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## The Costs of Protection in the European Community

A study of EC trade policy in the coming decade should focus on the remaining peaks of protection because they are generating the highest domestic costs, and hottest international *and* domestic tensions. There is an additional reason for such a focus: most of the highly protected EC activities examined in detail in this chapter are similar to those listed by the study on the costs of protection in the US economy done by Hufbauer and Elliott (1994), suggesting that almost the *same* sectors in the OECD countries have been able to resist past trade liberalization. Many of these highly protected products are intermediate goods (used as inputs by EC producers) in which developing countries have comparative advantages. This concentrated survival of protection may reflect the limited participation of developing countries in past rounds of WTO negotiations, and the capacity of EC firms to “pass through” peaks of protection downstream to consumers.

During the WTO negotiations of the coming decade, reciprocity is unlikely to work with such round-immune, worldwide troublemaking sectors, which always argue that they are being hurt by a liberalization that they have been successful at aborting. *Unilateral* actions are necessary to cope with them. The first step in such actions is to recognize the problem at stake by revealing the domestic costs of protection of these highly protected sectors. This is the topic of this chapter.

The focus on EC high protection during the 1990s pinpointed 22 products and services (5 in agriculture, 14 in manufacturing, and 3 in services) characterized by a high rate of overall protection. The absence of available

information on the relations between these products and services, and between them and the rest of the economy, has made necessary the use of partial-equilibrium models to estimate the costs of protection, although such models can neither catch income effects nor the feedback effects from a better allocation of resources generated by freer trade (including dynamic interactions between economic growth and trade).

But a general-equilibrium approach requires quantitative information on the existing links between sectors—hence it is forced to rely on “pre-fabricated” sectors (generally derived from national accounts). This is a severe constraint when one focuses on trade negotiations because pre-fabricated sectors aggregate products under low and high levels of protection. The resulting *average* rates of protection by sector do not reflect peak rates, and thus they generate systematic and possibly large underestimates of protection costs (because those costs increase more than the level of protection; e.g., they are a function of the *square* of the rates of protection in the case of linear supply and demand functions).

The chapter provides two major results about the *magnitude* of the costs of protection for EC consumers. (The reasons for using the costs of protection for consumers as the preferred measure, in sharp contrast to the traditional approach, are explained in the section estimating the costs of protection in the perfect competition case). First, the estimated costs of protection in agriculture and manufacturing for EC consumers amount to 6 percent of the value added generated by these two sectors, when perfectly competitive markets are assumed in the protected sectors.

However, almost all the industrial products (12 of the 14) and a significant portion of the farm goods examined in detail in this chapter are produced under imperfect competition. Taking into account this aspect increases by one-third on average the protection costs of the highly protected goods involved, despite conservative assumptions about the extent to which trade liberalization would allow shifting to more competitive domestic markets. As a result, the protection costs of the *whole* EC agriculture and manufacturing sectors (including all the products not pertaining to the 19 highly protected goods examined) would amount to 7 percent of the corresponding value added.

Second, estimating the costs of protection in the three services examined in detail suggests even higher figures—almost one-sixth of the corresponding value added. Introducing imperfect competition doubles these estimates. However, because the three services represent only a small proportion of all tradable services, these estimates have not been extrapolated to the whole EC service sector. But they suggest that the costs of EC protection (goods *and* services) could easily represent 7 percent of the *entire* EC GDP—the equivalent of the Spanish GDP.

These results deserve a caveat and a remark. The caveat is that the above estimates assume that the Single Market is working effectively—that there are no substantial nonborder barriers left in *intra-EC* trade. This

assumption is still not fulfilled for a noticeable number of goods because norms, standards, and other kinds of technical regulations still constitute substantial barriers to trade (see chapter 4). And it is a heroic assumption for services, simply because intra-EC liberalization in services is only two to three years old, and quite incomplete (see chapter 5). This caveat suggests the following remark. The *level* of EC protection may be similar to what exists in the other Quad countries (see chapter 2), but this does not imply that the *costs* of protection are similar. Relatively high and frequent remaining intra-EC barriers are likely to allow more imperfect competition in the EC Single Market than in the “single” markets of the other Quad countries. Hence they are likely to make protection more costly in the EC than in the other Quad countries.

Asking for protection (and granting it) has one essential motive: to generate domestic income *transfers*. Analyzing protection would thus be incomplete without assessing the main winners and losers in the EC. In this respect, the chapter provides two major results. First, contrary to a belief widespread in Europe, protection is a costly instrument for “saving” jobs. Only a few jobs—roughly 3 percent of the total number of jobs existing in the 22 sectors involved—are estimated to have been possibly saved by the high protection granted to these sectors. The combination of high costs of protection for EC consumers and few jobs saved leads to an astronomical average annual cost per job saved: roughly €220,000, or 10 times the European average wage of the sectors in question. If saving jobs is the issue at stake, it must—and can—be addressed by more efficient policies than trade protection.

Second, the instruments of import protection used by the EC have the crucial—and very undesirable—feature of granting large rents to vested interests. In fact, estimated rents are *larger* than tariff revenues collected by the EC authorities. For the 22 products and services examined in detail, rents represent 30 percent (if one minimizes the likelihood of the existence of such rents) to 40 percent (if one makes more plausible guesses about existing rents) of the total costs of protection for EC consumers—relative to 24 and 13 percent, respectively, for tariff revenues.

Of course, the existence of such rents is not specific to the EC, as is illustrated by the following remark made in the US context: “Special interests seeking protection have ‘captured’ trade policy and moved it away from the domain of public good” (Krueger 1992). But again their magnitude might be specific to the EC, to the extent it reflects more frequent situations of imperfect competition—hence EC protection is more “captured” by vested interests with strong incentives and means to keep the external protection unchanged *and* to slow down the emergence of more competitive EC markets (for a description of such vested interests in the EC, see Pedler and van Schendelen 1994).

These conclusions fly in the face of the traditional views about protection and liberalization in Continental Europe, where protection is often

perceived, and justified, as an expression of some kind of “public interest” (e.g., strategic goods, cultural differences, social stability, etc.) and where free trade is widely seen as favoring narrow-minded “private” interests. The above results suggest that the reality of European protection is quite the opposite. Massive private rents are derived from protection by a happy few, and resulting large costs are imposed on many European consumers, who may be beginning to realize this point, as is illustrated by the tone less favorable to farmers during the March 1999 debate on reforms in EC agriculture (see chapter 4). However, vested interests may be quick to adjust to this recent evolution by adopting a “smiling” face to promote protection—for instance, by flaunting themselves as protectors of the environment or food safety, despite the abundant evidence showing quite the contrary.

This chapter is organized as follows: the first section below presents a brief review of the 22 highly protected sectors examined in detail. The second section estimates the costs of protection for these sectors, and for the rest of the EC output of goods aggregated in one sector, in a perfect-competition framework that allows comparisons with the Hufbauer-Elliott study (1994) on the costs of US protection. The third section reestimates these costs for an imperfect-competition environment more appropriate to the EC economy. Last, the fourth section looks at three adjacent issues: the stability of protection in the 22 sectors during the 1990s, the possibility of terms-of-trade effects reducing the costs of protection for the EC, and the relative impact of “preferential” (compared with multilateral) liberalization.

## **Twenty-two Highly Protected EC Sectors: A Presentation**

Table 3.1 lists the 22 EC products and services highly protected in 1990, and appendix A gives a detailed description of protection for each. The list does not cover all the EC highly protected sectors. Ideally, at least half a dozen manufacturing sectors (fishing, beverages, coal, nonferrous metals, footwear and leather products, glass, machine tools, pharmaceuticals, shipbuilding, and aerospace) could have been added, as well as many service sectors.<sup>1</sup> However, lack of data about the exact level of protection and the economic performances of these sectors has prevented doing so. Because the 22 sectors involve both intermediate and final goods or services (in fact, most are intermediate), EC consumers should be understood as both households (consumers of final goods and services) *and* firms (consumers of intermediate goods and services)—a key point, because trade in intermediate goods accounts for a substantial percentage of EC and world trade.

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1. WTO, *Trade Policy Review: The European Union*, 2000, provides information on some of these highly protected sectors (electrical equipment, pharmaceuticals, shipbuilding, and aerospace).

