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Financing the health and population sector – resource projections

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Also available;

Public-private mix for health sector development: proceedings of the fourth annual conference, 25-26th July 1999

Bangladesh National Health Accounts 1996/97, Final report, Data International/ Health Economics Unit.

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Executive summary

The principle aim of this study is to project financial resources available to the health sector of Bangladesh up to 2006/07. In the first part of the report, we project government and donor health expenditure, comprising the great bulk of the total resource envelope. In the second part, we examine the potential of alternative financing mechanisms that are currently under consideration, projecting revenues from social and community insurance, user charges, and local government tax reform. In order to generate projections, the study develops a relatively rich but tractable model that will be available for development and use in future research¹. The model has in excess of 20 control parameters allowing the researcher great flexibility.

In the model, the key determinants of government funding are:

- the underlying macroeconomy²
- the extent and efficiency of tax collection
- the share of national budget negotiated by the Ministry of Health and Family Welfare.

A number of scenarios are explored by changing the values of key parameters including a 'best-case' or adjustment scenario and a 'worst-case' or baseline scenario.

In the best-case scenario, growth is projected to be 6.5% per annum over the projection period, inflation 4.5%, growth in trade volume approximately 10% and the budget deficit is scheduled to decline to 4.5% of GDP. In respect of revenue collection, we assume that efficiency gains increase the share of tax revenue to GDP to 9.5% (still relatively low for a developing country), whilst MOHFW negotiates a proportion of non-donor budget increasing to 5% in 2006/07 (in excess of the 1990s high of 4.5%). We assume zero real growth in the donor budget.

The baseline macroeconomic management is assumed to be weaker resulting in an annual growth-rate of 4.5%, inflation rate of 6%, growth in trade volume circa 6%, and a budget deficit sustained at the 1990s high of 6% of GDP. There are no gains in the efficiency of tax collection, and the revenue-GDP ratio falls to a 1990s low of 8%, whilst the MOHFW negotiates only 4% of the non-donor budget, slightly beneath the 1990s average.

In the baseline scenario, by contrast, real growth in government and donor expenditure is 3.5%, with actual expenditure in 2006/07, 2395 in 1995/96 prices, approximately 25% lower than in the best-case. In per capita terms real spending grows by 2 percent per annum (298 taka per capita, at current prices).

In the best-case scenario, donor and government expenditures grows at approximately 6.5% in real terms, increasing to 3022 crore in 1995/96 prices (by 2006/07). In per

¹ The model will be available at the Institute of Health Economics at the University of Dhaka, together with a User's Guide.

² In particular, the rate of GDP and trade growth, rate of inflation, and budget deficit.

capita terms real spending grows by 6 percent per annum (376 taka per capita, at current prices).

Alternative funding mechanisms

Whilst government and donor funds will continue to dominate the financing of the health sector, alternative sources of funding can, if implemented seriously, comprise 13-20% of total resources. Since these projections assume the development of new financing systems, the resource estimates are rather more speculative than those in the first section and illustrative of what could be under reasonable scenarios.

We assume that community insurance is introduced gradually to three groups with access to relatively high quality health services. These are those in the rural population covered by NGOs and TFIPPs and those in district (urban) capitals with ready access to district hospitals. Revenue projections are determined by numbers of households in these sub-groups who are able/willing to purchase insurance, and we estimate this using household survey data and controlling for the premium level.

Assuming a worst-case macroeconomic environment and a per capita premium of 220 taka (approximately the per capita cost of secondary care), we find that almost all of the urban population are able to purchase (89%), whilst only 15% of the rural population will purchase, although this increases to 45% by 2006/07. Total revenue from community insurance is projected to increase to 315 crore in current prices, approximately 6% of projected government and donor funds, with 5.5% of the total population of Bangladesh covered.

We assume that social insurance is introduced in 2003 and by 2006/07 covers 50% of the formally employed, and approximately 4% of the total population. The revenue potential however, is slightly higher than with community insurance because of relatively high premiums – US \$10 per capita, or approximately 520 taka.

