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An Analysis of Health Sector Expenditures in Cameroon Using a National Health Accounts Framework

Joseph Ntangsi*

World Bank Resident Mission, Yaounde, Cameroon

Abstract - Health care financing studies in sub-Saharan Africa at both country and cross-national levels have tended to focus on single modes of financing at a time, such as user fees, insurance, government budget, external aid, or on financing-related issues such as equity and quality of care. Relatively few attempts have been made in the literature to analyze total national health financing from all sources and to relate them to their various uses. This study uses the broader framework of National Health Accounts (NHA) to analyze national health expenditures in Cameroon. It is argued that this is a useful framework for answering basic health financing questions and for highlighting policy issues which may otherwise not be evident using more narrowly-focused approaches.

Introduction

This paper examines the structure of health care expenditures in Cameroon using a National Health Accounts (NHA) framework. Health care financing is one of the fastest-growing areas in the field of public health. The last decade has witnessed a proliferation of literature on the subject. Three major publications by the World Bank seem to have been particularly influential in generating this interest. The first was "Financing Health Services in Developing Countries: An Agenda for Reform" (World Bank 1987); the second "Investing in Health" in *World Development Report* (World Bank1993); and the third *Better Health in Africa* (World Bank 1994).

In the face of severe resource constraints in developing countries for increasing the coverage and improving the quality of health care and the explosion in the costs of care in

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the developed countries, the central question has been how additional resources can be mobilized to cover the financing gap and how existing resources can be utilized much more cost-effectively. As a result, in most of the literature, especially in the context of sub-Saharan Africa (SSA), the main effort has been directed at how to mobilize additional resources and to improve the technical and allocative efficiency of existing resources in order to increase access to, and improve the quality of, care. However, both country case-studies and cross-country analyses in SSA have tended to concentrate on single modes of financing at a time, such as the government budget, external aid, user fees, insurance, and related financing issues, such as equity and quality of care. Surprisingly, remarkably few attempts have been made in the literature to estimate total national health financing or expenditures from all sources and to relate them to their various uses. Yet the basic questions for most countries are: Who finances health care, how much, and for what? How much health care can countries actually afford (for, example, can they afford even the minimum package of care)? Are expenditures consistent with priorities? How can additional resources be mobilized for health and how can health resources be used more efficiently?

Objectives of the study

This case-study of Cameroon uses an NHA methodology to provide answers to the above types of questions. The study attempts, for the first time, to carry out baseline estimates of health expenditures for the country, despite severe data limitations. The estimates are for fiscal year 1995/96 and the study attempts to exploit patches of information from a vast number of sources, including two national budget/consumption surveys in 1983 and 1995. It is argued that the broader NHA framework, in addition to answering basic financing questions, can highlight policy issues that may not otherwise be evident using more narrowly-focused approaches. The World Bank's *Better Health in Africa* Report, using 1991 data, estimated at $13 the cost of providing a basic package of care to 90% of the population in a low-income country like Cameroon. On the basis of actual health expenditures by various income groups the paper attempts to estimate what percentage of the Cameroon population could afford the basic package in 1995/96. The study also

reveals a declining trend in public sector health financing and provision in favor of the private sector.

The Cameroon Health System

The Cameroon health system has two important features. It is a pluralistic system because it is characterized by multiple sources of financing and health care providers.
The main financing sources are the government, public enterprises, foreign aid donors, private enterprises, households, religious missions and NGOs, and the providers are government health facilities, public enterprise health clinics, health facilities of religious missions and NGOs, private clinics, pharmacies and drug retailers, and traditional doctors. It is also a vertical system in the sense that financing sources deal directly with the providers without going through intermediaries or financing agents.

