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## The dynamics of German foreign trade

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THE DYNAMICS OF GERMAN FOREIGN TRADE

by

Udo-Ernst Simonis

ECONOMIC RESEARCH CENTRE

THE CHINESE UNIVERSITY  
OF HONG KONG

Economic Research Centre

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SHATIN, N. T., HONG KONG

August 1976

"An announcement...that the country's exports are breaking all records has a regenerative effect on our spirits: we begin to feel proud, confident and very respectable.

One dares not imagine the general acclaim and exhilaration that would follow the discovery, at the end of the year, that we had in fact exported the whole of our national product!"

E.J.Mishan

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# The Dynamics of German Foreign Trade<sup>+</sup>

by

Udo-Ernst Simonis

## I. Introduction

For quite a long period, the main emphasis of economic policy in the Federal Republic of Germany has been laid on economic growth and trade expansion. One of the main suggestions of this paper is that it ought to be more on qualitatively improving the allocation of resources. In economics, as in other fields, past experiences provide a major basis for current decisions, even though changing circumstances may have diminished the appropriateness of past experiences. This use of "conventional wisdom" may explain the continuing undifferentiated emphasis put on economic and export growth - despite the many problems created by such growth <sup>1)</sup>.

German economic growth and the surplus in the trade balance since long have ceased to be of national interest only. They have among others been jointly responsible for several crises of the international economic system. However, the discussion in Germany on the problems involved has mainly centered on the aspect of "imported inflation". Other negative effects have to an astonishingly high degree been neglected or excluded from discussion. Though many industrial countries have in the last decade experienced long-lasting imbalances in their foreign economic relations, Germany is in fact a very extraordinary example. It's beyond doubt that fundamental imbalances in trade collide with several economic goals not only on the national but also on the international level. Insofar as economic balance is one important

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element of the "quality of life", long-lasting fundamental imbalances in the trade relations of a country are detrimental to the improvement of the quality of life of the population at large. This hypothesis should hold true for the German case.

Trade expansion is not an unmixed blessing, and one purpose of this paper therefore is to make this clear, using one concrete example of rapid growth and trade expansion. Growth of course is very deeply entrenched in our economic thinking and in institutionalized economic and political behaviour. Society emphasizes growth, and assumes that good things will follow by some indirect mechanism. To paraphrase Henry C. Wallich: As long as there is growth there is hope. Particularly, growth seems to be a substitute for equality, and quantitative growth a substitute for qualitative improvements <sup>2)</sup>. Since growth and trade expansion have become such an integral part of economic policy, any sudden setback is greatly feared and could indeed be disastrous. One must also see that as a product of long evolution, the trade system is not something that can be improved quickly and by a few armchair criticisms.

In a report submitted by the Secretary-General of OECD on the problems of modern society it was said, as early as 1969, that we should put more emphasis on welfare, and less on growth for its own sake <sup>3)</sup>. Continuing rapid economic growth seems to require a more systematic and forward looking approach to problems of resource allocation so as to take more fully into account the desirable long-term development. The Secretary-General of the OECD, however, continued to say that "... it is not possible to provide quantitative norms pointing to the desirable allocation of resources in favour of 'quality'. What the qualitative priorities should be must to a large extent be a political judgement". <sup>4)</sup> Though this may be true, it is in fact necessary to critically analyse the situation and to make clear the options available. To confront the interests of sectors and groups with the general objectives of society, to show the conflicts between foreign trade and domestic trade, and to point to the interests of today and those of tomorrow, should in the end help to produce a better allocation of resources in the economy.

The precise definition of a society's preferences and valuations regarding the quality of life represents an inherently difficult or even futile endeavor. Nevertheless it is fairly safe to predict that for a policy placing more emphasis on the qualitative aspects of growth and trade, there are two problems that supposedly deserve special consideration: the "public goods

problem" and the "environmental problem". Public goods and environmental amenities are highly important for our welfare. Their neglect or loss, however, does not show up in any indicator on foreign trade. This may lead to a serious misallocation of resources <sup>5)</sup>. Another emphasis of this paper, therefore, will be to show the interdependencies between trade and the structure of the economy, especially to develop hypotheses on the relations between trade expansion, public goods and the environment.

We proceed by first compiling some figures on economic growth and foreign trade in order to get an answer to three questions: (1) what is the general significance of foreign trade for the German economy; (2) how strong is the position of Germany in world trade; (3) what are the peculiarities and decisive structural problems of German trade?

An intensive though not only empirical consideration will follow on the question of the social costs of foreign trade, and the overall implications of a policy of eliminating social costs for the volume and structure of trade will be looked for. The question will be asked, in how far rapid growth and the specific structure of trade expansion may have negatively impaired the quality of life in Germany or, in how far the records shown in the trade statistics should be reviewed in order to get an impression of the magnitude of gains from quantitative trade expansion for the improvement in the qualitative living conditions of the population at large. Furthermore, the inefficacy of traditional policies to deal with structural imbalances will be discussed and some alternative measures be suggested.

A warning however is in order. One should be aware of the precariousness and prematurity of propositions on the quality of life: lack of data and models, arbitrariness in the selection of relevant indicators, difficulties in aggregation etc. are reasons for this. Still, even non-comprehensive empirical investigations and resulting statements should be fruitful; may be more so than rigorous but abstract argumentations along the lines of traditional welfare economics, the assumptions of which are too rigid of ever being fulfilled.

## II. Economic Growth and Trade Expansion

(1) Following the United States, the Federal Republic of Germany is the second biggest trading nation in the world. Exports of goods increased from 8.362 billion Deutsche Mark (DM) in 1950 to some 230.578 billion DM in 1974, while imports rose from 11.374 to 197.732 billion DM in this same period. This rapid expansion led to a growing share in world exports which rose from 3.6 % in 1950 to about 12.7 % in 1974. Tables 1, 2 and 3 give a first general illustration of the dynamics of German economic growth and trade expansion in the post-war period.

Table 1: Gross National Product, Exports and Imports of Goods and Services of Germany, 1950 - 1975

(current prices, billion DM; const. prices of 1962)

Year	GNP	Exports	Imports	Exports - Imports	GNP	Exports	Imports	Exports - Imports
	(current prices)				(const. prices of 1962)			
1950	98.1	11.1	12.5	- 1.35	143.6	15.5	11.4	+ 4.03
1951	120.0	18.5	16.3	+ 2.12	158.6	21.0	12.3	+ 8.72
1952	137.0	21.8	18.7	+ 3.13	172.7	23.7	15.3	+ 8.41
1953	147.7	25.0	19.8	+ 5.20	186.9	27.5	18.2	+ 9.32
1954	158.6	30.4	25.4	+ 4.98	200.8	34.1	24.0	+ 10.09
1955	181.4	36.2	32.3	+ 3.93	224.9	39.8	30.1	+ 9.72
1956	200.5	43.5	37.1	+ 6.46	241.3	45.9	34.0	+ 11.90
1957	218.5	51.8	43.3	+ 8.54	255.0	53.3	39.2	+ 14.02
1958	234.3	53.4	44.8	+ 8.65	264.5	55.8	43.6	+ 12.19
1959	254.9	60.2	51.1	+ 9.13	283.8	62.9	50.8	+ 12.13
1960	284.7	69.4	61.1	+ 8.38	309.4	71.1	59.8	+ 11.30
1960	302.3	62.6	55.2	+ 7.39	328.4	64.1	53.7	+ 10.32
1961	332.6	65.1	58.6	+ 6.54	346.2	65.9	58.1	+ 7.80
1962	360.1	68.3	64.7	+ 3.66	360.1	68.3	64.7	+ 3.66
1963	384.0	74.4	69.4	+ 5.09	372.5	74.0	69.3	+ 4.64
1964	420.9	82.9	77.8	+ 5.02	397.3	81.8	77.2	+ 4.54
1965	460.4	90.8	91.4	- 0.54	419.5	87.9	88.2	- 0.36
1966	490.7	102.2	95.8	+ 6.45	431.7	97.3	90.6	+ 6.75
1967	495.5	110.1	94.2	+ 15.92	430.8	105.2	89.3	+ 15.90
1968	540.0	123.8	106.2	+ 17.61	462.3	119.4	102.4	+ 16.94
1969	605.2	141.8	127.0	+ 14.79	500.4	134.4	119.8	+ 14.64
1970	685.6	158.5	147.4	+ 11.17	529.4	146.5	138.8	+ 7.68
1971	758.8	173.1	162.9	+ 10.20	544.3	155.8	152.3	+ 3.52
1972	834.6	190.2	175.5	+ 14.70				
1973	927.6	277.4	202.6	+ 24.80				
1974	996.7	298.9	259.1	+ 39.80				
1975	1037.8	291.8	266.8	+ 25.00				

Source: Jahresgutachten 1972 des Sachverständigenrats pp. 212-213  
Bundesbank, Monatsberichte, Febr. 1976.

Note: Definitions according to the National Accounts; 1950-1960 without Saarland and Berlin

Table 2: Growth of Commodity Trade of Germany, 1956 - 1975  
Total Trade and Per Capita Trade  
(current prices)

Year	Imp.	Exp.	Exp./Imp.	Imp. per Capita	Exp. per Capita
	(in million DM)			(in DM)	
1956	17 964	30 861	+ 2 897	528	582
1957	31 697	35 968	+ 4 271	591	670
1958	31 133	36 998	+ 5 865	573	681
1959	35 823	41 184	+ 5 361	653	750
1960	42 723	47 946	+ 5 223	771	865
1961	44 363	50 978	+ 6 615	790	907
1962	45 498	52 975	+ 7 476	869	930
1963	52 277	58 310	+ 6 032	908	1 013
1964	58 839	64 920	+ 6 081	1 010	1 114
1965	70 448	71 651	+ 1 203	1 194	1 214
1966	72 670	80 628	+ 7 958	1 219	1 352
1967	70 183	87 045	+ 16 862	1 172	1 454
1968	81 179	99 551	+ 18 372	1 349	1 654
1969	97 972	113 557	+ 15 584	1 610	1 866
1970	109 606	125 276	+ 15 670	1 807	2 066
1971	120 119	136 011	+ 15 892	1 979	2 241
1972	128 744	149 023	+ 20 279	2 110	2 450
1973	145 417	178 396	+ 32 979	2 390	2 934
1974	179 733	230 578	+ 50 845	2 956	3 792
1975	184 448	221 601	+ 37 153	3 033	3 645

Source: Statistisches Jahrbuch 1972, p. 285; Bundesbank, Monatsberichte, Feb. 1976.

