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## German Firms Go International

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**This article offers a contribution to the topical discussion of multinationals. It describes the quantitative and qualitative identification criteria for these enterprises and analyses the internationalisation process of German firms.**

The investments of German firms in other countries have been increasing rapidly, especially since the mid-sixties. About two thirds of their total direct investment abroad — which the statistics for 1973 show at nearly DM 30 bn — have been added since 1966. This big expansion of their overall economic engagement abroad went hand in hand with the emergence of "multinational enterprises" among the individual companies. This internationalisation process among German firms is to be analysed here in greater detail.

To identify multinational enterprises use can be made of quantitative as well as qualitative criteria.<sup>1</sup> The ratio of foreign to total production, sales, investments, assets, profits and manpower, the composition by nationalities of management staffs and stockholders and the number of countries in which investments have been made can serve as quantitative criteria. The qualitative criteria mainly concern the modes of conduct complied with in connection with the internationalisation process and its repercussions on the various spheres of internal and external business policy.<sup>2</sup>

### Inadequate Information

The following analysis is in the main confined to the production, sales and employment abroad and the number of countries in which the firms have invested.<sup>3</sup> The 100 industrial enterprises, which in

1971 recorded the largest sales, were chosen as a starting point.<sup>4</sup> They are listed in Table 1 ranking according to the absolute value of their production abroad in so far as they maintain production facilities abroad — which is the essential attribute of a multinational enterprise — and publish the requisite information.<sup>5</sup> "Production abroad" is here taken to be the total of sales by foreign associates (engaged in production activities) less deliveries to them by their parent companies.

The evidential value of such a compilation is subject to qualification: The data provided for the production abroad do not always cover the same ground. Some firms only release turnover figures for their foreign subsidiaries. These include the deliveries by the parent company for processing and distribution in addition to the subsidiaries' own production and thus indicate a trend towards a higher degree of internationalisation.<sup>6</sup> It may however be assumed that such demarcation differences do not cause major distortions in Table 1.

The total production abroad by the investigated firms in 1971 approximated DM 25 bn. As many — albeit mostly minor — firms have been omitted because of lack of adequate information or relative insignificance, the manufacturing industry taken as a whole certainly reached a figure in excess of DM 25 bn in its production abroad. The total may be estimated at DM 30 bn. About 80 p.c. of this was contributed by the chemical industry (about DM 12 bn), the electrical industry (about

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<sup>1</sup> Department of Industry, Trade and Commerce, Notes on some definitions of the multinational enterprise, Ottawa 1971.

<sup>2</sup> They include, e.g., the place of foreign activities in the whole organisation and their inclusion in the group's internal division of labour, the degree of multinational orientation in regard to such functions as financing, marketing, R & D, etc., and the attitude to national economic policies in the various countries.

<sup>3</sup> A comprehensive analysis of the internationalisation process as it affects German firms is undertaken for the HWWA project on "International Enterprises" of which M. Holthus is in charge. Cf. R. Jungnickel, G. Koopmann, K. Matthies, R. Sutter, Die deutschen multinationalen Unternehmen (The German multinational enterprises) (to be published shortly).

<sup>4</sup> Cf. M. Kruk, Die hundert größten Unternehmen (The hundred largest enterprises), in: Frankfurter Allgemeine Zeitung, No. 209, Sept. 9, 1972.

<sup>5</sup> It may be taken for granted that Table 1 includes all major German investors abroad with few exceptions (such as Oetker, MAN and Boehringer/Ingelheim). In addition, several enterprises have been included which, although not among the hundred largest industrial firms, have substantial interests abroad.

<sup>6</sup> The extent of such distortions may be gauged from the turnover structure of the DEMAG and Bosch associates abroad. The 1969 turnovers of DEMAG's companies abroad were twice as high as its own production. Those of Bosch's were three times as high.

DM 6 bn) and the automobile industry (about DM 6.5 bn).<sup>7</sup>

### Differences in the Degree of Concentration

The figures in Table 1 show that the production abroad of the manufacturing industry of the FRG is to a high degree concentrated in the hands of a few large enterprises. Seven firms accounted for a foreign output in excess of one billion DM each. To the total production abroad of all manufacturing industries they contributed more than 55 p.c. VW, Hoechst, Siemens and Bayer together accounted for DM 12.7 bn, i.e. over 40 p.c. of all production abroad.

The numbers of employees indicate a similarly high measure of concentration: On the basis of the figures for 30 firms in Table 2 the total number of persons employed abroad by the manufacturing industry of the Federal Republic may be estimated at no less than 500,000.<sup>8</sup> The seven largest employers of labour abroad account for about half this figure; all of them, except Daimler-Benz, are employing more than 20,000 persons abroad.

