kingdom to a 5,5% increase for Italy. Given the large margins of uncertainty surrounding both model inputs and simulation results, there is no evidence to say that these results are significantly different from each other. Therefore, in explaining the differences between the point estimates, this aspect should always be kept in mind.

The fact that Italy comes out strongest with a 5,5% increase in GDP is entirely due to the positive results in the field of financial services. For the three other areas, the results for Italy are the weakest each time. In the section on financial services it was already pointed out that the positive results in that field were mainly due to the large scope for price decreases, improving real disposable income and therefore consumer spending, demand expectations and investment. The aggregate result confirms this picture, with the GDP deflator decreasing more than 8% over six years. As noted above, high growth does not necessarily imply high labour demand. Despite the highest increase in GDP, Italy would have -with the UK- the smallest increase in employment with 1,4% in the medium run, mainly due to the large increase in labour productivity for this country.

In terms of increases in GDP, France would obtain the second best result after Italy, with a 5,1% increase, still higher than the Community average of 4,5%. Comparatively speaking this result is mostly due to supply effects and, to a lesser extent, the liberalisation of financial services. Despite lower growth than in Italy, the employment response in France is somewhat stronger due to a smaller productivity increase. Compared to Italy, growth is more export-oriented due to a moderate increase in real wages which is less beneficial for private consumption but tends to increase competitiveness.

There is a dichotomy between, on the one hand, France and Italy with GDP increases around 5%, and, on the other hand, Germany and the United Kingdom with increases around 4%. For what concerns financial services and supply effects, the effects on GDP for these two countries are almost identical, but there are differences between the results for public markets and notably customs barriers. Despite GDP increases in the same range, the composition of growth is much more oriented towards private spending and notably investment in Germany than in the United Kingdom; in particular, the contribution of net external trade would be double that of Germany. With the domestically oriented industries being more labour intensive, this implies stronger employment growth in Germany than in the United Kingdom: 1,7% against 1,4%.

6.3 The structure of the employment effects

The unemployment problem is one of the most important issues of economic policy in Europe at present. This subsection tries to say something more on the distribution of the employment gains described above.

The distribution of the effects on employment to be expected from the completion of the internal market has three dimensions: a temporal dimension, a geographical dimension and a sectoral dimension. Only if all aspects (including timing) of the completion of the internal market would have been simulated with sectoral models for all European countries, would it have been possible to say something definite on each of these three dimensions. Any attempt at conclusion based on results that do not satisfy this criterion is therefore surrounded with uncertainty, the extent of which depends on the area concerned.

Table 6.1 suggests that the timing of the effects on aggregate employment is such that there is a loss of more than half a million jobs in the first year, almost no change in the second year and a gradual increase to more than 1,8 million jobs in the medium run. This particular timing is, however, strongly influenced by the hypotheses underlying the simulations, which assume that the corresponding effect takes place completely from the first year of the simulation onwards or which is spread out over a five-year period[1]. Consequently, all the negative effects on employment due to the restructuring of industries or the reduction of custom related employment are concentrated in the first years of the simulation period. In reality, the process of completion of the internal market is a gradual one, in which 1) the different measures are not taking effect all at the same time and 2) the effects of each measure are not always immediate but spread out over a period of time. Although job losses cannot be denied and are even to be considered inevitable, it is highly unlikely, therefore, that they will be produced at the rate suggested by the simulations. Rather will the dynamic profile of the employment effects be smoother, with perhaps lower employment increases for some longer period in the beginning, but certainly not the massive loss of half a million jobs cited above to be concentrated in one single year.

As regards the geographical distribution of employment effects among the member countries, evidence based on all four areas is only available for Germany, France, Italy and the United Kingdom. As discussed in subsection 6.1 above, national differences in employment effects can be explained by national differences in the links between productivity increases, price decreases, real wage increases, expenditure increases and their subsequent effects on employment. Nevertheless, the differences between the effects on employment growth for the four largest European economies seem to remain slight, the effects ranging from 1,7% for Germany and 1,6% for France to 1,4% for Italy and the United Kingdom. However, the model simulations for these four countries are unable to answer two main questions concerning the employment issue: (a) the distribution of jobs between the regions within each of the Member States and (b) the distribution between the less and the most developed Member States.

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[1] In the case of the supply side effects in particular, which assumes an acceleration of the restructuring of industries over time.

As regards the sectoral distribution of the employment effects, generally speaking, this depends on the importance of employment in each branch. As shown in Table 6.3, employment in market services, for instance, is approximately 60% higher than in the manufacturing branch, on average in the Community. Consequently, a one percent increase in employment in each of the two branches generates 60% more jobs in the market services branch than in the manufacturing branch.

The above considerations play a crucial role concerning the sectoral distribution of the more than 1,8 million new jobs which the simulations suggest will result from the completion of the internal market. The single European market will, in a first instance, especially foster the exposed branches of the national economies (traded goods branches) as well as those sheltered branches which become, through the internal market process, newly exposed to internatonal competition (e.g. financial services). Even though they are faced with inevitable restructuring, they are likely, through their increased productivity and enhanced competitiveness, to be the strongest growing branches in the end. It is in these branches that one may thus expect the strongest percentage increases in output and employment in the medium run. The effects of increased output and income are, however, diffused throughout the economy, also affecting other, sheltered, branches, notably parts of the market services branch. Although the percentage increase in output and employment might be smaller in the sheltered branches than in the exposed ones, their larger share in employment would still cause a considerable part of the 1,8 million new jobs to be concentrated there.

This picture is confirmed by the partial evidence from the simulations. Since not all areas of the internal·market could be simulated with sectoral HERMES models for all countries[1], only an incomplete table with sectoral employment results can be given (Table 6.4). Excluding the results for financial services, for which no sectoral models were used at all, the partial evidence on which this table is based suggests that the increase in employment in absolute numbers is approximately equal in the manufacturing branch and the market services branch. This is the combined result of 1) a percentage increase in employment which is, with 2,1% versus 1,2%, stronger in the manufacturing branch than in the market services branch, but 2) a larger share in total employment for the latter branch than for the former.

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[1] Table 1.1 identifies for which areas and countries sectoral HERMES models were simulated.

Table 6.3
Share of branches in total occupied population, 1985

%

Branch	B	DK	D	GR	E	F	IRL	I	L[1]	NL	P[2]	UK	EUR8[3]	US	JA
Agriculture	2,9	6,9	5,4	27,5	17,3	7,5	15,8	11,0	4,8	5,9	26,6	2,4	7,3	2,9	11,1
Energy	1,4	0,7	1,8		1,5	1,5		0,9	0,9	1,4	0,9	2,4	1,6	1,3	0,7
Manufacturing	21,3	20,3	30,7	26,0	22,2	22,0	28,4	23,7	25,7	19,1	23,5	22,7	24,3	17,1	24,0
−Intermediate	4,4	2,2	4,5		3,7	3,3		3,7	13,7	3,3	3,5	3,2	3,7	2,1	2,7
−Equipment	7,3	8,0	15,7		7,2	9,4		6,9	4,8	7,3	4,6	10,5	10,2	7,9	11,7
−Consumption	9,5	10,1	10,5		11,3	9,3		13,1	7,2	8,5	15,4	9,0	10,4	7,2	9,5
Building and construction	5,7	6,5	7,2		7,2	7,1		7,6	9,9	7,2	10,1	6,1	7,0	5,3	9,3
Market services	46,3	34,3	35,2	46,5	39,2	41,7	55,8	38,5	45,9	49,3	24,1	44,6[5]	40,1[5]	49,7	46,2
−Transport and communication	7,1	7,1[4]	5,4[5]		6,9	6,4		6,0	6,7[6]	6,9	4,5	6,0[5]	6,1[4]	4,4	5,4
−Other	39,2	26,9[4]	29,6[5]		32,4	35,3		32,5	36,0[6]	42,4	19,6	38,6[5]	33,1[4]	45,4	40,8
Non-market services	22,4	32,1	19,6		12,7	20,2		18,3	12,8	17,1	14,8	20,9[5]	19,1[5]	23,6	8,7
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Total ('000)	3.662	2.428	25.482	3.774	10.500	21.397	1.074	21.151	158	4.561	3.905	24.140	113.400	115.341	61.300

1 1982
2 1981
3 EUR8 = B + DK + D + E + F + I + NL + UK
4 1983
5 1984
6 1978

Source: Sectoral databank (BDS) of the Commission of the EC, DG II: Occupied population. For Greece and Ireland: Eurostat, National Accounts ESA, Aggregates and detailed tables by branch, 1987

Note: When figures for years other than 1985 are given, individual entries may no longer add up to total or subtotals.

