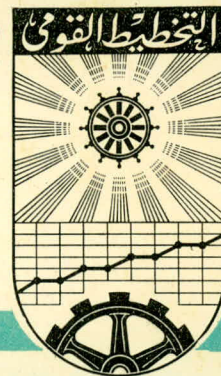


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UNITED ARAB REPUBLIC

THE INSTITUTE OF NATIONAL PLANNING



Memo. No. 473

COSTS ASPECTS OF EDUCATION
BACKGROUND NOTE

ORDERS OF MAGNITUDE

by

Klaus BAHR

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Lecture 8.2: Costs Aspects of Education

Background Note on Part I

Orders of Magnitude

by

Klaus BAHR

Part II of Background Note
(Part I is on concepts')

1. Statistical information on cost aspects of education in African countries is in general extremely scanty and the sources of information are widely scattered. Given this situation it is not possible to provide consistent data on which a cost analysis could rely. This gap can only be filled by research. In view of (a) the importance of cost analysis and cost assessments for educational planning, and (b) the overall, aggregate, largely hypothetical data available in national forecasts and international studies (including the Addis-Ababa-Plan), need for research in cost aspects of education and need for provision of basic facts and figures is obvious. This contrasts with the neglect of cost problems on the part of educational administrations in most African countries. A minimum of statistical information can be obtained at very low costs. Lack of money cannot be made the excuse for further neglect of this field.
2. The only somewhat detailed study undertaken so far covers French speaking African countries (see item (14.) of Reference list).
3. In spite of this overall data may yield useful information. Orders of magnitude help to see the implications for educational planning of the general issues set out in part I of this background note. - A passage on the relative burden educational expenditure put on developing countries complements this.
4. The aggregate data contained in the Tables must be interpreted with great care, i.e. their margin of error is very great and uncritical comparisons are bound to be misleading. The reason why this is so need hardly be repeated: differences (sometimes fundamental) in definitions, evaluation methods, coverage, reference period, sources of information, etc..

TABLE 1

EXPENDITURE ON EDUCATION AS PERCENTAGE OF NATIONAL
INCOME IN 27 COUNTRIES AROUND 1950 AND AROUND
1960 a)

Country	1950	1960	Increase 1960/1950 in %
Honduras	0.60	2.20 (1958)	207
Finland	2.57	6.61	157
Brazil	1.26	2.70 (1959)	114
Ecuador	1.27	2.45	93
France	1.90	3.50	84
Canada	3.21	5.87	83
Netherlands	3.34	5.85 (1959)	75
Belgium	3.35	5.83	74
Argentina	1.80 (1948)	3.10	72
Italy	3.03	5.19	71
Denmark	2.65	4.50 (1959)	70
Australia	2.06	3.49	69
Colombia	1.21	2.02 (1959)	67
Portugal	1.35 (1952)	2.21	64
Norway	3.37	5.48 (1959)	63
New Zealand	2.40	3.81	59
Sweden	3.20	5.02	57
India	1.20	1.85 (1959)	54
Puerto Rico	4.80 (1948)	7.40	54
United States	4.04	6.19	53
Ceylon	2.96	4.39 (1959)	48
Ireland	2.62	3.41	30
Chile	1.89	2.37 (1959)	25
United Kingdom	3.65	4.41 (1959)	21
Federal Republic of Germany	3.21	3.79	18
Panama	3.50	4.00	14
Japan	4.78	5.34	12

a) The definitions of expenditure used for the two years under comparison may, in some cases, have changed considerably.

Source : Unpublished, subject to revision recent research findings by Prof. Friedrich Edding from the Max-Planck-Institute for Education Research, Berlin (West). They were presented at the International Economic Association's Conference on Economics of Education, held in September 1963 in France.

