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# Development Aid and Employment in the Federal Republic of Germany

by Dieter Schumacher, Berlin\*

**The discussion on an increase of development aid is overshadowed by uneasiness about job opportunities at home. Against the demands for a sizeable increase of development aid funds it is often argued that such aid draws purchasing power away from the internal market if it is not tied to deliveries by the Federal Republic of Germany. Recent data show however that, since these "ties" were largely abolished in 1973, most funds allocated to development aid have still been flowing back into the Federal Republic in the shape of export orders.**

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The bilateral development aid by the Federal Republic of Germany is on principle not tied to German deliveries. Exceptions are made only in favour of supplies and services in what are known as "sensitive economic sectors" — i. e. at present ships, railway engines and carriages, nuclear power stations, and consulting services<sup>1</sup>. In the average of the years 1976-79 a little less than one-quarter of all bilateral development aid by the Federal Republic was formally tied<sup>2</sup> but as much as about 70 % of the aid funds was nevertheless spent on supplies from German firms. In addition, follow-up exports are triggered off because development aid covers as a rule only part of the cost of a project or because the project is tailored to German systems or specifications or because it improves the political and psychological receptiveness for German products. The German economy also benefits to some extent from bilateral development aid by other donor countries as well as the disbursements of multilateral institutions. Besides, insofar as development aid gives momentum to the development process in the Third World, it generates a demand for additional German exports because of the recipient countries' high import propensity.

A quantification of the resultant impulses for the export trade of the Federal Republic of Germany is subject to certain limitations. The analysis in the present report is for this reason confined to those effects which can be sufficiently precisely attributed to development aid. They include in particular the return flows from bilateral capital aid and (public) technical assistance by the Federal Republic of Germany<sup>3</sup>.

The bulk of the bilateral development aid of the Federal Republic takes the form of *capital aid* (financial cooperation). It is handled by Kreditanstalt für Wiederaufbau (Reconstruction Loan Corporation) and used chiefly to finance individual investment projects. 30 % of all capital aid is provided without project links for imports of current requirements (e. g. raw materials and spare parts). In the average of the years 1976-79 the developing countries spent almost two-thirds of the capital aid, both project-linked and non-project-linked, in the Federal Republic. The mechanical engineering industry was the principal beneficiary. It accounted for more than half of all orders to German firms in connection with project-linked and 40 % with non-project-linked aid. Electrical engineering and vehicle building followed at some distance. These three large capital goods industries together accounted for more than 80 % of the German deliveries. The only other beneficiaries from return flows from project-linked capital aid of any significance were the construction industry and other services (more specifically, engineering and architectural services). A significant part of the return flows from non-project-linked aid (11 %) went to the chemical industry. Barely 5 % of all

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<sup>1</sup> Cf. Rückwirkungen der Entwicklungszusammenarbeit, Untersuchung des Wissenschaftlichen Beirats beim Bundesministerium für wirtschaftliche Zusammenarbeit (Repercussions of development cooperation, a study of the Economic Advisory Council of the Federal Ministry for Economic Cooperation), in: Entwicklungspolitik, Materialien No. 65, published by Bundesministerium für wirtschaftliche Zusammenarbeit, Bonn, April 1980, p. 5.

<sup>2</sup> OECD: Development Co-operation. Efforts and Policies of the Members of the Development Assistance Committee, various years.

<sup>3</sup> The following analysis is based on R. Filip-Köhn, R. Krengel, D. Schumacher: Macro-Economic Effects of Disarmament Policies on Sectoral Production and Employment in the Federal Republic of Germany, with Special Emphasis on Development Policy Issues, Report commissioned by the Foreign Office, mimeo., Berlin 1980, p. 37 ff.

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capital aid-financed deliveries were made by firms in other than the six mentioned industries.

The Federal Government's principal agent for implementation of *technical assistance* (technical cooperation) measures for the transference of technical, economic and organizational know-how is Deutsche Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation).

About 86 % of its disbursements in recent years found their way back into the German economy, chiefly to pay for requisite specialist personnel. Wages and salaries of the Agency's own staff accounted for a good 31 % of the total; a similar amount was spent on services by consultants and experts, mostly in private consultancy firms but some also in public institutions. The rest – of less than 40 % – was spent on material purchases for the projects. The purchases made mainly concerned mechanical engineering products, food and feedstuffs, chemical products, vehicles, precision engineering and optical articles, and metal manufactures – in that order.

### Impact on Production and Employment

With the aid of input-output computations it has been ascertained how far the production and the working population of the Federal Republic of Germany depend on development aid-financed exports. This approach takes into account not only the – direct – effects in the industry carrying out the order but also the – indirect – effects induced by its demand for intermediate goods from other industries<sup>4</sup>.