Note: According to Trade Statistics, Special trade only.

Table 3: Germany's Share in World Exports, 1950 - 1974  
(in %)

1950	1955	1959	1960	1961	1962	1963	1964	1965
3.6	7.3	9.6	10.0	10.7	10.6	10.8	10.7	10.9
1966	1967	1968	1969	1970	1971	1972	1973	1974
11.1	11.5	11.7	11.8	12.3	12.6	12.5	12.8	12.7

Source: Statistisches Jahrbuch, sev. editions.

Note: World exports excluding socialist countries.

The increasing role of Germany in world trade after the Second World War went hand in hand with an increasing share of international trade in Germany's Gross National Product (GNP). Exports of goods and services in the GNP in current prices increased from 11.3 % in 1950 to about 23 % in 1968, staying on that level up to 1972, and then rocketing to nearly 30 % in 1974. Measuring the export ratio in the GNP on the basis of 1962 prices, a steady increase can be observed from 10.7 % in 1950 to some 28.6 % in 1972. The development of both ratios is shown in table 4.

Table 4: Share of Exports in the German Gross National Product,  
1950 - 1975

Year	Export Ratio (in current prices)	Export Ratio (in constant prices of 1962)
1950	11.3	10.7
1951	15.4	13.2
1952	15.9	13.7
1953	16.8	14.7
1954	19.8	17.0
1955	19.9	17.7
1956	21.7	19.0
1957	23.7	20.9
1958	22.8	21.1
1959	23.6	22.1
1960	24.4	22.9
1960	20.7	19.5
1961	19.6	19.0
1962	19.0	19.0
1963	19.3	19.8
1964	19.7	20.5
1965	19.7	20.9
1966	20.8	22.5
1967	22.2	24.4
1968	22.9	26.0
1969	23.4	26.8
1970	23.1	27.6
1971	22.8	28.8
1972	22.7	30.0
1973	24.4	33.4
1974	29.9	37.7
1975	28.1	(36.0)

Note: Calculated according to the system of the National Accounts;  
Export of Goods and Services; 1950-1960 without Saarland and Berlin.

Source: See tables 1 and 2; own calculations.

Generally speaking we may already conclude from these aggregate figures that foreign trade plays an important role in the German economy, both with respect to its secular growth and the fluctuations of growth. Any intention to define and to improve the quality of life of the German population is thus inevitably dependent on the analysis of and the influence upon foreign trade. Seen from another angle: a policy of improving the quality of life will be strongly influenced by the existing foreign economic relations and will have to influence them in order to be successful.

A closer look at German exports and imports reveals a heavy bias towards exports, more goods and services being exported than imported. Since 1952 the trade balance registered a large increasing export surplus. (Summed up over the period 1952- 1975 these surpluses would reach as much as 285 billion DM.) The increase in the export surplus has not been a steady one; rather, several periods may be distinguished. The first period between 1953 and 1956 showed a relatively stable surplus of about 2.5 billion DM per year, in 1957 it jumped to more than 4 billion and steadily increased until 1964, reaching more than 6 billion DM. The year 1965 brought a spectacular change, the surplus decreasing to 1.2 billion, when imports expanded more than twice as rapidly as exports. After this deviation from the trend, in the second half of 1966 the third period began, when the surplus jumped to a never experienced level of 16.8 billion in 1967, remaining around that level in the following years and reaching nearly 33 billion in 1973. A surplus in the trade balance of more than 50 billion DM occurred in 1974, while in 1975 it was at 37 billion DM. The development of the German trade balance, and the other international transactions are summarized in table 5.

To look at the development of one of the items in the international balance of payments in isolation may be of little significance, other items and partial balances have also to be considered. As is shown in table 5, not only the German merchandise transactions were highly unbalanced; the reserves in gold and foreign currencies too rose dramatically. While in 1952 total reserves were in the order of 3 billion DM only, at the end of 1970 they stood at 52 billion DM, in May, 1973, they reached an all time high 91 billion DM, and in March, 1976, they were in the order of 80 billion DM. A noticeable decrease of the foreign currency reserves can be observed for the years of the DM-revaluation, 1961 and 1969, while the decrease after the international realignment of exchange rates in December, 1971, was only modest <sup>6)</sup>.

Table 5: Development of Main Items in the German Balance of Payments,  
1950 - 1975

(in million DM; + = surplus, - = deficit)

Year	Trade Balance	Transfer Balance	Balance of long-term capital	Currency Balance
1950	- 3 013	+ 2 065	+ 488	- 564
1951	- 149	+ 1 529	- 79	+ 2 038
1952	+ 706	+ 160	- 357	+ 2 900
1953	+ 2 516	- 461	- 378	+ 3 646
1954	+ 2 698	- 474	- 438	+ 2 971
1955	+ 1 245	- 834	- 271	+ 1 851
1956	+ 2 897	- 1 221	- 365	+ 5 010
1957	+ 4 083	- 1 882	- 390	+ 5 122
1958	+ 4 954	- 2 000	- 1 437	+ 3 444
1959	+ 5 361	- 3 279	- 3 629	- 1 692
1960	+ 5 223	- 3 488	- 81	+ 8 019
1961	+ 6 615	- 4 430	- 4 053	- 2 297
1962	+ 3 477	- 5 210	- 183	- 877
1963	+ 6 032	- 5 095	+ 1 806	+ 2 740
1964	+ 6 081	- 5 311	- 894	+ 435
1965	+ 1 203	- 6 377	+ 1 137	- 1 283
1966	+ 7 958	- 6 295	- 342	+ 1 952
1967	+ 16 862	- 6 422	- 2 930	- 140
1968	+ 18 372	- 7 312	- 11 201	+ 7 009
1969	+ 15 584	- 8 750	- 23 040	- 14 361
1970	+ 15 670	- 9 759	- 934	+ 22 650
1971	+ 15 892	- 11 497	+ 6 293	+ 10 989
1972	+ 20 278	- 14 009	+ 15 545	+ 15 194
1973	+ 32 979	- 15 842	+ 12 437	+ 16 149
1974	+ 50 846	- 16 713	- 6 265	- 9 137
1975	+ 37 153	- 17 605	- 16 804	+ 3 261

Source: Bundesbank Monatsberichte,

Febr. 1976, 2, p 68<sup>+</sup>.

As the Council of Economic Advisors stated correctly for the situation in 1968, there was, compared with trade volume, no other country in the world which affords itself such huge reserves of non-renumerative capital<sup>7)</sup>. This judgement was more true for 1973 and the following years.

The German Law on Stability and Growth of the Economy (Stabilitätsgesetz) of 1967 states that the Federal Government and the state governments have to pay attention to the overall balance of the economy. Economic and fiscal measures have to be used in such a way as to achieve "... within the market system (marktwirtschaftliche Ordnung) the goals of (1) price stability, (2) full employment, (3) external balance, and (4) steady and adequate economic growth simultaneously." In a 1967 note on economic projections of the Ministry of Economic Affairs, the goal "external balance" was defined as to be reached if the "Aussenbeitrag", i.e. the surplus of exports over imports of goods and services to the GNP, does not exceed the one-percent limit<sup>8)</sup>. The so-defined "external balance" has not been reached in postwar Germany, except for the years 1962, 1965, and 1971.

What makes things worse is that the very definition of this goal of economic policy may have to be called in question. It is thought to guarantee the probable financial commitments of the future but, in fact, is some kind of alibi for continuing export surplus, not taking into consideration that large currency reserves might make a negative "Aussenbeitrag" necessary. Furthermore, it is the very structure of the balances that really matters. In recent discussions the basic-balance concept is stressed, saying that a balance is reached when the "Aussenbeitrag" is equal to the combined balances of the long-term capital and the transfer balance<sup>9)</sup>. However, even in this case short-term capital movements may lead to extraordinary hoardings of foreign currency reserves. An active balance in the short-term capital movements can be observed for several years, as for 1970, but in other years respective deficits occurred. Though exports of goods are not unaffected by the transactions in other accounts, especially by long-term capital export, it is obvious that in the German case the trade surplus must be recognized as being the main reason for the chronic imbalance in the balance of payments. Before asking the question how this surplus came about, a few further details on German international economic relations shall be given.



(2) A major feature of the commodity structure of German exports is the high share of the investment goods industry, which comes close to 56% (1972) with slightly increasing trend (52.5% in 1960). This fact provides one of the explanations for the rapid expansion of overall exports, following the industry-oriented growth of world trade and the generally high elasticity of demand for investment goods. Finished products in total account for about 86% of German exports. In contrast, the share of the agricultural products in exports has been decreasing to a mere 3.7%, and raw materials come to 2.4% of total exports.

On the import side, a rather different picture emerges, although the structure is far from being as pronounced as e.g. is the case with Japan. Products of the investment goods industry amount to about 23.5% as against the 56.0% on the export side; this share however, has gone up since 1960 when it stood at merely 11.0%. Finished goods come to about 50.5%. The imports of raw materials have been steadily increasing in volume, from 3.300 million DM in 1950 to some 15.800 million DM in 1971, although their share in total imports decreased during that period from 29.6% to 13.4%. The share of agricultural products in total imports stands now at 19.0%, having decreased slowly from 1960 when it still came to 26.3%.

On the basis of the classification for statistics and tariffs (CST), the differences in the commodity structure of German exports and imports come out very clearly, as is shown in table 6.

Table 6: Commodity Structure of German Trade, 1971

CST-Group	Exports (in %)	Imports (in %)
0 + 1	3.2	16.3
2 + 4	2.6	11.6
3	3.0	10.2
5	11.6	6.3
6 + 8	30.6	32.1
7	47.3	19.4
9	1.6	4.1

Source: Statistisches Jahrbuch, 1972, p. 301.