Table 6.4 Extrapolation of sectoral medium term simulation results for employment, EUR12

Branch	Customs barriers		Public procurem.		Supply effects		Subtotal		Financial Liberalis.		Total	
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%
Agriculture	14	0,24	17	0,27	78	1,21	109	1,71	:	:	:	:
Energy	8	0,32	6	0,23	4	0,19	18	0,73	:	:	:	:
Manufacturing	74	0,26	104	0,37	417	1,49	596	2,13	:	:	:	:
-Intermediate	8	0,16	16	0,39	62	1,64	86	2,19	:	:	:	:
-Equipment	25	0,19	54	0,44	149	1,21	228	1,84	:	:	:	:
-Consumption	41	0,36	34	0,30	206	1,79	281	2,45	:	:	:	:
Building and construction	21	0,18	30	0,26	71	0,64	122	1,09	:	:	:	:
Market services	137	0,25	199	0,37	288	0,54	625	1,16	:	:	:	:
-Transport and communication	-20	-0,25	53	0,63	74	0,84	106	1,21	:	:	:	:
-Other	157	0,34	146	0,32	214	0,47	518	1,13	:	:	:	:
Non-market services	-43	-0,18	0	0	0	0	-43	-0,18	0	0	-43	-0,18
Total	211	0,16	356	0,28	859	0,68	1426	1,12	440	0,36	1866	1,47

'000 = thousands (absolute difference with respect to baseline simulation)
% = percentage difference with respect to baseline simulation

Source: Extrapolation based on simulation results for the HERMES models only, i.e. 1) results for Belgium, France, Italy and the United Kingdom for "customs barriers" and "public procurement", and 2) results for France, Italy and the United Kingdom for "supply effects".
The basis for extrapolation to EUR12 therefore differs from the one used for the macroeconomic results (except for the total).

ANNEX 1   MAIN SHOCKS INTRODUCED IN THE HERMES AND INTERLINK MODELS FOR MACRO-ECONOMIC SIMULATIONS

Description	B	D	E	F	I	NL	UK	EUR12[1]	% of EUR12 GDP	
									Shock[2]	Interval[3]
I.CUSTOMS BARRIERS										
*Decrease in intra-EC import prices (in %)	1,46	1,53	1,71	1,84	2,04	1,55	1,58	1,7	–	–
*Employment decrease (thousands):										
-exporting firms	Distributed pro rata according to corresponding employment figures by country							17,5[4]	–	–
-customs clearing agents								40,0[4]	–	–
*Government employment decrease (in %)										
-customs officials	0,41	0,06	–	0,21	0,06	0,22	0,07	0,11	–	–
TOTAL SHOCK I (% GDP)	–	–	–	–	–	–	–	–	0,26	0,25-0,27
II.PUBLIC MARKETS										
*Increase of import penetration rate of public markets (% points)	8,2	8,5	–	5,5	4,1	–	3,9	5,6	0,22	–
*Price decrease of equipment goods on public markets (in %):										
-government	0,03	0,13	–	0,03	0,07	–	0,12	–	0,28	–
-public enterprises										
.energy	1,6	1,5	–	1,7	1,1	–	1,1	–		–
.transport and tele-communication	8,5	7,8	–	7,6	11,4	–	7,2	–		–
TOTAL SHOCK II (% GDP)	0,99	0,50	–	0,34	0,39	–	0,67	–	0,50	0,35-0,70
III. FINANCIAL MARKETS										
*Decrease in interest rate margins (% points):										
-short term households	0,7	2,2	0,7	1,8	2,6	0,6	1,9	1,9	–	–
-long term households	0,2	0,3	1,0	0,6	0	0	0	0,2	–	–
-long term firms[5]	1,2	0,2	0,2	0,5	0,7	0,9	0,4	0,5	–	–
*Decrease in price of financial services (in %):										
-private consumption	16,4	3,4	18,9	10,0	19,8	3,8	2,8	7,9	–	–
-intermediate con-sumption of firms	17,7	8,0	26,0	14,3	18,4	7,5	3,9	10,4	–	–
TOTAL SHOCK III (% GDP)	0,64	0,55	1,31	0,53	0,69	0,23	0,79	–	0,65	0,35-0,95

Description	B	D	E	F	I	NL	UK	EUR12[1]	% of EUR12 GDP Shock[2]	Interval[3]
IV.SUPPLY EFFECTS										
1.Sectoral studies from consultants										
*Decrease in unit cost of production[6] (in %):										
-industry	-	1,24	-	1,75	1,69	-	1,12	-	0,97	-
*Decrease in price paid for business services by firms (in %)		Same shock for each country						1,26	0,13	-
Shock IV.1 (% GDP)	-	-	-	-	-	-	-	-	1,10	0,6-1,6
2.Economies of scale										
*Decrease in unit cost of production[7] (in %):										
-industry		Same shock for each country						1,52	-	-
Shock IV.2 (% GDP)	-	-	-	-	-	-	-	-	1,02	0,8-1,2
3.Pure competition effects										
*Decrease in production price (in %):										
-contraction of monopoly rents in industry		Same shock for each country						0,73	-	-
-reduction of X-inefficiency										
-industry								0,50	-	-
-market services								1,00	-	-
*Decrease in unit cost of production[8] (in %):										
-X-inefficiency										
.industry		Same shock for each country						0,50	-	-
.market services								1,00	-	-
Shock IV.3 (% GDP)	-	-	-	-	-	-	-	-	1,12	0,7-1,5
TOTAL SHOCK IV (% GDP)	-	-	-	-	-	-	-	-	3,24	2,1-4,3
TOTAL SHOCK OF PRIMARY EFFECTS									4,65	3,1-6,3

Notes:

[1] EUR12 extrapolation of the weighted average of the analysed countries (N.B. differing units)

[2] Nominal amount as a % of 1985 EUR12 GDP

[3] Interval taking account of the precision margins indicated by the external consultants. For the supply effects, evaluation of the Commission's services.

[4] Total EUR12

[5] Net decrease including effects of capital market integration on interest rates.

[6] Depending on the branch and the kind of effect (direct/indirect), the decreases in unit cost of production are obtained through a decrease in the cost of intermediate consumption, an ex-ante increase in the productivity of investments (marginal capital productivity) or an ex-ante increase in labour productivity

[7] Obtained through an ex-ante increase in the productivity of investments (marginal capital productivity)

[8] Obtained through an ex-ante increase in labour productivity

Source: Catinat and Italianer (1988)

ANNEX 2 MAIN MACRO-ECONOMIC SIMULATION RESULTS BY AREA FOR INDIVIDUAL COUNTRIES [1]

Table A2.1: "Customs barriers" simulation: main macro-economic results for individual countries

CUSTOMS BARRIERS: BELGIUM
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MODEL : HERMES
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	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT...................	-0.06	0.13	0.21	0.26	0.30	0.34
PRIVATE CONSUMPTION PRICES.............	-0.45	-0.74	-0.94	-1.07	-1.17	-1.25
GDP DEFLATOR............................	0.15	-0.07	-0.25	-0.37	-0.47	-0.55
REAL WAGE RATE.........................	0.02	0.08	0.11	0.11	0.11	0.10
LABOUR PRODUCTIVITY/HEAD...............	0.04	0.14	0.15	0.14	0.14	0.14
EMPLOYMENT % CHANGE....................	-0.10	-0.03	0.02	0.06	0.10	0.13
EMPLOYMENT ('000)......................	-4	-1	1	2	4	5
BUDGET SURPLUS % GDP, CHANGE...........	0.25	0.50	0.55	0.62	0.65	0.67
TRADE BALANCE % GDP, CHANGE............	0.51	0.64	0.70	0.74	0.76	0.77

CUSTOMS BARRIERS: GERMANY
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MODEL : HERMES
================

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT...................	0.03	0.16	0.34	0.43	0.53	0.57
PRIVATE CONSUMPTION PRICES.............	-0.14	-0.36	-0.63	-0.90	-1.13	-1.27
GDP DEFLATOR............................	0.05	-0.21	-0.46	-0.72	-0.95	-1.10
REAL WAGE RATE.........................	0.01	0.07	0.18	0.31	0.44	0.55
LABOUR PRODUCTIVITY/HEAD...............	0.08	0.17	0.24	0.23	0.25	0.23
EMPLOYMENT % CHANGE....................	-0.05	-0.00	0.10	0.20	0.29	0.34
EMPLOYMENT ('000)......................	-11	-1	25	52	74	89
BUDGET SURPLUS % GDP, CHANGE...........	0.02	0.05	0.11	0.15	0.19	0.21
TRADE BALANCE % GDP, CHANGE............	0.15	0.10	0.08	0.05	0.03	0.03

CUSTOMS BARRIERS: FRANCE
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MODEL : HERMES
================

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT...................	-0.04	0.03	0.11	0.18	0.26	0.34
PRIVATE CONSUMPTION PRICES.............	-0.21	-0.39	-0.57	-0.74	-0.92	-1.09
GDP DEFLATOR............................	-0.05	-0.22	-0.41	-0.60	-0.79	-0.98
REAL WAGE RATE.........................	0.08	0.06	0.05	0.06	0.08	0.10
LABOUR PRODUCTIVITY/HEAD...............	0.02	0.09	0.16	0.20	0.25	0.30
EMPLOYMENT % CHANGE....................	-0.09	-0.09	-0.07	-0.04	-0.01	0.03
EMPLOYMENT ('000)......................	-19	-19	-15	-9	-2	6
BUDGET SURPLUS % GDP, CHANGE...........	0.00	0.05	0.06	0.09	0.12	0.15
TRADE BALANCE % GDP, CHANGE............	0.21	0.22	0.24	0.24	0.25	0.27

[1] The top part of each table gives cumulative percentage deviations from the baseline projection, while the bottom part gives cumulative absolute deviations. See note at the end of Annex 4 for precise explanations.