The model computations for the average return flows per DM 100 mn of German development aid disbursements show that the technical assistance is thanks to its high direct return flow ratio – and despite relatively low indirect effects – the form of aid which has the greatest effect on the internal economy: DM 100 mn of technical assistance generate a total output of DM 130 mn while the total production induced by the same amount of capital aid is DM 10 mn smaller. The technical assistance excels even more by its effect on employment because it concentrates chiefly on the – labour-intensive – services sector: DM 100 mn of technical assistance provide nearly 1,600 man-years of

**Table 1**  
**Supplies in Connection with Bilateral Development Aid of the Federal Republic of Germany 1976-1979**  
- at current prices -

	Total development aid	Capital aid <sup>3</sup>			Technical assistance
		Total	Project-linked	Not project-linked	
Total disbursements (in DM bn)					
1976	2.3	1.9	1.2	0.6	0.4
1977	2.1	1.6	1.2	0.4	0.5
1978	2.6	2.0	1.4	0.6	0.6
1979	3.2	2.6	1.8	0.8	0.6
1976-79	10.1	8.1	5.6	2.4	2.1
Structure of total disbursements 1976-79 by supplier sectors <sup>1</sup> (in %)					
5 - 7 Chemicals etc.	.	3.3	0.4	12.5	.
10 Metal industry	.	3.3	1.3	9.4	.
12 Mechanical engineering	.	42.2	45.3	32.5	.
13 Vehicle building	.	9.0	7.4	14.2	.
14 Electrical engineering	.	13.4	12.9	14.9	.
21-22 Construction	.	20.4	27.0	0.0	.
32 Other services	.	3.4	4.1	0.9	.
Other sectors	.	5.0	1.6	15.5	.
1-34 Total	.	100	100	100	.
Share of German exports in total disbursements <sup>2</sup> 1976-79 (in %)					
5 - 7 Chemicals etc.	.	58.9	51.7	59.6	.
10 Metal industry	.	27.6	24.6	28.9	.
12 Mechanical engineering	.	72.8	71.6	78.2	.
13 Vehicle building	.	89.5	96.4	78.3	.
14 Electrical engineering	.	74.1	70.6	83.4	.
21-22 Construction	.	33.6	33.6	0.0	.
32 Other services	.	74.0	72.1	99.9	.
Other sectors	.	32.1	53.5	25.9	.
1-34 Total	68.7	64.3	64.4	64.0	85.9 <sup>a</sup>
Structure of German exports 1976-79 by supplier sectors <sup>1</sup> (in %)					
5 - 7 Chemicals etc.	3.5	3.2	0.3	11.5	4.0
10 Metal industry	1.0	1.5	0.6	4.3	0.0
12 Mechanical engineering	37.5	50.9	54.7	39.8	7.8
13 Vehicle building	10.5	13.5	12.1	17.4	3.7
14 Electrical engineering	11.8	16.0	14.8	19.5	2.4
21-22 Construction	6.5	8.3	11.2	0.0	2.5
32 Other services	20.1	4.1	5.0	1.4	56.0
Other sectors	9.1	2.6	1.3	6.3	23.7
1-34 Total	100	100	100	100	100

<sup>1</sup>As far as classifiable by supplier sectors. - <sup>2</sup>As far as classifiable by supplier countries. - <sup>3</sup>Details may not add to Total due to rounding. - <sup>a</sup>1976-1978.

Sources: DIW calculations based on figures from the Reconstruction Loan Corporation, the German Agency for Technical Co-operation and the Federal Ministry for Economic Co-operation.

work; the comparable figure for capital aid is 1,200 man-years.

In 1976 disbursements of DM 2.3 bn on capital aid and (public) technical assistance together led directly to orders totalling about DM 1.6 bn for German firms. These in turn required a production of intermediate inputs in excess of DM 1.3 bn. The total gross output value thus approximated DM 3 bn, which was equivalent to one year's work for over 29,000 people.

<sup>4</sup> The calculations are based on the DIW input-output table for 1976, subdivided into 34 production sectors, and sectoral labour-output ratios for the same year. The cost patterns indicated by these figures are thought to reflect also the situation in later years. Linear-limitational production functions are assumed to apply. The deliveries by German firms have been deflated to the 1976 price level with the aid of sectoral price indices for exports and gross production. The wages and salaries and the staff of the German Agency for Technical Cooperation have been included in the direct production and employment effect in the "other services" sector.