In contrast to insurance, the revenue potential of user charges is small, projected to reach 12 crore by 2006/07. The projections are based on existing user charges and patterns of utilisation, and estimated rates of exemption. Exemption rates are scheduled such that resources are re-allocated towards primary care (in line with conventional practice) and are sufficiently high as to enable use by all, assuming that exemptions apply to the poorest.

Finally, we illustrate the revenue potential in Dhaka of appropriate property tax reform. Assuming that property is valued at its market value, and the rate of property tax is in line with European tax-rates (approximately 1% per annum) we estimate that health expenditure in Dhaka may increase 11 fold, to reach approximately 5% of national health expenditure in 2006/07.

Introduction

This is the first in a series of two reports examining and projecting the level of resources available for health and the impact of various options for collecting additional resources. This report concentrates on the amount of funding. The second report (research paper 24) will focus on the impact on equity and other criteria for sound health financing.

In order to facilitate planning of the second Health and Population Sector Programme, it is important to obtain at least crude estimates of the expected resources available for health services. The following report is the outcome of a recent study that addresses that need. In it, we develop a model for estimating the resource envelope to 2006/07, and proceed to use the model to generate estimates of health expenditure subject to various scenario. In the first part of the report, we project government and donor financing. This comprises the bulk of total health finances, and as we illustrate, is sensitive to the macroeconomic environment and, in particular, to assumptions regarding tax collection and the proportion of government budget allocated to the health sector. In the second part, we consider various potential sources of additional finance some of which are currently under consideration in government; these are community and social insurance, user charges and local government tax reform. It is shown that, together, if implemented seriously, these may plausibly raise an additional 15% of total health sector expenditure.

The models developed in this paper are available at the Institute for Health Economics of the University of Dhaka, together with a User's Manual. It is anticipated that researchers may use and develop the model for future resource projection.

1 Projecting Government and Donor Expenditure on Health

1.1 Macroeconomic Projections

Government revenue (and therefore expenditure on the health sector) is driven, in part, by the condition of the underlying macroeconomy. Accordingly, macroeconomic projections are a key part of this analysis, and for these, we rely on a recent country study by the IMF, in collaboration with the resident World Bank mission (IMF Staff Report, 1999). In this, they construct crude macroeconomic projections for Bangladesh, according to two scenarios. The 'baseline' scenario is a worst-case, assuming a continuation of disturbing recent policy trends, and, in particular, continuation of fiscal expansion. Combined with diminishing availability of foreign financing, this creates an increasing public deficit financed by domestic credit, which, in turn, 'crowds-out' domestic investment. Accompanied by low productivity (in the absence of structural reform), falling investment causes stagnation of growth at 4.5%, just short of the 1990 decade average annual growth-rate. Inflation accelerates to 6.5% whilst import and export growth is subdued, due to the decline in domestic investment and declining external competitiveness.

By contrast, the second 'adjustment' scenario is based on the assumption that the authorities concerned adopt a comprehensive package of policy reforms. Accordingly, aggregate economic growth is predicted to accelerate to 7%, accompanied by significant growth in trade volume and lower inflation, at 4.1%

compared to a 1990s average annual rate of 5.1%. The positive scenario is driven primarily by improved tax-collection. Sustained efforts at revenue generation are projected to increase the revenue to GDP ratio by about 3 percentage points (from 7.6% to 10.6%), easing the fiscal deficit and releasing domestic (and foreign) credit for investment. In addition, the more positive macroeconomic environment is projected to increase foreign investment to approximately 650 million US dollars.

