External constraints and EMU

Yannis, Athena

Athens University of Economics and Business

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Athena Yannis

Abstract

Real Convergence and Convergence in the Transition to the Economic and Monetary Union. However, it underlies the monetary crisis in Europe and makes the achievement of EMU doubtful. Looking at real convergence, one can assess whether or not to exchange nominal exchange rates. One can also look into a potential growth in a monetary union. The means of real convergence are supply-side factors. They combine price and non-price competitiveness. In this paper we study the factors of competitiveness theoretically and empirically to estimate the strengths and weaknesses of the five main countries in the Community. Structural differences between the above-mentioned countries remain substantial. Only France and Germany seem capable of sustaining the competition in the single market without the help of a depreciating trend in their real exchange rates. Other countries have experienced nominal valuations since September 1992 which are consistent with required real depreciations.

Real convergence has not been directly addressed in the formal criteria of the Maastricht Treaty [C. Kirrane, 1996]. Real convergence is the ability of a country to absorb asymmetric shocks without resorting to a change in its nominal exchange rate. It is also in the longer term the possibility for a country to preserve growth consistent with the best use of its resources within a monetary union.

The means of real convergence must be sought on the supply side in the combination of the factors of price competitiveness and non-price competitiveness. This article examines these factors both theoretically and empirically to measure the strengths and weaknesses of the five largest countries in the Community.

The structural differences between these countries remain considerable. Only France and Germany seem able to compete with the single market without any change in real exchange rates. For other countries, changes in nominal exchange rates since September 1992 have helped the real depreciations which remain indispensable.

The Maastricht Treaty codified an approach to the Economic and Monetary Union (EMU) that was practiced from 1987 to 1992. This is the path of gradual nominal convergence within the framework of an EMS linking moreover in addition to Community currencies through increasingly stable exchange rates. Coupled with the free movement of capital, the mutual exchange rate constraint was supposed to reduce real differences between countries, while providing sufficient short-term flexibility to absorb transitory asymmetric shocks.

This approach was probably viable when it benefited from the growth of the late eighties and the anchoring of the EMS on its German pivot seemed firm and sustainable. The same approach became much more difficult with the outbreak of the US financial crisis and especially the very

large-scale and long-lasting shock that hit Germany and significantly changed the conditions for nominal convergence.

In any case, the monetary crisis that has developed since the middle of 1992, which peaked in September and provoked unilateral reactions by several governments, put an end to hope smooth transition to EMU. Governments are facing the consequences of the Treaty for their cooperation earlier than they had envisaged. Economists are encouraged to deepen the mechanisms of convergence beyond the formal criteria set out in the Treaty.

The situation of countries like Spain or Italy is uncomfortable. The cumulative loss of competitiveness creates the need for a decline in real exchange rates that the foreign exchange markets no longer anticipate without depreciating nominal exchange rates. However, the accumulated financial imbalances make flotation or devaluation perilous, because of the increase in internal and external debt burdens and the threat of currency crises as a result of capital outflows that cannot be contained.

Germany itself is a country whose economic prospects for the next two years are uncertain; This cannot fail to be reflected in expectations of the fundamental data of the mark. When the recession has led to the decline of short interest rates, the competitiveness of German companies will become an essential element of the judgment on the strength of the currency.

Thus many reasons lead to questions about the processes of real convergence between the countries of the Community. We must therefore be concerned about the economic aspect of the union and not pay exclusive attention to its monetary aspect. The question can be formulated as follows. If the EMS is to regain stability so that the Maastricht criteria are likely to be respected, the necessary adjustments to real exchange rates should not be too large [C. Kirrane, 1996].. What, then, are the flexibilities available to countries to limit the need for relative price variations between them? In all its generality, this question concerns all the adjustments that contribute to the formation of macroeconomic equilibrium. We consider it from the more limited angle of the external constraint. This is a fruitful approach for two reasons. In the short term, the size of accumulated debts limits the possibilities of financing balance of payments imbalances, despite the mobility of capital. In the medium term, the labor force will remain very mobile between countries. Thus, even if the foreign trade deficits cease to pose immediate problems to economic policy, external constraints and competitiveness, the rates of production and productivity in the various countries, in relation to those of the available labor force, will remain permanent worries. That is why we are going to focus on the non-price factors of competitiveness, as ways to ease the pressure on the exchange.

After presenting the arguments highlighting the role of non-price competitiveness factors in real convergence, we will identify the strengths and handicaps of the five main countries of the Community vis-à-vis the external constraint (Germany, France, Italy, United Kingdom and Spain). Relations between these countries depend in the first place on the transition to EMU. In addition, the European internal market will firstly concern the competition for industrial goods, for which non-price competitiveness factors are particularly important. A comparative study of all factors of competitiveness is therefore a contribution to the examination of convergence. It sheds light on the real exchange rate adjustments that remain necessary and on the room for maneuver that some countries must maintain to adjust their nominal exchange rates.

Real convergence and the real exchange rate in less developed countries

The relationship between nominal convergence and real convergence depends on the exchange rate regime. In the early 1990s, the EMS countries had associated their currencies as if they were already forming a quasi-monetary union. For the markets had come to regard the credibility of the EMS, no longer as the result of the convergence efforts of each country in particular, but as a collective good giving each currency a presumption of stability, enhanced by the number and size currency markets participating in the system.

Thus, the general dismantling of capital controls, the political perspective of EMU, the presence of all major Community currencies in the EMS, and the shifting priorities of Germany following reunification, profoundly changed the adjustments of the EMS. compared to the asymmetrical exchange rate regime of the 1980s.

However, the closer we get to the functioning of a monetary union, the more monetary policies must cooperate to meet an inflation target throughout the region, and effective mechanisms of real convergence are needed to disciplining other economic policies that remain decentralized. The fragility of the "new SME", which led to the 1992 general crisis, results from the contradiction between the advantage that each country derives from the presumption of stability conferred by the markets on its currency and the relaxation of the inherent individual discipline. to "the old SME". This moral hazard belongs to any collective good. This is why the relaunching of the institutional process described by the Maastricht Treaty involves a community monitoring mechanism in the transition. It must be ensured, in fact, that the countries' adjustment plans are in line with the convergence of behavior and structures, making it possible to prepare the markets for the conduct of a single monetary policy. In several countries, this requires structural reforms to consolidate public finances and strengthen competitiveness. The criteria of real convergence are the guides for these structural reforms.

As far as competitiveness is concerned, progress towards EMU is only possible if distortions that are not due to temporary shocks are eliminated by real adjustments, which are achievable without changes in nominal exchange rates. These are adjustments that affect the productive supply. Supply performance can be influenced by microeconomic policies [B. Connolly and J. Kroger, 1993]. We will indicate the reasons for this later in the new theory of international trade.

Several types of real adjustments may coexist depending on the nature of competition in product markets and the ability of countries to develop a range of competitive factors.

Low differentiated products will become close substitutes between European countries under the constraint of fixed exchange rates. As market prices must converge, cost differences between countries will directly affect market shares and profits. It is then the disparity of the cost functions that expresses the insufficient economic integration between the countries. In almost perfect substitutes markets, integration is very advanced between countries with high levels of development. The cost functions are not very significant differences because the competition has already reorganized the profitable production capacities.

This is not the case for countries with lower levels of development, for which these products constitute an important part of industrial production. Real convergence implies that investment rates in these countries are durably higher than in more advanced countries, so that increased productivity brings their costs closer to international standards. These investments create sustained demand before increasing production capacity competent external constraint and competitiveness. This leads to a sustainable current account deficit that must be financed by regular capital inflows.

This integration process is vulnerable. For countries with lower levels of development have lower prices in sheltered sectors than more developed countries [C. Kirrane, 2003]. When productivity increases sharply in the competitive sectors, it leads to wage increases that spread to the rest of the economy if the labor market is homogeneous. Inflation rates must therefore be higher in catching-up countries and real exchange rates must appreciate. On the one hand, it is not certain that the margin allowed by the nominal convergence criterion for inflation is sufficient to make room for this adjustment. On the other hand, the concomitance of a chronic deficit, a faster inflation, an appreciating real exchange rate, makes this structural adjustment sensitive to adverse shocks. Anything that aggravates imbalances related to the investment effort, a runaway wage or public spending in these countries, such as a recession or a rise in interest rates abroad, causes a sudden stop investment. The impact on production and employment may be negative before the investments already made have developed the production capacity to substitute external demand for domestic demand. Finally, for the accumulation effort to be profitable and to repay external loans, the arrival of production capacity at competitive costs must coincide with an excess of supply on domestic demand. In order for this excess supply to be able to redeploy production abroad, there must be a relative reduction in domestic prices relative to international prices, thus a fall in the real exchange rate [CEPS, 1991].