Table A2.1: Continued

CUSTOMS BARRIERS: ITALY
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MODEL : HERMES
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	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT...................	-0.05	0.10	0.19	0.23	0.25	0.24
PRIVATE CONSUMPTION PRICES..............	-0.23	-0.37	-0.48	-0.56	-0.63	-0.68
GDP DEFLATOR............................	-0.04	-0.16	-0.26	-0.33	-0.39	-0.43
REAL WAGE RATE..........................	0.07	0.16	0.24	0.30	0.34	0.37
LABOUR PRODUCTIVITY/HEAD................	-0.02	0.08	0.13	0.12	0.11	0.08
EMPLOYMENT % CHANGE.....................	-0.05	-0.02	0.02	0.06	0.08	0.10
EMPLOYMENT ('000).......................	-10	-3	5	12	18	21
BUDGET SURPLUS % GDP, CHANGE............	0.03	0.13	0.19	0.21	0.21	0.22
TRADE BALANCE % GDP, CHANGE.............	0.14	0.14	0.15	0.15	0.15	0.16

CUSTOMS BARRIERS: NETHERLANDS
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MODEL : HERMES
=============

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT...................	-0.08	-0.02	0.11	0.22	0.35	0.45
PRIVATE CONSUMPTION PRICES..............	-0.09	-0.25	-0.44	-0.64	-0.81	-0.94
GDP DEFLATOR............................	0.38	0.13	-0.05	-0.23	-0.39	-0.51
REAL WAGE RATE..........................	0.01	0.08	0.16	0.25	0.37	0.51
LABOUR PRODUCTIVITY/HEAD................	0.07	0.17	0.26	0.27	0.29	0.29
EMPLOYMENT % CHANGE.....................	-0.15	-0.19	-0.14	-0.05	0.06	0.15
EMPLOYMENT ('000).......................	-7	-9	-7	-2	3	8
BUDGET SURPLUS % GDP, CHANGE............	0.07	0.01	0.08	0.16	0.26	0.32
TRADE BALANCE % GDP, CHANGE.............	0.36	0.22	0.18	0.14	0.12	0.11

CUSTOMS BARRIERS: UNITED KINGDOM
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MODEL : HERMES
=============

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT...................	0.05	0.16	0.23	0.27	0.30	0.31
PRIVATE CONSUMPTION PRICES..............	-0.34	-0.65	-0.91	-1.06	-1.15	-1.21
GDP DEFLATOR............................	-0.19	-0.52	-0.80	-0.98	-1.08	-1.15
REAL WAGE RATE..........................	0.13	0.14	0.17	0.17	0.18	0.18
LABOUR PRODUCTIVITY/HEAD................	0.08	0.16	0.17	0.17	0.15	0.12
EMPLOYMENT % CHANGE.....................	-0.03	0.02	0.08	0.13	0.17	0.20
EMPLOYMENT ('000).......................	-9	5	21	36	48	58
BUDGET SURPLUS % GDP, CHANGE............	0.02	0.09	0.13	0.17	0.19	0.21
TRADE BALANCE % GDP, CHANGE.............	0.11	0.12	0.13	0.15	0.17	0.17

Table A2.2: "Public procurement" simulation: main macro-economic
results for individual countries

PUBLIC MARKETS WITH RESTRICTED OPENING: BELGIUM

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT	0.79	0.94	0.85	0.79	0.76	0.78
PRIVATE CONSUMPTION PRICES	0.05	-0.04	-0.11	-0.17	-0.24	-0.30
GDP DEFLATOR	-0.29	-0.35	-0.42	-0.49	-0.52	-0.57
REAL WAGE RATE	0.03	0.20	-0.02	-0.21	-0.30	-0.31
LABOUR PRODUCTIVITY/HEAD	0.36	0.22	-0.02	-0.15	-0.19	-0.17
EMPLOYMENT % CHANGE	0.22	0.39	0.52	0.61	0.65	0.66
EMPLOYMENT ('000)	8	14	19	22	23	23
BUDGET SURPLUS % GDP, CHANGE	0.48	0.72	0.74	0.74	0.74	0.76
TRADE BALANCE % GDP, CHANGE	0.70	0.73	0.68	0.73	0.77	0.80

PUBLIC MARKETS WITH RESTRICTED OPENING: GERMANY

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT	0.15	0.10	0.16	0.22	0.37	0.56
PRIVATE CONSUMPTION PRICES	-0.10	-0.23	-0.48	-0.90	-1.47	-2.15
GDP DEFLATOR	-0.09	-0.23	-0.43	-0.78	-1.27	-1.79
REAL WAGE RATE	0.01	0.06	0.10	0.13	0.22	0.37
LABOUR PRODUCTIVITY/HEAD	0.10	-0.02	0.05	0.11	0.21	0.29
EMPLOYMENT % CHANGE	0.05	0.12	0.11	0.11	0.17	0.27
EMPLOYMENT ('000)	12	29	27	29	43	70
BUDGET SURPLUS % GDP, CHANGE	0.11	0.10	0.09	0.11	0.14	0.23
TRADE BALANCE % GDP, CHANGE	0.10	0.10	0.11	0.11	0.10	0.15

PUBLIC MARKETS WITH RESTRICTED OPENING: FRANCE

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT	0.24	0.34	0.38	0.41	0.45	0.50
PRIVATE CONSUMPTION PRICES	-0.06	-0.12	-0.19	-0.27	-0.35	-0.42
GDP DEFLATOR	-0.10	-0.20	-0.28	-0.36	-0.43	-0.49
REAL WAGE RATE	0.04	0.07	0.10	0.15	0.21	0.26
LABOUR PRODUCTIVITY/HEAD	0.20	0.24	0.23	0.22	0.22	0.24
EMPLOYMENT % CHANGE	0.04	0.10	0.15	0.19	0.23	0.26
EMPLOYMENT ('000)	9	22	33	42	50	57
BUDGET SURPLUS % GDP, CHANGE	0.07	0.18	0.24	0.28	0.33	0.37
TRADE BALANCE % GDP, CHANGE	0.17	0.25	0.27	0.26	0.26	0.26

Table A2.2: Continued

PUBLIC MARKETS WITH RESTRICTED OPENING: ITALY

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT..................	0.29	0.28	0.28	0.30	0.33	0.39
PRIVATE CONSUMPTION PRICES.............	-0.04	-0.09	-0.15	-0.25	-0.35	-0.45
GDP DEFLATOR...........................	-0.23	-0.31	-0.46	-0.62	-0.73	-0.84
REAL WAGE RATE.........................	0.06	0.06	0.06	0.06	0.04	0.04
LABOUR PRODUCTIVITY/HEAD...............	0.20	0.15	0.12	0.13	0.13	0.15
EMPLOYMENT % CHANGE....................	0.06	0.10	0.13	0.15	0.18	0.20
EMPLOYMENT ('000)......................	13	21	27	32	37	44
BUDGET SURPLUS % GDP, CHANGE...........	0.18	0.24	0.18	0.20	0.20	0.19
TRADE BALANCE % GDP, CHANGE............	0.07	0.07	0.04	0.03	0.03	0.02

PUBLIC MARKETS WITH RESTRICTED OPENING: UNITED KINGDOM

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT..................	0.02	0.21	0.39	0.54	0.63	0.70
PRIVATE CONSUMPTION PRICES.............	-1.17	-1.72	-2.12	-2.44	-2.70	-2.92
GDP DEFLATOR...........................	-1.11	-1.96	-2.58	-2.97	-3.22	-3.41
REAL WAGE RATE.........................	0.61	0.23	0.24	0.31	0.37	0.42
LABOUR PRODUCTIVITY/HEAD...............	0.31	0.50	0.60	0.65	0.65	0.64
EMPLOYMENT % CHANGE....................	0.03	0.10	0.18	0.24	0.28	0.32
EMPLOYMENT ('000)......................	7	27	47	65	78	90
BUDGET SURPLUS % GDP, CHANGE...........	0.03	0.28	0.35	0.41	0.46	0.51
TRADE BALANCE % GDP, CHANGE............	-0.57	-0.49	-0.47	-0.39	-0.33	-0.26

Table A2.3: "Financial liberalisation" simulation: main macro-economic results for individual countries

FINANCIAL SERVICES: BELGIUM

MODEL : INTERLINK

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT..................	0.50	0.97	1.19	1.21	1.20	1.22
PRIVATE CONSUMPTION PRICES..............	-0.91	-1.09	-1.27	-1.37	-1.37	-1.28
GDP DEFLATOR...........................	-0.95	-1.12	-1.30	-1.40	-1.38	-1.27
REAL WAGE RATE.........................	0.80	0.65	0.67	0.82	1.00	1.17
LABOUR PRODUCTIVITY/HEAD...............	0.45	0.74	0.72	0.64	0.65	0.69
EMPLOYMENT % CHANGE....................	0.04	0.23	0.46	0.56	0.55	0.52
EMPLOYMENT ('000)......................	2	9	17	21	20	19
BUDGET SURPLUS % GDP, CHANGE...........	0.34	0.56	0.70	0.88	0.92	0.97
TRADE BALANCE % GDP, CHANGE............	-0.00	0.24	0.29	0.31	0.34	0.37