**Table 3.1 Characteristics of 22 highly protected sectors, 1990**

Sector	Additional protection initiated by European Community (period)	Domestic shipments (millions of euros)	Imports (c.i.f. and duties paid) (millions of euros)	Average annual percentage change of imports, 1988-90	Number of workers (thousands)	Estimated value added <sup>a</sup> (millions of euros)	Estimated average wages <sup>b</sup> (euros)
Cement	1985	9,171.8	291.2	35.2	58.0	3,810.5	23,466
Fertilizers	1980	1,413.4	1,937.9	8.0	28.0	488.4	34,361
Low-density polyethylene	1982	6,957.6	1,407.0	25.9	34.0	2,404.1	34,361
Polyvinyl chloride	1981	4,069.6	597.7	35.6	18.0	1,406.2	34,361
Hardboard	1986	7,904.2	2,635.7	5.5	71.0	2,845.2	15,038
Newsprint <sup>c</sup>		1,782.7	2,436.9	3.2	14.0	778.1	25,026
Chemical fibers	1960s	9,117.2	1,942.0	8.1	71.8	3,150.3	34,361
Videocassette recorders	1982	1,794.4	710.8	-28.8	16.0	797.8	27,464
Integrated circuits	1987	1,989.8	4,606.0	4.1	41.6	715.4	25,481
Photocopiers	1985	1,274.9	962.1	7.4	24.0	667.9	23,909
Steel	1970s	58,588.7	4,994.2	11.7	379.4	18,584.3	26,086
Passenger cars	1970s	92,702.5	10,567.4	9.5	1,229.0	27,359.6	28,404
Textiles	1960s	112,580.5	21,353.0	8.5	1,636.5	43,539.4	15,508
Clothing	1960s	64,569.8	18,096.4	15.1	1,234.6	25,112.0	12,213
Cereals	1960s	22,572.0	1,382.4	-0.2	1,134.0	15,013.8	13,725
Meat	1960s	24,864.0	2,767.0	7.5	946.1	16,538.3	16,063
Dairy products	1960s	27,597.9	1,462.4	1.7	36.9	18,356.8	18,760
Sugar	1960s	5,073.0	1,789.0	2.3	275.1	3,374.3	13,680
Bananas <sup>d</sup>	1993	376.4	1,188.0	17.1	25.0	250.4	7,000
Films (France)	1986	206.9	563.5	15.9	21.7	137.9	25,000
Air transport <sup>c</sup>		27,536.6	18,869.9	6.8	296.8	18,357.7	30,000
Telecoms <sup>c</sup>		62,751.0	4,700.6	17.6	703.3	41,834.0	25,562

(table continues next page)

Table 3.1 Characteristics of 22 highly protected sectors, 1990 (continued)

Sector	Additional protection initiated by European Community (period)	Domestic shipments (millions of euros)	Imports (c.i.f. and duties paid) (millions of euros)	Average annual percentage change of imports, 1988-90	Number of workers (thousands)	Estimated value added <sup>a</sup> (millions of euros)	Estimated average wages <sup>b</sup> (euros)
<b>Totals for the 22 sectors, by economic activity</b>							
Agriculture		80,483.3	8,588.8	5.1	2,417.1	53,533.6	14,642
Manufacturing		373,917.1	72,538.3	9.6	4,855.9	131,659.2	19,632
Market services		90,494.5	24,134.0	9.1	1,021.8	60,329.7	26,839
Total		544,894.9	105,261.1	9.2	8,294.8	245,522.4	19,066
<b>Sectors, in percentage of the corresponding activities</b>							
Agriculture		40.1	17.7		29.3	40.1	97.6
Manufacturing		11.0	15.7		14.9	10.9	85.4
Market services <sup>e</sup>		2.4	13.4		2.3	2.4	117.2
Total		7.4	15.2		9.6	6.4	86.3

c.i.f. = cost, insurance, freight

ISIC = International Standard Industrial Classification.

a. Estimates for manufacturing sectors are based on the ratio (value-added/production) for the corresponding ISIC sectors. For farm products, they are based on the ratio (value-added/production) for the whole agricultural sector. For services, they are based on the ratio (value-added/production) for the whole service sector.

b. Estimates based on ISIC average wages (manufacturing), and on sectoral data for the other sectors.

c. Member-state protection still dominant by 1990.

d. Both production and distribution.

e. Excluding nonmarket services.

Sources: Case studies in appendix A; European Commission (1995).

Table 3.1 shows that protectionist measures at the Community level were granted to these sectors a long time ago (mostly during the 1960s and early 1970s). Table 3.2 shows that barriers are very high (with protection peaks in ISIC sectors that table 2.1 did not present as highly protected): 15 of the 22 sectors have an overall protection rate higher than 30 percent, and 19 sectors have an overall protection rate higher than 15 percent. The fourth section below provides detailed information showing the stability of protection in these 22 sectors during the 1990s. It shows that the estimated costs of protection in terms of value added are stable since the relative sizes of the sectors examined have not substantially changed during the past decade (highly protected services taking the little room left by less highly protected agriculture and manufacturing sectors), and since there is no reason to believe that other parameters, e.g., elasticities or degree of labor mobility, have profoundly changed.

As table 3.1 shows, domestic shipments of the 22 sectors represent almost 7.5 percent of total EC production. This coverage varies widely by economic activity. The farm sectors on the list cover almost 40 percent of EC farm output, whereas the manufacturing sectors represent 11 percent of EC industrial production (mostly because of steel, passenger cars, and textiles and clothing), and the three service sectors account for only 3 percent of the EC production of "market services."<sup>2</sup> However, looking at the *relative* magnitude of these sectors is also important for getting a sense of the costs of protection to be expected. The combined production of the 14 listed industrial sectors is almost five times larger than the combined output of the listed farm sectors, and the combined production of the three service sectors is larger than the farm output. In other words, manufacturing and service sectors with such large pockets of high protection should be expected to be a substantial source of high costs of protection.

In manufacturing, the coverage of protection in terms of workers is higher than in terms of production, mirroring the concentration of EC protection in labor-intensive industrial sectors. This is not the case in the farm and service sectors; but in the early 1990s, none of these sectors was exposed to domestic regulatory reform, not even to mention liberalization and foreign competition.<sup>3</sup> Although less precise, the evidence about average wages provided by table 3.1 is consistent with the above remarks. Wages in the highly protected manufacturing sectors are, on average,

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2. Market services range from distribution to transport, financial services, professional services of all kinds, market-based health, and education services. They represented more than 52 percent of the EC GDP in 1990 (more than 57 percent in 1995–96) (OECD 1998b). Their importance explains the small coverage (in percentage) of the three sectors examined. Non-market services represented less than 13 percent in 1990 (as in 1995–96).

3. The figure for farmers deserves a remark. In 1990, of a total of 8.2 million farmers in Europe, there were only 4.5 million "professional" farmers (i.e., farmers selling to markets on a regular basis). The other farmers produced for their own consumption (retired people or gardeners), but were nevertheless entitled to some benefits of the Common Agricultural Policy.

Table 3.2 Estimated welfare effects of liberalizing the 22 protected sectors: The perfect-competition case

Sector	Overall ad valorem tariff equivalent (percent)	Induced increase in (c.i.f.) imports (millions of euros)	Breakdown of the consumer surplus gain (A2)					Net national welfare gain <sup>b</sup> (F = D + E) (millions of euros)	
			Consumer surplus gain		Producer surplus <sup>b</sup> (millions of euros)	Tariff revenue <sup>a,b</sup> (C) (millions of euros)	Quota rent <sup>a,b</sup> (D) (millions of euros)		Efficiency gain (E) (millions of euros)
			A1 <sup>a</sup> (millions of euros)	A2 <sup>b</sup> (millions of euros)					
Cement	22.8	84.3	99.3	78.0	14.4	9.0	45.0	9.6	54.7
Fertilizers	32.7	479.7	829.2	641.6	86.0	477.3	0.0	78.5	78.5
Low-density polyethylene	12.5	557.0	265.6	300.0	108.9	156.3	0.0	34.8	34.8
Polyvinyl chloride	12.5	252.0	120.0	132.0	49.8	66.4	0.0	15.7	15.7
Hardboard	25.0	798.4	830.1	739.1	112.8	239.6	286.8	99.6	386.4
Newsprint	7.0	159.9	82.2	191.5	26.6	159.4	0.0	5.6	5.6
Chemical fibers	22.9	686.0	433.1	580.1	138.9	362.4	0.0	78.7	78.7
Videocassette recorders	30.2	442.3	289.4	313.1	81.7	164.7	0.0	66.7	66.7
Integrated circuits	47.6	2,373.3	3,462.6	2,187.4	138.6	547.7	936.4	564.2	1,500.6
Photocopiers	33.7	394.2	287.1	313.5	4.8	242.4	0.0	66.4	66.4
Steel	21.9	3,043.8	2,423.1	1,626.1	396.5	228.7	667.7	333.1	1,000.8
Passenger cars	17.1	3,223.9	2,402.5	2,100.8	277.9	978.5	568.5	275.8	844.3
Textiles	21.4	6,275.0	5,954.0	7,095.6	2,677.7	1,742.4	2,007.2	668.3	2,675.5
Clothing	31.3	6,891.4	7,655.4	7,102.8	1,711.9	1,695.6	2,618.5	1,078.5	3,697.1
Cereals	63.0	2,996.8	2,792.0	3,211.9	1,770.2	497.7	0.0	944.1	944.1
Meat	95.0	2,766.6	4,998.8	4,108.4	1,599.5	1,194.9	0.0	1,314.0	1,314.0
Dairy products	104.0	1,842.1	3,643.6	2,717.2	1,061.7	697.7	0.0	957.8	957.8
Sugar	117.0	3,942.1	4,040.6	4,268.3	979.5	982.7	0.0	2,306.1	2,306.1
Bananas	81.9	448.4	1,076.5	824.6	106.0	136.6	398.3	183.7	582.0

Films (France)	76.8	280.0	547.9	406.4	54.1	35.0	209.7	107.5	317.3
Air transport	71.0	2,289.5	9,414.3	8,761.3	113.2	1,654.9	6,179.9	813.3	6,993.2
Telecom	45.2	5,740.6	5,887.8	3,929.7	1,169.0	0.0	1,463.3	1,297.4	2,760.7
<b>Totals for the 22 sectors, by economic activity<sup>c</sup></b>									
Agriculture	90.4	11,996.0	16,551.4	15,130.4	5,516.8	3,509.5	398.3	5,705.7	6,104.1
Manufacturing	22.2	25,661.2	25,133.7	23,401.7	5,826.5	7,070.4	7,130.2	3,375.6	10,505.8
Market services	53.1	8,310.1	15,850.0	13,097.4	1,336.4	1,689.9	7,852.9	2,218.2	10,071.1
All 22 sectors	37.4	45,967.3	57,535.1	51,629.5	12,679.7	12,269.9	15,381.5	11,299.5	26,680.9
<b>The sector producing the rest of the goods<sup>d</sup></b>									
Tariffs and nontariff barriers	6.1	54,679.6	35,352.5	41,162.3	15,212.2	13,848.6	10,482.3	1,661.8	12,144.2
Only tariffs	3.4	30,755.4	13,263.0	22,984.9	8,603.7	13,840.8	0.0	540.3	540.3

c.i.f. = cost, insurance, freight

a. Based on Francois-Hall (1997) model.

b. Based on Hufbauer-Elliott (1994) model.

c. Tariffs are shipment-weighted tariffs of the corresponding 22 sectors.

d. This sector excludes all services.

