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International Comparisons of Government Expenditure

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Prefatory Note

This study was prepared by Alan A. Tait, Deputy Director, Government Expenditure Analysis Division, Fiscal Affairs Department, and Peter S. Heller, Assistant Chief of the above Division.

The opinions expressed are those of the authors and do not necessarily represent the views of the Fund.

I Introduction and Some Conclusions[1]

Many studies on international tax comparisons have been undertaken since the early 1970s.[2] While controversial, such studies have facilitated more subtle comparisons of a country's tax performance than would be afforded by focusing on its simple tax ratio. This paper provides a comparable framework for comparisons of both functional and economic expenditure patterns of countries having similar economic and demographic positions. It also provides an implicit technological norm for predicting the economic characteristics of a country's expenditure pattern, based on its choice of priorities for functional expenditures.

For example, Table 1 shows the international expenditure comparison index for comparing the functional categories of government expenditure. Use of this index allows us to conclude, tentatively, that the French Government spends a little more than might be expected on education (9 per cent more) but perhaps 20 per cent more than expected on health and social security, whereas the Egyptian Government spends twice as much as expected on education, the United Kingdom 50 per cent more than expected, but Greece 30 per cent less. An alternative way to look at government expenditure is to divide it into the so-called economic categories; Table 2 shows the indices for the economic classification of expenditures. This table indicates that the Government of Mali spends some 79 per cent more than might be expected on government wages and salaries and Greece spends twice as much as expected, while Korea spends 55 per cent less than predicted.

In a paper of this sort, no brief summary of results is possible; the tables just referred to and the detailed discussions in Sections III, IV, and V present the results. However, five general conclusions are worth making.

First, many international cross-section studies of government revenue and expenditures use per capita income as a proxy for most of the underlying demographic, social, and economic differences,[3] yet it is striking how uncertain per capita income is as an explanatory variable. This poor performance of per capita income compared with other variables suggests the importance of searching for the more robust, underlying, basic variables as is done in this paper.

Second, it is encouraging to note how plausible the modeled relationships are; it is also reassuring to see how most of the expenditure indices for individual countries reflect general knowledge concerning those countries' performances and attitudes (for example, on defense, health, and social welfare).

Third, the technical coefficients of functional categories that determine economic categories of expenditure (see Tables 2, 6, and 7) are powerful and suggestive.

Fourth, there appears to be no clear support for the hypothesis that the majority of governments spend excessive amounts on wages relative to amounts spent on goods and services; some countries do appear to overspend on wages relative to other goods and services—some do not. However, a clear bias is evident toward greater-than-expected current expenditure relative to capital expenditure in Africa and in industrial countries; the same regions spend more than expected on subsidies relative to wages. The reverse patterns emerge in Latin America.

Finally, without a doubt, this exercise provides many "departure points" for discussions and assessments of government expenditure policies in individual countries.

Three conceptual points should be stated at the outset. First, there is a distinction between the international tax comparison index (hereinafter referred to as the ITC index) and the international expenditure comparison index (hereinafter referred to as the IEC index). The measurement of tax effort is helped by the fact that governments, to finance their operations in a sustainable and noninflationary way, must transfer private sector resource claims to the public sector using whatever "tax handles" they find at their disposal. Expressed in these basic terms, it is clear that in their tax collection efforts

[1]The authors would like to acknowledge the research assistance rendered by Ms. Tarja Papavassiliou and Ms. Erika Kaufman.

[2]See Alan A. Tait, Wilfrid L. M. Grätz, and Barry J. Eichengreen, "International Comparisons of Taxation for Selected Developing Countries, 1972–76," *Staff Papers*, Vol. 26, No. 1 (March 1979), pp. 123–56.

[3]For example, Richard A. Musgrave, *Fiscal Systems* (New Haven and London, Yale University Press, 1969), pp. 110–24.

Table 1. International Expenditure Comparison Index, 1977: Functional Categories of Expenditure[1]

Country	Year of Data	General Public Service	Defense	Education	Health	Social Security and Welfare	Health, Social Security, and Welfare	Housing and Community Amenities	Agriculture, Forestry, and Fisheries	Mining, Manufacturing, and Construction	Electricity, Natural Gas, and Water	Transportation and Communications
Argentina	1977	400	112	34	13	57	45	31	16	400	118	109
Australia	[2]	96	71	130	111	69	85	38	63	...	...	72
Austria	1977	142	50	68	100	95	97	130	59	74	400*	142
Bahamas	1975	109	9	105	120	34	81	8	40	...	...	...
Bahrain	1977	...	...	...	119	...	...	...	...	16	...	...
Bangladesh	1977	42	12	49	106	345	93	...	93	9	2	293
Barbados	1977	113	6	139	89	63	81	185	171	...	135	145
Belgium	1977	64	71	132	87	119	111	68	29	138	400*	171
Bolivia	1977	82	82	78	67	14	35	40	22	18	54	78
Botswana	1977	121	48	163	150	12	112	279	136	...	126	...
Burma	1977	79	225	62	57	39	45	215	138	28	...	78
Burundi	1977	71	145	122	...	211	113	...	107	...	...	...
Cameroon	1976	180	83	78	63	250	129	1	66	204	45	126
Canada	[2]	155	68	109	126	113	119	117	126	...	...	231
Chad	1977	97	400	109	43	19	32	18	125	12	2	44
Chile	1977	151	74	105	115	228	183	121	64	2	9	63
Costa Rica	1977	59	24	98	43	210	135	30	35	3	5	152
Cyprus	1977	142	145	61	64	67	62	218	79	16	55	33
Denmark	1976	116	78	66	104	99	98	50	127	89	400*	34
Dominican Rep.	1977	71	36	46	93	127	106	278	96	199	83	52
Ecuador	1977	62	98	85	63	7	34	...	75	...	26	...
Egypt	1977	67	68	211	107	187	163	342	132	19	91	47
El Salvador	1977	77	25	83	93	96	93	79	65	1	25	113
Ethiopia	1977	60	82	80	125	225	138	21	85	27	48	151
Fiji	1977	160	17	114	146	306	154	82	114	83	83	79
Finland	1977	77	78	124	121	76	90	70	231	170	42	127
France	1977	77	75	109	121	119	120	93	45	135	37	19
Gambia, The	1977	200	...	99	211	49	119	48	225	...	119	...
Germany, Fed. Rep.	[2]	64	114	92	118	97	101	89	51	...	...	188
Ghana	1977	76	...	132	94	75	87	...	95	53	3	93
Greece	1977	83	325	71	69	83	82	64	121	46	19	103
Grenada	1977	29	139	105	189	34	87	43	95	386	...	...
Guatemala	1977	60	55	...	55	73	65	34	28	...	...	...
Honduras	1976	130	54	89	180	108	159	93	28	29	...	...
Iceland	1977	124	...	75	135	41	70	106	233	...	...	...
Iran	1977	36	185	80	120	38	49	197	84	85	142	71
Ireland	1977	...	...	40	...	68	51	10	...	...	...	...
Israel	1977	30	390	130	79	153	137	44	48	72	46	39
Italy	1977	109	39	108	147	104	120	73	100	400	...	190
Jamaica	1977	73	16	130	144	25	56	151	196	19	60	87
Japan	[2]	...	...	85	75	50	60	122	204	14	...	88
Jordan	1975	111	308	175	198	142	152	100	197	400	355	240
Kenya	1977	73	89	104	123	400*	138	28	94	43	231	115
Korea	1977	65	244	89	23	30	26	15	54	10	46	33
Kuwait	1977	98	91	59	73	29	44	272	3	207	94	...
Lesotho	1974	171	...	148	88	111	103	323	187	...	65	...
Liberia	1977	188	31	122	148	33	100	110	101	9	4	115
Luxembourg	1977	102	28	77	19	163	127	43	96	...	10	...
Madagascar	1973	103	30	103	106	400	237	14	119	22	19	93
Malawi	1977	80	63	87	57	121	78	14	114	8	34	71
Malaysia	1977	105	131	137	137	62	106	5	64	1	15	53
Mali	1976	111	149	132	99	260	145	...	60	141	36	42
Malta	1977	102	29	94	86	125	121	143	135	202	365	154
Mauritius	1977	141	5	118	166	181	171	104	360	14	70	50
Mexico	1977	43	13	82	52	217	142	...	163	...	400	57
Morocco	1977	208	128	163	99	295	178	152	...	...	...	...
Nepal	1977	43	98	38	400*	400	96	20	92	...	252	...
Netherlands	1977	150	73	156	132	163	157	111	...	...	...	...
New Zealand	1977	71	30	109	129	114	124	28	148	...	...	...
Nicaragua	1976	62	45	65	46	400	212	269	68	31	20	...
Niger	1977	142	46	160	109	400	394	3	56	110	68	116
Norway	1977	62	121	120	92	82	84	309	227	123	27	118
Oman	1974	...	...	...	270	...	...	...	25	162	...	...

Table 1 (concluded). International Expenditure Comparison Index, 1977: Functional Categories of Expenditure[1]

Country	Year of Data	General Public Service	Defense	Education	Health	Social Security and Welfare	Health, Social Security, and Welfare	Housing and Community Amenities	Agriculture, Forestry, and Fisheries	Mining, Manufacturing, and Construction	Electricity, Natural Gas, and Water	Transportation and Communications
Pakistan	1977	39	164	15	23	27	24	169	31	46	102	117
Panama	1977	139	...	116	264	273	254	49	81	99	99	88
Papua New Guinea	1977	110	43	133	160	15	148	186	121	116	101	176
Paraguay	1977	67	51	31	20	140	75	27	24	12	...	151
Peru	1977	91	65	111	74	2	35	75	125	...	203	...
Philippines	1976	79	103	52	50	117	60	30	96	166	400	198
Portugal	1977	140	251	74	91	81	79	84	51	95	210	...
Rwanda	1977	62	131	58	48	400	400*	7	39	43	83	267
Senegal	1975	112	70	97	66	57	67	55	37	...	42	10
Sierra Leone	1978	123	57	102	114	26	63	49	56	12	109	54
Singapore	1977	195	139	93	50	7	30	114	8	2	1	52
Somalia	1977	160	176	167	164	400	305	400	210	224	...	55
Spain	1977	53	42	47	61	93	86	41	73	41	4	53
Sri Lanka	1977	58	27	101	82	400	301	38	106	22	...	...
Sudan	1977	30	93	39	27	56	44	3	174	2	...	106
Suriname	1976	247	...	116	...	167	192	113	76	97	...	92
Swaziland	1977	123	48	132	116	16	101	176	160	...	400	...
Sweden	1977	94	85	154	127	123	122	86	94	240	400	58
Syrian Arab Rep.	1977	19	218	78	30	122	87	159	130	400*	254	115
Tanzania	1977	95	114	106	138	400	188	81	135	286	171	93
Thailand	1977	38	155	88	55	400	183	72	78	20	400	115
Tunisia	1977	61	26	179	151	139	141	63	178	78	...	114
Turkey	1977	69	97	97	36	19	25	57	36	312	270	181
United Arab Emirates	1977	176	150	...	...	...	...	33	...	1	...	...
United Kingdom	1977	99	112	152	110	66	79	265	95	131	400	112
United States	[2]	51	318	85	71	78	76	64	18	...	...	19
Upper Volta	1973	82	218	85	67	32	50	24	11	31	...	55
Uruguay	1978	232	72	57	55	139	113	8	32	32	107	75
Venezuela	1977	60	33	119	67	77	78	151	248	141	155	107
Yemen Arab Rep.	1977	111	400	40	55	...	23	...	14	2	...	84
Yugoslavia	1977	31	400	...	157	103	128	...	19	...	...	...
Zambia	1977	172	...	157	169	10	144	105	231	84	90	133
Mean		103	110	100	103	131	112	103	100	95	134	101
Standard deviation		57	101	38	60	116	67	113	68	112	138	50

* Asterisk denotes that this particular IEC index should be treated with care as actual expenditures were extremely small and predicted expenditures negative—see text for explanation.

[1] As the text explains in more detail, this index represents the actual expenditure/gross domestic product (GDP) ratio as a percentage of the predicted expenditure/GDP ratio.

[2] 1973–75.

all governments have a similiar objective. There appear to be few substantial alternative approaches to the problem of financing expenditure that would not be captured in one form or another by the ITC index. The construction of an expenditure index, however, poses more complex problems, first, because government expenditures are directed at many objectives and, second, because many of these objectives can be achieved by the use of policy instruments other than government expenditure, for example, tax expenditures, price controls, tariffs, import restrictions. It may be possible to design indices for particular broad objectives (functional expenditure indices) but these single objective indices will be difficult to interpret unless steps can also be devised to take account of the different policy instrument mixes chosen by individual governments in the sample. (The most obvious example is the interchangeability of government expenditures and tax expenditures.)

Second, it is not intended that this paper should make normative judgments as to the appropriateness of a country's functional expenditure priorities. The economic optimality of a given amount of spending on defense or education may be open to question in a cost-benefit sense. It is also questionable whether the objectives for a sector are being realized in a cost-effective manner, given the level of expenditure. Yet, ultimately, the public expenditure budget reflects the social and economic priorities of a country's government and, presumably, of its population; thus, it is difficult to state that a country is spending too much or too little on a particular type of expenditure.

Third, the measures proposed in this paper are indications—possible starting places—for discussion. After all, if a country is spending, say, twice as much as

Table 2. International Expenditure Comparison Index, 1977: Economic Categories of Expenditure[1]

Country	Year of Data	Current Expenditure	Goods and Services	Wages and Salaries	Other Goods and Services	Interest	Subsidies	Capital Expenditure	Acquisition of Capital Assets	Capital Transfers
Argentina	1977	92	56	...	...	225	115	114	95	83
Australia	1977	105	118	...	...	118	94	164	314	...
Austria	1977	96	78	65	140	55	113	99	46	107
Bahamas	1976	90	111	116	137	89	36	82	...	...
Bahrain	1977	85	83	...	87	14	51	129	151	...
Barbados	1977	99	117	98	175	186	48	83	80	83
Belgium	1977	95	64	87	100	155	108	71	87	78
Bolivia	1977	80	86	87	57	29	127	81	72	66
Botswana	1977	93	85	89	99	145	122	116	139	49
Burma	1977	94	...	...	...	...	...	67	...	...
Cameroon	1976	88	101	97	103	27	64	172	132	80
Canada	1977	107	108	...	...	228	76	32	57	...
Chad	1976	98	...	...	...	...	...	81	...	...
Chile	1977	100	105	107	70	158	97	84	116	8
Costa Rica	1977	79	99	93	252	162	56	133	219	68
Cyprus	1977	112	136	148	100	94	88	91	122	96
Dominican Rep.	1976	73	68	84	42	22	151	90	123	111
Egypt	1977	160	118	116	120	188	219	99	69	192
El Salvador	1977	76	70	...	...	24	226	102	77	122
Ethiopia	1977	137	150	138	171	70	80	78	90	5
Fiji	1977	93	104	88	123	147	46	96	96	60
Finland	1977	96	108	...	...	35	90	62	115	...
France	1977	83	58	89	86	26	110	84	323	97
Gambia, The	1977	143	123	92	139	68	143	98	87	3
Germany, Fed. Rep.	1977	102	127	...	...	60	89	99	392	...
Greece	1977	89	145	212	107	70	26	96	117	39
Grenada	1977	94	112	116	112	45	53	33	...	...
Guatemala	1977	74	69	71	52	63	130	127	55	307
Honduras	1976	67	96	91	106	41	21	213	125	325
Iceland	1977	96	69	106	60	81	133	84	50	171
Iran	1976	110	102	124	83	18	140	125	190	21
Israel	1977	101	101	80	113	181	98	53	50	250
Italy	1975	88	43	63	31	172	122	68	39	114
Jamaica	1977	124	102	98	128	337	160	92	96	104
Japan	1977	...	...	...	...	...	...	72	...	...
Jordan	1975	95	100	...	...	45	77	114	122	92
Kenya	1977	95	90	95	100	125	143	89	93	...
Korea	1977	83	74	45	97	47	173	140	96	155
Kuwait	1977	117	103	131	123	...	136	85	70	...
Lesotho	1974	...	...	88	...	...	...	92	82	...
Liberia	1977	114	115	128	88	65	174	181	124	...
Luxembourg	1977	103	96	142	179	142	92	66	60	57
Madagascar	1973	111	107	137	76	33	147	94	92	8
Malawi	1977	114	96	63	138	204	218	137	143	84
Malaysia	1977	90	96	113	75	150	98	223	115	224
Mali	1976	92	118	179	59	6	101	87	55	...
Malta	1977	106	137	135	142	68	73	60	105	...
Mauritius	1977	115	94	105	62	173	146	90	63	95
Mexico	1977	79	77	72	93	364	53	...	97	53
Morocco	1977	82	88	112	46	108	67	227	173	13
Netherlands	1977	92	47	66	61	56	127	114	...	193
Nicaragua	1976	72	90	76	107	113	33	122	146	199
Niger	1977	108	106	90	162	191	164	113	65	400
Norway	1977	112	96	...	...	139	118	17	35	...
Oman	1974	...	100	76	...	16	...	152	...	117
Pakistan	1977	115	87	...	...	142	400	73	94	2
Panama	1977	103	119	119	138	200	60	90	53	107
Papua New Guinea	1977	135	147	...	...	193	55	36	36	52
Paraguay	1977	85	97	77	104	37	72	151	148	49
Peru	1977	94	79	...	...	199	145	100	96	95
Philippines	1976	103	84	64	82	65	317	37	...	...
Rwanda	1977	84	82	88	83	12	228	98	113	...
Senegal	1975	109	130	128	144	32	132	103	51	400

Table 2 (concluded). International Expenditure Comparison Index, 1977: Economic Categories of Expenditure[1]

Country	Year of Data	Current Expenditure	Goods and Services	Wages and Salaries	Other Goods and Services	Interest	Subsidies	Capital Expenditure	Acquisition of Capital Assets	Capital Transfers
Sierra Leone	1978	123	126	84	179	117	140	79	...	...
Singapore	1977	90	108	88	111	127	29	121	187	3
Somalia	1977	112	...	...	...	...	...	73	...	...
Spain	1977	91	116	125	127	28	77	143	195	94
Sri Lanka	1977	102	81	79	84	306	109	170	128	230
Sudan	1977	149	78	39	113	400	400	92	130	...
Suriname	1976	115	147	141	121	20	50	141	107	5
Swaziland	1977	94	105	114	103	18	68	106	122	...
Sweden	1977	113	157	...	...	89	89	145	400	...
Switzerland	1977	139	152	...	...	119	111	232	...	...
Tanzania	1977	112	104	101	113	135	109	82	46	328
Thailand	1977	83	86	62	149	93	98	121	185	336
Tunisia	1977	82	79	84	81	114	88	136	131	225
Turkey	1977	100	69	78	45	130	183	63	84	22
United Arab Emirates	1977	69	...	...	...	...	...	400	...	...
United Kingdom	1976	93	73	65	104	114	124	34	62	61
United States	1977	103	138	...	...	101	77	212	400	...
Upper Volta	1977	96	102	74	19	53	115	71	13	319
Uruguay	1978	92	105	99	73	30	89	94	87	12
Venezuela	1977	92	82	98	55	125	76	125	41	391
Yemen Arab Rep.	1977	...	112	190	...	8	...	...	...	...
Zambia	1977	...	...	111	...	...	...	60	37	...

[1] As the text explains in more detail, this index represents the actual expenditure/GDP ratio as a percentage of the predicted expenditure/GDP ratio.

might be expected (given its population structure, urbanization rates, economic structure) on education, it probably has a good *sui generis* reason, but policymakers should at least focus on the question and realize that such expenditure, although it may be justified, is unusual. It is not proposed that the expenditure indices presented in this paper should replace detailed country studies as a basis for actual expenditure decisions, but merely that they should provoke further analysis and discussion.