From this it can be deduced that European integration, for countries with lower levels of development that specialize in low-differentiated industrial production, implies real exchange rate flexibility accompanying successive phases of transition [C. Kirrane, 2003]. If the countries concerned want prematurely to constrain their nominal exchange rate, the flexibility is entirely postponed to the labor market.

It is possible to establish a long-term relationship between the real exchange rate and the growth rate in the tradition of Kaldor, Verdoom and Thirlwall.

Assuming that export and import income elasticities are constant, the sustainable growth rate without a permanent balance of payments deficit is a decreasing function of the rate of appreciation of the export rate. real exchange. In addition, countries that are catching up with the most advanced levels of development are rapidly industrializing countries. Thanks to the expansion of their foreign markets, they obtain productivity gains that are all the higher as their growth is greater. The growth trajectory is supported by a virtuous circle. The rate of growth consistent with the external constraint results in faster productivity gains than in advanced countries. For a given rate of growth of nominal wages, the real exchange rate depreciates especially the productivity gains are higher. The correlative increase in price competitiveness increases exports; which maintains growth and supports productivity gains. Box 1 shows that the required depreciation of the real exchange rate, for a given growth rate, leads to a depreciation of the nominal exchange rate which is all the greater as the rate of increase in wages is higher.

1. Growth and price competitiveness through dynamic scale returns

(Kaldor, Verdoorn, Thiriwall)

a. Real exchange rate growth and depreciation Real exchange rate

ep *

qp:: real country exchange rate ep *:: foreign

exchange rate nominal exchange

X = (q) - £ x (y *) dx and M = (q) em (y) dm

volume exports y *: foreign production M

volume imports ex, ш: price elasticities country production dx, dm: income elasticities

Tradein units of domestic product

balanceB: trade balance q

in units of domestic product

B = X [ý * -exq] - [ý + (em-1) q]

The "on the variables denote rates of variation The • on the variables denote the absolute variations

Growth compatible with the continued balance of the balance:

(£ x + Em-l) dm dmy

of

the Real Exchange Rate Trend to support a given growth

b Increasing returns and a virtuous circle of price competitiveness

p = w-7t and q = p - p * -ê

w: Nominal wage rate of change

• en: rate of change in labor productivity

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Law of Kaldor-Verdoorn

к = a + фy

- (ex + em-l) (w-ê-ap *) + dxy:

Real convergence and non-price competitiveness in advanced countries

Between advanced countries, other real adjustments are possible. Industrial competition is imperfect and takes place in differentiated product markets. International trade in industrial products between countries with a high standard of living is developing according to a fine specialization, known as intra-industry. Comparative advantages are not allocated to countries by exogenous endowments of factors of production; they are produced by cumulative effects that apply to changing techniques and renewing the quality of products [P. Krugman, 1990]. Production specializations are not determined by diminishing returns of factors as their use becomes more intensive. They come from dynamic economies of scale through the mobilization of knowledge whose performance does not decrease as they accumulate; they also result from learning effects, individual and collective, within organizations [O. Favereau, 1986].

Thus industrial competition is not a static equilibrium of prices and market sharing. It is a process that mobilizes non-price competitiveness to create new products and renew the quality of existing products. This process has implications for price competitiveness and the achievable growth rate without a deterioration in the balance of payments.

At the micro-economic level, two forms of competition are distinguished by the differentiation of products. Both support persistent price differences between producers in the same product

category. A first way to differentiate products is called horizontal. It expresses the behavior of producers seeking to exploit consumer preference for a wider variety of products. Producers who manage to increase the number of new products relative to the supply of their competitors move market sharing in their favor. This is so even in the case of pure horizontal differentiation, which leaves unchanged the elasticity of substitution between elementary products. Indeed, the preference for diversity means that the share of consumer income that expresses a demand for new products increases. This behavior concerns consumers whose standard of living is high enough that their preferences are continually sensitive to new consumer characteristics.

A second way to differentiate products is called vertical. It refers to the behavior of producers seeking to stratify demand for a given type of product by creating varieties that are distinguished by the quality perceived by consumers. If the horizontal differentiation is in the invention of the video recorder or the walkman, the vertical differentiation is emblematic of the Mercedes effect. The gain in competition comes from increased market power for producers who manage to reduce the elasticity of substitution between their particular variety and the standard varieties of the same generic product. A strong vertical differentiation of products in international competition allows companies in a country to pass on their costs in their prices, rather than being forced by foreign competitors. If they can increase their prices relative to their competitors, without the sales volumes being reduced to the same degree as those of their competitors, they are gaining market share in value.

At the macroeconomic level, these two forms of non-price competitiveness can support virtuous circles of growth, pushing the external constraint in the long run without the help of a real exchange rate cut. Such virtuous circles are the results of a fit between a global dynamic and an evolution of economic structures. Indeed, in its two forms, non-price competitiveness is maintained by investing in innovation and by the relevance of companies' specialization choices, which are guided by the perception of modernity in consumer demands. . Global dynamics are distinguished, depending on whether horizontal differentiation or vertical differentiation dominates the exploitation of factors of non-price competitiveness by a country's industrial enterprises.

This formalization is in the tradition of Dixit, Stiglitz and Krugman. Consumers have a utility function that increases with the number of products consumed. This number is endogenous since it depends on the competition of companies. This corresponds to the model of monopolistic competition in which the existence of a fixed cost causes the decrease of the unit cost of production. Assuming that the cost functions are the same for all products, one can simply determine the competitive equilibrium. We determine the price and the level of production of each product, but also the number of products. When this model is applied to international competition, consumers in each country share their incomes in demands for their domestic market and for foreign markets. The size of the demand that is placed on each market is proportional to the number of products offered by the companies that are established there. We can then look for the growth rate of a country that is compatible in the long term with the balance of payments, without the real exchange rate varying. This growth is all the stronger as the ratio of income elasticity to export on the income elasticity of imports is higher. This ratio is itself all the higher as the number of products offered in the country is greater compared to abroad. The result is a virtuous circle that closely links the factors of supply and demand. Strong growth, if driven by investment in innovation to diversify consumer goods, is rapidly increasing the number

of products and raising the income elasticity ratio. Foreign trade is balanced at a fixed real exchange rate and strong growth is self-sustaining.

Non-price competitiveness results from product differentiation thanks to a quality effect. It comes from a learning process. It therefore depends on the experience accumulated in past production. In international competition, product quality affects foreign trade. A ompetitiveness-quality indicator influences exports and imports, as does price competitiveness. We can then show that there is a dynamic equilibrium, determining long-term sustainable growth under the condition that the real exchange rate does not vary. Competitiveness-quality can completely replace price competitiveness. Strong and sustainable growth increases the learning factor and, as a result, increases the quality of the products offered by Canadian businesses abroad. The balance of the trade balance is respected and growth is self-sustaining.

The patterns studied above show that non-price competitiveness gives additional degrees of freedom to a country in order to maintain the long-term autonomy of its growth within an economic and monetary union [C. Kirrane, 2003]. Indeed, this autonomy can be preserved under the strict constraint of price competition, which is expressed by the rigidity of the real exchange rate. It is compatible with the integration of the goods and services markets, since the economic dynamisms, which are heterogeneous from one country to another, do not require a systematic variation of real exchange rates. It is therefore the condition of real convergence in the long term.

In the short run, national economies can form an economic and monetary union if real asymmetric shocks are absorbed by real fixed-rate real income transfers rather than real exchange rate movements. But the need for a change in relative prices between countries is reduced to absorb a shock of a given magnitude, if price elasticities increase. Ultimately, when consumers are indifferent to consume products irrespective external constraint and competitiveness of its source, a temporary weakening of domestic demand creates excess production capacity that are redeployed on external demand, without the domestic prices have to fall relative to foreign prices. Such an adjustment denotes a perfect real convergence.