FINANCIAL SERVICES: GERMANY

MODEL : INTERLINK

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT..................	0.50	0.92	0.89	0.71	0.75	0.96
PRIVATE CONSUMPTION PRICES.............	-0.24	-0.23	-0.12	-0.16	-0.32	-0.48
GDP DEFLATOR...........................	-0.18	-0.05	0.16	0.16	0.03	-0.10
REAL WAGE RATE.........................	0.30	0.58	0.61	0.57	0.59	0.66
LABOUR PRODUCTIVITY/HEAD...............	0.50	0.74	0.62	0.47	0.48	0.54
EMPLOYMENT % CHANGE....................	0.00	0.18	0.27	0.23	0.27	0.42
EMPLOYMENT ('000)......................	-0	45	69	60	70	108
BUDGET SURPLUS % GDP, CHANGE...........	0.11	0.33	0.45	0.46	0.50	0.63
TRADE BALANCE % GDP, CHANGE............	-0.05	0.02	0.19	0.25	0.23	0.20

FINANCIAL SERVICES: SPAIN

MODEL : INTERLINK

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT..................	0.45	0.81	0.92	0.86	0.77	0.71
PRIVATE CONSUMPTION PRICES.............	-1.22	-1.37	-1.44	-1.51	-1.56	-1.59
GDP DEFLATOR...........................	-1.29	-1.42	-1.49	-1.56	-1.61	-1.65
REAL WAGE RATE.........................	1.03	0.91	0.85	0.78	0.71	0.66
LABOUR PRODUCTIVITY/HEAD...............	0.66	1.08	1.09	1.00	0.93	0.89
EMPLOYMENT % CHANGE....................	-0.20	-0.27	-0.17	-0.13	-0.16	-0.18
EMPLOYMENT ('000)......................	-22	-28	-18	-15	-18	-21
BUDGET SURPLUS % GDP, CHANGE...........	0.01	-0.05	0.03	0.06	0.02	-0.01
TRADE BALANCE % GDP, CHANGE............	-0.02	0.16	0.19	0.18	0.14	0.12

Table A2.3: <u>Continued</u>

FINANCIAL SERVICES: FRANCE
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MODEL : INTERLINK
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	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
. GROSS DOMESTIC PRODUCT...................	0.46	0.80	1.17	1.43	1.63	1.77
. PRIVATE CONSUMPTION PRICES..............	0.04	0.01	-0.18	-0.41	-0.65	-0.86
. GDP DEFLATOR............................	0.08	0.08	-0.12	-0.35	-0.61	-0.83
. REAL WAGE RATE..........................	-0.03	-0.01	0.02	0.08	0.16	0.26
. LABOUR PRODUCTIVITY/HEAD................	0.49	0.76	1.02	1.19	1.30	1.36
. EMPLOYMENT % CHANGE.....................	-0.03	0.04	0.14	0.24	0.33	0.41
. EMPLOYMENT ('000).......................	-6	8	30	51	70	87
. BUDGET SURPLUS % GDP, CHANGE............	0.08	0.26	0.49	0.76	1.02	1.23
. TRADE BALANCE % GDP, CHANGE.............	-0.07	-0.05	0.01	0.05	0.10	0.15

FINANCIAL SERVICES: NETHERLANDS
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MODEL : INTERLINK
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	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
. GROSS DOMESTIC PRODUCT...................	0.28	0.73	0.98	0.97	0.91	0.85
. PRIVATE CONSUMPTION PRICES..............	-0.39	-0.72	-1.00	-1.12	-1.03	-0.82
. GDP DEFLATOR............................	-0.33	-0.68	-0.94	-1.04	-0.91	-0.66
. REAL WAGE RATE..........................	0.13	0.10	0.18	0.33	0.48	0.65
. LABOUR PRODUCTIVITY/HEAD................	0.23	0.46	0.41	0.23	0.19	0.26
. EMPLOYMENT % CHANGE.....................	0.05	0.27	0.57	0.74	0.72	0.59
. EMPLOYMENT ('000).......................	2	12	27	35	34	28
. BUDGET SURPLUS % GDP, CHANGE............	-0.01	0.13	0.33	0.46	0.50	0.50
. TRADE BALANCE % GDP, CHANGE.............	0.04	0.10	0.14	0.18	0.30	0.39

FINANCIAL SERVICES: ITALY
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MODEL : INTERLINK
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	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
. GROSS DOMESTIC PRODUCT...................	0.56	1.94	2.79	3.10	3.15	3.01
. PRIVATE CONSUMPTION PRICES..............	-1.48	-2.78	-3.86	-4.40	-4.48	-4.19
. GDP DEFLATOR............................	-1.56	-3.11	-4.38	-5.06	-5.26	-5.03
. REAL WAGE RATE..........................	0.51	0.33	0.21	0.12	-0.03	-0.14
. LABOUR PRODUCTIVITY/HEAD................	1.01	2.23	2.87	2.97	2.83	2.55
. EMPLOYMENT % CHANGE.....................	-0.45	-0.29	-0.08	0.13	0.31	0.45
. EMPLOYMENT ('000).......................	-101	-66	-18	30	72	104
. BUDGET SURPLUS % GDP, CHANGE............	-0.08	0.49	1.30	1.80	2.20	2.50
. TRADE BALANCE % GDP, CHANGE.............	0.00	-0.04	0.37	0.47	0.51	0.52

FINANCIAL SERVICES: UNITED KINGDOM
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MODEL : INTERLINK
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	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
. GROSS DOMESTIC PRODUCT...................	0.19	0.92	1.05	0.87	0.77	0.84
. PRIVATE CONSUMPTION PRICES..............	-0.13	-0.34	-0.39	-0.44	-0.55	-0.74
. GDP DEFLATOR............................	-0.12	-0.25	-0.21	-0.18	-0.24	-0.41
. REAL WAGE RATE..........................	-0.12	-0.19	-0.07	0.23	0.47	0.56
. LABOUR PRODUCTIVITY/HEAD................	0.61	1.09	0.85	0.51	0.44	0.53
. EMPLOYMENT % CHANGE.....................	-0.41	-0.17	0.21	0.35	0.33	0.31
. EMPLOYMENT ('000).......................	-99	-40	51	89	83	78
. BUDGET SURPLUS % GDP, CHANGE............	-0.13	0.17	0.55	0.66	0.62	0.65
. TRADE BALANCE % GDP, CHANGE.............	-0.02	-0.16	0.01	0.13	0.20	0.21

Table A2.4: "Supply effects" simulation: main macro-economic

results for individual countries

SUPPLY EFFECTS (TOTAL): GERMANY

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT..................	0.53	0.79	1.18	1.52	1.86	2.10
PRIVATE CONSUMPTION PRICES..............	-0.26	-0.63	-1.07	-1.56	-1.98	-2.26
GDP DEFLATOR............................	-0.23	-0.60	-1.01	-1.48	-1.91	-2.21
REAL WAGE RATE.........................	0.12	0.20	0.56	0.86	1.23	1.56
LABOUR PRODUCTIVITY/HEAD...............	0.84	0.94	1.16	1.27	1.39	1.45
EMPLOYMENT % CHANGE....................	-0.31	-0.16	0.03	0.26	0.47	0.65
EMPLOYMENT ('000)......................	-79	-40	7	66	123	170
BUDGET SURPLUS % GDP, CHANGE...........	-0.10	0.07	0.11	0.25	0.35	0.45
TRADE BALANCE % GDP, CHANGE............	0.29	0.31	0.31	0.31	0.31	0.32

SUPPLY EFFECTS (TOTAL): FRANCE

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT..................	0.43	0.81	1.22	1.63	2.08	2.45
PRIVATE CONSUMPTION PRICES..............	-0.78	-1.14	-1.49	-1.85	-2.21	-2.53
GDP DEFLATOR............................	-1.45	-1.85	-2.26	-2.65	-3.03	-3.33
REAL WAGE RATE.........................	0.34	0.22	0.30	0.45	0.65	0.88
LABOUR PRODUCTIVITY/HEAD...............	0.66	0.90	1.15	1.34	1.53	1.64
EMPLOYMENT % CHANGE....................	-0.21	-0.07	0.11	0.34	0.60	0.87
EMPLOYMENT ('000)......................	-45	-16	25	75	132	192
BUDGET SURPLUS % GDP, CHANGE...........	-0.11	-0.08	0.11	0.32	0.59	0.89
TRADE BALANCE % GDP, CHANGE............	0.10	0.15	0.30	0.43	0.54	0.66

