

**COMPETITIVENESS AND THE KALDOR  
PARADOX:  
THE CASE OF SPANISH SERVICE  
SECTOR**

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## COMPETITIVENESS AND THE KALDOR PARADOX: THE CASE OF SPANISH SERVICE SECTOR

### ABSTRACT

In the current wave of service globalisation, a new dynamic explaining international trade in services emerges. Some services are following similar trends to the ones initiated by manufacturing industries some decades ago. In this context, costs factors, the ones leading the major part of the current global sourcing in services, could gain importance in global services competition. Services could behave more similarly to goods and the Kaldor paradox may potentially be less remarkable that some years ago, in a context where the achievement of the EMU perform in the opposite way. As a particular empirical case study, empirical analysis of trade market shares in relation to effective real exchange rate is carried out for the Spanish case. Results shows that the *Kaldor paradox* continues having a strong importance in Spanish trade, although not all the service sectors have the same price/costs sensibility. Recent trends also present uneven results depending on the service sector, but in general there are not signs of decreasing the role of non-price/cost factors in international trade (in particular business services), although many services continue to be slightly more sensitive to relative prices than other industries.

**KEY WORDS:** Competitiveness, services, Kaldor paradox, international trade.

### RESUMEN:

Dentro de unas economías de servicios cada vez más globalizadas, una nueva corriente de explicación del comercio internacional de servicios se hace necesaria. Algunos servicios están en la actualidad siguiendo las mismas tendencias que las industrias manufactureras empezaron hace algunas décadas. En este contexto, los factores relativos a los costes podrían aumentar su papel en esta competencia global de servicios. Así, los servicios podrían comportarse de forma parecida a los bienes y la paradoja de Kaldor podría ser menos importante en estas actividades que hace unos años, dentro de un contexto donde el desarrollo de la UME actúa en sentido opuesto. Como caso de estudio particular, el presente documento analiza empíricamente las cuotas de mercado en relación con los tipos de cambio efectivos reales para la economía española. Los resultados muestran que la paradoja de Kaldor continúa teniendo gran importancia en el comercio español, aunque existe una significativa heterogeneidad entre las distintas actividades de servicios en cuanto a su sensibilidad frente a los precios/costes. En general, las últimas tendencias no muestran signos de que disminuya el papel de los factores que no son los precios en el comercio internacional (particularmente en algunos servicios a empresas), aunque muchos servicios todavía continúan siendo ligeramente más sensibles a los precios que otros sectores económicos.

**PALABRAS CLAVES:** Competitividad, servicios, Paradoja de Kaldor, comercio internacional

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## 1. INTRODUCTION

**I**n the current wave of service globalisation, a new dynamic explaining international trade in services emerges. Some services are following similar trends to the ones initiated by manufacturing industries some decades ago. In this context, costs factors, the ones leading the major part of the current global sourcing in services, could gain importance in global competition. Services could behave more similarly to goods and the Kaldor paradox may be less remarkable that some years ago.

One might think that the evolution of the changes in services and, hence, in their competitiveness, would be associated with the competitive capacity of the overall economy because of the important role of the service activities both in employment and production in the advanced economies. In this way, service prices, costs, and productivity levels would necessarily influence the international evolution of services. If global relative prices were higher, service competitiveness would be lower and the market shares these services could reach in other countries would be inferior to those present in economies offering more favourable conditions.

The adopted approach for analysing Spanish competitiveness has been based on the study of export market share indicators and the effective real exchange rate (ERER), which indicates the influence costs and prices have on competitive capacity.<sup>1</sup> However, the important number of factors integrating the concept of competitiveness explains why the approach through price and cost indicators introduce an incomplete vision of the problem. Following the hypothesis of Kaldor (1978), this paper tries to evaluate the existence of a *Kaldor paradox* in the Spanish service sector and, going one step further, show the diverging patterns between the competitive behaviour of manufacturing industries and that of services: service characteristics could make service market shares less sensitive to the evolution of indicators exclusively based on prices<sup>2</sup>. In addition, this paper underlines the strong influence played by market share cycles in sustaining relative prices (contrary to trends which show a basic behaviour justifying the arguments presented by Kaldor).

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<sup>1</sup> The selection of these indicators is made for two reasons: a conceptual focus and trade competitiveness versus other wider forms of competitiveness and explanatory factor (Rubalcaba, 2002); and a reasonable empirical assessment using the available data. Other additional indicators are expected to be used in further research.

<sup>2</sup> The competitive analysis of this research has exclusively been focused on evaluating the presence of Spanish goods and services on the European Union-15 market. Yet, competitiveness in domestic markets is not taken into account. On the other hand, the competitiveness indicators used only reflect part of the generated total trade, in reference to products, but not to factor trade, very important in some service activities such as financial or commercial services. Finally, the time series used range from 1980 to nowadays.

Possible factors justifying the partial refutation of Kaldor hypothesis are the subsectorial specialisation of Spanish service exports, or the fact that market shares do not represent a full guarantee competitiveness indicator because it strongly depends on those institutional alterations which affect the levels of connection of the country with international markets. The Kaldor paradox is reinforced in the EMU area since the influence of price/costs movements have decreased after the currency stability. However, due to the delocalisation trends the Kaldor paradox may be less relevant today, or potentially less relevant, than some few years ago. Therefore, the previous existing evidence (Rubalcaba and Gago, 2001) can be revisited to test its validity. Moreover, new data not available some years ago allow us to test new hypothesis, a better statistical refinement and new sectoral breakdowns.

In summary, this paper addresses four main hypotheses:

- 1) Kaldor paradox is even more valid for services than for manufacturing due to the particular, segmented and less open to competition markets.
- 2) Recent trends towards delocalisation should potentially lead to a less influence of the Kaldor paradox in outsourcable services, since prices-costs factors are of major influence in global sourcing, in a context where the achievement of EMU acts in an opposite way, since intra-EMU difference in relative prices are not any more affected by currencies movements so more stability is gained and other reasons for trading prevail.
- 3) Since Kaldor paradox is explained by a diversity of factors, many of which are linked to structural and mid-long-term factors, the short-term analysis on cycles should reduce the role of its effects.
- 4) Services are so heterogeneous that results should indicate uneven situation: trend performance in personalised services and producer services could be less affected by costs-prices factors than consumer or standardised services.

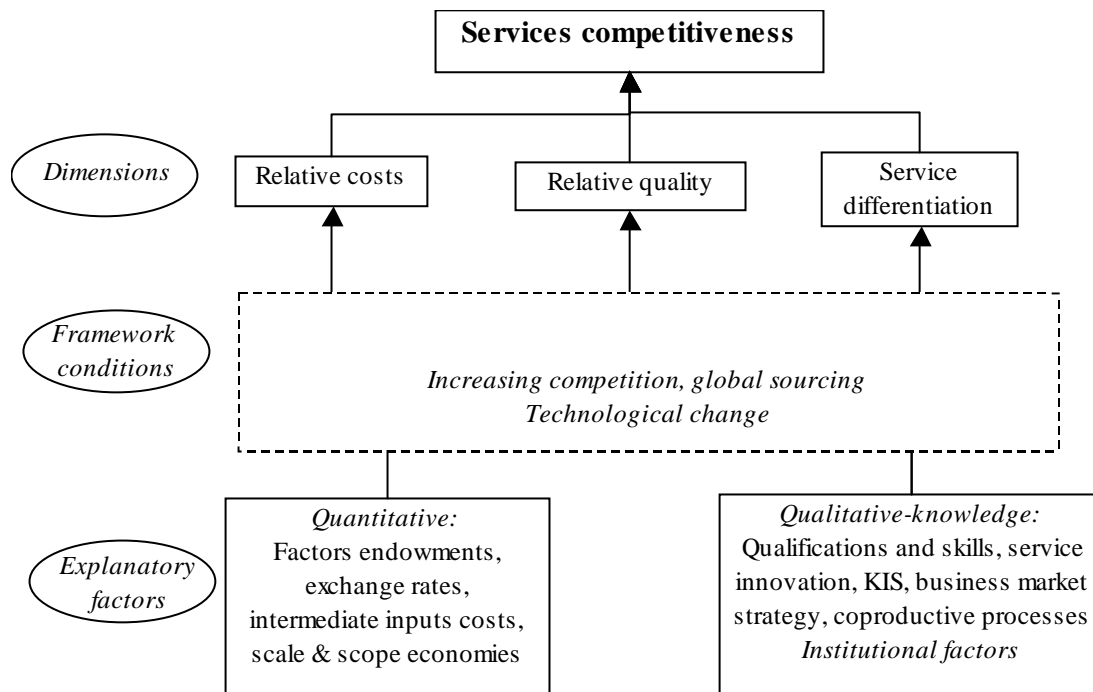
## 2. SERVICES AND COMPETITIVENESS IN A NEW GLOBAL ARENA

**I**n recent years, services globalisation has changed the traditional role of services in economic growth. Services are not so fragmented and out of competition as many of them they were some years ago. Nowadays, services are not only active in promoting economic globalisation: services are becoming themselves more global, more affected by the international scale of businesses. The relatively recent trends towards global sourcing establish a new path that seems to break the traditional market segmentation and limits of service globalisation.