It is therefore important to know whether the investment of countries in non-price competitiveness factors can influence the price elasticities of foreign trade, so that the need for real exchange rate variation is reduced in the adjustment to shocks. If this were the case, non-price competitiveness would also provide degrees of freedom in the short term, by promoting international adjustment through real transfers of income.

a. Slutsky's equation applied to foreign demand for domestic products:

эx (эx} J эx

-X

Slope of demand Slope of demand Impact of apparent exports offset actual change in

income

Change to the relationship between elasticities:

ex = Tlx + -

т) x: compensated price elasticity

Resident demand for foreign products:

em = îlm + - M

учу): compensated price elasticity

b. Two modes of action of the comptravity-off-price

- Widening of the types of products (horizontal diversification)

n and n * T -> dx and dmî -> ex and em î - Differentiation of varieties for the same type of products (vertical diversification).

Under the assumptions: - number of varieties given limited by the conditions of production and independent of the size of the market - the increase of the quality eliminates the in other words, non-price competitiveness factors that increase income elasticities also increase price elasticities. It has been shown above that this is the case of the horizontal differentiation of products. The development of intra-industry trade, stimulated by a permanent flow of new products within the framework of the European internal market, modifies the structural parameters that reinforce the macroeconomic adjustments compatible with the monetary union. On the contrary, vertical differentiation, because it reduces the substitutability between products and strengthens monopoly positions, reduces the price elasticities of foreign trade. Adjustments to asymmetric shocks therefore require amplified relative price changes. However, as we will see below, these transient variations can be absorbed by the margins of the companies without being passed on to production costs, particularly wages.

The analysis that has just been done leads to results, concerning real convergence, which renew the notion of optimal currency area. This is not surprising. The notion of a currency area which is compatible with the new theory of international trade has no reason to be identical with that which fits into the old neoclassical theory. In truth, the old theory is a theory of free trade without limits that is not compatible with the idea of regional integration. Thus the monetary zone can be defined empirically only on the basis of ad hoc criteria on the degree of greater or lesser approximation of the theoretical hypotheses. For Mundell it is the degree of mobility of the factors of production, for Kenen it is the intensity of the mutual exchanges which delimit the spaces of integration.

The new theory of international trade provides a stronger foundation for regional integration because trade is driven by forces that exclude the existence of an international balance of perfect competition. As the ideal of the old theory is no longer a point of reference, the question of the principles of organization of international competition becomes unavoidable theoretically and politically. Regional integration is a possible principle. By linking it to the real convergence criterion, we want to define the optimal currency area as a space of macroeconomic mechanisms supported by the microeconomic factors of imperfect competition, which are identified by the new theory of international trade. Study the real convergence in Europe, so identifying the existence of external constraint and competitiveness factors of non-price competitiveness, detect, and if possible measure, the importance of their macroeconomic effects.

The combination of the European internal market and the transition to EMU, should reinforce the role of non-price competitiveness in the real adjustments of countries whose currencies previously tended to depreciate. For the accentuation of competition under the constraint of more stable exchange, under the assumption that large countries seek to meet the Maastricht criteria, should encourage companies to conquer or defend market share by acting on quality and product diversity. For their part, governments that renounce competitive devaluations do or will experience the limits of cost disinflation as an instrument of competitiveness. On the one hand, the pressure on wages only acts very slowly on price competitiveness [O. Blanchard and P.-A.

Muet, 1992]. On the other hand, this action is exhausted when the convergence of inflation rates is reached. Micro-economic supply policies, which consist of investing in the production of non-price competitive factors, will become the most effective real adjustment means for countries in their area of economic integration. When countries improve their growth, not by lowering the relative prices of their products, but by expanding the range of products they sell, this leads to increased import demand from their firms for a stable real exchange rate [C. Kirrane, 2003]. Their partners also benefit from the creation of additional trade that is related to the diversification of traded products. The factors of regional integration are reinforced by endogenous deepening.

The magnitude of the real exchange rate variations and the formation of foreign trade prices in the five countries studied, give us information on the intensity of foreign competition in each of these countries and on the reactions of resident companies. These variables give an indication of the room for maneuver at a fixed exchange rate or, on the contrary, of the recklessness of completely depriving oneself of the adjustment of the nominal exchange rate.

The models, derived from the new theory of international trade, emphasize the key role of non-price competitiveness factors in the specialization and trade of the most advanced countries. In the long term, stable growth trajectories are compatible with external equilibrium without the need for countries to depreciate their real exchange rate. However, recent changes in the price competitiveness of European countries indicate that the price component still plays an active role in international trade. Real exchange rate movements will be studied in relation to two time horizons. A long term, it is to identify countries where the real exchange rate movements have been limited and those for which the nominal depreciation was not enough to stabilize the price competitiveness. In the shorter term, the study of price competitiveness also requires taking into account the degrees of freedom available to companies in each country to cope with a slippage in wage costs.

Evolution of real exchange rates For the years 1970-1991, two groups of countries can be identified: Germany and France had limited movements in their real exchange rate, while the other three European countries recorded losses sensitive price competitiveness. Over this period Germany and France have indeed obtained price competitiveness gains of 8 to 9% compared to the countries of the EMS (1), while the United Kingdom and Italy have recorded losses in competitiveness. greater than 13%. However, France obtained its price competitiveness gains thanks to the nominal depreciation of the franc; Germany made them despite a strong appreciation of the mark. Finally, the stability of the Spanish real exchange rate over the entire period needs to be nuanced. This stability was obtained by means of a significant exchange rate depreciation. But the global trend masks two opposing movements in Spain's price competitiveness. It improved significantly between 1970 and 1978, then lost most of the previous gains. Also, like Italy and the United Kingdom, Spain belongs to the group of countries whose real appreciation had to be compensated in 1992 by large nominal devaluations (Charts 1.A. and 1.B.).

For shorter periods, we can distinguish the effects of wage, exchange rate and profit <2) costs on price competitiveness, distinguishing between the periods 1979-86 and 1986-92 within the EMS era.

In the context of the transition to EMU, the focus is on measures of countries' competitiveness vis-à-vis their EMS partners. For the countries that were in the EMS over the two periods studied, the changes in price competitiveness were not of a very different amplitude between 1986 and 1992 than between 1979 and 1986, although the variation nominal exchange rates were

much lower in the second period. This encouraging finding, however, must be seriously nuanced. When one examines the conditions under which the relative stabilization of competition is

The biggest contrast between two periods are observed in France. It illustrates the success of competitive disinflation on this point. Controlling wage costs completely reversed cost competitiveness, with the impact of the nominal exchange rate being neutral between 1986 and 1992. The reduction in costs relative to foreign competitors gave firms leeway that they used to improve the competitiveness of their prices and increase their export profits.

Germany is in a situation opposite to France. The evolution of labor costs, which was much lower than that of partners until 1986, accelerated end of the period as a result of the

1. B. Competitiveness - evolution of Price the five European countries (expressed in relation to the average of their main EMS partners)

Although the appreciation of the mark slowed sharply in the second period, cost competitiveness continued to deteriorate at the same rate as in the past. Also, the maintenance of price competitiveness apparently indicates a rolling of the exporters' profits, which overlaps information on the deterioration of the operating accounts of German companies since reunification. A reorganization of domestic price and wage developments becomes an emergency to rebuild the profitability of companies whose degradation threatens competitiveness, and therefore the strength of the mark.

Italy is still dependent on the devaluation of its currency. Because wage costs are growing much faster than in other countries. The choice to stabilize its currency, reduce its fluctuation margins and free capital movements from 1990, did not have the same effects as in France.

Despite the deterioration in cost competitiveness, it follows that price competitiveness has gravely and continuously deteriorated since 1979. As a result, the greater rigidity of nominal exchange rates has led to a deterioration of the balance of payments which has contributed to increasing external indebtedness. The deterioration of competitiveness and financial imbalances are mutually and suggest that the slippage of the lira since September 1992 is far from reaching a level of the exchange rate that can be stabilized. A radical change in the formation of direct and indirect wages, in the public sector in particular, is a prerequisite for considering the functioning of the economy at fixed exchange rates.