Cameroon's relatively good economic performance during the 1970s and the oil boom of the early 1980s favored a rapid expansion of the network of health structures. With a population of 13.5 million in 1997, the country had 1,031 government-operated health facilities which included 1 teaching hospital, 2 referral hospitals, three central hospitals, 8 provincial hospitals, 38 divisional hospitals, 132 district hospitals, and 847 health centers (World Bank, 1996: 6), backed up by a medical staff of 14,292 (Ministry of Public Health 1998: 7). A number of State-owned enterprises also operate health facilities for their staff. There is an important sub-sector of private health providers who complement and often compete with government providers, consisting of non-profit religious missions and NGOs, for-profit providers, and traditional healers. The bulk of non-profit facilities are operated by the Catholic and Protestant Health Services: the former operate 179 facilities (including 8 hospitals) with a staff of 1,315 and the latter122 health facilities (including 24 hospitals) with a staff of 2,633 (World Bank op cit); there were roughly 200 for-profit clinics (Deschamps, 1996; p. 2) and a few thousand traditional healers (Lantum, 1996; personal communication).

Following the Bamako initiative in 1987 the government adopted a new health policy in 1992 based on the decentralization of health care delivery, emphasis on primary health care, and the participation of beneficiary communities in the co-financing and co-management of health care facilities (Republic of Cameroon, 1992)

The NHA Methodology

The NHA framework used here was recently developed at the Harvard School of Public Health by Professor Peter Berman. It is based on the OECD and especially the US NHA experience but is adapted to the pluralistic health systems of developing countries, and is supported by a windows-based software package that facilitates analysis and presentation of health expenditure information. The program's graphical capabilities, moreover, make it possible for decision-makers to view the structure of health sector financing flows clearly and quickly. The methodology has three operational features which facilitate analysis. First, it ensures a desegregation of sources of financing beyond the general categories of public and private. Second, it requires the calculation and presentation of national estimates through a core matrix of sources and uses. And third, it provides a systematic framework and flexibility for classifying uses according to a number of useful categories, depending on the availability of data.

On the other hand there are two main problems in estimating NHA. One difficulty is that there is no internationally accepted definition of what constitutes health expenditures. For the purposes of the present study health expenditures are broadly defined as all expenditures and outlays for prevention, promotion, rehabilitation, care, population activities, nutrition, and emergency programs for the specific objective of improving health This definition is similar to that used for the estimation of national health expenditures in the World Bank (1993). Expenditures on medical education and training are not counted as health expenditures. A second problem is that the estimation of NHA requires the

collection of many types of expenditure data which are frequently not available in many SSA countries or are of poor quality.

Matrix Estimation and Sources of Data

This section gives an overview of procedures for estimation as well as data sources, availability, and deficiencies in the context of the Cameroon NHA to highlight some of the difficulties that were encountered and what may be expected in many SSA. A presentation in more detail of data sources, problems of availability and quality, as well as problems of analysis and assumptions made is given in Appendix 1.

Procedure for estimation

The estimation of NHA consists of two main tasks. The first is the estimation of health spending by financing source. The second is the tracing of expenditure flows through the health system in order to determine how these expenditures are allocated among various uses by analytical category. In view of the vertical nature of the Cameroon health system there are no intermediaries or financing agents and resources flow directly from financing sources to various uses. The second task invariably involves the construction of matrices, each matrix showing the flow of resources from financing sources to uses according to useful analytical categories. A core matrix in NHA is that showing expenditure flows from financing sources (or agents) to health providers. Other useful matrices which may be constructed, depending on need and availability of data, include those showing flows from sources to functions, sources to line items, sources to geographical regions, and sources to income groups.

Main sources of data

The sources of financing in the Cameroon health system have already been identified as households, government (through the Ministry of Economy and Finance), external aid, public enterprises, private enterprises, religious missions and NGOs, and the providers in the core matrix (of sources to providers) are Ministry of Health facilities, Other Ministry facilities, parastatal facilities, religious missions and NGO facilities (also known as not-for-profit providers), pharmacies and drug retailers, private sector (or for-profit) clinics, and traditional healers.