To carry on this short survey on the structure of German foreign trade relations a bit further, we computed the absolute surpluses or deficits of the main commodity groups according to the production statistics for the period 1960 - 1971. The results are shown in table 7.

Table 7: Surplus and Deficit in German Trade, Main Commodities, 1960-1971  
(in million DM)

Year	Total Trade	Mining Products	Basic Materials & Production Goods	Investment Goods	Consumption Goods	Food and Beverages	Agricultural Products
1960	+ 5 223	- 2 213	+ 1 661	+ 20 223	+ 95	- 2 772	- 10 557
1961	+ 6 615	- 2 339	+ 2 482	+ 21 421	- 296	- 2 999	- 10 436
1962	+ 3 476	- 2 224	+ 1 492	+ 21 895	- 481	- 3 753	- 11 516
1963	+ 6 032	- 2 394	+ 1 745	+ 24 957	- 357	- 3 782	- 10 446
1964	+ 6 081	- 3 654	+ 564	+ 27 123	- 379	- 3 811	- 11 592
1965	+ 1 203	- 4 138	+ 367	+ 27 794	- 1 500	- 4 741	- 13 153
1966	+ 7 958	- 4 530	+ 2 795	+ 31 569	- 1 302	- 5 047	- 13 403
1967	+ 16 862	- 5 150	+ 5 407	+ 34 387	- 787	- 4 354	- 12 260
1968	+ 18 372	- 6 296	+ 3 337	+ 39 435	+ 123	- 4 630	- 12 292
1969	+ 15 584	- 7 008	+ 694	+ 43 094	- 540	- 5 176	- 13 531
1970	+ 15 670	- 7 327	+ 989	+ 43 311	- 751	- 5 965	- 13 289
1971	+ 15 892	- 8 494	+ 3 004	+ 47 404	- 2 240	- 6 194	- 14 122
1972	+ 20 279	- 8 432	+ 3 636	+ 52 762	- 4 295	- 7 032	- 14 678
1973	+ 32 979	- 10 586	+ 6 429	+ 64 266	- 2 856	- 6 806	- 16 017
1974	+ 50 845	- 24 699	+ 20 917	+ 80 346	- 1 423	- 4 929	- 17 348

Source: Jahresgutachten 1975, p. 277.

As will be discussed more thoroughly later on, the structural differences between German exports and imports as revealed by the foregoing tables play an important role in continuously creating trade surpluses. The relatively low elasticity of demand for a large part of the imports, on the one hand, the relatively high elasticity of demand for the larger part of the exports as well as the technical possibilities of greater specialization in the field of manufactures which dominate German exports, on the other hand, provide also the clue for understanding the failure of revaluation measures proposed in order to decrease the export surplus of the German economy.

(3) Not only the overall trade and the commodity structure of trade but also the regional trade figures demonstrate the highly unbalanced situation of German exports and imports. Considering first the general classification in industrialized countries (IC), developing countries (DC), and socialist countries (SC), we get the following picture: roughly 83 % of German exports flow to the IC, about 12 % to the DC, and only 5 % to the SC. On the import side the respective figures are 80 %, 16 % and 4 %. This means that there is, apart from the high dependence on the IC, also an extra high surplus of exports in German trade with the Western capitalist countries, a deficit with the developing countries and a surplus with the Eastern socialist countries. Since 1968 these global imbalances have remained fairly constant, no remarkable tendency towards a greater balance could be observed.

Regarding the regional economic groupings, the countries of the European Economic Community are by far the largest customers, nearly 50 % of all German exports are going to this region at an increasing trend. Exports and imports to and from the EEC are, however, fairly balanced. This was not so with the EFTA-countries, with whom Germany had been running to ever increasing surpluses; integration with the EEC-countries and desintegration with the EFTA countries is especially marked in the field of import trade. This trend, furthermore, is very likely to intensify following the enlargement of the EEC in 1973.

The regional structure of German trade at the nation level shows that economic interchange with some industrialized countries has been increasing rapidly, not only absolutely but also relatively. 50 % of German exports are concentrated on 5 Western countries, in the order: France, Holland, USA, Belgium-Luxemburg, Italy, while concentration on the import side is still more pronounced, some 57 % coming from the same 5 countries (in a somewhat different order). It should be clear that while this heavy regional concentration of trade is conditioned by such factors as distance, elasticity of demand, communication systems etc., for Germany this situation is quite problematic, especially from the stabilization point of view.

Comparing the fluctuations in the GNP growth rate of the Western countries with the expansion of German exports, we find a very strong correlation; a marked deviation however is to be noted for the period after the first re-valuation of the Deutsche Mark in 1961.

(4) To conclude our survey on the structure of German foreign trade relations, we shall have a look at the trade dependence of the various industries. A tabulation of the export and import ratio of German manufacturing industries for the period 1960 - 1970 is given in tables 8 and 9 <sup>10)</sup>. These tables also include a prognosis for the years 1977 and 1985, respectively.

As can easily be seen, a steady increase is to be registered in the ratio concerned. The average export ratio of manufacturing industry rose from 15 % in 1960 to 19 % in 1970, while the import ratio went up from 12 % to 18 %. A very rapid increase took place in the export ratio of the chemical industry (from 23 to 31 %), the paper industry, and the machinery industry. Regarding imports, a rapid increase in the ratio occurred in the iron industry, the asbestos industry, in machinery and ship building, in electronics, in glass industry, music instruments, and in clothings.

Unfortunately, the tabulations given do not include the development of the last few years, when in a number of industries a dramatic change took place: the export ratio of the investment goods industry jumped from 29 % in 1970 to 42 % in 1973; consumption goods industry: from 10 % to 17 %; total manufacturing industry: from 19 % to 31 %.

With these rapid developments, the long-term prognosis for 1977, respectively 1985, given in tables 8 and 9, to a certain extent was already reached within a period of three years.

Table 8: Industrial Export Ratios According to Main Exporting Groups, 1960 - 1985  
(Exports in % of total turnover, current prices)

Federal Republic of Germany		1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1972 <sup>+</sup>	1977	1985
1.00	Raw materials & production goods	15	15	15	16	15	16	18	20	19	19	19	21	25	33
1.01	Building and quarrying	3	4	3	3	3	3	3	4	4	4	4	4	4	5
1.02	iron & steel producing industry	20	21	21	22	20	23	24	30	24	24	24	28	32	39
1.03	iron & steel casting & malleable iron casting				8	7	8	9	11	11	10	11	13	15	20
1.04	cold rolling mills	16	16	15	15	14	14	16	19	16	15	16	17	17	18
1.05	nonferrous ind.	11	11	13	(16)	14	16	22	22	18	14	16	18	22	29
1.06	chemicals	(23)	23	23	25)	25	25	27	29	31	31	31	32	40	54
1.07	processing of mineral oils					4	4	4	4	4	4	4	4	4	4
1.08	processing of rubber & asbestos	12	11	11	12	12	12	13	15	18	17	16	18	23	33
1.09	wood processing	5	5	5	5	6	6	6	7	8	7	6	8	9	13
1.10	woodpulp ind. & paper mills					8	8	9	10	11	13	13	15	19	27
2.00	industrial goods	25	24	24	25	25	25	27	30	32	31	29	32	37	44
2.01	skeleton constr. & carriage building	11	11	11	11	10	11	10	13	15	13	10	12	12	12
2.02	constr. engineering	29	30	30	32	32	30	34	38	40	38	36	40	44	50
2.03	constr. of office machines														
2.04	vehicle building	35	32	31	33	36	35	38	41	45	42	39	44	53	69
2.05	aircraft buildg.	1	3	12	13	10	10	12	11	12	12	8	19	37	72
2.06	naval constr.	62	48	42	42	40	41	39	32	46	48	36	35	32	27
2.07	electrical ind.	18	18	17	18	18	19	20	22	23	22	22	24	27	32
2.08	precision mechanics and optics	36	34	34	34	33	33	34	36	38	37	37	37	38	40
2.09	tin and iron mongery	15	14	15	15	15	16	18	18	18	18	17	19	21	25
2.10	steel formation	10	10	10	10	10	10	11	14	12	11	11	13	14	17
3.00	consumption goods	7	7	7	7	8	8	8	9	10	11	10	11	14	19
3.01	ceramics	24	23	24	26	26	26	29	31	32	33	31	36	41	47
3.02	glass industry	15	15	15	15	14	13	14	15	16	17	16	16	16	18
3.03	wood processing	4	4	4	4	5	4	5	5	7	8	7	7	10	16
3.04	musical instruments and toys	31	28	27	27	27	26	26	29	29	28	28	28	26	25
3.05	paper & cardboard processing					5	4	5	6	7	7	7	9	14	22
3.06	printing & mimeographing	1	1	1	1	2	2	2	2	3	3	3	3	5	9
3.07	plastics proc.	11	11	11	12	12	11	12	12	14	14	13	13	15	20
3.08	leather proc.					9	9	10	12	10	11	10	11	12	14
3.09	textile industry	8	8	8	8	9	9	10	11	12	13	14	15	19	27
3.10	clothing	3	2	2	3	3	3	4	4	5	5	5	6	9	17
4.00	food & beverages	2	2	2	2	2	2	2	2	3	3	3	3	3	7
5.00	proc. ind. (total)	15	15	15	15	16	16	17	19	20	20	19	21	25	32
6.00	mining	(20)	20	20	20	20	21	21	21	22	20	20)	21	21	20
7.00	total of industr.	15	15	15	16	16	16	17	19	20	20	19	21	25	32

<sup>+</sup>) Tendential value, base of projection, indications in brackets = estimation by Prognos or statistically not secured value

Source: Prognos AG, Basle

Table 9: Industrial Import Ratios According to Main Importing Groups, 1960 - 1985.  
(Imports in % of the domestic supply, current prices)