The United Kingdom has only made an episodic appearance in the EMS. Yet, while the exchange rate of the pound against the EMS currencies has been volatile, Table 1 shows a significant decline in the pound only recently. An examination of the behavior of economic agents nevertheless suggests that the entry of the pound into the EMS was premature and that the exchange rate was overvalued. In the United Kingdom, as in Italy, there is a combination of a sharp rise in wage costs and an increase in the profits of exporters. Only the depreciation of the currency can dampen the subsequent deterioration of price competitiveness.

The situation in Spain is clearly unfavorable for both periods. Between 1979 and 1986, the sharp depreciation of the peseta and relatively moderate wage costs did not allow Spain to achieve price competitiveness gains as exporters significantly increased their profits. Since 1986, the losses in price competitiveness have also been high and have particularly affected the country's trade balance. Indeed, accession to the EEC has been marked by a reorientation of Spain's trade to European countries and the need to finance its economic growth through the development of its exports. Despite a rapid rise in wage costs, the Spanish currency appreciated under the effect of the high interest rate policy aimed at attracting foreign capital to finance growth. This

appreciation further reinforced the cost-competitiveness losses already fueled by the acceleration of inflation. The reduction in the profits of the exporters was not sufficient to correct the cost-competitiveness losses which, between 1986 and 1992, were greater than 20%.

The study of foreign trade price formation provides additional insights into the foreign competition faced by producers in the countries examined.

In forming their export prices, the three most advanced countries are "price maker" while Spain remains highly dependent on the prices charged by competitors. Italy is in an intermediate position. For the import price, all countries, except Germany, depend on the prices charged by their foreign competitors. This dependence is very strong in Spain as in Italy.

The main result is the heterogeneity of the situation of Italian and Spanish companies compared to that of other countries. In Italy, we know that the performance of the Italian manufacturing industry has been obtained mainly through medium-sized companies in traditional branches. Firms that cannot have a significant market share individually because of their size and operate in highly price-competitive industries are necessarily very sensitive to price competitiveness. Therefore, both for export and for import, prices are much more dependent on competitors' prices in Italy than in more advanced European countries.

On the other hand, the non-price advantages of Germany, especially in mechanical and electrical construction, which are long-standing and maintained by learning effects, give companies in this country a predominant influence on prices. both for export and for import. The apparent efforts to reduce the margins of German companies on their wage costs, noted above, are not therefore due to the direct pressure of foreign competition. Part of the evolution is probably due to the drop in the elements imported from the cost of production relative to the cost of wages, because of the appreciation of the mark; another more recent part comes from the deterioration of profits in the internal market following the shock of German reunification.

The situations in France and the United Kingdom are intermediate. Companies in these countries seem to be export price makers, but rather price takers for imports.

It should be added that the relationship between aggregated price indices does not only represent the conditions of competition in the markets for basic products. While the non-price factors of competitiveness influence the elasticities of changes in foreign trade prices relative to those of competitors' prices, they also act through structural effects. Because the weights of the different branches in exports and imports do not evolve proportionally to those of these branches in industrial production because of the specialization. These structural effects are expressed in by temporal trends. Thus a downward trend in the price of exports in France and Germany means that the exports of these countries are composed, more than imports and industrial production, of branches whose productivity progress is faster. These performances of the German and French export sectors are found, to a lesser extent, in the United Kingdom, but not at all in Italy or Spain.

This finding complements earlier observations on Italy. The industrial system is dualistic: from small, high-performing companies in the traditional consumer sectors to specialized capital goods, large companies in basic industries, transportation equipment and the chemical industry. These large companies are notoriously burdened with labor management costs and constraints that hinder their productivity gains. These difficulties, which give rise to a delicate financial situation, could explain the temporal trend of the aggregate price of exports, which is opposite to that of other countries. It is also possible, as the OECD [Economic Surveys, 1991] acknowledge,

that the efficiency of small and medium-sized enterprises deteriorates as from the second half of the 1980s with the tightening of the exchange rate constraint and the rising cost of financing costs. Small businesses have not been able to embark on the high-risk investments needed to accumulate non-price competitiveness on a scale large enough to leverage the innovation capacity they had previously enjoyed. These considerations lead us to study directly the impact of innovation on the external constraint and the role it can play in the real convergence of European economies.

Despite advances in the new theory of international trade, there has been little econometric work conducted in a macroeconomic framework. The work consisted mainly in estimating isolated equations of foreign trade in volume, without trying to link these estimates to a complete model. Also, most global macroeconomic models (Metric, OFCE, MIMOSA, Banque de France, etc.) continue to equate non-price competitiveness with a negative trend. This is why the choice of non-price competitiveness indicators will focus on two aspects. First, we selected macroeconomic indicators of non-price competitiveness. Then, we introduced them into the foreign trade equations, while respecting the coherence of global econometric models.

The choice of these indicators was made to reflect the adequacy that existed or not between the innovation factors and the specialization choices that make them profitable. The indicators selected are, in fact, of two types. Accumulation rate or industrial research indicators first reflect the global supply of a country and generate collective benefits for the industry as a whole. The second type of indicator, of adaptation to world demand, responds to a different logic. This indicator expresses, in fact, the strategy of the companies in their choice of specialization. The approach that has been used thus consists of having a "battery" of non-price competitiveness indicators and also taking into account more cyclical supply factors, such as the voltage indicator on production capacities.

The relative accumulation rate indicator <4) relates a relatively strong accumulation dynamic in a country compared to abroad, to its greater capacity to capture the demand of foreign customers using non-price characteristics. The industrial research indicator has the advantage of also taking into account intangible investment [D. Guellec, 1990, A. Magnier and J. Toujas-Bernate, 1992].

Finally, the global demand adaptation indicator reflects the sectoral content of the specialization of European countries. The introduction of this latter indicator was motivated by the desire to link supply factors (accumulation rate, utilization rate of production capacity, research) and demand factors (adaptation to global demand). This link seemed essential to us to analyze the degree of adequacy between the technological innovations and the choices of specialization.

Over the entire period 1970 to 1990, unlike the other three European countries, the relative accumulation rate of the United Kingdom increased sharply, especially from 1982. The recovery in the accumulation rate was later and less important in France (1986) and Germany (1989). The Italian accumulation rate tends to decrease over the whole period.

The evolution of industrial research indicators (expressed as a percentage of GDP ^ has a contrasting profile compared to that of accumulation rates. From 1980, industrial research expenditure increased significantly in Italy while it decreased sharply in the United Kingdom. Strong growth in industrial research expenditure in Italy, is explained by the particularly dynamic nature of the Italian manufacturing sector compared to other sectors of the economy. Conversely, the restructuring of the UK economy, led by the Thatcher government, has resulted

in a significant reduction in the industrial sector. In terms of industrial research, France catches up and overtakes Germany at the end of the period.

The indicator of adaptation to global demand built at CEPII [G. Lafay, C Herzog, 1989] is a global indicator that summarizes the contributions of each product category to the balance of manufactured goods. For one country, a high indicator indicates that this country has specialized in products with strong global demand and has been able to abandon low-growth products of global demand. This indicator makes it possible to analyze the quality of a country's industrial system, regardless of its surplus or deficit in foreign trade. The poor position for Germany is due to the fact that Germany accumulates surpluses on low growth products (mechanics). The deterioration of the Italian position can also be explained by the growing comparative advantages of this country, during the 70s and 80s, on weak products (textiles and mechanics). The type of specialization focused on low-growth products should not make us forget that these two economies, and especially Germany, are highly specialized.

On the contrary, the adjustment index for the United Kingdom or France is steadily increasing during the years 1967-1990; the specialization choices were directed towards products with high growth in demand. However, the improvement of the industrial structure in the United Kingdom and France did not lead, in the 1980s, to favorable results on trade in manufactured goods. These two countries recorded, on the contrary, significant losses of market share. To understand this paradoxical situation, it is necessary to link this quality indicator of the specialization to an indicator of the amplitude of the specialization. One then realizes that, unlike Germany and Italy, the UK, and more France, are very few specialized countries, that is to say with very little comparative advantages and disadvantages.