(I) Household health spending

As will be seen below households are by far the most important source of health spending. Expenditure information on this component was obtained from national household budget/consumption surveys carried out in 1983 and 1995 by the Department of Statistics and National Accounts (DSNA) of the Ministry of Economy and Finance. These data provided a fairly good basis for the estimation of total household health expenditures and also a rough indication for the allocation of expenditures among pharmacies and drug retailers, traditional healers, and to some extent, not-for-profit and for-profit providers. For the last two types of providers information on expenditures by households was also obtained from the annual turnover of religious missions and NGO providers (payments of user fees plus approximately 400% profit on drug sales) as well as from a private for-profit sector study carried out in 1996 by Dr Jacques Deschamps. Similarly information was obtained from parastatals and the university hospital (which falls under the Ministry of Higher Education) on annual household expenditures in their facilities. Given the near impossibility of obtaining information on user fees paid by households to the massive network of Ministry of Public Health facilities, this information was estimated as a residual, after subtracting all other household health expenditures from the total.

The budget/consumption surveys provide baseline data not only for the estimation of the sources to providers matrix but also the sources to geographical regions and sources to incomes groups matrices.

(ii) Government health spending

The bulk of government spending is through the Ministry of Public Health, following allocations by the Ministry of Economy and Finance. A smaller fraction of government spending is: by the Ministry of Armed Forces in its own facilities, providing health services to the military and police; by the Ministry of National Education which has hygiene and occasional immunization activities for school children; by the Ministry of Higher Education on its university hospital; and by the Ministry of Social Affairs which occasionally carries out various community health programs. Information was obtained from these sources as well as from the Department of Budget of the Ministry of Economy and Finance on actual expenditures as opposed to budgetary allocations, given that in the Cameroon budgetary system the former fall far short of the latter. Furthermore as will be seen below, even official figures on actual expenditures do not signify that these funds were spent on health care, due to high transaction costs.

(iii) Other sources of health spending

Quite good external financing data was obtained from individual donor agencies in the country. In the case of public enterprises it should be noted that some have their own health facilities and those without own facilities use private for-profit facilities for their workers. Expenditures of those with own facilities were obtained and divided by the number of workers to determine expenditures per worker. The same ratio was then used to estimate expenditures for public enterprises without own facilities. However, the same method could not be used for private enterprises since neither their total number nor the number of workers is known. Instead the estimates for private enterprises were based on information from a small survey of private for-profit health provision conducted in Douala (the country's largest town) in 1996. In addition to user fees and profits from the sale of drugs, religious missions and NGOs finance a small part of their activities from donations in the form of staff, drugs, and equipment from their denominations abroad and a rough estimation of donations on an annual basis was made.

<u>Problems of data availability and quality</u>

A major data problem confronting this study was the fact that the two household budget/consumption surveys used are very general, do not focus on any particular sector and therefore do not provide details. There is little or no disagregation of health expenditure data into useful analytical categories. For example there is no disaggregation of expenditures into functional categories such as outpatient versus hospital care or primary health care versus intensive curative care. Similarly there is no disaggregation into line items. Because of this limitation it was not possible to estimate the sources to functions and the sources to line items matrices. However, using the survey data in combination with anecdotal information from some provinces it was possible to construct two important matrices: the sources to providers matrix (which is the core matrix) and the sources to regions matrix showing how health financing is allocated to the various geographical regions of the country. A partial matrix showing household health expenditures by socio-economic category is also presented and used, along with the sources to geographical regions matrix, to analyze equity issues.

Another important data complication, though of a substantially different nature, concerns government expenditures. As was noted earlier actual expenditures fall way below budgetary allocations. Official figures on actual expenditures are published with a two years time lag. However, a well-known reality in the Cameroon budget system is that "actual" does not imply that these resources were spent for health. With the exception of salaries (which are paid directly to all government staff by the Ministry of Economy and Finance) resources actually allocated to government Ministries are made in the form of vouchers which in theory may be cashed in any public treasury in the country. But as will be explained later, the cashing of vouchers generally involves substantial transaction costs (in the form of "commissions" or bribes to treasury officials) which can range from 30-60% of the value of the voucher, depending on the part of the country.

While the estimates of the level of health expenditures arrived at for the country as a whole would seem reasonable in terms of its share in total expenditures and also by comparison with countries of similar structure and level of income, there is considerable

uncertainty with respect to the allocation of these expenditures among various uses. The uncertainty concerns especially the share of health expenditures going to traditional healers, to drugs and drug retailers, to private enterprises, and even to government health facilities (see appendix 1).