Federal Republic of Germany	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1972 <sup>+</sup>	1977	1985
1.00 Raw materials & production goods	15	14	15	15	16	17	18	18	20	21	21	22	27	36
1.01 Building and quarrying	9	8	7	8	8	8	6	9	10	10	9	10	11	13
1.02 iron & steel pro- ducing industry	13	12	15	15	16	16	16	17	21	20	20	23	29	41
1.03 iron & steel ca- sting & malleable iron casting				2	2	2	2	2	3	3	3	3	4	5
1.04 cold rolling mills	(2	3	3)	4	5	7	7	7	9	9	10	13	19	31
1.05 nonferrous ind.	41	39	39	(43)	42	45	46	48	49	49	47	50	54	59
1.06 chemicals	12	11	11	12	13	15	15	15	17	18	19	20	26	39
1.07 processing of mineral oils				12	10	10	10	11	12	12	12	12	15	20
1.08 processing of rubber & asbestos	6	7	8	10	10	12	13	13	13	14	15	17	24	40
1.09 wood processing	27	26	26	26	27	28	26	24	25	26	27	25	25	24
1.10 woodpulp ind. & paper mills					33	34	34	33	37	39	39	41	40	58
2.00 industrial goods	7	7	8	8	9	10	11	11	13	13	15	16	23	35
2.01 skeleton constr.& carriage building	1	1	2	2	2	2	2	2	3	3	4	4	6	11
2.02 constr.engineering	11	12	12	12	13	14	14	15	17	18	20	20	25	37
2.03 constr. of office machines														
2.04 vehicle building	5	5	7	6	7	9	12	13	14	14	16	20	32	55
2.05 aircraft buildg.	60	51	50	37	41	52	57	49	50	40	45	45	50	65
2.06 naval constr.	7	4	5	6	4	11	10	10	12	21	24	26	40	68
2.07 electrical ind.	5	6	6	6	7	8	9	9	11	12	13	14	19	28
2.08 precision mecha- nics and optics	12	13	14	14	16	17	20	21	23	23	24	26	34	47
2.09 tin and iron mongery	3	4	5	5	6	6	7	7	8	8	9	10	14	23
2.10 steel formation	2	2	3	3	3	3	3	4	4	4	5	5	7	13
3.00 consumption goods	9	9	10	10	11	12	13	12	14	15	15	17	21	30
3.01 ceramics	5	6	7	8	9	12	13	13	15	16	17	21	31	51
3.02 glass industry	5	6	6	7	8	10	10	10	12	13	14	16	23	36
3.03 wood processing	4	4	4	5	5	5	5	5	5	5	6	6	7	8
3.04 musical instru- ments and toys	19	20	23	24	27	30	32	30	34	36	36	39	47	59
3.05 paper & card- board processing					3	3	3	3	4	4	5	5	7	12
3.06 printing & mimeo- graphing	3	3	3	3	3	3	3	4	4	4	4	4	5	6
3.07 plastics proc.	3	3	6	4	4	5	6	9	10	11	11	12	17	27
3.08 leather proc.	(11	13	11	12)	12	14	17	16	21	23	22	30	41	62
3.09 textile industry	16	16	17	18	18	20	21	19	21	23	24	25	30	39
3.10 clothing	4	5	6	7	7	9	10	9	11	14	15	17	26	43
4.00 food & beverages	9	9	10	10	9	11	11	10	11	12	12	12	14	18
5.00 proc.ind.(total)	10	10	11	11	12	13	13	13	15	16	16	18	23	32
6.00 mining	(34	36	35	35	41	44	46	50	54	54	52)	60	70	82
7.00 total of industr.	12	11	12	12	13	14	15	15	17	17	18	19	24	34

Source: Prognos AG, Basle

(5) German international capital transactions were not as spectacular as was the case with merchandise trade. Beginning in 1951, a steady export of long-term capital took place, which reached temporary high-lights in 1959 and 1961, when suddenly, in 1963, there was for the first time a net import of long-term capital. This was repeated in 1965 and in 1971-73. In between, and following the recession of 1966-67, a rapid increase of long-term capital export was registered, which jumped from 2.930 million DM in 1967 to 11.200 million in 1968 and some 23.040 million in 1969, thus reaching quite dramatic proportions. After three years of import surplus, and following the recent economic recession, a large capital export took place, reaching 16.800 million DM in the year 1975. The balance of total capital transactions, of course, does not show a steady trend, since the short-term capital movements are subject to their own rules, surplus and deficit following each other very irregularly over time.

In contrast, the German transfer balance("Übertragungen") developed quite steadily towards growing exports, from 450 million DM in 1953 to about 17.600 million DM in 1975, without remarkable deviations from the upward trend.

### III. Causes and Problems of Trade Expansion

Chapter II has demonstrated Germany's extensive international economic interchange in general, and the structural imbalances of trade in particular. As these facts stood behind several crises of the international system, one may predict that as long as they do exist the sequence of disturbances of the international economic system has not yet come to an end. The German trade and capital transactions seem to provide an example of what was called "cumulatively increasing foreign trade dynamics": the development potential of the economy and its transformation capacity are strong; a combination of externally-oriented preference structures with a qualitatively highly developed resource basis but relatively small domestic industrial markets seem to favour the creation and expansion of an outward-oriented production structure and the continuing evolution of dynamic comparative advantages<sup>11)</sup>. The question is, whether the volume and structure of German trade are "best" in a real sense, especially with view to the quality of the living conditions of the population.

The economist has (or should have) at the fore of his mind the notion of an optimum flow of things. The "optimum volume of trade" would be the just right volume more than which, or less, is to be avoided. Though this concept is quite straight forward, the optimum volume of trade practically shall be difficult to measure with a pretence of anything approaching exactness, given the state of knowledge on production functions, preference structures, and given the mechanisms of transferring social preferences into economic and political actions. However, the notion of an optimum volume of trade as a goal to attain could certainly with advantage replace the current basically mercantilist view rampant among businessmen, economists and politicians that it is maximum growth. It could increase their receptiveness to the possibility, the likelihood even, that the share of foreign trade in the Gross National Product is too large and the structure be changed <sup>12)</sup>.

Though in Germany the high share of trade in the GNP has seldom been seriously questioned, many theses have been put forward on how to explain the specific trade pattern, namely the export surplus in the trade balance, and one should not regard this discussion as being concluded. In the following, we first will give a resumé of the main streams of thought, which may be classified under three headings. Then we will put forward some new theses which we think have been neglected for too long or were undervalued to some extent. Of course, at this occasion we can give only a short discussion of the implications involved. Should the discussion be rather too sketchy, so only because the arguments are thought to be known or because others are thought to deserve more attention.

What measures are taken to solve the problems of trade imbalances is a consequence of how the surplus is explained. In the past, it mainly was explained by price factors and business cycles. Concentrating on such explanations, the surplus should be eliminated mainly by two means: domestic inflation (Anpassungsinflation) or revaluation. Only recently, structural factors were stressed to explain the surplus and to remedy the situation.

### 1. International Price Differences and Trade Expansion

The price differences between Germany and its trade partners have been cited most as being the reason for the rapid German trade expansion. The argument is as follows: the efforts of economic policy regarding price stabilisation in Germany have been, by and large, rather successful, especially when



compared with the main trading partners. The result is a price gap which promoted the competitiveness of German exporters and weakened the position of the competitors. In contrast to a case of equal inflation rates, German export growth is pushed and import growth retarded, thus creating a chronic surplus in the trade balance.

One problem with this reasoning is that it can explain trade flows at best only in the short run. No economy being as highly export-oriented as the German one can definitely flee from international inflation in the present monetary system. Efforts to neutralize the money-expanding effects of an export surplus through monetary policies can be successful only temporarily; increasing the official interest rate may reduce domestic money supply but will increase foreign-induced money circulation. There are many examples in postwar history of the boomerang-effect of an autonomous monetary policy. (The most spectacular example in Germany probably was in 1971, when foreign currency reserves increased by more than 1.000 million DM a day).

Recent experiences show quite clearly that export behaviour cannot be explained by price differences alone. In May, 1973, for instance, foreign orders in the German industry were nearly 50 % above the level of the year before, despite the revaluations, floating of the DM <sup>13)</sup>, and higher export prices. Non-price factors of competitive advantage seem to play an increasing role, as e.g. product quality, monopoly positions on foreign markets, and multinational activities of business firms, temporary shortages, the ability to supply in time. Furthermore, the actual variations in the trade balance were not always in parallel to international price movements.

In summary, we may say that the theory of a monocausal relationship between international price differences and German export surplus does not hold good. This is confirmed by recent investigations comparing export volume and export prices of the Western countries: Export growth was more pronounced in Germany but export prices of Holland, Belgium, France had been rising less rapidly. (On the other hand, this is not to be used as a general explanation for all cases, since, for instance, the development of Japan's exports may provide counter-evidence.)

## 2. Time Lag in Business Cycles and Trade Expansion

The time lag in business cycles has been used to explain the export surplus in the German trade balance. This scenario was particularly stressed during the recession of 1966 /67, when compensatory exports pushed the export surplus to new dimensions (1967: 18.372 million DM). As a consequence of this argument it was thought that domestic recovery would reduce the surplus; the boom came, but the surplus remained. The same was true for 1971.

Without going into a more detailed analysis we can say that during the business cycles of the postwar period there had been reactions of the trade surplus according to this line of thinking, i.e. a decrease of the surplus during the domestic boom and an increase during recession, but this is not confirmed by all the business cycles. On the other hand, one may well differentiate between price and cycles effects on trade, since developments of export and import prices do not necessarily correspond to the business cycles.

## 3. Structure of Trade and Trade Expansion

It seems quite natural to look at the specific structure of exports and imports in order to find explanations for the chronic developments, though in the German case one may say that this has been done so only recently. Harry G. Johnson had shown fairly early that the discrepancy between the income elasticity of demand of a country for imports and the income elasticity of foreign demand for export products of this country will lead to imbalances in trade <sup>14)</sup>. This tendency towards trade surplus based on the commodity structure of trade may, furthermore, be increased or decreased by the regional structure of trade of the country concerned.

H.S. Houthakker and S.P. Magee in their study on income and price elasticities in world trade demonstrated that the countries with the highest export growth registered the highest income elasticities for their exportables while their income elasticities for importables was clearly behind <sup>15)</sup>. Though these results may be taken with caution, they should be plausible too for explaining the German case <sup>16)</sup>.