Italy, with its specialization turned to traditional comparative advantages (textile, chemistry and metallurgy) remains highly dependent on international competition. Despite a rise in industrial research spending, the decrease in its accumulation rate prevents it from exploiting its innovations on a large scale and does not allow it to loosen the constraint on its real exchange rate since its specialization remains focused on low differentiated products where the price advantages are decisive.

Like Italy, Spain is mainly specialized in low-differentiated products. But, in the 1970s and 1980s, Spain experienced two structural changes which greatly contributed to intensifying its foreign trade. During the 1970s, Spain benefited from a strong opening of its economy and the geographical and sectoral reorientation of its exports. As imports were still largely controlled, Spain experienced an improvement in its specialization, as measured by the manufacturing volume indicator in relation to total manufactured trade (Balassa indicator).

But the weak sectorial specialization of Spain, as well that the high import content of domestic demand, contributed to degrade sharply the balance of industrial exchanges. This movement was further reinforced by the significant losses in Spanish price competitiveness.

The situation in the United Kingdom seems more favorable, while remaining fragile. Indeed, this economy has a specialization focused on products with high global demand and the increase in its accumulation rate allows it to effectively exploit existing technologies. On the other hand, the United Kingdom's weakness in research may indicate that it may encounter difficulties in renewing its industrial technology.

Despite a special focus on low-demand products, Germany's position is, however, much more favorable than that of Italy. Indeed, while Italy, specializing in low differentiated products is

constrained in the formation of prices, Germany has a quality advantage, which can result in high prices. In addition, the recovery of the accumulation rate at the end of the period helped to renew the German production system. But this movement has been largely linked to the clash of reunification and tends to be exhausted now, because of the financial deterioration of German companies. Moreover, the relative decrease in its industrial research expenditure since 1987 is also worrying and could indicate the limits of German specialization, "inherited from the past", as well as the difficulties encountered by Germany in renewing its advantages of price.

In the 1980s and 1980s, France recorded a significant deterioration in its rate of accumulation and its industrial research. At the end of the 1980s, however, the simultaneous recovery of investment and research reveals elements of structural competitiveness that are more favorable than in the past. Also, the recovery in supply factors should allow the pursuit and renewal of its specialization towards products with strong global demand. It is still necessary that the French economy out of the recession where it is plunged to regain a dynamism of investment too early interrupted.

For different reasons, Italy and Spain (because of their specialization in poorly differentiated products). But also, to a lesser extent, France and the United Kingdom (because of their differentiated specialization in products with high world demand) are sensitive to price competitiveness variations. In the case of Spain, it is necessary. In the case of the UK, the link between research and development efforts and technological innovation is particularly difficult to highlight, especially because of the large weight military research (A. Magnier and J. Toujas-Bernate, 1992). Nevertheless takes into account the structural changes that have affected this country since joining the common market. During the years 1986 to 1992, following the sharp increase in the Spanish investment rate, foreign trade was, in fact, largely disconnected from fluctuations in Spanish price competitiveness. Only Germany, whose specialization is geared towards quality advantages, is less dependent on price competitiveness factors.

a. Traditional modeling

Export and import equations are generally based on New Keynesian representations of the economy where, on the one hand, trade is constrained by demand and, on the other hand, goods traded are imperfectly substitutable. . This leads to price differences for the same product in the domestic and international markets. The traditional equations of foreign trade are placed in a static representation of the national economy where the assumption is made that the rest of the world constitutes a second country. In this type of two-country model, imports from one country correspond to exports from the other, leading to widely symmetric export and import equations. The usual equations for the foreign trade of manufactured products for a given country are thus represented by the following two functions:

(1) $X = f(Y^*, COMPET)$ and $M = g(Y, COMPIT)$ where: X and M refer to the export and import volume requirements of manufactured goods, Y and Y * real domestic and foreign income, COMPET refers to export price competitiveness and COMPIT domestic price competitiveness.

On the basis of these theoretical equations, the econometer is nevertheless led to take into account the heterogeneity of the rest of the world by slightly modifying the export and import equations. Econometric work, estimating the export and import demand functions, generally holds demand variables instead of income variables. Moreover, the two types of demand are not strictly homogeneous. In fact, global demand for manufactured goods addressed to France

consists of the average imports of the different countries of the world, weighted by the representing manufacturing exports of France. Thus calculated, this global demand already incorporates the trend opening of economies, reflecting the growing consumer interest in expanding the range of foreign products available on the domestic market. On the contrary, on the contrary, domestic demand does not take this openness into account. Also, a time trend is usually introduced into the import equation to account for the degree of border opening.

(2) X = f (D \ COMPET) and M = g (D, COMPIT, Tm) where: D *

and D denote the volume of "world demand" and domestic demand for manufactured products, Tm the trend of trend opening of the domestic market to foreign products.

The foreign trade equations for manufactured products presented above contain an implicit assumption, which was verified in the years 1960-75, but which has been called into question since the second oil shock. The requests, French or foreign, were supposed not to meet supply constraints. In this case, export and import volumes of manufactured goods adjusted to the notional consumer demand, defined by maximizing their utility under constraint. Numerous empirical studies have underlined the role of supply factors in the deterioration of French export performance in the 1980s and, in particular, the inadequacy of French investment compared to its OECD partners (Artus, 1986, Francq, 1990). To account for this evolution, economists have introduced, for a number of years, indicators of tension on domestic production capacities (TUC) or relative (TUCRX). This last indicator captures the demand deferral effects that can occur in the event of capacity saturation in a country relative to its partners.

X - f (D *, COMPET, TUCRX) and M - g (D, COMPIT, Tm, TUCRM) where: TUCRX denotes the ratio of domestic TUC on partner country TUC (TUCx *), TUCRM ratio of the domestic TUC on the TUC of the partner countries

(TUCm *) TUCx * is the average of the indices of tensions on the production capacities of the main partner countries of the studied country weighted by the weights they represent in the exports of manufactured products of this country. country, TUCm * is defined in the same way, the weighting being calculated on imports.

b. Taking into account factors of non-price competitiveness

Despite the advances of the new theory of international trade, few econometric studies have been conducted in the macroeconomic framework. The work consisted mainly in estimating isolated equations of foreign trade in volume without trying to link these estimates to a complete model. Also, most global macroeconomic models (Metric, OFCE, MIMOSA, Banque de France, etc.) continue to equate non-price competitiveness with a negative trend.

Two major methods to account for non-price factors have been experimented with isolated equations. At present, they remain non-adaptable for the overall models. Indeed, at of all manufacturing, non-price competitiveness is usually measured by the ratio of elasticities export earnings and import (Thirlwall, 1980 Krugman, 1992). A high ratio would allow a country to sustain higher growth than its partners, without reducing its real exchange rate. These equations are not integrable in a global model as much because the usual concepts of "domestic demand" and "foreign demand" are largely heterogeneous because the authors are led to retain negative price elasticities. If at the level of foreign trade in manufactures, these price elasticities are explained by the presence of non-price factors, in the models used for forecasting, the price elasticities of foreign trade respect the critical elasticities theorem.

Other economists (Magnier and Toujas-Bemate, 1992, Guellec, Ralle and Glenat, 1992) directly introduced non-price competitiveness factors (research and development, investment rates or specialization indicators) into export equations. or export market shares. These studies were carried out for export and on meso-economic data (the automobile sector for example or a panel of manufacturing branches) and, to account for endogenous growth processes, non-price factors were introduced in absolute terms. , according to the theory of international trade. But the results, non-standard, are difficult to apply to an overall model of short and medium term. Indeed, the increase in activity, by improving the quality of research and specialization, results in an improvement in the trade balance. In addition, these studies also retain negative export price elasticities.

Our method has been to introduce these non-price competitiveness factors within the usual framework of ensemble forecasting models. Following the Amadeus model, which was the first to incorporate a relative accumulation rate indicator into the volume equation of foreign trade in manufactured goods (Erkel-Rousse, 1992), we integrated two other non-price indicators: specialization and research and development. In order to respect the overall logic of the two-country models, the non-price competitiveness variables are introduced relatively in relation to the main partner countries of France and only the price elasticities consistent with economic theory have been retained to respect the theorem of critical elasticities.

