

Hesse, Helmut

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ARTICLES

FOREIGN TRADE

Determinants for Variations in Export Growth

by Professor Dr Helmut Hesse, Göttingen

In judging economic events one is often tempted to concentrate one's attention unduly on the salient events of the day and in so doing to forget long-term development trends. This then leads to erroneous estimates of economic processes and possibly to hasty decisions on economic policy. If this is to be avoided it is necessary to concern oneself among other things with trends. This applies also to the field of foreign trade.

The Trend

For this reason it is intended to analyse in the following the long-term development in the German Federal Republic's exports of industrial goods. (SITC-classes 5—9) The procedure chosen for this purpose is to compare the Federal Republic's industrial exports with those of the most important industrial states. The following table may serve as starting point for our analysis:

Tabelle 1

The Percentage Shares of Individual Countries in the Total Exports of Industrial Goods in the SITC-Classes 5—9.

Country	1937	1950	1956	1960	1965
Belgium/Luxembourg	6.2	6.2	6.6	6.2	6.7
Federal Republic of Germany	23.6 ¹	7.7	16.4	19.8	20.4
France	6.7	11.0	8.3	10.4	9.7
Great Britain	23.6	26.9	19.6	17.0	14.3
Italy	3.8	4.1	3.7	5.4	7.3
Japan	7.6	3.5	5.7	7.1	10.0
Canada	5.3	6.5	6.0	5.1	5.0
Sweden	2.6	2.9	2.7	3.2	3.5
USA	20.6	31.2	31.0	25.8	23.1
Total	100.0	100.0	100.0	100.0	100.0

¹ German Reich

The table shows that in 1950 the Federal Republic's share in the total exports of the nine countries was at 7.7 per cent relatively small. Then followed a rise which continued until the end of the fifties when the curve flattened at around 20 per cent. Clearly, the Federal Republic first of all regained the position in the world market for industrial products, which it had lost during the war, and then roughly retained it. At all events, the Federal Republic has hardly been able

during the sixties to increase its share in exports still further. In this respect its experience differs from that of Japan, which continues to gain ground in the world market for industrial products and now holds a position better than that before the war. The Federal Republic also differs from Italy which has made considerable advances in the sixties.

To note these facts is only the first step in an analysis of long-term trends. The second is to find out why these developments have occurred, to determine the determinants that have brought about these variations.

Determinants of Differing Trends

Roughly speaking, differences in the export growth rate can be attributed to two kinds of components: the one element is structural while the other has to do with competition. Into the second category fall all those elements which characterise the competitive position. It is by these competitive elements that producers and commercial enterprises attempt to increase the proceeds from their sales even relatively to their competitors. Among these elements are price, quality, delivery periods, publicity and credits granted by the suppliers. "Structural components" arise from differences in the growth of world demand for individual goods. This is best explained by an example. Let us take two countries of which one primarily exports goods for which the demand on the world market rises but slowly, whereas the other is able to satisfy with the goods it exports a rapidly mounting demand. Now even assuming that neither country achieves an advantage over its competitor in the market for each individual product and therefore just holds its share in the market, total exports of the two states will develop at a different pace, and that because of differences in their export structures.

It is possible roughly to separate statistically the structural from the competitive components. This is done by first of all splitting up for the first and the last year under review the total industrial exports of the countries under examination into several groups. (In the present calculation the totals have been divided into 17 of such groups.) The next step is to deter-

mine for the first year each country's share of the global volume of trade in each individual product, assuming that each of the nine countries will just maintain its share in the world market for each of the 17 separate groups of products until the final year, that is to say that it will maintain without advantages or disadvantages its competitive position. Starting from each product's export figure which can be ascertained for the final year under review, each country is then allocated a hypothetical export value in accordance with the already established percentage of the total for all the countries. Its share in total exports of all countries will be ascertained. This share indicates what position each country would have occupied on the world market in the final year of the period under examination, if competition had led to no changes in the relative position of each good. The difference between this hypothetical share and the one actually achieved in the initial year is the yardstick of the structural components at work during the period under examination; it indicates in how far fluctuations in the world demand for individual products has benefited—or not benefited—those individual countries which have specialised in different products. The difference between the hypothetical share and the one actually achieved in the final year is the measure of ground gained or lost by the country in the competitive struggle. It is this difference that expresses the competitive component.

