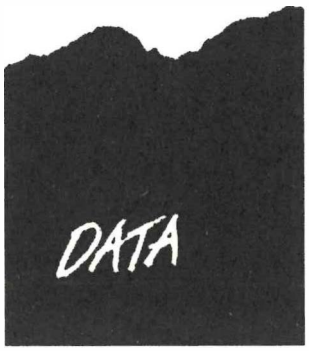

Basic facts on the bauxite, alumina and aluminium industries

By Andreas Tegen and John Dryden

The charts on the following pages show the geographical distribution of and corporate concentration in the bauxite/aluminium industry. The charts reflect the dominance of transnational corporations in the industry and the position of the »Third World» as a raw material supplier to the processing industries in the industrialized capitalist countries.

Geographically, the "third world" accounts for almost half of the world production of *bauxite*, but the share is decreasing. The largest producers are Australia, Guinea and Jamaica, which together account for more than half of the world production. Jamaica and Surinam have gradually been losing their position as major producers, while production has increased rapidly in Australia, Guinea and Brazil.

A large proportion of the bauxite is shipped to *alumina* refineries in the industralized capitalist countries, which account for almost two thirds of world alumina output. The largest producers are Australia and the US, with about 40 per cent of world output together. The European and especially the Australian share of production has increased, while North American, Japanese and Latin American production has decreased.

The dominance of the industrialized countries is even more accentuated on the *aluminium* smelting level – more than two thirds of world aluminium is produced in this region. USA is the leading producer. The »Third World» share of aluminium production is increasing, notably in Brazil, Venezuela and the Middle East.

The socialist countries' share of world production of bauxite, alumina and aluminium is about 15 to 20 per cent and has been about constant.

Aluminium *consumption* is not reflected in the charts. The "third world" share is very small, but increased from 5.5 to 8.7 per cent between 1971 and 1981.

Transnational corporations control the main part of the bauxite/aluminium industry. In the post-war period the fully integrated »Big six» have had a tight grip on the industry. Nationalizations and the forming of IBA (International Bauxite Association) have meant falling market shares for the "Big six", but their leading position is still unchallenged.

The transnationals have countered the attempts of the "third world" countries to benefit from their resources by spreading investments, and by investing in 'safe' countries, like Australia. The chart below shows how ALCOA - the world's largest aluminium corporation - has changed its bauxite supply system.

	Per cent of total ALCOA supply	
	1968	1982
Australia	3.0	29.7
Guinea	0.2	26.6
Suriname	53.8	22.0
Jamaica	17.0	8.0
USA	10.0	6.5
Dominican Rep.	16.0	1.5
Brazil	-	5.7
	100.0	100.0

Source: ALCOA Annual Report 1982

The "Big six" have been losing market shares mainly due to the growth of transnational corporations outside the »Big six». One example is the multi-mineral producing Rio Tinto-Zinc through its majority holding in Australian CRA Ltd. Japanese and German corporations are also agressively trying to integrate backwards.

One of the »Big six», the French-based Pechiney Ugine Kuhlmann, was nationalized by the French government in 1982. However, so far this has not changed the corporation's policy.

One comment should be made to the chart showing the capacity shares of the »Big six» and 12 other big private corporations. The figures are based on ownership shares in mines, refineries and smelters. This most likely gives an underestimated picture of these corporations' *control* of the industry. Not visible in the chart is the influence through management (of i e minority owned mines) and technical know-how, financing of new or expanded projects and marketing. Corporate control of the industry becomes even more apparent if we examine interlocking directorates with banks and other forms of personal links.

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Table 1
Geographical distribution (per cent) of world bauxite, alumina and aluminium production 1971, 1976 and 1981