Sources: Case studies in appendix A; European Commission (1995); author's computations.

lower than the average industrial wage—mirroring the expected wage differentials between export (capital-intensive) sectors and import-competing (labor-intensive) sectors in a relatively capital-abundant economy like the EC. The same relation holds, less clearly, in agriculture, but not in market services (again probably reflecting the highly regulated environment of these activities).

All 22 sectors but one have experienced (and are still experiencing) severe problems with intensity of competition in EC markets. Farm products are covered by the “common market organizations” (see chapter 4) and by a host of related institutions that severely limit competition (from farm trade unions to cooperatives in banking, in input purchasing, and in product marketing) and by a trade regime that generates anticompetitive situations (particularly in distribution; see Abbott 1998 and appendix A, cases 15, 18, and 19) to such an extent that many observers consider EC major farm goods as subject to a quasi state-trading regime. In manufacturing, all the listed sectors have been subject to long-lasting “crisis cartels” (chemical fibers, steel), to fines for repeated collusive or anticompetitive behavior (cement, basic chemicals, passenger cars), or to both, leaving only clothing as a sector not too much plagued by anticompetitive behavior.

Last, the three listed market services illustrate the three main imperfectly competitive situations existing in EC services: public firms in a highly regulated environment (air transport); public monopolies or dominant firms (telecommunications); and a small oligopoly with a fringe of tiny competitive firms in a hyper-subsidized and -regulated environment (filmmakers). These observations strongly suggest the merit of estimating the costs of protection for European consumers not only in a perfect-competition situation (see the next section) but also in an imperfect-competition environment (see the following section). The difference between these two estimates could be interpreted as reflecting at least partly the additional costs of the absence of a fully functioning Single Market, given prevailing EC external barriers on imports from the rest of the world.

## **Costs of Protection: The Perfect-Competition Case**

Table 3.2 presents the costs of EC protection estimated with two alternative models. Using the Hufbauer-Elliott model (1994), adopted in the study on the costs of protection in the United States, allows a direct comparison with their results for the US economy. The model, described in more detail in appendix C, assumes that domestic and imported goods are not perfect substitutes, that the supply of imported goods is perfectly elastic, and that the supply of domestic goods is less than perfectly elastic. (Appendix A provides detailed information about the elasticities used

for each product and service). The cross-elasticities of demand have been calculated by using the modified Cournot aggregation condition (Tarr 1990) based on three basic price elasticities (for total domestic demand, domestic supply, and foreign supply) and on the elasticity of substitution between domestic and imported goods.

The fact that such a model cannot take into account input costs (by construction) has two implications. First, it misses an important reason for asking for protection: in order not to be squeezed by high protection on their inputs, producers request high protection on their outputs (for lowering effective protection). Second, the production-generated rents revealed by the model may be captured not by the producers directly involved, but by input owners—as is best illustrated by the case of farm products (most of the rents are going to landowners and other providers of essential inputs, e.g., capital, distribution services, or holders of licenses to produce; see chapter 4). The use of the Francois-Hall model (1997) has two motives (also described in appendix C): first, it allows for testing the robustness of the results obtained by the Hufbauer-Elliott model; second, it allows for analyzing two important adjacent issues, namely, the possible impact of terms-of-trade effects on the costs of protection in the EC, and the gains from “preferential” liberalization compared with those from multilateral liberalization (see the last section, below).

This section (and the rest of the chapter) highlights one measure of the costs of protection: those costs paid by EC consumers. This focus deserves an explanation because, as is well known, costs for consumers are the widest possible definition of protection costs; they include tariff revenues and rents to firms that are usually analyzed as pure transfers between nationals of the country in question, and consequently usually are not considered costs for the economy. By contrast, the traditional approach limits protection costs to the “efficiency gains” (the Harberger triangles) generated by the elimination of the misallocation of resources imposed by protection. However, this usual approach does not fit the EC case very well, for two reasons.

The first reason is related to nontariff-barrier rents. Are these rents transfers between domestic consumers and producers, are they collected by foreign (or even “domestic”) firms shifting them to the rest of the world, or do they consist of real trade costs? Three observations can be made: (1) Certain nontariff barriers (NTBs) for the 22 products and services are equivalent to voluntary export restraints generating rents captured by foreign firms (see appendix A). (2) Other NTBs are closely related to technical regulations aimed at raising rivals’ costs (see chapter 4). (3) The upholding of many NTBs during the long communitarization process has required a lot of effort and money-wasting resources and created “directly unproductive profit-seeking” activities. For all these reasons, adding rents to efficiency gains in order to get the “net national welfare gain” (following the Hufbauer-Elliott [1994] terminology) in a substantial

number of the 22 products and services provides a better indicator of gains from trade liberalization than narrowly defined efficiency gains.

The second reason relates to tariff revenues. It flows from the fact that the EC is not (yet) a “country.” Are tariff revenues then a transfer from “Europeans” to the Community budget, or are they a transfer from consumers of one member-state to the budget of another member-state—and hence a cost of protection from the first state’s point of view? One could argue that this question is irrelevant because the pooling of tariff revenues by the EC implies that, ultimately, consumers in one member-state benefit from tariff revenues raised from consumers in another member-state. However, such an outcome is far from being assured. EC decisions in trade-related matters are also the outcome of hard bargaining between member-states; hence, they increase real trade costs and/or generate directly unproductive profit-seeking activities. Moreover, a substantial proportion (40 percent) of EC tariff revenues is spent on EC international actions or on costs for levying tariffs (as a matter of fact, low EC tariffs do not cover the costs of levying them). For all these reasons, including tariff revenues in the costs of protection does not appear, in the EC case, an unreasonable approach.

In sum, the costs of protection for European consumers look, on the whole, like a more accurate indicator than the usual narrowly defined efficiency gains. In any case, table 3.2 provides separate estimates for all basic components of the costs of protection, so that the reader can find his or her preferred measure. Globally, it shows that the estimated “efficiency gains” from liberalizing trade in the 22 sectors represent one-fourth, and the estimated “net national welfare gain” one-half, of the estimated “costs of protection for EC consumers.”

## Overview of Costs

In 1990, the estimated costs of protection for European consumers in the 22 sectors and in the rest of the EC goods-producing sector amounted to €92–93 billion—depending upon the model used, and taking into account the NTBs imposed in the EC sector producing the rest of the goods.<sup>4</sup>

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4. The “sector producing the rest of the goods” consists of the farm and industrial goods not listed in the 22 sectors, but excludes services (as in the Hufbauer-Elliott [1994] study). It deserves a remark because chapter 3 is based on *applied* tariffs (not on MFN-bound tariffs, as in chapter 2). According to Sapir (1998), 21.3 percent of EC imports (subject to MFN nonzero tariffs) are coming from sources benefiting from an EC “preferential” zero tariff, and 8.3 percent from GSP sources. The GSP complexity makes it difficult to estimate the average applied tariff (see chapter 6); what follows assumes that half of GSP trade benefits are from an EC zero tariff, and the rest from no preference at all. As a result, 25 percent of the imports of goods (21 percent for zero-tariff trade and 4 percent for GSP trade) competing with the sector producing the rest of the goods have been assumed to be subject to an EC zero tariff, leading to an *applied* tariff of 3.4 percent (corresponding to the MFN-bound tariff of 4.6 percent).

This sum represents roughly 6 percent of the corresponding value added, and 55 to 60 percent of these costs are due to the protection of the 22 sectors alone—underlining the necessity of focusing on protection peaks during the next round.

These estimates are larger than the costs of protection in the United States estimated by Hufbauer and Elliott (1994) at \$70 billion (€55 billion, at the 1990 exchange rate) for the same year (1990). However, this difference is substantially reduced by two adjustments. First, the Hufbauer-Elliott study does not take into account NTBs and antidumping measures existing in the sector producing the rest of the goods; it estimates the costs of protection in this sector on the basis of the average tariff (3.5 percent) alone. The same approach in the EC would reduce the estimated costs of protection for European consumers to €71–74 billion by using a 3.4 percent average tariff (instead of a 6.1 percent rate of overall protection). Second, estimating the costs of protection in agriculture on a CSE basis (and not on the basis of CSE-based tariffs), as was done in the Hufbauer-Elliott study, would further reduce the EC costs of protection to €60–65 billion (as is mentioned in chapter 2, CSEs and CSE-based tariffs are very different in the EC case). These two adjustments lead to relatively similar costs of protection for the two countries—if one assumes a perfectly competitive environment within the EC (a key caveat, as seen below).