Method of Calculation

Let us take an example to clarify the method of calculation. Let us say two countries A and B export in the year 1 two products X and Y and that in quantities that may be read from the following table.

Country A has $\frac{100}{400}$ of the trade in product X and country B $\frac{300}{400}$. The export shares for product Y are correspondingly $\frac{200}{500}$ in respect of country A and $\frac{300}{500}$ for country B.

Tabelle 2

Exports of the goods— Exporting country	X	Y	Total exports of the country
A	100	200	300
B	300	300	600
Total trade in the product	400	500	world trade 900

Now let us assume that the world trade figure rises in the year Z to 1,400 of which the share of country A is 600 and that of country B 800, or, to 400 in respect of product X and to 1,000 in respect of product Y. The hypothetical export value to be attributed to country A is then arrived at as follows:

$\frac{100}{400} \times 400 + \frac{200}{500} \times 1,000 = 500$. And for country B the calculation would be: $\frac{300}{400} \times 400 + \frac{300}{500} \times 1,000 = 900$. These would be the results if there had been no competition, i.e. if each country had retained its original share in both markets.

Country A's share in world trade during the basic period was $\frac{300}{900} = 0.333$. Thanks to the structural component the value increases to $\frac{500}{1400} = 0.357$. But there is actually a further increase, due to competitive components, to $\frac{600}{1400} = 0.428$. The same calculation can be made for country B.

The Influence of the Competitive Component

The results of the calculation are given in table 3. The first three columns show the percentage changes in the shares of each of the nine countries in the total industrial exports between 1937 and 1965, between 1950 and 1965, and between 1960 and 1965. Reference to table 1 makes it possible to arrive at the changes in terms of value. The second three columns of table 2 give the proportional gains or losses due to the competitive component and the last three columns those due to the structural component. The proportional gain of 0.5 per cent by Belgium/Luxembourg (col. 3) between 1960 and 1965 has for instance come about in the following manner: Due to an unfavourable export structure Belgium/Luxembourg's share would have dropped by 0.3 per cent (col. 9) if it had not been for an improvement in their competitive position. But in the competitive struggle the Belgians and Luxembourgers were able to gain advantages—advantages which, if Belgium's export structure had corresponded to that of the average of all the nine countries, would have led to an increase of 0.8 per cent.

The figures contained in the table show that in the post-war period the greatest influence must be ascribed to competition: the figures in the second third of the table are almost throughout higher than the corresponding figures in the first third. It is therefore primarily the competitive factor that determines each individual country's position in the world market. Thus the Federal Republic's relatively great advance on the world market during the fifties is due to the improvement it then achieved in its competitive position, whereas its failure in the sixties to conquer further sectors of the world market must be attributed to its inability to gain further competitive advantages. The growing importance of Italy and Japan is without any doubt due to improvements in their competitive positions. On the other hand, the part played by Great Britain and the United States in the export markets—though still considerable in absolute terms—has been constantly diminishing owing to the fact that these countries have been unable to keep pace in the competitive struggle for world markets.

The Importance of the Structural Component

The importance of the competitive elements notwithstanding, the structural component should by no means be underrated. Thus, if the Federal Republic of Germany increased its share in the world market in the years from 1950 to 1960, it was able to do so to some relatively minor extent owing to its export

structure, and in the sixties, when competitive influences played no part, influences of a structural nature became even more important. The United States and Sweden are the only other countries to show proportional gains due to changes in the composition of the products they sold for export. The USA is able in this manner to compensate its losses to at least a small extent.