Section II discusses some further conceptual issues that arise in such an analysis and reviews the methodology used in this paper. (Readers interested only in the results could skip this section.) Sections III and IV discuss the results on a functional and economic basis, respectively. Section V discusses the balance in expenditure composition between wages and other goods and services, wages relative to subsidies, and goods and services relative to subsidies. The basic data appear in the Appendix.

II Conceptual Issues

One can make hypotheses about the identity of the factors that are likely to influence spending in a given functional sector, and the significance of such factors can be empirically tested. Six groups of factors can be identified: (1) demographic influences, (2) sociological concerns, (3) the structure of the economy, (4) the level of economic development, (5) technological factors, and (6) environmental factors.

Demographic influences are likely to be principal underlying determinants of the demand for services. The larger the share of school-age groups in the population the greater the likely demand for education; the higher the percentage of elderly people in the population the greater the demand for medical care and perhaps more elaborate public mechanisms for old-age support. Other demographic variables, such as life expectancy, population growth, share of population in urban areas, and infant or child mortality rates, may imply the existence of a core underlying demand for certain types of services. Sociological concerns may explain whether there is a demand for the public sector to provide certain services; for example, the need for a social security mechanism is greater where extended family arrangements have broken down.

The sectoral structure of an economy may play a key role in shaping priorities for public expenditure. A dominant agricultural sector may require certain forms of public expenditure on agriculture to complement or service private sector activities. It might also be supposed that at low levels of development, the desire to change the structure of the economy may stimulate public expenditure in sectors that are not currently dominant elements in total output.

Technological factors influence the cost of realizing expenditure objectives. For example, the lower the desired pupil-to-teacher ratio the higher the cost of realizing a given percentage of enrollment for the population. Environmental factors may influence both the cost of providing services and the likely magnitude of the underlying demand; for example, poor access to clean water may imply a significant demand for investment to provide drinking water as well as the likely need for medical services because of the effects of contaminated water supplies.

These variables all focus on the major factors underlying the demand for public services. Yet, clearly, the level of real per capita income is the ultimate constraint on how much, in total, of that demand can be satisfied. In the typical low-income country, the recent high population growth rates have produced a population structure with a relatively high percentage in the school-age groups, which should imply a very high share of educational expenditure in total output. Yet the very low incomes may constrain government revenue so as to virtually preclude full enrollment even in primary schools, let alone in secondary schools. The quality of education will also fall short of that available in the higher-income countries. Thus, in analyzing the determinants of the share in gross domestic product (GDP) of public spending on a sector, the level of development (as measured by per capita GDP) seems to place a fundamental limit on possible spending in many sectors. It may also influence the likely balance in spending between the economic sectors, which are oriented toward stimulating current productivity and capital accumulation, and the social and administrative sectors, which aim at providing current consumption. It can be added, furthermore, that, while per capita income constitutes a constraint that limits the total provision of goods and services to satisfy a country's need, it does not necessarily reflect the degree and the proportion in which these goods and services are provided by the public sector as opposed to the private sector. The division between the public and private sectors may reflect institutional and political considerations as well as the government's capacity to obtain resources (through taxation) to finance these expenditures.

At a general level it may be hypothesized that the types of goods and services purchased by government expenditure—the so-called *economic* categories of expenditure—are significantly influenced by sectoral priorities. In any sector there may be a wide range of services, each potentially produced by a host of different technologies. Yet, on balance, the mix of labor, current consumption of other goods and services, and capital goods is likely to be different for each functional sector, so that the economic mix of expenditure will be largely determined by the functional mix. For example, a high share of spending on education is likely to imply a high share of spending on wages and salaries and perhaps on goods and services; similarly, a strong correlation might be

expected between the share of spending on economic sectors and public capital formation. In developing predictive norms for appraising the share of spending on different economic categories of expenditure, the functional spending priorities are thus assumed to be the primary determinants.[4]

Sections III and IV describe the precise specifications used to explain the shares in total output associated with public expenditure on different sectors and different economic inputs. The equations are then used to predict a "norm" for spending on a sector or on a specific type of expenditure in a given country. The norm simply reflects what a country would be expected to spend on a sector, given the country's economic, social, and demographic characteristics and given the actual expenditure of the large number of countries, both developed and developing, in the sample. In effect, the norm is defined according to how a large number of countries actually spend their funds, without regard to any external judgment about the optimality of this spending.

For any country, the ratio of *actual* to *predicted* expenditure ratios is computed and taken as an index for the purposes of international expenditure comparison—the IEC index. For example,

$$\text{IEC}_{\text{health}} = \left(\frac{\text{Actual health expenditure/GDP}}{\text{Predicted health expenditure/GDP}} \right) \times 100$$

A high value of the IEC index (e.g., above unity) for a functional expenditure category simply indicates that a country is spending more than would be predicted, given its economic and social characteristics (or in an IEC index for an economic input, given the structure of its functional expenditure). It does *not* indicate the actual share in GDP of a given category of expenditure; a country with a low IEC index (e.g., less than unity) may, nevertheless, be spending a higher share of GDP on a category of expenditure than a country with a high IEC index. For reference purposes, Appendix Tables 10 and 12 provide the actual functional and economic expenditure shares in GDP, and Appendix Tables 11 and 13 show the shares as a percentage of total government expenditure and net lending. By dividing the IEC indices for a country into these actual shares, the predicted shares may be calculated and expressed as a percentage.

The sources of the deviation of an IEC index from unity for a given country cannot be directly inferred from the results and may represent a conscious policy choice by the authorities to attach a different emphasis to a sector than is attached by its peer countries. An upper limit has been placed on the value of the IEC index. It is quite possible that the econometrically predicted values of the expenditure share in GDP may be a very small, or even a negative, number. As the IEC index equals the ratio of the actual to predicted shares, this ratio can lead to either a negative index value or to an exceptionally large value. Both simply indicate that a country is spending far more than would be expected. In both, a maximum value of 400 has been arbitrarily attached to the IEC index. Where an IEC index number is associated with a negative value and where the actual government expenditure is extremely small (under 0.1 per cent of GDP), the value assigned is shown as 400, although, in fact, it might be more appropriate to give a value of 100; after all, the actual expenditure is extremely small and the predicted expenditure is so small as to be negative, therefore, it could be maintained that actual is close to predicted, i.e., 100. However, in practice, in the seven cases where this happened (out of about 2,000 indices), the reader is signaled by an asterisk to treat the IEC number with care.

The data for the dependent variables for this cross-country study have been drawn from the most recent volume of the *Government Finance Statistics Yearbook,* published by the International Monetary Fund.[5] Up to 93 countries have been included in this study, generally using 1977 as the base year for comparison. Expenditure has been disaggregated into the following functional and economic categories:

Functional Expenditures	*Economic Expenditures*
General public services	Current expenditure
Defense	Expenditure on goods and services
Education	Wages and salaries
	Other purchases of goods and services
Health, social security, and welfare	Interest payments
Health	
Social security and welfare	Subsidies and other current transfers
Housing and community amenities	
	Capital expenditure
Agriculture, forestry, fishing, and hunting	Acquisition of fixed capital assets
Mining, manufacturing, and construction	Capital transfers
Electricity, gas, steam, and water	
Roads, other transportation, and communications	

[4]It should be noted that all functional relationships have been estimated to include and exclude net lending (domestic and foreign); no significant difference in ranking occurred. The regressions in this paper have been estimated with net lending omitted.

[5]International Monetary Fund, *Government Finance Statistics Yearbook,* Vol. 4 (1980); hereinafter referred to as the *GFS Yearbook.* When data are unavailable for 1977, the next nearest available year has been used (see Table 4).

The choice of independent variables was greatly influenced by the availability of data. The principal data sets were taken from the International Monetary Fund's *International Financial Statistics (IFS)* and the World Bank's *World Tables*.[6] Several data problems were encountered. First, in calculating the share in GDP of expenditure, an adjustment in GDP was necessary where the fiscal year in the government accounts differed from the calendar year. For example, where the fiscal year 1977 ended on June 30, 1977, the use of GDP for calendar year 1977 could seriously underestimate the share of expenditure in total GDP, particularly if the country had experienced significant inflation during 1977. In such a case, a measure of the average of GDP in 1976 and 1977 was used. Second, in estimating per capita income, some obvious instances occurred where the use of a clearly overvalued nominal exchange rate yielded per capita income estimates that did not accurately reflect the relative income in a given country. As the IBRD *World Tables* also give estimates of per capita income for 1977, where these proved significantly different from the estimates derived from strict use of the nominal exchange rate, the IBRD estimates were used.

Third, the disaggregated public expenditure data in the *GFS Yearbook* relate to the consolidated central government accounts. In some countries the role of provincial and local governments is quite prominent, particularly in the provision of certain government services, notably education. Inclusion of central government spending alone would yield an excessively understated picture of the expenditure policies of such countries. In a recent study, the Organization for Economic Cooperation and Development (OECD) provided data on the share of total general government expenditure in GDP by functional categories for 1973–75. These shares have been used instead of the data in the *GFS Yearbook* for the following countries: Australia, the Federal Republic of Germany (hereinafter referred to as Germany), Canada, the United States, and Japan. On an economic classification, some data on the general government expenditure of these countries are available from the OECD.[7] Other important countries (for example, India, Nigeria, and Brazil) were omitted because no comparable data were available.

Fourth, for some countries, the *GFS Yearbook* classification of expenditure obscures the ultimate intent of the expenditure. For example, block grants to localities in the United Kingdom are legally not earmarked for any particular sector and thus are included in the *GFS Yearbook* under "other expenditure." The OECD statistics indicate that much of this expenditure is, in fact, directed toward education, community services, roads, and housing.[8] Similarly, it is often difficult to distinguish expenditure on health from expenditure on social security (as in Costa Rica). When such problems are obviously distortive, an attempt has been made to reclassify expenditure in the appropriate functional expenditure categories by using country or OECD sources of information. In specifying the model, one equation has also been estimated to predict the sum of health and social security expenditure in order to capture any obvious example of misclassification.

Finally, all the equations were estimated by using the least-squares method. Multicollinearity was tested in every case and variables exhibiting major multicollinearity were rejected. In specifying the equations, multiplicative dummies were used to test whether there might be discontinuities in the effects of individual independent variables according to per capita income. Alternative amounts of per capita income were tested as the breakpoint for such discontinuities, and it was observed that, where significant at all, a per capita income of US$1,750 seemed to yield the lowest sum of squared residuals for the equations. In general, such multiplicative dummies appeared statistically significant only in the equations explaining the functional expenditure shares.

[6]International Bank for Reconstruction and Development (IBRD), *World Tables, 1980* (Baltimore, The Johns Hopkins University Press, 1980).

[7]Organization for Economic Cooperation and Development, *National Accounts of OECD Countries, 1960–78*, Vol. 2 (Paris, 1980).

[8]Organization for Economic Cooperation and Development, *Public Expenditure Trends* (Paris, 1978).

III Determinants of Shares in Gross Domestic Product of Functional Expenditure Categories

Introduction

This section discusses the specification of the equations to predict the shares in GDP of each category of functional expenditure. The econometric results appear in Table 3. Table 1 shows the value of the IEC index. Table 4 ranks the countries by the value of their IEC index; a low ranking indicates a relatively low IEC index—namely, a low expenditure share relative to what would have been predicted for the country.

General Public Services

This functional category covers financial administration, external affairs (including international aid), planning, statistics, and other aspects of general administration. It also covers justice, police, public order, and safety. A believer in "Wagner's" law[9] might expect that the share in GDP of such expenditure would rise with per capita income; in fact, no statistically significant relationship was found. The only variable significant at the 1 per cent level was the share in GDP of total public expenditure; thus, the larger the share of government, in general, the larger would be the general expenses of running government. At the same time, there is some evidence of economies of scale in the operation of the government and in the provision of judicial services; as the public sector grows, these costs do decline slightly as a proportion of total expenditure. The elasticity of public administration expenditure was found to be approximately 0.88.

The next most significant variable is the percentage of population in urban areas; apparently, as countries become more urbanized, the share in total output of general public administration expenditure decreases, suggesting some economies of scale. On the other hand, the larger the proportionate size of the young population (14 years old and younger) the higher this share is likely to be. This emphasis on the young population might be thought to be simply a proxy for nondevelopment (developing countries tend to have much larger proportions of their population in the younger age groups). However, the insignificance of per capita income as estimated in the relationship suggests this is not so and that the size of the younger population must be taken as a significant variable in its own right.

Across countries there tends to be a low standard deviation in the value of the IEC index for this expenditure category. Countries such as Argentina, The Gambia, Morocco, Suriname, and Uruguay seem to spend more than might be expected on general administration as a share of GDP (for example, IEC indices are significantly higher than 100), while the United Kingdom and Australia appear to spend as much as might be predicted. Mexico, the United States and Yugoslavia have IEC indices much lower than 100. (Does this suggest that there is less "fat" in the operation of the U.S. Government than is currently argued?) There is some tendency for Latin American, Asian, and industrial countries to spend less than would be expected on general public services and for African countries to spend more than would be expected.

Defense

This category includes all defense expenditures except those for military pensions, which are included under social security and welfare (see p. 15). Again, it might have been expected that the share of defense expenditure in GDP would be closely associated with per capita income but the relationship does not prove significant. The same variables as those influencing general administrative expenses proved to be significant for defense. The most striking difference is that, whereas urbanization had a negative impact on the share in GDP of general administrative expenditure, for defense there was a positive relationship. Defense expenditure, according to these relationships, could be expected to be higher in a more urbanized country, with a larger proportion of children of 14 years and younger and a larger public sector (net of defense spending).

While numerous influences not tested in this study (and, indeed, impossible to test) must influence defense spending, and while the low correlation coefficient suggests a large amount of "unexplained" defense expendi-

[9] A. T. Peacock and J. Wiseman, *The Growth of Public Expenditure in the United Kingdom* (London, Oxford University Press, 1961).

Table 3. Determinants of Functional Expenditure Categories as Share of Gross Domestic Product

(All expenditure categories as a percentage share of GDP)

	General Public Services	Defense	Education	Health	Social Security and Welfare	Health, Social Security, and Welfare	Housing and Community Amenities	Agriculture, Forestry, Fisheries	Mining, Manufacturing, and Construction	Electricity, Natural Gas, and Water Supply	Transportation and Communications
Constant	−0.59 (−0.30)	−7.00** (−2.27)	3.18* (1.85)	1.31** (3.48)	−4.76** (−3.93)	−3.89** (−2.93)	0.28 (1.45)	0.47 (1.17)	0.83* (1.94)	0.66 (1.61)	4.80** (4.49)
Income per capita (PCI) (in thousands of dollars)	0.01 (0.13)			(−0.01)	0.25* (1.78)	0.41* (2.60)		0.09 (1.53)	−0.03 (−0.58)	0.01 (1.40)	
Income per capita, countries with PCI < $1,750 (in thousands of U.S. dollars)		−0.04 (−0.32)	2.11** (2.92)				0.82** (2.67)				
Income per capita, countries with PCI ≥ $1,750 (in thousands of U.S. dollars)			0.20** (2.65)				−0.01** (2.68)				
Percentage of population, aged 14 and under	0.07* (1.82)	0.16** (2.71)	0.03 (0.81)								
Percentage of population, over age 65				0.12** (2.28)	0.84** (7.26)	1.02** (8.01)					
Infant mortality rate					0.07 (1.71)	0.06 (1.37)					
Share of labor force in agriculture								0.02** (3.80)			
Share of labor force in industry					0.13** (3.12)	0.14** (2.87)					
Share of population in urban areas	−0.03** (−2.28)	0.05** (2.25)	−0.03** (−2.28)								
In countries with PCI < $1,750							— (−0.48)				
In countries with PCI ≥ $1,750							0.02** (2.11)				
Enrollment rate, primary schools			0.01* (1.56)								
Enrollment rate, secondary schools, countries with PCI < $1,750			−0.02 (−1.39)								
Enrollment rate, secondary schools, countries with PCI ≥ $1,750			0.02** (2.09)								
Pupil-teacher ratio, primary schools			0.04* (−1.88)								
Access to clean water supplies											
In countries with PCI < $1,750				— (−0.20)						0.02** (3.20)	
In countries with PCI ≥ $1,750				0.02** (2.97)						−0.01** (2.78)	

Table 3 (concluded). Determinants of Functional Expenditure Categories as Share of Gross Domestic Product

(All expenditure categories as a percentage share of GDP)

	General Public Services	Defense	Education	Health	Social Security and Welfare	Health, Social Security, and Welfare	Housing and Community Amenities	Agriculture, Forestry, Fisheries	Mining, Manufacturing, and Construction	Electricity, Natural Gas, and Water Supply	Transportation and Communications
Population per hospital bed											
In countries with PCI < $1,750				0.26* (-1.84)							
In countries with PCI ≥ $1,750				-2.50* (-1.76)							
Population growth rate in urban areas											0.19** (2.33)
In countries with PCI < $1,750										(0.07)	
In countries with PCI ≥ $1,750										0.48** (5.22)	
Share of total public expenditure in GDP	0.12** (5.62)										
Share of total public expenditure (net of defense)		0.10** (2.48)									
Share of manufacturing sector in GDP									-0.04* (-1.87)		-0.07** (2.24)
In countries with PCI < $1,750										-0.05** (-2.75)	
In countries with PCI ≥ $1,750										—* (1.80)	
Share of other manufactured goods and fuel exports in total exports									0.02** (3.04)		-0.01* (1.71)
Share of agriculture in GDP											-0.08** (-3.76)
R^2	0.32	0.15	0.28	0.62	0.80	0.84	0.21	0.17	0.16	0.44	0.23
(N)	(91)	(84)	(90)	(91)	(91)	(92)	(86)	(90)	(72)	(66)	(69)

* Significant at a 10 per cent level.
** Significant at a 5 per cent level.
t-statistics are in parentheses.

ture, the significant variables mentioned above are interesting.[10] It seems reasonable to consider that urbanized societies must spend more on defense and are willing to do so. Likewise, it is reasonable to expect that many authorities who are prepared to run a large public sector are also likely to accept the idea that a substantial part of the national budget should be spent on defense.

The country ranking confirms the expected evaluations. Sweden, the Philippines, Kenya, Tanzania, Germany, and the United Kingdom were spending roughly what could be expected in 1977 on defense and Mauritius, Barbados, and Mexico were spending much less than might be expected. The high figures for the United States, Pakistan, Portugal, Iran, Korea, Israel, the Yemen Arab Republic, and Chad reflect these individual countries' preocupation with defense in the 1970s.

Education

It is to be expected that government expenditure on education as a percentage of GDP would be most strongly correlated with the proportion of the population in the age group affected by schooling. The largest

[10]Concentration on only one functional expenditure for a single country, e.g., defense in the United Kingdom, can yield more subtle and much better estimated equations. See R. P. Smith, "The Demand for Military Expenditure," *Economic Journal*, Vol. 90, No. 360 (December 1980), pp. 811–20.