As indicated, the extent and efficiency of revenue collection is a crucial factor in determining public sector resources, and significant emphasis has been placed on reform in this area, with recent reforms including the introduction of VAT. Anecdotal reports³ regarding prospects for tax reform are ambiguous. On the one hand, revenue generation is undermined by 'system leakage' at all levels induced in part by low public sector wages. Other constraints include the narrow tax-base and government commitment to continue a policy of lowering trade taxes, which have historically constituted an alarmingly high proportion of total revenues (see Table 1.2). Whilst it is hoped that VAT will generate a greater proportion of total revenue, progress is slow on account of low capacity in the Revenue Board, and technical difficulties arising over appropriate valuation of goods. Currently, for ease of administration, the Revenue Board assumes a constant mark-up of 13.5% on all goods⁴. This is very likely to be beneath the average mark-up, implying lower than appropriate revenues.

On the other hand, there are reasons to be optimistic. The ratio of GDP collected in tax is considerably lower in Bangladesh than the average for developing countries (Table 1.1), indicating at least enormous scope for improvement. Secondly,

TABLE 1.1 Revenue as Proportion of GDP, 1995

	Tax / GDP
Bangladesh	9.50%
India	16.90%
Aver. Developing Country	18.50%

Source: Budget wing, M/o Finance & Bangladesh Bureau of Statistics

revenues are highly sensitive to annual financing requirements as laid out by the Ministry of Finance, with local tax collection being, in practice, an informal agreement between tax officials and tax-payers such that the Revenue Board can meet the MoF targets (Government Revenues – Accountability and Audit).

there is recent evidence that increased financing demands by the Ministry of Finance have led to considerable growth in revenue collection. Perversely, revenue generation in Bangladesh is only loosely related to tax law. Rather,

Table 1.2: Sources of tax revenue in Asia, 1992

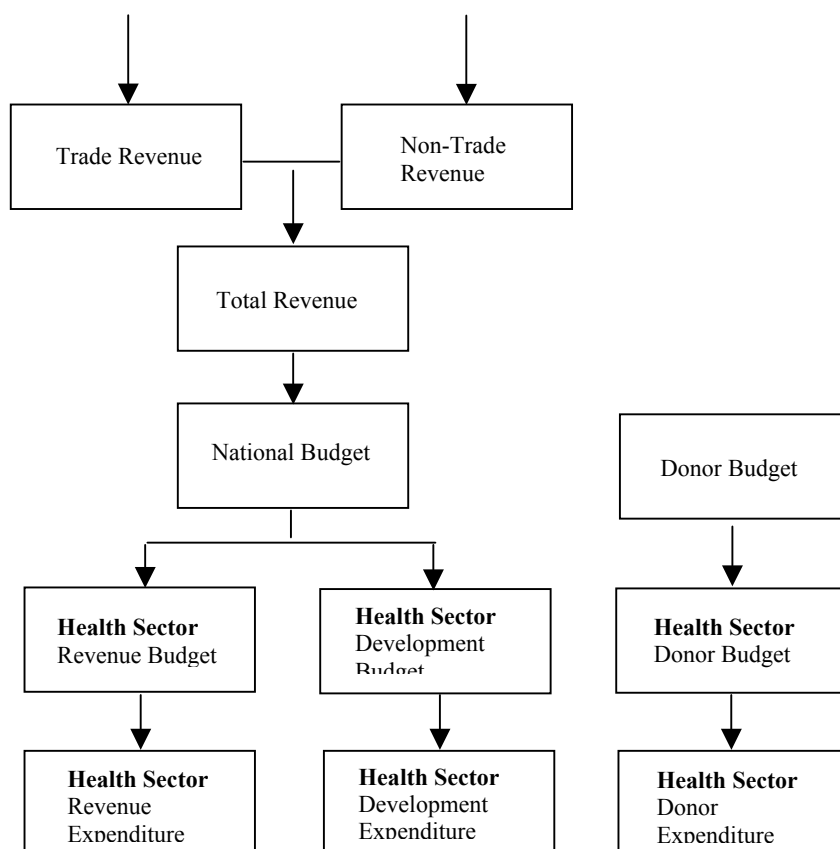
	Taxes on Income & Profit	Taxes on Goods & Services	Taxes from International Trade	Non-Tax Revenue
Singapore	27%	23%	2%	34%
Indonesia	58%	26%	5%	8%
Malaysia	34%	20%	15%	8%
Phillipines	29%	26%	29%	13%
Thailand	28%	42%	17%	10%
Bangladesh	9%	26%	27%	23%
Bhutan	8%	17%	0%	75%
India	17%	34%	26%	23%
Myanmar	11%	33%	17%	40%
Nepal	10%	37%	31%	17%
Pakistan	10%	32%	30%	27%
Sri Lanka	11%	48%	28%	10%
MEAN	21%	30%	19%	24%