## Costs by Sector

Table 3.2 provides three results. First, it confirms the importance of the costs of protection for European consumers of farm products (a well-known result). The costs of protecting the five farm sectors examined in detail represent roughly a fourth of the costs of EC protection in goods only, or almost a third of the value added for the five sectors. Assuming that the level of protection for other farm products is similar to the level (6.1 percent) for the sector producing the rest of the goods (a conservative assumption), the costs of EC protection for all farm products represent roughly 12 percent of EC total farm value added.

Second, the costs of protection in the 14 listed manufacturing sectors represent almost one-fifth of the value added of these sectors—and they are higher (in euros) than the costs for farm products. The costs of protection for the whole manufacturing sector (the 14 listed sectors plus the industrial activities included in the rest of the goods-producing sector) amount to roughly 5 percent of the corresponding value added. These results strongly suggest that industrial products should be an important component of the negotiations of the coming round—not for the sake of reciprocity (as is often said), but as a source of large additional welfare gains for the EC. If one adds together agriculture and manufacturing, the protection costs for

European consumers amount to roughly 6 percent of the total EC value added in all the goods-producing sectors of the Community.

The last result for sectors provided by table 3.2 concerns services. Lack of data on the most efficient world service producers imposes a different interpretation of the models used. The costs of protection are estimated on the basis of the lowest *prices* available in the world, with no assurance that these prices reflect the lowest possible *costs* of production (in contrast to sectors producing goods).<sup>5</sup> Moreover, the small number of services included in the 22-sector list requires additional caution about the interpretation of the results obtained. Bearing these caveats in mind, the costs of protection for European consumers in the three service sectors considered represent 16 percent of their value added (with a huge peak in the French film case, where costs for French viewers are larger than the value added, and where the efficiency gains alone represent 80 percent of the value added).

### Major Beneficiaries of Transfers from Protection

The preceding section focused on the losers from protection: European consumers (again, households *and* firms). What follows looks at the beneficiaries of protection-based transfers. Table 3.2 is based on three very conservative assumptions for splitting protection costs between tariff revenues and rent-based barriers in each sector: (1) The CSE-based tariffs are interpreted as “real” tariffs (see chapters 2 and 4). (2) Antidumping measures are assumed to generate no rents, despite the fact that antidumping cases are often terminated (at least partly) by “undertakings” that consist of voluntary export restraints in terms of maxima quantities or minima prices, hence in rent-generating instruments, as documented in appendix B. (3) Certain tax revenues (e.g., seat taxes in movie theaters) are conceived of as equivalent to tariffs, although they are not registered as such.

Under these assumptions—which maximize tariff revenues and minimize rents—table 3.2 shows that roughly only 24 percent of the costs of protection in the 22 highly protected sectors is collected in the form of tariff revenues, whereas estimated NTB rents amount to 30 percent of these costs. Less conservative assumptions about the breakdown between tariffs and rents in fertilizers, chemical fibers, consumer electronics (videocassette recorders and photocopiers), agriculture, and services would boost quota rents to 40 percent of the costs of protection for EC

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5. An important lesson of recent regulatory reform in services is that costs have often been cut by much more than initially expected, as is illustrated by the long and wide British experience (Armstrong, Cowan, and Vickers 1994) or by EC telecommunications (see appendix A, case 21).

consumers (and reduce tariff revenues to 14 percent) in the 22 sectors examined in detail.<sup>6</sup>

Again, this last result is essential in the European context, where protection is often justified on the basis of the “public interest,” whereas free trade is often considered as favoring “private” interests. In fact, vested private interests are able to benefit from a large proportion of the protection costs imposed on EC firms and households. Hence, they are strongly induced to keep untouched the level and instruments of protection.

## Small Domestic Price Increases, High Costs of Protection

European debates on protection often rely on the assertion that a small change of 1 or 2 percent in domestic prices generates insignificant protection costs. This argument is routinely illustrated by the many EC antidumping proceedings, which, when the “interest of the Community” not to impose antidumping measures is discussed, state that high antidumping measures create no severe damage to the EC economy because they generate only small price changes (see the antidumping proceedings published in the EC *Official Journal* reporting the discussion about the interest of the Community clause). In sharp contrast to this frequent assertion and in accordance with economic analysis, connecting the costs of protection (table 3.2) to the corresponding price changes (table 3.3) shows that indeed, small price changes can generate high costs of protection.

## Protection and Jobs

A frequent argument for protection (and a particularly powerful one in the sluggish European continental economies of the 1990s) is that protec-

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6. Tariff revenues officially reported for 1990 amount to only €13 billion (Court of Accounts, EC, *Official Journal*, 1996, C340, 25). Under the initial assumptions about the breakdown between tariff revenues and rents (24 and 30 percent, respectively), the estimated tariff revenue losses would amount to €25 billion. Under the revised assumptions (14 and 40 percent, respectively), they would still amount to €18–19 billion. Further adjustments could be made on the basis of preferential tariffs in textiles and clothing under the GSP or Lomé conventions, and in all manufactured goods under the European Economic Area (EEA) Agreement (see chapter 6). Such preferential tariffs would reduce tariff revenues by €2–4 billion more, without reducing protection costs (exporters enjoying such preferential tariffs are induced to keep them for their own profits, and to limit the passthrough to EC consumers as much as possible). All these adjustments suggest tariff revenues estimated at €14–16 billion, a figure close enough to the official figure to be seen as mirroring the real situation. Hagdahl (1996) has underlined the fact that many tariffs will not be profitable for the Community by the year 2005. All this suggests that the main *raison d'être* of tariffs is not to provide revenues but to hide peak protection rates (protecting well-targeted sectors) behind a forest of low tariffs. However, low tariffs may still generate a costly protection if there is multiple crossing of borders due to the fact that the successive stages of the production process are located in different countries (in order to get the full benefits of comparative advantages).

Table 3.3 Estimated price and employment effects of liberalization: The perfect-competition case

Sector	Changes in domestic prices		Decrease in jobs <sup>b</sup>		Consumer gain per saved job <sup>b</sup>		Efficiency gain per saved job <sup>b</sup>	
	Francois-Hall model <sup>a</sup> (percent)	Hufbauer-Elliott model <sup>b</sup> (percent)	Number	As percent of jobs	Thousands of euros	As a proportion of average wage	Thousands of euros	As a proportion of average wage
	Cement	-0.15	-0.16	91	0.2	857.1	36.5	105.5
Fertilizers	-2.37	-6.49	3,514	12.6	182.6	5.3	22.3	0.7
Low-density polyethylene	-1.60	-1.59	1,072	3.2	279.9	8.1	32.5	0.9
Polyvinyl chloride	-1.27	-1.24	443	2.5	52.9	1.5	35.4	1.0
Hardboard	-2.24	-1.43	511	0.7	611.1	40.6	194.9	13.0
Newsprint	-1.18	-1.50	210	1.5	800.2	32.0	26.7	1.1
Chemical fibers	-1.62	-1.53	1,102	1.5	526.4	15.3	71.4	2.1
Videocassette recorders	-4.87	-4.89	746	4.7	419.7	15.3	89.4	3.3
Integrated circuits	-3.35	-7.52	6,027	14.5	366.4	14.4	93.6	3.7
Photocopiers	-4.92	-0.38	90	0.4	3,483.3	145.7	737.8	30.9
Steel	-0.72	-0.68	5,152	1.4	315.6	12.1	64.7	2.5
Passenger cars	-0.31	-0.30	3,694	0.3	568.7	20.0	74.7	2.6
Textiles	-2.42	-2.41	39,383	2.4	180.2	11.6	17.0	1.1
Clothing	-2.88	-2.69	33,160	2.7	214.2	17.5	32.5	2.7

Cereals	-10.42	-8.01	46,341	4.1	69.3	5.0	20.4	1.5
Meat	-7.58	-6.54	40,695	4.3	116.5	7.3	32.3	2.0
Milk (manufactured)	-4.78	-3.89	837	2.3	3,246.4	173.0	1,144.3	61.0
Sugar	-34.90	-20.41	29,129	10.6	146.5	10.7	79.2	5.8
Bananas	-29.27	-30.71	4,190	16.8	196.8	28.1	43.8	6.3
Films (France)	-30.40	-30.91	6,721	30.9	60.5	2.4	16.0	0.6
Air transport	-2.31	-0.41	609	0.2	14,386.4	479.5	1,335.5	44.5
Telecommunications	-2.23	-1.90	19,933	2.8	197.1	7.7	65.1	2.5
<b>Totals for the 22 sectors, by economic activity<sup>c</sup></b>								
Agriculture	-17.39	-13.91	121,192	5.0	124.8	8.5	47.1	3.2
Manufacturing	-2.14	-2.34	95,195	2.0	245.8	12.5	35.5	1.8
Market services	-11.65	-11.07	27,263	2.7	480.4	17.5	81.4	3.0
Total	-6.90	-6.16	243,650	2.9	211.9	11.1	46.4	2.4
<b>Sector producing rest of the goods</b>								
Tariffs and nontariff barriers	-0.47	-0.49	179,636	0.5	229.1	10.3	9.3	0.4
Only tariffs	-0.26	-0.28	101,732	0.3	225.9	10.1	5.3	0.2

a. Based on the Francois-Hall (1997) model.

b. Based on the Hufbauer-Elliott (1994) model.

c. Unweighted averages

Sources: Case studies in appendix A; European Commission (1995); author's computations.

tion “saves” jobs, despite economic analysis showing the poor capacity of protection to save jobs. It is thus important to estimate the number of jobs that would have been eliminated in the highly protected sectors, if protection had been removed. (Of course, a partial-equilibrium analysis focusing on import-competing sectors ignores the number of jobs that would have been *created* in the exporting sectors by a more open European economy; and it treats changes in jobs as proportional to changes in shipments, because factor incomes are assumed fixed.) Under these assumptions, table 3.3 shows that EC protection has saved very few jobs, even in the highly protected sectors—roughly 250,000 jobs, or 3 percent of the total number of jobs existing in these 22 sectors. The number of jobs saved as a percentage of the total number of jobs varies widely by sector (in certain sectors, it is almost negligible).