Table 4. Ranking of Countries by International Expenditure Comparison Index, 1977: Functional Expenditure

Country	Year of Data	General Public Services	Defense	Education	Health	Social Security and Welfare	Health, Social Security, Welfare	Housing and Community Amenities	Agriculture, Forestry, and Fisheries	Mining, Manufacturing, and Construction	Electricity, Natural Gas, and Water	Transportation and Communications
Argentina	1977	91	55	3	1	26	12	22	5	69	43	40
Australia	1	48	37	71	55	33	35	25	30	...	...	24
Austria	1977	73	26	19	48	43	44	65	28	40	58 *	54
Bahamas	1976	57	3	50	62	18	32	7	20	...	...	...
Bahrain	1977	...	...	...	60	...	...	...	...	20	...	...
Bangladesh	1977	9	4	10	50	81	41	...	45	11	3	69
Barbados	1977	63	2	78	40	29	31	73	76	...	46	55
Belgium	1977	24	36	72	38	54	52	41	13	54	58 *	60
Bolivia	1977	43	45	25	27	6	8	27	8	21	26	26
Botswana	1977	65	24	85	78	5	53	82	71	...	45	...
Burma	1977	39	75	16	20	21	13	76	72	28	...	27
Burundi	1977	31	66	67	...	72	54	...	57	...	...	...
Cameroon	1976	84	46	26	24	76	65	2	34	62	22	51
Canada	1	78	34	55	67	51	57	62	65	...	...	66
Chad	1977	49	82	58	10	9	6	13	64	16	2	9
Chile	1977	77	40	52	57	75	82	63	31	8	8	21
Costa Rica	1977	15	8	44	9	71	66	21	16	9	7	58
Cyprus	1977	74	65	15	25	31	20	77	40	19	27	4
Denmark	1976	64	42	18	49	46	45	35	66	45	58 *	6
Dominican Rep.	1977	30	18	8	44	60	50	81	52	60	32	13
Ecuador	1977	20	53	32	23	2	7	...	37	...	15	...
Egypt	1977	27	33	90	52	70	79	85	68	22	36	10
El Salvador	1977	38	9	30	43	44	42	46	33	44	14	42
Ethiopia	1977	16	44	27	66	74	69	15	43	27	25	57
Fiji	1977	79	7	60	75	80	76	48	58	42	34	28
Finland	1977	37	43	68	63	36	40	42	86	59	20	52
France	1977	36	41	56	64	55	59	52	21	53	19	3
Gambia, The	1977	87	...	45	88	23	56	32	84	...	44	...
Germany, Fed. Rep.	1	25	57	39	59	45	47	51	23	...	...	63
Ghana	1977	35	...	73	45	35	39	...	49	38	4	36
Greece	1977	44	80	20	30	41	33	40	62	36	12	37
Grenada	1977	2	63	51	86	19	38	30	48	68	...	...
Guatemala	1977	17	29	...	17	34	22	24	12	...	...	...
Honduras	1976	69	28	38	85	49	78	53	11	29	...	...
Iceland	1977	68	...	22	71	22	24	57	88	...	...	...
Iran	1977	6	72	28	61	20	14	75	42	44	47	22
Ireland	1977	...	...	6	...	32	16	9	...	...	...	...
Israel	1977	3	81	69	35	65	67	31	22	39	23	7
Italy	1977	56	19	54	76	48	58	44	54	69	...	64
Jamaica	1977	33	6	70	74	11	17	68	80	23	28	30
Japan	1	...	...	33	34	23	18	64	82	18	...	31
Jordan	1975	60	78	88	87	64	75	54	81	69	56	67
Kenya	1977	34	48	49	65	82 *	68	19	47	35	52	46
Korea	1977	26	76	37	5	15	4	12	25	13	24	5
Kuwait	1977	50	49	14	32	14	11	80	1	63	37	...
Lesotho	1974	81	...	79	39	50	49	84	79	...	29	...
Liberia	1977	85	16	66	77	17	46	58	55	12	6	44
Luxembourg	1977	52	12	23	2	66	63	29	53	...	9	...
Madagascar	1973	55	14	48	51	82 *	87	10	60	25	11	35
Malawi	1977	41	31	35	21	56	27	11	59	10	17	23
Malaysia	1977	54	61	77	72	28	51	5	32	2	10	15
Mali	1976	59	67	75	46	77	73	1	29	55	18	8
Malta	1977	53	13	41	37	59	60	66	70	61	57	59
Mauritius	1977	72	1	63	83	69	80	55	90	17	31	11
Mexico	1977	11	5	29	15	73	71	...	75	...	58	19
Morocco	1977	88	60	86	47	79	81	69	...	...	...	...
Nepal	1977	10	52	4	91	82 *	43	14	44	...	53	...
Netherlands	1977	76	39	82	70	67	77	59	...	...	...	...
New Zealand	1977	32	15	57	69	52	62	18	73	...	...	...
Nicaragua	1976	22	22	17	11	82	86	79	35	30	13	...
Niger	1977	75	23	84	53	82	91	4	27	49	30	48
Norway	1977	21	59	65	42	40	34	83	85	51	16	50
Oman	1974	...	...	...	90	...	...	...	10	57	...	...

Table 4 (concluded). Ranking of Countries by International Expenditure Comparison Index, 1977: Functional Expenditure

Country	Year of Data	General Public Services	Defense	Education	Health	Social Security and Welfare	Health, Social Security, Welfare	Housing and Community Amenities	Agriculture, Forestry, and Fisheries	Mining, Manufacturing, and Construction	Electricity, Natural Gas, and Water	Transportation and Communications
Pakistan	1977	8	70	1	4	13	2	71	14	37	40	49
Panama	1977	70	...	61	89	78	88	33	41	48	38	32
Papua New Guinea	1977	58	21	76	81	7	74	74	61	50	39	61
Paraguay	1977	28	27	2	3	63	25	17	9	15	...	56
Peru	1977	45	32	59	33	1	9	45	63	...	50	...
Philippines	1976	40	54	11	14	53	19	20	51	58	58	65
Portugal	1977	71	77	21	41	39	30	49	24	46	51	...
Rwanda	1977	23	62	13	12	82	92	6	19	34	33	68
Senegal	1975	62	35	42	26	27	23	36	18	1	21	1
Sierra Leone	1978	67	30	47	56	12	21	34	26	14	42	16
Singapore	1977	86	64	40	13	3	5	61	2	6	1	12
Somalia	1977	80	71	87	82	82	90	86	83	64	...	18
Spain	1977	13	20	9	22	42	36	28	36	33	5	14
Sri Lanka	1977	14	11	46	36	82	89	26	56	26	...	...
Sudan	1977	4	50	5	6	25	10	3	77	7	...	38
Suriname	1976	90	...	62	...	68	85	60	38	47	...	33
Swaziland	1977	66	25	74	58	8	48	72	74	...	58	...
Sweden	1977	46	47	81	68	58	61	50	46	65	58	20
Syrian Arab Rep.	1977	1	74	24	7	57	37	70	67	69	54	45
Tanzania	1977	47	58	53	73	82	84	47	69	66	49	34
Thailand	1977	7	69	36	19	82	83	43	39	24	58	47
Tunisia	1977	19	10	89	79	61	70	38	78	41	...	43
Turkey	1977	29	51	43	8	10	3	37	17	67	55	62
United Arab Emirates	1977	83	68	...	...	...	...	23	...	3	...	...
United Kingdom	1977	51	56	80	54	30	29	78	50	52	58 *	41
United States	[1]	12	79	34	31	38	26	39	6	...	...	2
Upper Volta	1973	42	73	31	29	16	15	16	3	31	...	17
Uruguay	1978	89	38	12	16	62	55	8	15	32	41	25
Venezuela	1977	18	17	64	28	37	28	67	89	56	48	39
Yemen Arab Rep.	1977	61	82	7	18	...	1	...	4	5	...	29
Yugoslavia	1977	5	82	...	80	47	64	...	7	...	...	...
Zambia	1977	82	...	83	84	4	72	56	87	43	35	53
Number of countries in column		91	84	90	91	91	92	86	90	72	66	69

* Asterisk denotes that this particular ranking should be treated with care as actual expenditures were extremely small and predicted expenditures negative—see text for explanation.
[1] 1973–75.

groups attending school fall in the age group 14 years and under, followed by secondary school and university populations. Unfortunately, the population breakdown available for the large sample of countries enabled only the under 15 age group to be included; over 15 years, the population span included the active workers through age 65, negating any explanatory power of the secondary school and university groups.

An alternative measure of the effective demand for education would be the enrollment rates of the primary and secondary school age populations, respectively. The higher the enrollment rate is, *ceteris paribus,* the higher the expenditure share on education should be. Technological factors also influence the level of spending on education. The higher the pupil-teacher ratio is at the primary or secondary school level the lower would be the expected share of education spending in total output.

Finally, it might be expected that the costs of educating a widely scattered agricultural population might be higher than the costs of educating an urban, highly concentrated school population, although this factor clearly depends on the costs of urban school development, the quality of rural education programs versus urban education programs, and the costs of urban universities. Expenditure on education might also be expected to increase with per capita income, but this influence could weaken in countries with high per capita income, where the private sector might take over some of the government's responsibility for expenditure on education.

Per capita income proved to be a highly significant determinant of the share in GDP of public expenditure on education, mainly at incomes below US$1,750. In countries with a low per capita income, it is evident that a greater need exists for expenditure on education, but a

breaking point is reached when per capita income rises to US$1,750. Further increases in per capita income tend not to lead to as great an increase in government expenditure on education as for incomes below US$1,750, probably because expenditure on education by the private sector increases to take over part of the burden or because "basic" education needs are satisfied and other priorities (economic and social) take precedence.

Another variable that was highly significant was the enrollment rate in secondary schools for those countries where per capita income was over US$1,750. A positive correlation between the primary school enrollment rate and the share of educational expenditure is also evident for these countries. This tends to bear out the observation that expenditure on education by government is believed to be important for basic primary education for low-income countries but that this attitude changes when per capita income is over US$1,750 and more importance is attached to secondary school enrollment.

Although government expenditure on education is positively correlated with the proportion of the population in the primary school age bracket, the relationship is not statistically significant. In effect, a large share in GDP of expenditure on education will not depend simply on a large number of potential students. It is particularly interesting that government expenditure on education is negatively correlated with the pupil-teacher ratio and with the percentage of the population in urban centers (significant at the 5 per cent level). However, the significant negative correlation with urbanization suggests a stronger explanatory power than might be expected for the hypothesis that it will cost the government more to educate a rural population than an urban one.

It is interesting to note that the spread between predicted and observed results for education expenditure is the smallest of all the functional categories, suggesting a greater unanimity and consensus among countries in relation to government expenditure on education. The Governments of the United Kingdom and the Netherlands appear to spend about 50 per cent more than expected, while that of the United States spends about 15 per cent less than expected. These results reflect the major differences between the three countries in their degree of state involvement in the education sector, notably universities; the United States relies far more on the private sector at this level of education (Table 1). Many Middle Eastern and North African countries seem to spend more than might be expected on education but these countries can be contrasted with their neighbors, Sudan and the Yemen Arab Republic. On balance, two thirds of the African countries spend more than would be predicted; two thirds of the Latin American countries and all of the European developing countries (Turkey, Cyprus, Greece, Malta, and Portugal) spend less than expected (i.e., have an IEC index of less than 100).

Health

This category includes government expenditure on general administration, regulation, and research for health; on hospitals, medical and dental centers, and clinics; on population control, immunization, and inoculation; and on blood donor services. It also covers the reimbursement for services of individual doctors, dentists, and paramedics under insurance schemes for individual health services outside hospitals and clinics. It excludes expenditures that would fall under social security and welfare (see p. 15).

The share in GDP of government expenditure on health might be expected to be positively correlated with factors suggesting a high basic demand for medical care, such as high infant mortality rates,[11] a large population under 15 and over 65, a low life expectancy rate, a high birth and population growth rate, and poor access to clean water supplies. The higher the quality of care (for which high ratios of hospital beds, nurses, and doctors per unit of population are used as proxies) the higher would be medical expenditure. While it would also be desirable to capture the effect of any unusual country-specific disease (such as schistosomiasis, onchocerciasis, or trypanosomiasis in some of the African countries), it was impossible to collect sufficient data in this study for a significant sample of countries to test any such relationship. Finally, medical care could be expected to increase as per capita income increased.

In fact, few of these variables were significant and over 60 per cent of government expenditure on health was explained by the proportion of the population aged 65 and over (significant at the 2 1/2 per cent level) and by the ratio of population to hospital beds. Access to clean water supplies was very significant where per capita income exceeded US$1,750. In principle, one might expect poor access to clean water supplies to be associated with ill health and, thus, with a greater demand for medical care. The reverse relationship in the results suggests that access to clean water supplies may be a proxy for the overall level of economic development. Indeed, there is some correlation between the index of clean water and per capita income ($R = 0.75$ in the sample as a whole, and $R = 0.86$ for countries with per capita income in excess of US$1,750). This possible multicollinearity may also explain why per capita income proves to be an insignificant explanatory variable.

It is interesting to note that, while the proportion of population over 65 is a strongly significant factor, the variables relating to the portion of the population under 15 years, the infant mortality rate, and the birth rate were all statistically insignificant (results not shown).

[11] A low infant mortality rate could, of course, reflect the effectiveness of high public health expenditures.

Again, the obvious presence of a potential demand for a sector's services does not necessarily indicate that the services will be forthcoming. There is a statistically significant but weak positive quantitative relationship between the per capita ratio of hospital beds and the share of health expenditure at low incomes; the quantitative relationship becomes far stronger at per capita income over US$1,750, probably reflecting a greater preoccupation with the quality of medical care at higher incomes.

As with education, there is also a fairly tight bunching of IEC index values in the health sector, with a low standard deviation for the index. In terms of country rankings, most of the industrial European countries appear to spend more on health than might be expected, given their population structures, their water supplies, and their provision of hospital beds. However, it is noteworthy that government expenditure on health in the United States and Japan is some 25–30 per cent less than might be expected and that the developing countries in Europe have IEC indices less than 100. The U.S. and Japanese results again arise from the prominence of the private sector in the provision of medical care in these countries. As was true for education, two thirds of the Latin American countries spend less on health than would be expected; however, this may reflect only a problem in statistical classification. The indices of some countries with strikingly low IEC indices for health—such as Luxembourg, Argentina, Costa Rica, Paraguay, the Syrian Arab Republic, Sudan, and Nicaragua—may be misleading in their implications if account is taken of the share of their expenditure on social security (see below).

Social Security and Welfare

This category includes expenditure on social security; sickness, old age, and disability payments; and payments under contributory and noncontributory schemes; and underfunded and unfunded pension and disability plans for government employees (civil or military). It also includes unemployment, family, maternity, and child allowances, as well as any other public assistance. Welfare services include care of the elderly, disabled, mentally defective, and children.

The variables selected explain about 80 per cent of the share in GDP of government expenditure on social security and welfare. Government spending on this function would be expected to be strongly associated with the number of elderly people in the total population; indeed, this variable is significant at the 1 per cent level. The other variable that is strongly correlated with social security and welfare expenditure is the proportion of the labor force in industry; as the labor force in manufacturing expands, so does government responsibility for unemployment pay and for sickness and injury benefits. It might also be supposed that, as per capita income rises, private sector insurance might assume more responsibility for social security and welfare. This hypothesis is borne out in the results. Similarly, it could be expected that the proportion of population under 15, life expectancy, and the various medical variables might be significant; in fact, none of these was found to be particularly significant and only the infant mortality rate is included as an explanatory variable.

The German Government appears to spend on health about what would be expected, but, interestingly, the United Kingdom, often considered to be a "welfare state," spends some 34 per cent less than would be expected. While the U.K. Government is involved in the provision of many social or welfare services, it spends less on these than many other countries, in terms of the level of benefits per recipient and in the quality of services provided. Nicaragua and Tanzania appear to spend substantially more than would be expected, given the structure of their population and their per capita income. Most OECD member countries cluster around 90–120 per cent of expected government expenditure on social security and welfare.

Health, Social Security, and Welfare Combined

These categories were combined to test whether the explanatory power of the variables improved because of overlap and possibly poor distinction between the categories of "health" and "social security" expenditure. As noted above, some countries, particularly in Latin America, have difficulty in accurately distinguishing items of health and social security expenditure; this may have led to the extremely high IEC indices for social security and the extremely low indices for health, which can be seen in Table 5. The index for the combined functional categories may be more representative of their expenditure patterns.

The proportion of the population over 65 and per capita income were both explanatory variables significant at the 1 per cent level. The percentage of the labor force in industry was also significant at the 5 per cent level. As the population over 65 increased, as the percentage of the labor force in manufacturing expanded, as income per capita rose, and as the infant mortality rate increased, expenditure on health and social security could be expected to be higher.

Again, expenditures on health, social security, and welfare by the Governments of Ireland, Japan, the United States, the United Kingdom, Norway, and Australia appear to be lower than would be expected on the basis of their population and per capita income, whereas corresponding expenditure by Germany appears to be

Table 5. IEC Indices for Health and Social Security in Selected Countries Where Medical and Social Security Systems Partly Overlap

Country	Health	Social Security	Combined Health and Social Security
Paraguay	19.8	139.9	75.3
Syrian Arab Republic	29.7	122.1	86.6
Uruguay	54.5	139.4	113.5
Costa Rica	42.7	210.0	135.1
Nicaragua	46.3	400.0	212.0

approximately what would be expected. The expenditures of the Governments of France, Sweden, Italy, New Zealand, Mexico, Israel, Egypt, and the Netherlands all appear to be higher than expected.

Housing

Government expenditure in this area covers the provision of housing and of housing payments tied to the income level of the recipient; it also includes rent subsidies, some home purchase subsidies (exclusive of tax expenditures), and any administrative costs.

As expected, the most significant explanatory variables were those relating to urbanization and per capita income (significant at the 5 per cent and 1 per cent levels, respectively). However, the importance of these variables depends on the amount of per capita income. No matter how urbanized the country is, the share in GDP of government expenditure on housing increases as per capita income rises to US$1,750. Once this figure is reached, *ceteris paribus,* an increase in per capita income alone does not trigger further public sector housing involvement. (In some cases, this may reflect the increasing involvement of the private sector's construction industry.) Once per capita income rises above US$1,750, the degree of government involvement then becomes sensitive to the extent of urbanization. Increasing urbanization triggers further increases in the share in GDP of government housing expenditure.

This seems to indicate that in countries with a low per capita income, the government cannot enter into the budgetary expense of open-ended subsidies for housing even in large urban areas. The authorities are much more likely to attempt to control this element by controls on rents and licenses to build. However, as per capita income rises and more urbanization occurs, the pressure for public housing increases and government expenditure on publicly subsidized housing becomes strongly identified with urbanization.

The standard deviation of the IEC index is extremely high for this functional expenditure category. Uruguay's spending on housing is 92 per cent less than expected, whereas Somalia spends far more than expected (2 per cent of GDP rather than the predicted 0.25 per cent). It may be noted that the United States spends 36 per cent less than expected, France and Germany have IEC indices closer to unity, and the United Kingdom is far above (two and a half times as much) what might be predicted. In general, African, Latin American, and industrial countries appear to spend less than might be expected.

Agriculture

This covers the provision of agricultural services and financial support programs for farm prices and incomes through market intervention subsidies and price supports, and forestry and inland and ocean fishing programs, as well as research in all the sectors just mentioned.

Government expenditure on agriculture might be expected to be a function of the importance of the sector in the economy, as proxied by its share of the labor force, and might also be expected to be dependent on the type of land associated with different amounts of rainfall. Unfortunately, insufficient information for a number of countries makes it impossible to include the quality and extent of arable land as an explanatory variable. However, expenditure on agriculture might also be expected to have some functional relationship to agricultural exports or, indeed, a negative relationship to non-food agricultural exports as a percentage of total exports. Tests were made in the study to include such variables, but it was found that the only significant variables were the percentage of the labor force employed in agriculture (significant at the 1 per cent level) and per capita income, both with a positive impact on the share of government. This is not surprising. These forces, however, work in opposite directions for some countries. For example, many European countries have a high per capita income that suggests increased spending by government on agriculture, but this is offset by the rapidly shrinking labor force in agriculture, which is a more powerful factor in reducing the impetus for governments to spend on agriculture rather than on other competing claims.