Source: IMF Government Finance Statistics Yearbook

1.2 A Model of Government and Donor Health Expenditure

Figure 1.1 illustrates the mechanics of the model, with details of the exogenous control parameters ('model instruments'). As shown, the first step in estimating health expenditure is estimation of government revenue. Our modelling strategy begins by assuming that the practice of taxation is, at least partially, governed by the laws of taxation, and therefore, that revenue is sensitive to the underlying sources of income, such as growth, trade volume and so on. Given constant average marginal duty, trade revenue is assumed to depend on the weighted sum of growth of imports and exports, with, in our baseline model, heavy weight attached to imports (as the bulk of trade revenue accrues from import duty). Non-trade revenues (primarily VAT and income tax) grow at the rate of GDP growth plus a control factor allowing for exogenous effects on efficiency of tax collection⁵.

Figure 1: Model to estimate government and donor expenditure in the health sector⁶



³ F

⁴ Debra Adams, Price WaterhouseCoopers

⁵ The link to economic growth is plausible in the case of VAT because, in practice, VAT is linked to business turnover rather than any measure of value-added. The tax efficiency factor applies only to non-trade revenues because this is the area where most reform effort is concentrated.

⁶ The upper arrows indicate that trade and non-trade revenues are determined by an underlying macroeconomic model.

Perhaps, not surprisingly, when tested on 1990s revenue data, the model, in this form, does not perform particularly well. Predicted total revenues are significantly in excess of actual revenues collected, whilst the share of trade revenues (which was relatively constant throughout the period) is predicted to increase from 55% to 65%. Whilst part of the error is explained by decline in average marginal duty as part of a government commitment to trade liberalisation, to reconcile the data in this way alone, requires a 40% decrease in duty over 7 years, which is not plausible.

The more likely source of error in the model is that, in practice, tax collection is only loosely related to the laws of taxation. As discussed earlier, there is much anecdotal evidence to suggest that revenue collection is strongly influenced by targets determined as a result of negotiation with government and, particularly, the Ministry of Finance. In this case, revenue is at least partially exogenous of the macroeconomy, determined by government and institutional factors. To adjust the model to allow for this, we introduce an additional exogenous control factor that discounts trade revenue and, accordingly, adjusts the trade share. The resulting model is a hybrid that allows for two very different types of practice in revenue collection. For revenue systems in which tax collection is primarily governed by tax law then the appropriate procedure is to project change in tax efficiency and average annual change in duties (the trade adjustment factor) and allow underlying macroeconomic assumptions to determine revenue and the proportion of revenue to GDP collected. On the other hand, in a system such as Bangladesh, in which revenue collection is driven primarily by targets (and other institutional factors), we may use the exogenous control parameters to adjust revenue collected to meet a projected target for revenue to GDP. In this case, revenue projection is, in essence, equivalent to projecting revenue targets.

Having estimated tax revenue, the next step towards estimating health expenditure is to determine the national budget. This depends simply on total revenues (as estimated above) and the projected budget deficit, which we treat as exogenous, using the IMF projections, as reported above. Financed by both domestic lending and foreign grants and lending, the deficit captures the impact of fiscal management and/or change in foreign aid and lending policy⁷.

