GLOBALISATION, STRUCTURAL CHANGES IN EXPORTS AND THE PORTUGUESE TERMS OF TRADE*

*Fátima Cardoso***

*Paulo Soares Esteves***

1. INTRODUCTION

Fluctuation in the terms of trade is an issue frequently addressed in economics. The terms of trade have direct effects on welfare, since they condition the domestic resources that must be assigned to assure the same level of imports, but they are also extremely volatile, and a major source of economic fluctuations. Thus, it became frequent to use formulas to measure the effect of terms of trade on GDP mechanically [see Gutman (1981)] and to consider the terms of trade as an important factor in business cycle fluctuations [Backus and Crucini (2000)].

This paper analyzes the evolution of the Portuguese terms of trade over the last few decades. The focus is on trade excluding energy, as the short and medium-run effects of energy import prices on the terms of trade are clearly visible and easy to quantify, given the big volatility of international oil prices, the high share of net imports and the low price elasticity of demand. Section 2 characterizes the recent gains in the terms of trade (excluding energy) recorded by the Portuguese economy. It is important to evaluate this phenomenon from an historic perspective and to look into whether this evolution is a special feature of the Portuguese economy. Additionally, it analyses whether this behaviour in the terms of trade is more related to the evolution of export or import prices.

In Section 3, the evolution in the terms of trade is broken down by products following very closely the approach used in Baxter and Kouparitsas (2006). The first component of this decomposition measures the effects of the specialization of each country across various sectors. An economy tends to face an increase in its terms of trade if it is more specialized in products where international prices are growing faster. Those effects can be interpreted as being relatively exogenous - at least in the short run – given that it is not easy or even possible to change output rapidly across a range of sectors. Typically, this type of specialization depends on endowments of labour, capital and natural resources. The second component is related to differences between export and import prices for each type of product, and thus to the position of national production in several market segments and also to the country's capacity to import from markets with lower prices.

The results show that terms of trade developments have been dominated by the specialization effects related to the evolution of oil prices. Excluding energy and focusing on manufactured goods, the increase in terms of trade is strongly connected with the positive evolution of relative exports prices in some groups of products, in particular what are usually designated as traditional sectors: textiles, clothing and footwear.

Sections 4 and 5 go deeper into these results, which suggest that the effects of globalization on import prices and some structural changes in traditional export sectors are factors that explain the recent

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** Economics and Research Department, Banco de Portugal.

terms of trade gains. In Section 4, an estimate is presented for the direct effect of low-cost countries in the import prices for Portuguese manufacturing, using a methodology similar to that used in some studies for other countries. In Section 5, the clothing sector is considered as a case study to evaluate the role of structural changes in the export sector. There is evidence that a composition effect occurred in this sector, towards a bigger proportion of high-range markets, contributing to the increase in average price of exports.

Finally, Section 5 summarizes the main conclusions.

2. CHARACTERIZING THE RECENT GAIN IN PORTUGUESE TERMS OF TRADE

How unusual is this increase?

The evolution of Portuguese terms of trade over the last 60 years is presented in Chart 1, using the Banco de Portugal's historical series [Pinheiro *et al*.(1999)] for the period before 1995 and the external trade deflators of the *Instituto Nacional de Estatística* (INE) for the latest period.

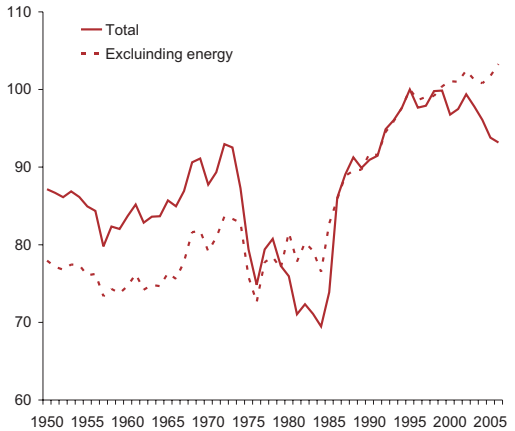
Since the end of the 80s, contrasting with apparent stability previously, terms of trade started to move on a positive trend, interrupted in the most recent years because of the marked increase in oil prices. This positive trend cannot be explained by the direct effects of oil prices. In fact, excluding the energy component, the increasing trend in the terms of trade since the end of the 80s becomes even more evident.

Is this increase a special feature of the Portuguese economy?