The ranking of countries by their government expenditure on agriculture confirms this outline. Some of the

countries with IEC indices close to 100 the United Kingdom, which spends 95 per cent of what might be expected on agriculture, and Italy, which spends exactly what is expected—have higher per capita incomes and smaller contracting agricultural labor forces, where these two offsetting circumstances produce almost precisely the expected expenditures.[12] However, a country like Mauritius, which has a large agricultural labor force and a low per capita income, spends over three times more than might be expected on agriculture, and indeed much the same is true of countries like Finland, Iceland, Japan, and Norway, all of which spend more than twice as much as might be expected—probably to assist the fishing activities of these countries. It is interesting to note that advanced countries that depend on agriculture for a major contribution to their balance of payments (for example, Denmark and New Zealand) are well above the mean. It is equally striking, on the contrary, that governments such as those of the United States and Argentina spend so much less than expected.

In general, governments in African countries seem to spend as much or more than might be expected on agriculture, Asian countries somewhat less, and Latin American countries significantly less.

Economic Services: Mining, Manufacturing, and Construction

This functional category includes expenditure for the promotion, regulation, research, subsidization, and other assistance to the mining, natural resources, manufacturing, and nonhousing construction sectors. It also includes investment grants to these sectors.

Government contributions to mining and manufacturing are strongly correlated (significant at the 1 per cent level) with the share of exports of other manufactured goods and fuel in total exports but negatively correlated with the percentage share in GDP of manufacturing. Again, it is interesting to note that per capita income does not prove to be a significant determinant of the share of such expenditure. Basically, as one would expect, the more industrially developed the country is the less likely it is to subsidize industry (under the limitations of the General Agreement on Tariffs and Trade and limitations on export credit guarantees). At the same time those countries committed to exporting manufactured products are likely to spend government revenue on attempting to help both mining and manufacturing.

Out of a sample of 72 countries in all, only 24 actually spend more government money than might be predicted on subsidizing mining and manufacturing. What is, perhaps, most interesting is the number of highly industrialized countries that apparently spend more than might be expected: Norway, 23 per cent; the United Kingdom, 31 per cent; Belgium, 38 per cent; France, 35 per cent; Sweden, 140 per cent; and Italy, over 300 per cent more. On the whole, Asian, Latin American, and African countries spend less than might be expected on subsidizing and supporting industry.

Economic Services: Electricity, Natural Gas, Steam, and Water

This category encompasses expenditure for the promotion, regulation, research, subsidization, and provision of investment grants for production, transmission, and distribution of electricity, natural gas, or steam. It does not include the mining of natural gas, which is classified under mining. This category also includes expenditure on the regulation, purification, and distribution of clean water for general use (not for irrigation).

The most straightforward hypothesis is that government expenditure in this category will rise with per capita income, the urbanization of society, the growth of manufacturing, and increased access to clean water supplies. Interestingly, per capita income was negatively and very weakly associated with expenditure on utilities, but significant variables at the 1 per cent level were urban population growth, changes in the percentage of GDP related to manufacturing, and access to clean water supplies.

Urban population growth was positively associated with this government expenditure, but only at per capita incomes over US$1,750. On the other hand, the share in GDP of government expenditure on energy and water declines as the role of the manufacturing sector increases for countries with a per capita income below US$1,750; for countries with incomes above this amount, the share in GDP of manufacturing is no longer statistically important. This initial negative relationship appears contrary to what would be expected, because increased public expenditure on electricity, steam, and gas might be expected as manufacturing increases. One possible explanation is that as the manufacturing base of the country expands, the energy supply industry becomes more profitable and the required transfers from government to these utilities on both current and capital account become less. Presumably, industry generates sufficient income to compensate utilities commercially and to enable them to operate with smaller governmental subsidies or with none at all. Similarly, in agriculturally oriented countries, the government is usually more actively involved in providing water for rural households.

[12]It should be noted that European Economic Community agricultural subsidies that do not move through the consolidated national government budgets (for example, adjusted artificial agricultural exchange rates) will not be included in these functional categories.

The index of access to clean water supplies has a strong positive explanatory power for countries with per capita income below US$1,750; for countries with a higher per capita income, there is a negative relationship between access to clean water supplies and the share in GDP of government expenditure on water and energy. This probably reflects two influences: first, that at very low per capita income increased government expenditure leads to a rapid increase in access to clean water, but for countries with more than US$1,750 per capita income, increases in government expenditure on this overall category might improve electricity, steam, and gas more than water supply; second, at higher per capita income, charges for water, electricity, and gas reduce the necessary government subsidy for provision of these services.

The governments of countries like Egypt and Pakistan appear to be spending just about as much as would be expected on these services, given their own particular combinations of urbanization, manufacturing base, and population access to water supply. However, it is striking how governments such as those of Korea, Singapore, and Bangladesh appear to spend minimal amounts on the provision of these services,[13] whereas, as might be expected, some developing countries in the process of industrialization appear to spend a great deal more on energy and water provision (for example, Mexico, the Philippines, Thailand, and Turkey). Sweden certainly seems to be in an anomalous position but its high expenditure level probably reflects the large capital investment associated with its nuclear energy program.

[13]Presumably, utilities in these countries charge rates that negate the need for recourse to budget financing.

Economic Services: Roads, Other Transport, and Communications

This category includes expenditure on roads, railways, other transportation, and communications. Government expenditure on transport and communications could be expected to increase as per capita income rises and as urbanization increases; it could also be expected to rise as exports increase (to transport both industrial and agricultural goods to railways and harbors). In fact, one of the strongest associations of expenditure on these services (significant at the 5 per cent level) is with the growth in urban areas. Government expenditure on transport and communications was weakly associated with the share in total exports of other manufactured goods and fuel and negatively with the shares in GDP of manufacturing and agriculture. While such expenditure can be expected to rise with per capita GDP, the relationship is statistically insignificant.

In terms of country ranking, Ghana and Tanzania seem to spend close to what might be expected, but Turkey, Canada, and Italy spend approximately twice as much.

IV Determinants of Shares in Gross Domestic Product of Economic Expenditure Categories

Introduction

This section analyzes the determinants of the shares of alternative economic categories of public expenditure as a share of GDP. The principal approach in specifying the equations is to assume that a specific technological bias exists in respect of the provision of different functional expenditure categories and that the relative importance of these functional categories in a given country will determine the relative importance of the different economic categories of expenditure used to realize these objectives.

Table 6 provides the basic econometric results used for calculating the IEC indices; to maximize the size of the sample of countries, these equations use the aggregate functional category of expenditure on economic services. To obtain a clearer picture of the relative impact of spending on the different economic services subsectors—transport, electricity and water, agriculture, and mining and manufacturing—equations have been estimated by using these more disaggregated variables (Table 7).

Table 2 provides the IEC index, and Table 8 ranks countries by the value of the IEC index (as Table 4 does for the functional expenditure shares).

Goods and Services

Wages and Salaries

This expenditure category covers all payments in cash before the deduction of withholding taxes, social security payments, or pension fund contributions. It does not include income in kind such as the value of food, clothing, or lodging provided free of charge or below market prices; such income in kind is included under "Goods and Services Other Than Wages" (see p. 21).

Table 6. Determinants of Economic Categories of Expenditure as Share of Gross Domestic Product

	Current Expenditure						Capital Expenditure		
	Goods and services								
All Dependent Variables as Share of GDP	Wages and salaries (1)	Other goods and services (2)	(1) + (2) (3)	Interest payments (4)	Subsidies and transfers (5)	(1) + (2) + (4) + (5) (6)	Acquisition of capital assets (7)	Capital transfers (8)	(7) + (8) (9)
Constant	5.69**	1.31*	3.57**	0.72**	−2.07**	2.75**	−0.42	2.16**	−0.62
	(4.60)	(1.69)	(3.08)	(2.22)	(−2.31)	(2.56)	(−0.48)	(2.74)	(−0.81)
General public services expenditure/GDP		0.23**					0.58**		
		(2.08)					(4.47)		
Defense expenditure/GDP		0.68**	0.63**	0.18**	0.38**	1.25**		−0.07	
		(9.43)	(5.83)	(5.18)	(3.10)	(10.43)		(−1.37)	
Education expenditure/GDP	0.74**	−0.44**	0.72**		0.76**	1.85**	−0.27		
	(4.33)	(−2.29)	(2.51)		(3.75)	(6.24)	(−1.29)		
Health expenditure/GDP		0.71**	1.01**	0.33**		1.61**			
		(3.03)	(2.51)	(2.85)		(3.82)			
Social security and welfare expenditure/GDP		−0.07			1.12**	1.09**	−0.07		1.02**
		(−1.08)			(12.64)	(10.60)	(−0.93)		(2.97)
Economic services expenditure/GDP	0.22**	0.26**	0.46**	−0.10*			0.65**	0.20**	0.98**
	(2.48)	(2.96)	(3.66)	(−2.46)			(6.67)	(3.13)	(10.01)
Income per capita (in thousands of U.S. dollars)	−0.42**	0.15	−0.07	0.03	0.30*	0.01	—	−0.18	−0.19**
	(−2.68)	(−1.11)	(0.39)	(0.51)	(1.90)	(0.09)	(0.02)	(−1.47)	(2.03)
Share of labor force in agriculture	−0.04**							−0.03**	
	(−2.76)							(−2.88)	
R^2	0.42	0.67	0.62	0.38	0.88	0.91	0.64	0.22	0.65
(N)	(65)	(61)	(78)	(77)	(76)	(80)	(72)	(62)	(83)

* Significant at a 10 per cent level.
** Significant at a 5 per cent level.
t-statistics are in parentheses.

Table 7. Determinants of Economic Categories of Expenditure as Share of Gross Domestic Product Using Disaggregated Categories of Expenditure on Economic Services

All Dependent Variables as Share of GDP	Wages and Salaries (1)	Goods and Services (2)	Interest Payments (3)	Capital Expenditure: Acquisition of capital assets (4)	Capital Expenditure: Capital transfers (5)	Capital expenditure (4) + (5)
Constant	6.26**	3.61**	0.87**	-0.22	2.11**	0.83
	(4.90)	(3.03)	(3.74)	(-0.26)	(2.55)	(1.11)
General public services expenditure/GDP				0.55**		
				(4.13)		
Defense expenditure/GDP		0.73**	0.25**		-0.07	
		(6.32)	(6.73)		(-1.26)	
Education expenditure/GDP	0.80**	1.04**		-0.05		
	(4.22)	(3.38)		(-0.24)		
Health expenditure/GDP		0.90**				
		(1.95)				
Social security expenditure/GDP				0.01		
				(0.14)		
Housing and community amenities expenditure/GDP						0.79**
						(2.16)
Economic services expenditure						
Agriculture, forestry, and fisheries expenditure/GDP	0.28	0.70			0.79**	0.49*
	(1.01)	(1.58)			(3.59)	(1.81)
Manufacturing, mining, and construction expenditure/GDP	0.68**	1.0**	-0.54**		1.57**	1.12*
	(2.13)	(1.96)	(-2.41)		(4.36)	(1.91)
Electricity, natural gas, and water expenditure/GDP			-0.38**	1.82**		2.45**
			(-2.35)	(5.67)		(5.89)
Transport and communications expenditure/GDP				0.75**	-0.50**	0.81**
				(3.47)	(-2.44)	(2.64)
Income per capita (in thousands of U.S. dollars)	-0.51**	-0.25	0.16**	-0.22	0.08	-0.32**
	(-2.73)	(-1.08)	(2.73)	(-1.03)	(-0.50)	(-2.27)
Share of labor force in agriculture	0.04**				-0.03**	
	(-2.70)				(-2.64)	
R^2	0.44	0.66	0.53	0.71	0.49	0.82
(N)	(59)	(66)	(56)	(57)	(51)	(58)

* Significant at the 10 per cent level.
** Significant at the 5 per cent level.
t-statistics are in parentheses.

Wages and salaries are a substantial part of all government payments, as is evident from the significant constant term in the estimation. As might be expected, government expenditure on education is a significant explanatory variable. Most countries find that teachers' salaries are an important, and often controversial, component of government expenditure.

Less obvious, but clearly important, is government expenditure on economic services. When the latter is disaggregated by sector, expenditure on mining and manufacturing as a percentage of GDP prove to be significant at the 5 per cent level (Table 7). It seems probable that the staffing costs of administering and monitoring the numerous public sector schemes associated with mining and manufacturing can impose significant costs on government in terms of wages and salaries. The other economic subsectors—electricity, agriculture, water, and transport—do not appear to be important determinants of wage and salary expenditure. Equally interesting, expenditures on health and on public administration as a share of GDP did not prove to be very significant influences on the shares of wages and salaries.

It is interesting to note that per capita income is negatively related and significant. That is, as per capita income rises, it can be expected that government wages and salaries as a proportion of GDP will fall. Presumably, in developing countries government employees form a significant part of the income earners and hence of GDP, but as the country develops, the relative importance of direct government provision of services, and thus the government's role as an employer, falls and other types of expenditure (e.g., transfers) become more important. Appendix Table 13 shows that generally the ratio of government wage expenditure in total expenditure is relatively higher in poorer countries.[14]

In testing the impact of a country's economic structure on public wage and salary expenditure, the proportion of the labor force in agriculture proves to be negatively correlated with government expenditure on wages and salaries (significant at the 5 per cent level) which is to be expected. In effect, across countries at a given level of development, those with a large labor-intensive agricul-

[14] Many developing countries, particularly in Africa, use government employment as a substitute for unemployment relief; as development occurs, this form of hidden welfare payment affects government wages and salaries less and less.

tural sector are likely to provide fewer direct government services.

Some large European countries spend less than expected on wages and salaries (for example, Italy, the United Kingdom, and Austria). Overall, defined in terms of an IEC index below 95, Asian, African, and Latin American countries allocate less to wages and salaries than might be expected, Middle Eastern countries tend to allocate more. The dispersion of IEC indices is fairly narrow for this category of expenditure, suggesting that countries tend to be more likely to spend what would be expected on wages and salaries than on other categories.

Goods and Services Other Than Wages

This category covers all goods and services bought on the market or received through loans or grants (materials, office supplies, rent, fuel, electricity, travel, telephones, equipment with a life less than a year, and goods and services distributed to employees free of charge); not included are fixed capital assets, stocks, land, and intangible assets.

For most countries, it seems that a strong determinant of increased expenditure on other goods and services will be increases in defense expenditures (significant at the 1 per cent level). Large shares in GDP of expenditure on health, economic services, and public administration also seem to lead to a large share of purchases of other goods and services. Interestingly enough, a large share of expenditure on education is significantly and negatively correlated with such purchases. In effect, it may be that some sectors require a fixed complement of nonlabor inputs for the provision of services, whereas other sectors may be able to substitute labor or, more realistically, squeeze nonwage expenditures, for a given amount of services provided. Not surprisingly, expenditure on social security is not a significant factor in determining such expenditure.

Overall it seems that there is no systematic pattern across regions in terms of a bias toward such expenditure. There is a slightly higher dispersion in IEC index values for this category of expenditure, but the standard deviation of the IEC index seems significantly below that of other current or capital expenditure categories.

Total Goods and Services

This expenditure category is the aggregate of government spending on wages and salaries and on other purchases of goods and services. Probably the most interesting point about this equation is that, despite the high level of explanatory power ($R^2 = 0.62$), per capita income has an insignificant value. The most important influences are government expenditures on defense, education, agriculture, manufacturing and mining, and health—broadly as presented above for each of the separate categories. Social security expenditure is not an important factor in determining such expenditure. In a cross-section of expenditure on economic services, expenditure on mining, manufacturing, and agriculture tends to lead to significant spending on goods and services. With respect to countries with IEC index values five points above or below 100, there is some tendency for African and industrial countries to spend more than would be expected and for Asian and Latin American countries to spend less. Another interesting aspect of these results is that the dispersion in IEC index values is lower for the aggregate category of expenditure than for its disaggregated subcomponents.

Interest Payments

This category covers all interest payments to domestic and foreign holders of government debt. Again, defense spending emerges as one of the most significant explanatory variables. As unexpected defense expenditures associated with emergency circumstances cannot (or are not) financed through current taxation, it would be expected that the associated debt financing would greatly increase interest payments. Surprisingly, countries that have a large share in GDP of public expenditure on health also tend to have larger expenditures on interest.

It could be hypothesized that the larger the proportion of government expenditure on such economic services as electricity and on current transfers to mining and manufacturing the lower interest payments would have to be. The government, instead of nationalizing such concerns (which would involve large capital sums raised through the bond market), provides current subsidies and investment grants, so that a larger share of such expenditures would generally be associated with lower interest payments. The coefficient for expenditure on government economic services is negative and significant, supporting the suggestions made above. This result appears even more clearly when, for a more limited set of countries, expenditure on economic services is disaggregated. The coefficient (-0.38) for expenditure on electricity, gas, and water is even more strongly negative (Table 7).