Presentation of the Cameroon NHA Estimates

Despite all the data deficiencies and pitfalls in estimation discussed above the Cameroon NHA presented below would appear to be reasonable, rough, estimates which should be accepted as a baseline while awaiting progressive refinements as more reliable data becomes available. At any rate it is more than likely that these estimates will generate considerable interest among both researchers and policymakers which may then result in more data collection efforts.

The sources to providers matrix in the Cameroon NHA for fiscal year 1995/96, is presented in table 1. Sources of financing are presented at the top, and providers on the left, of the matrix. The country's total health expenditure for that year was estimated at CFA francs 173,320 million equivalent to about US $ 347 million. Given that total GDP that year stood at CFA Francs 4131 billion (US $ 8262 million) equivalent to CFA francs 317,769 per capita (US $ 635 per capita) national health expenditures represented 4.2% of GDP equivalent to an annual per capita expenditure of CFA francs 13,332 (US $ 26.7). Total public spending on health (government plus State-owned enterprises plus foreign aid) was CFA francs 39,208 million equivalent to US $6 per capita or 0.9% of GDP while private spending (households, private enterprises, and religious missions/NGOs) totaled CFA francs 134,112 million equivalent to US $20.6 per capita or 3.2% of GDP.

Table 1

FINANCING SOURCES TO PROVIDERS MATRIX
(in millions of CFA francs)

Sources

Providers	Ministry of Economy & Finance	State Owned Enterprises	Foreign Aid	Private Owned Enterpr.	House-holds	Private Non Profit	Total
Ministry of Public Health	18,166		12,350		17,812		48,328
Other Ministry Facilities	1,332				70		1,402
State owned Enterprise Facilities		1,963			475		2,438
Non Profit Facilities					29,082	1,800	30,882
Pharmacies & Drug Retailers		4,316		4,105	66,614		75,035
Private for-Profit Clinics		1,081		2,463	2,948		6,492
Traditional Healers					8,743		8,743
Total	19,498	7,360	12,350	6,568	125,744	1,800	173,320

Source: Data for this core matrix was obtained from numerous sources: See Appendix 1

Table 2

Structure of Cameroon's Health Expenditures Compared with other LDCs

Country	**Per capita GDP, 1991 US $**	**Health expenditures per capita US $**	**Health Expenditures as % of GDP**			**Health Status**
			Total	**Public**	**Private**	**Life Expectancy**
Sri Lanka	500	18	3.7	1.8	1.9	72
Indonesia	610	12	2.0	0.7	1.3	64
Egypt	610	30	4.7	2.0	2.7	64
Cameroon	635 A/	26,7	4.2	0.9	3.2	57
Philippines	730	14	2.0	1.0	1.0	67

A/ GDP for 1995/96

Source: World Bank (1993)

In table 2 Cameroon's situation is compared with that of other developing countries having roughly similar per capita incomes. Relative to per capita income Cameroon ranks among the higher health spenders but what is remarkable is the very low share of public spending and the very high expenditures by the private sector. Possible explanations for this are given below.

Public and Private Financing of Health

The levels of public and private financing of health care in Cameroon are shown in figure 1. The low level of government financing is partly to be traced to the severe and unprecedented macroeconomic crisis that hit the country during the period 1986 - 1995 which provoked a fall in per capita income from $1020 to $635. The impact of the crisis on government health spending was more severe than on private spending. The impact of the crisis on the Ministry of Public Health's budget is shown in table 3. Estimated health expenditures of the Ministry which stood at CFA francs 35,817 million in 1986/87 equivalent to $9.6 per capita fell to CFA francs 18,167 in 1995/96 equivalent to $2.69.

Fig. 1

An important consequence of the crisis for government spending was increased external debt service at the expense of government domestic expenditure. Although there was also a decline in total household expenditures during the period there was a major reallocation in favor of health. As shown in table 4 the share of health in the household budget rose from 4% in 1983/84 to 9.6% in 1995/96 resulting in an increase in household spending on health from $ 14 to $20.6 per capita.