TABLE 2

EXPENDITURE ON EDUCATION PER INHABITANT AND IN
RELATION TO NATIONAL INCOME IN 23 COUNTRIES
AROUND 1960 - U.S. \$ -

Country	National Income per Capita		Educational Expenditure per Capita		Educational Expenditure as percentage of National Income	
United States	(1)	2237	(1)	138.43	(2)	6.19
Canada	(2)	1528	(2)	89.65	(3)	5.87
Sweden	(3)	1470	(3)	73.74	(9)	5.02
New Zealand	(4)	1301	(7)	49.55	(13)	3.81
Australia	(5)	1187	(11)	41.41	(16)	3.49
United Kingdom	(6)	1036	(8)	45.64	(11)	4.41
Federal Republic of Germany	(7)	985	(12)	37.37	(14)	3.79
Belgium	(8)	981	(4)	57.20	(5)	5.83
Denmark	(9)	979	(9)	44.03	(10)	4.50
France	(10)	968	(13)	33.87	(15)	3.50
Norway	(11)	909	(6)	49.78	(6)	5.48
Finland	(12)	806	(5)	53.32	(1)	6.61
Netherlands	(13)	735	(10)	43.04	(4)	5.85
Ireland	(14)	528	(16)	18.00	(17)	3.41
Italy	(15)	510	(14)	26.56	(8)	5.19
Japan	(16)	342	(15)	18.28	(7)	5.34
Portugal	(17)	234	(18)	5.17	(20)	2.21
Colombia	(18)	216	(20)	4.36	(22)	2.02
Ecuador	(19)	179	(19)	4.38	(19)	2.45
Honduras	(20)	167	(21)	3.66	(21)	2.20
Ceylon	(21)	122	(17)	5.37	(12)	4.39
Brazil	(22)	107	(22)	2.90	(18)	2.70
India	(23)	64	(23)	1.18	(23)	1.85
U.S.S.R. a)		800		56.00		7.0

a) This is a "guestimate" giving the absolute amounts in the real purchasing power of the U.S. \$.

N.B. Figures in brackets indicate the ranking order on the basis of column 1 (National Income per Capita)

Source : See Table 1

TABLE 3

EXPENDITURE ON EDUCATION BY PURPOSE AROUND 1959

- Percentages -

Country	Year	Total	Total Recur- ring	thereof		Capital
				thereof		
				Instruct.	Other	
Africa						
Basutoland	1958	100	89.3	72.7	16.6	10.7
Tanganyika	1959	100	88.6	63.5	25.1	11.4
Réunion	1959	100	87.2	81.1	6.2	12.8
Bechuanaland	1960	100	83.8	60.7	23.1	16.2
Niger	1961	100	82.8	58.1	24.7	17.2
Rhodesia and Nyasaland	1959	100	81.2	41.9	39.3	18.8
Upper Volta	1960	100	74.6	53.0	21.6	25.4
Guinea	1960	100	65.6	63.9	1.7	34.4
Cameroun	1959	100	62.8	52.5	10.3	37.2
America						
Haiti	1958	100	99.6	79.4	20.2	0.4
Colombia	1959	100	98.4	46.7	51.7	1.6
Puerto Rico	1957	100	95.3	47.2	48.1	4.7
Panama	1959	100	94.9	73.5	21.4	5.1
West Indies	1959	100	94.2	78.4	15.8	5.8
Argentina	1959	100	93.8	73.6	20.2	6.2
Chile	1959	100	89.8	64.3	25.5	10.2
Cuba	1961	100	88.1	73.2	14.9	11.9
Martinique	1959	100	84.7	82.4	2.3	15.3
Asia						
Iran	1959	100	97.8	58.0	39.8	2.2
Viet-Nam	1959	100	95.3	66.7	28.6	4.7
Malaya	1960	100	92.4	63.7	28.7	7.6
Thailand	1959	100	91.6	72.7	18.9	8.4
Jordan	1959	100	91.0	70.0	21.0	9.0
Indonesia	1959	100	87.3	22.6	64.1	12.7
Cambodia	1959	100	86.2	76.6	9.6	13.8
Iraq	1960	100	81.3	47.0	34.3	18.7 ^{a)}
Japan	1959	100	80.1	44.7	35.4	19.9 ^{a)}
India	1957	100	77.8	51.3	26.5	22.2
Korea	1959	100	77.4	54.9	22.5	22.6
Kuwait	1959	100	69.0	29.0	40.0	31.0

a) Including debt service (1.9%).

Source : See Table 1

(Table 3 cont'd. on
next page)