Dividing the estimated protection costs by the estimated number of jobs saved provides the average cost of protection by job saved. Table 3.3 shows that, in many sectors, this average cost amounts to several hundreds of thousands of euros—roughly 10 times the corresponding sectoral wage, with huge peaks in some sectors. Relating the number of jobs saved to efficiency gains (the narrowest definition of protection costs) reduces the costs per job saved by one-fourth, but it does *not* change the conclusions for policy: saving jobs by protecting the 22 sectors would cost 2.5 times the average wage. These results strongly suggest that, if saving jobs is the issue at stake, it has to (indeed, it can) be addressed by more efficient policies than trade protection.

### **Costs of Protection: The Imperfect-Competition Case**

Jacquemin and Sapir (1991) have provided clear evidence that extra-EC—*not* intra-EC—liberalization has been the key factor in introducing more competitive disciplines into the EC economy. Only extra-EC imports have exerted a significant disciplinary effect on price-cost margins. (Intra-EC imports have exerted some noticeable disciplinary effects in only a few sectors with high intra-EC NTBs, but none of these sectors pertains to our 22-sector list.) This result echoes studies showing the continuing existence of “border effects” *within* the Community (Krugman 1991; Sapir 1996). The ad valorem tariff equivalent of such effects has been recently estimated as large: roughly 37 percent (Head and Mayer 1999). Different consumer preferences *and* restrictive business practices (including alliances among EC firms aimed at keeping stable market shares in the various EC member-states in the context of weak EC anticartel enforcement; see chapter 5) are major candidates for explaining these intra-EC obstacles.

The section thus aims to estimate the costs of protection in the EC in an imperfect-competition environment. It is based on a partial-equilibrium model elaborated by Atje and Hufbauer (1996). The model estimates the effects of a decrease in protection *cumulated* with a shift from imperfectly competitive market structures to more competitive ones by considering four alternative basic market structures: perfect competition (in this case, the model boils down to the above Hufbauer-Elliott model [1994]), monopolistic competition between eight firms, monopolistic competition between four firms, and monopoly.

## Assessing Market Structures

A preliminary task is to assess the market structure prevailing under protection (the “initial” market structure), and to define the market structure that would prevail after trade liberalization in the EC market in question (the “final” market structure). Six sectors (textiles, clothing, cereals, meat, dairy, and sugar) of the 22 sectors examined in detail have been excluded from this exercise because the number of existing producers seems large enough to ignore the possible interactions between protection and competition in these markets. This is a conservative hypothesis, which leaves aside the possible consequences of imperfect competition existing at the distribution level. For instance, the emergence of few worldwide trademarks in textiles or clothing or the existence of few large world grain, sugar, or banana traders could have some impact on markets at the production stage (see appendix A, cases 15, 18, and 19).

For 11 of the 16 remaining sectors, the available information suggests beginning by defining the “final” market structure (the structure associated with *no* protection). This is because these 11 sectors have all been (and still are) subject to antidumping measures, which constitute the core of existing protection. EC antidumping proceedings provide some information about the market structure prevailing *before* the imposition of these antidumping measures; it seems reasonable to assume that once protection is removed, markets will go back to this structure. In particular, antidumping proceedings give the number of allegedly dumping firms and the number of EC firms, as well as the global market share of these two groups of firms.

This information allows us to calculate a “partial” Herfindahl Index (PHI), which permits us to classify the “final” market structure according to the following procedure. Because an eight-firm market structure has a minimal “complete” (i.e., based on complete information) Herfindahl Index (CFI) of 0.125 (when the eight firms have exactly the same market share), any of the 11 sectors with an estimated PHI smaller than 0.125 has been classified as “returning” to a “competitive” market structure,

once protection is removed.<sup>7</sup> For a four-firm market structure with a minimal CFI of 0.250, any of the 11 sectors with an estimated PHI higher than 0.125 and smaller than 0.250 has been classified as returning to an eight-firm market structure.

The next step is to define the “initial” market structure for these 11 sectors. There is almost no information available giving a sense of the degree of additional imperfect competition brought on by protection. This lack of information suggests adopting the following conservative hypothesis. Existing protection in the 11 sectors in question has induced the market to function under the *next less* competitive structure. For instance, existing protection forces a competitive market to function as an eight-firm market, an eight-firm market as a four-firm one, and so on.

For the five remaining sectors that have not been subject to antidumping measures (newsprint, cars, films, air transport, and telecommunications), two procedures have been followed. For newsprint, cars, and films, the information about CFIs under protection is available, and it has been assumed that eliminating protection in these four sectors would allow the market in question to function under the *next more* competitive structure. Last, for air transport and telecommunications, the initial and final situations have been arbitrarily defined as four- and eight-firm markets (respectively) to present minima estimates of the impact of more competition in a liberalized environment.

## Costs under Imperfect Competition

Table 3.4 focuses on the costs of protection for EC consumers in the 16 sectors that have been considered as operating under imperfect competition. These costs are larger (sometimes in considerable proportion) than those estimated under perfect competition, and estimated excess profits accruing to protected sectors are massive—underlining again the huge vested interests willing to keep peaks of EC protection unchanged.

The “amplification” factor generated by imperfect competition (the costs under imperfect competition as a percentage of the costs under perfect competition) ranges from a few percent to almost 900 percent. Focusing on the 12 industrial goods operating under imperfect competition, the average amplification factor is about 135 percent. As a result, for the whole EC manufacturing sector, the costs of protection would amount to roughly 7 percent of EC total industrial value added. The amplification factor seems much more important for services; it corresponds to a

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7. PHIs are defined as the sum of the square of the *average* market share held by the allegedly dumping firms and of the square of the *average* market share held by EC firms (nondumping foreign firms are ignored). By construction, they tend to underestimate the level of concentration; in the three sectors where PHIs can be compared with CFIs, PHIs are half or two-thirds of the corresponding CFIs.

**Table 3.4 Estimated welfare effects of liberalizing the 14 highly protected sectors under imperfect competition**

Sector	Assumed change of market structure <sup>a</sup>	Consumer surplus gain (millions of euros)			Efficiency gain (millions of euros)			Producer surplus loss (millions of euros)			Excess profits <sup>b</sup> (millions of euros)
		Imperfect competition case <sup>b</sup>	Perfect competition case <sup>c</sup>	Imperfect competition case <sup>b</sup>	Perfect competition case <sup>c</sup>	Imperfect competition case <sup>b</sup>	Perfect competition case <sup>c</sup>	Imperfect competition case <sup>b</sup>	Perfect competition case <sup>c</sup>		
Cement	8 → PC	673.8	78.0	50.0	9.6	565.2	14.4	1,118.6			
Fertilizers	4 → 8	716.2	641.6	108.1	78.5	43.4	86.0	103.7			
Low-density polyethylene	8 → PC	617.8	300.0	63.9	34.8	236.7	108.9	534.8			
Polyvinyl chloride	8 → PC	341.0	132.0	33.5	15.7	144.2	49.8	340.4			
Hardboard	8 → PC	974.4	739.1	126.0	99.6	558.0	112.8	780.2			
Newsprint	8 → PC	276.1	191.5	13.6	5.6	98.0	26.6	177.4			
Chemical fibers	8 → PC	1,020.1	580.1	120.8	78.7	505.7	138.9	922.5			
Videocassette recorders	4 → 8	363.0	313.3	88.2	66.7	76.0	81.7	116.2			
Integrated circuits	8 → PC	2,239.9	2,187.4	575.3	564.3	50.2	138.6	99.5			
Photocopiers	4 → 8	363.0	313.5	76.8	66.4	64.2	4.8	104.2			
Steel	8 → PC	4,403.4	1,626.1	543.9	333.1	2,054.1	396.5	4,658.6			
Passenger cars	4 → 8	5,417.9	2,100.8	945.8	275.8	4,545.0	277.9	7,234.4			
Textiles	No change	7,095.6	7,095.6	668.3	668.3	2,677.7	2,677.7	—			
Clothing	No change	7,102.8	7,102.8	1,078.5	1,078.5	1,711.9	1,711.9	—			
Cereals	No change	3,211.9	3,211.9	944.1	944.1	1,770.2	1,770.2	—			
Meat	No change	4,108.4	4,108.4	1,314.0	1,314.0	1,599.5	1,599.5	—			
Milk (manufactured)	No change	2,717.2	2,717.2	957.8	957.8	1,061.7	1,061.7	—			
Sugar	No change	4,268.3	4,268.3	2,306.1	2,306.1	979.5	979.5	—			
Bananas <sup>d</sup>	No change	1,327.1	824.6	391.5	183.7	131.3	106.0	—			