A second explanation for the low level of government health spending relative to private spending is that the country has had a long tradition of privately financed health care. Since colonial times the Catholic and Protestant church missions in Cameroon developed an important and reliable not-for-profit network of health services operating with user fees. Even government health care which, until recently, was officially supposed to be free, has never really been free; patients knew that they had to pay for drugs and bribe to receive care. A third reason is that the 1994 fifty percent devaluation of the CFA franc relative to the French franc, resulted in a near doubling of the prices of drugs, medical equipment, and supplies which are all imported, and this increase was passed on to consumers.

Table 3

Impact of Macroeconomic Crisis on Government Health Care Financing

(in millions of CFA francs)

	1986/87	1988/89	1990/91	1992/93	1994/95	1995/96
Ministry of Health expenditures	**35,817**	**26,241**	**26096**	**28,987**	**22,167**	**18,167**
Total government expenditures	**614,100**	**430,000**	**354,300**	**376,500**	**326,924**	**352,438**
% of total government expenditures	**5.8**	**6.1**	**7.4**	**7,7**	**6.8**	**5.2**
Min. of health expenditures/per capita	**3,404**	**2,356**	**2,214**	**2,327**	**1,684**	**1,343**
Exchange rate (CFA francs/ $	**353**	**304**	**275**	**265**	**519**	**500**
Min. of health exp. $/ per capita	**9.64**	**7.76**	**8.05**	**8.78**	**3.25**	**2.69**

Source: Compiled from information obtained from the Department of Budget, Ministry of Economy and Finance.

Legend: AID = Foreign Aid, HHS = Households, GOV = Government, REL = Religious Missions and NGOs, SOE = State-owned Enterprises, POE = Privately-owned Enterprises

Source: Estimated from household survey data, Enquete Camerounaise Aupres des Menages (ECAM), 1995, Department of National Accounts, Ministry of Economy and Finance.

Table 4

Comparative Structure of Mean Annual Expenditures Per Capita In 1983/84 and 1995/96

Expenditure Categories	1983/84 Per Capita Expenditures in CFA Francs		1995/96 Per Capita Expenditures in CFA Francs	
	Value	%	Value	%
Food, Beverages, and Tobacco	86,337	56.8	79,474	45.7
Clothing	11,623	7.6	11,651	6.7
Housing	16,871	11.1	39301	22.6
Other Housing Expenditures	10,272	6.6	6,260	3.6
Health	5,776	3.8	12,500	6.9
Transport	13,068	8.6	12,521	7.2
Education	4,012	2.6	6,956	4,0
Leisure	2,817	1.9	1,043	0.6
Make-up	1,207	0.8	4,400	2.9
Total	151,989	100	173,900	100

Source: Enquete Budget/Consomation, 1983/84 and Enquete Camerounaise Aupres des Menages, 1996, Department of Statistics and National Accounts, Ministry of Economy and Finance.

High Transaction Costs in Government Spending

Quite apart from low levels of government health spending discussed above the advent of the economic crisis in 1985, combined with shrewd political expediency, ushered a new and harsh reality into the Cameroon budgetary system which has had far-reaching consequences for health care. Year after year, and in an apparent attempt to satisfy the demands of various political constituencies, government budgets approved by the National Assembly (Parliament) and allocated to Ministries in the form of Treasury vouchers (with the exception of salaries which are paid directly to staff by the Ministry of Economy and Finance) have largely failed to reflect the severe and steady decline in government revenues. The approved budget exceeded actual government revenues by 42% in fiscal year 1994/95. The total value of Treasury vouchers issued in any one year for the purchase of goods and services have far exceeded government revenue and a substantial

number of vouchers have remained unpaid for several years. Treasury offices have been besieged by long cues of suppliers and other contractors waiting to be paid but without any pre-established order of priority for payment. The end result has been that Treasury officials at various levels of the bureaucracy have capitalized on the situation by extorting "commissions" or bribes of up to 60% of the value of a voucher as a condition for payment.

In a recent analysis of the Cameroon budgetary system undertaken for the European Union by AEDES, consultants Jean Benoit Burrion and Philippe Vinard have made the following assessment:

"Whatever the level in the health pyramid, the testimony is unequivocal: the delegated credits [approved budgets to the regions] are utilized at no more than half their nominal value for the purpose for which they were intended. Some speak of 30% but it is difficult to evaluate. At any rate this is not rumor or widespread prejudice but a reality lived and experienced by everyone.