SUPPLY EFFECTS (TOTAL): ITALY

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT..................	0.54	0.93	1.28	1.52	1.68	1.82
PRIVATE CONSUMPTION PRICES..............	-0.55	-0.80	-1.06	-1.34	-1.56	-1.75
GDP DEFLATOR............................	-0.75	-1.01	-1.28	-1.57	-1.82	-2.04
REAL WAGE RATE.........................	0.28	0.41	0.57	0.72	0.84	0.94
LABOUR PRODUCTIVITY/HEAD...............	0.75	0.95	1.07	1.12	1.11	1.10
EMPLOYMENT % CHANGE....................	-0.18	-0.01	0.19	0.37	0.51	0.64
EMPLOYMENT ('000)......................	-38	-3	40	77	110	139
BUDGET SURPLUS % GDP, CHANGE...........	0.15	0.50	0.50	0.61	0.68	0.73
TRADE BALANCE % GDP, CHANGE............	0.13	0.20	0.22	0.25	0.30	0.34

SUPPLY EFFECTS (TOTAL): UNITED KINGDOM

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
GROSS DOMESTIC PRODUCT..................	0.55	1.15	1.62	1.91	2.08	2.15
PRIVATE CONSUMPTION PRICES..............	-0.91	-1.61	-2.15	-2.44	-2.55	-2.56
GDP DEFLATOR............................	-1.11	-1.99	-2.68	-3.02	-3.11	-3.09
REAL WAGE RATE.........................	0.32	0.46	0.78	1.11	1.37	1.55
LABOUR PRODUCTIVITY/HEAD...............	0.79	1.20	1.48	1.61	1.65	1.62
EMPLOYMENT % CHANGE....................	-0.22	-0.03	0.18	0.35	0.48	0.56
EMPLOYMENT ('000)......................	-56	-8	48	96	132	159
BUDGET SURPLUS % GDP, CHANGE...........	0.02	0.18	0.29	0.37	0.41	0.43
TRADE BALANCE % GDP, CHANGE............	0.14	0.22	0.31	0.38	0.45	0.48

ANNEX 3 DETAILED MACRO-ECONOMIC SIMULATION RESULTS FOR EUR12, AGGREGATED AND BY AREA [1]

Table A3.1: Detailed aggregated macro-economic simulation results
of the completion of the internal market for EUR 12

MODEL : HERMES/INTERLINK

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
. PRIVATE CONSUMPTION......................	0.63	1.25	1.87	2.29	2.70	3.08
. GOVERNMENT CONSUMPTION..................	0.85	0.83	0.88	0.95	1.03	1.11
. GROSS FIXED CAP.FORMATION...............	2.26	3.66	4.44	5.09	5.36	5.39
. * GOVERNMENT...........................	0.00	0.00	0.00	0.00	0.00	0.00
. * RESIDENTIAL..........................	0.53	1.77	3.19	4.19	4.61	4.70
. * FIRMS................................	3.68	5.47	6.19	6.78	7.01	7.03
. EXPORTS OF GOODS AND SERVICES..........	3.43	5.49	7.43	8.60	9.64	10.52
. IMPORTS OF GOODS AND SERVICES..........	2.93	4.37	5.36	6.05	6.67	7.21
. GROSS DOMESTIC PRODUCT..................	1.13	2.31	3.16	3.64	4.10	4.52
. PRIVATE CONSUMPTION PRICES.............	-1.58	-2.68	-3.71	-4.66	-5.49	-6.16
. EXPORT PRICES..........................	-0.85	-2.01	-3.33	-4.31	-5.04	-5.58
. IMPORT PRICES..........................	-1.33	-2.12	-3.15	-3.93	-4.49	-4.96
. NOMINAL WAGE RATE......................	-1.01	-2.15	-2.88	-3.43	-3.80	-4.02
. REAL WAGE RATE.........................	0.77	0.80	1.11	1.48	1.86	2.22
. TERMS OF TRADE.........................	0.47	0.11	-0.19	-0.38	-0.54	-0.62
. GDP DEFLATOR...........................	-1.68	-2.93	-4.04	-5.02	-5.84	-6.45
. EMPLOYMENT ('000)......................	-533	-40	552	1043	1462	1866
. EMPLOYMENT % CHANGE....................	-0.44	-0.03	0.45	0.83	1.16	1.47
. UNEMPLOYMENT ('000)....................	464	13	-396	-746	-994	-1255
. UNEMPLOYMENT RATE, CHANGE..............	0.27	0.02	-0.26	-0.30	-0.56	-0.68
. LABOUR PRODUCTIVITY/HEAD...............	1.57	2.35	2.72	2.81	2.95	3.04
. UTILIZATION RATE INDUSTRY..............	0.88	1.72	2.11	2.20	2.33	2.47
. BUDGET SURPLUS (BN 1985 ECU)...........	4.341	23.886	39.311	52.000	62.609	73.464
. BUDGET SURPLUS % GDP, CHANGE...........	0.13	0.72	1.19	1.57	1.89	2.22
. TRADE BALANCE (BN 1985 ECU)............	10.060	12.946	20.800	25.324	28.555	31.578
. TRADE BALANCE % GDP, CHANGE............	0.30	0.39	0.63	0.76	0.86	0.95
. GR. OP. SURPLUS % GDP, CHANGE..........	0.52	0.73	0.55	0.21	-0.08	-0.35
. REAL DISP. INCOME HOUSEHOLDS...........	0.91	1.43	2.00	2.32	2.65	2.94

[1] The top part of each table gives cumulative percentage deviations from the baseline projection, while the bottom part gives cumulative absolute deviations. See note at the end of Annex 4 for precise explanations.

Table A3.2: "Customs barriers" simulation: detailed macro-economic results for EUR 12

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
PRIVATE CONSUMPTION	0.09	0.17	0.24	0.30	0.36	0.40
GOVERNMENT CONSUMPTION	-0.10	-0.10	-0.09	-0.07	-0.06	-0.04
GROSS FIXED CAP.FORMATION	0.01	0.15	0.30	0.40	0.47	0.47
* GOVERNMENT	0.00	0.00	0.00	0.00	0.00	0.00
* RESIDENTIAL	0.04	0.11	0.21	0.30	0.36	0.38
* FIRMS	-0.00	0.19	0.38	0.49	0.56	0.55
EXPORTS OF GOODS AND SERVICES	0.21	0.47	0.69	0.82	0.92	1.00
IMPORTS OF GOODS AND SERVICES	0.36	0.64	0.85	0.95	1.03	1.06
GROSS DOMESTIC PRODUCT	-0.01	0.10	0.20	0.27	0.33	0.36
PRIVATE CONSUMPTION PRICES	-0.21	-0.41	-0.61	-0.78	-0.92	-1.02
EXPORT PRICES	-0.11	-0.39	-0.58	-0.72	-0.83	-0.91
IMPORT PRICES	-0.88	-1.12	-1.27	-1.36	-1.41	-1.45
NOMINAL WAGE RATE	-0.15	-0.33	-0.47	-0.58	-0.66	-0.72
REAL WAGE RATE	0.06	0.10	0.15	0.20	0.25	0.29
TERMS OF TRADE	0.78	0.74	0.70	0.65	0.60	0.55
GDP DEFLATOR	-0.01	-0.23	-0.42	-0.60	-0.74	-0.85
EMPLOYMENT ('000)	-67	-32	33	102	164	211
EMPLOYMENT % CHANGE	-0.06	-0.03	0.03	0.08	0.13	0.16
UNEMPLOYMENT ('000)	46	12	-31	-77	-117	-148
UNEMPLOYMENT RATE, CHANGE	0.02	0.01	-0.01	-0.02	-0.03	-0.04
LABOUR PRODUCTIVITY/HEAD	0.04	0.12	0.17	0.17	0.18	0.17
UTILIZATION RATE INDUSTRY	-0.03	0.07	0.12	0.14	0.15	0.15
BUDGET SURPLUS (BN 1985 ECU)	.920	2.661	4.139	5.209	6.185	6.942
BUDGET SURPLUS % GDP, CHANGE	0.03	0.08	0.12	0.16	0.19	0.21
TRADE BALANCE (BN 1985 ECU)	5.605	5.184	5.202	5.139	5.163	5.283
TRADE BALANCE % GDP, CHANGE	0.17	0.16	0.16	0.16	0.16	0.16
GR. OP. SURPLUS % GDP, CHANGE	0.08	0.10	0.10	0.08	0.06	0.04
REAL DISP. INCOME HOUSEHOLDS	0.13	0.19	0.24	0.28	0.31	0.33

Table A3.3: "Public procurement" simulation: detailed macro-economic results for EUR 12