Although the increasing role of international trade and FDI in services, there are still many limits to international flows in services (Cuadrado et al., 2002). Restrictions are related to the role of technologies, price and product heterogeneity, market segmentation, the limits to multinational service companies and, finally, the existence of national legal, economic, linguistic and cultural frontiers. However, none of the limits on the globalisation of service activities have prevented the breakthrough of international outsourcing in some services, in particular the offshoring of business services from advanced countries to developing countries such as those of South-east Asia. Led by India, some less-developed countries continue to demonstrate that it is possible to replicate the relocation movements of manufacturing. Services that had remained as a "reserve" sector for unemployed people leaving the traditional industries, now begin to be the object of a degree of "delocalisation" or, at least, of a loss of potential jobs. In many cases it is not appropriate to speak of delocalisation because it does not mean the direct relocation of businesses, but the transfer or migration of *new* services. However, the current perception is that some of the new jobs that might have been generated in countries traditionally strong in services are now being moved to countries where labour costs are lower. It is happening both in low-skilled or unskilled service sectors – such as call-centres – and in highly-qualified service sectors such as information and computer services, and even in very advanced services such as research and development, whose success cannot be explained by low costs alone, although the "cost" reason is still the best explanation for the bulk of the offshoring process.

Figure 1 shows the three success-dimensions for services competitiveness: relative prices, relative quality and perceived service differentiation (other factors explaining services trade not directly related "strictly speaking" with prices or quality factors –although quality in a wider sense of the term can cover also differentiation aspects such cultural proximity or trust-) The three dimensions are based on explanatory factors which are costs-related factors -based on classical economic factors explaining international trade such as factors endowments, development of scale or scope economies or exchange rates- or non-costs related factors such as skills, qualifications, service innovation, use of knowledge-intensive services (KIS), business strategies or the way in which interfaces and interaction with clients are co-produced. All these non-prices factors are related to knowledge creation and potential knowledge behind technology and capacity competitiveness, one of the main explanation for the competitiveness of the Asian tigers (Fagerberg et al., 2005), but they can also be related to degrees of institutional agreements, which have been provide to be important as well (Milberg and Houston, 2005).

FIGURE 1.  
Dimensions and factors of services competitiveness.



The way in which the explanatory factors become competitive advantages for services is strongly affected by three business framework conditions: technological change, increasing competition – both national-local and international-global, and emerging trends towards global sourcing –this is still restricted to certain services and countries (Rubalcaba, 2005). The increasing role of global sourcing could unbalance the current “equilibrium” between costs factors and quality-differentiation factors towards a major importance of relative prices.

Previous recent results on Kaldor paradox indicate its relevance in understanding the external trade in overall economy (Fagerberg et al, 2004). Costs-factors can not be the main nor the “alone” explanation of trade competitiveness. For example, when costs factors such as unit labour costs take into account other factors such as the functional distribution dimension “Kaldor paradox ceases to be an anomalous results” (Felipe, 2005). In services all these elements should apply as well, although differences among services should be at least as important as the differences found for manufacturing industries (Ioannidis and Schreyer, 1997) where both technological and non-technological factors proved to be determinant of export performance. Different profile in service trade specialisation and factors such as the exposure degree to international competition and market structures



(Díaz and Molero, 2003; Molero and Boueri, 2003) have to play a major role.

### 3. THE SPANISH CASE

The adopted approach for analysing Spanish competitiveness has been based on the study of export market share indicators and the effective real exchange rate (henceforth, EREER). The latter indicates the influence costs and prices have on competitive capacity which, in spite of their limitations, are still, nowadays, the dominant approaches on economic literature. Taking into account the current statistical availability, EREER is used mainly due to the fact that they are the only indicators elaborated by official and international organisms in a systematic and periodical way thus offering the best competitiveness approach. Indeed, export shares present the advantage of evaluating competitiveness through their effects, so that economies, industries or enterprises are qualified as competitive if they widen their participation in the international supply, integrating, through their results, all the factors which have intervened in the promotion of the supply capacity of a country<sup>3</sup>.

The trade competitiveness indicator has to be necessarily assumed to represent the evolution of the market share of a country or, in other words, the capacity shown by this country to increase, in a sustainable way, its supply participation in a wider market. In this sense, competitiveness cannot purely be defined as the capacity a country has to sustain a trade balance and a balance of invisible items. Indeed, many under-developed economies maintain their balance in equilibrium, or even positive, without necessarily implying a strong competitive position. What makes the concept of competitiveness relevant is precisely its relationship with other competing economies and not the evolution of their balances.

However, the important number of factors integrating the concept of competitiveness explains why, when we approach the problem of its measurement through price and cost indicators, we are necessarily introducing an incomplete vision of the problem. The research carried out by Kaldor in 1978 was pioneering in showing that the hypotheses on which price and cost indicators are based do not seem to be confirmed by the empirical results shown by trade figures, a fact further corroborated by posterior analyses (see Fagerberg, 1996) establishing how countries managed to increase their market shares in the medium

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<sup>3</sup> The approach used in this paper differs notable from other (see, for example, Barras y Peterson, 1987), which analyze international competitiveness in services comparing the value of constructed indexes in different European countries.

term, independently from the evolution of price and cost indicators. This led to the conclusion that variations in exchange rates and in “competitive capacity”, as it is normally understood, were not the causes but consequences of the trends followed by the countries’ market shares. Such trends can be explained by factors other than prices and costs (the so-called non price factors).

From this point of view, the empirical approach here tries to evaluate the existence of a Kaldor paradox in the Spanish economy and, going on step further, puts forward the above-mentioned hypothesis arguing for the existence of diverging patterns between the competitive behaviour of manufacturing industries and that of services: service characteristics could make service market shares less sensitive to the evolution of indicators exclusively based on prices.

Two additional issues before starting the analysis: the competitive analysis has exclusively been centred on evaluating the presence of Spanish goods and services on foreign markets (concretely, on the EU-15 market, as explained later on). Yet, competitiveness in domestic markets is not taken into account, as it is somewhat distant from the objectives of this paper. On the other hand, it is necessary to consider that international service trade indicators only reflect part of the generated total trade, in reference to products, but not to factor trade (human and physical capital), very important in many service activities. Moreover, the fact that the establishment of productive units in the host country is essential in services, being flows of specific factors the means through which this trade is carried out.

### 3.1. The Kaldor paradox in Spanish economy:

Before going into the analysis of competitive patterns in services and manufacturing industries in Spain, we shall briefly look at the evolution of competitiveness in the overall Spanish economy. In relation to trade competitiveness, market shares have been established by evaluating the significance of Spanish service and manufactured goods exports within the EU-15 market (that is to say the EU-15 imports), using the following formula:

$$CEX = \frac{X_t}{M_t} * 100$$

where  $X_t$  are goods and/or services exported by Spain to the European Union in the year  $t$ , and  $M_t$  are imports carried out by the European Union over the period  $t$  from countries belonging to the EU itself.