Chart 2 presents the evolution of terms of trade for the OECD countries, considering external trade on goods and services excluding commodities. It seems clear that there has been a generalized gain of terms of trade across the OECD countries since the beginning of the 90s, and that these gains were

Chart 1

PORTUGUESE TERMS OF TRADE
External trade of goods, 1995=100

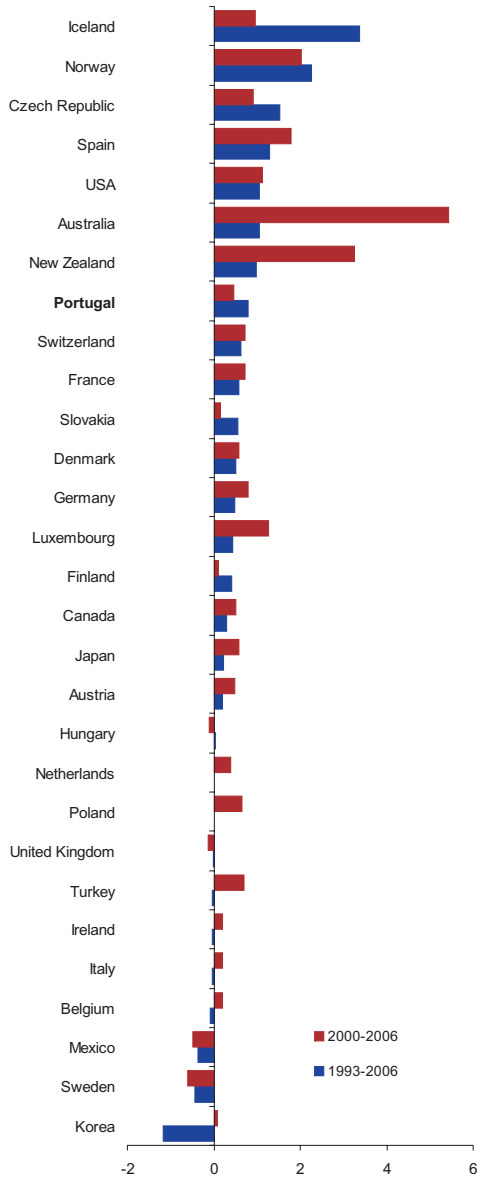


Sources: *INE* and Banco de Portugal [Pinheiro *et al*. (1999)].

Chart 2

TERMS OF TRADE IN OECD COUNTRIES

Goods and services excluding commodities
Annual average changes

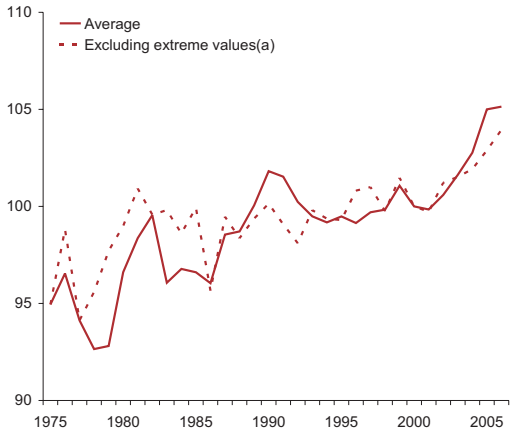


Source: OECD.

Chart 3

TERMS OF TRADE IN 23 OECD COUNTRIES

Goods and services excluding commodities, 2000=100

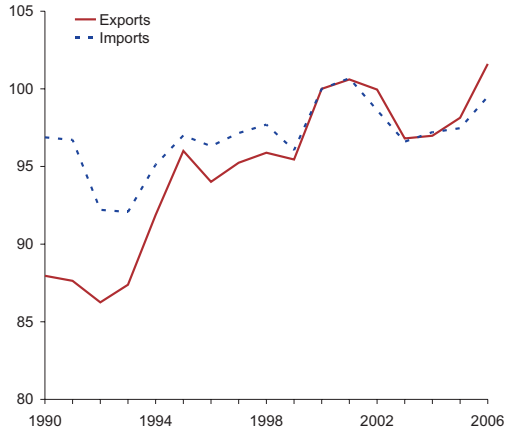


Source: OECD.
Note: (a) Excluding observations outside the range defined by two standard deviations around the average.

Chart 4

PORTUGUESE EXTERNAL TRADE PRICES

Goods excluding energy, 2000=100



Source: *INE*.

more pronounced in the most recent period. In terms of non-weighted average of the OECD countries, the average annual increase was 0.8 per cent from 2000 onwards, against the annual gain of 0.5 per cent from 1993.

The same evidence seems to emerge when a longer period is considered. Chart 3 presents the evolution of terms of trade (goods and services excluding commodities) for the period starting in 1975, using a sample of 23 OECD countries. Terms of trade stood at higher levels in the second part of the sample, this upward trend being particularly pronounced over the most recent years, when the terms of trade reached maximum figures.