**Table 2**  
**Production and Employment Generated by Exports**  
**in Connection with Bilateral Development Aid**  
**1976-1979<sup>1</sup>**

	Total develop- ment aid	Capital aid <sup>3</sup>			Techni- cal assis- tance
		Total	Project- linked	Not project- linked	
<b>Effects per 100 million disbursed<sup>2</sup></b>					
Production effect (in DM mn)					
Direct	69	64	64	64	86
Indirect	54	58	59	57	46
Total	123	122	123	121	132
Employment effect (in 1000 persons)					
Direct	0.70	0.61	0.63	0.57	1.05
Indirect	0.55	0.56	0.56	0.55	0.52
Total	1.25	1.17	1.19	1.12	1.57
of which in %:					
1 Ag., for. & fishing	2.6	1.5	1.5	1.7	5.9
2 El., gas & water	0.6	0.7	0.6	0.8	0.4
3 - 4 Mining	0.6	0.7	0.6	1.0	0.4
5 Chemicals	2.5	2.6	1.4	5.6	2.3
6 Oil industry	0.1	0.1	0.1	0.1	0.1
7 Plastics & rubber	1.5	1.8	1.7	2.0	0.8
8 Stone, sand & clay	0.7	0.9	0.9	0.7	0.4
9 Fine ceramics & glass	0.4	0.5	0.4	0.5	0.3
10 Metal industry	5.1	6.3	5.6	7.8	1.5
11 Constr. steel, EDP	1.5	1.8	2.0	1.3	0.7
12 Mechanical engineering	25.5	32.3	35.0	25.7	5.7
13 Vehicle building	6.7	8.1	7.0	10.7	2.6
14 Electrical engineering	11.9	15.0	13.9	17.4	2.9
15 Prec. eng., optics,met.prods.	2.3	2.0	1.1	4.0	3.2
16 Timber, paper, printing	2.2	2.2	2.1	2.4	2.2
17-18 Textiles, leather & clothing	0.4	0.5	0.5	0.7	0.3
19-20 Food & drink, tobacco	1.7	0.8	0.8	0.9	4.5
5-20 Manufacturing	62.5	74.9	72.5	79.8	27.5
21-22 Construction	4.7	5.4	7.7	0.2	2.0
23 Wholesale trade	3.3	3.7	3.6	3.9	2.0
24 Retail trade	0.5	0.4	0.4	0.4	0.5
25-27 Transport	2.7	2.2	2.2	2.3	3.9
28 Communications	1.0	1.0	1.0	1.0	0.8
29-30 Banking & insurance	0.9	0.9	0.9	0.9	1.0
31 Residential letting	0.0	0.0	0.0	0.0	0.0
32 Other services	17.1	7.9	8.2	7.0	43.8
33 Public sector	3.5	0.8	0.8	0.8	11.4
34 Priv. househ., non-prof. orgs.	0.2	0.0	0.0	0.0	0.7
<b>Effects of total payments</b>					
Production effect (in DM bn)					
1976	3.0	2.4	1.6	0.7	0.6
1977	2.5	1.9	1.3	0.6	0.6
1978	3.0	2.2	1.5	0.7	0.7
1979	3.6	2.8	2.0	0.8	0.7
Employment effect (in 1000 persons)					
1976	29.2	22.3	15.8	6.6	6.9
1977	24.8	17.8	12.8	5.0	7.0
1978	29.2	21.2	14.8	6.4	8.1
1979	35.4	27.0	19.3	7.8	8.4

<sup>1</sup>At 1976 prices and productivities. - <sup>2</sup>On the basis of the average supply structure for 1976-79. - <sup>3</sup>Details may not add to Total due to rounding.  
Source: DIW calculations.

Due to the increase in development aid, its employment effect in 1979 was still higher, even if — otherwise than in Table 2 — allowing for the increase of productivity compared with 1976.

The effects showed themselves most clearly in mechanical engineering, other services, electrical engineering, vehicle building, metal production and processing. Two-thirds of the entire production and employment effects of development aid accrued in these five sectors<sup>5</sup>. Development aid-induced orders account however — on the basis of the 1979 disbursements — in all sectors for less than 1 % of production and employment. The mechanical engineering industry (0.8 %) and vehicle building (0.4 %) recorded the highest relative figures. The development aid would have to be raised by 25 % to lift the share of aid-induced orders in mechanical engineering production and employment (under otherwise unchanged conditions) to about 1 %.

If the German development aid is stepped up in 1981 as planned — by about 10 % — it will increase in real terms by 5 %, i. e. the same rate as in 1980. This is significantly less than in the preceding years, so that — if productivity increases as expected — its effect on employment is unlikely to be greater than in 1979.

#### Effects of Total Development Aid

Additional to the orders deriving from the capital aid and public technical assistance by the Federal Republic of Germany, a demand for German goods and services is created by

- ☐ German non-public technical assistance,
- ☐ disbursements by multilateral aid agencies (especially the World Bank group),
- ☐ untied bilateral development aid by other donor countries.