In country rankings, France seems to spend much less on its interest payments than might be expected, given its per capita income, its defense spending, and its support of electricity, mining, and manufacturing. On the other hand, the United Kingdom spends more than might be expected. Regionally, Asian countries clearly appear to spend more on interest than would be expected, while Middle Eastern countries spend less. The dispersion in IEC indices for this category of expenditure is very high,

Table 8. Ranking of Countries by International Expenditure Comparison Index, 1977: Economic Expenditure

Country	Year of Data	Current Expenditure	Goods and Services	Wages and Salaries	Other Goods and Services	Interest	Subsidies	Capital Expenditure	Acquisition of Capital Assets	Capital Transfers
Argentina	1977	25	3	...	...	72	46	54	34	31
Australia	1977	55	62	...	...	46	33	74	68	...
Austria	1977	43	14	8	53	25	44	48	8	41
Bahamas	1976	22	56	49	49	37	5	25	...	...
Bahrain	1977	17	21	...	23	4	9	64	61	...
Barbados	1977	45	61	37	59	65	7	26	24	30
Belgium	1977	38	5	22	30	59	39	15	29	28
Bolivia	1977	9	24	23	8	14	51	22	22	26
Botswana	1977	32	23	29	27	56	49	57	57	19
Burma	1977	35	...	...	...	...	...	13	...	...
Cameroon	1976	19	41	35	31	12	15	76	56	29
Canada	1977	57	55	...	...	73	21	2	15	...
Chad	1976	44	...	...	...	...	...	23	...	...
Chile	1977	47	49	43	13	60	34	28	45	13
Costa Rica	1977	8	37	33	62	61	13	65	67	27
Cyprus	1977	65	70	62	28	39	26	36	49	37
Dominican Rep.	1976	4	6	19	3	9	64	35	50	42
Egypt	1977	80	63	50	43	66	71	46	20	48
El Salvador	1977	6	10	...	...	10	72	50	23	45
Ethiopia	1977	76	76	59	58	34	25	20	30	10
Fiji	1977	31	47	27	45	57	6	42	37	24
Finland	1977	42	53	...	...	18	31	10	43	...
France	1977	12	4	28	22	11	42	27	69	38
Gambia, The	1977	78	66	32	52	31	59	45	28	9
Germany, Fed. Rep.	1977	49	68	...	...	27	30	47	70	...
Greece	1977	20	73	65	36	33	2	43	46	18
Grenada	1977	34	57	48	39	21	10	3	...	...
Guatemala	1977	5	8	10	6	28	53	63	13	55
Honduras	1976	1	31	31	35	20	1	79	52	57
Iceland	1977	40	7	42	10	35	55	29	10	47
Iran	1976	60	43	52	19	6	57	61	65	16
Israel	1977	48	40	18	42	64	35	7	9	54
Italy	1975	18	1	5	2	62	48	14	5	43
Jamaica	1977	74	42	36	48	75	65	38	36	39
Japan	1977	...	...	...	...	...	...	17	...	...
Jordan	1975	37	38	...	...	22	24	56	47	33
Kenya	1977	39	28	34	29	48	60	32	32	1
Korea	1977	14	12	2	26	23	67	68	35	46
Kuwait	1977	72	45	56	46	...	56	30	21	1
Lesotho	1974	...	...	25	...	...	...	39	25	...
Liberia	1977	67	59	54	24	30	68	77	51	1
Luxembourg	1977	54	34	61	60	55	32	12	16	23
Madagascar	1973	61	52	58	16	17	63	41	31	12
Malawi	1977	68	33	4	51	71	70	67	58	32
Malaysia	1977	23	32	46	15	58	36	80	44	51
Mali	1976	29	64	63	9	1	38	31	14	1
Malta	1977	56	71	57	54	32	19	9	40	...
Mauritius	1977	71	30	41	12	63	62	34	18	36
Mexico	1977	7	13	11	25	76	11	...	39	22
Morocco	1977	10	27	45	5	41	16	81	62	15
Netherlands	1977	27	2	9	11	26	52	55	...	49
Nicaragua	1976	3	29	13	37	42	4	60	59	50
Niger	1977	58	51	30	57	67	66	53	19	61
Norway	1977	64	35	...	...	53	47	1	2	...
Oman	1974	...	39	14	...	5	...	73	...	44
Pakistan	1977	69	26	...	...	54	75	18	33	7
Panama	1977	52	65	51	50	70	14	33	12	40
Papua New Guinea	1977	75	75	...	...	68	12	5	3	21
Paraguay	1977	16	36	15	34	19	18	72	60	20
Peru	1977	33	17	...	...	69	61	49	38	35

Table 8 (concluded). Ranking of Countries by International Expenditure Comparison Index, 1977: Economic Expenditure

Country	Year of Data	Current Expenditure	Goods and Services	Wages and Salaries	Other Goods and Services	Interest	Subsidies	Capital Expenditure	Acquisition of Capital Assets	Capital Transfers
Philippines	1976	51	22	6	18	29	74	6	...	...
Rwanda	1977	15	19	24	20	3	73	44	42	...
Senegal	1975	59	69	55	55	16	54	51	11	61
Sierra Leone	1978	73	67	21	61	45	58	21	...	...
Singapore	1977	21	54	26	38	50	3	59	64	8
Somalia	1977	62	...	...	...	...	...	19	...	...
Spain	1977	24	60	53	47	13	22	70	66	34
Sri Lanka	1977	50	18	17	21	74	40	75	53	53
Sudan	1977	79	15	1	40	77	75	37	54	1
Suriname	1976	70	74	60	44	8	8	69	41	11
Swaziland	1977	36	48	47	32	7	17	52	48	1
Sweden	1977	66	78	...	...	36	28	71	71	...
Switzerland	1977	77	77	...	...	47	43	82	...	...
Tanzania	1977	63	46	40	41	52	41	24	7	58
Thailand	1977	13	25	3	56	38	37	58	63	59
Tunisia	1977	11	16	20	17	44	27	66	55	52
Turkey	1977	46	9	16	4	51	69	11	26	17
United Arab Emirates	1977	2	...	...	...	...	...	83	...	...
United Kingdom	1976	30	11	7	33	43	50	4	17	25
United States	1977	53	72	...	...	40	23	78	71	...
Upper Volta	1977	41	44	12	1	24	45	16	1	56
Uruguay	1978	28	50	39	14	15	29	40	27	14
Venezuela	1977	26	20	38	7	49	20	62	6	60
Yemen Arab Rep.	1977	...	58	64	...	2	...	...	...	...
Zambia	1977	...	...	44	...	...	...	8	4	...
Number of countries in column		78	80	65	62	77	83	76	72	62

suggesting possibly that time plays such an important role in determining eventual annual interest payments unique to each country that cross-section analysis is not appropriate for this functional category.

Subsidies and Other Current Transfers

Subsidies include all transfers on current account to private industries and grants to public enterprises for offsetting operating losses stemming from government action. Other current transfers include transfers to other levels of government for current purposes, grants to private nonprofit institutions, and, most important, cash transfers to households (including payments for social security, unemployment benefits, family allowances, civil service pensions, and scholarships).

Such expenditure should be associated with the expansion of social services and welfare (for example, social security, welfare, and education), as society is more capable of subsidizing the provision of such services or providing transfers made to improve income distribution. It might also be expected that the expansion of both a modern agricultural sector and a manufacturing sector would lead to subsidies (although insofar as these sectors proved efficient and profitable, subsidies would become unnecessary).

The result is that almost 88 per cent of government expenditure on subsidies and transfers as a share of GDP is explained by the proportion in GDP of government expenditure spent on social services, education, defense, and per capita income. Health expenditure is not significant. Per capita income, although positively correlated, is only significant at the 6 per cent level. As mentioned above, expenditures on social security and education might be expected to be important, but expenditure on defense as a powerful explanatory variable is somewhat surprising. Perhaps the industries that are needed to ensure domestic defense require industrial subsidies (for example, for steel and shipbuilding) or large defense expenditures might require complementary inputs at subsidized prices (transport, energy).

In the country rankings, it is surprising that Mexico seems to offer almost 50 per cent less in subsidies than might be expected, although this is possibly explained by aid to industries in other ways, such as tax concessions, and much the same may be true of the United States. At the same time, it would not be expected that the United Kingdom spends some 24 per cent more than predicted on subsidies, Korea 73 per cent more, the Philippines and Egypt more than twice as much, and Sudan and Pakistan over four times as much. Equally interesting, African countries tend to spend far more than expected

on subsidies and transfers, but it is not known which sector is benefited most—the urban or the rural. More than half of the Latin American countries spend less than expected. Although the predictive power of the equation is high, the dispersion of IEC index values is also high.

Total Current Expenditure

This expenditure category represents the aggregate of the categories discussed above, that is, expenditure on wages and other goods and services, interest, subsidies, and transfers. Countries that allocate a large share of GDP to public expenditure on defense and social services (health, education, and social security) rely on current expenditure as the main instrument for realizing these objectives.

The dispersion of IEC index values is the lowest of all the economic variables. Almost all the Latin American countries and two thirds of the Asian countries spend far less on current expenditure than would have been predicted; conversely, most of the African countries spend more than expected.

Capital Assets

This category covers the acquisition of new and existing durable goods (with a normal life in excess of one year) but excludes all military goods. Two key areas of functional expenditure give rise to the purchase of capital assets: expenditure on economic services and on general public administration. The higher the share in GDP of expenditure on general public services (police, general administration, the judiciary, legislature) the higher is government investment (significant at the 1 per cent level). This is similarly true for expenditure on economic services, with the key subsectors being public expenditure on utilities and transport (Table 7). Other key functional categories, such as health, education, or social security, prove to be unimportant as factors explaining the share in GDP of public capital investment. The amount of per capita income is not an important factor in determining whether public sector investment is an important share of GDP.

A problem with the capital investment variable is that a figure for any one year can be misleading. It is in the nature of government acquisitions of capital assets that they are made sporadically; governments change and with them the prevailing views on the role of government ownership of capital. Thus, the low actual ranking of the United Kingdom, compared with what might be expected given that nation's size of public administration and its expenditure on utilities and roads, is misleading and does not reflect the substantial capital investment already made by the Government of the United Kingdom in the 1950s and 1960s. Similarly, the high figure for Sweden might be predicted, but that for Spain may simply represent a catching up after years of a deliberately contained government investment in capital projects. Finally, across regions, a slight majority of African countries tends to spend less than expected on capital investment.

Capital Transfers

Capital transfers are unrequited payments to help the recipients (other branches of government, public enterprises, or the private sector) to buy capital assets or to compensate for loss, damage, or some extraordinary problem. To some extent, they could be viewed as a reciprocal of the acquisition by the State of capital assets. Such transfers could be expected to be associated positively with the growth of a modern agricultural sector and the mining and manufacturing sectors. To the extent that the central government is involved directly in capital acquisition, such transfers would need to be less.

The key functional expenditure determining the share in GDP spent on public capital transfers is expenditure on economic services. Within this, the principal economic subsectors are government spending on roads, agriculture, and mining and manufacturing. Expenditure on capital transfers is positively related to the amount the government spends on agriculture as a proportion of GDP (significant at the 5 per cent level) but negatively correlated with the proportion of the labor force in agriculture, suggesting that the smaller the labor force and the more modern the agricultural sector the more likely it is that government expenditure may take the form of capital transfers. Such transfers enable the smaller agricultural labor force to use more modern equipment and to improve its capital stock for processing and storage and allow it to be protected from the effects of natural disasters. Much the same appears true for the mining and manufacturing sectors.

The negative coefficients for defense expenditure and government expenditure on roads tend to suggest that such spending preempts government allocation for capital transfers. Per capita income does prove to be modestly significant for this variable; the negative coefficient suggests that, again, with higher per capita incomes the need for government expenditures on capital transfers is reduced.

In the country rankings, it is surprising that a country such as the Netherlands spends almost twice what might be expected, given the relative importance of its agricultural, mining, and manufacturing sectors. However, this may be explained by the sporadic nature of capital transactions, although capital transfers—often made under

entitlement programs—would be expected to be less responsive to major fluctuations than purchases of capital assets directly by government. Across regions, countries in Africa and Latin America tend to spend less than would be expected on capital transfers.

The dispersion in IEC index values is the highest for this type of expenditure; only 4 of the 62 countries in the sample have IEC values between 95 and 105 (Table 3).

Total Capital

This category is the aggregate of government expenditure on the acquisition of capital assets and capital transfers. Expenditures on the more capital-oriented functional categories—economic services, housing, and community amenities—prove to be the most important determinants of the share in GDP of public capital expenditure. When the economic services category is disaggregated, it is found that expenditure on electricity, gas, and water, on mining and manufacturing, on roads, and on agriculture gives rise to a significant amount of capital expenditure (Table 7).

Across regions, the key imbalance appears in Africa and in the industrial countries, where a significant majority of countries seem to spend less on capital expenditure than expected. Perhaps because of the importance of the members of the Organization of Petroleum Exporting Countries, the Middle Eastern countries spend more on capital expenditure than expected.

V Balance in Expenditure Composition

From a policy perspective, it is often argued that countries tend to economize on nonwage forms of current expenditure, particularly when faced with a budgetary squeeze. Excessive current spending relative to capital expenditure is also inveighed against. If these hypotheses were true, the expectation would be that countries would exhibit higher IEC indices for wages relative to their indices for other purchases of goods and services—and, similarly, for current expenditure relative to capital expenditure.

Despite the danger of interpreting a cross-section study as a time series, it was thought worthwhile to test the above hypothesis. The following measure was calculated (Table 9). The ratio is shown as:

$$B_1 = \frac{[\text{IEC other goods and services}]}{[\text{IEC wages}]} = \frac{\dfrac{\text{Actual share in GDP of purchases of other goods and services}}{\text{Actual share in GDP of wages}}}{\dfrac{\text{Predicted share in GDP of purchases of other goods and services}}{\text{Predicted share in GDP of wages}}}$$

If B_1 is more than unity, it suggests a tendency toward overemphasis on other goods and services *relative* to wages, compared with what might have been predicted.[15] A set of other comparable B measures have been tested as well:

$$B_2 = \frac{\text{IEC current expenditure}}{\text{IEC capital expenditure}}$$

$$B_3 = \frac{\text{IEC wages}}{\text{IEC subsidies}}$$

$$B_4 = \frac{\text{IEC goods and services}}{\text{IEC subsidies}}$$

representing, if B is greater than unity, a tendency to overemphasis on current expenditure relative to capital expenditure (B_2), wages relative to subsidies (B_3), and goods and services relative to subsidies (B_4).

The cross-country patterns were revealing. Focusing on the countries where B_1 is more than 1.05 or less than 0.95, the study found that the wage imbalance hypothesis cannot be confirmed. With the exception of the Asian region, half the countries appear to overspend on wages, while the remaining half overspend on other purchases of goods and services. Only in the Asian region is there a clear bias toward overemphasis on purchases of other goods and services relative to wages; it was found that, in this region, $B_1 > 1.05$ in more than three fourths of the countries.

Examining next the relative balance of current and capital expenditures (B_2), the study found a more varied pattern. In Africa and the industrial countries, a clear bias was found toward relative overspending on current relative to capital expenditure. On the other hand, almost two thirds of the Latin American and Middle Eastern countries had B_2 indices less than 0.95, suggesting a higher weighting of capital expenditure than would have been predicted.

In comparing wages with subsidies and transfers, greater emphasis on subsidies was found in Africa and among the industrial countries. More than two thirds of the African countries attached a higher weight to subsidies vis-à-vis wages than would have been predicted. The reverse was true in the Latin American region. The weight attached to all purchases of goods and services vis-à-vis subsidies also verified the above relationship in Latin America and Africa based on the calculation of B_4.

[15]One could, of course, observe a country with $B_1 < 0$ and still find that its share of wages in GDP exceeds what might have been predicted!

Table 9. Measures of Balance in Composition of Public Expenditure on an Economic Basis

Country	Ratio of IEC Indices for: Other goods and services to wages (B_1)	Current expenditure to capital expenditure (B_2)	Wages to subsidies (B_3)	Goods and services to subsidies (B_4)	Country	Ratio of IEC Indices for: Other goods and services to wages (B_1)	Current expenditure to capital expenditure (B_2)	Wages to subsidies (B_3)	Goods and services to subsidies (B_4)
Argentina	...	0.80	...	0.49	Madagascar	0.56	1.18	0.94	0.73
Australia	...	0.64	...	1.25	Malawi	2.21	0.83	0.29	0.44
Austria	2.13	0.97	0.58	0.68	Malaysia	0.67	0.40	1.15	0.98
Bahamas	1.18	1.10	3.17	3.05	Mali	0.33	1.07	1.77	1.17
Bahrain	...	0.66	...	1.63	Malta	1.05	1.76	1.84	1.87
Barbados	1.79	1.19	2.04	2.45	Mauritius	0.59	1.28	0.72	0.65
Belgium	1.15	1.34	0.80	0.59	Mexico	1.29	...	1.35	1.43
Bolivia	0.66	0.98	0.69	0.68	Morocco	0.41	0.36	1.67	1.30
Botswana	1.11	0.81	0.73	0.70	Netherlands	0.92	0.80	0.52	0.37
Burma	...	1.40	...	...	Nicaragua	1.41	0.58	2.32	2.76
Cameroon	1.06	0.51	1.52	1.59	Niger	1.79	0.96	0.55	0.65
Canada	...	3.32	...	1.42	Norway	...	6.59	...	0.81
Chad	...	1.21	...	...	Pakistan	...	1.58	...	0.22
Chile	0.65	1.19	1.10	1.08	Panama	1.16	1.15	1.97	1.98
Costa Rica	2.70	0.60	1.66	1.76	Papua New Guinea	...	3.75	...	2.65
Cyprus	0.68	1.24	1.69	1.55	Paraguay	1.35	0.56	1.07	1.34
Dominican Rep.	0.51	0.82	0.55	0.45	Peru	...	0.94	...	0.55
Egypt	1.03	1.62	0.53	0.54	Philippines	1.28	2.74	0.20	0.27
El Salvador	...	0.75	...	0.31	Rwanda	0.94	0.86	0.38	0.36
Ethiopia	1.23	1.76	1.74	1.88	Senegal	1.12	1.06	0.97	0.98
Fiji	1.39	0.97	1.92	2.27	Sierra Leone	2.12	1.56	0.60	0.90
Finland	...	1.55	...	1.19	Singapore	1.26	0.74	3.03	3.70
France	0.97	0.99	0.81	0.53	Somalia	...	1.53	...	...
Gambia, The	1.51	1.45	0.65	0.86	Spain	1.01	0.63	1.63	1.51
Germany, Fed. Rep.	...	1.04	...	1.42	Sri Lanka	1.07	0.60	0.73	0.74
Greece	0.50	0.93	8.06	5.50	Sudan	2.91	1.63	0.10	0.20
Grenada	0.97	2.81	2.20	2.13	Suriname	0.86	0.82	2.81	2.94
Guatemala	0.74	0.58	0.55	0.53	Swaziland	0.90	0.89	1.68	1.53
Honduras	1.16	0.31	4.36	4.57	Sweden	...	0.78	...	1.77
Iceland	0.56	1.13	0.80	0.52	Switzerland	...	0.60	...	1.37
Iran	0.67	0.88	0.88	0.73	Tanzania	1.11	1.37	0.93	0.95
Israel	1.41	1.92	0.82	1.03	Thailand	2.41	0.69	0.63	0.88
Italy	0.49	1.29	0.52	0.35	Tunisia	0.97	0.60	0.95	0.90
Jamaica	1.31	1.35	0.61	0.64	Turkey	0.58	1.59	0.42	0.38
Jordan	...	0.83	...	1.29	United Arab Emirates	...	0.17	...	...
Kenya	1.05	1.07	0.67	0.63	United Kingdom	1.60	2.71	0.53	0.59
Korea	2.15	0.60	0.26	0.42	United States	...	0.49	...	1.79
Kuwait	0.94	1.37	0.96	0.75	Upper Volta	0.25	1.35	0.64	0.89
Liberia	0.69	0.63	0.73	0.66	Uruguay	0.74	0.98	1.10	1.17
Luxembourg	1.26	1.56	1.54	1.04	Venezuela	0.56	0.74	1.30	1.08

Appendix

Table 10. Share of Functional Expenditures in Gross Domestic Product, 1977[1]