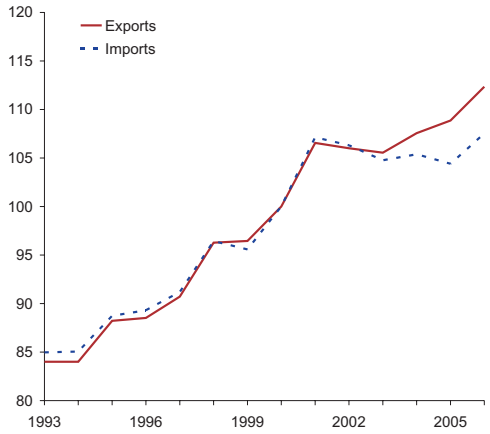
Is this evolution mostly related to import or export prices?

The increase in Portuguese terms of trade excluding energy in the first half of the 90s occurred in a context where both export and import prices were increasing (Chart 4). But the story seems to be different from 2000 onwards, when both export and import prices started to record more contained evolutions. This is even more evident when intermediated goods are excluded – in this case both export and import prices have declined since 2000 (by 4.9 and 1.8 per cent, respectively).

This evolution of import prices did not occur only in Portugal. Chart 5 presents the evolution of export and import prices (excluding commodities) for the OECD countries, emphasizing that the gains in terms of trade since the end of the 90s occurred in a context of stagnating of import prices.

Chart 5

OECD COUNTRIES EXTERNAL TRADE PRICES
Goods excluding commodities, 2000=100



Source: OECD.

3. DECOMPOSING TERMS OF TRADE EVOLUTION

Terms of trade can be written as a difference between indices measuring external trade deflators for exports (Px) and imports (Pm), which can be expressed as a weighted average of their various components:[1]

$$P_{x,t} - P_{m,t} = \sum_{i=1}^{n} \left(\frac{p_{x_i,t}}{p_{x_i,t-1}} \omega_{x_i,t} - \frac{p_{m_i,t}}{p_{m_i,t-1}} \omega_{m_i,t} \right) \quad (1)$$

where p_{xi}, and w_{xi} (p_{mi} and w_{mi}) represent the price and weight of each i component on exports (imports). In line with Baxter and Kouparitsas (2006), an adjustment in the previous equation makes it possible to decompose the evolution in terms of trade into two components:[2]

$$P_{x,t} - P_{m,t} = \sum_{i=1}^{n} \left(\omega_{x_i,t} - \omega_{m_i,t} \right) \frac{p^{*}_{i,t}}{p^{*}_{i,t-1}} + \sum_{i=1}^{n} \left(\frac{p_{x_i,t}}{p_{x_i,t-1}} - \frac{p_{m_i,t}}{p_{m_i,t-1}} \right) \omega^{*}_{i,t}, \quad (2)$$

$$\frac{p^{*}_{i,t}}{p^{*}_{i,t-1}} = \frac{\frac{p_{x_i,t}}{p_{x_i,t-1}} + \frac{p_{m_i,t}}{p_{m_i,t-1}}}{2}, \qquad \omega^{*}_{i,t} = \frac{\omega_{x_i,t} + \omega_{m_i,t}}{2}$$

The first term may be designated as an **inter-sector specialization effect**, measuring the effects of differences in composition between import and export baskets. A country tends to obtain a terms of trade gain (loss) if is more (less) specialized in goods whose prices are growing faster. The obvious example is related to commodities, in particular oil. When oil prices increase, importer countries tend to record a deterioration in the terms of trade. The other term may be designated as the **intra-sector effect**, since it is related to the relative prices of exports and imports for each type of product. Its evolution is related to the position of national production across various segments and to the ability to import from markets with lower prices.

The results of this decomposition for the period after 1995 are presented in Chart 6, while Table 1 contains detailed information for the evolution of import and export prices across groups of products and their contribution to the evolution of terms of trade through these two types of effects.

Portuguese terms of trade were dominated by the inter-sector specialization effect, linked to the evolution of oil prices (the contribution of the energy component and the overall evolution of terms of trade have a correlation coefficient higher than 0.8). The **energy component** contributed negatively in 9.7 p.p. to the 6.4 per cent decline in total terms of trade observed since 1995. This contribution has been particularly negative during the most recent years.

When energy is excluded and the focus is on manufacturing trade, the intra-sector effect can be seen to have most contribution to the increase in the terms of trade, in particular after 2000. This type of fluctuation may be related to quality effects and to a differentiated evolution in the composition of exports and imports in each sector.