(table continues next page)

**Table 3.4 Estimated welfare effects of liberalizing the 14 highly protected sectors under imperfect competition**  
(continued)

Sector	Assumed change of market structure <sup>a</sup>	Consumer surplus gain (millions of euros)		Efficiency gain (millions of euros)		Producer surplus loss (millions of euros)		Excess profits <sup>b</sup> (millions of euros)
		Imperfect competition case <sup>b</sup>	Perfect competition case <sup>c</sup>	Imperfect competition case <sup>b</sup>	Perfect competition case <sup>c</sup>	Imperfect competition case <sup>b</sup>	Perfect competition case <sup>c</sup>	
Films (France)	4 → 8	408.2	406.4	112.4	107.5	2.6	54.1	3.2
Air transport	4 → 8	20,105.9	8,761.3	3,251.3	813.3	3,370.2	113.2	11,772.9
Telecommunications	4 → 8	10,410.9	3,929.7	2,839.6	1,297.4	2,499.8	1,169.0	7,755.0
<b>Totals for the 22 sectors, by economic activity</b>								
Agriculture		15,632.9	15,130.4	5,913.5	5,705.7	5,542.2	5,516.8	n.a.
Manufacturing		31,605.2	23,401.7	4,492.7	3,375.6	13,330.3	5,826.5	16,190.5
Market services		30,925.0	13,097.4	6,203.3	2,218.2	5,872.5	1,336.4	19,531.1
All sectors		78,163.0	51,629.5	16,609.4	11,299.5	24,745.0	12,679.7	35,721.6
<b>The sector producing the rest of the goods</b>								
Tariffs and nontariff barriers	No change	41,162.3	41,162.3	1,661.8	1,661.8	15,212.2	15,212.2	
Only tariffs	No change	22,984.9	22,984.9	540.3	540.3	8,603.7	8,603.7	

PC = perfect competition; 8 = 8 firm market; 4 = 4 firm market.

n.a. = not available

a. 8 → PC: cases from 8-firm market to perfect competition; 4 → 8: cases from 4-firm market to 8-firm market.

b. Atje-Hufbauer model (1996).

c. Hufbauer-Elliott model (1994).

d. For the assumed change of market structure, see appendix A, case 19.

Sources: Case studies in appendix A; European Commission (1995), author's computations.

doubling of the costs of protection, despite the very conservative assumptions adopted about changes in market structures.

These results reveal what could be the main source of divergence between the costs of protection in the United States and the EC. These two large economies may differ less in their level of protection (hence, when estimated under perfect competition, the costs of protection in the two economies may be relatively similar, as shown above) than in their level of *effective* internal competition. For decades, the US economy has been a well-integrated “single market” without too much public interference—partly because many US states are smaller economically relative to the whole US economy than EC member-states are to the whole EC economy, and as a consequence, US states tend to have a more competition-oriented behavior than the EC member-states. In sharp contrast, the EC economy has only started the process of establishing its single market, and it is doing so under the heavy influence of “large” (“dominant” in competition-policy parlance) member-states.<sup>8</sup> In other words, the estimated amplification factor could be interpreted as reflecting the additional costs of the absence of a fully functioning Single Market, given prevailing external barriers on imports from the rest of the world.

## Variations on Three Important Related Issues

Three important issues could significantly change the magnitude of the results achieved so far. Has the level of protection in the 22 highlighted sectors decreased substantially since the early 1990s? Are there reasons to believe that the EC is a large market (at least for some of these 22 products) relative to the rest of the world—so that the EC could benefit from terms-of-trade effects that would reduce net gains from liberalization? And are there reasons to believe that the EC’s propensity for “preferential” liberalization (the EC’s “addiction to discrimination,” examined in chapter 6) has provided noticeable gains, in comparison with those to be expected from multilateral liberalization?

### Protected Sectors: Stable during the Past Decade

What follows shows that none of the 22 heavily protected sectors experienced a substantial and definite decline of protection between the early and late 1990s. Table 3.5 is devoted to farm goods growing in a temperate

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8. This is best illustrated by the steel sector. Although both the EC and US steel sectors have been quite protected during the past two decades, the US steel industry has made a quicker adjustment to new and more efficient technologies than its EC counterpart (see appendix A, case 11).

Table 3.5 Trade and nontrade barriers for selected farm products (percent)

	Period	Coarse grains					
		Wheat <sup>a</sup>	Beef	Pork	Poultry	Dairy <sup>b</sup>	Sugar
<b>Tariff equivalents, bound and applied tariffs</b>							
1. Tariff equivalents (reference period)	1986-88	103.0	83.0	40.0	51.0	177.0	234.0
2. Uruguay MFN bound tariffs	1995	155.6	125.0	51.7	44.5	288.5	297.0
3. Applied (out-of-quota) tariffs	1995	34.8	80.9	40.3	16.3	147.5	n.a.
4. Applied (in-quota) tariffs	1995	n.a.	20.0	13.3	8.1	33.2	n.a.
5. Applied (out-of-quota) tariffs	2000	55.5	36.8	19.2	12.7	103.8	248.1
6. Negative tariff escalation: level	1995	Serious	Severe	Nil	Moderate	Small	Moderate
Negative tariff escalation: change	2001/1995	None	Decrease	None	None	None	Increase
<b>Production and export subsidies</b>							
7. Share in EC farm budget	1985	↔ 11.6 ↔	13.8	0.8	0.2	30.0	9.1
	1990	↔ 14.6 ↔	10.7	0.9	0.7	18.8	5.3
	1995	↔ 43.5 ↔	11.7	0.4	0.6	11.7	5.3
	1998	↔ 42.4 ↔	14.5	0.9	0.2	7.3	4.1
8. Export subsidy equivalents	1996-97	12.5	53.0	252.5	16.0	125.0	157.5
9. Share (subsidized/total) exports	1996-97	99.0	116.5	37.0	72.5	102.0	69.5
10. Subsidized exports/commitments (volume)	1996-97	73.5	102.0	48.5	102.0	48.0	99.0
11. Subsidized exports/commitments (outlays)	1996-97	12.0	68.0	28.0	102.0	34.0	99.0
12. Self-sufficiency rate	1960	85	92	n.a.	n.a.	101	104
	1979	112	98	100	105	123	125
	1991	141	113	106	106	116	122
	1995	113	109	105	109	106	140
	1998	126	112	107	111	106	138

n.a. = not available

MFN = most favored nation

a. Common wheat.

b. Butter (except for line 7: all dairy products).

Sources: Rows 1 and 2: Ingco (1996). Row 4: Tangermann (1998, table 232) and WTO, *Trade Policy Review: The European Community*, 1997. Rows 3 and 5: author's computations. Row 6: OECD, 1997b. Row 7: Court of Auditing, EC, *Official Journal*. Rows 8 to 11: OECD, 2000e. Row 12: EC *Report on Agriculture*, various years.

climate.<sup>9</sup> The first part of the table provides four kinds of key information about the EC Uruguay Round commitments on tariffs: (1) the estimated tariff equivalents (row 1) of the border protection enforced during the period 1986–88, as the reference period for the “tariffication” exercise; (2) the MFN-bound tariffs (row 2) listed in the EC Uruguay Round commitments on agriculture; (3) the “out-of-quota” and “in-quota” (rows 3 and 4) ad valorem equivalents of the tariffs applied in 1995; and (4) the ad valorem equivalents of the tariffs applied in 2000 (row 5, like row 3, is based on the average of OECD price estimates—for Australia, Canada, New Zealand, and the United States—for the farm product and year in question).

Four major lessons emerge from table 3.5. (1) The substantial differences between the tariff equivalents of the reference period and the Uruguay Round bound tariffs (rows 1 and 2) reflect the magnitude of the “dirty” tariffication process (see chapter 4). (2) The similarities between the tariff equivalents of the reference period and the applied tariffs in 1995 (rows 1 and 3) mirror the absence of any real liberalization in 1995. (3) The similarities between the tariffs applied in 1995 and 2000 (rows 3 and 5) reflect the absence of any real liberalization until 2000, in particular if one takes into account food safety measures amounting to import bans (beef) or other severe barriers (pork and poultry).<sup>10</sup> (4) In-quota tariffs (amplified by complex or opaque quota-management regimes) have been high enough to keep rates of fulfillment of the existing (very small) quotas at a low rate; the average fill rate on all quota lines imposed by the EC decreased from 75 percent (1995) to 66 percent (1997) (OECD 2000d).

The second part of table 3.5 deals with domestic and export farm subsidies. Row 7 shows limited changes in the domestic subsidy concentration by product, except in favor of dairy products in the mid-1980s and of cereals in the Uruguay Round aftermath (in this case, reflecting the increasing gap between CSE- and PSE-based tariffs during the late 1990s following the 1992 CAP Reform; see chapter 4). Row 8 provides estimates of the ad valorem rates of export subsidies.<sup>11</sup> Row 9 gives the share of sub-

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9. Appendix A, case 19, shows that the conclusions drawn from table 3.5 can be extended to bananas, the only tropical farm product examined in this study; in fact, protection of EC bananas increased in 1993 relative to 1990.