		Bauxite			Alumina			Aluminium		
		1971	1976	1981	1971	1976	1981	1971	1976	1981
Industrialized capitalist countries		**34.4**	**41.1**	**40.0**	**62.4**	**65.4**	**65.4**	**73.6**	**70.4**	**68.2**
Africa	South Africa	-	-	-	-	-	-	0.3	0.6	0.5
Asia	Japan	-	-	-	7.0	5.1	4.8	8.1	7.0	4.9
Europe	Total	12.3	8.6	9.4	12.4	15.0	17.8	21.2	25.7	23.7
	Austria	-	-	-	-	-	-	-	0.7	0.6
	France	4.8	2.9	2.1	4.6	3.7	3.6	3.5	2.9	2.8
	F R G	-	-	-	3.7	4.8	4.9	3.9	5.3	4.6
	Greece	4.3	3.2	3.6	2.0	1.7	1.5	1.1	1.0	0.9
	Iceland	-	-	-	-	-	-	0.4	0.5	0.5
	Italy	0.3	-	-	1.2	2.9	2.3	1.2	1.6	1.7
	Netherlands	-	-	-	-	-	-	1.1	1.9	1.7
	Norway	-	-	-	-	-	-	4.9	4.7	4.1
	Spain	-	-	-	-	-	2.1	1.2	1.6	2.5
	Sweden	-	-	-	-	-	-	0.7	0.6	0.5
	Switzerland	-	-	-	-	-	-	0.9	0.6	0.5
	United Kingdom	-	-	-	0.6	0.4	0.3	1.1	2.6	2.2
	Yugoslavia	3.0	2.6	3.7	0.5	1.6	3.1	0.4	1.5	1.1
North America	Total	3.0	2.5	1.7	31.1	22.8	21.9	41.8	34.3	35.7
	Canada	-	-	-	5.0	1.8	3.6	9.2	4.8	7.1
	U S A	3.0	2.5	1.7	26.1	21.0	18.3	32.6	29.5	28.6
Oceania	Total	19.1	30.0	28.9	11.9	22.5	20.9	2.2	2.8	3.4
	Australia	19.1	30.0	28.9	11.9	22.5	20.9	2.0	1.8	2.4
	New Zealand	-	-	-	-	-	-	0.2	1.0	1.0
»Third world»		**49.8**	**44.7**	**46.6**	**20.6**	**16.6**	**17.0**	**5.2**	**7.7**	**11.2**
Africa	Total	5.3	15.2	15.5	2.9	2.0	2.0	1.4	2.0	2.5
	Cameroon	-	-	-	-	-	-	0.5	0.4	0.4
	Egypt	-	-	-	-	-	-	-	0.5	0.9
	Ghana	0.5	0.3	0.3	-	-	-	1.0	1.1	1.2
	Guinea	3.9	14.1	14.5	2.9	2.0	2.0	-	-	-
	Sierra Leone	0.9	0.8	0.7	-	-	-	-	-	-

Table 1 continued

		Bauxite			Alumina			Aluminium		
		1971	1976	1981	1971	1976	1981	1971	1976	1981
»Third world» continued										
Asia	Total	5.8	4.4	4.9	1.8	2.3	1.8	2.1	3.3	3.6
	Bahrain	-	-	-	-	-	-	0.1	0.9	0.9
	Dubai	-	-	-	-	-	-	-	-	0.7
	India	2.3	1.8	2.2	1.6	1.6	1.4	1.6	1.6	1.4
	Indonesia	1.8	1.2	1.4	-	-	-	-	-	-
	Malaysia	1.5	0.8	0.8	-	-	-	-	-	-
	Rep. of Korea	-	-	-	-	-	-	0.2	0.1	0.1
	Taiwan	-	-	-	-	-	-	0.2	0.2	0.2
	Turkey	0.2	0.6	0.6	-	0.5	0.4	-	-	0.3
Latin America	Total	38.7	25.1	26.2	15.9	12.3	13.2	1.7	2.4	5.1
	Argentine	-	-	-	-	-	-	-	0.3	0.9
	Brazil	0.8	1.2	5.3	0.7	1.1	1.5	0.7	1.1	1.6
	Dominican Rep.	1.5	0.6	0.5	-	-	-	-	-	-
	Guyana	6.3	3.9	2.2	1.4	1.0	0.6	-	-	-
	Haiti	1.1	0.9	0.6	-	-	-	-	-	-
	Jamaica	18.8	12.8	13.1	8.2	6.0	7.4	-	-	-
	Mexico	-	-	-	-	-	-	0.3	0.3	0.3
	Suriname	10.2	5.7	4.5	5.6	4.2	3.7	0.5	0.3	0.3
	Venezuela	-	-	-	-	-	-	0.2	0.4	2.0
Socialist countries		**15.8**	**14.1**	**13.3**	**16.9**	**18.0**	**17.6**	**21.1**	**21.9**	**20.6**
	China	0.8	1.1	2.0	1.3	1.3	2.1	1.3	1.4	2.2
	Hungary	3.2	3.6	3.3	2.0	2.7	2.4	0.7	0.5	0.5
	Soviet Union	10.5	8.3	7.3	12.1	12.1	11.2	16.5	16.8	15.3
	Romania	1.3	1.1	0.8	1.0	1.4	1.5	1.1	1.6	1.5
	Others	-	-	-	0.5	0.3	0.4	1.6	1.6	1.1
Total		**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
World total production (Mt)		**66 795**	**80 391**	**88 264**	**22 776**	**27 692**	**33 862**	**10 936**	**13 089**	**15 696**

Sources: Annuaire Minemet, Edition 1982, Groupe Imetal, Paris 1981, Mining Annual Review 1982, Transnational Corporations in the Bauxite/Aluminum Industries, ST/CTC/20, UNCTC, New York, 1981: Trade sources.