TABLE 3 CONTINUED
EXPENDITURE ON EDUCATION BY PURPOSE AROUND 1959

- percentages -

Country	Year	Total	thereof			
			Total Recur- ring	thereof		Capital
				Instruct.	Other	
Oceania						
New Caledonia	1958	100	96.9	57.6	39.3	3.1
Australia	1959	100	79.9	47.2	32.7	20.1
Pacific Islands	1957	100	79.7	41.9	37.8	20.3
New Zealand	1960	100	75.6	55.1	20.5	24.4
New Hebrides	1959	100	64.0	36.1	27.9	36.0
Guam	1959	100	50.8	40.3	10.5	49.2
Europe						
Yugoslavia	1958	100	99.1	78.6	20.5	0.9
Luxembourg	1959	100	96.9	83.9	13.0	3.1
Czechoslovakia	1960	100	94.4	43.9	50.5	5.6
Rumania	1959	100	92.7	92.2	0.5	7.3
Finland	1959	100	90.2	89.9	0.3	9.8
Ireland	1959	100	88.2	63.5	24.7	11.8
Italy	1959	100	87.8	61.2	26.6	12.2 ^{b)}
United Kingdom	1959	100	86.7	43.0	43.7	13.3 ^{b)}
Austria	1959	100	85.5	50.0	35.5	14.5
Sweden	1958	100	84.6	73.7	10.9	15.4
Belgium	1959	100	84.0	63.6	20.4	16.0
Portugal	1958	100	77.5	62.3	15.2	22.5 ^{c)}
Netherlands	1958	100	77.4	57.0	20.4	22.6 ^{c)}
Norway	1959	100	75.2	52.3	22.9	24.8
Spain	1960	100	75.1	47.6	27.5	24.9
France	1960	100	74.0	59.3	14.7	26.0
Federal Republic of Germany	1959	100	73.4	42.4	31.0	26.6 ^{d)}

- b) Including debt service (7.4%). - c) Including debt service (5.4%). - d) Including debt service (2.7%).

Source : See Table 1

TABLE 4a

EXPENDITURE ON EDUCATION AT DIFFERENT LEVELS OF EDUCATION
IN ITALY - 1901-1960

- percentages -

Year	Total Educational Expenditure	thereof			
		Primary	Secondary	Higher	Other
1901	100	9.4	45.7	23.1	21.8
1907	100	23.6	40.6	19.2	16.6
1926	100	65.5	16.3	6.2	12.0
1936	100	60.6	21.5	5.7	12.2
1946	100	61.1	24.6	5.0	9.3
1954	100	49.1	27.3	5.0	18.6
1955	100	50.2	29.9	5.1	14.8
1956	100	50.5	30.4	5.1	14.0
1957	100	49.7	30.4	6.2	13.7
1958	100	48.2	32.4	6.0	13.4
1959	100	43.4	33.4	8.1	15.1
1960	100	38.8	32.9	11.8	16.5

Source : See Table 1

TABLE 4b

EXPENDITURE ON EDUCATION AT DIFFERENT LEVELS OF EDUCATION
IN INDIA = 1870-1955.

- percentages -

Year	Total	thereof				Higher
		Primary	Secondary			
			Total	thereof		
				General	Professional and technical	
1870	100	28.3	60.3	47.5	12.8	11.4
1880	100	50.3	40.4	31.7	8.7	9.3
1886	100	41.0	47.7	40.8	6.9	11.3
1891	100	39.1	50.6	40.3	10.3	10.3
1896	100	39.0	50.3	40.3	10.0	10.7
1901	100	37.8	51.5	40.4	11.1	10.7
1906	100	39.0	50.7	37.8	12.9	10.3
1911	100	37.3	51.2	37.4	13.8	11.5
1916	100	35.8	52.4	39.0	13.4	11.8
1921	100	37.0	49.7	35.4	14.3	13.3
1926	100	37.5	49.2	35.7	13.5	13.3
1931	100	37.1	49.3	37.1	12.2	13.6
1936	100	36.3	49.0	38.1	10.9	14.7
1941	100	39.6	46.9	38.6	8.3	13.5
1946	100	46.5	39.8	30.0	9.8	13.7
1950	100	41.8	44.3	35.2	9.1	13.9
1955	100	38.7	47.2	38.2	9.0	14.1