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
PRIVATE CONSUMPTION	0.16	0.18	0.23	0.28	0.35	0.46
GOVERNMENT CONSUMPTION	0.71	0.69	0.68	0.68	0.69	0.70
GROSS FIXED CAP.FORMATION	0.27	0.37	0.49	0.61	0.75	0.88
* GOVERNMENT	0.00	0.00	0.00	0.00	0.00	0.00
* RESIDENTIAL	0.15	0.44	0.70	0.88	1.02	1.15
* FIRMS	0.38	0.47	0.59	0.73	0.89	1.05
EXPORTS OF GOODS AND SERVICES	1.59	1.71	1.76	1.81	1.91	2.02
IMPORTS OF GOODS AND SERVICES	1.95	1.86	1.84	1.88	2.00	2.13
GROSS DOMESTIC PRODUCT	0.20	0.25	0.31	0.37	0.45	0.55
PRIVATE CONSUMPTION PRICES	-0.30	-0.48	-0.67	-0.91	-1.17	-1.46
EXPORT PRICES	0.04	-0.12	-0.36	-0.63	-0.90	-1.11
IMPORT PRICES	-0.10	-0.18	-0.37	-0.65	-0.95	-1.23
NOMINAL WAGE RATE	-0.16	-0.43	-0.62	-0.82	-1.03	-1.25
REAL WAGE RATE	0.18	0.11	0.12	0.15	0.20	0.26
TERMS OF TRADE	0.13	0.05	0.02	0.02	0.05	0.12
GDP DEFLATOR	-0.35	-0.62	-0.86	-1.11	-1.35	-1.58
EMPLOYMENT ('000)	62	143	192	238	290	356
EMPLOYMENT % CHANGE	0.05	0.12	0.15	0.19	0.23	0.28
UNEMPLOYMENT ('000)	-48	-97	-118	-149	-179	-222
UNEMPLOYMENT RATE, CHANGE	-0.03	-0.05	-0.07	-0.09	-0.10	-0.11
LABOUR PRODUCTIVITY/HEAD	0.15	0.13	0.16	0.18	0.23	0.27
UTILIZATION RATE INDUSTRY	0.09	0.14	0.17	0.19	0.19	0.19
BUDGET SURPLUS (BN 1985 ECU)	3.687	7.006	7.526	8.555	9.658	11.108
BUDGET SURPLUS % GDP, CHANGE	0.11	0.21	0.23	0.26	0.29	0.34
TRADE BALANCE (BN 1985 ECU)	-.331	.814	1.046	1.594	1.988	2.869
TRADE BALANCE % GDP, CHANGE	-0.01	0.02	0.03	0.05	0.06	0.09
GR. OP. SURPLUS % GDP, CHANGE	0.15	0.09	0.04	0.02	0.01	0.01
REAL DISP. INCOME HOUSEHOLDS	0.22	0.19	0.23	0.28	0.34	0.43

Table A3.4: "Financial liberalisation" simulation: detailed macro-economic results for EUR 12

MODEL : INTERLINK

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
PRIVATE CONSUMPTION	0.24	0.59	0.80	0.86	0.90	0.95
GOVERNMENT CONSUMPTION	0.00	0.00	0.00	0.00	0.00	0.00
GROSS FIXED CAP.FORMATION	1.63	2.47	2.60	2.72	2.58	2.42
* GOVERNMENT	0.00	0.00	0.00	0.00	0.00	0.00
* RESIDENTIAL	0.28	1.05	1.78	2.18	2.14	1.97
* FIRMS	2.81	3.90	3.85	3.84	3.61	3.43
EXPORTS OF GOODS AND SERVICES	0.37	1.04	1.79	2.01	2.11	2.21
IMPORTS OF GOODS AND SERVICES	0.40	0.94	1.18	1.24	1.19	1.23
GROSS DOMESTIC PRODUCT	0.43	1.06	1.33	1.36	1.39	1.46
PRIVATE CONSUMPTION PRICES	-0.47	-0.78	-1.01	-1.19	-1.32	-1.38
EXPORT PRICES	-0.24	-0.52	-0.97	-1.15	-1.20	-1.24
IMPORT PRICES	-0.18	-0.37	-0.81	-1.02	-1.07	-1.11
NOMINAL WAGE RATE	-0.33	-0.68	-0.91	-1.02	-1.06	-1.02
REAL WAGE RATE	0.26	0.26	0.28	0.33	0.38	0.42
TERMS OF TRADE	-0.07	-0.14	-0.16	-0.13	-0.13	-0.13
GDP DEFLATOR	-0.47	-0.77	-1.00	-1.17	-1.31	-1.37
EMPLOYMENT ('000)	-245	-65	171	294	361	440
EMPLOYMENT % CHANGE	-0.20	-0.05	0.14	0.24	0.29	0.36
UNEMPLOYMENT ('000)	250	77	-151	-261	-311	-377
UNEMPLOYMENT RATE, CHANGE	0.18	0.05	-0.11	-0.05	-0.23	-0.28
LABOUR PRODUCTIVITY/HEAD	0.63	1.11	1.19	1.12	1.10	1.11
UTILIZATION RATE INDUSTRY	0.36	0.76	0.83	0.72	0.68	0.72
BUDGET SURPLUS (BN 1985 ECU)	.566	9.367	19.926	26.003	30.368	34.988
BUDGET SURPLUS % GDP, CHANGE	0.02	0.28	0.60	0.78	0.92	1.06
TRADE BALANCE (BN 1985 ECU)	-1.012	-.580	4.973	7.160	8.196	8.599
TRADE BALANCE % GDP, CHANGE	-0.03	-0.02	0.15	0.22	0.25	0.26
GR. OP. SURPLUS % GDP, CHANGE	0.20	0.40	0.29	0.06	-0.15	-0.32
REAL DISP. INCOME HOUSEHOLDS	0.31	0.68	0.82	0.83	0.85	0.88

Table A3.5: "Supply effects" simulation: detailed macro-economic results for EUR 12

MODEL : HERMES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
PRIVATE CONSUMPTION	0.15	0.32	0.60	0.85	1.08	1.27
GOVERNMENT CONSUMPTION	0.24	0.24	0.29	0.34	0.40	0.45
GROSS FIXED CAP.FORMATION	0.35	0.67	1.04	1.35	1.56	1.63
* GOVERNMENT	0.00	0.00	0.00	0.00	0.00	0.00
* RESIDENTIAL	0.05	0.17	0.50	0.82	1.09	1.21
* FIRMS	0.50	0.92	1.37	1.73	1.96	2.01
EXPORTS OF GOODS AND SERVICES	1.26	2.27	3.19	3.96	4.70	5.29
IMPORTS OF GOODS AND SERVICES	0.22	0.92	1.49	1.97	2.45	2.79
GROSS DOMESTIC PRODUCT	0.51	0.90	1.31	1.64	1.93	2.14
PRIVATE CONSUMPTION PRICES	-0.60	-1.01	-1.41	-1.78	-2.08	-2.29
EXPORT PRICES	-0.54	-0.98	-1.43	-1.80	-2.11	-2.33
IMPORT PRICES	-0.17	-0.45	-0.70	-0.90	-1.06	-1.17
NOMINAL WAGE RATE	-0.36	-0.72	-0.89	-1.01	-1.05	-1.03
REAL WAGE RATE	0.26	0.32	0.56	0.80	1.04	1.25
TERMS OF TRADE	-0.37	-0.53	-0.73	-0.90	-1.05	-1.16
GDP DEFLATOR	-0.85	-1.32	-1.76	-2.14	-2.44	-2.65
EMPLOYMENT ('000)	-284	-86	156	409	647	859
EMPLOYMENT % CHANGE	-0.23	-0.07	0.13	0.33	0.51	0.68
UNEMPLOYMENT ('000)	215	20	-97	-259	-387	-509
UNEMPLOYMENT RATE, CHANGE	0.09	0.01	-0.07	-0.14	-0.20	-0.25
LABOUR PRODUCTIVITY/HEAD	0.75	0.97	1.18	1.31	1.42	1.47
UTILIZATION RATE INDUSTRY	0.46	0.75	0.99	1.16	1.31	1.40
BUDGET SURPLUS (BN 1985 ECU)	-.832	4.851	7.720	12.233	16.399	20.426
BUDGET SURPLUS % GDP, CHANGE	-0.03	0.15	0.23	0.37	0.49	0.62
TRADE BALANCE (BN 1985 ECU)	5.817	7.528	9.578	11.432	13.209	14.828
TRADE BALANCE % GDP, CHANGE	0.18	0.23	0.29	0.34	0.40	0.45
GR. OP. SURPLUS % GDP, CHANGE	0.09	0.14	0.11	0.05	-0.01	-0.09
REAL DISP. INCOME HOUSEHOLDS	0.25	0.38	0.70	0.93	1.14	1.29

ANNEX 4 DETAILED AGGREGATED MACRO–ECONOMIC SIMULATION RESULTS OF THE COMPLETION OF THE INTERNAL MARKET FOR GERMANY, FRANCE, ITALY AND THE UNITED KINGDOM [1]

Table A4.1: Detailed aggregated macro-economic simulation results of the completion of the internal market for Germany