The non-price competitiveness indicators used in this study are of two types. Accumulation rate or industrial research (relative) indicators first reflect the overall supply of a country and generate collective benefits for the industry as a whole. The second type of indicator of adaptation to global demand, responds to a different logic since this indicator reflects the strategy of companies in their choice of specialization.

X = f (D ', COMPET, TUCRX, TACRX, RDRX, SPEC) M = g (D, COMPIT, Ti, TUCRM, TACRM, RDRM, SPEC) where: TACRX designates the ratio TACi / TACx * and TACRM the ratio TACiyTACm *

TACi the rate of domestic accumulation, TACx * and TACm * the average of the accumulation rates of the partner countries weighted respectively by the structure of exports and imports of the studied country, RDRX denotes the ratio RDRi / RDRx * and RDRM the ratio RDRi / RDRm *

External constraint and competitiveness

RDRi the domestic industrial research relative to the GDP, RDRx * and RDRm * the average of the research amounts relative to the GDP of the partner countries, weighted respectively by the structure of the exports and imports of the country studied, SPEC represents the indicator of adaptation to global demand, built by the CEPII.

Estimated models of external trade of the five European countries

Export volumes X and imports M of manufactured products were estimated by the following equations:

Exports (X):

o o Log (X) = Log (D *) + b / n + 1 I Log (Compet) + d / n + 1 £ Log (TACRX)

i = - ni = - n

+ eLog (TUCRX) + f / n + 1 I Log (RDRX) + g / n + 1 I SPEC + hTEMPS + c + Rx

i = -ni = -n

Imports (M):

$$o \; o \; Log \, (M) = Log \, (D) + b \, / \, n + 1 \, I \, Log \, (Compit) + d \, / \, n + 1 \, I \, Log \, (TACRM)$$

$$i = -ni = -n \; 0 \; 0 + eLog \, (TUCRM) + f \, / \, n + 1 \, I \, Log \, (RDRM) + g \, / \, n + 1 \, £ \, SPEC + hTEMPS + c +$$
$$Rm \; i = -ni = -n$$

with:

- D *: the foreign demand indicator sent to the country, which is based on imports of manufactured products by the country's trading partners from the OECD (for 4 European countries) and from all over the world (for France),

- D: the domestic demand indicator of the four European countries and the demand indicator for manufactured products, including stocks for France,

- TIME: a temporal trend, which measures the pace of internationalization of economies. The temporal variable can also be taken into account by means of a trend "bent", for example TRF724 and TRD724 where TRF724 takes the value of the time until 1972 4 is equal to zero thereafter and TRD724 takes the value of time from from 1972 4 and is equal to zero before,

- COMPET: the export price competitiveness indicator, calculated with a double weighting (price ratio of partner countries and competitors at the price of the country concerned, expressed in common currency)

-COMPIT: the indicator of price competitiveness on imports (ratio of import prices to production costs),

- TACRX and TACRM: the relative rate of accumulation of indicators expressing the medium investment effort term TACRX = TACiTTACx * and TACRM = TACi / TACm *

TACx * and TACm *: the synthetic indicators of foreign accumulation rate: these two indicatorsdiffer by the weighting of the partner countries of the country considered, which reflects the structure of its exports and competition from other countries in third markets (TACx *) or its imports (TACm *), capabilities - TUCRX production and TUCRM:: TUCRX indicators = TUCi / TUCx * relative and TUCRM voltages = on TUCi /

TUCm *, reported - RDRX to GDP and: RDRX RDRM =: relative RDRi / RDRx * indicators and research RDRM = RDRi / RDRm *,

- SPEC: global demand adaptation indicator: a rise in demand the world index.

indicates that the country has specialized in high-value products

This modeling accounts for the following effects: - a demand effect from the country (domestic demand D) or from the zone (foreign demand D *);

- a price-competitiveness effect reflecting the relative price evolution of domestic exporters compared to their foreign competitors;

- a cyclical effect of tensions on domestic and foreign production capacity;

- non-price competitiveness effects apprehended using three macroeconomic indicators defined in Box 5:

• the relative accumulation rate, based on the medium-term investment effort,

• the relative index of translated research the respective effort of each country in terms of industrial research (relative to GDP),

    • the specialization indicator reflects the adaptation of the different countries to the national demand;

    A residual term Rx or Rm which represents the residue of the regression.

The variables of the competitiveness-price volumes of the exchanges of and products except manufactured prices, intervene with in the

delays more or less important according to the countries. The delay structure used is presented in the following table:

1. Number of quarters of delay used for the explanatory variables

Compet price TACR RDR SPEC TUCR

The purpose of these estimates was to analyze, on the one hand, the role of non-price factors on the volume of foreign trade in manufactures of the different European countries and, on the other hand, the impact of non-price factors on the price elasticities of foreign trade. To study this latter aspect, we constrained income elasticities to unity because the changes, which resulted from the introduction of non-price factors, also affected price elasticities.

The introduction of non-price factors firstly improves the quality of econometric estimates. But when forced to unity income elasticities, the introduction of non-price factors no longer possible to reduce the influence of the temporal trend with the exception of Spain and, to a lesser extent, of 'Germany. It should be noted, however, that the trend in Spain's export equation is, unlike other European countries, positive. It reflects the strong development of Spanish exports that accompanied the opening of this country and the reorientation of its trade from its accession to the EEC. The other more advanced countries experienced, on the contrary, a downward trend in their export market shares from the first oil shock. This decline reflects the intensification of international competition with, in particular, the rise in industrial exports of the new industrial countries of South-East Asia.

Spanish exports appear very sensitive to the evolution of non-price factors. In the absence of statistical data consistent with those available for other European countries, non-price factors were apprehended for this country by means of two simpler indicators to calculate: the domestic investment rate and a specialization indicator based on the ratio of manufacturing balance by volume in total of products traded (Balassa indicator). An important, but opposite, break occurred as a result of Spain's entry into the common market. From this date, the Spanish investment rate is recovering strongly, while the specialization, seized by the Balassa indicator, is deteriorating under the strong surge of imports.

The introduction of non-price factors leads to a decrease in the positive temporal trend (2.6% vs. 3.5% / year). Part of the positive trend is then captured by the evolution of non-price factors. These factors account for some of the growth in Spanish exports. The investment rate and the specialization indicator are indeed positively related to Spanish exports with very strong elasticities, greater than unity. The rise in the investment rate in Spain since the 1980s has stimulated exports from this country. The voltage indicator on domestic production capacity is also negatively related to Spanish exports. However, unlike other European countries, Spain experienced a decrease in tensions over its production capacity during the 1980s. Also, at the end of the period, Spanish exports do not seem to have been hampered by bottlenecks.

Finally, the introduction of non-price factors in the Spanish export equation leads to a significant drop in price elasticity. This decline is explained by the deep structural changes that affected the

Spanish economy during the period studied. It reports on the partial disconnect that took place between exports and price competitiveness. During the whole period, it appears that the increase in Spanish exports is explained more by the openness of the economy and by the sharp recovery in the investment rate, than by the factors of price competitiveness. Indeed, the deterioration in Spanish price competitiveness between 1979 and 1990 seems to have been partly offset by the strong growth in investment. The price elasticity remains high (0.7) and explains the role of the devaluations carried out in 1992, to restore the trade balance in a context of investment crisis.

With a decrease in its investment rate and tensions on its production apparatus, the situation in Italy seems to be opposite to that of Spain. The impact of the relative accumulation rate is high but its effect is opposite to that of Spain. The sharp reduction in Italian investments has indeed weighed on the country's exports and slowed the shift in specialization towards more differentiated products (12). The voltage indicator on production capacity is negatively related to exports.

Also, the tensions that appeared in the 80's limited Italian exports. The strong price elasticity, with the introduction of non-price factors, shows that, in the absence of sustained investment, Italian exports still largely depend on price competitiveness. This strong elasticity thus coincides with the Italian specialization, which remains focused on commoditized products, where price factors still play a decisive role.