10. The increase in the applied tariff for wheat between 1995 and 2000 mirrors the combination of decreasing world prices and specific tariffs (see chapter 4). Recent estimates (Gibson, et al. 2001) on tariffs (for products more widely defined than those included in table 3.5) tend to confirm the magnitude of the estimated tariffs for 2000 that are presented in table 3.5. The same conclusion can be drawn from the estimated ratios of EC/world prices made public by the European Commission during the launch of the “Everything but Arms” initiative (see chapter 6) (European Commission, 2000c).

11. Export-subsidy rates should be roughly equal to the corresponding ad valorem tariff equivalents; both mirror the same wedge between world and EC prices. This is the case except for wheat, coarse grains, and pork. The discrepancy for the first two goods may be due to the fact that export-subsidy rates have been calculated for 1996 and 1997, which were characterized by high world prices (to such an extent that the EC has imposed export taxes). The third case (pork) was largely determined by the 1997 crisis in the Netherlands.

sidized exports in total EC exports, rows 10 and 11 provide the ratio of subsidized exports with respect to EC commitments in the Uruguay Agreement (respectively, in volume and value), and row 12 recapitulates the effect of import and export protection on EC “self-sufficiency” rates. Two major lessons emerge: (1) EC exports still depend heavily on export subsidies, and the EC clearly has difficulties fulfilling its commitments, notably in beef, poultry, and sugar. (2) Self-sufficiency rates have not substantially declined since their 1970s peak, revealing how little has been achieved in trade liberalization by the EC in recent years (see chapter 4).

Table 3.6 on the industrial goods pertaining to the 22-sector list provides the 1990 and 1999 bound tariffs, which are also the tariffs applied by the EC (with minor exceptions). It also reports the voluntary export restraints (VERs) existing during the late 1980s and 1990s, and it gives the number of antidumping cases in force for the same periods, including “ambiguous” ones.<sup>12</sup> For the period 1995–99, ad valorem tariff equivalents of antidumping measures have been estimated with the method adopted in chapter 2, whereas ad valorem tariff equivalents of the VERs are explained in the corresponding cases in appendix A.

The key lesson from table 3.6 is that the reduction of the overall level of protection during the 1990s was modest (if there was any) for all these industrial products. In many cases, one observes a mere substitution of focused instruments of protection (e.g., antidumping measures) for more rigidly or broadly defined instruments (e.g., tariffs or VERs). This change is far from meaning that existing EC products are less protected; it could mean that the protection has been better “designed,” with a higher level of protection granted to a smaller but better defined coverage of EC production.

The apparent exceptions to the stability of protection during the 1990s would require extensive research to be confirmed. For instance, the long history of private collusive behavior in cement, polyvinyl chloride, newsprint, and steel (see appendix A, cases 1, 4, 6, and 11) due to insufficient anticartel enforcement makes it far from certain that the apparent decline of the overall level of protection corresponds to an effective opening of EC markets, and not to a shift from public to private barriers—and hence from tariff revenues to private rents.

The car industry raises different issues. Protection by technical regulations may have been substituted for trade barriers—the number of EC directives dealing with norms and standards for cars increased by 50 percent during the 1990s relative to the 1970s, and doubled relative to the 1980s. And the protection granted by the massive subsidies of the 1980s and early or mid-1990s (particularly in France) may have had long-term

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12. These cases consist of antidumping complaints withdrawn by the complainants before the end of the official investigation. It is hard to interpret such withdrawals; they could cover private restrictive actions (cement), interactions between antidumping measures and collusive behavior (low-density polyethylene [LdPE] and polyvinyl chloride [PVC] in the first period), or shifts from basic to derived products (LdPE in the second period), etc.

**Table 3.6 The evolution of EC global protection of the 14 highly protected industrial sectors**

Sector	1990				1999				Rate of overall protection (percent)
	GATT MFN-bound tariffs (percent)	Types of NTBs		Rate of overall protection (percent)	GATT MFN-bound tariffs (percent)	Types of NTBs		Rate of overall protection (percent)	
		Voluntary export restraints	Antidumping cases (number)			Voluntary export restraints	Antidumping cases (number)		
Cement	3.2		5	22.8	1.7		6 <sup>a</sup>	n.a.	
Fertilizers	5.2		19	32.7	4.3		23	26.0	
Low-density polyethylene	12.5		4	12.5	5.9		3 <sup>b</sup>	14.7	
Polyvinyl chloride	12.5		4	12.5	7.8			7.8	
Hardboard	10.0		16	25.0	7.6		7	20.2	
Newsprint	7.0		2	7.0	2.5			2.5	
Artificial/synthetic fibers	8.9		23	22.9	6.4		18	22.7	
Videocassette recorders	12.5		4	30.2	12.0		2	27.7	
Integrated circuits	13.5		2	47.6	0.0		1	30.0	
Photocopiers	7.2		2	33.7	3.1		7	35.3	
Steel	4.8	VERs	43	21.9	2.7	VERs	67	9.0	
Cars	10.2	VERs <sup>c</sup>		17.1	9.8	VERs <sup>c,d</sup>		13.8	
Textiles	9.9	VERs <sup>e</sup>		21.4	8.5	VERs <sup>e</sup>	35	22.1	
Clothing	12.3	VERs <sup>e</sup>		31.3	11.6	VERs <sup>e</sup>		30.6	

EC = European Community.

GATT = General Agreement on Tariffs and Trade.

MFN = most favored nation

NTBs = nontariff barriers

n.a. = not available

a. Antidumping measures unknown.

b. Derived products targeted by antidumping measures.

c. VERs eliminated by 31 December 1999, plus an ad valorem tariff equivalent for technical regulations.

d. Threats of ant subsid y cases for certain vehicles.

e. See text for the ad valorem equivalents of VERs.

Sources: Appendix A, various cases; EC, *Official Journal*, author's computations.

effects, which are possibly still being felt (first, by closing the EC markets to Japanese cars during the period of disbursement; second, by allowing artificially surviving EC carmakers to become shareholders of Japanese carmakers—as is best illustrated by the Renault-Nissan deal—because the Japanese government decided not to subsidize its domestic automakers in difficulty, contrary to what has been done in Europe).

In services, observed protection has not substantially declined during the past decade. There has been no multilateral liberalization (existing WTO agreements in services are standstill agreements); and intra-EC liberalizations, only a couple of years old, are incomplete and reversible (for details, see chapter 5). In fact, information on the three services examined in detail (see appendix A, cases 20 to 22) raises doubts even about the standstill commitments: (1) The subsidization rate of French films has increased, and there are similar changes in most EC member-states. (2) Intra-EC liberalization in airlines seems to have been counterbalanced on most routes by route-sharing agreements between the very few firms present on those routes. (3) If the telecommunications sector may have operated under lower barriers and with more competition in the late 1990s than the early 1990s, recent benchmarking studies suggest that price differences with respect to the most efficient countries (a proxy for the rate of protection) did not substantially change (see appendix A, case 22).

### **Is the EC a “Large” Country?**

A “large” country is big enough to have “market power” in the world market of the good in question. When such a country imposes border protection, it improves its terms-of-trade (increases its export prices, or reduces its import prices). As a result, if the EC were a large country, EC trade liberalization would generate terms-of-trade losses for the EC, and the net gains estimated in the previous sections would be reduced.

Identifying the situations in which the EC would be a “large” country is beyond the scope of this study. As a result, the costs of protection with terms-of-trade effects have been systematically estimated for the 22 products. Table 3.7 presents available information on EC market shares of world production for these 22 products; market shares larger than 25 and 40 percent of world consumption could be interpreted as two crude thresholds for possible EC market power.<sup>13</sup> None of the 22 sectors passes the 40 percent threshold. Only a handful pass the 25 percent threshold: hardboard, cars, textiles, clothing, and dairy—all goods (except maybe hardboard) subject to intensive product differentiation, a feature that tends to reduce the plausibility of large terms-of-trade effects.

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13. In EC competition-policy enforcement, the 40 percent threshold is almost systematically associated with a dominant position (not to the abuse of such a position), whereas it has been less often the case for the 25 percent threshold.