If an estimate of this demand<sup>6</sup> is added to the return flows analysed so far (estimated at DM 2.2 bn for 1979), the total of the orders to German firms rises to quite a different level, namely to about DM 6.2 bn, with nearly DM 2 bn of return flows from multilateral sources as its largest component. One-tenth of all exports from the Federal Republic of Germany to developing countries (incl. the OPEC states) in 1979 thus appears to have been financed by development aid.

<sup>5</sup> Compared with the effects of the total exports of the Federal Republic of Germany to the Third World, the production and employment effects of the development aid-financed demand are concentrated to a larger extent on the mechanical and electrical engineering industries, the construction industry and the other services; the chemical and vehicle industries are not involved to the same extent. Cf. R. F i l i p - K ö h n , R. K r e n g e l , D. S c h u m a c h e r , op. cit., p. 43 ff.

The aid allocations which were not used for placing direct orders with German firms – all in all, the developing countries received in 1979 over DM 51 bn in bilateral aid and from multilateral sources – went to other countries where they generated an indirect demand for German goods. The German exports induced in this way may be estimated at amounting to another DM 900 mn<sup>7</sup>.

For 1979 the total demand for German goods and services generated by development aid may be put at about DM 7.1 bn. This corresponds to a gross production value of DM 13-14 bn and over 100,000 jobs.

### Summary

The employment effect deriving from orders directly financed by bilateral German development aid – over 1,200 jobs for DM 100 mn of disbursements – is indeed smaller than that from an equal outlay for internal purposes – investments or private or public consumption<sup>8</sup>. But the mentioned figure does not allow for the – not easily quantifiable – indirect repercussions over time of the goodwill effect of such aid and the extra purchasing power accruing to the developing countries on the German export trade. Bearing in mind further that decisions concerning the

size of the German development aid may arouse a response from other donors, the actual effect on employment is to be put much higher than the figure of 1,200 jobs suggests.

It may be assumed that every D-Mark spent on development aid will be returned to the German economy in full – in part directly and immediately and in part with some delay in a roundabout way<sup>9</sup>. More development aid instead of other spending does not mean less production inside the Federal Republic but more production for others.

It emerges from the model computations that the effect on the German labour market of any change in the overall level of development aid by the western industrialized countries is of the order of 1,000 jobs for 1 % of increase or decrease. The drastic cutback of American foreign aid currently under discussion in the USA would therefore have an effect also on employment in the Federal Republic of Germany.

Employment aspects should not however be the principal consideration in a discussion of development aid. The essential motives for development aid are humanitarian, moral and political. The positive repercussions of exports on the employment situation in the donor country are a side-effect. They may however make a decision to increase the aid allocations easier<sup>10</sup>.

<sup>6</sup> The public technical assistance ratios were used for the orders deriving from non-public technical assistance. The orders financed by multilateral sources were estimated at 14 % of the World Bank group disbursements and 10 % of those by other multilateral donors (cf. G. Ashoff, D. Weiss: Binnenwirtschaftliche Wirkungen der deutschen Entwicklungspolitik (Internal economic effects of the German development policy), Berlin 1978, Appendix, p. 5). The orders resulting from bilateral development aid by other donor countries were estimated at 12 % of their untied disbursements, i. e. in line with the share of the Federal Republic of Germany in the total exports of the western industrialized countries to non-European developing countries (excl. OPEC).

<sup>7</sup> On the assumption that they amount to 2 % of the development aid-financed orders going to others than German firms, which corresponds to the ratio of exports of the Federal Republic to the western industrialized and the developing countries to the national product of these two groups of countries.

<sup>8</sup> To go by the findings of the DIW in its structural reports the comparable employment effects of DM 100 mn of disbursements were in 1976: for investments nearly 1,800 jobs, for private consumption over 1,600 jobs and for public consumption almost 2,300 jobs. Cf. DIW: Struktureller Wandel und seine Folgen für die Beschäftigung – Zwischenbericht zur Strukturberichterstattung (Structural change and its consequences for employment – interim report), mimeo., Berlin 1979, p. 33 and 113.

<sup>9</sup> The board of Experts for Assessment of Overall Economic Trends came to the same conclusion in its report on the general economic development: Herausforderung von Außen (Challenge from outside), annual statement 1979/80, Stuttgart/Mainz 1979, p. 191.

<sup>10</sup> Cf. also S. Schultz, D. Schumacher: Aufstockung der öffentlichen Entwicklungshilfe nützt Entwicklungs- und Industrieländern (Stepping-up the public development aid is of benefit to developing and industrialized countries), in: Wochenbericht des DIW, No. 20/1979.

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