In the United Kingdom, non-price competitiveness factors (the accumulation rate and specialization) played a positive role in the expansion of exports. However, the tensions that have appeared on production capacities tend to limit this growth. With a rising rate of accumulation and a specialization towards products with strong global demand, the poor price competitiveness of the United Kingdom could be, unlike Italy, offset by the dynamism of non-price factors (13). . Despite the introduction of non-price factors, price elasticity remains the lowest among European countries (0.41).

Germany also has a low price elasticity, much lower than that of France. Yet the effects of non-price competitiveness have been particularly difficult to pin down for this economy. Indeed, it has not been possible here to highlight either the influence of the accumulation rate or the rate of investment on exports.

The only indicator of non-price competitiveness that seems to have an effect in the determination of exports is the indicator of adaptation to world demand. However, this indicator is decreasing for Germany, since this country is rather specialized in products with low demand but high quality. This indicator, which is positively related to exports, has thus limited German exports by volume. The econometric estimate also indicates, for this country, a negative influence on exports of the indicator of tensions on production capacities. The tensions that have emerged as a result of reunification have particularly weighed on German exports.

French exports are positively related to the two factors of non-price competitiveness. Although the elasticities remain lower than those observed for Italy or Spain, the delay taken by France in terms of accumulation during the years 1974-1985 seems to have slowed down French exports. On the other hand, France's regular specialization towards high-growth products could have limited the impact of the accumulation rate. France remains more dependent than Germany on its price competitiveness. The introduction of non-price factors even tends to reinforce the price elasticity gap between the two economies. This gap reflects the special type of specialization of France, which differs from that of Germany. With a focus on high demand products, price

competitiveness plays an active role in France to gain market share and continue the innovation process. The rise in price elasticities, when non-price factors are introduced, is nevertheless in line with greater real convergence between the two economies. A lesser variation in price competitiveness is necessary to achieve the same objective of export growth.

The second objective of this study was to study the impact of the introduction of non-price factors on price elasticities and to try to link these results with the type of dominant specialization in each country: specialization in new products, specialization in product quality or traditional specialization in unmarked products. The econometric study shows that the traditional hierarchy of price elasticities of the different European countries is modified when non-price factors are taken into account. In general, estimates of foreign trade equations made without non-price competitiveness variables indicate that price elasticities are even higher when countries are specialized in low-differentiated products. Three groups of countries can be distinguished. Spain has a very high price elasticity (greater than unity) which corresponds to the price elasticities advanced countries had in the 1960s. France and Italy have intermediate price elasticities (0.6). Finally, German and English price elasticities are generally quite low (0.4).

The work of H. Erkel-Rousse (1992) suggests, however, that there is a very strong link between the investment rate and exports for this country. A refinement of non-price competitiveness indicators is needed here.

Taking into account non-price factors disrupts this hierarchy and tightens the range of price elasticities. Advanced countries, such as France, the United Kingdom or Italy, then have higher price elasticities. This result indicates that, on the one hand, for an identical effect on exports, the variation in price competitiveness may be more limited than in the years 1960-70 and that, on the other hand, price and non-price competitiveness play complementary and non-opposing roles. For the two extreme countries, Spain and Germany, the impact of non-price factors on price elasticities seems different. In Germany, taking into account non-price factors does not change price elasticities. German non-price competitiveness, based on vertical differentiation, seems to be less dependent on price competitiveness. In Spain, the introduction of non-price factors leads to a significant decrease in price elasticity, although it remains higher than in other European countries (with the exception of Italy). The drop in elasticity reveals the key role played by non-price factors and, especially, the investment rate, in Spanish exports.

The influence of specialization is less marked on importation. She does not play especially in Italy and the United Kingdom. On the other hand, the rate of accumulation influences imports from all European countries, with the exception of the United Kingdom. The impact of the accumulation rate seems to be greater for imports than for exports in Germany and the equivalent for France, while for the other three countries the impact is less pronounced.

In France and Germany, specialization and accumulation rate indicators are negatively related to imports. In France, the impact of non-price factors is reinforced by the influence of the industrial research indicator. For their part, imports from Germany appear to be constrained by tensions over production capacity. Also, the recovery of the rate of accumulation in Germany in the second half of the eighties did not make it possible to compensate for the growing tensions weighing on the production capacities. German imports accelerated sharply from 1989 (above 14% in 1990 and 1991). In France, when the recovery of the economy took place, driven by the global economy, the increase in the investment rate, whose import content is higher than in Germany, led to a rise in imports to reach 12% in 1988 (for a growth of only 10% of its exports).

In Italy and Spain, although the influence of the accumulation rate is less marked on imports than on exports, imports from these two countries largely depend on the evolution of this postman. The voltage indicator on production capacity is particularly relevant for Italian imports, whereas its impact is more limited on Spanish imports. In the United Kingdom, imports are negatively related to the industrial research indicator. The weakness of the industrial research of this country thus weighed on its imports. On the other hand, British imports are also stimulated by the tensions that appear on production capacities.

The introduction of non-price factors also modifies the import price elasticities. They decrease in Spain, increase in France, Germany and the United Kingdom and remain stable in Italy. Taking non-price factors into account leads to a decrease in the price elasticity gap between European countries and in particular reverses the ranking of France and Spain. The price elasticity of Spain increases from 1.7 to 0.58 while that of France increases from 0.59 to 0.83. In total, the difference in elasticities is even smaller than in exports. It should also be noted that France, Germany and the United Kingdom are more sensitive to price elasticities for their imports, while Spain and Italy appear less constrained by their domestic price competitiveness.

The introduction of non-price competitiveness factors generally reinforces the influence of price competitiveness. Their introduction allows, first and foremost, the respect for all countries of the critical elasticity theorem and the Marshall-Lerner condition.

In addition, this study shows that both aspects of competitiveness (with a price and a quality pole are highly complementary, which is particularly important in the case of France and the United Kingdom. In order to ensure a good diffusion of new products and gain market share, price advantages must accompany the deepening of non-price benefits (the case of horizontal differentiation). In the case of the United Kingdom, the loss of English price competitiveness may thus, in this respect, negate the effort that has been made with regard to the rate of accumulation. Conversely, Germany, with its focus on high quality products, is less dependent on the evolution of its price competitiveness.

Two countries seem atypical: Italy and Spain are both specialized in low-differentiated products. The introduction of non-price factors leads to higher price elasticities in Italy and a drop in Spain. In Italy, the rise in price elasticity could be explained by the low level of accumulation, which makes the country even more vulnerable to changes in price competitiveness. In Spain, the decline in price elasticities indicates a structural change that occurred with the entry of Spain into the EEC. For a while, foreign trade has been disconnected from the evolution of price competitiveness. The latest devaluations indicate that this atypical process has met its limits and that Spain, like Italy and the United Kingdom, will have to improve its price competitiveness in order to balance its foreign trade. Only the rise in price elasticities in France and the decrease in Germany could allow real convergence of the two economies. In a context of cost and price competitiveness restored in France, the rise in price elasticities should allow, in the long run, a lesser variation in the nominal exchange rate in order to obtain the same impact of price competitiveness on foreign trade.

Conclusion

The analysis of the factors of foreign trade in manufactures revealed significant differences between the main European countries. These differences must be placed in the difficult situation of Europe. The length of the recession and its mismatch between countries, the severity of the

financial adjustments, the reappearance of each one for oneself in terms of exchange, have modified the competitive positions.

We have seen that France had accumulated a labor cost advantage that was converted into price competitiveness until 1992, thanks to a continuous effort by companies on their margins. These gains in price competitiveness have combined the benefits out prizes won in the second half of 1980 to enable sustained growth of exports. Thus foreign trade was a powerful stabilizer of the French economy in 1992.

On the contrary, the traditional virtuous circle of Germany has been significantly altered. Firstly, the demand for Germany has fallen since 1990 because of a depressed world economy, which particularly affects productive investment. As Germany has not redeployed its non-price factors into high demand global product categories, the traditional robustness of its trade balance has significantly eroded. Two other factors contributed to this new situation. Production capacity has been reoriented towards domestic demand after reunification; above all, cost-competitiveness deteriorated sharply in 1992. This phenomenon was further aggravated by the appreciation of the mark, following the depreciation of other currencies (except for the guilder) which enamelled the successive crises of the EMS.