Table 2
Corporate shares (per cent) of world bauxite, alumina and aluminium capacity in 1982

Company	Bauxite Producer (ownership %)		%	Alumina Producer (ownership %)		%	Aluminium Producer (ownership %)		%
ALCOA	**Total**		**14.8**	**Total**		**17.7**	**Total**		**10.6**
	Alcoa of Australia (51)	Australia	6.5	ALCOA (100)	USA	6.8	ALCOA (100)	USA	9.1
	ALCOA (100)	USA	0.8	Alcoa of Australia (51)	Australia	5.4	Lista og Mosjøen (45)	Norway	0.5
							Alcoa of Australia (51)	Australia	0.3
	Suralco (100)	Suriname	4.3	Suralco (100)	Suriname	3.7			
	Guinea Bauxite (14)	Guinea	1.2	Jamalco (94)	Jamaica	1.4	Suralco (100)	Suriname	0.4
	Jamalco (94)	Jamaica	1.1	Alcoa Aluminio (76)	Brazil	0.3	Alcoa Aluminio (76)	Brazil	0.3
	Alcoa Exploration (100)	Dominican Republic	0.6				Aluminio S A de CV (44)	Mexico	0.1
	Alcoa Aluminio (76)	Brazil	0.3						
ALCAN	**Total**		**5.6**	**Total**		**10.0**	**Total**		**9.9**
	S A des Bauxites et Alumines de Provence (100)	France	0.4	ALCAN (100)	Canada	3.5	ALCAN (100)	Canada	5.3
				Queensland Alumina (21)	Australia	1.4	ALCAN, British Aluminium (100)	U K	1.5
	Jamalcan (93)	Jamaica	2.4	Nippon Light Metals (50)	Japan	1.2	Nippon Light Metals (50)	Japan	1.0
	Guinea Bauxite (14)	Guinea	1.2	British Aluminium (100)	U K	0.3	Alcan Australia (70)	Australia	0.4
	Mineracao Rio do Norte (24)	Brazil	0.7				ALCAN (100)	FRG	0.3
	Pocos de Caldas (100)	Brazil	0.6	Jamalcan (93)	Jamaica	2.9	Endasa (43)	Spain	0.3
	Indian Aluminium (51)	India	0.3	Indian Aluminium (51)	India	0.4	Al Espanol (14)	Spain	0.2
	Friguia (5)	Guinea	0.1	Alcan Alum. do Brasil(100)	Brazil	0.3	Alugasa (4)	Spain	
							Vlissingen Pechiney (3)	Netherl.	
							Alusaf (1)	South Africa	0.1
							Alcan Alum. do Brasil(100)	Brazil	0.7
							Indian Aluminium (51)	India	0.4
Reynolds	**Total**		**4.4**	**Total**		**7.6**	**Total**		**6.6**
	Reynolds (100)	USA	0.9	Reynolds (100)	USA	5.6	Reynolds (100)	USA	5.1
				Aluminium Oxid Stade(50)	FRG	0.8	Reynolds (100)	Canada	0.9
	Jamaica Reynolds Bauxite(49)	Jamaica	1.4				HAW (33)	FRG	0.2
	Alumina Partners of Jamaica (36.5)	Jamaica	1.1	Alumina Partners of Jamaica (36.5)	Jamaica	1.2	Aluminio del Caroni (28)	Venezuela	0.3
	Reynolds Haitian Mines (100)	Haiti	0.9				Volta Aluminium (10)	Ghana	0.1
	Mineracao Rio do Norte (5)	Brazil	0.2				Iranian Aluminium (5)	Iran	0.0
Kaiser	**Total**		**3.2**	**Total**		**7.8**	**Total**		**6.0**
				Kaiser (100)	USA	4.6	Kaiser (100)	USA	4.0
	Kaiser Bauxite (49)	Jamaica	2.0	Queensland Alumina (28)	Australia	1.9	Anglesey Aluminium (67)	U K	0.4
	Alumina Partners of Jamaica (36.5)	Jamaica	1.1	Alumina Partners of Jamaica (36.5)	Jamaica	1.2	Kaiser Aluminium Europe (100)	FRG	0.2
	Hindustan Aluminium (27)	India	0.1	Hindustan Aluminium (27)	India	0.1	Volta Aluminium (90)	Ghana	1.2
							Hindustan Aluminium (27)	India	0.2
							Aluminium Bahrain (17)	Bahrain	0.1
PUK	**Total**		**2.4**	**Total**		**6.0**	**Total**		**6.1**
(nationalized in 1982)	Aluminium Pechiney (100)	France	1.3	Aluminium Pechiney (100)	France	3.7	Aluminium Pechiney (100)	France	2.8
	Bauxites Helleniques de Distomon (53)	Greece	0.2	Queensland Alumina (20)	Australia	1.3	Vlissingen Pechiney (85)	Netherl.	0.8
				Aluminium de Grece (73)	Greece	1.0	Intalco (50)	USA	0.7
							Aluminium de Grece (73)	Greece	0.6
	Friguia (18)	Guinea	0.5				Eastalco (50)	USA	0.5
	Guinea Bauxite (5)	Guinea	0.4				Alugasa (66)	Spain	0.4
							Al Espanol (11)	Spain	0.1
							Cie Camerounaise de l'Aluminium (60)	Cameroon	0.2
							Alum. of Korea (50)	Rep. of Korea	0.1