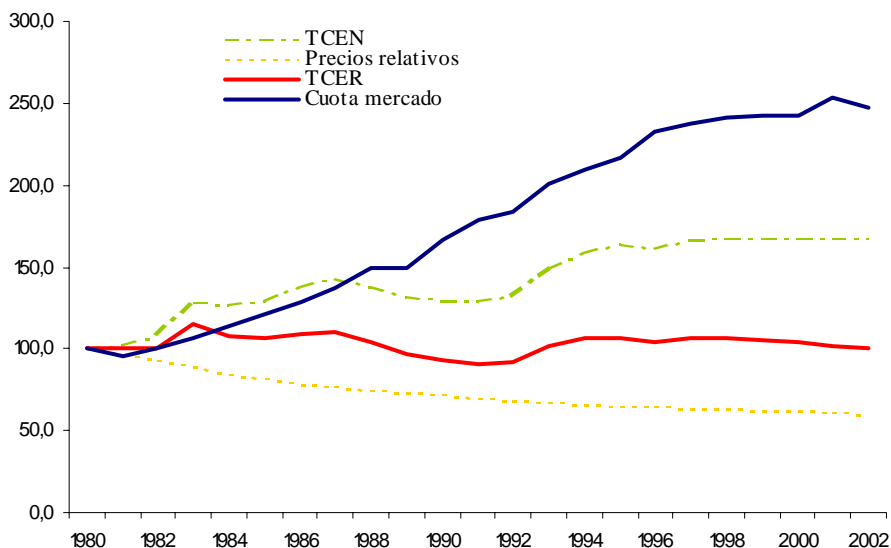
The reason why the EU-15 has been chosen is because it makes up the majority of service and goods trade (72 per cent in 2003), percentages which have increased over time, and because it is comparable with the

ERER evolution, calculated with the reference to the EU relative prices and the Euro exchange rate (and ECU exchange rate before). As for price competitiveness, it is calculated through the variations shown in the ERER, obtained by multiplying the Spanish relative price index of each industry, compared with the European Union<sup>4</sup>, by the effective nominal exchange rate<sup>5</sup> (henceforth, ENER).

The figure 1 show that the relationship between both variables is not exactly the one conventionally (non-Kaldor type) suggested for the overall reference period. Concretely, at the end of 1980s and in the mid-1990s, increases in export shares were accompanied with a worsening of average price competitive capacity measured by the ERER, thus corroborating the conclusions reached by Kaldor. On the contrary, at the beginning of the 1990s, the evolution of both variables adapted itself to the expected economic logic, since the strong market share increase was accompanied with a ERER improvement. At the beginning of 1980s, a strong worsening of the exchange rate was parallel with the largest growths of the market shares, agreeing with the classical economic theories. The same is observed at the end of 1990s, although with less intense increases of both variables.

FIGURE 2.

**Parallel evolution of market shares in the EU-15 and ERER of Spanish economy.**  
(1980 = 100)

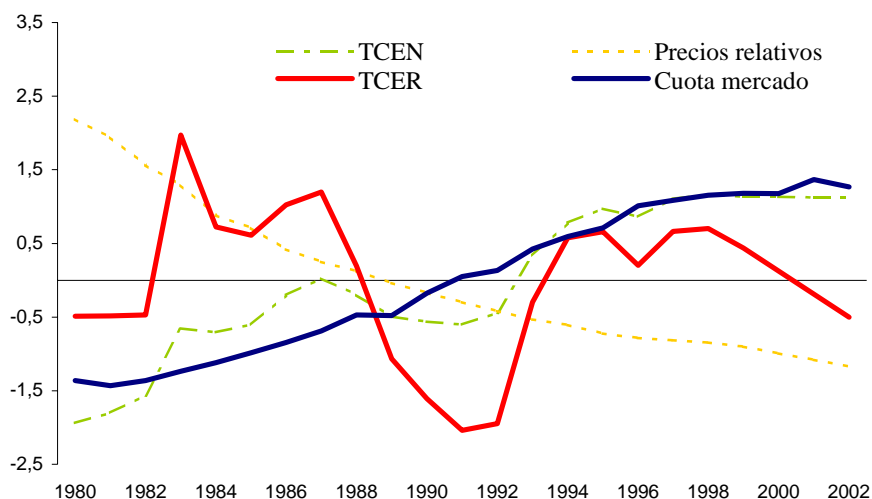


Source: Based on EUROSTAT, OECD y GGDC

<sup>4</sup> Price deflators supplied by Groningen Growth and Development Centre (GGDC) database.

<sup>5</sup> Comparing peseta against euro.

FIGURE 2 BIS.  
**Parallel evolution of market shares in the EU-15 and ERER of Spanish economy.**  
 (normalized data)



Source: Based on EUROSTAT, OECD y GGDC

In general, the classical relationship between exchange rates and market shares appears in the Spanish economy after devaluations and during the second energetic crisis; while the Kaldor paradox is observed slightly between 1987 and 1995, and during the last two reference years. The possible causes of this fact have been the following:

1. The adaptation to a new competitive environment during the 1980s, differentiation processes and entry of multinationals.
2. Internal limits of markets, international recession and lagging shock of the energetic crisis of the 1990s.
3. The recovery during the 1990s, the entry to the EMU and the appearance and consolidation of the euro.
4. The role of the aforementioned non-costs/prices factors.

### 3.2 Services vs manufacturing industries in trade relationships.

The increase in international service trade is unquestionable and has been the object of a growing interest over the last years. This fact rests on various factors such as the fast growth experienced by service activities, unprecedented progresses made in new information technologies or the progressive liberalisation of some service markets. In this way, according to the Eurostat (2005), service EU15 exports grew by an annual accumulative close to 8.8 per cent while goods reached 8.6 between 1992 and 2003. This implied a slightly increase in

the relative weight of service exports, albeit remains very stable over time to approximately 21-22%.

Spanish export growth, in services as well as in goods, was quite above EU15 growth thus illustrating the strong process of trade opening and internationalisation that took place over the whole reference period. In any case, what is most relevant to our analysis is that, contrarily to what happened in many countries in the world (medium and low-income countries included), service exports grew less than good exports (11.3% in goods, 10.3 in services exports, 1992-2000). This implies that service exports lost relative weight, although it remains over the 30% of exports due to the role of travel and tourism. Table 1 shows the coverage rates and growth rates of service exports from Spain to the rest of the world. The positive evolution of computer and information services is outstanding as well as the generally high growth rates (in current prices). The positive coverage for travel and IC services is compensated by important deficits in most of service sectors and goods.

TABLE 1.  
Trends and coverage rate of Spanish trade with the world

	Coverage rate (Exports/Imports)			Annual growth rate Exports		
	1992	2000	2003	92-00	92-03	00-03
Total	0,85	0,93	0,95	10,9%	9,1%	4,1%
100 Goods	0,69	0,77	0,79	11,3%	9,2%	3,7%
200 Services	1,58	1,71	1,67	10,1%	8,7%	5,0%
205 Transportation	0,94	0,96	:	10,7%	:	:
236 Travel	4,00	5,66	:	8,5%	:	:
981 Other services	0,64	0,84	0,89	13,9%	12,6%	9,0%
245 Communications services	0,70	0,91	0,83	21,2%	17,4%	7,3%
262 Computer and information services	0,29	1,67	1,75	30,9%	23,8%	4,9%
266 Royalties and license fees	0,10	0,25	0,22	22,0%	16,4%	1,3%
268 Other business services	0,63	0,79	0,88	16,3%	14,7%	10,6%
287 Personal, cultural and recreational services	0,43	0,38	0,48	8,1%	7,8%	7,3%

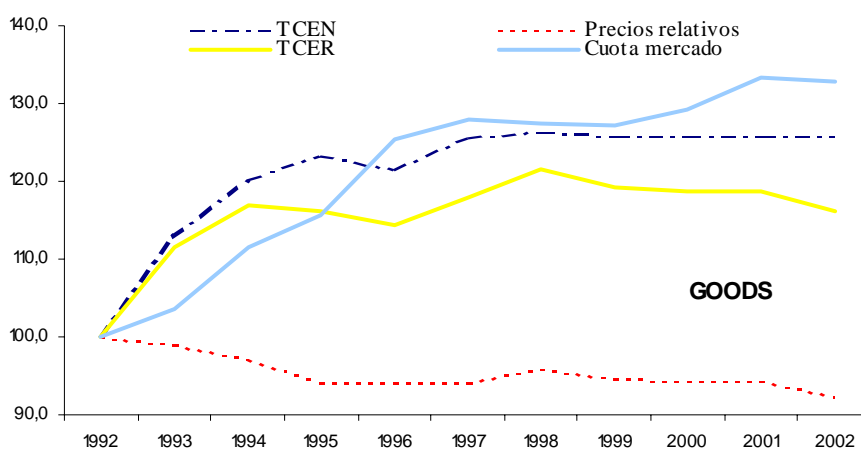
Source: Based on Eurostat (2005), balance of payment statistics.