There are quite substantial differences between individual industries as far as the concentration of activities abroad is concerned.

☐ In the automobile industry VW and Daimler-Benz are clearly carrying the main weight. Other commercial vehicle manufacturers such as MAN and KHD probably account for no more than 10 p.c. of the foreign production in this industry.

☐ In the electrical industry Siemens, AEG and Bosch have about 75 p.c. of the total engagement abroad and Siemens alone about half.

☐ A similarly high degree of concentration prevails in the chemical industry; subsidiaries of the three I.G. Farben successors account for nearly two thirds of the total production abroad.

☐ In the textile industry about 100 mostly smaller firms are engaging in activities abroad; almost half their labour force abroad is employed by Triumph Int. and Freudenberg.<sup>9</sup>

☐ In the mechanical engineering industry, according to a VDMA study, 70 p.c. of the capital investment in production plant, and thus in actual production, abroad in 1968 was attributable to 11 big firms employing more than 5,000 persons; 192 production plants abroad were owned by 115 firms in this industry, but their combined sales

did not exceed DM 1.7 bn.<sup>10</sup> The ratio of foreign to total production is thus markedly lower than in the other industries<sup>11</sup> while the foreign activities of the mechanical engineering industry are more widely dispersed.

### Important Position of the Medium-sized Firms

In literature a firm is customarily assumed to have a multinational orientation if foreign activities amount to at least 10 p.c. of the total engagement.<sup>12</sup> As regards production abroad, 31 of the 33 investigated firms satisfy this criterion. As regards employment, 29 of 30 firms are above the threshold. If the threshold is raised to 25 p.c., 12 firms satisfy the criterion in production and 17 in regard to employment. None report a foreign ratio of as much as 50 p.c.

In a list ranking firms according to the relative weight of production or employment abroad many medium-sized enterprises appear in the top group together with big companies like Bayer, Hoechst, Siemens and VW, which have substantial interests abroad. Beside textile firms like Triumph Int. and Freudenberg mention should be made in particular of the pharmaceutical manufacturers, several mechanical engineering firms and the electrical enterprises Grundig, Varta and Osram; they all occupy strong positions in the international market.

### Growing Weight of Foreign Production

If the total of turnover abroad (i.e. production abroad plus exports) is made the yardstick of internationalisation, all firms listed in Table 1 with the exception of Reemtsma are seen to place at least 25 p.c. of their turnover in foreign markets; 11 of them attained ratios of 50 p.c. or more. These figures, though markedly above those indicated for production abroad, do not substantially alter the positions of the firms in the list. The enterprises which record the largest foreign production ratios are as a rule also the largest exporters. An exception is the textile industry which has a low export ratio. Engineering firms with a high export bias, like DEMAG, KHD and Krupp, on the other hand, appear in a more prominent position. The firms listed in Table 1 are still exporting altogether appreciably more than they produce abroad. Over recent years however most of the firms for which data are available have been moving increasingly towards production abroad. This trend is revealed most clearly by

<sup>7</sup> Concerning the computation of the value of production abroad in these industries reference should be made to the HWWA study mentioned.

<sup>8</sup> I.e., about 15 p.c. of the total labour force of manufacturing industry in the Federal Republic.

<sup>9</sup> Concerning the development of the engagement abroad of the textile and clothing industry cf. „Sollen wir im Ausland produzieren?“ (Shall we produce abroad?) in: Textil-Wirtschaft, No. 42, Oct. 15, 1970.

<sup>10</sup> Cf. the VDMA direct investment survey, Frankfurt, completed in March, 1970.

<sup>11</sup> Bayer's production abroad by itself is larger than all sales by mechanical engineering subsidiaries engaged in production abroad in so far as included in the representative VDMA survey.

<sup>12</sup> Cf. J. N. Behrman, Some Patterns in the Rise of the Multinational Enterprise, Chapel Hill 1969, p. 45.

VW, Daimler-Benz and the "big three" of the chemical industry. In every industry there are several medium-sized firms, which are already producing abroad a great deal more than they export (see Table 1).<sup>13</sup>

To qualify for the "multinational" label an enterprise must have production plants in the major markets abroad. Of 30 companies, for which information was obtained, 26 were (in 1971) producing in at least 5 countries; 19 had production facilities in at least 10 countries, and 5 were operating in 25 or more countries. These five were the I.G. Farben successors, Siemens and Daimler-Benz.