Country	General Public Services	Defense	Education	Health	Social Security and Welfare	Housing and Community Amenities	Health, Social Security, and Welfare	Agriculture, Forestry, and Fisheries	Mining, Manufacturing, and Construction	Electricity, Natural Gas, and Water	Transportation and Communications
Argentina	1.4	1.8	1.3	0.4	3.7	0.4	4.1	0.2	—	1.1	1.8
Australia	2.0	2.7	5.9	4.5	6.4	0.5	10.9	0.8	...	...	2.1
Austria	5.4	1.1	3.7	4.7	14.2	1.2	19.0	0.8	0.4	—	2.5
Bahamas	3.1	0.4	5.1	3.0	0.8	0.1	3.8	0.4	—	1.3	1.0
Bahrain	4.4	2.2	3.2	3.5	0.8	7.0	4.3	0.4	0.1	5.8	2.3
Bangladesh	1.5	0.2	1.4	0.5	0.9	...	1.4	2.1	0.1	—	0.9
Barbados	4.9	0.2	6.4	3.6	4.5	1.5	8.0	1.5	...	0.6	4.3
Belgium	2.9	2.7	7.3	4.0	17.7	0.8	21.7	0.4	0.8	—	3.8
Bolivia	2.3	1.8	3.2	1.0	0.3	0.2	1.3	0.4	0.4	0.3	1.7
Botswana	8.4	2.0	7.9	2.5	0.1	1.9	2.5	3.3	0.5	1.4	4.9
Brazil	2.7	1.1	1.2	1.6	7.2	0.1	8.7	0.8	0.2	0.2	1.5
Burma	2.5	3.7	1.6	0.8	0.8	0.6	1.7	2.4	0.2	...	0.6
Burundi	3.5	2.4	4.5	1.0	0.7	...	1.8	2.6	0.3	0.5	2.1
Cameroon	5.3	1.7	3.0	1.0	1.3	—	2.3	1.4	0.7	0.2	3.3
Canada	2.1	1.7	5.9	4.9	9.3	1.4	14.2	1.8	...	...	7.4
Chad	3.3	3.9	2.0	0.6	0.3	0.1	0.9	3.1	0.1	—	0.7
Chile	4.6	3.5	4.2	2.0	8.5	1.4	10.5	0.7	–	0.1	1.2
Costa Rica	2.0	0.8	5.5	0.6	4.5	0.4	5.2	0.5	—	—	2.9
Cyprus	4.6	2.5	3.1	1.4	4.7	3.4	6.1	1.1	0.1	0.8	0.9
Denmark	3.2	2.4	3.6	4.8	14.3	0.6	19.1	2.0	0.3	—	1.0
Dominican Rep.	2.2	1.4	1.8	1.4	1.0	2.1	2.4	1.8	0.7	0.4	1.3
Ecuador	1.8	3.2	3.5	0.9	0.1	...	1.0	1.2	...	0.1	...
Egypt	5.6	4.7	5.0	1.7	6.3	1.4	8.0	2.2	0.2	0.7	0.6
El Salvador	2.4	0.9	2.9	1.4	0.4	0.5	1.8	1.0	—	0.2	1.4
Ethiopia	2.7	1.9	2.2	1.0	0.9	0.1	1.8	2.0	0.1	0.1	2.4
Fiji	5.7	0.5	5.7	2.2	0.7	1.0	2.9	1.8	0.6	1.0	2.1
Finland	2.3	1.4	7.1	5.2	8.5	0.7	13.7	3.3	0.7	0.3	2.6
France	2.6	2.6	5.8	5.4	16.1	1.1	21.6	0.6	0.4	0.1	0.5
Gambia, The	11.7	–	3.3	3.0	1.0	0.2	4.0	5.2	...	0.9	6.5
Germany, Fed. Rep.	1.2	2.9	4.7	5.5	15.1	1.1	20.5	0.7	...	...	3.1
Ghana	3.0	...	3.6	1.4	1.5	...	2.8	1.7	0.4	—	1.6
Greece	2.6	5.9	3.1	3.0	8.8	0.6	11.7	2.0	0.5	0.2	2.4
Grenada	1.4	3.7	4.3	3.7	1.2	0.3	4.8	1.2	2.8	...	...
Guatemala	1.5	1.4	1.4	0.8	1.2	0.3	2.0	0.5	—	1.8	0.9
Honduras	4.9	1.8	3.6	2.6	0.8	0.5	3.4	0.5	0.1	...	...
Iceland	3.0	—	3.7	5.6	4.1	1.4	9.7	3.5	0.1	0.9	1.8
India	1.0	2.9	0.3	0.3	...	0.4	0.3	0.7	1.1	...	...
Iran	2.2	10.0	3.6	1.2	1.3	1.6	2.5	1.3	1.8	3.7	2.1
Ireland	...	...	1.9	...	6.9	0.1	6.9	...	...	...	0.6
Israel	2.3	25.6	5.4	2.8	11.7	0.6	14.5	0.5	0.9	0.6	1.1
Italy	3.9	1.3	4.9	6.5	13.0	0.8	19.5	1.1	2.5	...	2.8
Jamaica	4.2	0.9	6.2	2.6	1.1	2.0	3.8	2.3	0.3	0.6	2.1
Japan	...	...	4.2	3.0	4.3	1.4	7.2	2.9	—	...	2.1
Jordan	8.1	17.3	5.9	2.7	6.0	0.7	8.7	2.3	4.1	3.1	9.3
Kenya	3.7	2.6	4.8	1.8	—	0.1	1.8	2.2	0.4	0.8	2.4
Korea	1.7	5.9	2.7	0.3	0.8	0.1	1.1	0.9	0.1	0.2	0.6
Kuwait	4.7	6.6	3.7	2.0	1.3	3.4	3.3	0.1	4.1	2.7	...
Lesotho	8.8	...	5.4	1.4	0.6	1.1	2.1	4.7	0.2	0.6	1.4
Liberia	9.8	1.2	4.1	2.2	0.4	0.5	2.6	2.2	0.2	—	2.5
Luxembourg	4.2	1.0	4.1	0.9	23.6	0.5	24.5	1.5	...	—	6.5

Table 10 (concluded). Share of Functional Expenditures in Gross Domestic Product, 1977[1]

Country	General Public Services	Defense	Education	Health	Social Security and Welfare	Housing and Community Amenities	Health, Social Security, and Welfare	Agriculture, Forestry, and Fisheries	Mining, Manufacturing, and Construction	Electricity, Natural Gas, and Water	Transportation and Communications
Madagascar	4.7	0.8	3.1	1.6	2.1	0.1	3.7	2.9	0.1	0.1	1.1
Malawi	3.5	1.7	2.2	0.8	0.4	–	1.2	2.8	—	0.2	2.6
Malaysia	5.5	4.9	6.6	2.1	0.6	0.1	2.6	1.0	—	0.1	1.0
Mali	4.8	3.5	4.5	1.2	0.7	—	2.0	1.5	0.5	0.1	0.7
Malta	3.5	1.2	3.5	3.5	13.2	1.8	16.7	1.0	2.1	0.8	2.6
Mauritius	6.9	0.2	4.8	2.7	4.2	0.8	6.9	4.5	—	0.6	1.2
Mexico	1.1	0.6	3.4	0.7	4.8	...	5.5	2.2	...	0.6	1.3
Morocco	13.9	7.0	5.9	1.3	2.2	0.9	3.5	...	...	...	...
Nepal	1.6	0.9	1.5	0.7	0.1	0.1	0.8	2.4	0.9	0.7	2.8
Netherlands	7.8	3.5	7.9	5.6	20.3	1.3	26.0	...	...	...	...
New Zealand	2.4	1.5	5.1	5.1	10.0	0.4	15.1	1.7	0.1	0.1	1.5
Nicaragua	2.0	2.0	2.7	0.6	3.1	2.1	3.8	1.1	0.1	0.1	...
Niger	7.2	1.3	5.1	1.3	0.6	—	1.9	1.4	0.5	0.4	1.8
Nigeria	3.4	4.5	2.4	0.6	0.3	0.8	0.8	0.6	3.8	0.6	5.8
Norway	3.2	3.2	7.7	4.3	11.7	2.5	16.0	3.4	0.7	0.2	3.6
Oman	8.5	20.7	1.0	2.1	...	1.7	2.1	0.5	4.1	4.2	6.8
Pakistan	1.8	5.4	0.4	0.3	0.4	0.6	0.7	0.6	0.6	0.4	1.7
Panama	6.1	...	5.7	4.2	3.8	0.5	8.0	1.0	0.8	1.1	2.4
Papua New Guinea	6.3	1.3	6.0	2.6	0.1	1.3	2.7	3.0	0.9	0.5	4.7
Paraguay	1.7	1.4	1.5	0.3	1.9	0.2	2.2	0.4	—	...	1.8
Peru	2.6	3.0	3.5	1.1	–	0.5	1.1	1.8	...	1.0	...
Philippines	2.6	3.1	1.8	0.7	0.4	0.2	1.1	1.6	0.4	0.4	2.3
Portugal	5.7	2.6	3.5	2.3	8.0	1.2	10.2	0.6	0.6	0.1	...
Rwanda	2.6	2.2	2.0	0.6	0.2	—	0.9	1.0	0.4	0.5	2.6
Senegal	4.0	1.7	3.0	1.0	0.7	0.3	1.7	0.8	—	0.2	0.2
Sierra Leone	5.5	1.6	3.4	1.6	0.6	0.2	2.1	1.1	0.2	0.7	0.8
Singapore	2.2	6.0	2.9	1.5	0.3	1.7	1.8	0.1	—	—	1.3
Somalia	9.8	7.4	5.2	2.2	0.7	2.1	2.9	5.0	1.1	...	2.1
Spain	1.1	1.1	2.0	2.2	10.3	0.5	12.4	0.9	0.2	—	1.1
Sri Lanka	2.4	0.6	2.7	1.4	5.9	0.1	7.3	1.8	0.1	...	...
Sudan	1.5	3.0	1.3	0.4	0.7	—	1.1	4.0	–	...	2.5
Suriname	15.5	—	6.7	3.6	2.9	1.6	6.5	0.8	2.1	0.9	2.7
Swaziland	7.5	1.8	5.9	1.8	0.1	1.3	1.9	3.6	0.7	0.9	3.4
Sweden	3.4	3.4	7.7	6.1	18.7	1.1	24.7	1.4	0.6	0.7	1.5
Switzerland	0.9	2.1	0.8	2.2	10.3	0.3	12.6	1.0	...	0.1	1.7
Syrian Arab Rep.	1.6	14.4	3.2	0.4	3.5	1.3	3.9	2.2	10.3	3.5	2.8
Tanzania	5.4	3.5	3.8	2.0	0.3	0.3	2.3	3.3	2.1	1.5	1.8
Thailand	1.6	3.3	3.8	0.8	0.6	0.4	1.4	1.8	0.1	0.3	1.8
Tunisia	3.2	1.4	7.6	2.4	4.0	0.5	6.4	2.7	1.4	...	3.0
Turkey	2.7	3.5	4.9	0.6	0.4	0.6	1.1	0.7	1.9	2.9	4.0
United Arab Emirates	3.3	4.3	1.4	0.8	0.3	0.3	1.1	0.1	—	0.4	...
United Kingdom	3.1	4.8	6.1	5.0	9.1	3.6	14.1	0.9	0.8	0.1	2.6
United States	0.8	5.0	5.0	3.0	8.6	0.7	11.6	0.2	...	...	0.5
Upper Volta	3.4	3.3	2.4	0.8	0.5	0.1	1.3	0.3	0.1	...	1.0
Uruguay	3.4	2.4	2.2	1.2	10.1	0.1	11.2	0.3	0.1	0.9	1.4
Venezuela	2.5	2.3	4.3	1.5	2.1	1.9	3.6	3.0	2.6	3.2	3.0
Yemen Arab Rep.	5.4	8.0	1.6	0.6	...	...	0.6	0.3	—	...	1.7
Yugoslavia	0.9	5.2	...	5.6	8.2	...	13.9	0.3	...	...	...
Zambia	10.8	...	5.8	2.5	0.1	0.6	2.6	4.9	1.2	0.3	3.2

Sources: International Monetary Fund, *Government Finance Statistics Yearbook*, Vol. 4 (1980); Organization for Economic Cooperation and Development, *National Accounts of OECD Countries, 1960–78*, Vol. 2 (Paris, 1979), and *Public Expenditure Trends* (Paris, June 1978).

[1] See Table 1 for those countries for which the data relate to earlier years.

Table 11. Functional Expenditures as Percentage of Total Expenditure, 1977[1]

Country	General Public Services	Defense	Education	Health	Social Security and Welfare	Housing and Community Amenities	Health, Social Security, and Welfare	Agriculture, Forestry, and Fisheries	Mining, Manufacturing, and Construction	Electricity, Natural Gas, and Water	Transportation and Communications
Argentina	8.6	10.8	7.9	2.5	22.1	2.3	49.1	0.9	0.1	6.5	3.9
Australia	6.8	9.0	20.3	15.6	22.2	1.7	23.9	3.1	...	...	1.3
Austria	14.7	3.1	10.1	13.0	39.0	3.2	42.2	2.1	1.0	—	3.4
Bahamas	15.2	0.2	25.2	14.7	4.1	0.3	18.8	2.0	—	6.4	4.9
Bahrain	10.9	5.3	7.8	8.6	2.0	17.1	19.1	0.9	0.2	14.3	3.2
Bangladesh	...	...	12.9	4.4	8.5	...	8.5	19.4	1.3	0.2	...
Barbados	14.3	0.6	19.0	10.6	13.2	4.5	17.7	4.4	...	1.9	9.1
Belgium	6.1	5.7	15.3	8.4	37.2	1.6	38.8	0.8	1.7	—	5.9
Bolivia	18.9	14.7	25.6	8.0	2.7	1.8	4.5	3.0	3.0	2.3	2.9
Botswana	21.9	5.2	20.5	6.4	0.2	4.8	5.1	8.6	1.4	3.7	0.7
Brazil	12.7	5.2	5.6	7.3	33.4	0.4	33.8	3.8	0.8	1.0	2.2
Burma	17.5	26.2	11.2	5.9	6.0	4.5	10.5	17.2	1.2	...	1.2
Burundi	16.2	11.2	20.6	4.7	3.4	...	3.4	12.0	1.2	2.2	4.2
Cameroon	27.9	9.1	15.7	5.7	6.9	—	12.0	7.6	0.3	0.9	17.0
Canada	9.7	7.6	15.1	12.5	23.6	3.5	27.1	4.5	...	...	4.2
Chad	22.4	25.8	13.5	4.2	1.9	0.4	2.3	20.9	0.5	0.1	1.9
Chile	14.6	11.1	13.3	6.2	27.0	4.3	31.3	2.2	0.1	0.3	1.9
Costa Rica	9.7	3.8	26.6	3.1	22.0	1.9	23.9	2.2	—	0.2	1.0
Cyprus	17.2	8.9	8.9	5.2	17.7	12.6	30.3	4.3	0.5	2.9	1.6
Denmark	9.9	7.4	9.9	11.8	35.1	1.5	36.6	4.9	0.9	—	2.5
Dominican Rep.	12.7	9.5	11.3	8.9	6.2	13.6	19.9	11.5	4.2	2.8	7.1
Ecuador	13.0	23.4	25.7	6.8	0.8	...	0.8	9.1	...	0.7	...
Egypt	9.0	7.5	8.0	2.7	10.1	2.2	12.4	3.6	0.3	1.1	0.5
El Salvador	15.9	5.7	19.5	9.0	2.7	3.6	6.3	6.9	0.1	1.3	4.2
Ethiopia	...	...	11.4	4.9	4.4	0.4	4.7	10.3	0.8	0.8	1.8
Fiji	23.7	2.0	23.8	9.0	3.0	4.1	7.1	7.6	2.6	4.2	1.9
Finland	7.2	4.2	18.3	13.4	22.2	1.7	23.9	8.7	2.2	0.9	5.7
France	6.7	6.8	15.1	14.2	42.1	2.8	44.9	1.6	1.0	0.2	1.7
Gambia, The	33.1	...	9.4	8.5	2.8	0.5	3.3	14.7	...	2.4	15.7
Germany, Fed. Rep.	3.9	9.7	12.1	14.2	38.9	2.9	41.8	1.8	...	...	3.8
Ghana	3.0	1.0	18.7	7.1	7.6	...	7.6	8.6	2.3	0.1	0.3
Greece	8.0	18.2	9.6	9.1	27.1	1.9	29.0	6.3	0.7	0.6	1.3
Grenada	5.8	14.7	17.2	14.7	4.7	1.2	5.9	4.7	11.4	...	...
Guatemala	13.1	12.1	11.8	7.0	10.0	2.4	12.4	4.5	0.2	15.2	1.3
Honduras	27.6	10.4	20.6	14.6	4.7	2.6	7.3	3.1	0.7	...	—
Iceland	9.5	...	11.6	17.4	12.9	4.4	17.3	10.9	0.3	2.9	0.6
India	5.4	16.1	1.7	1.5	...	2.5	2.5	4.2	6.3	...	...
Iran	4.2	23.0	8.6	2.9	3.1	3.9	7.0	3.2	4.2	8.7	2.5
Israel	3.2	35.9	7.6	3.9	16.4	0.8	17.3	0.7	1.2	0.9	1.2
Italy	5.7	2.8	12.6	16.8	33.5	2.1	35.5	2.8	6.4	...	...
Jamaica	10.8	2.3	15.9	6.8	2.9	5.1	7.9	5.8	0.7	1.5	2.2
Japan	...	...	19.0	13.3	19.2	6.4	25.6	13.0	0.2	...	...
Jordan	11.2	24.0	8.2	3.7	8.3	1.0	12.0	3.2	5.7	4.3	12.9
Kenya	16.1	11.1	20.5	7.7	0.2	0.6	0.7	9.4	1.6	3.3	2.6
Korea	9.1	30.8	14.3	1.5	4.3	0.7	5.0	4.5	0.6	1.3	0.4
Kuwait	12.1	16.7	9.3	5.1	3.4	8.6	12.0	0.1	10.5	7.0	3.7
Lesotho	34.3	...	21.1	5.6	2.5	4.5	7.0	18.4	0.9	2.4	0.2
Liberia	31.7	4.0	13.2	7.0	1.4	1.8	3.1	7.1	0.6	0.1	1.6
Luxembourg	9.1	2.2	8.8	1.8	51.2	1.0	52.3	3.2	...	0.1	7.9
Madagascar	22.8	4.0	14.8	7.8	10.0	0.2	10.2	13.9	0.5	0.3	0.4
Malawi	16.4	8.0	10.4	3.8	1.6	0.2	1.9	13.3	0.1	0.8	3.2
Malaysia	17.4	15.4	20.8	6.6	1.8	0.2	2.0	3.2	—	0.4	0.4
Mali	26.9	19.3	25.0	6.9	4.1	—	11.0	8.4	2.8	0.3	4.0
Malta	8.6	3.0	8.7	8.5	32.3	4.4	36.6	2.5	5.1	2.0	2.7
Mauritius	19.2	0.6	13.3	7.5	11.7	2.1	13.8	12.3	0.1	1.6	2.0
Mexico	6.5	3.5	19.3	4.2	27.1	...	27.1	12.6	...	3.6	5.3
Morocco	32.1	16.3	13.7	3.0	5.1	2.1	7.2	...	...	...	...
Nepal	12.4	7.1	11.2	5.5	0.6	0.5	1.1	18.3	6.7	5.3	4.2
Netherlands	14.6	6.7	14.9	9.8	38.2	2.4	40.6	...	...	...	...
New Zealand	6.3	3.9	13.6	13.5	26.6	1.0	27.5	4.6	0.3	0.2	1.4

Table 11 (concluded). Functional Expenditures as Percentage of Total Expenditure, 1977[1]