After briefly analysing the trade evolution of goods and services in the Spanish economy, this section looks at the possibility of finding some

differential patterns in the competitive behaviour of the service sector in relation to manufacturing industries. In order to do so, it is necessary to evaluate the relationship between EREER and market shares for services and manufacturing industries over the 1992-2002 reference period and for the EU-15 market.<sup>6</sup>

When analysing the behaviour of manufacturing industries, an increase in export shares for practically all of the considered period can be observed, a fact which seems to speed up from the entry of Spain into the EU, and the EMU later. However, over these years, variations in the EREER follow two opposite trends: towards depreciation (1991-94 and 1996-98) and towards appreciation in certain years. Thus, it cannot be concluded that a very clear connection between their evolution and market shares took place. In any case, if the overall period –and not specific sub-periods– is analysed, seems to underline a relationship between both variables in the sense expressed by Kaldor.

FIGURE 3.  
**Relationship between market share, EREER, ENER and relative prices in goods and services of Spanish economy.**  
 (1992 = 100)



<sup>6</sup> The difficulties faced when calculating these indexes have been great, but the reference price index here used for both goods and services has been the relative price deflators of GGDC database. For a better view and to avoid scale disparities, all the variables are standardised, with an average equal to 0 and a variance equal to 1.

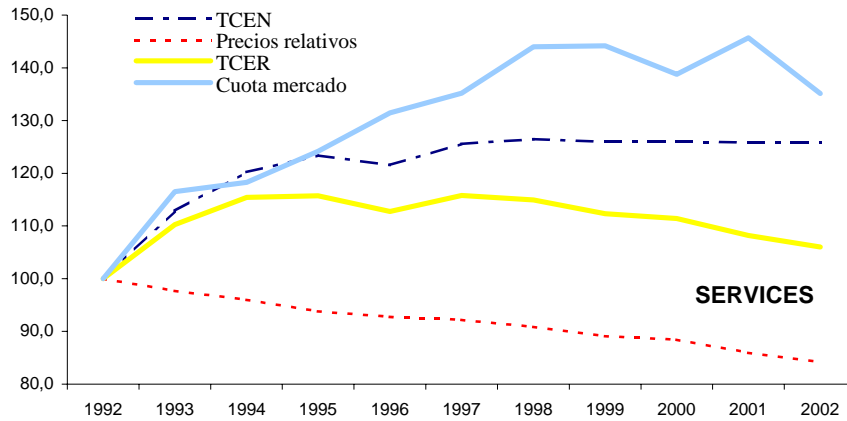
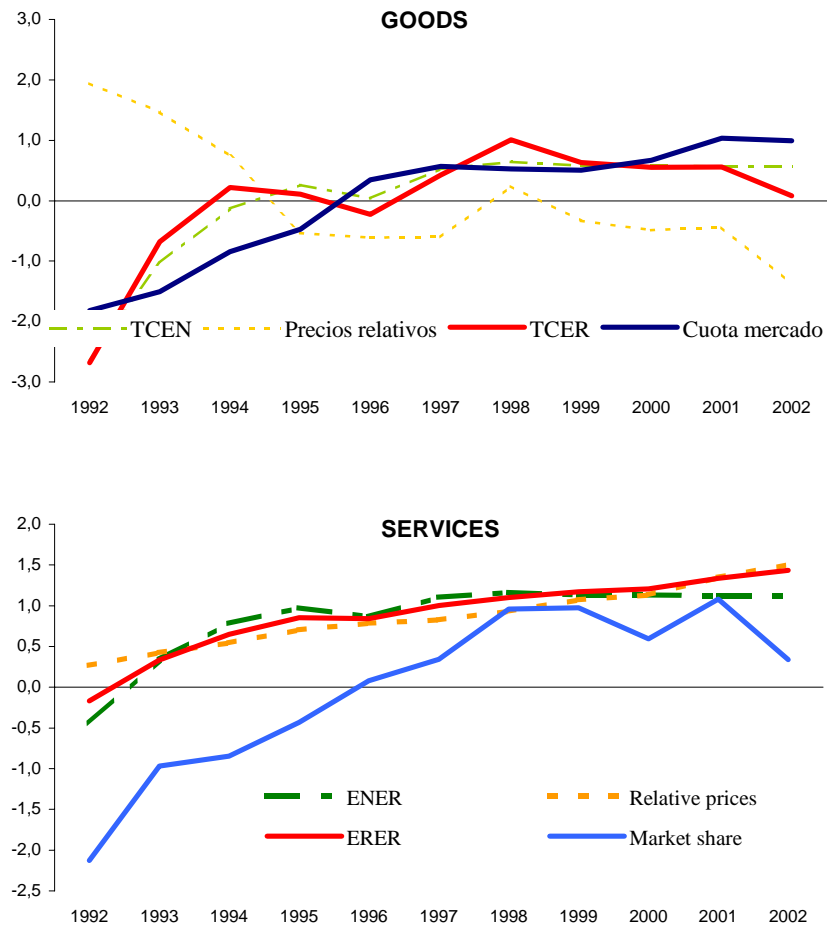


FIGURE 3 BIS.

Relationship between market share, ERER, ENER and relative prices in goods and services of Spanish economy (normalized)



Source: EUROSTAT, OECD and GGDC

However, these results should be further broken down and the two components making up the ERER, that is to say the ENER and the relative prices, should be separated. As can be deduced from figure 2, the evolution of both indicators diverged over the reference period. Thus, the ENER globally presented a depreciation oriented trend, a fact which is confirmed by the positive market share evolution. On the contrary, relative prices showed a clearly worsened behaviour, especially from the second half of the 1980s. The relationship between market shares and the ENER is especially strong during devaluation phases. At that time, the evolution of market share in goods, already positive, experienced even more significant increases. As a consequence, it can be said that out of the two components, exchange rate evolution has been the one offering the clearest relationship (in the non-Kaldor sense) with the market share variables and not relative prices.

Once the relationship between the ERER and the market shares held by manufacturing industries has been analysed, what are the conclusions which can be reached when looking at service sector? In this case, the behaviour pattern seems sensibly different. Firstly, the evolution of service market shares does not follow an upward trend over the whole period as in the case of manufacturing industries. On the contrary, after experiencing a notable downward trend from 1986 to 1992, then it strongly recovers. In the second place, and as a very important factor, a stronger connection between market share evolution and ERER can be observed. Then, improvements (worsenings) in ERER values correspond to increases (decreases) in market shares, thus confirming the non-Kaldor relationship. However, it seems a Kaldor relationship appears in 1995, 1998 and at the beginning of 21<sup>st</sup> century. The same trend (non-Kaldor relationship) can be observed during the 1980s, thus confirming the less sensitiveness to prices. In that indicate manufacturing industries follow Kaldor paradox.

It is worth exploring, as in the previous case, the evolution of the two ERER components, the ENER and relative prices. In this case, two sub-periods can be defined: between 1992 and 1996, when the evolution is divergent, and from that year, when a certain accommodation between both variables can be observed. Although, as in the previous case, the evolution of ENER seems to have had a stronger influence on the evolution of service market shares (once again, especially visible in devaluation phases), relative prices also seem to have played a certain role from 1986.