So far our considerations have led us to the conclusion that what primarily determines the position in the world market is competition. But this statement does not get us very far, because competition takes many different forms, and it is therefore not yet clear whether prices, qualities, delivery dates, credits granted by the sellers or preferences shown by the buyers have been responsible for the fluctuations in the world market.

Most people, asked how competitive advantages are gained, point to prices. According to this thesis, states whose export prices rise relatively strongly are less able to increase their exports quantitatively than nations whose prices remain below those of their competitors.

Pricing and Export Growth

There is however no conclusive evidence to confirm this expectation. One only has to calculate and compare the average annual rates at which prices for export products and the exported quantities increase, i.e. the percentages by which prices and quantities of industrial exports change from year to year, in order to see that no strict correlation exists between export prices and volume. It has to be borne in mind, however, that statistics does not provide proper export price indices. These must therefore be worked out with the aid of unit values, which are arrived at by dividing the indices for the export values by the corresponding indices for the export volumes.

Even if the relationship between export prices and volume is in general only a loose one, it is nevertheless

possible to trace the changing importance of individual countries in the international market for industrial goods at least in part back to their price structure. In the period from 1950 to 1965 the USA and Great Britain registered for instance the greatest price increases while their export volume rose less than that of any of the other states, and it is reasonable to assume that these price increases were not the least among the reasons for the relative decline in their export position. The reverse is true of Japan and Italy, countries whose exports rose rapidly in volume while their prices declined. It is therefore not unreasonable to assume that their advances on the world market are to a large extent due to the price advantages they were able to offer.

The figures arrived at for the remaining countries do not support the above-mentioned thesis. The Federal Republic for instance achieved the quickest growth after Japan and Italy in spite of the fact that German export prices rose more steeply than those in Belgium/Luxembourg, France, Canada and the Netherlands. It is therefore difficult to attribute the Federal Republic's growing importance in the world market to more attractive prices. Other factors, such as quality, sales- and after-sales service, credit facilities, delivery dates, preferences etc. seem more likely to have been responsible for Germany's improved export position.

The procedure for explaining trends in export volumes with the aid of average values has met with objections from economists who have written to point particularly to the inadequacy of average values. Their indices as quotient of value and volume index may rise or fall without any rise or fall taking place in the prices of the goods consumed. If there is an increased demand for the more highly priced goods of better quality while qualitatively inferior goods are relatively less in demand, the value of the whole group rises even if the total volume remains constant, and the average value goes up. For this reason calculations on such a basis may lead to absurd results.

Tabelle 3
The Influence of the Structural and the Competitive Components¹

	Actual changes (in %) in the 2 shares in the total exports between			Fluctuations due to competition between			Fluctuations caused by structural influences between		
	1937 and 1965	1950 and 1965	1960 and 1965	1937 and 1965	1950 and 1965	1960 and 1965	1937 and 1965	1950 and 1965	1960 and 1965
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Belgium/Luxembourg	+ 0.5	+ 0.5	+ 0.5	+ 1.3	+ 0.9	+ 0.8	- 1.2	- 0.5	- 0.3
Fed. Republic of Germany	- 3.2	+12.7	+ 0.6	- 5.3	+11.9	+ 0.2	+ 1.9	+ 1.5	+ 0.3
France	+ 3.0	- 1.2	- 0.7	+ 3.7	- 0.5	- 0.5	- 0.9	- 0.5	- 0.2
Great Britain	- 9.3	-12.6	- 2.7	- 7.2	-12.6	- 2.9	+ 0.1	- 0.0	+ 0.1
Italy	+ 3.5	+ 3.2	+ 1.9	+ 4.2	+ 3.9	+ 1.9	- 0.6	- 0.3	+ 0.0
Japan	+ 2.4	+ 6.5	+ 2.9	+ 4.4	+ 7.2	+ 3.2	- 1.9	- 1.2	- 0.4
Canada	- 0.3	- 1.5	- 0.1	+ 0.5	- 0.4	+ 0.2	- 0.8	- 0.6	- 0.2
Sweden	+ 0.9	+ 0.6	+ 0.3	+ 0.7	+ 0.6	+ 0.4	+ 0.1	- 0.1	- 0.1
USA	+ 2.4	- 8.4	- 2.7	- 2.4	-11.4	- 3.4	+ 3.5	+ 1.8	+ 0.8