Source : See Table 1

TABLE 4c

EXPENDITURE ON EDUCATION AT DIFFERENT LEVELS OF EDUCATION
IN SWEDEN - 1913 - 1958

- percentages -

Year	Total Educational Expenditure	thereof			
		Primary	Secondary	Higher	Other ^{a)}
1913	100	69.8	16.4	5.4	8.4
1914	100	69.3	15.6	5.0	10.1
1916	100	71.4	14.6	4.7	9.3
1918	100	70.9	14.9	3.3	10.9
1920	100	69.9	11.7	1.8	16.6
1922	100	62.1	11.1	2.1	24.7
1924	100	67.5	12.4	2.6	17.5
1926	100	66.2	12.8	3.2	17.8
1928	100	67.1	12.7	3.2	17.0
1930	100	68.1	12.7	3.1	16.1
1932	100	67.8	13.4	3.3	15.5
1934	100	67.6	12.9	3.5	16.0
1936	100	64.5	14.2	3.3	18.0
1938	100	66.8	13.9	2.7	16.6
1940	100	67.9	16.5	3.2	12.4
1942	100	65.2	14.9	2.8	17.1
1944	100	61.9	13.9	2.8	21.4
1946	100	61.4	12.5	3.3	22.8
1948	100	66.5	14.3	4.1	15.1
1950	100	65.6	14.8	4.2	15.5
1952	100	65.7	14.4	4.4	15.5
1954	100	64.6	14.9	4.5	16.0
1956	100	63.3	14.9	4.7	17.1
1958	100	60.6	14.4	5.3	19.7

a) Adult education, People's Libraries, other education.

Source : See Table 1.

TABLE 5

ESTIMATED GOVERNMENT (AT ALL LEVELS) EXPENDITURES FOR SOCIAL PURPOSES, AS A PERCENTAGE OF TOTAL GOVERNMENT EXPENDITURES AND AS A PERCENTAGE OF GNP, 1958 OR NEAREST YEAR.

Income Group	Percentage of Government Expenditures		Government expenditures in terms of percentage of GNP			
	Educa- tion	Social items	Total	Educa- tion	Social items	Economic items
<u>Group 1</u> (Income per capita < 100\$)						
Belgian Congo	(14.4)	(31.7)	(31.6)	(4.6)	(10.0)	(9.09)
Burma	(7.6)	(15.0)	(36.2)	(2.8)	(5.4)	
India	9.0	14.5	15.8	1.4	2.3	6.3
Kenya	(13.7)	(26.4)	(22.3)	(3.0)	(5.9)	(4.4)
Nigeria		34.7	12.1		4.2	3.4
Tanganyika	(19.5)	(30.7)	(14.0)	(2.7)	(4.3)	(4.0)
Uganda	(17.9)	(37.1)	(22.4)	(4.0)	(8.3)	(5.1)
Republic of Viet-Nam(1959)	(8.3)	(16.2)	(14.3)	(1.2)	(2.3)	(2.1)
<u>Group 2</u> (Income per capita - 100-199\$)						
Ceylon	(13.3)	(33.3)	(27.6)	(3.7)	(9.2)	(8.0)
Ghana(1959/60)	(13.9)	(28.4)	(17.7)	(2.5)	(5.0)	(6.7)
Honduras(1954/1955)	(12.6)	(26.5)	(9.2)	(1.2)	(2.4)	(3.3)
Peru (1957)	12.9	23.3	18.6	2.4	4.3	
Thailand(1960)	(17.4)	(25.8)	(16.8)	(2.9)	(4.3)	(3.5)
<u>Group 3</u> (Income per capita- 200-499\$)						
Chile (1956)	(19.5)	(41.3)	(13.7)	(2.7)	(5.7)	(2.6)
Costa Rica	(24.2)	(41.4)	(12.7)	(3.1)	(5.3)	
El Salvador (1954)	(14.2)	(28.2)				
Federation of Malaya	17.4	27.2	20.1	3.5	5.5	3.5

table cont'd. on next page

TABLE 5 (CONTINUED)

ESTIMATED GOVERNMENT (AT ALL LEVELS) EXPENDITURES FOR SOCIAL PURPOSES, AS A PERCENTAGE OF TOTAL GOVERNMENT EXPENDITURES AND AS A PERCENTAGE OF GNP, 1958 OR NEAREST YEAR.

Income Group	Percentage of Government Expenditures		Government expenditures in terms of percentage of GNP			
	Educa- tion	Social items	Total	Educa- tion	Social items	Economic items
<u>Group 3 (Cont'd)</u> (Income per capita - 200-499\$)						
Portugal (1957)	(9.5)	(23.9)	(14.2)	(1.3)	(3.4)	
Singapore (1960)	24.6	45.5				
<u>Group 4</u> (Income per capita - 500-899\$)						
Belgium	(14.1)	(30.7)	(18.3)	(2.6)	(5.6)	(3.0)
Federal Rep. of Germany	9.6	47.9	24.4	2.3	11.7	3.6
Israel (1954/55)	10.0	32.3	39.5	3.9	12.8	14.9
Venezuela (1955/1956)	(6.5)	(16.9)	(18.7)	(1.2)	(3.2)	
<u>Group 5</u> (Income per capita > 900\$)						
Australia (1954/1955)	7.2	41.8	27.0	2.0	11.3	7.2
Canada (1956)	10.7	32.7	25.6	2.7	8.4	
France	(8.9)	(31.9)	(25.2)	(2.2)	(8.0)	(5.3)
New Zealand	9.2	41.0	34.5	3.2	14.1	
Norway (1955/56)	12.7	34.6	25.2	3.2	8.7	6.8
Sweden	12.9	42.4	35.5	4.6	15.1	
United Kingdom	13.2	48.1	31.4	4.1	15.1	5.1
United States of America	12.4	30.9	30.4	3.8	9.4	4.2