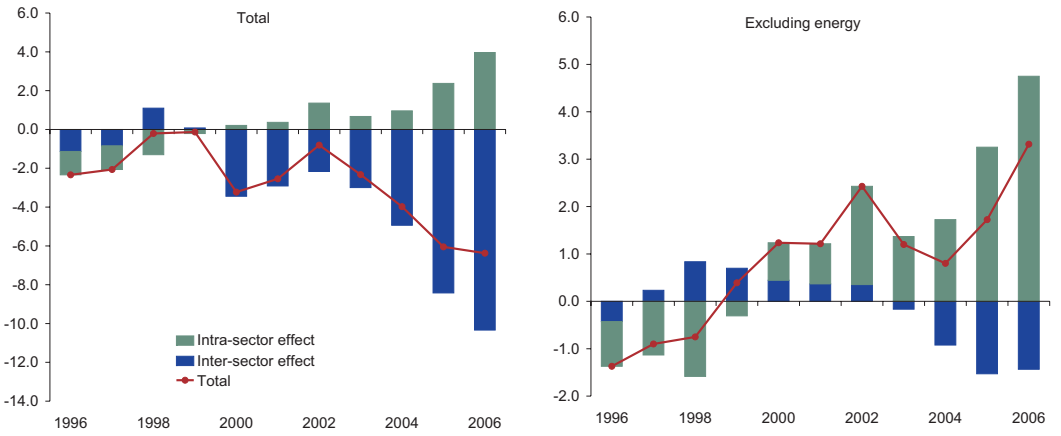
(1) External trade deflators (Px and Pm) are computed as Paasche type indices, which measure the evolution of prices from the previous year.

(2) Baxter and Kouparitsas (2006) presented this type of decomposition to explain terms of trade volatility. The dependency of the results on the level of disaggregation shoud be pointed as a caveat of this type of decomposition.

Chart 6

PORTUGUESE TERMS OF TRADE

Contributions to accumulated growth, in p.p.



Source: Calculations based in information from *INE*.

The terms of trade in the **manufacturing** trade recorded a 2.6 per cent increase over the period considered. However, this was not generalized across the various groups of products considered.

The total effects were clearly related to the behaviour of external trade prices for **textiles, clothing and footwear**, which contributed positively in more than 4 p.p. to the overall evolution of terms of trade. These gains were broadly based across the three groups of products, reflecting the strong decline in import prices, which recorded a negative growth rate of around 14 per cent from 1995 onwards, while export prices increased by more than 11 per cent.

The same type of phenomenon occurred in **rubber and plastics products**, which also gave an important contribution to the terms of trade gains. The strong decline in import prices (around 13 per cent) and the maintenance of a positive growth of export prices (above 18 per cent) were translated into an increase in the terms of trade of more than 30 per cent. **Chemical products** also recorded a positive contribution but not related to a decline in import prices, which continued to grow, albeit at a slower pace than export prices.

Machinery and equipment also recorded a remarkable decline in import prices, but in this case the same occurred in export prices and the contribution to the overall evolution of the terms of trade was slightly negative. It should be mentioned that this result entails very different situations across the subsectors, reflecting the usual lack of homogeneity in this kind of products. In the classification considered, there was a strong increase of the terms of trade in **office machinery and computers** reflecting the decline in import prices; **the radio, television and communication** sector recorded a decline in exports prices and thus in terms of trade; and **other machinery and equipment** recorded small variations in import and export prices, and thus relatively stable terms of trade.

The external trade prices of **transport equipment** presented a singular evolution. Import prices continued to grow, while export prices recorded a decline, and this sector gave therefore the most negative contribution to the evolution of the terms of trade.

Table 1

EXTERNAL TRADE AND TERMS OF TRADE BY GROUPS OF PRODUCTS (1995-2006)