### 3.3 Towards an explanation of the differential competitive behaviour of services.

The relationship, obtained in the previous section, between service shares and ERER, leads us to analyse the causes which can explain it and which discard the behaviour hypothesis considered at the beginning. To this effects, it is necessary to very briefly look at the sectorial



composition of exports in the Spanish balance of invisible items, given that in this balance are contemplated very varied activities and that, as such, they can react very differently to the evolution of the competitiveness-price conditions presented by the economy.

Tourism and travel is the more prominent sector in the service sector in Spain. This determines a strong specialisation in this type of services if compared with EU countries and the OECD (Gonzalez, 1999). As a result, the trend defined by the overall service exports keeps a close relationship with the evolution maintained by this item. However, this main role started to decrease from 1990. Parallel to this trend, a notable decrease has been registered in the relative weight presented by transports. As regards communication services, after a notable increase between 1980 and 1990, they started to decline from then. The remaining services (business services, financial and insurance services) represent the other side of the coin, given that they have gained positions as service exporters, especially business services.

The relationship between the ERER and market share is far from similar, when analysing the relationship existing between the various activities which make up the service sector, but actually shows a series of strongly differentiated patterns.

In the first place, it can be observed that the three service branches which show the clearest expected non-Kaldor relationship are commerce, communications and financial and insurance service. Tourism and travel follows a similar way during a full decade from 1986 to 1998. That is to say the activities which have traditionally had the higher relative weight in total exports, in spite of their decreasing trend in the last years. In all three, increases (decreases) in ERER value, that is to say improvements (worsenings) of the competitive capacity, were translated into increases (decreases) in market shares, although the relationship was far from being perfect over the whole period. The case of tourism deserves special attention. Although the demand in tourism depends on factors such as preferences, and on the emergence of new competitors, the Spanish tourism is strongly dependent on price evolution and on exchange rates, a situation close to results shown by some econometric analyses (Espasa et al., 1993, and Esteban, 1996). Thus, the hypothesis of the rigidity in the change of tourists' destination in relation to factors linked to knowledge, customs and the ownership of a residence, is discarded for the period 1986-1998. This strong sensitivity to the evolution of export shares in relation to competitiveness levels is also related to the low or average income levels of the tourists who visit Spain. The Kaldor relationship plays a role at the beginning of the 1980s and for the last years of reference period.

Since the 1970s and 1980s, the evolution of Spanish transport services has fallen into a certain slackness. Its market shares followed a progressive downward trend and a sustained worsening of balances. Within this critical framework, a certain sensibility of market shares to

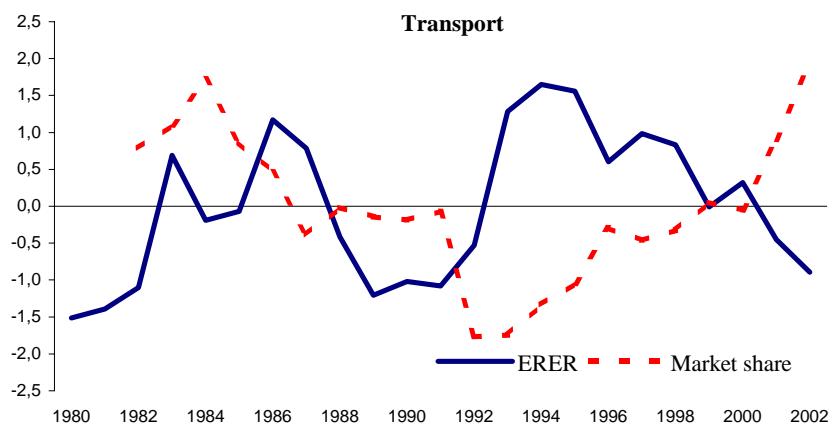
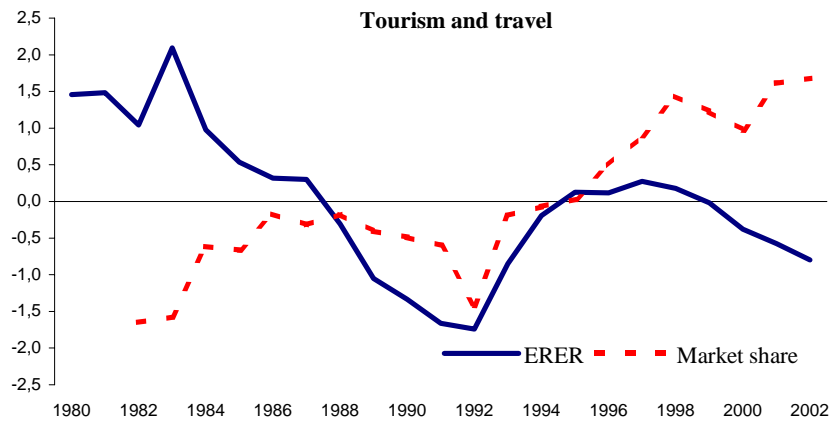
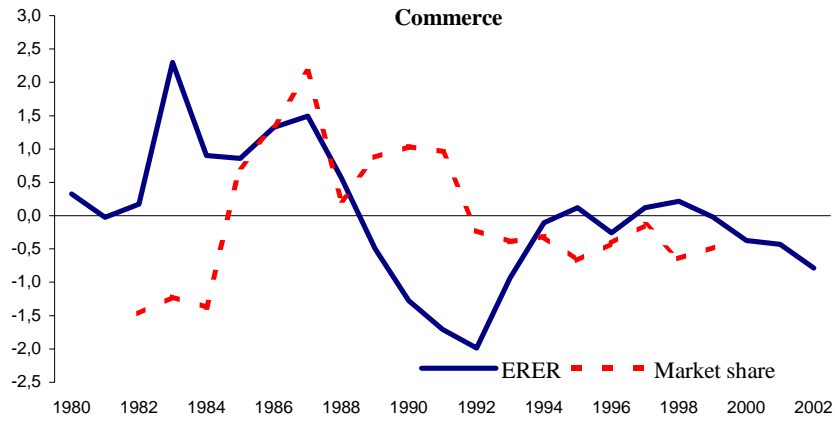
the evolution of price competitiveness can be observed. In any case, it is necessary to consider the heterogeneous nature of these services when analysing its behaviour. For example, air transport market shares showed no clear links to ERER trends; market dynamism and deregulation processes explained it. On the contrary, the rest of transport followed a quite different path, especially if sea transport is excluded from the analysis. In that case, two main sub-periods are to be distinguished. Between 1982 and 1988 a non-Kaldor type relationship can be concluded, whereas the evolution is the contrary (Kaldor type) for the 1989-95 period. All of this brings us to reach a conclusion: the importance that institutional factors have in explaining the evolution of market shares, especially the elimination of entry barriers due to deregulation processes and the entry of Spain into the EU first, and the EMU later.

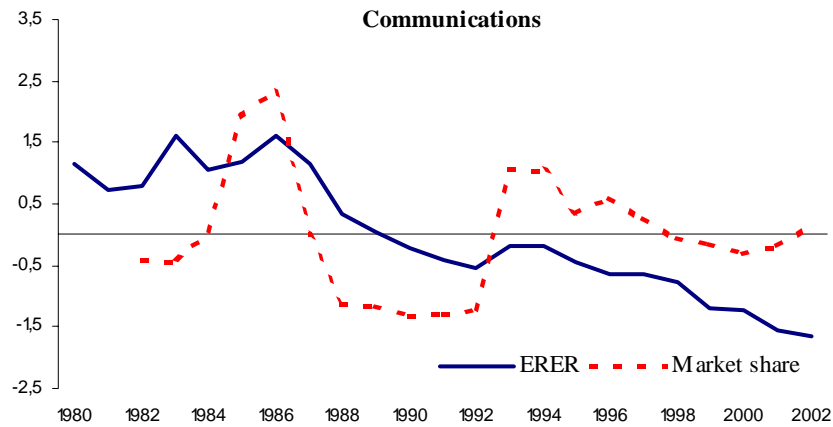
As pointed out, communication services also present conventional (non-Kaldor type) behaviour patterns, so that worsenings (improvements) in price competitiveness have led to parallel falls (increases) in market shares. On the other hand, the evolution of their trade has been quite erratic over the whole period, as can be deduced from the high levels shown by standard deviation, in exports as well as in imports. In spite of being a sector characterised by strong regulatory frameworks, at least till the beginning of the 1990s, the technological impact has been very important, thus greatly reducing location restriction, a characteristic of service activities, and benefiting price competition.