MODEL : HERMES/INTERLINK

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
PRIVATE CONSUMPTION	0.49	1.11	1.65	2.14	2.82	3.59
GOVERNMENT CONSUMPTION	-0.24	-0.10	0.07	0.28	0.49	0.67
GROSS FIXED CAP. FORMATION	1.74	2.63	3.65	4.34	4.88	5.21
* GOVERNMENT	0.00	0.00	0.00	0.00	0.00	0.00
* RESIDENTIAL	0.63	1.49	2.15	2.46	2.67	2.89
* FIRMS	2.72	3.68	4.98	5.84	6.54	6.93
EXPORTS OF GOODS AND SERVICES	3.10	4.72	6.27	6.95	7.69	8.33
IMPORTS OF GOODS AND SERVICES	2.42	3.52	4.70	5.43	6.16	6.89
GROSS DOMESTIC PRODUCT	1.22	1.97	2.57	2.89	3.52	4.20
PRIVATE CONSUMPTION PRICES	-0.74	-1.46	-2.30	-3.52	-4.90	-6.16
EXPORT PRICES	-0.21	-1.38	-2.65	-3.82	-4.94	-5.77
IMPORT PRICES	-1.04	-1.78	-3.02	-4.10	-5.01	-5.86
NOMINAL WAGE RATE	-0.29	-0.50	-0.81	-1.62	-2.41	-3.00
REAL WAGE RATE	0.44	0.91	1.44	1.87	2.48	3.14
TERMS OF TRADE	0.84	0.40	0.37	0.29	0.07	0.10
GDP DEFLATOR	-0.45	-1.09	-1.74	-2.82	-4.10	-5.20
EMPLOYMENT ('000)	-78	34	129	208	311	438
EMPLOYMENT % CHANGE	-0.31	0.14	0.50	0.80	1.19	1.68
UNEMPLOYMENT ('000)	78	-65	-108	-184	-260	-373
UNEMPLOYMENT RATE, CHANGE	0.00	-0.15	-0.22	-0.20	-0.24	-0.36
LABOUR PRODUCTIVITY/HEAD	1.53	1.84	2.07	2.08	2.32	2.51
UTILIZATION RATE INDUSTRY	0.57	1.01	0.91	0.64	0.65	0.83
BUDGET SURPLUS (BN 1985 ECU)	1.070	4.562	6.330	7.891	9.714	12.575
BUDGET SURPLUS % GDP, CHANGE	0.13	0.55	0.77	0.95	1.18	1.52
TRADE BALANCE (BN 1985 ECU)	4.058	4.413	5.661	6.029	5.627	5.776
TRADE BALANCE % GDP, CHANGE	0.49	0.53	0.69	0.73	0.68	0.70
GR. OP. SURPLUS % GDP, CHANGE	0.66	0.64	0.56	0.41	0.29	0.15
REAL DISP. INCOME HOUSEHOLDS	0.95	1.31	1.91	2.19	2.73	3.27

Table A4.2: Detailed aggregated macro-economic simulation results of the completion of the internal market for France

MODEL : HERMES/INTERLINK

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
PRIVATE CONSUMPTION	0.24	0.65	1.04	1.50	1.97	2.41
GOVERNMENT CONSUMPTION	0.58	0.44	0.54	0.70	0.89	1.10
GROSS FIXED CAP. FORMATION	4.07	5.27	5.95	6.45	6.73	6.79
* GOVERNMENT	0.00	0.00	0.00	0.00	0.00	0.00
* RESIDENTIAL	0.40	1.28	2.85	4.31	5.62	6.59
* FIRMS	6.86	8.46	9.02	9.30	9.21	8.85
EXPORTS OF GOODS AND SERVICES	4.21	6.79	9.30	11.01	12.79	14.47
IMPORTS OF GOODS AND SERVICES	3.45	5.80	7.30	8.18	9.05	9.59
GROSS DOMESTIC PRODUCT	1.09	1.97	2.88	3.65	4.41	5.05
PRIVATE CONSUMPTION PRICES	-1.00	-1.64	-2.43	-3.27	-4.12	-4.89
EXPORT PRICES	-0.80	-1.52	-2.71	-3.71	-4.52	-5.18
IMPORT PRICES	-1.55	-2.43	-3.32	-3.88	-4.31	-4.64
NOMINAL WAGE RATE	-0.57	-1.28	-1.90	-2.45	-2.92	-3.25
REAL WAGE RATE	0.43	0.34	0.48	0.74	1.09	1.51
TERMS OF TRADE	0.76	0.93	0.63	0.20	-0.19	-0.53
GDP DEFLATOR	-1.53	-2.19	-3.07	-3.97	-4.86	-5.63
EMPLOYMENT ('000)	-60	-5	73	159	250	342
EMPLOYMENT % CHANGE	-0.28	-0.02	0.34	0.73	1.15	1.57
UNEMPLOYMENT ('000)	33	5	-35	-80	-128	-178
UNEMPLOYMENT RATE, CHANGE	0.15	0.02	-0.16	-0.37	-0.57	-0.79
LABOUR PRODUCTIVITY/HEAD	1.37	2.00	2.55	2.95	3.30	3.54
UTILIZATION RATE INDUSTRY	1.37	2.07	2.90	3.56	4.25	4.74
BUDGET SURPLUS (BN 1985 ECU)	.262	2.727	6.073	9.761	13.860	17.788
BUDGET SURPLUS % GDP, CHANGE	0.04	0.40	0.90	1.45	2.05	2.64
TRADE BALANCE (BN 1985 ECU)	2.806	3.872	5.517	6.603	7.787	9.110
TRADE BALANCE % GDP, CHANGE	0.42	0.57	0.82	0.98	1.15	1.35
GR. OP. SURPLUS % GDP, CHANGE	0.24	0.59	0.69	0.55	0.29	-0.03
REAL DISP. INCOME HOUSEHOLDS	0.30	0.78	1.12	1.56	1.99	2.41

[1] See note at the end of this Annex

Table A4.3: Detailed aggregated macro-economic simulation results of the completion of the internal market for Italy

MODEL : HERMES/INTERLINK

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
PRIVATE CONSUMPTION	0.85	1.85	2.98	3.53	3.75	3.79
GOVERNMENT CONSUMPTION	-0.05	-0.05	-0.06	-0.07	-0.07	-0.08
GROSS FIXED CAP.FORMATION	2.10	4.42	5.06	6.48	6.88	6.93
* GOVERNMENT	0.00	0.00	0.00	0.00	0.00	0.00
* RESIDENTIAL	0.33	2.20	5.24	7.23	6.95	5.70
* FIRMS	3.54	6.82	6.58	8.11	8.93	9.58
EXPORTS OF GOODS AND SERVICES	3.62	5.94	8.55	10.15	11.40	12.28
IMPORTS OF GOODS AND SERVICES	2.05	3.85	4.47	5.39	5.98	6.61
GROSS DOMESTIC PRODUCT	1.35	3.25	4.54	5.15	5.41	5.46
PRIVATE CONSUMPTION PRICES	-2.30	-4.04	-5.55	-6.55	-7.02	-7.07
EXPORT PRICES	-1.85	-3.17	-5.11	-6.33	-6.99	-7.34
IMPORT PRICES	-1.82	-2.97	-4.28	-5.25	-5.78	-6.08
NOMINAL WAGE RATE	-1.68	-3.46	-4.84	-5.62	-5.92	-5.77
REAL WAGE RATE	0.91	0.96	1.07	1.19	1.19	1.21
TERMS OF TRADE	-0.02	-0.19	-0.83	-1.09	-1.22	-1.26
GDP DEFLATOR	-2.58	-4.59	-6.38	-7.58	-8.19	-8.34
EMPLOYMENT ('000)	-136	-50	53	150	236	308
EMPLOYMENT % CHANGE	-0.62	-0.22	0.26	0.70	1.08	1.40
UNEMPLOYMENT ('000)	131	66	-16	-92	-157	-208
UNEMPLOYMENT RATE, CHANGE	0.53	0.25	-0.10	-0.41	-0.66	-0.87
LABOUR PRODUCTIVITY/HEAD	1.94	3.41	4.20	4.34	4.18	3.89
UTILIZATION RATE INDUSTRY	0.86	1.26	1.33	1.25	1.13	1.03
BUDGET SURPLUS (BN 1985 ECU)	1.569	7.559	12.101	15.708	18.370	20.293
BUDGET SURPLUS % GDP, CHANGE	0.28	1.36	2.17	2.82	3.30	3.65
TRADE BALANCE (BN 1985 ECU)	1.900	2.040	4.376	5.001	5.541	5.743
TRADE BALANCE % GDP, CHANGE	0.34	0.37	0.79	0.90	1.00	1.03
GR. OP. SURPLUS % GDP, CHANGE	0.27	0.47	0.01	-0.64	-1.28	-1.89
REAL DISP. INCOME HOUSEHOLDS	1.07	1.98	2.92	3.32	3.46	3.50

Table A 4.4: Detailed aggregated macro-economic simulation results of the completion of the internal market for the United Kingdom