In percentage

	Implicit average weights		Accumulated growth rate			Contributions to terms of trade accumulated growth rate		
	Exports	*Imports*	Export prices	Import prices	Terms of trade	Inter-sector effect	Intra-sector effect	Total effect
Agric, hunting and fishing	***1.3***	***5.3***	**27.9**	**3.0**	**24.9**	**-0.6**	**0.7**	**0.1**
Energy	***2.2***	***9.0***	**189.3**	**219.1**	**-29.8**	**-8.9**	**-0.8**	**-9.7**
Mining and quarrying	***0.8***	***0.3***	**78.2**	**20.6**	**57.6**	**0.3**	**0.2**	**0.5**
Manufacturing	***95.7***	***85.4***	**5.1**	**2.5**	**2.6**	**-1.1**	**3.8**	**2.7**
Food and beverages	*6.3*	*8.5*	6.5	11.7	-5.2	-0.2	-0.3	-0.5
Textiles, clothing and footwear	23.9	*9.0*	11.6	-14.1	25.8	0.3	3.9	4.2
Textiles	*8.8*	*4.8*	4.4	-14.9	19.3	-0.2	1.3	1.2
Clothing	*9.1*	*2.2*	8.3	-20.0	28.3	-0.1	1.5	1.4
Leather and leather products	*6.0*	*2.0*	30.7	-2.8	33.5	0.6	1.1	1.6
Wood, cork, pulp and paper products	*9.4*	*3.8*	-2.0	-2.2	0.3	-0.2	0.1	-0.1
Mineral and metal products	*9.4*	*9.6*	18.4	17.8	0.7	0.2	-0.2	0.0
Chemical products	*5.4*	*10.8*	28.0	12.4	15.6	-1.0	1.5	0.5
Rubber, plastic products	*3.0*	*3.2*	18.5	-13.0	31.5	0.1	1.0	1.1
Machinery and equipment	*19.3*	*22.4*	-8.8	-7.3	-1.5	-0.2	0.0	-0.2
Office machinery and computers	1.1	2.7	44.4	-41.9	86.3	-0.1	1.6	1.5
Radio, television and communication	*6.2*	*5.8*	-32.9	-0.2	-32.7	0.0	-2.2	-2.2
Other machinery and equipment	*12.0*	*14.0*	4.2	-0.5	4.6	-0.1	0.5	0.5
Transport equipment	*16.1*	*15.6*	-7.3	10.9	-18.2	-0.1	-2.7	-2.8
Other products	*2.9*	*2.5*	15.9	-2.5	18.3	0.0	0.6	0.5
TOTAL	***100.0***	***100.0***	**8.9**	**15.7**	**-6.8**	**-10.3**	**4.0**	**-6.4**

Source: Calculations based on information from *INE* (quarterly Paasche index).

4. THE EFFECTS OF LOW-COST COUNTRIES ON PORTUGUESE MANUFACTURING IMPORTING PRICES

As mentioned above, the recent gain in manufacturing terms of trade has occurred in a context of relative stabilization of import prices. This Section looks at the links between this evolution and the role of low-cost countries in Portuguese imports. In fact, the increasing participation in international trade of some of these countries is often pointed out as a reason to explain why manufacturing import prices have shown a very contained growth in recent years. This is related to a simple composition effect: products with lower prices from some developing countries are increasing their share in total imports, pushing down the average unit value of imports.

Table 2 shows the shares in Portuguese manufacturing imports of 41 countries defined as low-cost, for the period from 1998 to 2006.[3] These shares recorded an increase (especially in the most recent years), which has bee common to all sectors, with the exception of "food and beverages". "Textiles, clothing and footwear" are the ones where the share of imports from low-cost countries records the highest figure (close to 16 per cent in 2006). The item "mineral and metal products" also came in with a share above 10 per cent in 2006.

Considering the evidence of contained growth in import prices and in line with some studies for other countries [see Kamin *et al* (2004), Røstøen (2004), Sveriges Riskbank (2005), Bank of Finland (2006), Glatzer *et al*. (2006) and ECB (2006)], an estimate was produced for the direct effect of low-cost countries in Portuguese manufacturing import prices. This was done through the computation of Paasche indices to each group of products, using import unit value figures at the most detailed available level (8-digit of Combined Nomenclature).[4] This information, covering more than 8000 different products, was adjusted by the exclusion of outliers, considered as the items whose unit values rose more than 100 per cent or fell by more than 50 per cent in each year. An import deflator was then computed for a

Table 2

PORTUGUESE WEIGHTS OF IMPORTS FROM LOW-COST COUNTRIES IN MANUFACTURING PRODUCTS

Per cent

	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average	Variation (in p.p.)
Total manufacturing	5.8	5.4	6.3	6.5	6.8	6.8	6.9	7.5	8.6	6.7	2.9
Food and beverages	8.7	8.8	7.4	7.2	6.4	7.5	7.5	7.7	7.5	7.6	-1.3
Textiles, clothing and footwear	13.3	11.9	13.0	14.7	13.0	13.4	14.5	14.7	16.1	13.8	2.8
Wood, cork, pulp and paper products	6.0	6.9	6.9	6.9	7.5	6.8	9.2	8.5	7.6	7.4	1.7
Chemical products	2.3	2.4	3.4	3.3	3.3	3.2	3.5	4.5	4.6	3.4	2.3
Rubber, plastic products	3.8	4.1	4.2	4.3	4.3	5.1	5.1	5.5	6.2	4.7	2.5
Mineral and metal products	7.0	7.2	8.0	8.8	9.5	10.3	9.1	11.8	13.8	9.5	6.8
Machinery and equipment	3.3	3.2	3.5	3.2	4.6	4.3	4.5	5.0	6.4	4.2	3.1
Transport equipment	3.9	3.4	6.7	7.3	8.0	7.0	6.9	6.5	7.9	6.4	4.0
Other products	6.6	6.7	8.0	7.8	7.9	8.4	9.4	9.5	9.7	8.2	3.1

Source: *INE*.