As was mentioned above, the share of investment goods and agricultural products in German exports and imports differ markedly. According to general understanding, income elasticity of demand for investment goods is fairly high

compared with that for agricultural products. As the share of the former is rather big in the exports but rather low in imports, while the contrary can be said regarding the latter, it is fair to assume that income elasticity of total demand for German exports is higher than that for total German imports. This structural component of trade should be strengthened if the main importers of the products of the country concerned belong to the group of growth-intensive countries. Thus we find a more than proportionate increase of the export share in such products whose share in world trade has been rising, and a more than proportionate expansion of German exports towards those countries whose imports were rising fast.

In other words: even if Germany would be in line with the business cycles and the price levels of her trading partners, she would run into export surpluses. Revaluations alone, therefore, cannot be an adequate measure; instead or additionally, structural policies should be undertaken. (It is to be noticed that structural measures for stabilizing trade balance are more or less unknown even in text-books on the balance-of-payments.)<sup>17)</sup>

Going further into the analysis of trade structures, we may differentiate between "active" and "passive" (respectively fast expanding and slowly expanding or decreasing) export and import industries. Grueter has estimated that approximately 50 % of German exports belong to fast growing industries (Wachstumsindustrien), while on the import side only about 30 % belong to that group<sup>18)</sup>. This fact again may be taken to mean that the fast growing industries will reach the limits of national absorption soon ("push-effect in exports").

For Germany this process has led to a double dilemma: with increasing income abroad, German exports grow more than proportionately, while along with increasing domestic income, more and more growth-oriented enterprises press for exports; exports even becoming the main activity (50 % and more of turnover) in various industries.

There is yet another characteristic of the strong export-orientated German economy to be observed: even in a recession period abroad, exports did not decrease (with the exception of a slight decrease in 1975) since enterprises tend to "hold the market" at the risk of temporarily lower profits. Because of these effects it has been suggested to use "ex ante revaluation" (voraus-eilende Aufwertung) as a means of economic policy<sup>19)</sup>.

#### 4. Employment Structure and Trade Expansion

There is no doubt about the dependence of the employment of foreign workers (Gastarbeiter) on the growth cycle during the 1950's and the early 1970's<sup>20)</sup>. Very important for our discussion here is the relationship between employment of foreign workers and German export expansion. Table 10 gives the Gastarbeiter-ratio in selected German industries compared with the export share of these industries in total exports.

Table 10: Gastarbeiter and Export Ratios in Germany, Selected Industries, (1965-1970)

Industry	Export Ratio						Gastarbeiter Ratio					
	1965	1966	1967	1968	1969	1970	1965	1966	1967	1968	1969	1970
Chemicals	5.7	5.8	6.6	7.2	7.5	7.5	6.7	7.0	5.3	5.9	7.6	9.2
Plastics, Rubber & Asbestos	1.3	1.4	1.4	1.6	1.7	1.8	11.3	11.8	10.5	11.3	16.5	18.4
Quarrying, Ceramics, Glass	2.2	2.2	2.3	2.3	2.2	2.3	12.1	12.7	8.8	9.0	11.9	16.1
Wood, Paper and Printing	5.9	5.7	5.2	5.4	5.5	5.4	6.5	7.3	5.7	5.9	7.9	10.1
Leather, Textiles	9.8	10.0	8.7	9.5	9.8	9.4	8.2	10.0	8.2	9.4	12.1	13.6
Steel, Machinery, Vehicles	9.2	9.6	9.4	9.5	10.4	12.5	8.0	8.4	5.9	6.6	9.8	12.5
Coal Mining	0.7	0.6	0.6	0.5	0.5	0.6	6.7	6.4	5.0	4.4	5.9	9.3

Source: M. Nikolinakos: Politische Ökonomie der Gastarbeiterfrage, Reinbek 1973, p. 74.

The table shows that while the respective export shares of the selected industries in total exports were fairly constant or slightly increasing during the period reviewed, the share of foreign workers in total employment in these industries had a strongly increasing tendency. From this we may conclude that the industries concerned have been able to hold their share in total exports, or to increase it, because they succeeded in getting increasingly more Gastarbeiter. Said differently: if these industries would not have been able to employ more labour, they most probably would not have been able to hold their export share constant or increase it, and would not have been in a position to increase the absolute volume of their exports considerably.

Further analysis would show that the increase of Gastarbeiter-employment is directly following the increase in exports. The growing demand from abroad for German exports leads to a growing demand of industry for labour which in the German case was coming from the developing regions of Southern Europe, Africa and parts of Asia.

Summarizing, one may say: without the liberal migration policy the growing demand for German products would not have been met and the German GNP would not have grown as fast as it did. In a study of the Tübingen Institute for Applied Economic Research on the role of employing Gastarbeiter in Germany it is stated: "The increase of labour input leads to a surplus value, provided this additional factor is meaningfully employed. Thus the employment of foreign workers will lead to an increase in the GNP, and insofar, export growth must in part be attributed to the employment of foreign workers. Hereby it is relatively unimportant whether these foreign workers are employed in the export sector or whether it is possible to employ more German workers in the export sector because of greater flexibility in the labour market" <sup>21)</sup>.

Recently, the question was raised whether the employment of foreign labour does meet its total cost to society. It is thought that the "social costs" of additional employment are not internalized into private accounts, especially regarding housing, schooling, and other parts of social infrastructure and that a large part of these social costs are shifted onto the Gastarbeiter themselves, in form of work exploitation and lower wages for equal inputs. As is well known from welfare economies, in case of externalities the market mechanism will bring forth sub-optimal results, decentralized decisions thus lead us to produce (and work) too much. Since the non-internalization of externalities may especially lead to overproduction for exports, we will have to discuss this question more intensively. Before doing so, we shall conclude this chapter by referring to some other effects which in Germany were quite early touched but not prevented.

The Council of Economic Advisors to the German Ministry of Economic Affairs in its 1957 expert opinion on "Problems of the German Export Surplus" predicted that the surplus in the trade balance would for a long time be larger than necessary to finance the deficit in the capital balance <sup>22)</sup>. Though the Council did not ask why it should be that the capital balance be as unbalanced as it was, he made quite clear that a steady lasting surplus in the trade balance would be detrimental to the welfare of the people: "... so bedeutet das volkswirtschaftlich gesehen nichts anderes, als daß im Inland produzierte Güter und

Dienste dem Ausland überlassen werden und infolgedessen für Investitionen und Konsum im Inland nicht mehr bereitstehen" <sup>23)</sup>. The Council went on to say that if the currency reserves of the central bank surpass the "necessary amount" (it is not said what that amount may be), this would be a sign of "unintended capital export" <sup>24)</sup>. In the case of full employment, unintended capital export must lead to heavy burdens on and great disruptions in the economic process, as income is created domestically whose real equivalent is flowing abroad. This in turn can lead to a vicious circle insofar as stabilization policy may increase the reserves, what again would necessitate new domestic restrictions.

Though one may highly agree to this 1957 analysis even when transposed to the present situation, the medicine the Council prescribed sounds strange indeed: it called for a relatively (and not only absolutely) greater international interchange of the German economy <sup>25)</sup>, and thus laid the very basis for many troubles to come.

Without discussing the pros and cons of this opinion further, one point should have come out clearly: to decrease the export surplus (either by reducing the growth rate of total exports or by increasing total imports) would make available more resources at home. Within the overall potential effects of such a policy, two would have been of great importance for the German situation: (a) increase of resources available for public investments, (b) increase of resources for rationalization purposes, which in turn could have led to reducing the demand for foreign labour.

Of course, effects (a) and (b) are very much interrelated as the migration of foreign workers makes additional investments into infrastructure necessary. These investments, as we know today, were more or less neglected for quite a long time but have to be retrieved now, at a stage of development where the number of Gastarbeiter in Germany is above 2 million (plus an unknown number of family members). To put it shortly: The fact of a large import of foreign labour instead of products and the tremendous export of products instead of capital, give one more example for the discrepancy between private and total costs and benefits of production. It certainly pays for the German industry to engage Gastarbeiter as long as their wages and fringe benefits are below average, and as long as the social costs of their employment are born by the state, the public at large, and the Gastarbeiter themselves <sup>26)</sup>.

Also liberal migration policy must have caused a delay in the rationalization of German economic structures. Competitive pressure to modernize production techniques will certainly be reduced as long as (privately cheap) foreign labour is freely available. Migration policy in a sense is a new kind of "structural conservation policy" (Strukturerhaltungspolitik), the contrary to the very much needed "structural adjustment policy" (Strukturentwicklungspolitik). Extending this argument a bit further we may say that the non-internalization of externalities of migration into the private economic accounts does not only lead to increasing private profits but help at the same time conserve the industrial structure. This effect is particularly hostile towards the products of the developing countries, including those where the Gastarbeiter come from.

### 5. Industrial Structure of Exports and Trade Expansion

The foreign trade sector of the German economy is not at all homogeneous regarding productivity, size, competitiveness, etc. Besides numerous "marginal exporters" supplying mainly the domestic market and exporting only in case of attractive prices and special opportunities in the foreign markets, there are firms with a high degree of specialization towards the foreign market and pursuing an active export policy ("structural exporters"). This last group covers the largest part of German exports both regarding volume and value. The production capacity of these firms often exceeds the absorption capacity of the domestic market so that their behavior is strongly oriented towards closed partial markets via product differentiation, their price policy being substituted by non-price sales instruments. At best only historically, the export activities of these firms may be traced back to a "compensatory export policy". In this field of trade, compensatory exports as a response to the situation in the domestic markets no longer work as a sufficient hypothesis; instead, domestic markets tend to become compensatory markets for those firms.

It can also be expected that high export shares (and especially export surpluses) will bind resources at the cost of the "marginal exporter": In the case of a recession at home, the marginal exporter will bear the main burden, while in the case of a domestic boom the marginal exporter will be able to invest only at higher costs since the labour and capital market are to a great extent dominated or influenced by big industry, including big exporters. The consequence out of this structural situation is more than proportionate growth of the export-oriented active industries; a distortion of the production structure will follow, in the sense that resources are not available for domestic uses. This is the essence of what may be called "Exportlastigkeit" 27).