It thus emerges that the companies with the largest production abroad (in absolute terms) are also represented in the largest number of coun-

tries; VW is an exception. That production plants in many instances developed from distribution facilities established earlier is a typical feature of the internationalisation process of the investigated companies.

The progressive internationalisation is being reflected in other sectors of business policy, of which only brief mention shall be made here.<sup>14</sup>

□ The large multi-product enterprises in particular have moved from a rather functional to a divisional organisational structure. This makes it easier to integrate their foreign activities with their overall business strategy.

□ A strong international orientation can be observed especially in financing policy. Some of the large enterprises are already obtaining a large part of the financial resources for their

<sup>13</sup> As the first major group to do so Siemens has probably in the meantime reached equality between production abroad and exports.

<sup>14</sup> Cf. the HWWA study referred to for details.

**Table 1**  
**German Enterprises: Foreign Production and Foreign Turnovers in 1971 (1966)**

Enterprise	Business	Foreign Production in mn DM	Foreign Production: Share of World Turnover in p.c.	Position 1971	Foreign Turnover 1971	Foreign Turnover: Share of World Turnover in p.c.	Position
VW	Automobile	4,272	25 (17)	12	12,181	70 (67)	1
Hoechst	Chemical	2,922	23 (12)	13	7,110	56 (46)	7
Siemens	Electrical	2,889	20 (17)	17	5,896	40 (39)	21
Bayer	Chemical	2,617	26 (19)	7	6,650	66 (60)	2
BASF	Chemical	1,684	17 (10)	19	4,787	47 (46)	16
Daimler-Benz	Automobile	1,669	13 ( 8)	23	5,501	43 (43)	19
AEG	Electrical	1,015	10 ( 8)	31	2,969	30 (29)	28
Mannesmann	Steel	814	11 (12)	30	3,314	46 (35)	17
Henkel	Chemical	738	21	15	900	25	31
Bosch	Electrical	666	12 (12)	28	2,240	40 (34)	22
Reemtsma <sup>1</sup>	Tobacco	539	13	24	578	14	33
Metallgesellschaft.	Engineering	400 <sup>2</sup>	9	32	1,500	31	27
Freudenberg <sup>3</sup>	Textile	359	26	8	694	50	11
Kugelfischer	Engineering	352	26	9	747	55	8
Krupp	Engineering	322	5	34	1,980	31	26
Varta	Electrical	290	17	21	500	29	30
Degussa	Chemical	288	12	29	909	39	24
Schering	Chemical	250	21	16	654	54 (68)	9
Osram	Electrical	250	33	4	380	50	12
Grundig	Electrical	250	22	14	527	46	18
Beiersdorf	Chemical	240	36	2	290	43 (35)	20
Triumph-Intern. <sup>4</sup>	Textile	238	38	1	247	40	23
Villeroy & Boch	Ceramic Ind.	223	34	3	392	60	4
KHD	Engineering	217	6 ( 7)	33	1,735	50	10
Merck	Chemical	200	26 (17)	10	380	49 (46)	13
Feldmühle	Paper Ind.	200	20	18	414	34	25
Metzeler	Chemical	200	15 (11)	22	319	24	32
Liebherr	Engineering	188	30 (32)	5	360	58 (50)	6
Klein, Schanzlin & Becker	Engineering	178	29 (20)	6	359	59 (50)	5
Demag	Engineering	172 <sup>5</sup>	13	25	815	60 (45)	3
Schulte & Dieckh.	Textile	160	26	11	300	48	15
Linde	Engineering	132	13	26	501	48	14
Bauknecht	Electrical	105	13	27	242	30	29
		25,039	17		66,371	46	

<sup>1</sup> Cigarettes only. <sup>2</sup> Turnover of foreign parts of the enterprise. <sup>3</sup> 1972. <sup>4</sup> 1969. <sup>5</sup> 1970.

Source: Material out of the company archives of the Hamburg Institute for International Economics. In some cases the data are estimated values. Vacant positions = Data are not available.

activities abroad in foreign capital markets, often by interposing holding companies.

□ The responsibility for research and development is still largely left to the parent companies. The development of new products or their adaptation to local market conditions however is being entrusted more and more to the foreign subsidiaries.