(3) As selection criterion, the economies considered had having a price level less than 75 per cent of the Portuguese. Using Purchasing Power Parity data from the IMF's World Economic Outlook for the period 1995-2006, 41 countries were classified as low-cost countries according to this criterion: Albania, Algeria, Argentina, Bangladesh, Belarus, Bolivia, Brazil, Bulgaria, Cameroon, China, Colombia, Côte d'Ivoire, Czech Republic, Egypt, Estonia, Hungary, India, Indonesia, Kazakhstan, Kenya, Kyrgyz Republic, Latvia, Lithuania, Macedonia, Malaysia, Morocco, Nigeria, Pakistan, Paraguay, Peru, Philippines, Poland, Romania, Russia, Slovak Republic, Sri Lanka, Thailand, Tunisia, Turkey, Ukraine and Vietnam.

(4) The unit values may differ slightly from the official data on external trade deflators - the most important difference is that the unit values are not quality-adjusted. However, this problem is minimized (but not solved) when a very disaggregated level of detail of products is used.

group of trading partners excluding the economies classified as low-cost countries. The difference between these two import deflators (the overall and the one excluding low-cost partners) is used as a measure of the direct effect of low-cost countries imports. This arithmetical decomposition should of course be interpreted carefully, and probably constitutes a lower bound for the total effect of low-cost countries on import prices. Firstly, this estimate is just a rough measure of the direct effect, given that it does not account for the products arriving indirectly from low-cost countries but recorded as imports from other economies. Secondly, this measure does not account for indirect effects on the export prices of developed countries.

Table 3 shows the estimates of the direct effect on Portuguese manufacturing import prices for the period 1998-2006. As expected, the overall effect is negative, in particular from 2003 onwards – the positive figure for 2006 is an exception, and is related to higher growth in the export prices of low-cost countries that more than offset the downward pressures associated with the rise in import share of those countries with lower price levels.

According to these estimates, imports from low-cost countries contributed directly to an annual average reduction in the growth of manufacturing prices of around 0.2 percentage points (p.p.) (0.4 p.p. from 2003 onwards). Among the several groups of products considered, this negative effect was more important in textiles, clothing and footwear (an annual average of -0.5 p.p.). This direct effect seems to be rather small, when compared with the various estimates produced for other countries following the same type of methodology.

Kamin *et al*. (2004) estimated that the rising share of China in US imports had a downward effect of about 1 p.p. in import price changes, on average annual terms, over the period 1993-2002. Applying the same methodology to 26 countries, these authors estimate an average annual impact of China on import prices growth of -0.25 p.p. (-0.1 p.p. for Portugal) with higher impacts of about -1.0 p.p. on countries with the strongest trading links with China (US, Korea, Japan).

Higher effects are also reported in other recent studies for some specific countries. The Bank of Finland (2006) estimates that imports from low-cost countries have slowed the annual increase in Finish import prices of industrial goods by approximately 1 p.p. between 1996 and 2005, mostly concentrated after 2000. An average annual effect of -0.7 p.p. in the Austrian manufacturing import price growth rates in the period 1995-2005 is reported by Glatzer *et al* (2006). These results are broadly in line with the ones reported by the Sveriges Riskbank (2005) for Sweden and in Røstøen (2004) for Norway. As expected, the results for the euro area as a whole point to a bigger effect, given the exclusion of the intra-trade flows and thus the higher share attributed to low cost countries: the ECB (2006) estimates a

Table 3

EFFECTS OF LOW-COST COUNTRIES ON IMPORT DEFLATORS

In percentual points

	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Total manufacturing	-0.4	-0.1	0.5	0.0	-0.1	-0.7	-0.6	-0.4	0.3	-0.2
Food and beverages	-0.8	-0.1	1.0	0.1	0.1	-0.5	0.1	-0.3	0.4	0.0
Textiles, clothing and footwear	-1.4	-1.1	1.5	0.2	-1.5	-0.7	-0.8	-1.1	0.9	-0.5
Wood, cork, pulp and paper products	-0.2	0.0	0.7	-0.1	0.0	-0.8	0.9	0.2	0.7	0.2
Chemical products	0.0	0.1	0.5	-0.6	-0.2	-0.3	-0.2	0.4	0.3	0.0
Rubber, plastic products	-0.1	-0.9	-0.1	0.2	0.2	-1.3	-0.8	0.2	0.4	-0.2
Mineral and metal products	-0.3	-0.1	0.5	-0.4	-0.2	0.7	1.0	-1.3	-1.3	-0.2
Machinery and equipment	-0.4	0.0	-0.3	0.3	-0.1	-1.1	-1.1	-0.4	0.6	-0.3
Transport equipment	-0.4	0.7	1.2	-0.3	0.2	-1.1	-1.8	-0.1	-0.1	-0.2
Other products	-0.1	0.3	-1.2	0.4	0.3	-1.0	-0.6	-1.3	-0.4	-0.4

Source: Calculations based on information from *INE*.