Summarizing, we have to suspect that the negative effects of the type discussed above, in the case of German trade expansion, have been quite pronounced, thus leading to specific discrepancies and dichotomies: "private versus public investment" (public goods effect); "industrial resources and subsidies competition" (sectoral and regional effects); and "income and wealth distribution" (income and inflation effects). The causes and problems of German trade expansion with respect to the "common-property resources" will be discussed in the following chapter.

#### IV. Environment, Infrastructure and Trade Expansion

Environmental and infrastructural amenities are two important aspects of the "quality of life". Generally, in the postwar period the supply of these goods and services had been subordinated in private and in public decision-making to other goals, in particular to the more immediate requisites of economic growth (conventionally defined) and trade expansion. Over time, however, in Germany as in other industrial countries the social costs of a lacking infrastructure and of environmental disruptions have risen, in the face of steadily more apparent limits in the absorptive capacity of the human- and the bio-sphere. Thus there is a growing realization of the fact that severe problems in infrastructure and environment are closely related to the imprudent pursuit of economic growth, and that the intersectoral and intertemporal cost-transfers and negative social spillovers inherent in the growth process at various points have become sufficiently powerful to outweigh the expected net gains of economic growth. This process in Germany is both gradual and uneven, gaining in intensity and social impact during the last few years but varying widely among municipalities, regions and social groups.

The lack of homogeneity in the awareness of the environmental and infrastructural problems (Problembewußtsein) and its political perception is attributable in large part to the fact that human and biological absorptive thresholds exist that, theoretically speaking, damage curves are uneven, and that the free rider phenomenon is frequent. Furthermore, regarding environment, the international transfer of natural and common-property resources has itself helped to obscure emerging problems at the national level. In some way, international trade permits the acquisition of scarce (or environmentally costly) natural resources and goods of pollution-intensive industries from abroad, again diminishing the urgency of dealing with common-property resource management problems 28).



These reflections should elucidate the fact that infrastructural investments and environmental control are closely related to and strongly influenced by international trade expansion, especially so in a country as highly depending on trade as Germany. In order not to complicate reasoning, in the following we will concentrate on the relations between environment and trade; the arguments however may largely hold true for infrastructure as a whole.

### 1. Competitive Advantage and Environmental Control

Three types of environmental disruptions may be identified:

- (a) Final goods, intermediates, and raw materials (which when used cause despoilation of the environment);
- (b) Residuals of the consumption process (products having served their purpose are discarded in a manner harmful to the environment);
- (c) Residuals of the production process (environmentally deleterious side-effects of the production of virtually all goods and services) <sup>29)</sup>.

Clearly, economic activity generates a wide range of externalities including such environmental disruptions which are not reflected in private economic accounts and hence fail to enter the resource-allocation process and the conventional measures of economic success. Once acknowledged as real social costs, such externalities must be considered explicitly - and this of course can alter economic decisions and priorities. The market mechanism generally fails to distribute the costs of environmental disruptions - and other externalities - to the ultimate producers. Enforced internalization of such costs would therefore affect the international competitive position of the producing units involved, depending on the degree of standards and methods applied. Generally speaking, the economy with the highest volume of foreign trade (relatively and absolutely) will be affected most when international uniformity in standards is applied.

Germany, in such a case, would be one of the countries strongly affected, especially because of the high content of pollution-intensive chemical and heavy-industry goods in German exports. Since no comparable figures and calculations in the German situation are available up to now, we would suggest to consider for a moment the standards imposed under the Clean Air Act of the United States and their prospective effects on all prices, if the 20 industries responsible for most of the emissions of sulphur dioxide, carbon monoxide, hydrocarbons, and particulates would fully satisfy these norms <sup>30)</sup>.

Table 11: Estimated Price Increases of Goods and Services Resulting from Compliance with Certain Anti-Pollution Measures (in %).

Sector	Price increase if major air-pollution industries met the standards of the U.S. Clean Air Act	Price increase resulting from an overall substitution of low sulphur fuels for high sulphur fuels
Electric utilities	7.3	2.9
Gas utilities	0.1	1.1
Iron and steel foundries	3.5	2.9
Primary steel	2.2	1.5
Iron and ferro-alloy mining	0.4	2.3
Coal mining	0.5	6.1
Chemical and ferrous mineral min.	0.4	1.9
Iron and steel forgings	1.9	2.4
Pulp mills	0.7	3.2
Paper and allied products	0.4	2.8
Paper containers	0.3	2.5
Primary non-ferrous metals	16.8	3.4
Secondary non-ferrous metals	3.0	1.9
Misc. non-ferrous metals	0.5	1.8
Petroleum refining	6.0	2.1
Crude petroleum and natural gas	0.2	8.3
Industrial chemicals	0.2	1.2
Plastics and synthetic materials	0.6	10.3
Fertilizers	0.4	6.2
Metal containers	0.8	4.7
Other fabricated metal products	1.6	2.0
Metal handling machinery and equipment	1.4	1.7
Metal working machinery and equipment	0.8	1.5
Specific industrial machinery and equipment	0.7	1.3
General industrial machinery and equipment	0.8	1.7
Machine shop products	0.8	1.1
Electric equipment and appliances	0.9	1.6
Electric machinery and equipment	1.6	1.4
Engines and turbines	0.9	1.5

Source: GATT: Industrial Pollution Control and International Trade, Geneva 1971

Table 11 shows that if environmental controls such as these are implemented, and if such estimates are reasonably close to the mark regarding the German situation, the overall competitive impact could be substantial indeed, especially since about three quarters of the German exports would be affected. As the pollution load of exports is certainly much higher than the pollution load of imports, an effective policy of pollution control might help to bring down the chronic export surplus of the German economy. Of course, the impact on aggregate trade and on the structure of trade fundamentally depends on the distribution and the nature of control measures applied among the competing countries.

In explaining postwar developments, one may say that German foreign trade and especially exports must have been strongly stimulated by the fact that the environmental (and infrastructural) costs of trade were not (or not completely) internalized into the private accounts of the originators, the exporters and importers, but were born by third parties or the population at large. However, it is very difficult to guess on how much the level of trade and its growth rate have been pushed upward by this mechanism of socializing the externalities of production and consumption, whether it may account for 5 or 15% of volume and growth. It should be relatively more easy but still highly complicated to assess the effects of future pollution control policy on the German balance-of-payments and on national income.

Recently, B.P. Klotz made an assessment of these effects for five countries including Germany, using the model designed by R. D'Arge and the import and export elasticities calculated for the OECD countries <sup>31)</sup>. The model traces the sequence of effects triggered off by a rise in domestic prices following environmental control measures: reduced exports, increased imports, correcting respectively worsening of the trade balance and consequent reduction in GNP through the multiplier effect. Table 12 shows that the German national income resulting from a one percent increase in domestic and export prices following environmental pollution control, would decrease by 1.8 %.

Table 12: Estimated Change in National Income Resulting from a One Percent Increase in Domestic and Export Prices; Selected Countries (in billion dollars, 1968)

Country	Income Change	Percentage Change	Export Elasticity	Import Elasticity
Japan	- 15.5	- 14.0 %	- 1.25	0.78
United Kingdom	4.2	4.9 %	- 0.33	0.22
United States	- 8.4	- 1.1 %	- 1.00	1.88
West-Germany	- 2.0	- 1.8 %	- 0.99	0.34

Source: B.P. Klotz; The Trade Effects of Unilateral Pollution Standards, in: OECD (Ed.): Problems of Environmental Economics, Paris, 1972, p. 223

There is no space here to discuss the model and its underlying assumptions in detail, but it must be said that the results should be viewed with caution in that they are subject to a wide margin of uncertainty because the model is highly sensitive to different estimates for the domestic absorption capacity and for the price elasticities of exports and imports. On the other hand, the figure for the price increment (following pollution control) pegged in these studies at only one per cent is considerably below some recent estimates for the economy as a whole and for certain industries in particular.

Classifying the goods and services produced in a country into those in which international competitive advantage exists ("exportables"), those which appear to be characterized by an international competitive disadvantage ("importables"), and those which are "non-traded", in international trade exportables are exchanged for importables which (under assumed constant terms of trade) render the country better off in terms of (conventionally defined) real income per capita than if it did not engage in trade. Its economic structure is thus biased towards the production of exportables in which it specializes more than it otherwise would, as a result of its particular factor endowments and productivities. Assuming now that the country would decide to deal with environmental disruption in a serious manner by diverting substantial resources to environmental control, not only by forcing this upon producers but also by undertaking direct pollution abatement operations, the initial outcome would

be fewer exportables and fewer importables, as a result of government induced diversion of resources to non-traded (environmental) goods. In such a case, the quantity of exportables and importables may decline but the quality of life may well improve <sup>32)</sup>.

The pollution control effects on international trade will be different if the incidence is not symmetrical as between exportables and importables - and this assumption may be more realistic with regard to the German case. Supposing that the country's export production is clearly capital-intensive and that the pollution control activities too turn out to be capital-intensive, the diversion of capital resources from tradeable goods to the environment sector thus bears more heavily on the output of exportables than it does on importables. Hence the comparative advantage in exports is reduced and the production mix of tradeable goods becomes less specialized in the export sector. In the case of unbalanced trade - as is true for Germany - this may lead to a reduction of the export surplus.

However, this effect may work only in the short run, since a substantial shift of resources to the pollution control sector may lay the very basis for new comparative export advantages in the long run, especially so if the competing countries do not follow this shift of policy in due time, and provided the pollution control goods can be traded (be it in form of consulting, licensing or exports of hardware). The wider the gap between leading and lacking countries, the more pronounced the competitive advantage of the leaders will become. Anyhow, it would appear that the specific factor-intensity of pollution control techniques will in part determine the impact on the volume and structure of the country's foreign trade <sup>33)</sup>.

Regarding the inter-industry effects, variations in the impact of pollution control policies are born out by the facts. In terms of the primary impact on selected industries, the bearing of environmental measures may be approximately gauged by their respective expenditure on pollution control plant and equipment.

According to the estimates of the first German government report on environmental problems <sup>34)</sup>, private fixed investment and operating expenditure for pollution control plant and equipment in the main problem areas and industry groups for the period 1971 - 1975 were supposed to be as is shown in table 13 and table 14.