MODEL : HERMES/INTERLINK

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
PRIVATE CONSUMPTION	1.10	1.75	2.29	2.54	2.73	2.91
GOVERNMENT CONSUMPTION	2.86	2.80	2.74	2.67	2.61	2.55
GROSS FIXED CAP.FORMATION	1.69	3.34	4.10	4.26	3.93	3.42
* GOVERNMENT	0.00	0.00	0.00	0.00	0.00	0.00
* RESIDENTIAL	0.55	2.48	3.57	4.17	4.57	4.73
* FIRMS	2.79	4.75	5.90	5.66	4.93	4.13
EXPORTS OF GOODS AND SERVICES	2.50	4.43	6.14	7.31	8.07	8.57
IMPORTS OF GOODS AND SERVICES	4.11	4.96	5.01	5.14	5.30	5.48
GROSS DOMESTIC PRODUCT	0.81	2.44	3.29	3.59	3.79	4.00
PRIVATE CONSUMPTION PRICES	-2.55	-4.33	-5.57	-6.39	-6.96	-7.43
EXPORT PRICES	-1.10	-2.67	-3.96	-4.57	-4.89	-5.21
IMPORT PRICES	-1.33	-1.89	-2.57	-3.10	-3.45	-3.74
NOMINAL WAGE RATE	-1.64	-3.70	-4.46	-4.55	-4.56	-4.73
REAL WAGE RATE	0.94	0.65	1.12	1.83	2.40	2.71
TERMS OF TRADE	0.23	-0.78	-1.39	-1.48	-1.44	-1.47
GDP DEFLATOR	-2.52	-4.72	-6.26	-7.14	-7.66	-8.06
EMPLOYMENT ('000)	-157	-16	167	285	342	385
EMPLOYMENT % CHANGE	-0.64	-0.08	0.65	1.07	1.26	1.39
UNEMPLOYMENT ('000)	135	10	-136	-207	-219	-223
UNEMPLOYMENT RATE, CHANGE	0.50	0.05	-0.48	-0.07	-0.79	-0.79
LABOUR PRODUCTIVITY/HEAD	1.79	2.95	3.10	2.93	2.89	2.91
UTILIZATION RATE INDUSTRY	0.65	2.62	3.45	3.53	3.48	3.46
BUDGET SURPLUS (BN 1985 ECU)	-.338	4.232	7.865	9.563	10.045	10.707
BUDGET SURPLUS % GDP, CHANGE	-0.06	0.71	1.32	1.61	1.69	1.80
TRADE BALANCE (BN 1985 ECU)	-1.987	-1.883	-.130	1.645	2.907	3.601
TRADE BALANCE % GDP, CHANGE	-0.33	-0.32	-0.02	0.28	0.49	0.61
GR. OP. SURPLUS % GDP, CHANGE	1.13	1.52	1.03	0.39	-0.01	-0.21
REAL DISP. INCOME HOUSEHOLDS	1.17	1.68	2.11	2.34	2.60	2.80

Note to Annexes 2, 3 and 4:

The figures in the tables represent cumulative deviations from a baseline simulation. The table below indicates which variables are expressed in percentage deviations, and which variables are expressed in absolute differences.

List of variables

Volumes		
Private consumption	Percentage difference	
Government consumption	"	"
Gross fixed capital formation	"	"
- Government	"	"
- Residential	"	"
- Firms	"	"
Exports of goods and services	"	"
Imports of goods and services	"	"
Gross domestic product	"	"
Prices		
Private consumption price	"	"
Export price	"	"
Import price	"	"
Nominal wage rate	"	"
Real wage rate	"	"
Terms of trade	"	"
GDP deflator	"	"
Other		
Employment ('000)	Absolute difference	
Employment % change	Percentage difference	
Unemployment ('000)	Absolute difference	
Unemployment rate, change	" "	(% points)
Labour productivity/head	Percentage difference	
Utilization rate industry	Absolute difference (% points)	
Budget surplus (BN 1985 ECU)	"	"
Budget surplus % GDP, change	" "	(% points)
Trade balance (BN 1985 ECU)	"	"
Trade balance % GDP, change	" "	(% points)
Gr.op.surplus % GDP, change	" "	(% points)
Real disp.income households	Percentage difference	

ANNEX 5 <u>LIST OF STUDIES</u>

This annex provides the list of studies carried out by external consultants or universities and used for the simulations.

<u>Studies concerning specific types of barrier</u>

1. "The Cost of Non-Europe: Customs Barriers"
   Ernst & Whinney

2. "The Cost of Non-Europe in Public Sector Procurement"
   W.S. Atkins Management Consultants

<u>Studies concerning specific industries</u>

3. "The Cost of Non-Europe in the Foodstuffs Industry"
   Groupe MAC

4. "The Cost of Non-Europe: the Pharmaceutical Industry"
   Economists Advisory Group

5. "The benefit of True-Europe in the EC Automobile Sector"
   Ludwigsen Associates Limited

6. "The Cost of Non-Europe in the Textile-Clothing Industry"
   IFO-Institut für Wirtschaftsforschung, and Prometeia Calcolo Srl.

7. "Le coût de la Non-Europe des produits de construction"
   BIPE - Bureau d'informations et de prévisions économiques

<u>Studies concerning specific service sectors</u>

8. "The Cost of Non-Europe in Financial Services"
   Price Waterhouse Economic and Management Consultants

9. "The Cost of Non-Europe for Business Services"
   Peat, Marwick, McLintock

Studies based on particular analytical approaches

10. "The Completion of the Internal Market: a Survey of European Industry's Perception of the Likely Effects"
    G. Nerb, Directorate-General for Economic and Financial Affairs, Commission of the European Communities

11. "A Survey of the Economies of Scale"
    C. Pratten, Department of Applied Economics, University of Cambridge

12. "Economies of Scale and Intra-Community Trade"
    J. Schwalbach, International Institute for Management

13. "The Costs of Non-Europe: An Assessment based on a Formal Model of Imperfect Competition and Economies of Scale"
    A. Smith, University of Southampton, and A. Venables, University of Sussex

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No. 1   EEC-DG II inflationary expectations. Survey based inflationary expectations for the EEC countries, by F. Papadia and V. Basano (May 1981).

No. 3   A review of the informal economy in the European Community, by Adrian Smith (July 1981).

No. 4   Problems of interdependence in a multipolar world, by Tommaso Padoa-Schioppa (August 1981).

No. 5   European Dimensions in the Adjustment Problems, by Michael Emerson (August 1981).

No. 6   The bilateral trade linkages of the Eurolink Model : An analysis of foreign trade and competitiveness, by P. Ranuzzi (January 1982).

No. 7   United Kingdom, Medium term economic trends and problems, by D. Adams, S. Gillespie, M. Green and H. Wortmann (February 1982).

No. 8   Où en est la théorie macroéconomique, par E. Malinvaud (juin 1982).

No. 9   Marginal Employment Subsidies : An Effective Policy to Generate Employment, by Carl Chiarella and Alfred Steinherr (November 1982).

No. 10 The Great Depression : A Repeat in the 1980s ?, by Alfred Steinherr (November 1982).

No. 11 Evolution et problèmes structurels de l'économie néerlandaise, par D.C. Breedveld, C. Depoortere, A. Finetti, Dr. J.M.G. Pieters et C. Vanbelle (mars 1983).

No. 12 Macroeconomic prospects and policies for the European Community, by Giorgio Basevi, Olivier Blanchard, Willem Buiter, Rudiger Dornbusch, and Richard Layard (April 1983).

No. 13 The supply of output equations in the EC-countries and the use of the survey-based inflationary expectations, by Paul De Grauwe and Mustapha Nabli (May 1983).

No. 14 Structural trends of financial systems and capital accumulation : France, Germany, Italy, by G. Nardozzi (May 1983).

No. 15 Monetary assets and inflation induced distorsions of the national accounts - conceptual issues and correction of sectoral income flows in 5 EEC countries, by Alex Cukierman and Jørgen Mortensen (May 1983).

No. 16 Federal Republic of Germany. Medium-term economic trends and problems, by F. Allgayer, S. Gillespie, M. Green and H. Wortmann (June 1983).

No. 17 The employment miracle in the US and stagnation employment in the EC, by M. Wegner (July 1983).

No. 18 Productive Performance in West German Manufacturing Industry 1970-1980; A Farrell Frontier Characterisation, by D. Todd (August 1983).

No. 19 Central-Bank Policy and the Financing of Government Budget Deficits : A Cross-Country Comparison, by G. Demopoulos, G. Katsimbris and S. Miller (September 1983).

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No. 21 Actifs financiers et distorsions des flux sectoriels dues à l'inflation : le cas de la France, par J.-P. Baché (octobre 1983).

No. 22 Approche pragmatique pour une politique de plein emploi : les subventions à la création d'emplois, par A. Steinherr et B. Van Haeperen (octobre 1983).

No. 23 Income Distribution and Employment in the European Communities 1960-1982, by A. Steinherr (December 1983).

No. 24 U.S. Deficits, the dollar and Europe, by O. Blanchard and R. Dornbusch (December 1983).

No. 25 Monetary Assets and inflation induced distortions of the national accounts. The case of the Federal Republic of Germany, by H. Wittelsberger (January 1984).

No. 26 Actifs financiers et distorsions des flux sectoriels dues à l'inflation : le cas de l'Italie, par A. Reati (janvier 1984).

No. 27 Evolution et problèmes structurels de l'économie italienne, par Q. Ciardelli, F. Colasanti et X. Lannes (janvier 1984).

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