Finally, we estimate the health sector budget and actual expenditure. We assume that the budget depends exclusively on the negotiating authority of the MOHFW and the commitment of the GoB to the health sector, measured by the proportion of health sector budget to national budget. In 1993 (excluding donor contribution), this was 3.3% rising to 4.5% in 1995 and 1997, but subsequently declining to 3.8% in 1999. Reflecting government statements of commitment, in the baseline scenario, we assume a rising trend, increasing linearly to 5% in 2006/07. The donor budget, by contrast, is assumed to be constant in real terms throughout the projection period. In recent years, procurement difficulties associated with new donor regulations have led to a significant under-spending. In modelling actual donor expenditure, we assume that this is eliminated within three years, at which time the budget and actual expenditure converge.

In 1998/99, salaries comprised 65% of government spending in health (excluding donor expenditure), with the revenue budget taking 70% of this. We project that this increases to 100% by 2004, reflecting a government policy to transfer

⁷ In their baseline scenario, which assumes fiscal expansion, the budget deficit is sustained at its 1990 peak of 6%. By contrast, in the adjustment scenario, the deficit is projected to fall to 4.5%.

all salary-expenditure to the revenue budget. Of non-salary related expenditure, we assume that the proportional allocation to revenue and development budgets is constant at approximately 65% to revenue budget and 35% to the development budget.

1.3 Results

Macroeconomics and Health Expenditure in the 1990s

Before considering projections of health resources and related macroeconomic variables it is informative to reflect on the 1990s experience (see Bangladesh Bank 2000; Bangladesh Bank Bulletin 2000, and Ministry of Finance 2000, 2001). Table 1.3 illustrates, for 1993-1999, average annual values for the key variables⁸. The usual caveats regarding the quality of data apply.

Table 1.3: Annual Averages 1993-1999

Macroeconomic data		Total Revenues as % of GDP	9.38%
Growth	4.94%	Total Expenditure as % of GDP	14.37%
Inflation	4.77%	Health Expenditures	
Real Export Growth	13.51%	Real Growth in GoB Revenue Expenditure	6.26%
Real Import Growth	9.87%	Real Growth in GoB Development Expenditure	9.19%
Budget Deficit	-5.16%	Real Growth in Donor Expenditure	8.42%
Growth in Tax Efficiency	0.00%	Real Growth in GoB & Donor Health Expenditure	6.94%
Trade Share Adjustment Factor	-3.53%	Total GoB & Donor Exp. As % of a National Exp.	6.18%
GoB Health Exp./National Expenditure	4.05%	Total GoB & Donor Exp. As % of GDP	0.89%
Real Growth in Donor Expenditure	8.40%		

In the 1990s, GDP growth was high and stable, averaging 4.9%, driven in part by growth in exports, notably of labour-intensive manufactures such as garments, and frozen foods. Macroeconomic management was relatively good for a developing country with an average rate of inflation of 4.77% and fiscal deficit of 5.16% of GDP (although rising through the period to 6.1% in 1999). From 1991 to 1996/97, the proportion of government revenues to GDP increased steadily from 7.96% to 9.49% and total government expenditure (revenue plus domestic loans and external loans and aid) increased from 12.74% in 1991 to 15.13% in 1994/95. In the late 1990s, however, government revenues failed to keep up with growth, and the proportion of revenue to GDP declined to 8.85% in 1999/2000. The downturn may be partially attributed to a decline in real growth of imports and, consequently, in trade revenues (although imports have grown faster than GDP in each year of the decade). The proportion of government expenditure to GDP decreased in 1995/96, although it subsequently recovered in 1998/99 and 1999/00, financed by decade-high budget deficits in excess of 6%⁹.