For about ten years the Treasury has experienced an acute shortage of liquidity. At first this shortage induces a 'waiting line' of suppliers for the settlement of their claims at the counters of the Treasury. Delays of payment can be long (sometimes a couple of years). In the long run an informal system of management of the waiting line installs itself based on the law of supply and demand. Given the limited resources of the Treasury, these are sold to the most intransigent suppliers. Progressively the informal system becomes a near institutionalized system in which everyone finds his interests. The system transforms itself into a network of complicities……..

The system has two consequences. The first is some sort of natural selection of suppliers who are capable of negotiating their claims or who are solid financially. The second is the regulation of the market which results in "the law of 50%"…." (p.16-17)

However, according to the authors, it is not that the authorities are ignorant of what is going on. At least one cabinet Minister attempted unsuccessfully to fight the system. Indeed as the authors have implied, far stronger action is needed at the highest political level to change the system.

"The system is known to everyone and the authorities at the central level are fully conscious about what is going on……Given the interests in play, it is very unlikely that an improvement of the liquidity situation or that a few exemplary "sanctions" will be sufficient to change the system" (p. 17).

Given that non-salary health expenditures by government involve substantial transaction costs one must distinguish between expenditures for health and expenditures for health care. Expenditures for health are the resources that have actually been mobilized for the health sector. In fiscal year 1995/96 they amounted to CFA francs 19.5 billion of which 11 billion was in the form of salaries (for government health personnel). The expenditure balance of 8.5 billion in the form of Treasury vouchers would have involved transaction costs evaluated at 4.25 billion (assumed to be approximately 50% of nominal value). This means that actual expenditures on health care were therefore only 15.25 billion. In NHA transaction costs are counted as health expenditures even though they are not spent on health care; they are viewed as a penalty or a toll that must be paid in order to have access to the 15.25 billion (in much the same way as a motorist must pay a toll at a toll gate in order to have access to certain roads).

<u>The Providers of Health Care</u>

The allocation of health spending among the various categories of providers is shown in figure 2. The most important single use of expenditure in the Cameroon health system is for drugs which came up to CFA francs 75,035 million or 43.3% of total health expenditure. This figure includes the actual cost of drugs in public and private health facilities, private pharmacies, drug retail stores, as well as sales by road-side vendors. It does not include profits on drugs in public and private health facilities. Unfortunately no information is available permitting a breakdown by facility. The amount reflects the high cost of drugs in the country due partly to the fact that virtually all drugs are imported and partly to major inefficiencies in the drug procurement system. These are due to the long

Fig. 2

and cubersome administrative procedures as well as the lack of transparency in the authorization of drug imports). Private spending on drugs was estimated at CFA francs 67.5 billion in 1994 immediately after the devaluation of the CFA franc (World Bank, 1995). The expenditure of CFA francs 75 billion in 1995/96 was therefore the resultant of two effects: the effect of the decline in the demand for drugs due to the drastic increase in prices (estimated at 74%) following the devaluation and the effect of the higher prices on drug expenditures.

In terms of the allocation of health spending between public and private facilities CFA francs 48 billion (or 28% of total spending) went to government facilities. Private not-for-profit and private for-profit providers received, respectively, 30 billion and 6.5 billion, while 9.3 billion is estimated to have gone to traditional healers.