Country	General Public Services	Defense	Education	Health	Social Security and Welfare	Housing and Community Amenities	Health, Social Security, and Welfare	Agriculture, Forestry, and Fisheries	Mining, Manufacturing, and Construction	Electricity, Natural Gas, and Water	Transportation and Communications
Nicaragua	11.4	11.5	15.3	3.7	18.0	11.8	29.8	6.1	0.5	0.8	10.0
Niger	31.8	5.9	22.4	5.8	2.8	—	2.8	6.3	2.1	1.6	2.9
Nigeria	...	...	7.7	1.8	0.9	2.6	3.5	2.0	12.2	1.8	...
Norway	7.0	6.9	18.0	8.6	21.9	5.0	26.9	6.7	1.4	0.4	3.3
Oman	14.7	35.8	1.7	3.7	...	2.9	2.9	0.9	7.0	7.2	5.7
Pakistan	7.9	23.8	1.9	1.1	1.9	2.5	4.5	2.5	2.8	1.9	5.8
Panama	19.9	...	18.4	13.6	12.3	1.7	14.0	3.4	2.6	3.7	2.3
Papua New Guinea	19.9	4.3	18.9	8.2	0.2	4.0	4.2	9.3	2.8	1.6	6.3
Paraguay	15.3	12.4	13.2	2.7	16.7	1.7	18.4	3.6	0.4	...	0.2
Peru	12.7	14.8	17.5	5.5	0.2	2.5	2.7	9.1	...	5.0	4.5
Philippines	16.6	19.9	11.9	4.5	2.5	1.0	7.0	10.4	2.7	2.2	15.0
Portugal	18.5	14.3	11.2	7.2	25.6	3.9	29.5	2.0	1.9	0.3	5.9
Rwanda	19.1	15.8	15.0	4.8	1.6	0.2	1.8	7.4	2.9	3.3	1.8
Senegal	24.0	10.3	18.9	5.9	4.7	1.8	6.4	5.2	—	1.0	0.1
Sierra Leone	26.3	7.8	16.0	7.6	2.6	0.9	10.2	5.4	1.1	3.2	4.0
Singapore	9.4	25.4	12.5	6.3	1.1	7.3	8.5	0.3	0.1	—	3.8
Solomon Islands	34.9	...	14.1	11.6	1.0	0.7	1.7	14.6	0.9	1.1	4.7
Somalia	26.8	20.1	14.0	6.1	1.9	5.6	7.5	13.6	3.1	...	4.2
Spain	4.2	4.5	7.8	8.7	37.8	1.8	39.6	3.4	0.9	0.1	2.1
Sri Lanka	10.2	2.6	11.5	5.9	25.5	0.6	26.1	7.9	0.5	...	7.8
Sudan	5.9	11.5	5.1	1.4	2.7	0.1	2.8	15.4	0.1	...	8.9
Suriname	37.0	...	15.9	8.6	6.8	3.7	10.5	1.9	5.1	2.2	2.9
Swaziland	22.6	5.4	18.0	5.4	0.3	3.9	4.2	10.9	2.1	2.6	1.0
Sweden	7.7	7.5	14.1	11.0	34.2	2.0	36.2	2.5	1.4	1.2	1.4
Switzerland	4.3	10.2	3.9	10.7	49.5	1.2	50.7	4.8	...	0.2	4.1
Syrian Arab Rep.	2.7	25.0	5.5	0.7	6.0	2.3	8.3	3.8	17.8	6.0	0.5
Tanzania	19.2	12.2	13.5	7.0	1.2	1.2	2.4	11.5	7.3	5.4	0.6
Thailand	9.1	18.3	21.2	4.4	3.5	2.3	5.8	9.8	0.4	1.4	1.0
Tunisia	8.8	4.0	20.8	6.5	10.9	1.4	12.3	7.4	3.8	...	6.0
Turkey	10.6	13.6	19.1	2.4	1.7	2.3	4.1	2.8	7.2	11.1	0.8
United Arab Emirates	27.2	35.8	11.9	6.7	2.4	2.6	4.9	0.8	0.2	3.1	4.9
United Kingdom	7.1	12.6	14.8	12.2	21.8	8.8	30.6	2.0	1.9	0.2	1.6
United States	3.6	21.4	16.8	13.3	29.7	2.4	32.1	0.8	...	...	2.0
Upper Volta	...	...	14.4	5.1	2.7	0.5	3.2	1.6	0.8	...	...
Uruguay	14.2	10.3	9.1	4.9	42.4	0.4	47.3	1.2	0.4	3.8	5.8
Venezuela	7.0	6.5	12.3	4.3	5.8	5.4	11.3	8.6	7.5	9.1	3.2
Yemen Arab Rep.	25.2	37.5	7.4	2.9	...	...	—	1.5	0.1	...	2.4
Yugoslavia	3.7	19.9	...	23.6	34.7	...	34.7	1.3	...	...	...
Zambia	27.6	...	14.8	6.5	0.2	1.5	1.6	12.4	3.2	0.9	5.1

Sources: International Monetary Fund, *Government Finance Statistics Yearbook,* Vol. 4 (1980); Organization for Economic Cooperation and Development, *National Accounts of OECD Countries, 1960–78;* Vol. II (Paris, 1979), and *Public Expenditure Trends* (Paris, June 1978).

[1] See Table 1 for those countries for which the data relate to earlier years.

Table 12. Share of Economic Expenditures in Gross Domestic Product, 1977[1]

Country	Current Expenditures[2] (1)	Goods and Services[3] (2)	Wages and Salaries (3)	Other Goods and Services (4)	Interest (5)	Subsidies and Transfers (6)	Capital Expenditure[4] (7)	Acquisition of Capital Assets (8)	Capital Transfers (9)
Argentina	11.1	4.5	...	...	1.8	4.9	4.3	2.5	1.8
Australia	32.8	18.2	...	...	3.0	11.7	4.3	4.2	...
Austria	33.0	10.1	4.0	5.8	1.3	21.6	3.0	1.4	1.4
Bahamas	16.4	13.6	9.9	3.7	1.3	1.5	2.7	...	...
Bahrain	15.3	13.2	7.0	6.2	0.2	1.9	21.7	13.3	8.0
Barbados	25.1	19.2	11.2	7.5	1.9	4.0	8.6	5.4	2.9
Belgium	43.1	11.1	8.0	3.0	3.2	28.8	4.0	2.3	1.4
Bolivia	10.2	8.1	5.7	1.8	0.3	1.8	2.1	1.5	0.6
Botswana	22.3	15.3	9.4	5.6	1.2	5.8	13.8	13.1	0.7
Brazil	17.0	4.4	2.6	1.8	1.9	10.7	2.4	2.4	—
Burma	11.8	...	...	...	...	...	2.2	...	...
Cameroon	11.8	10.1	5.8	4.3	0.2	1.5	6.8	6.4	0.4
Canada	36.1	19.8	...	...	4.1	12.1	3.2	3.2	...
Chad	12.4	...	...	...	...	...	2.7	...	...
Chile	27.3	12.9	8.7	3.1	2.7	11.8	3.4	3.3	0.1
Congo, People's Rep.	6.1	...	3.5	...	...	...	0.8	...	0.7
Costa Rica	15.8	10.2	8.2	2.0	1.2	4.4	4.3	2.9	1.1
Cyprus	21.3	14.0	9.9	4.1	1.2	6.0	5.6	4.3	1.2
Dominican Rep.	8.1	6.5	4.7	1.8	0.2	1.6	6.0	4.6	1.2
Egypt	43.7	18.9	10.8	8.1	2.3	22.6	9.6	4.8	3.7
El Salvador	9.1	6.4	...	...	0.2	2.5	3.2	1.8	1.4
Ethiopia	16.0	14.4	7.3	7.1	0.6	0.9	3.4	3.3	—
Fiji	16.9	14.0	8.2	4.5	1.2	1.7	6.9	5.7	1.2
Finland	34.0	19.5	...	...	0.7	13.8	4.2	4.1	...
France	35.6	9.2	6.5	3.1	0.8	25.7	1.7	0.7	0.9
Gambia, The	21.1	18.5	7.3	11.2	0.3	2.3	12.2	12.1	0.1
Germany, Fed. Rep.	41.2	20.0	...	...	1.7	19.5	3.3	3.2	...
Greece	26.8	21.9	14.0	7.7	1.6	3.4	5.3	4.2	0.5
Grenada	21.0	18.2	10.6	7.6	0.8	2.0	2.5	...	...
Guatemala	7.2	5.3	3.5	1.7	0.6	1.2	3.5	1.2	2.3
Honduras	11.2	10.9	5.9	5.0	0.7	0.5	6.3	4.4	1.9
Iceland	22.1	10.2	6.8	2.9	1.7	10.2	5.7	2.5	3.2
India	12.0	4.3	2.2	2.1	1.6	6.1	2.3	1.3	0.9
Indonesia	9.6	5.6	...	...	0.6	3.5	8.8	7.7	1.1
Iran	27.8	19.5	10.7	8.8	0.3	8.0	15.6	14.5	0.5
Ireland	38.9	8.7	5.8	3.0	5.5	24.7	3.5	1.1	2.5
Israel	63.0	29.2	7.4	21.8	10.4	23.5	2.8	1.3	1.5
Italy	33.2	7.5	5.7	1.9	4.3	21.4	4.5	1.7	2.8
Jamaica	25.8	15.0	10.2	4.8	3.5	7.3	7.9	5.0	2.7
Japan	12.4	2.3	...	...	1.3	8.7	3.3	0.9	2.2
Jordan	43.8	31.3	...	...	1.1	11.3	24.3	19.8	3.9
Kenya	16.8	11.9	7.1	4.7	1.4	3.5	5.0	4.2	—
Korea	13.8	7.8	2.8	5.0	0.8	5.2	2.6	1.4	1.0
Kuwait	26.2	15.8	7.0	8.7	...	10.4	7.5	4.6	—
Lesotho	18.7	13.4	6.9	6.5	0.2	5.1	6.9	6.4	0.4
Liberia	17.9	13.7	8.9	4.9	0.7	3.4	9.5	9.5	—
Luxembourg	40.1	10.8	8.8	1.7	0.9	28.4	4.1	2.7	1.0
Madagascar	15.8	11.3	8.1	3.1	0.3	4.2	4.7	4.7	—
Malawi	12.2	9.6	3.3	6.3	1.4	1.3	7.8	7.3	0.4
Malaysia	22.4	14.2	10.4	3.9	3.0	5.2	5.6	3.6	2.0
Mali	16.7	13.4	10.9	2.5	0.1	3.3	1.5	1.5	—
Malta	32.7	19.9	12.6	7.2	0.8	12.0	5.9	5.9	...
Mauritius	24.0	12.8	10.0	2.8	1.5	9.7	7.2	4.6	2.5
Mexico	12.8	7.5	5.6	1.9	1.9	3.4	3.8	2.7	1.1
Morocco	22.0	15.5	11.0	4.5	1.6	4.8	20.9	20.4	0.2
Netherlands	48.8	8.6	5.9	2.7	1.7	38.4	3.1	...	2.0
Nicaragua	10.5	7.9	4.8	3.1	1.1	1.4	5.3	2.6	2.1
Niger	17.9	12.1	6.1	5.9	1.9	4.8	4.0	3.3	0.7
Nigeria	14.5	7.3	3.2	4.2	0.5	1.6	10.7	8.3	2.4
Norway	45.7	18.5	...	...	2.8	24.3	1.6	1.6	...

Table 12 (concluded). Share of Economic Expenditures in Gross Domestic Product, 1977[1]

Country		Current Expenditures[2] (1)	Goods and Services[3] (2)	Wages and Salaries (3)	Other Goods and Services (4)	Interest (5)	Subsidies and Transfers (6)	Capital Expenditure[4] (7)	Acquisition of Capital Assets (8)	Capital Transfers (9)
Oman	32.8	26.7	5.0	21.7	0.6	5.5	25.1	23.0	1.7
Pakistan	12.9	8.5	...	...	1.8	2.6	3.5	3.5	—
Panama	24.7	17.6	11.4	6.2	3.0	4.1	5.4	2.9	2.4
Papua New Guinea	26.6	23.2	...	...	1.7	1.7	3.6	2.9	0.6
Paraguay	8.4	6.7	3.9	2.8	0.3	1.3	2.8	2.4	0.4
Peru	13.9	9.1	...	...	2.2	2.6	4.8	3.3	1.5
Philippines	11.8	8.8	4.0	4.3	0.6	2.6	2.2	...	...
Rwanda	8.8	7.8	4.2	3.6	0.1	1.0	4.6	4.6	...
Senegal	14.1	11.5	6.8	4.7	0.4	2.3	1.8	1.3	0.5
Sierra Leone	17.4	13.8	5.6	8.3	1.2	2.3	3.6	...	...
Singapore	16.4	12.8	6.3	6.5	2.7	0.9	3.7	3.2	—
Somalia	28.9	...	...	...	...	...	7.8	...	...
South Africa	19.6	10.5	...	...	1.5	7.6	3.4	2.1	1.0
Spain	20.4	10.6	7.2	3.3	0.4	9.4	3.3	1.8	1.4
Sri Lanka	17.6	7.3	5.0	2.2	2.8	7.5	5.5	2.9	2.6
Sudan	15.5	9.9	2.4	7.4	1.2	4.4	10.7	10.7	—
Suriname	27.6	24.1	16.0	8.1	0.2	3.4	14.3	13.8	0.2
Swaziland	17.8	15.5	10.1	5.3	0.1	2.2	9.8	9.8	—
Sweden	57.8	29.6	...	...	2.8	25.4	4.7	4.7	...
Switzerland	30.3	12.9	...	...	2.2	15.2	1.7	...	...
Tanzania	19.8	16.0	7.7	8.4	1.3	2.5	8.3	4.0	4.3
Thailand	13.2	9.5	3.9	5.6	1.1	2.6	4.4	3.8	0.6
Tunisia	22.0	13.1	9.5	2.8	1.0	7.9	12.2	6.8	5.4
Turkey	17.6	10.6	7.1	2.5	0.5	6.5	7.0	6.2	0.5
United Arab Emirates	8.8	...	...	...	...	...	3.3	...	...
United Kingdom	35.2	12.7	6.1	6.2	3.4	19.1	2.0	0.9	1.1
United States	33.5	18.9	...	...	2.6	11.9	1.7	1.7	...
Upper Volta	12.6	10.5	3.8	0.9	0.6	1.5	2.7	0.5	0.4
Uruguay	20.8	9.7	6.8	2.6	0.4	10.8	2.2	2.0	0.2
Venezuela	16.7	12.3	9.4	2.9	0.6	3.8	15.7	3.1	12.6
Yemen Arab Rep.	13.8	12.6	8.0	4.6	0.2	1.0	7.6	...	...
Yugoslavia	25.5	7.7	...	...	...	17.8	0.5	0.5	...
Zaïre	24.8	19.8	11.4	8.4	2.6	2.4	6.8	5.0	1.8
Zambia	29.0	19.6	10.4	9.1	3.6	5.8	5.9	4.1	1.9

Sources: International Monetary Fund, *Government Finance Statistics Yearbook,* Vol. 4 (1980); Organization for Economic Cooperation and Development, *National Accounts of OECD Countries, 1960–78,* Vol. 2 (Paris, 1979), and *Public Expenditure Trends* (Paris, June 1979).

[1] See Table 2 for those countries for which the data relate to earlier years.

[2] The sum of columns 2, 5, and 6. Note that where columns 3 and 4 do not round up to column 2, the discrepancy is due to government contributions to employee pension plans.

[3] The sum of columns 3 and 4.

[4] The sum of columns 8 and 9. Note that where columns 8 and 9 do not round up to column 7, the discrepancy is due to the purchases or sales of stocks, land, and intangible assets.

Table 13. Economic Expenditures as Percentage of Total Expenditure, 1977[1]

Country	Current Expenditures[2] (1)	Goods and Services[3] (2)	Wages and Salaries (3)	Other Goods and Services (4)	Interest (5)	Subsidies and Transfers (6)	Capital Expenditure[4] (7)	Acquisition of Capital Assets (8)	Capital Transfers (9)
Argentina	66.5	26.8	...	...	10.7	29.0	25.7	15.2	10.5
Australia	88.4	49.0	...	...	8.0	31.5	11.6	11.2	...
Austria	90.3	27.7	11.0	15.8	3.5	59.1	8.2	3.9	3.9
Bahamas	81.6	68.0	49.5	18.5	6.4	7.2	13.3	...	...
Bahrain	37.4	32.2	17.2	15.1	0.4	4.7	53.1	32.6	19.5
Barbados	74.2	56.6	33.0	22.2	5.6	11.9	25.4	16.0	8.5
Belgium	90.7	23.4	16.8	6.3	6.7	60.5	8.5	4.8	3.0
Bolivia	82.6	65.7	46.2	14.6	2.5	14.3	17.3	12.3	5.0
Botswana	58.0	39.8	24.4	14.6	3.1	15.2	35.8	34.0	1.8
Brazil	79.3	20.5	11.9	8.6	9.0	49.8	11.4	11.3	–
Burma	83.9	...	...	...	...	...	15.9	...	...
Cameroon	61.9	52.9	30.2	22.7	1.3	7.8	35.8	33.5	2.3
Canada	91.8	50.5	...	...	10.5	30.8	8.2	8.2	...
Chad	82.5	...	...	...	...	...	17.6	...	...
Chile	86.7	41.0	27.7	9.9	8.5	37.2	10.8	10.3	0.4
Costa Rica	76.4	49.1	39.8	9.7	5.8	21.4	20.6	14.1	5.3
Cyprus	77.4	51.1	36.2	14.9	4.5	21.9	20.3	15.5	4.5
Dominican Rep.	55.1	43.7	31.7	12.0	1.4	10.7	40.3	31.0	8.4
Egypt	70.3	30.4	17.4	13.0	3.7	36.3	15.4	7.7	6.0
El Salvador	60.2	42.3	...	...	1.6	16.3	21.2	11.9	9.3
Ethiopia	82.1	74.1	37.6	36.5	3.2	4.8	17.2	17.1	0.1
Fiji	70.5	58.4	34.2	18.6	5.2	6.9	28.8	23.9	4.9
Finland	89.1	51.0	...	...	1.9	36.2	10.9	10.8	...
France	92.9	23.9	16.9	8.2	2.0	67.0	4.4	1.8	2.5
Gambia, The	59.8	52.4	20.7	31.7	0.8	6.6	34.5	34.3	0.2
Germany, Fed. Rep.	92.5	44.9	...	...	3.9	43.7	7.5	7.1	...
Greece	82.7	67.5	43.4	23.9	4.8	10.3	16.3	12.9	1.4
Grenada	84.3	73.1	42.7	30.5	3.3	8.0	9.9	...	...
Guatemala	61.3	45.5	29.6	14.5	5.1	10.7	29.6	10.1	19.5
Honduras	63.5	61.8	33.6	28.1	3.7	2.7	36.0	24.7	11.0
Iceland	69.2	32.0	21.4	9.2	5.2	32.1	18.0	7.8	10.1
India	65.8	23.8	12.3	11.5	8.7	33.3	12.7	7.0	4.9
Indonesia	47.9	27.7	...	...	2.9	17.3	43.9	38.4	5.5
Iran	64.1	44.9	24.6	20.3	0.7	18.4	35.9	33.3	1.0
Ireland	83.9	18.9	12.5	6.4	11.8	53.2	7.6	2.3	5.3
Israel	88.4	40.9	10.3	30.5	14.5	33.0	3.9	1.8	2.2
Italy	73.7	16.7	12.5	4.1	9.5	47.5	10.0	3.7	6.3
Jamaica	66.2	38.4	26.1	12.3	9.0	18.8	20.3	12.8	6.9
Japan	77.4	14.5	...	...	8.3	54.5	20.4	5.8	13.8
Jordan	60.6	43.4	...	...	1.6	15.7	33.7	27.4	5.3
Kenya	72.4	51.1	30.5	20.3	6.2	15.0	21.5	18.0	—
Korea	72.1	41.0	14.6	26.4	4.0	27.1	13.5	7.2	5.3
Kuwait	66.7	40.2	17.8	22.2	...	26.5	19.1	11.7	
Lesotho	72.3	51.6	26.6	25.0	0.9	19.8	26.7	24.7	1.7
Liberia	58.0	44.5	28.7	15.8	2.4	11.1	30.8	30.8	—
Luxembourg	86.9	23.4	19.2	3.7	2.0	61.5	9.0	6.0	2.2
Madagascar	76.3	54.6	39.4	15.2	1.3	20.4	23.0	22.7	0.2
Malawi	57.2	45.0	15.6	29.3	6.4	5.9	36.4	34.4	2.0
Malaysia	71.1	45.2	32.8	12.3	9.4	16.5	17.7	11.4	6.3
Mali	93.4	74.7	60.7	14.1	0.5	18.2	8.2	8.2	—
Malta	79.8	48.5	30.8	17.6	2.1	29.3	14.5	14.5	...
Mauritius	72.0	38.5	30.0	8.5	4.5	29.0	21.6	13.7	7.6
Mexico	72.8	42.6	31.6	11.0	10.7	19.4	21.6	15.5	6.0
Morocco	51.1	36.1	25.7	10.4	3.8	11.2	48.5	47.5	0.5
Netherlands	91.6	16.2	11.1	5.2	3.3	72.1	5.8	...	3.8
Nicaragua	60.1	45.4	27.6	17.9	6.6	8.1	30.3	14.7	12.3
Niger	78.6	52.9	26.9	26.0	8.2	21.3	17.5	14.6	3.0
Norway	96.6	39.2	...	...	6.0	51.4	3.5	3.5	...
Oman	56.6	46.1	8.7	37.4	1.0	9.5	43.4	39.7	2.9
Pakistan	56.6	37.4	...	...	8.0	11.2	15.4	15.3	0.1