Table 2 continued

Company	Bauxite Producer (ownership %)		%	Alumina Producer (ownership %)		%	Aluminium Producer (ownership %)		%
Alusuisse	**Total**		**3.1**	**Total**		**2.8**	**Total**		**4.1**
	Nabalco (40)	Australia	1.9	Nabalco (40)	Australia	1.1	Leichtmetal (98)	FRG	0.8
	Alusuisse France (100)	France	0.4	Martinswerk (99)	FRG	1.0	Ormet (53)	USA	0.7
				Ormet (53)	USA	0.8	Conalco (80)	USA	0.6
	Sierra Leone Ore & Metal (100)	Sierra Leone	0.7				Alusuisse (100)	Switzerl.	0.5
	Friguia (5)	Guinea	0.1	Friguia (5)	Guinea	0.1	Isal (100)	Iceland	0.5
							Aluminium- Hutte Rheinfelden (100)	FRG	0.4
							Sør-Norge Aluminium (75)	Norway	0.3
							Aluminium Veneto (50)	Italy	0.2
							Alusaf (22)	S. Africa	0.1
							SAG (100)	Austria	0.1
Total, »Big six»			**33.5**			**51.9**			**43.3**
Amax							**Total**		**1.2**
							Intalco (50)	USA	0.7
							Eastalco (50)	USA	0.5
Anaconda	Alum. Partners of Jam. (27)	Jamaica	**0.8**	Alum. Partners of Jam. (27)	Jamaica	**0.9**	Anaconda (100)	USA	**1.9**
Martin Marietta	Guinea Bauxite (7)	Guinea	**0.6**	Martin Marietta (100)	USA	**1.4**	Martin Marietta (100)	USA	**1.0**
Noranda	Friguia (19)	Guinea	**0.5**	Friguia (19)	Guinea	**0.4**	Noranda (100)	USA	**0.8**
Rio Tinto-Zinc	Comalco (70)	Australia	**6.4**	**Total**		**2.5**	**Total**		**1.7**
				Queensland Alumina (21)	Australia	1.4	Showa Aluminium (50)	Japan	0.7
				Showa Aluminium (50)	Japan	0.8	Comalco (70)	Australia	0.5
				Euroallumina (13)	Italy	0.3	N. Z. Alum. Smelters (48)	New Zeal.	0.3
							Anglesey Aluminium (33)	U K	0.2
Billiton	**Total**		**3.3**						
	N V Billiton Mij Surin. (100)	Suriname	2.8						
	Guinea Bauxite (3)	Guinea	0.3						
	Mineracao Rio do Norte (5)	Brazil	0.2						
Western Mining	Alcoa of Australia (33)	Australia	**4.2**	Alcoa of Australia (33)	Australia	**2.8**	Alcoa of Australia (33)	Australia	**0.2**
CVRD	Mineracao Rio do Norte (5)	Brazil	**1.5**						
Sumitomo				Sumitomo (100)	Japan	**2.1**	**Total**		**2.6**
							Sumitomo (100)	Japan	2.4
							N. Z. Alum. Smelters (20)	New Zeal.	0.2
Mitsubishi							Mitsubishi Kasei (90)	Japan	**1.8**
Showa Denko				Showa Aluminium (50)	Japan	**0.8**	**Total**		**0.8**
							Showa Aluminium (50)	Japan	0.7
							N. Z. Alum. Smelters (13)	New Zeal.	0.1
Mitsui							Mitsui (100)	Japan	**0.7**
Total, other big private corporations			**17.0**			**10.9**			**12.7**
Total, »Big six» and other big private corporations			**50.5**			**62.8**			**56.0**
World total capacity (Mt)			**105.5**			**35.9**			**17.2**

Sources: Same as for Table 1