Note:- Figures in brackets represent expenditures of the central Governments only, inclusive of grants and loans to other

.../...

TABLE 5

Note (continued)

levels of government.- Omission of footnotes from Table 5 increases the tentative character of the figures.

Source : Report on the World Social Situation, United Nations, New York, 1961, Chapter IV on Expenditures for Social Purposes, p.71.

TABLE 6

CENTRAL GOVERNMENT EXPENDITURES ON EDUCATION AND TOTAL OF
SOCIAL ITEMS AS A PERCENTAGE OF GOVERNMENT EXPENDITURES AT
ALL LEVELS OF GOVERNMENT - 1956 OR NEAREST YEAR -

Country	Year	Total Government Expenditure	Total Social Expenditure	Education Expenditure
Canada	1956	61 (54)	49 (46)	5 (4)
Colombia	1957	59 (57)	44	36
Federation of Malaya	1958	84 (70)	96 (96)	100 (27)
India	1954/55	71 (45)	45 (19)	15 (10)
Israel	1954/55	78 (73)	69 (57)	58 (26)
Nigeria	1957/58	(40)	(16)	
Norway	1955/56	67 (58)	49 (39)	43 (22)
Tanganyika	1957	84	83	86
Uganda	1956/57	88 (80)	93 (78)	
United Kingdom	1955	82 (73)	75 (63)	59 (15)
United States of America	1957/58	64 (60)	38 (31)	9 (6)
Venezuela	1956/57	93 (85)	70	73

Note - Figures are based on consolidated all-level data from which duplications due to inter-level transfers have been removed. Throughout this table, figures in brackets represent expenditures after deduction of amounts transferred (granted or loaned) to other levels of government. (Transfer payments to the public are not deducted, however; in terms of expenditures on goods and services only, excluding transfers, as shown by a recent study of the public sector by the Economic Commission for Europe, the second figure for education in the United Kingdom would be about 1 or 2 per cent instead of 15 per cent).

Source : Report on the World Social Situation, United Nations, New York, 1961, Chapter IV on Expenditures for Social Purposes, p.68.

- Detailed Footnotes given in the Report have been omitted from Table 6, thus oversimplification of the meaning of the figures has taken place.

A note on measuring the burden of education.

Correa constructed a measure⁽¹⁾ to assess the variation of the burden of education between countries due to (i) solely demographic reasons, namely because of the varying proportion of the population of school age, and (ii) because of differences in income per capita.

"A comparison of the variations in the cost of education necessary to give the same educational level to the populations of various countries having different age structures is presented in Table 7. In the same Table, the impact of the variation of cost on income is studied.

The results which appear in Table 7 are based on the assumption that the costs of education are the same in every country. This unrealistic assumption is necessary for lack of better data.

The contents of Table 7 can best be explained by an example. Consider two countries, the U.S.A. and Panama. In Panama, the population between the ages of 5 and 19 years. is 264,443 persons, and between 20 and 69 years, 454,331 persons. That is, 454,331 adults must be responsible for the education of 264,443 children. Therefore, each adult must pay a part equal to $\frac{264,443}{454,331} = 0.582 = p$ of the cost of education of a child in Panama. Since in the U.S.A. there are 37,197,000 persons between the ages of 5 and 19 and 93,485,000 between 20 and 69, each adult must pay a part equal to $\frac{37,197,000}{93,485,000} = 0.398 = p_{U.S.}$ of the cost of education of one child. If the cost of education is denoted by c , in Panama each adult must pay a cost equal to $0.582c$, and in the U.S.A. a cost equal to $0.398c$.

If the cost $0.398c$ in the U.S.A. is taken as a unit, the cost in Panama will be $\frac{0.582}{0.398} = 1.463$. These data appear in column (5) of Table 7 and give an idea of the effect of the variations in age structure of the population on the burden of education.