Table 13: Fixed Investment and Operating Expenditure for Environmental Control in Germany, 1971 - 1975  
(in prices of 1970, billion DM)

Problem Area	Net Investment 1971 - 1975	Operating Expenditure 1971 - 1975
Air Pollution	3.9	0.4
Water Pollution	16.2	4.0
Solid Wastes	2.3	1.5
Biocides and Chemicals	1.7	-
Noise	1.7	-
Land Use and Conservation	2.4	-
Others	0.2	2.1
Total	28.0	8.0

Source: Umweltprogramm der Bundesregierung, op. cit., p. 611.

Although these estimates are rather low compared with the rising public concern with environment, they do indicate some order of magnitude and inter-industry differences that may materialize in the impact of environmental policies on international competition.

Table 14: Fixed Investment and Operating Expenditure for Environmental Control in Germany, 1971 - 1975  
(in prices of 1970, billion DM)

Industry	Net Investment 1971 - 1975	Operating Expenditure 1971 - 1975
Mining	2.1	0.3
Energy	0.5	-
Quarrying, Glass, Ceramics	0.3	0.3
Chemical Industry	6.8	1.3
Other Industry	1.0	0.2
Construction	0.1	-
State Budget	15.3	3.6
Others	0.8	2.3
Total	28.0	8.0

Source: Umweltprogramm der Bundesregierung, op. cit., p. 611.

## 2. Industrial Location and International Capital Flows

A certain number of German communities following people's protests ("Bürger-initiativen") have begun to discourage the location of certain industries, involving confrontations between the "growth promoters" and the "environmentalists". Regions and Communities in which anti-growth tendencies can be seen are characterized by relatively high income levels. Political balance in other regions represents different assessments of the growth versus the environment trade-off. As a result, some increase can be registered in the important environmental considerations regarding industrial location and inter-regional capital flows within Germany.

Locational implications of environmental control for the international relations of Germany come also to the fore, especially at the industry level. There will thus evolve international spillovers attributable to local or regional environmental control policies. It can be assumed that these spillovers will increase and, together with the enlarged power of the German currency, will make foreign locations progressively more advantageous, relative to domestic locations. In other words, environmental considerations are increasing in importance, relative to such factors as labor cost, raw materials, proximity to markets etc<sup>35)</sup>. On the other hand, it can be expected that international variations in environmental awareness will exceed the inter-regional variations; a fact which became very clear at the UN Conference for the Human Environment. Therefore, the scope for international locational spillovers seems to be rather broad and durable. This quite probably will have notable implications for the regional pattern of German foreign direct investment. "Export of pollution" has already become a reality in today's world. Reasonable people call this the latest form of economic exploitation. Yet, since there are regional differences in the revealed or unrevealed preferences of the population in general and the politicians in particular, marginal social benefits even of pollution-intensive industries in practice may exceed marginal social costs in the relatively backward countries and regions.

Again, these developments make clear that in the past non-internalization of environmental externalities of trade has by itself strengthened the tendency towards international concentration of industrial locations, releasing backwash effects on the relatively backward countries and regions.

### 3. Implications of Environmental Control for Trade and Capital Flows

The impact of environmental control measures on international trade and capital flows (and on the respective commercial and financial policies) will to a large part depend on precisely how these measures are carried out and what countermeasures may be taken by the governments to soften their effects.

Economic theory has put forward numerous proposals centering around the Pigovian principles for reducing or eliminating external diseconomies, namely environmental taxes or subsidies <sup>36)</sup>. In Germany, political discussion has focussed on the "Verursachungsprinzip", i.e. internalizing the externality at its origin and by its originator. That principle is one thing. A different thing is that, according to the first German government report on environmental problems, about 55 % of all net investments for pollution control for the period 1971-1975 were to be born by the public sector <sup>37)</sup>.

These figures show that despite an increasing awareness among the German population about the reasons and industrial origins of environmental disruptions, even now the costs are being socialized to a great extent, as has been the case in the postwar period. In this sense it certainly would be premature to speak of a definite positive change in environmental policy in Germany. Therefore one might speculate who in the case of a dramatic domestic conflict between growth and trade on the one hand and environment on the other hand will bear the burden: the population at large in suffering from pollution, the tax-payer in paying for public investment in pollution control, or the individual originator of external diseconomies. Direct investment abroad and "export of pollution" might be the solution in the case of such a conflict, but certainly a very problematic one.

As was said above, environmental control (and infrastructural development as a whole) is primarily a normative concept and depends very much on the society's actual preferences and valuations regarding the quality of life. However, the differences existing or increasing as between regions and nations will probably have a strong influence on Germany's comparative economic advantage, industrial location and international capital flows. In the concluding chapter we will give a more detailed review of the policy problems involved in or resulting from German trade expansion and international interchange.



## V. Quantitative Economic Growth and Qualitative Economic Policies

As was shown in the preceding chapters, Germany has undergone a long period of imbalance in her foreign economic relations. Experience has also shown that up to now it was not possible to overcome these imbalances exerting conventional monetary, fiscal and income policies. Also several revaluations and the floating of the currency gave at best short-term mitigation. Therefore it is questionable whether such conventional measures of stabilization policy are able to reach both an internal and external balance of the economy.

The general thesis of this paper has been that the persistent tendency of the German economy towards rapid trade expansion and activating the trade balance should be seen as being mainly a consequence of structural factors in exports and imports, divergent elasticities of demand, and of different degrees of internalization of the social costs of production, which together set free cumulative processes of foreign trade dynamics. Two kinds of non-internalization of externalities seem to be significant in the case of German exports: the social costs of environmental disruption (and neglect of infrastructure in general) and the social costs of labour immigration, which result in a more than optimum output in the export sector, binding too many resources in this field of economic activity which then are no longer available for other social purposes upon which to a large extent the quality of life really depends.

An explanation of trade flows which puts emphasis on structural factors should also put emphasis on structural therapy; additional and/or alternative measures must be applied in order to remedy imbalances at the roots of trade dynamics <sup>38)</sup>. Instruments of a more special character and qualitative nature are needed that can influence the production and consumption structures and can direct the relevant behavioural patterns towards a balanced situation. To decrease or eliminate the social costs of trade by internalizing the externalities and to put the value of common-property resources into the price structure, in the German case would very probably lead to a positive effect into that direction. Measures of this kind therefore should further be discussed in this concluding chapter.

In economies with a strong development potential, the weakness of conventional policy comes out very clearly. The relative competitiveness of active export industries may even be strenghtend when the government or the central bank have recourse to stern measures <sup>39)</sup>. In such cases, the gap in productivity between

active and passive exporters and between exporting and import-competing industries is widened, since the active industries will gain most (or lose least) from such policies; conventional measures may thus cause counter-intuitive results. The "logic" trouble of monetary policy is that it does not command on the foreign component of money supply and cannot, without offsetting convertibility, guide the international money and capital flows in a sufficient manner. The "technical" difficulty of incomes policy is that it cannot regulate completely the foreign claims on the capacity of the economy. Revaluation of the currency also is insufficient for stabilization because it does not directly influence strong export activity factors and other non-price factors of competitive advantage. Circulation-oriented measures therefore should be supplemented by other measures which either indirectly influence the development process, thus steering production and consumption towards the right level and structure, or do modify investment behaviour as the main motivating force of this process directly.

#### 1. Structural Adjustment Policies

For countries with structurally initiated and stimulated export activities<sup>40)</sup>, a structural development policy is needed that either strengthens the position of those domestic industries falling behind during the process of greater export-orientation, and/or leads to a partial re-orientation of leading export industries towards the domestic market. In other words, three basic policy strategies are to be considered: (a) import expansion; (b) export substitution; (c) export substitution and import expansion.

H. Grueter, an advocate of the structural thesis, accepted the volume of exports as given and confined himself mainly to strategy (a) - import expansion - including, however, an active restructuring in the German imports by closing down industries of relatively low productivity and high labour input (as textiles, leather, etc.) and shifting the resources set free to more productive sectors<sup>41)</sup>. One problem of strategy (a) is, not to induce even greater exports by this shifting of resources, i.e. to prevent a net increase in export growth. The success of such a strategy thus depends on several conditions:

- The resources set free in the import-competing industries, in order not to lead to an increase of export growth, must be shifted into domestic-oriented production, as e.g. infrastructure and services. If this condition is met, the infrastructure improvements, however, in a second round may lead to increasing productivity in the export sector (indirect productivity effect of infrastructure investment). Therefore, public investments should now mainly

go into non-industrial infrastructure, as e.g. social infrastructure or household-oriented infrastructure (welfare effect of infrastructure investment).

- Insofar as such productivity effects favoring exporting industries cannot be excluded, a general or specific decrease in total yearly working hours may be carried out alternatively.

Strategy (b) - export substitution - was already discussed in connection with environmental control policies. If it is politically decided that for Germany export growth rates must no longer be as high as they were for export's own sake, the problem lies more with the question on how to slow down expansion of the active industries than on how to speed up growth of the more passive industries, since growth and export growth in particular have been and still are thought to be the basic criteria for economic success. Of course, structural adjustment policy need not to confine itself to the production structure. However, to believe that it would be easy to direct parts of domestic consumer demand to the products of the active export industries, may to some extent be wishful thinking. This the more so, if there is a tendency towards decreasing profits per unit of output. Furthermore, structural adjustment is very susceptible and apt to lead to export cartels which, in turn, may lead to an even wider deviation from the optimum of foreign trade.

Empirical evidence shows that theoretically different or exclusive strategies in practice are never realized in pure form. The solution for the German case, therefore, may be to combine both strategies and to simultaneously strive for (c) - export substitution and import expansion. A dilemma however remains: production would have to be reduced relatively (or even absolutely) in certain industries, while at the same time resources would have to be re-allocated to those activities not stimulating export growth. These two tasks might well over-stress the possibilities of economic policy in a market economy of the German type.

The rather pessimistic assessment of structural policy with regard to stabilizing foreign economic relations in the German case is illustrated and verified by a number of examples. Structural adjustment has not been successful in the old labor-intensive German industries which strongly compete with the young industries of the developing countries. These industries mostly succeeded in getting government subsidies, tariff protection, or cheap labour via the liberal immigration policy. Indirect structural policies may very well supplement conventional policy but in the end may remain insufficient.