### An International Comparison

A comparison with other countries shows that the German companies are still lagging behind in internationalisation, especially in regard to the ratio of production and employment abroad. Arrears exist in comparison with the American and British firms, which have long been established abroad<sup>15</sup>, but companies in smaller highly-industrialised countries are often also more highly internationalised. In 1969 seven Swedish companies were already obtaining 50 p.c. or

more of their production abroad while no single German firm was anywhere near this range; 17 (compared with 5 German firms) recorded a foreign production ratio of at least 25 p.c.<sup>16</sup>

The German enterprises show up better in an international comparison of the number of countries in which investments have been made<sup>17</sup>. This warrants the conclusion that they are not unfavourably placed for further expansion. Announcements by the major enterprises and a recent study by the IFO Institute<sup>18</sup> reveal that German industry is pursuing far-reaching plans to extend its activities abroad in the near future. The "multinationality gap" compared with firms in other countries has been closing steadily in the course of recent years and is likely to shrink further.

<sup>16</sup> Cf. "Kundens krav tvingar oss att flytta utomlands" (The demands of the customer force us to move abroad), in: Veckans Affärer, Sept. 10, 1970, p. 48.

<sup>17</sup> Cf. UN, *ibid.*, Table 3, pp. 130.

<sup>18</sup> Cf. "Verstärktes Auslandsengagement der Industrie" (Increased engagement of industry abroad), Ifo-Schnelldienst, No. 36, Sept. 5, 1973, pp. 3.

<sup>15</sup> Cf. UN, *Multinational Corporations in World Development*, New York, 1973, Table 3, pp. 130.

**Table 2**  
**German Enterprises: Employees abroad and Countries of Foreign Investments in 1971 (1966)**

Enterprise	Business	Employees total in 1000	Employees abroad total in 1000	Employees abroad in p.c. of total	Position 1971	Countries of Foreign Investment	
						total	with Production
Siemens	Electrical	306.4	72.0	24 (15)	18	more than 25	25
Hoechst	Chemical	142.1	44.7	32	11	more than 25	more than 25
Volkswagen	Automobile	201.3	42.0	21 (17)	22	more than 25	14 <sup>1</sup>
Bayer	Chemical	112.0	26.9 <sup>2)</sup>	24	19	more than 25	more than 25
Bosch	Electrical	115.2	24.9	22 (18)	21	more than 25	16
AEG	Electrical	167.4	20.6	12 ( 9)	28	more than 25	12
Daimler-Benz	Automobile	147.2	19.0	13	26	more than 25	more than 25 <sup>1</sup>
BASF	Chemical	93.3	15.4	17	24	more than 25	more than 25
Triumph-Intern. <sup>3</sup>	Textile	24.7	11.2	45	2	20	more than 10
Freudenberg <sup>4</sup>	Textile	24.4	11.0	45	3	13	more than 10
Mannesmann	Steel	85.2	11.0	13 (10)	27	14	8
Henkel	Chemical	32.9	9.5	29	15	more than 10	more than 10
Kugelfischer	Engineering	24.7	7.7	31	12	20	11
Varta	Electrical	22.0	7.5	34	8	15	15
MAN	Engineering	37.0	7.3	20	23	10	5
Schering	Chemical	16.6	7.0	42	4	more than 25	more than 10
Boehringer (Ingelh.)	Chemical	15.1	7.0	46	1	more than 25	more than 10
Osram	Electrical	22.3	6.8	31	13	15	11
Grundig	Electrical	24.2	6.3	26 (11)	16	9	6
Villeroy & Boch	Ceramic Ind.	17.4	5.9	34	9	6	6
KHD	Engineering	42.7	4.7	11	29	29	4
Krupp	Engineering	80.3	4.1	5	30	14	9
Müller-Wipperfurth	Textile	8.8	3.5	40	6	5	
Demag	Engineering	25.9	3.5	14	25	14 <sup>5</sup>	11 <sup>5</sup>
Beiersdorf	Chemical	9.5	3.5	37	7	10	more than 5
Reemtsma <sup>6</sup>	Tobacco	8.1	3.4	42	5	9	4
Bauknecht	Electrical	12.0	2.7	23	20	5	2
Liebherr	Engineering	7.8	2.6	33 (28)	10	7	5
KSB	Engineering	8.1	2.5	31 (20)	14	22	16
Schulte u. Dieckhoff	Textile	10.0	2.5	25	17	7	2
Total		18,452.0	396.7	21.5			

<sup>1</sup> Fitting included (1.1.1970). <sup>2</sup> 15,400 employees of essential producing companies and about 11,500 employees of foreign sales organisations. <sup>3</sup> Data for 1969. <sup>4</sup> Data for 1972. <sup>5</sup> Data for 1970. <sup>6</sup> Data only for sector "cigarettes".

Source: same as Table 1.