(1) H. Correa, The Economics of Human Resources, Amsterdam 1963. - p.103-106.

On the other hand, the average income in Panama of a person between the ages of 20 and 69 years is U.S. \$416, and in the U.S. \$3,491. Therefore, the part of the income of an adult which must be spent for educational costs for the population of between 5 and 19 years is in Panama equal to $\frac{0.582c}{416}$ and in the U.S.A. to $\frac{0.398c}{3,491}$.

Finally, in order to compare the importance of the cost of education in the U.S.A. with its importance in Panama, the proportion of the income of an adult which, in the U.S.A., must be spent for education, is taken as a unit of measurement. That is, the value $\frac{0.398c}{3,491}$ is taken as a unit. The proportion of the income of an adult in Panama which must go for education is, with respect to the unit adopted, 12 times as great. This means that the impact on income of the cost of the same level of education is 12 times as great in Panama as in the U.S.A. owing to the different age structures of the populations and the difference in income (Table column 7).

It may be concluded from this analysis that the difference in burden due to differences in the age structures of the populations vary only between 1 and 2. The variations due to differences in income are much greater."

TABLE 7

RELATIVE IMPORTANCE OF COSTS OF EDUCATION ⁽¹⁾ IN THE COUNTRIES WITH
 DIFFERENT INCOMES PER CAPITA AND DIFFERENT AGE-STRUCTURES OF
 THE POPULATION, AROUND 1952

Countries	Population		$p = \frac{P_{5-19}}{P_{20-69}}$	Income per active person(Y)	$\frac{p}{p_{U.S.}}$	$\frac{y_{U.S.}}{y}$	(5) x (6)
	P_{5-19}	P_{20-69}					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<u>Africa</u>							
Algeria	3,338,900	4,277,800	0.781	539	1.962	6.477	12.70
Morocco	90,300	216,100	0.418	252	1.050	13.853	14.55
<u>North America</u>							
Canada	3,711,200	8,237,600	0.451	2,833	1.132	1.232	1.40
Costa Rica	294,689	359,012	0.821	558	2.063	6.256	12.91
Honduras	526,415	703,815	0.748	321	1.880	10.875	20.44
Panama	264,443	454,331	0.582	416	1.463	8.392	12.27
United States	37,197,000	93,485,000	0.398	3,491	1.000	1.000	1.00
<u>Asia</u>							
Cyprus	152,065	261,923	0.581	665	1.459	5.250	7.66
Israel	370,338	830,630	0.446	1,410	1.121	2.476	2.77
Japan	26,805,000	42,819,000	0.626	497	1.573	7.024	11.05
Korea							
(South)	7,626,959	8,526,572	0.895	198	2.248	17.631	39.64
Turkey	7,264,800	10,118,400	0.718	516	1.805	6.766	12.21
<u>South America</u>							
Brazil	18,826,409	23,876,603	0.789	327	1.982	10.676	21.16

Table cont'd. on next page

TABLE 7 (CONTINUED)

RELATIVE IMPORTANCE OF COSTS OF EDUCATION⁽¹⁾ IN THE COUNTRIES WITH
DIFFERENT INCOMES PER CAPITA AND DIFFERENT AGE-STRUCTURES OF
THE POPULATION, AROUND 1952

Countries	Population		$\frac{P_{5-19}}{P_{20-69}}$	Income per active person(Y)	$\frac{p}{p_{U.S.}}$	$\frac{y}{y_{U.S.}}$	(5) x (6)
	P ₅₋₁₉	P ₂₀₋₆₉	(3)		(5)	(6)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<u>Europe</u>							
France	8,850,000	26,755,400	0.331	1,308	0.831	2.669	2.22
Germany Fed.	11,299,050	30,557,000	0.370	1,023	0.929	3.413	3.17
Republic Sweden	1,459,120	4,525,497	0.322	2,227	0.810	1.568	1.27
England, Wales	8,710,600	28,348,400	0.307	1,926	0.772	1.813	1.40
Yugo- slavia	4,946,983	9,259,827	0.534	271	1.343	12.882	17.29

(1) Expenditure for education.

Source : H.Correa, "The Economics of Human Resources", Amsterdam, 1963, p.104/105

P₅₋₁₉ = population in age-interval 5-19

P(U.S.) = part of the cost of education
that any adult must bear
(in the U.S.)

y(U.S.) = income per adult (in the U.S.)

P₂₀₋₆₉ = population in age-interval 20-69