**Table 3.7 Estimated welfare effects of liberalizing in cases of terms-of-trade effects and regional liberalization**

Sector	Terms-of-trade effects <sup>b</sup>					Regional liberalizations <sup>b</sup>				
	Tariff equivalent (percent of world price, 1990)	Consumer surplus gain <sup>a</sup> (millions of euros)	EC share of world output (percent)	Consumer surplus gain <sup>c</sup> (percent)	Increase in world prices (percent)	Terms-of-trade losses (millions of euros)	Central European countries		1995 EC member-states	
							Share of EC imports <sup>d</sup> (percent)	Antidumping measures <sup>e</sup> (percent)	Shares of EC 1990 imports (percent)	Consumer surplus gain <sup>c</sup> (percent)
Cement	22.8	99.3	12.0	66.6	7.0	15	92.6	83.3	8.0	2.8
Fertilizers	32.7	829.2	12.0	70.2	8.9	127	32.8	28.6	8.9	5.4
Low-density polyethylene	12.5	265.6	20.0	26.1	6.2	77	37.6	0.0	30.1	2.1
Polyvinyl chloride	12.5	120.0	20.0	25.3	6.5	22	34.7	0.0	9.4	0.6
Hardboard	25.0	830.1	25.0	60.5	7.0	150	16.8	71.4	30.6	14.4
Newsprint	7.0	82.2	25.0	34.9	1.8	40	2.4	0.0	65.1	36.1
Chemical fibers	22.9	433.1	15.0	36.5	7.9	150	20.5	0.0	20.8	3.2
Videocassette recorders	30.2	289.4	16.0	34.5	12.4	68	6.7	0.0	10.1	1.4
Integrated circuits	47.6	3,462.6	5.0	57.3	14.7	458	0.0	0.0	5.5	2.5
Photocopiers	33.7	287.1	10.0	42.0	9.9	71	0.2	0.0	0.5	0.2
Steel	21.9	2,423.1	21.0	48.5	10.0	411	42.7	42.8	36.6	13.2
Passenger cars	17.1	2,402.5	35.0	49.1	6.4	617	18.7	0.0	11.7	0.9
Textiles	21.4	5,954.0	25.0	58.5	6.9	1,148	23.3	20.0	9.4	1.8
Clothing	31.3	7,655.4	25.0	61.2	8.7	1,064	29.4	20.0	3.2	0.0
Cereals	63.0	2,792.0	16.0	41.8	30.9	270	5.5		0.7	0.0
Meat	95.0	4,998.8	22.0	52.0	28.9	364	2.9		10.1	2.2
Milk (manufactured)	104.0	3,643.6	27.5	49.9	37.6	252	13.0		13.4	0.4
Sugar	117.0	4,040.6	14.5	60.8	27.8	234	0.6		1.8	0.0
Bananas	81.9	1,076.5	4.0	72.6	14.7	96	0.0		0.0	0.0

(table continues next page)

**Table 3.7 Estimated welfare effects of liberalizing in cases of terms-of-trade effects and regional liberalization**  
(continued)

Product category	Terms-of-trade effects <sup>b</sup>					Regional liberalizations <sup>b</sup>			
	Tariff equivalent (percent of world price, 1990)	Consumer surplus gain <sup>a</sup> (millions of euros)	EC share of world output (percent)	Consumer surplus gain <sup>c</sup> (percent)	Increase in world prices (percent)	Terms-of-trade losses (millions of euros)	Central European countries		1995 EC member-states
							Share of EC imports <sup>d</sup> (percent)	Antidumping measures <sup>e</sup> (percent)	Shares of EC 1990 imports (percent)
Films (France)	76.8	547.9	5.0	71.8	15.5	49	5.0	2.0	0.7
Air transport	71.0	9,414.3	18.1	92.1	4.5	500	7.0	11.0	3.6
Telecommunications	45.2	5,887.8	24.0	48.1	19.3	625	7.0	9.7	3.8
<b>Totals for the 22 sectors, by economic activity</b>									
Agriculture	90.8 <sup>f</sup>	16,551.5 <sup>g</sup>	16.8 <sup>h</sup>	53.3	28.0 <sup>h</sup>	1,216 <sup>g</sup>	4.4 <sup>h</sup>	5.2 <sup>h</sup>	0.7
Manufacturing	22.2 <sup>f</sup>	25,133.7 <sup>g</sup>	19.0 <sup>h</sup>	56.4	8.2 <sup>h</sup>	4,420 <sup>g</sup>	25.6 <sup>h</sup>	17.9 <sup>h</sup>	3.0
Market services	55.2 <sup>f</sup>	15,850.0 <sup>g</sup>	15.7 <sup>h</sup>	75.1	13.1 <sup>h</sup>	1,174 <sup>g</sup>	n.a. <sup>h</sup>	8.6 <sup>h</sup>	3.5
All 22 sectors	37.5 <sup>f</sup>	57,535.1 <sup>g</sup>	18.1 <sup>h</sup>	60.6	13.3 <sup>h</sup>	6,809 <sup>g</sup>	18.2 <sup>h</sup>	13.6 <sup>h</sup>	2.5
<b>Sector producing rest of the goods<sup>h</sup></b>									
Tariffs and nontariff barriers	7.2	38,085.2	n.a.	48.6	2.8	11,155	7.0	11.0	3.4
Only tariffs	4.6	16,641.1	n.a.	27.7	1.8	7,196	7.0	11.0	0.3

EC = European Commission.

a. Table 3.2 estimates, based on the Francois-Hall (1997) model.

b. Estimates based on the Francois-Hall model.

c. In percentage of table 3.2 estimates based on terms-of-trade effects.

d. Unweighted average share in 1994–96 EC imports.

e. Percentages of antidumping cases enforced against the Central and Eastern European countries (for 1990–98).

f. Import-weighted average tariffs.

g. Sums.

h. Unweighted averages.

Sources: Case studies in appendix A; European Commission (1995); OECD, 1999a, table 3.2; author's computations.

To introduce terms-of-trade effects, table 3.7 arbitrarily sets the foreign supply elasticity at the low level of 3.<sup>14</sup> It presents the costs of protection for European consumers under terms-of-trade effects as a percentage of the costs of protection that would have existed in the absence of such terms-of-trade effects (for simplicity's sake, only results based on the Francois-Hall model are reported). If terms-of-trade effects occur in all sectors (an unrealistic assumption), gains from trade liberalization would be, on average, 60 percent of those existing in the absence of terms-of-trade effects. Limiting the possibility of terms-of-trade effects to the five sectors for which EC shares of world markets are higher than 25 percent would generate gains from trade liberalization roughly equal to 82 percent of those without terms-of-trade effects. This result suggests that the estimated European consumers' costs provided in the section on the costs of protection under perfect competition are unlikely to be substantially modified by the possible existence of terms-of-trade effects.

### **“Preferential” Liberalizations: A Large Impact?**

The 1990s witnessed few noticeable changes in the level of EC protection, both in economywide terms (see chapter 2) and in terms of the 22 listed products and services (see the above section). However, these results take into account only the EC liberalization in a *multilateral* context. They ignore the impact of two “preferential” liberalization processes involving the EC during the 1990s: (1) with EFTA countries, under the auspices of the European Economic Area (1993) and leading to the accession of Austria, Finland, and Sweden to the EC in 1995; and (2) with Central European countries (CECs) under the auspices of the “Europe Agreements” (signed in the early and mid-1990s), which should lead to the progressive accession of all the CECs to the EC at still undecided dates.<sup>15</sup> However, table 3.7 shows that, as of 1999, CEC trade with the EC may have been free from tariffs, but that it was still hampered by severe trade barriers, precisely in products for which CECs are noticeable suppliers of EC imports—suggesting that the EC-CEC preferential liberalization is still very incomplete (see chapter 6), and can be left aside for the time being.

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14. This very low elasticity of 3 has been adopted to be consistent with the Hufbauer and Elliott study (1994). Recent studies tend to use an elasticity of 5, which would lead to smaller terms of trade effects, and hence to smaller reductions in gains from liberalization because of these effects.

15. Iceland, Liechtenstein, Norway, and Switzerland are left aside, because they are very small economies or do not produce a significant amount of the 22 listed products, or because there are still important barriers (e.g., in services). The CECs included in this exercise are Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, and Turkey. This unusually wide definition of Central Europe includes Croatia and Turkey (under the Customs Union Treaty) because trade between these countries and the EC is large enough not to be ignored.

As a result, what follows focuses on the accession of the three new EC member-states, and estimates the *maximum* positive impact of preferential liberalization limited to these three countries. It purposely leaves aside the robust economic arguments underlining the costs associated with preferential liberalization (see chapter 6), and it ignores legitimate doubts about the high risks of capturing partial liberalizations (there are powerful incentives for EC importers and EC preferential partners to keep prices under the umbrella of EC tariffs imposed on nonpreferential imports, in order to capture as private rents what used to be tariff revenues).

Instead, table 3.7 relies on the two following hypotheses, which *maximize* the impact of preferential liberalization: (1) The three new member-states are assumed to be always among the most efficient world producers. (2) The elimination of trade barriers between the EC and the new member-states allows for the introduction of world prices in European trade. In other words, table 3.7 sees preferential liberalization from the most favorable perspective possible (risks of trade diversion are largely eliminated); that is, as equivalent to a multilateral liberalization, except for the fact that EC preferential partners have much smaller supply capacities than the entire world.

Table 3.7 provides the gains from preferential liberalization based on the Francois-Hall (1997) model. For farm and industrial goods, a crude (and indirect) indicator of supply availability from the three new member-states (NMSs) is their trade share in EC imports. Such shares are not available for services, so proxies have been used: the ratio of NMSs to EC production for films, the ratio of NMSs to EC GDP for air transport, and the ratio of NMSs to EC revenues for telecommunications. Last, supply elasticities of the NMSs have been set at the level of EC elasticities. Under these working hypotheses, which are the most favorable possible to preferential liberalization, table 3.7 shows that preferential liberalization would bring only a very modest proportion of the gains to be expected from a multilateral liberalization; for the 22 products, the gains from the accession of the three NMSs would amount to only 3 percent of the gains from multilateral liberalization.

This result is not very surprising. It reflects the small size of the NMSs relative to the EC's huge economy (their aggregated GDP is roughly 11 percent of the EC GDP). This observation suggests that the same result should be expected for the preferential liberalization between the EC and CECs, because the aggregate GDP of all CECs is roughly 7 percent of the EC GDP—a conclusion consistent with available estimates of the EC net benefit from enlargement (Baldwin, François, and Portes 1997).