Table 4

WEIGHTS OF IMPORTS FROM LOW-COST COUNTRIES
(EURO AREA COUNTRIES MANUFACTURING PRODUCTS)
Per cent

	All 41 countries			of which					
				Central and Eastern Europe[a]			China		
	1998	2006	var	1998	2006	var	1998	2006	var
Austria	9.9	14.3	4.3	8.0	10.2	2.1	1.0	2.8	1.8
Belgium-Luxemburg[a]	9.0	12.9	3.9	3.0	4.8	1.8	2.3	4.7	2.4
Finland	8.8	20.4	11.6	5.6	10.2	4.7	1.7	7.6	5.9
France[b]	12.8	20.3	7.5	3.7	7.4	3.7	2.8	5.7	2.9
Germany	16.8	24.4	7.6	10.1	13.7	3.6	3.1	7.4	4.3
Greece	10.6	17.8	7.2	5.2	9.1	4.0	2.5	5.2	2.7
Ireland	4.6	8.4	3.9	0.9	2.4	1.5	1.5	3.8	2.3
Italy	12.9	23.3	10.4	5.7	10.8	5.2	2.7	7.2	4.4
Netherlands	11.2	24.4	13.2	3.4	5.1	1.6	2.5	13.1	10.6
Portugal	5.1	8.1	3.0	1.4	3.4	2.0	0.9	1.9	1.0
Spain	7.5	16.0	8.5	2.0	5.4	3.4	2.4	6.3	3.9

Source: World Trade Atlas.
Notes: The differences observed in Portuguese import shares between table 2 and table 4 are due to different data sources. (a) Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Poland, Romania, Russia, Slovakia, Turkey and Ukraine. (b) First available year is 1999. In the case of France, shares are computed in total imports of goods.

sizeable dampening in overall euro area import price growth of approximately 2 p.p. per year over 1996-2005.

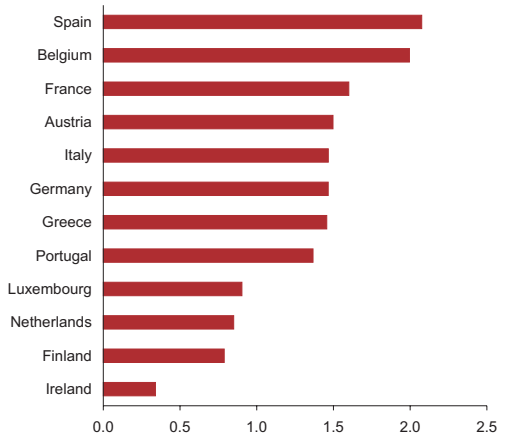
As in Kamin *et al*. (2004), the smaller direct effect estimated for Portugal is related to the lower importance of imports arriving directly from countries characterized by low production costs.

Table 4 compares the proportion of these countries in manufacturing imports of several euro area countries. In fact, Portugal is the country where this share is smaller (both in levels and in accumulated variations), and this difference is basically explained by the low proportion of imports arriving from China and from Central and Eastern Europe. This notable difference between Portugal and the other euro area countries may be related to some geographical features or to a more similar specialization between Portugal and those developing countries [Esteves and Reis (2005)]. However, it should be stressed that this lower direct effect was not translated into a differentiated evolution of import prices – using data from Eurostat, the growth in Portuguese manufacturing import prices was very close to the average of the euro area countries (Chart 7).

Chart 7

MANUFACTURING IMPORT PRICES IN EURO-AREA COUNTRIES

Annual average changes: 1998-2006



Source: Eurostat (Comext).

5. THE CLOTHING SECTOR AS A CASE STUDY

Given the important contribution of the so-called traditional sectors, it is relevant to explore the evolution of their terms of trade. While the decline of import prices is often pointed out as being related to the increasing competition from low-cost countries, the differentiated evolution of export prices may constitute a signal of some structural changes.