There has been a long-standing debate in Cameroon concerning the relative importance of the public and private sectors in the provision of health care. On the basis of the frequency distribution of patient consultations by category of health provider, information from the 1995 household budget-consumption survey suggests that 14.8% were with traditional healers. As far as consultations in modern health centers are concerned 43.8% took place in public facilities and 56.2% in private facilities even though services in the latter are 50% more expensive and the former outnumber the latter by a ratio of 3: 1. These percentages are also confirmed in the North West province where excellent records of monthly consultations at health centers during the period 1989 - 1995 show that in 1995 there were 173,450 consultations in religious mission facilities and 129,569 at government facilities (Ghogomu et al, 1996). This is testimony of the superior quality of private sector health services. The household budget-consumption survey did not, however, provide any indication of the relative importance of public and private inpatient care (such as the total number of inpatient days for the two categories of facilities). But the records of monthly hospital consultations in the North West province show the domination of the government sector with 154,396 consultations in 1995 as opposed to 92,274 for the missions and 16,327 for the private for-profit sector. The evidence from the North West province during the past several years also suggests a steady decline in health care provision by the government sector: the share of the government sector in both health center and hospital consultations fell from 72.9% in 1989 to 50.1% in 1995 while the share of mission and private sectors increased from 25.5% to 47% and 1.6% to 2.9%, respectively. The main reason cited for the declining role of the public sector was the economic crisis which has drastically reduced resources for the maintenance of facilities and caused the demotivation of health staff following the more than 60% cut in civil servant salaries in January, 1991. Owing to a rapid deterioration of facilities the bed occupation ratio at the General Hospital in Yaounde fell from 45% in 1985 to 23% in 1996 and this has been reported to be a generalized phenomenon throughout the country (ADE, 1996 p.11).

Equity Considerations

On account of the low level of per capita incomes in SSA large segments of the population may not have access even to the basic package of health care. An important policy objective of governments should therefore be to improve equity of access through an appropriate distribution of health expenditures either across geographical regions or across income groups.

A sources to geographical regions matrix and the distribution of household per capita health expenditures by population decile (which is a partial sources to income groups matrix) are presented respectively in tables 5 and 6 and used to discuss equity concerns in

Table 5
Sources to Geographical Regions Matrix
(in $ per capita)

Regions	Government	Public enterprises	Foreign aid	Private enterprises	Households	Religious missions	Totals by region
Yaounde	5.8	2	1.9	1.8	34,3	-	46.1
Douala	2.9	1.7	1.9	2.6	42.5	-	51.9
Other Towns	2.4	2.4	1.9	1.3	27.7	-	36
Rural Forest	2.4	2.8	1.9	-	13	-	20.4
Rural Plateau	2	-	1.9	-	14.3	-	18.5
Rural Savana	1.8	-	1.9	-	14.9	-	18.9
All regions	3	1.1	1.9	1.0	19.2	0.3	26.5

An examination of the distribution of health expenditures across income groups reveals more dramatic inequalities. Per capita household expenditures for health by the poorest 10% of the population was only $5.4 while for the richest 10% it was $90.4. As noted earlier the cost of a basic package of health care delivered to 90% of the population in a low income country like Cameroon was evaluated by the World Bank at $13 per capita.

Table 6
Household Per Capita Health Expenditures by Decile of Population

Deciles of population	Total per cap. Expenditures (CFA francs)	Per capita Health Exp. (CFA francs)	Per capita Health Exp. (in dollars)	Total Population	Percentage of total population
1	28,132	2,701	5.4	1,610,800	12.5
2	42,831	4,112	8.2	1,782,800	13.8
3	52,108	5,002	10	1,741,800	13.5
4	64,759	6,218	12.4	1,543,700	11.9
5	76,205	7,316	14.6	1,412,100	10.9
6	94,036	9,027	18.1	1,173,000	9.1
7	120,361	11,554	23.1	1,158,600	9.0
8	157,952	15,163	30.3	941.100	7.3
9	219,217	21,045	42.1	783,800	6.1
10	470,964	45,213	90.4	771,800	6.0
Entire Pop.	104,744	10,055	20,1	12,919,500	100.0

Cameroon. The sources to regions matrix shows considerable inequalities in the distribution of health expenditures between urban and rural areas (and also to a lesser extent among rural areas). Following the presentation in the household surveys, Douala (the country's largest town), Yaounde (the capital) and "other towns" are treated as regions (they held some 40% of the country's population in 1995/96) and there are also three rural regions: the forest area (covering the center, south and east provinces), the plateau area (covering the north-west, west, south-west, and litoral provinces) and the savana (covering the far-north, north, and Admaoua provinces).