¹ Discrepancies due to rounding off of figures. The actual changes in the shares cannot always be explained altogether with the aid of structural and competitive components. This is why the sum total of the values contained in columns 4 plus 7 (or respectively in columns 5 plus 8 or 6 plus 9) do not equal the value given in column 1 (or respectively columns 2 or 3). It may be larger or smaller.

² Calculated according to Table 1.

Objections are also raised against the use of average values on the grounds that they are arrived at *ex post facto*, i.e. after supply and demand have together determined the market price. This procedure therefore partly conceals the influence the supply situation alone exercises on price and quantity.

To meet these objections it is possible to calculate the labour costs for each product unit, which in this context may be regarded as the measure of the suppliers' ability to compete. True, wages do not constitute the only costs incurred by the producers of goods for export, but it is nevertheless a tenable hypothesis to say that, all else being equal, the share of countries in the world market for industrial goods (exports) declines if their average labour costs per product rise disproportionately.

Labour Costs and Export Volumes

A comparison of mean annual growth rates for export quantities during the period from 1950 to 1965 with the corresponding rates of increase in labour costs per unit of output would seem to lead to the conclusion that the relatively small increase in the volume of British exports was due to a sharp rise in labour costs, while the gains made by Japan and Italy can be attributed to their decreasing labour costs per unit produced. The connexion between the growth rates is, however, only a loose one. It could by no means be said for instance that the advances made by the Federal Republic in the world market were due to a relatively slowly rising wage level just as the regression suffered by the USA can certainly not be attributed to a sharply rising trend in wages.

To sum up the results of our investigation so far: It is safe to say, on the one hand, that changes in labour costs and in prices have contributed to the gains made by Japan and Italy as well as to the losses

sustained by Great Britain, but that, on the other, no close relation existed between the changes in world market shares as shown in table 1 and the fluctuations in prices and costs.

The Influence of Other Factors

Accordingly, there must have been at work other factors to bring about the differing growth rates for the export of industrial products, particularly in the case of the Federal Republic.

This view is supported by the fact that the important industrial countries are importers at the same time as exporters of almost all industrial products. There is proof of this in that in almost all industrial nations the share of imported goods required for home consumption is rising at the same time as their exports increase.¹ This is the view expressed in almost all reports published by national and international bodies, for each one of these reports contains references stressing the importance of such things as: buyers' preferences; product diversification made by the suppliers; competition as to quality, credit facilities, delivery dates, etc. One example in evidence of this may suffice: In the 11th annual report of the OEEC (for 1959) it is stated on page 75 that since the war European industry has been making great efforts to sell its goods in the USA and "has successfully exploited American partiality in favour of goods of foreign origin. In some cases price considerations clearly favoured purchases from Europe—as for instance in the case of certain types of machinery and electrical equipment—but the European successes were also due to a more highly developed ability to meet American tastes and to maintain a satisfactory sales- and after-sales service."

¹ Compare for instance the calculations made by H. Hesse in: *Strukturwandel im Welthandel 1950-1960/61* (Structural Changes in World Trade), Tübingen 1967, particularly the tables 38-40.

The Teaching of Development Economics

The Proceedings of the Manchester Conference on Teaching Economic Development, April 1964
Kurt Martin and John Knapp, eds.

There has been an upsurge of interest in the problems of underdeveloped economies since the early 1950's. A feeling has grown to exist among some economists that current, orthodox economic theory is inadequate in this field and it was to consider this dilemma that a Conference on the Problems of Teaching Development Economics was held in Manchester in 1964.

The papers and discussion here published with a minimum of editing provide a conspectus of the strengths and limitations of economic theory in this area.

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