Table 13 (concluded). Economic Expenditures as Percentage of Total Expenditure, 1977[1]

Country	Current Expenditures[2] (1)	Goods and Services[3] (2)	Wages and Salaries (3)	Other Goods and Services (4)	Interest (5)	Subsidies and Transfers (6)	Capital Expenditure[4] (7)	Acquisition of Capital Assets (8)	Capital Transfers (9)
Panama	80.2	57.1	37.0	20.0	9.8	13.4	17.4	9.4	7.8
Papua New Guinea	86.4	75.3	...	...	5.5	5.6	11.7	9.3	2.0
Paraguay	73.3	58.9	34.6	24.3	2.7	11.7	24.9	21.5	3.4
Peru	68.9	45.0	...	...	11.2	12.7	23.9	16.5	7.3
Philippines	76.5	57.3	26.2	28.0	3.6	16.6	14.1	...	...
Rwanda	65.0	57.2	30.9	26.3	0.7	7.1	33.5	33.5	...
Senegal	83.8	68.1	40.4	27.7	2.2	13.6	10.8	7.6	3.2
Sierra Leone	82.2	66.0	26.5	39.5	5.8	11.0	17.2	...	...
Singapore	70.0	54.7	26.8	27.9	11.5	3.9	16.0	13.7	0.2
Solomon Islands	68.7	49.9	27.7	20.7	—	18.7	26.0	21.1	4.9
Somalia	78.8	...	...	...	...	...	21.2	...	...
South Africa	73.0	39.0	...	...	5.7	28.2	12.7	7.8	3.7
Spain	81.3	42.1	28.8	13.3	1.6	37.6	13.2	7.2	5.7
Sri Lanka	75.4	31.3	21.7	9.6	12.0	32.2	23.6	12.5	11.1
Sudan	58.9	37.5	9.2	28.3	4.8	16.7	40.6	40.6	—
Suriname	65.8	57.3	38.1	19.2	0.5	8.0	34.0	32.9	0.4
Swaziland	54.1	47.0	30.8	16.2	0.4	6.7	29.7	29.7	—
Sweden	92.5	47.4	...	...	4.5	40.6	7.5	7.5	...
Tanzania	70.1	56.7	27.1	29.6	4.5	8.9	29.3	14.0	15.3
Thailand	73.5	52.9	21.6	31.3	6.2	14.4	24.7	21.1	3.6
Tunisia	60.9	36.4	26.4	7.8	2.7	21.8	33.7	18.7	14.9
Turkey	68.4	40.9	27.3	9.7	2.1	25.4	27.3	24.2	1.8
United Arab Emirates	72.4	...	...	...	...	...	27.1	...	...
United Kingdom	91.7	33.2	15.8	16.2	8.9	49.6	5.3	2.3	2.8
United States	95.1	53.8	...	...	7.5	33.8	4.9	4.8	...
Uruguay	87.7	40.8	28.8	11.1	1.6	45.3	9.4	8.4	1.0
Venezuela	48.4	35.5	27.2	8.3	1.9	11.0	45.5	8.9	36.5
Yemen Arab Rep.	64.5	59.0	37.4	21.7	0.8	4.7	35.5	...	...
Yugoslavia	98.2	29.6	...	...	...	68.6	1.8	1.8	...
Zaïre	78.4	62.5	36.0	26.5	8.3	7.6	21.5	15.9	5.6
Zambia	73.9	50.0	26.6	23.2	9.1	14.8	15.1	10.4	4.7

Sources: International Monetary Fund, *Government Finance Statistics Yearbook,* Vol. 4 (1980); Organization for Economic Cooperation and Development, *National Accounts of OECD Countries, 1960–78,* Vol. 2 (Paris, 1979), and *Public Expenditure Trends* (Paris, June 1978).

[1] See Table 2 for those countries for which the data relate to earlier years.

[2] The sum of columns 2, 5, and 6. Note that where columns 3 and 4 do not round up to column 2, the discrepancy is due to government contribution to employee pension plans.

[3] The sum of columns 3 and 4.

[4] The sum of columns 8 and 9. Note that where columns 8 and 9 do not round up to column 7, the discrepancy is due to purchases or sales of stocks, land, and intangible assets.

Table 14. Variables Used in Estimating Expenditure Equations: 1977 or Latest Available Year

Country	Income per Capita (in $)	Share of Total Public Expenditure in GDP	Share of Total Public Expenditure (Net of Defense) in GDP	Share of Population Under 15	Share of Population Over 65	Infant Mortality Rate	Share of Population in Urban Areas	Population Growth Rate in Urban Areas	Share of Labor Force in Agriculture	Share of Labor Force in Industry
Argentina	1,988	17	14	29	8	3	81	1.9	14	29
Australia	6,843	30	27	27	9	1	87	2.0	6	35
Austria	6,366	37	35	23	15	1	53	0.6	12	41
Bahamas	3,868	20	20	41	4	4	58	3.3	7	20
Bahrain	6,048	41	39	45	3	6	...	...	...	...
Bangladesh	80	11	11	46	3	23	9	6.3	78	7
Barbados	1,955	34	34	32	9	3	45	1.3	10	25
Belgium	8,066	48	45	22	14	1	71	0.5	4	43
Bolivia	481	12	11	43	3	22	30	4.2	51	23
Botswana	524	38	36	46	4	23	11	8.9	83	4
Brazil	1,463	21	20	42	3	9	61	4.5	42	20
Burma	133	14	10	41	4	15	25	3.8	55	19
Burundi	131	22	19	43	3	28	2	1.7	85	5
Cameroon	412	17	15	43	3	27	27	8.0	74	6
Canada	8,657	22	20	26	8	1	78	1.9	6	30
Benin	184	...	...	46	2	27	23	10.4	47	15
Chad	150	15	11	39	4	30	14	6.8	87	6
Chile	1,400	32	28	34	5	5	79	2.5	21	27
Congo, People's Rep.	418	...	...	43	3	27	36	3.0	36	26
Costa Rica	1,491	21	20	41	3	3	41	3.3	30	29
Cyprus	1,740	27	24	28	9	2	42	1.6	35	28
Denmark	9,780	37	34	21	14	1	82	1.1	8	37
Dominican Rep.	816	16	14	47	3	10	46	5.4	58	16
Ecuador	854	14	10	46	3	10	42	4.1	47	24
Egypt	358	62	57	40	4	18	44	2.7	51	26
El Salvador	673	15	14	46	3	8	40	3.1	47	15
Ethiopia	114	19	18	45	2	37	12	7.0	81	7
Fiji	1,295	24	23	36	3	1	39	3.6	44	16
Finland	6,653	33	31	21	11	1	57	2.8	14	38
France	7,210	38	36	24	13	1	75	1.7	10	41
Gambia, The	208	35	...	42	4	34	24	3.4	79	8
Germany, Fed. Rep.	8,420	30	27	21	14	1	83	0.8	5	48
Ghana	370	19	...	48	3	23	32	5.1	54	19
Greece	2,822	32	27	23	13	1	57	2.4	40	27
Grenada	549	25	21	44	6	4	15	...	31	21
Guatemala	851	12	10	43	3	15	37	3.6	57	19
Honduras	403	18	16	47	3	14	32	5.3	63	15
Iceland	7,690	32	...	28	9	1	87	1.8	13	40
India	162	18	15	42	3	18	21	3.1	73	11
Indonesia	330	20	...	41	3	19	18	3.3	60	12
Iran	1,950	42	32	46	3	14	45	5.0	41	32
Ireland	2,869	46	...	30	11	1	55	2.3	21	36
Israel	3,790	71	46	33	8	1	87	3.3	8	37
Italy	3,439	39	37	23	12	1	67	1.5	13	47
Jamaica	1,466	39	38	44	6	3	46	3.6	24	27
Japan	6,593	16	...	24	8	1	75	2.4	14	37
Jordan	790	52	28	47	3	16	53	4.5	28	39
Kenya	278	23	21	47	3	14	12	7.0	79	9
Korea	971	19	13	37	3	5	49	5.4	45	33
Kuwait	11,554	39	33	48	2	2	84	7.8	2	34
Lesotho	106	25	25	39	4	21	3	8.1	88	4
Liberia	396	31	30	43	3	23	30	5.6	73	14
Luxembourg	9,640	46	45	20	13	1	74	2.7	8	44
Madagascar	183	21	20	45	3	27	16	4.3	84	5
Malawi	163	21	20	44	3	27	20	18.4	87	5
Malaysia	1,046	32	27	43	3	3	30	4.8	44	20
Mali	114	20	17	44	3	32	17	5.3	89	5
Malta	1,808	41	40	23	11	—	79	0.7	5	42
Mauritius	773	36	36	36	4	4	44	1.0	30	25
Mexico	1,149	18	17	46	4	6	63	4.6	34	25

Table 14 (concluded). Variables Used in Estimating Expenditure Equations: 1977 or Latest Available Year

Country	Income per Capita (in $)	Share of Total Public Expenditure in GDP	Share of Total Public Expenditure (Net of Defense) in GDP	Share of Population Under 15	Share of Population Over 65	Infant Mortality Rate	Share of Population in Urban Areas	Population Growth Rate in Urban Areas	Share of Labor Force in Agriculture	Share of Labor Force in Industry
Morocco	566	43	36	46	2	17	37	4.1	53	19
Nepal	105	13	12	42	3	23	4	4.4	93	2
Netherlands	7,690	53	50	24	11	1	76	0.5	6	45
New Zealand	5,026	38	36	29	9	1	83	2.2	10	35
Nicaragua	826	17	15	48	2	17	50	4.5	44	14
Niger	144	23	21	47	2	32	10	6.8	92	3
Nigeria	551	31	27	46	2	24	18	4.6	56	18
Norway	8,905	46	43	23	14	1	47	3.1	8	37
Oman	2,224	58	37	43	4	29	...	...	63	...
Pakistan	202	23	17	47	3	17	26	4.1	58	20
Panama	1,226	31	...	42	4	3	51	4.1	30	18
Papua New Guinea	558	32	30	42	3	19	13	8.0	84	8
Paraguay	742	11	10	45	3	8	38	3.3	51	19
Peru	767	20	17	44	3	16	63	4.5	40	20
Philippines	467	15	12	46	3	7	34	3.5	51	15
Portugal	1,563	31	28	26	11	2	28	2.3	27	36
Rwanda	176	14	11	47	2	27	4	5.6	92	3
Senegal	415	16	14	44	3	32	24	2.9	77	9
Sierra Leone	206	23	22	43	3	27	21	5.6	68	18
Singapore	2,954	23	17	31	4	1	100	1.6	2	32
Solomon Islands	...	...	...	48	4	...	...	4.9	45	15
Somalia	107	37	29	45	2	31	27	5.0	83	7
South Africa	1,539	27	...	41	4	10	48	2.9	30	30
Spain	3,299	25	24	26	11	1	71	2.4	19	42
Sri Lanka	195	23	23	38	4	2	24	3.7	54	15
Sudan	349	26	23	45	3	31	20	6.9	79	10
Suriname	1,575	42	...	49	3	5	50	3.2	19	24
Swaziland	614	33	31	45	3	27	14	9.3	75	6
Sweden	9,248	45	41	21	15	—	85	1.2	5	37
Switzerland	9,583	21	19	22	12	1	56	1.0	6	48
Syrian Arab Rep.	886	58	43	46	4	14	47	4.7	49	23
Tanzania	197	28	25	46	3	20	9	8.5	84	6
Thailand	422	18	15	45	3	6	14	3.5	77	8
Togo	292	...	...	46	3	27	15	5.5	69	14
Tunisia	852	37	35	43	4	15	48	3.6	43	23
Turkey	1,158	26	22	41	5	10	43	4.7	62	14
United Arab Emirates	20,840	12	8	44	4	29	65	20.5	...	...
United Kingdom	4,018	42	37	23	14	1	90	0.5	2	43
United States	8,431	23	18	24	11	1	70	1.3	3	33
Upper Volta	125	17	13	44	3	32	8	3.6	84	11
Uruguay	1,472	23	21	28	9	3	83	0.4	12	32
Venezuela	2,808	35	33	44	3	5	80	4.4	21	27
Yemen Arab Rep.	402	21	13	45	3	31	8	7.3	76	11
Yugoslavia	2,027	24	19	25	9	2	38	3.0	42	34
Zaïre	188	30	...	43	3	27	35	5.4	76	13
Zambia	484	39	...	47	3	23	34	5.4	69	11

Sources: International Monetary Fund, *Government Finance Statistics Yearbook*, Vol. 4 (1980), and *International Financial Statistics*; International Bank for Reconstruction and Development, *World Tables* (1980, 2nd ed.).

Table 15. Variables Used in Estimating Expenditure Equations: 1977 or Latest Available Year

Country	Primary School Enrollment Rate	Secondary School Enrollment Rate	Pupil-Teacher Ratio, Primary School	Index of Access to Clean Water	Population per Hospital Bed	Share of GDP in Manufacturing	Share of GDP in Agriculture	Share of Other Manufacturing and Fuel in Total Exports
Argentina	108	56	18	66	170	34	12	16
Australia	92	73	21	100	80	21	6	31
Austria	102	77	21	100	90	30	5	58
Bahamas	135	75	44	65	230	...	...	99
Bahrain	...	...	...	100	250	21	2	37
Bangladesh	83	23	55	53	4,430	8	53	62
Barbados	108	78	33	100	116	10	10	48
Belgium	106	89	19	100	110	26	2	59
Bolivia	80	32	23	34	510	13	17	96
Botswana	92	18	33	45	340	6	26	...
Brazil	90	18	22	77	260	24	10	16
Burma	80	22	52	17	1,220	10	48	8
Burundi	22	3	31	...	760	...	...	2
Cameroon	120	17	51	26	380	14	33	3
Canada	106	94	25	100	110	19	4	31
Benin	53	10	48	20	780	8	34	8
Chad	41	3	75	26	1,140	7	48	4
Chile	117	48	39	83	300	21	11	92
Congo, People's Rep.	155	52	61	38	190	16	13	69
Costa Rica	111	43	33	77	260	20	23	21
Cyprus	69	61	26	95	200	14	12	39
Denmark	103	77	16	100	100	19	6	32
Dominican Rep.	110	24	54	55	350	19	21	16
Ecuador	102	42	38	40	430	17	21	61
Egypt	72	42	40	66	460	20	26	49
El Salvador	77	21	48	53	500	15	34	28
Ethiopia	23	6	46	6	2,980	9	47	4
Fiji	110	50	32	69	340	10	22	21
Finland	103	97	19	100	70	28	10	50
France	108	85	18	100	100	27	5	42
Gambia, The	32	9	27	12	1,291	2	51	...
Germany, Fed. Rep.	129	66	23	100	80	38	3	43
Ghana	44	50	30	35	600	9	38	22
Greece	105	83	30	95	160	16	14	49
Grenada	99	42	38	38	149	2	27	1
Guatemala	...	...	35	40	470	...	...	...
Honduras	89	13	35	46	660	15	30	10
Iceland	101	79	21	100	70	...	...	5
India	79	28	42	33	1,231	15	36	50
Indonesia	82	20	30	12	1,560	10	32	69
Iran	98	48	31	51	650	12	9	98
Ireland	109	90	31	100	90	...	...	40
Israel	128	39	17	90	170	19	5	70
Italy	105	71	18	100	90	33	8	57
Jamaica	98	58	39	86	260	20	9	77
Japan	101	92	25	100	100	30	5	41
Jordan	84	49	36	56	950	13	7	28
Kenya	105	15	33	17	760	12	35	27
Korea	109	63	49	62	1,430	22	21	69
Kuwait	93	60	16	89	210	6	—	96
Lesotho	119	15	53	17	560	1	19	...
Liberia	62	16	41	20	690	5	29	76
Luxembourg	114	53	20	100	90	34	3	...
Madagascar	92	14	61	26	410	14	39	14
Malawi	56	5	61	33	760	14	43	5
Malaysia	94	45	32	62	270	17	30	23
Mali	28	7	27	9	1,350	12	39	1
Malta	101	75	21	90	100	28	5	77
Mauritius	103	45	24	60	280	15	19	2
Mexico	116	37	46	62	860	29	10	51

Table 15 (concluded). Variables Used in Estimating Expenditure Equations: 1977 or Latest Available Year

Country	Primary School Enrollment Rate	Secondary School Enrollment Rate	Pupil-Teacher Ratio, Primary School	Index of Access to Clean Water	Population per Hospital Bed	Share of GDP in Manufacturing	Share of GDP in Agriculture	Share of Other Manufacturing and Fuel in Total Exports
Morocco	65	17	40	55	710	16	16	22
Nepal	60	12	31	9	6,630	10	62	...
Netherlands	101	92	27	100	90	27	4	52
New Zealand	111	85	23	100	140	...	...	16
Nicaragua	85	21	39	70	400	20	24	16
Niger	21	3	41	27	1,200	11	45	3
Nigeria	49	10	34	...	1,170	8	32	94
Norway	102	89	17	100	70	20	6	43
Oman	44	2	24	32	640	1	3	100
Pakistan	50	17	42	29	2,020	14	29	62
Panama	124	53	30	79	266	15	17	35
Papua New Guinea	58	12	31	20	150	9	34	16
Paraguay	106	20	28	13	610	17	34	14
Peru	110	49	40	47	500	17	14	50
Philippines	105	56	29	39	880	25	28	24
Portugal	97	85	27	65	170	30	11	57
Rwanda	61	2	53	35	580	14	42	36
Senegal	45	11	49	37	730	17	29	27
Sierra Leone	37	11	32	12	1,080	5	36	81
Singapore	110	55	30	100	280	26	2	50
Solomon Islands	...	...	26	31	325	...	...	...
Somalia	40	3	35	33	570	9	15	2
South Africa	107	18	41	...	150	21	7	61
Spain	114	73	29	75	190	27	9	49
Sri Lanka	77	55	29	20	330	14	37	13
Sudan	39	13	39	46	960	6	41	1
Suriname	105	42	32	...	180	6	10	94
Swaziland	103	35	38	37	290	21	25	...
Sweden	96	70	18	100	70	24	4	38
Switzerland	90	52	24	100	90	...	...	58
Syrian Arab Rep.	103	50	33	75	980	10	19	74
Tanzania	70	3	50	39	684	9	44	13
Thailand	83	26	30	22	800	19	28	17
Togo	103	23	61	16	680	8	28	29
Tunisia	100	20	40	70	410	9	16	74
Turkey	104	29	34	75	460	16	26	23
United Arab Emirates	75	...	14	...	...	2	1	98
United Kingdom	105	81	22	100	110	25	3	50
United States	109	100	20	100	150	24	3	30
Upper Volta	16	2	48	10	1,518	11	33	3
Uruguay	95	62	23	98	150	26	10	32
Venezuela	104	38	31	75	340	16	6	99
Yemen Arab Rep.	26	4	38	4	2,060	6	45	9
Yugoslavia	97	55	22	85	170	29	14	116
Zaïre	86	13	42	16	330	8	26	10
Zambia	95	15	48	42	250	19	14	78

Sources: International Monetary Fund, *Government Finance Statistics Yearbook*, Vol. 4 (1980), and *International Financial Statistics*; and International Bank for Reconstruction and Development, *World Tables* (1980, 2nd.ed.).

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