In general terms, the evolution of export unit values can be decomposed into: (i) the weighted evolution of individual prices; (ii) the changes in shares weighted by price levels; (iii) and a cross term accounting for both the variations of prices and shares

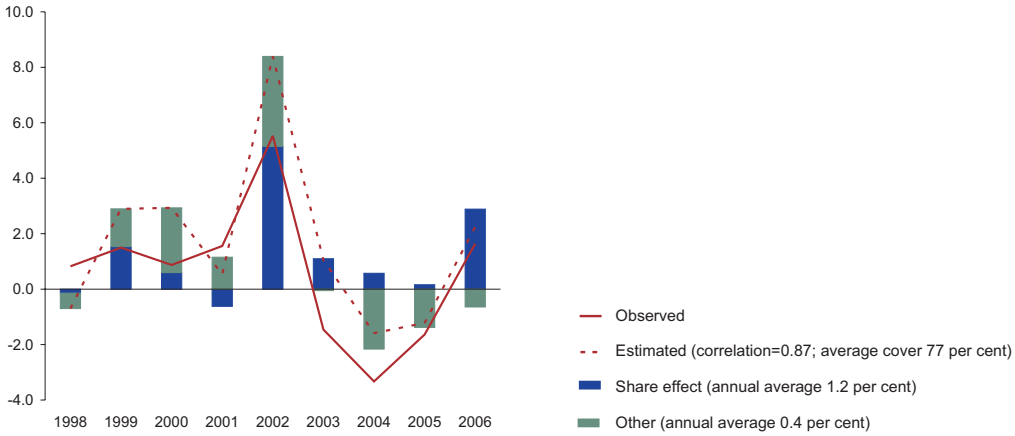
$$\Delta p = \sum_i \alpha_i \Delta p_i + \sum_i \Delta\alpha_i p_i + \sum_i \Delta\alpha_i \Delta p_i$$

The second term accounts for a composition effect. If the structure of exports is moving towards more (less) expensive products, this would imply an increase (decline) in the aggregate export price. Chart 8 presents this decomposition for export prices in the clothing sector, using the available micro data for around 420 different products, both in nominal and volume (in Kg) terms.[5] The results show a regular positive share effect, pointing to an annual average contribution of 1.2 percentage points for the evolution of export prices in the clothing sector. This suggests some recomposition in this sector, translated into an increase of relative weight of more expensive products, with a decline in exports of lower-end products and/or a redirection of exports to high-range markets. The information that was used does not allow for a conclusion as to which of these two composition effects was predominant. However, the decline of production in these sectors over the most recent years suggests that part of this composition effect might be related to the destruction of production in some products oriented to low-range markets.

(5) Products not available for two consecutive years are excluded. Moreover, products with prices growing outside the range (-25%,+25%) or with quantities rising outside (-50%,+50%) were also excluded. It should be mentioned that the same type of exercise was attempted for the textiles and footwear sectors. However, the micro data did not allow for a reasonable reproduction of the evolution of the respective export prices. This may be related to some important quality adjustments when computing the official figures for export prices. In general, it is not possible to reproduce these adjustmentents, and they are likely to be particularly important in sectors with less product homogeneity.

Chart 8

EXPORT PRICES IN THE CLOTHING SECTOR
Contributions to annual growth, in percentual points



Source: Calculations based on information from *INE*.

6. CONCLUSIONS

This article analyses the recent evolution in the Portuguese terms of trade. This evolution is analysed from an historical perspective and compared with the one recorded by other OECD countries. Additionally, in line with the approach presented in Baxter and Kouparitsas (2006), the evolution of terms of trade is broken down into two effects: a first component measuring the effects of the specialization of each country across the several sectors; and a second component related to differences between export and import prices for each type of product.

The results point to the fluctuations in oil prices as the major factor explaining the evolution of terms of trade. When the energy component is excluded, and the focus is on manufactured goods, the terms of trade gain is strongly related to an increase in relative prices in some group of products, in particular in textiles, clothing and footwear. The results suggest that the recent increase in terms of trade may be related, among others, to two factors.

The first is the increasing competition of low-cost countries in international markets. Terms of trade gains were common across OECD countries and started to occur in the 90s, when increasing international competition seemed to gain momentum. Moreover, the role of globalization is suggested by the fact that, both in Portugal and in the other OECD countries, the increase in terms of trade was connected with a very contained evolution of import prices. Several empirical studies point out the increasing competition from low-cost countries as having contributed to this evolution [see, for instance, Kamin *et al*. (2004) and ECB (2006)]. In the Portuguese case, this negative effect of increasing competition on manufacturing import prices was particularly strong in the so-called traditional sectors (textiles, clothing and footwear), i.e. the sectors where imports from low-cost countries recorded the highest shares and where import prices gave the most important contribution for the rising path of terms of trade.

The second factor is more specific to Portuguese economy, since it related to a significant increase in terms of trade in the traditional sectors. In line with recent results for the textiles sector concerning the evolution of labour and wages [see Banco de Portugal (2006)], there is evidence that a composition change within the clothing sector has contributed to the positive evolution of export prices, which may

also be related to increasing international competition. Such integration has translated into a progressive change in global comparative advantages, implying not only the redirecting of some national production to high-range markets, but also a decline in the proportion of exports of lower-end manufactures goods. The results presented do not allow for a conclusion as to which of the two composition effects was the most important.

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