Italy and the United Kingdom radically changed their European commitments by letting their currencies emerge from the EMS and by deliberately accepting initial devaluations of around 20%, which were partly reversed afterwards. These policy changes result from unbearable tensions that markets have turned into speculative crises. By first forcing some currencies out of the EMS and then causing a considerable widening of fluctuation margins, the currency crises create the conditions for more expansive monetary policies that are in line with speculators' views.

In the United Kingdom, the decline in the pound has been able to restore cost competitiveness and allow firms to rebuild their margins, because the recessionary environment has removed the inflationary impact of the devaluation. It is also necessary that the widening of the public deficit does not stifle the investment necessary to convert the improvement of the price competitiveness into lasting gains of market shares.

In Italy, the exit of the SME sanctioned the failure of a French attempt at competitive disinflation. The sharp relative increase in wage costs and the perilous state of public finances have eroded the dynamics of the export sector. Italy is therefore affected both in the price and non-price factors of its competitiveness. The decline of the lira is both an inevitable adjustment and a dangerous process that can only be controlled by a drastic consolidation of public finances.

Looking at recent changes in nominal exchange rates in the short term, we are inclined to consider them as a clearance of past distortions. We would have moved closer to the exchange rate more in line with the fundamental determinants of competitiveness. However, if one takes the longer perspective of the transition to EMU, we must question the compatibility of macroeconomic trajectories that will be inflected by the profound changes of the external constraint and competitive exchange rates. Because the convergence towards the EMU cannot be the illusory quest for equilibrium exchange rate that any unforeseen shock can destroy, hardly one believes to have reached them. Real convergence is in shock absorption mechanisms that flow through flows rather than prices. This is why the development of non-price factors of competitiveness plays a role.

In this respect, the relationship between France and Germany is decisive if the EMS is to become again the framework of convergence policies. The joint evolution of interest rates and exchange rates could lead to a downturn in France in 1994. Prudent monetary policy should promote disinflation in Germany, keep the country in recession longer than the rest of Europe, so help lowering interest rates in the short term. It would therefore be possible to find before the end of 1994 a more traditional configuration. During the fall in German rates, while the recovery would stop that of French rates, the exchange rate between the franc and the mark would go back to its central rate. Thanks to the productivity gains from work due to the recovery, France would continue to control its wage costs. As self-financing is very high, the conditions for a rise in productive investment rates would be met. The consolidation of France's competitiveness is therefore possible. On the German side, the gains from the prolonged recession would be the deceleration of wage costs. Provided that the tax measures already decided and especially the development of supply in the former East Germany reduce the pressure on public finances, the nominal stabilization of the exchange rate between the franc and the mark will become compatible with a real convergence of the two economies.

References

AGLIETTA M., ORLEAN A., OUDIZ G., 1980: The French Industry Facing Foreign Exchange Constraints, Economie et Statistique, No. 119, February.

AGLIETTA M. and BOYER R., 1982: A competitive industry in France and in the world, in An industrial policy for France, French documentation.

AGLIETTA M. and BAULANT C, 1992: The franc: from the growth instrument in search of the nominal anchorage, in Franc Poincaré to the Ecu, symposium held in Bercy in December 1992 and published in June 1993.

ARTUS P., BISMUT C, DEBONNEUIL M., 1981: Foreign penetration on the French market: twenty years plus one, Economie et Statistique, No. 135, July-August.

BAULANT C, 1988: Real exchange rates, levels of industrialization and norms exchange, Thesis Paris X, December.

BAULANT C, 1993: The Impact of Price and Non-Price Competitiveness on French Foreign Trade in Manufactured Goods, Working Paper Banque de France, DGSE-Changes No. 93-21, May.

BAULANT C, 1993: Estimation of the equations of price and volume of German foreign trade in manufactured goods, Working Paper Banque de France, DGSE-Foreign Exchange No. 93-39, June.

 BISMUT C and OLIVEIRA MARTINS J., 1986: The role of prices in international competition between Europe, the United States and Japan, in World Industry: competitiveness at all costs, M. Fouquin ed, CEPU, Economica.

BLANCHARD O. and MUTE PA, 1992: Competitiveness through Inflation: An Assessment of the French Macroeconomic Policy, CEPR, October. CEPS, Economic Policy Group, 1991: North-South in the EMS, CEPS paper, No. 50.

CONNOLY B. AND KROGER J., 1993: Economic convergence in the European Economy and the role of economic policies, Economic Research of Leuven, flight. 59, No. 1-2.

DEBONNEUIL M. and DELATTRE M., 1987: Price competitiveness does not explain the trend losses of market shares, Economie et Statistique, n ° 203, October.

DELATTRE M., 1987: Investment and Adaptation: The Drivers of Competitiveness-Volume, Economics and Statistics, No. 203, October.

DEBONNEUIL M., 1988: Note from the Directorate of Economic Syntheses, Department of Economic Affairs, No. 75-354, 4 March.

DIXIT A. and STIGLITZ J., 1987: Monopolistic competition and optimum product diversity, American Economic Review, june.

ERKEL-ROUSSE H., 1992: The External Performance of France and Germany, Economie et Statistique, No. 253, April.

ERKEL-ROUSSE H., 1992: Foreign Trade and the International Environment in the Amadeus Model, INSEE Working Paper, No. 9205, September.

FAGERBERG J., 1988: International Competitiveness, Economics Journal, vol. 98, June.

FAVEREAU O., 1986: Competitiveness and Employment: Three Levels of Analysis, Three Paradoxes, Economies and Societies, vol. XX, No. 1, January, Series P29.

GAGEY F. and VINCENT JP 1990: Competitiveness of French Products: An Approach by Quality, Economic Observations and Diagnostics, OFCE, No. 32, July. OFCE International Economic Policy Group, 1992:Disinflation Competitive, the Mark and Fiscal Policies in Europe, The Threshold, 1992.

GUBIAN A. and MUTE PA, 1989: Industrial Trade Degradation and Competitiveness-Price, Observations and Economic Diagnostics, OFCE, n ° 27, April.

GUELLEC D. and RALLE P. 1989: To grow more without increasing the deficit trade, Economy and Statistics, n ° 217-218, January-February.

GUELLEC D., 1990: Some analyzes of non-price competitiveness, INSEE Note, No. 43 / G142, March.

GUELLEC D. and RALLE P., 1991: Endogenous growth and product innovation, INSEE Working Paper, G No. 9103, March.

GUELLEC D., RALLE P. and GLENAT P., 1992: Product innovation and non-price competitiveness: an application to the automotive sector, in Technological innovation, growth and competitiveness (book project), February.

HELPMAN E., 1981: International Trade in the Presence of Product Differentiation, Economics of Scale and Monopolistic Competition, Journal of International Economics, August.

HELPMAN E. and KRUGMAN P., 1985: Market Structure and Foreign Trade, MIT Press.

KIRRANE C. 1996. Maastrict and Monetary Cooperation. European Economic Integration Review, Vol. 14, p.49-59.

KIRRANE C. 2003. The IMS and the Euro. European Political Economy Review No. 1 (March 2003), pp. 153-65

KIRRANE C. 2003. The Choice of Exchange Rate Regimes for EU Ascension Countries. European Political Economy Review No. 2 (Autumn 2003), pp. 188-206

KRUGMAN P., 1989: Differences in income elasticities and trends in real exchange rates, European Economic Review, 33, No. 5, May.

KRUGMAN P., 1992: Currencies and Crisis, MIT Press.

LAFAY G. and HERZOG C, 1989: International trade: The end of advantages acquired, CEPH, Economica.

MAGNIER A. and TOUJAS-BERNATE J., 1992: Technological innovation and export performance: a comparison of the five major industrial countries, in Technological innovation, growth and competitiveness (book project), February. OECD, 1991: OECD Economic Surveys: Germany, 1990-1991. OECD, 1991: OECD Economic Surveys: Italy, 1990-1991. OECD, 1991: OECD Economic Surveys: United Kingdom, 1990-1991.

THIRLWALL A., 1980: Balance of payments theory and the United Kingdom Experience, The Macmillan Press LTD.

TOUJAS-BERNATE J., 1991: Germany, world's leading exporter, Economy and Statistics, No. 246-247, September-October.