## 2. Policies of Influencing Business Behaviour

Practice shows that a change in the external data ("Datenkranz") of individual behaviour does not guarantee a change in that behaviour. In the German case, therefore, it may be necessary for economic policy to include all three elements of business decisions into its radius of action: a change in the Datenkranz, influencing behavioural patterns through a change in the objectives, and a change in the actual behaviour of business enterprise. Information policy, institutionalized guidance, codes of business behaviour, etc. are potential measures of this kind, some of which however being strongly dependent on the consent of the EEC partners.

Furthermore, in the political arena it would be quite difficult to explain an essentially dualistic pattern of policy, i.e. applying the brakes on the active exporters, while stimulating domestic activity, promoting passive industries while opening up chances for more imports from the developing countries. Repressively influencing active export industries collides with their long-term business strategy. Further trade expansion, however, collides among others with ecology. Pointing out that the social costs of active exporting might outweigh the private gains of exporting, may not at all be accepted by the exporters concerned - the more so when a quantitative calculation of these social costs is difficult or not very accurate.

An economic policy that makes use of such instruments as directly influencing business behaviour in addition to indirect structural and competitive measures, in any case will be very complex and more difficult to handle than the conventional type of policy (including revaluations of the currency). Moreover, the implications such measures might have on the economic order may be substantial and have not yet been fully explored. However, an avoidance of change in trade patterns is not a fundamental end in itself since the purpose of trade among others should be to improve the situation of the whole population and not only that of the exporters. The practical problems the persistent imbalances in the foreign economic relations of Germany pose are such that economists should not recoil from suggesting new instruments in order to remedy imbalances at their roots<sup>42)</sup>. Currency reserves which are several times that of most other countries, and an active trade balance reaching new heights and meaning large deficits to others are actually too big problems to be born for long by the international economic system.

### Footnotes

- 1) J.A. Wagar: Growth versus the Quality of Life, in: Science, Vol. 168, 1970, pp. 1179-1184
- 2) When talking about quality of life, inquiries are needed that are non-economic in the conventional sense. To put it differently: "economists are ... nervous of becoming sucked into a morass of quasi-sociological considerations, which are either essentially qualitative or, if quantitative, do not correspond to any clear theoretical framework such as that lying behind the measurement of national product". OECD: Problems of Environmental Economics, Paris, 1972, p. 23.
- 3) OECD: Problems of Modern Society. Economic Growth, Environment and Welfare, Paris, 1969 (mimeographed), p. 2.
- 4) Ibid.
- 5) For while the purchasers of products pay market prices to the producers of them, those who are victims of the external diseconomies of trade and the production of tradeable goods do not in general get compensation for the reduction of their welfare.
- 6) Cf. Monatsberichte der Deutschen Bundesbank, 25, Frankfurt, 1973, 6, p. 74.
- 7) "Kein anderes großes Welthandelsland leistet sich im Verhältnis zu seinem Handelsvolumen derart hohe Bestände an vergleichsweise unrentabel angelegtem Volksvermögen", in: Jahresgutachten des Sachverständigenrates, 1968/69, Stuttgart, 1969, point 95.
- 8) In later years this figure was set at 1.5 %.
- 9) Gutachten des Wissenschaftlichen Beirats beim Bundesministerium fuer Wirtschaft ueber Grundfragen der Stabilitaetspolitik, 10. April 1973, Bonn.
- 10) These ratios regarding integration of certain industries into world trade do not include indirect exports which could be computed by input-output techniques, and may increase the respective total ratio considerably. Cf. R. Staeglin: Direkte und indirekte Exportabhaengigkeit der Industrie der Bundesrepublik, Deutsches Institut fuer Wirtschaftsforschung, Wochenbericht, 20, Berlin, 1969.
- 11) H. Koerner: Dynamische Aspekte der aussenwirtschaftlichen Absicherung, Goettingen, 1970, p. 65.
- 12) E.J. Mishan: Technology and Growth. The Price we Pay, 3rd ed., New York, Washington, 1971, p. 170.
- 13) The main decisions regarding the Deutsche Mark in recent years were as follows:
  - Revaluation, 27.10.1969: 9,3 %;
  - Floating, 10.5.-17.12.1971;
  - Realignment, 18.12.1971, Revaluation effect: 5.7 %;
  - Devaluation of the dollar, 14.2.1972: 10 %;
  - Blockfloating, 19.3.1973; Revaluation of DM against Floating-Block: 3 %;
  - Revaluating against Floating-Block, 29.6.1973: 5,5 %.
- 14) H.G. Johnson: International Trade and Economic Growth, Cambridge, 1958.
- 15) H.S. Houthakker/S.P. Magee: Income and Price Elasticities in World Trade, in: The Review of Economics and Statistics, 51, 1969, 2, p. 112.
- 16) K. Henkner: Der Einfluss der Regional- und Warenstruktur auf die Exportentwicklung in der Bundesrepublik, in: Vierteljahresshefte zur Wirtschaftsforschung, Berlin, 1966, p. 296.

- 17) Cf. E. Kueng: Zahlungsbilanzpolitik, Tuebingen, Zuerich, 1959
- 18) H. Grueter: Strukturelle Aspekte des deutschen Aussenhandels, in: Di. Aussprache, 19, 1969, p. 190.
- 19) Ibid., p. 192.
- 20) Cf. V. Merx: Auslaenderbeschaeftigung und Flexibilitaet des Arbeitsmarktes der Bundesrepublik Deutschland, Koeln, 1972.
- 21) H. Bullinger/K. Huber: Die volkswirtschaftliche Bedeutung der Beschaeftigung auslaendischer Arbeitnehmer, quoted from M. Nikolinakos, op.cit., p. 76.
- 22) Gutachten des Wissenschaftlichen Beirats beim Bundeswirtschaftsministerium zur Wirtschaftspolitischen Problematik der deutschen Exportueberschuesse, 30. April 1957, Bonn, 1961, p. 2.
- 23) Ibid., p. 3.
- 24) It should be problematic to call such effects "unintended" (unbeabsichtigt). Those being responsive for expanding exports overproportionately do this, of course, very intendedly. One might explain this expression as the concession that economic policy cannot do much about it... There are many more such 'lapsus linguae' in German economic language.
- 25) "Die Beseitigung der bestehenden Stoerungen muß in jedem Fall auf der Basis einer weiteren Steigerung der weltwirtschaftlichen Verflechtung der Bundesrepublik durch stetige Zunahme sowohl des Export- wie des Importvolumens gesucht werden..." Op.cit., p.5.
- 26) It's cold comfort that at a moment where these mechanisms are going to be understood by a larger portion of the public, the fee enterprises have to pay for engaging an additional foreign worker ("Anwerbegelder") was increased to 1000 DM. This certainly is no equivalent for securing a decent living of the people concerned.
- 27) Cf. Jahresgutachten des Sachverstaendigenrates, 1968/69, point 23.
- 28) For the following cf. I. Walter: Environmental Control and Consumer Protection (mimeographed), New York, 1972.
- 29) Op. cit.
- 30) Op. cit.
- 31) B.P. Klotz: The Trade Effects of Unilateral Pollution Standards, in: OECD: Problems of Environmental Economics, Paris, 1972, pp. 219-225; R.C. D'Arge: International Trade, Domestic Income, and Environmental Controls: Some Empirical Estimates, in: A.V. Kneese/S.E. Rolfe/ J.W. Harned: Managing the Environment. International Economic Cooperation for Pollution Control, New York, Washington, London, 1971, pp. 289-315; F. Meyer zu Schlochtern/ A. Yajima: OECD Trade Model: 1970 Version, in: Occasional Studies, OECD Economic Outlook, Paris, December, 1970.
- 32) Cf. J. Walter, op. cit.
- 33) Ibid.
- 34) Cf. Umweltprogramm der Bundesregierung, Bundestagsdrucksache VI/2710, 14. Oktober, 1971, Bonn, 1971.
- 35) Cf. I. Walter, op. cit.

- 36) Cf. Development and Environment. Report and Working Papers of a Panel of Experts Convened by the Secretary-General of the UN Conference on the Human Environment, Paris, The Hague, 1972; Political Economy of Environment. Problems and Method, Papers presented at the Symposium held at the Maison des Sciences de l'Homme, Paris, The Hague, 1972.
- 37) Cf. Umweltprogramm der Bundesregierung, op. cit.
- 38) Cf. H.Koerner: Ungeloeste Probleme der "aussenwirtschaftlichen Absicherung", in: Jahrbuch für Sozialwissenschaft, 20, Goettingen, 1969, pp. 235-249.
- 39) Cf. H. Adebahr: Zu den Ursachen der chronischen deutschen Exportueberschuesse in: Schmollers Jahrbuch, 91, Berlin 1971, 4, pp. 385-409.
- 40) Comparing the industrial structure of Germany with the average of the group of OECD industrial countries ("normal structure"), the most imaginative difference is manufacturing industry, being 8.9 per cent points above average in 1956 and some 9.8 in 1965. For all other sectors, the deviation was in the margin of plus and minus 1.6 per cent points.

A study by the Institut fuer Weltwirtschaft in Kiel names four factors contributing to the extraordinarily high sectoral share of the manufacturing industry, the weight of which is dominating the German industry as well as the pollution problems:

- elastic supply of labour;
- recovery from war;
- an industrial structure meeting rapidly growing foreign demand;
- an economic policy creating favourable conditions for export-oriented industries; this process being strengthened by a rather modest wages policy by the trade unions, and by a mostly undervalued currency (valuta dumping).

Cf. Die Weltwirtschaft, Kiel, 1970, p. 64.

- 41) H. Grueter: op. cit.
- 42) A study by the Ifo-Institut in Muenchen says: "When trying to judge the effects of the latest revaluation we come to the conclusion that in face of the rapid export growth being expected for 1973, the reduction in demand due to the revaluation must be called low indeed... Measured against the expected growth of exports and imports ... the stabilizing effect of the revaluation can be neglected."
- Cf. Die juengsten Wechselkurskorrekturen und der Aussenhandel der Bundesrepublik, in: Berichte zur Wirtschaftslage, Ifo-Schnelldienst, 9, Muenchen, 1973, p. 24.