As can be seen per capita health expenditures were respectively $51.9 and $46.1 in Douala and Yaounde compared with $18.5 and $18.9 in the rural plateau and rural savana respectively. The high expenditures in Douala and Yaounde are explained by the combination of high household expenditures (due to high incomes), high government spending, and a concentration of public-owned and private-owned enterprises. In other words government expenditures have helped to agravate, rather than attenuate, existing regional inequalities in health spending by the other sources. Foreign aid expenditures have been more equitably distributed across regions.

(World Bank 1993). On the basis of rough estimates the actualized cost in 1995/96 was $15 per capita. This means that the 4th decile of the population (with a per capita household expenditure of $12.4) all by themselves could not have been able to afford the totality of the basic package. However if it is assumed that the government expenditure of CFA francs 15.25 billion (after transaction costs) were to be distributed equally to the population (13 million in 1995/96) this would have resulted in an extra per capita expenditure of $2.3. If foreign aid expenditures of $1.9 per capita are also added the extra expenditure would increase to $3.2 . Expenditures for the 4th decile would now be $16.2 (12.4 + 3.2) and the basic package would become accessible. However, for the first three deciles of the population corresponding to a population of approximately 5 million (about 40% of the total population) the package would still not be accessible. At any rate since, as we have seen, government expenditures are not distributed equitably, far more than 5 million would not have had full access to the package.

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Appendix 1

Data Sources, Availability, Quality, and Problems of Analysis

This appendix presents, in greater detail than in the text, data sources, problems of availability and quality as well as problems of actual collection and analysis of that data. The data collection effort for the study was undertaken during a six-week visit to Cameroon from Harvard in February/March, 1998. Students and researchers conducting researh in the country frequently complain not only about the scarcity of data but also the formidable difficulties of accessing existing data. Virtually all official data tends to be treated as confidential. Fortunately, in the case of this research project access was greatly facilitated by the author's personal relations with many officials (established while working as a Bank staff). The estimation of the Cameroon NHA is for fiscal year 1995/96.

1. Estimation of Health Expenditure Sources

Households: This is by far the most important source of health financing. The only vital source of data available in Cameroon is from household budget-consumption surveys. These surveys have been carried out twice at the national level, in 1983 and in 1995 by the Department of Statistics and National Accounts of what is now the Ministry of Economy and Finance. However, the survey of 1983 was certainly far more reliable than that of 1995: it had ten times more financial resources (in 1983 the country was still very prosperous with a per capita income of $1,050 as compared to $630 in 1995); it involved a much larger sample of 5,500 households and lasted a whole year, with each household being interviewed 16 times

while the 1995 survey covered only 1,700 households, lasted only 3 months and most of the questionnaire involved only one interview with a two-week recall period. Much of the financing for the 1995 survey was to come from the World Bank Social Dimensions of Adjustment Project; however when the project was abruptly cancelled in 1994 the scale of the survey had to be drastically reduced to adapt to the limited financing, most of which came from the European Union (the Bank's contribution was limited to the supply of computers). As a result the 1995 survey appears to suffer from substantial over-estimation of health expenditures, suggesting that households may have declared expenditures beyond the two-week recall period.

Because of the greater reliability of the 1983 survey it has been preferred as the basis for estimating the level of household expenditures (which is assumed to be equal to the level of household per capita income). At the same time information on the structural characteristics of expenditures of the 1995 survey data is also used as it is assumed that all categories of expenditure were inflated by the same ratio, and therefore that the general structure of expenditures remained valid. Given that the level of household per capita income (or expenditures) from the survey was CFA francs 151,989 in 1983/84 the estimated level in 1995/96 was obtained by actualization, using a growth rate for per capita income of + 7.2% per year between 1983 and 1985 and of -6.6% per year in the period 1985 to 1995 (World Bank 1993 p. and 1997 p.), and it is assumed that household per capita income grew at the same rate as total per capita income. On the basis of the above assumptions household per capita expenditures fell from 151,989 francs in 1983 to 104,744 in 1995 (due to the country's a deep and an unprecedented economic crisis). Since, according to the 1995 survey, per capita health expenditures were 9.6% of total per capita household expenditures, per capita health spending by households was therefore estimated at10,055 francs or $20.1.