As for the remaining services, quite disparate relationships between exchange rate and market shares can be observed, although they are not as obvious as in other cases. This does not imply that during specific periods a high level of coincidence cannot be observed, but the key point is that such behaviour does not last over the whole period.

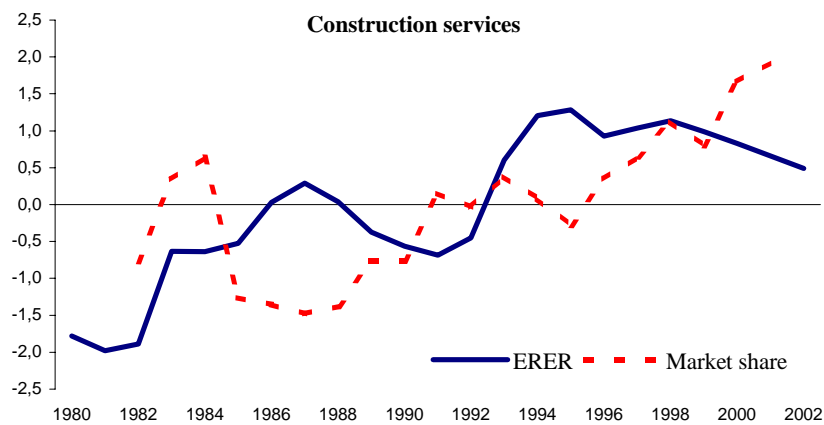
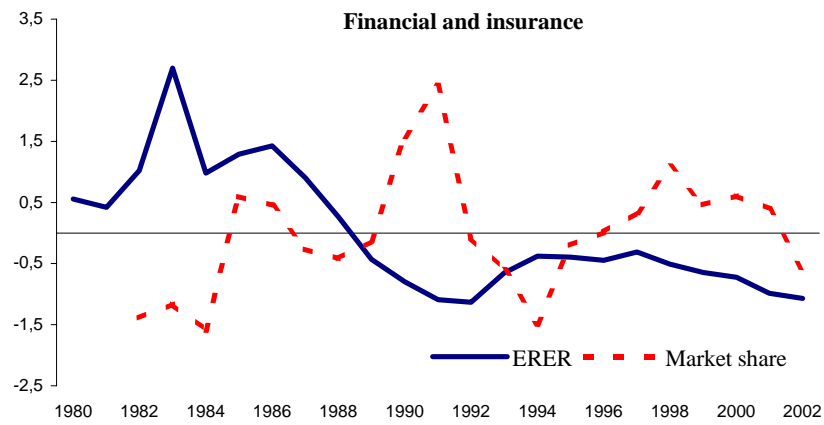
One of the most interesting results obtained from the remaining services is the one offered by business services, whose market shares continuously increased over the whole reference period, without showing any sign of connection with the evolution of ERER. As can be seen in figure 3, there is high level of coincidence in relation to the evolution of manufacturing market shares –a fact which underlines the complementary character of both activities even when analysing export shares. All this leads to an extremely well-known conclusion: in order for a country to be able to count on an internationally competitive industry, its enterprises should increasingly benefit from competitive and good quality services. The increase in business service export shares is, in addition, parallel to the important increase shown by this type of services in the Spanish economy, from a qualitative point of view as well as a quantitative one. Finally, their growth has rested on solid and structural bases, as can be deduced from the low value shown by the standard deviation of their export (and import) growth.

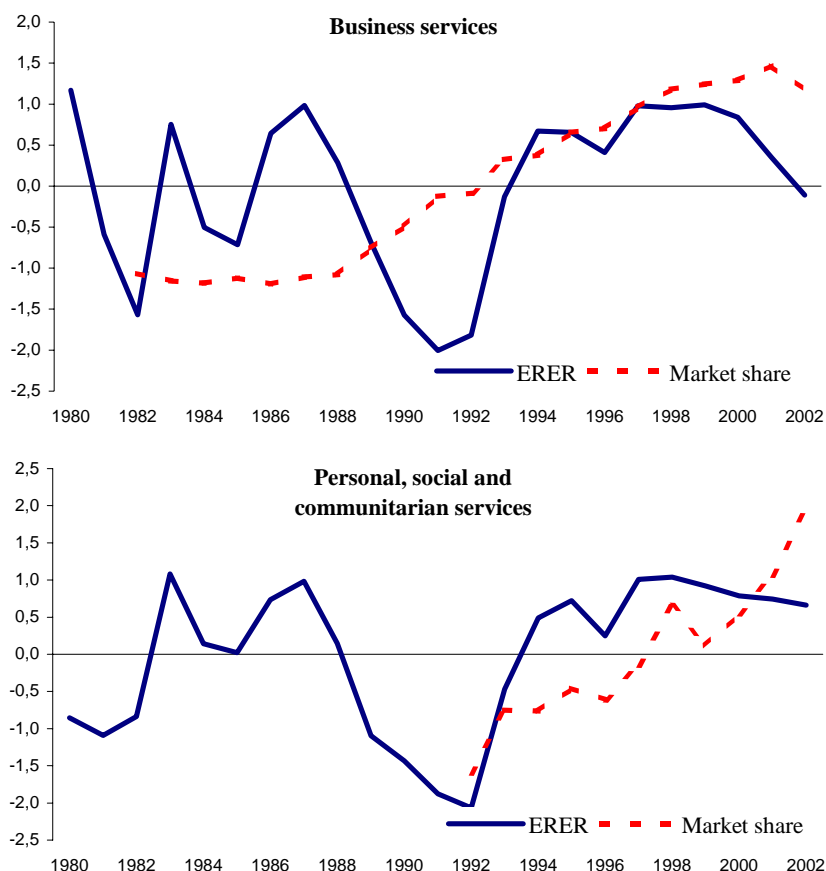
FIGURE 4.  
Relationship between competitive capacity and market share for different services





Source: EUROSTAT, OECD and GGDC.





Source: EUROSTAT, OECD and GGDC.

As regards financial and insurance services, as mentioned before, they also show a certain relationship between their market shares and ERER, but this time in the sense expressed by non-Kaldor, except at the end of the 1980s and beginning of the 1990s, when market share growth was very strong, in spite of the opposite evolution of price competitiveness, and also from 1992 to 1993, when devaluations coincided with strong corrections in market shares. The strong growth of market share in financial and insurance services during the later 1980s coincided with a gradual loss of market share in the United Kingdom, France and the Netherlands, being the most competitive countries in the sector (Hardwick and Dou, 1998). Yet, from the beginning of the 1990s, this sector experienced new competitive pressures, partly as a consequence of the measures taken within the Single Market to increase competition, of the progressive elimination of barriers and of the incorporation of new agents which were different from those who until then made up the traditional financial service industry (European Commission, 1997). Taking all these facts into account, it can be concluded that, after a very favourable evolution of the export market shares held by this type of services (not free from fluctuations), the new competitive pressures at the beginning of the 1990s seemed to have some effects in Spain from

1992, their evolution being independent from the improvements in the price competitiveness of the economy. The loss of competitiveness in market shares during the last reference years is, in addition, parallel to strong worsening in the trade balances of this type of services, a fact which suggests that the loss of competitiveness not only took place on some foreign markets but also on the domestic one.

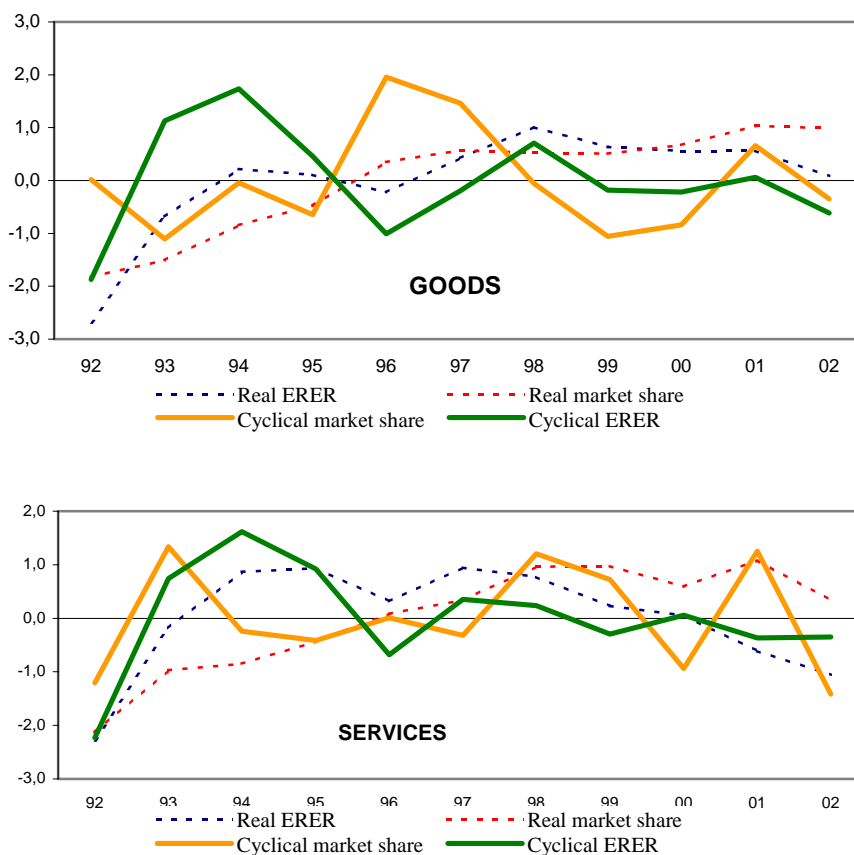
#### 4. TREND INFLUENCE, CYCLES AND SYNCHRONY OF COMPETITIVENESS IN SPANISH SERVICE ACTIVITIES

**I**t could be speculated from what has already been seen, that the strong upward trend followed by export shares in the manufacturing industries notably biases results and clearly weakens the relationship between market shares and ERER. For that reason, the trend component can be removed from both manufacturing industries and services and a cyclical component can thus be obtained. In order to address to the focus of this section, we follow the most widespread practice of decomposing, which is the procedure adopted by Hodrick and Prescott (1980) (henceforth, HP) who propose a filter whose main advantages lies on its flexibility, simplicity and reproducibility. For annual series, as in this case, Ravn and Uhlig (2001) recommended a value for the smoothing parameter  $\lambda = 6.25$ . This is the value chosen in this paper.

Once the trend has been eliminated, it can be observed in figure 4 that the strictly radical Kaldor relationship –positive correlation between market shares and ERER- is practically non-existent for aggregate categories. Therefore so, the Kaldor interpretation is still valid in the sense there is not negative correlations between the two variable. Anyway, it follows that the trend introduces a certain bias in the behaviour of the export shares of manufacturing industries, thus confirming the results pointed out by Kaldor. Furthermore, it seems that the cyclical component weakens the relationship postulated by Kaldor, in both manufacturing industries and services. In the latter case, this weakening means a reinforcement of the conventional relationship. However, the situation varies sector by branches.

FIGURE 5.

**Relationship between competitive capacity and the export share cycle of manufacturing industries and services.**



Source: EUROSTAT, OECD and GGDC.

Looking further into the behaviour of these relationships, it can be analysed the synchrony and volatility of the evolution of the market shares and ERES in the aggregate Spanish economy, and for both manufacturing industries and services. The same exercise has been translated into the different activities of the service sector. In order to study volatility, the percentage standard deviation of the series will be chosen as a measure of the amplitude of their fluctuations relative to total economy. The second item, synchrony, will analyse with cross-correlations<sup>7</sup> of the series at different leads and lags, as an indicator of

<sup>7</sup> Cross-correlation analysis gives information about the extent to which the cyclical profile of a series resembles that of the reference series. For a given variable X and Y, the examined cross-correlation are classified as follows. If  $\rho(j)$ ,  $j \in (0, +1, \dots, +5)$  denotes the cross-correlation between  $Y_t$  and  $X_{t-j}$ , we say that X is procyclical (countercyclical) if the value of  $\rho$  is positive (negative) and not very close to zero when  $j=0$ . We also say that the cycle of X is leading, synchronous or lagging the cycle of Y as  $\rho(j)$ , reaches a maximum for  $j>0$ ,  $j=0$

the type of comovement of the series ( $Y_t$  will be market shares; whereas  $X_{t-j}$  will be ERER series respectively) with the total cycle of the economy.

In the total economy, the series of ERER and export market shares are procyclical, as can be seen in the detailed summary table 3. On the other hand, the behaviour in manufacturing industries and services is quite different. In manufacturing industries, the competitive capacity and export market shares follow a weak countercyclical path (in a Kaldor sense), whereas the service industries follow a procyclical one (in a non-Kaldor sense). In addition, whereas, in manufacturing, the cycle of export market shares seems to slightly delay the market share cycle, in the service sector the behaviour is the contrary. Cycle of export prices seems to anticipate market share cycle.

TABLE 2.  
Relationship between export market shares and ERER in the Spanish economy.

	Synchrony	Rythm	Intensity
TOTAL	PROCYCLICAL	LEADING	NONE
Goods	COUNTERCYCLICAL	LAGGING	WEAK
Services	PROCYCLICAL	LEADING	WEAK
Trade	PROCYCLICAL	LAGGING	NONE
<i>Hotel &amp; Restaurants</i>	PROCYCLICAL	LAGGING	WEAK
<i>Transport</i>	PROCYCLICAL	LEADING	NONE
<i>Communications</i>	PROCYCLICAL	LEADING	STRONG
<i>Financing</i>	COUNTERCYCLICAL	LAGGING	NONE
<i>Real state and renting</i>	PROCYCLICAL	LAGGING	NONE
<i>Business services</i>	COUNTERCYCLICAL	LAGGING	WEAK
<i>Public services</i>	PROCYCLICAL	LAGGING	WEAK

Source: Based on analyses of market shares and ERER and HP filter.  
PROCYCLICAL means a non Kaldor- type relationship.

Within the different branches of the service sector, in financial and insurance, and business services, the export market shares follow a countercyclical path in relation to the evolution of the market share cycle (Kaldor relationship), whereas the remaining activities behaves in a similar way that the aggregate service sector. According the time dimension, the cycle of the market shares of transport and communications services, seems to anticipate the market share cycle,

or  $j < 0$ . In particular, for  $0.5 \leq |p(j)| < 1$  we use the adverb "strongly", for  $0.2 \leq |p(j)| < 0.5$  we use the adverb "weakly" and, when  $0 \leq |p(j)| < 0.2$  we say that the series are "acyclical". The cut-off point of 0.2 was chosen on empirical basis.



whereas the remaining service activities seems to delay it. The significance of these relationships is only strong in communications, where the Kaldor relationship was clearly observed in previous figures. In the remaining branches the significance is weak or none.

TABLE 3.  
Relative volatility of the export market shares in the Spanish economy

	Real volatility	In relation to total economy	In relation to aggregate service sector
Total economy	1,70	1,00	-
Goods	0,57	0,33	-
Services	1,19	0,70	1,00
Commerce	1,60	0,94	1,35
Tourism and travel	2,96	1,74	2,49
Transport	0,95	0,56	0,80
Communications	4,11	2,41	3,46
Financial and insurance	1,82	1,07	1,54
Construction services	1,53	0,90	1,28
Business services	1,87	1,10	1,58
Personal, social	0,88	0,52	0,74

Source: Based on analyses of market shares and ERER and HP filter. PROCYCLICAL means a Kaldor- type relationship.

Finally, table 4 show the volatility or fluctuation of the service sector activities in relation to the total economy and the aggregate service sector behaviour in the Spanish economy during the reference period here analysed. It can be seen that both markets shares of manufacturing industries and services are less volatile than that of total economy (33 per cent and 70 per cent, respectively). However, within the service sector, financial and insurance services (1.07 times more volatile), business services (1.10 times), tourism and travel (1.74 times), and, clearly, communications (2.41 times), are more volatile than that of total economy, and, in addition, than that of aggregate service sector.

## 5. FINAL REMARKS

The relationships between competitiveness and services must be understood within an analytical framework which takes into account the effects services have on the global economy and the challenges which competitive economies impose on these services. Two types of

factors influence service trade: expansive factors which force the opening of markets as well as limitative factors which restrict the possibilities of trade growth. Recent trends towards global sourcing could make service behaves more than goods (e.g., delocalisation) and costs-related factors could be more important than some years ago: costs-drives factors are the main explanatory reasons for most of global sourcing trends. This fact may slow down the importance of the Kaldor paradox in service trade, although the achievement of the EMU and the ongoing EU market integration operate in the opposite way: more stability in international trade make fluctuation in relative prices relative prices less important and other factor deserve major attention.

Within this framework, the relationship between market shares (taken as competitiveness indicator) and the price and cost indicators (which necessarily must influence the competitive capacity) are presented as a particular case for Spain. The analysis has been carried out separately for services and manufacturing industries so that the differential behaviour of service competitiveness could be investigated. Due to the referred limitative elements (market power, market segmentation, regulations, internalities...), it would be expected that services would show a lower sensibility to price and costs factors than manufacturing industries. However, according to the results obtained for the Spanish economy, manufacturing industries appear less sensitive to prices than services. Furthermore, services are within the relationship expected from manufacturing industries: to lower prices correspond higher market shares and vice versa. All the indexes used in this analysis confirm this fact. In addition, it underlines the strong influence played by economic cycles in sustaining relative prices (contrary to trends which show a basic behaviour justifying the arguments presented by Kaldor). However, there is a factor which explains the partial discarding of the main hypothesis derived from the subsectorial specialisation of Spanish service exports: the strong presence of tourism in the Spanish economy (two thirds of service trade), submitted to more cyclical and relative price-related components than would be expected.

Another factor justifying the partial refutation of the hypothesis resides in the fact that market shares do not represent a full guarantee competitiveness indicator. Its estimation, as shown by Alonso (1992), very strongly depends on those institutional alterations which affect the levels of connection of the country –or competitors- with international markets. Thus, it can be concluded that the acceptance of the hypothesis formulated between service trade competitiveness (market shares) and competitive capacity (prices) is partially correct for some of the service sectors, especially some of the producer services. Business services present a relative trade linked more to their structural growth trends and to elements inherent in their nature. Financial and insurance services show weak Kaldor-type relationships, linked to market integration, regulations and the market share cycle. On the contrary, transport and communication services also show similarities with tourism, within the recent process of liberalisation, which could have

accentuated the importance of relative prices. In any case, the emerging delocalisation and offshoring trends are still rather limited (Rubalcaba, 2005) and do still not constitute a enough powerful factor to significantly influence the Kaldor paradox. The potential development of global sourcing is anyway important and could lead to different results in the future.

The research presented in this paper also shows the Kaldor paradox is reduced when trends are excluded from the cycle analysis. It could be expected that the Kaldor-type effects would be more related to structural effects in international trade, and short term movements could be more influenced by costs-prices related factors. However, in some service sectors, such as business services, market shares cycles do not run in response to relative prices. Moreover, trends seem to be the opposite in many sectors, highly influenced by prices and costs. Volatility plays a role too.

In summary, results show that the *Kaldor paradox* has a strong importance in international trade, far from being anecdotal or exceptional, although not all the service sectors have the same price/costs sensitivity: services markets and service standardisation is playing a role. Recent trends also present uneven results depending on the service sector. Further research should cover international comparisons and more detailed analysis of some explanatory factors.

## 6. REFERENCES:

- ALONSO, J.A. (1992): "Ventajas comerciales y competitividad: aspectos conceptuales y empíricos", *Información Comercial Española*, nº 70: 38-76.
- BARRAS, R. AND PETERSON, J. (1987): "Measuring international competitiveness in services", *The Service Industries Journal*, vol. 7, nº 2
- CUADRADO, JR., RUBALCABA, L. AND BRYSON, J. (2002) *Trading Services in the Global Economy*. Edward Elgar.
- DÍAZ DE LA GUARDIA, C. AND MOLERO, J. (1993). *Compared analysis of the international competitiveness of the services sector in some OECD's countries*. SETI project, December 2003.
- ESPASA, A., GÓMEZ-CHURRUCA, R. AND MORALES, A. (1993): "Un análisis econométrico del turismo en España: implicaciones para el estudio sectorial de las exportaciones y algunas consideraciones de políticas económicas", in A. Espasa y Y. Cancelo (eds.), *Métodos cuantitativos para el análisis de la coyuntura económica*, Madrid: Alianza
- ESTEBAN (1996) "El saldo comercial en 1993: un analisis econométrico". *Información Comercial Española*. 749
- ESTEBAN, A. (1996): "Previsiones de la demanda turística", *Información Comercial Española*, nº 749, pp. 89-98
- EUROPEAN COMMISSION (1997) *The competitiveness of European Industry*. DGIII, Comisión Europea, Bruselas.
- FAGERBERG, J, KNELL, M, AND SRHOLEC, M. (2004). *The competitiveness of nations*. The Second Gloebelics Conference, Beijing, China, October, 18-20
- FAGERBERG, J, SRHOLEC, AND M. KNELL, J. (2005). *The competitiveness of nations*. 10<sup>th</sup> Anniversary DRID Summer Conference, June 2005.
- FAGERBERG, J. (1996): "Technology and competitiveness", *Oxford Review of Economic Policy*, vol 12, nº 3.
- FELIPE, J. (2005). *A note on competitiveness, unit labour costs and growth: Is Kaldor's paradox a "figment" of interpretation?*. Centre for Applied Macroeconomic Analysis. Working Paper Series, May 2005.
- GONZÁLEZ, F. (1999): "La demanda exterior de servicios", in J.R. Cuadrado Roura (ed.), *El sector servicios y el empleo en España. Evolución reciente y perspectivas de futuro*, Madrid: Fundación BBVA
- GONZÁLEZ, M. (1997): *Los servicios en la economía española: viejos problemas, nuevos retos*. Instituto de Estudios Económicos.

- HARDWICK, P. AND DOU, W. ""The Competitiveness of EU Insurance Industries"". *The Services Industries Journal*, vol. 18, pp. 39-53, (January) [1998]
- HODRICK, R. Y E. PRESCOTT. 1980. "Poswar US business cycles: an empirical investigation." *CMU University. DP n 441.*
- IOANNIDIS, E. AND SCHREYER, P. (1997) Technology and non-technology determinants of exports share growth. *OECD Economic Studies, No. 28, 1997.*
- KALDOR, N (1978): "The effect of devaluations on trade", in *Further essays on applied economics*, Duckworth, London.
- MARTÍN, C. (1993): "Principales enfoques en el análisis de la competitividad", *Papeles de Economía Española, n° 56.*
- MILBERG, W. AND HOUSTON, E. (2005) The high road and the low road to international competitiveness: extending the Neo-Schumpeterian Trade Model beyond Technology. *International review of Applied Economics*. Vol. 19, No. 2, 139-164, April, 2005.
- MOLERO, J. AND BOUERI, M. (2003) *Specialisation in services of EU countries: a proposal of taxonomy*. SETI Project, November 2003.
- RAVN, MORTEN O. & UHLIG, HARALD, 2001. "On Adjusting the HP-Filter for the Frequency of Observations," *CEPR Discussion Papers 2858*, C.E.P.R. Discussion Papers
- RUBALCABA, L. (1999): *Business services in European Industry: Growth, Employment and Competitiveness*, European Commission, Bruselas.
- RUBALCABA, L. (2002) *Competitividad y bienestar en la economía española*. Ediciones Encuentro, Madrid.
- RUBALCABA, L. AND GAGO, D. (2001): "Relationships between services and competitiveness: The case of Spanish trade", *The Service Industries Journal*, vol. 21, nº 1, pp. 35-62
- RUBALCABA, L. (2005) *The globalisation of business services: new evidences and challenges*. DG Internal Market and services (forthcoming).
- SEGURA, J. (1993): "Sobre políticas microeconómicas de competitividad", *Papeles de Economía Española n° 56: 348-360.*

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