In respect of the health sector budget and expenditure¹⁰, in the period up to 1997/98, government and donor expenditure on health grew rapidly at approximately 10% in real terms, consuming an increasing proportion of GDP (0.79% to 0.95%) and total government expenditure (rising from 5.72% to 7.01%). In 1998/99, however, real health expenditure decreased significantly at -6.5%, and, as a proportion of total

⁸ Growth in tax efficiency and the trade share adjustment factor are fitted values

⁹ The average budget deficit over the 1990s was 5.16%

¹⁰ see Public Expenditure Review of the Health and Population Sector. Research Paper Nos. 9&19 (1998, 2000)

expenditure, declined to 1993 levels, at 5.59% and 5.78% in 1998/99 and 1999/2000, 0.85 % of GDP in 1998/99. This was caused by a fall in the proportion of non-donor national resources allocated to health and a real decline in non-donor government expenditure on health. In addition, whilst donor budgets have continued to grow significantly in real terms, there has been significant under-spending in 1998 and 1999, due to difficulties in procurement under new regulations in the HPSP.

Projections

In projecting forwards, we first consider the baseline scenario. The key parameters of the model are described in Table 1.4 below.

Table 1.4: key parameters of the baseline scenario

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Growth	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%
Inflation	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
Real Export Growth	6.50%	6.42%	6.33%	6.25%	6.17%	6.08%	6.00%
Real Import Growth	5.40%	5.33%	5.27%	5.20%	5.13%	5.07%	5.00%
Budget Deficit	-6.00%	-6.00%	-6.00%	-6.00%	-6.00%	-6.00%	-6.00%
Growth in Tax Efficiency	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Trade Share Adjustment Factor	-2.38%	-2.43%	-2.50%	-2.56%	-2.63%	-2.70%	-2.77%
GoB Health Exp./National Exp.	3.99%	4.15%	4.32%	4.49%	4.66%	4.83%	5.00%
Real Growth in Donor Exp.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

International Monetary Fund Bangladesh. (1999), and author's own assumptions

In the baseline scenario, we make the following assumptions;

- The annual rate of growth is projected at 4.50% for each year of the projection period, marginally lower than the average for the 1990s.
- Projected inflation is significantly higher than the 1990s average, at 6.50% per annum in each year.
- We assume growth in exports and imports at approximately 6% and 5% per annum in real terms, again significantly lower than in the previous decade.
- Fiscal management is assumed to be weak, with the budget deficit sustained at the 1990s high of 6% GDP.
- In respect of revenue collection, we set the trade adjustment factor such that trade revenues are discounted at 2.5% per annum. Assuming zero efficiency gains in non-trade tax collection, this causes a decrease in the share of trade to total revenue from 57% in 2000 to 53% in 2006, reasonable in light of governments' continued commitment to reduce customs duties¹¹.
- The only optimistic projection is that the MOHFW negotiates an increasing share of the national budget (excluding external assistance), rising from 4% in 2000/01 to 5% in 2006/07. This represents an annual growth of nominal health expenditures of approximately 13% against growth in total government expenditure and economic growth of 8.3% and 4.5% respectively. Whilst relatively optimistic, this represents in part, a reversal of the downturn in government spending observed in the last two years of the 1990s.
- By contrast, donor expenditure on health is projected to grow at the rate of inflation, representing a marked decline in the relative contribution of donor aid in the 1990s, where real growth was approximately 10% per annum.

¹¹ The ratio of total revenue to GDP falls by 0.7% over the period to 1991 levels, at 8%

Table 1.5 summarises the implications of the baseline scenario for total revenue, total expenditure and health resources.

Table 1.5: Projections, 'baseline scenario'

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Total Revenues	23191	25230	27775	30560	33603	36927	40556
As % GDP	8.7%	8.5%	8.4%	8.3%	8.2%	8.1%	8.0%
Total Expenditure	38524	43024	47580	52600	58133	64227	70938
As % GDP	14.5%	14.5%	14.4%	14.3%	14.2%	14.1%	14.0%
Health Expenditures							
Government Revenue Expenditure	1112	1278	1582	1946	2378	2723	3112
Real Growth in Revenue Expenditure	10.9%	7.9%	16.3%	15.5%	14.8%	7.5%	7.3%
Government Development Expenditure	423	509	475	417	332	380	434
Real Growth in Development Expenditure	22.5%	13.0%	-12.5%	-17.5%	-25.5%	7.5%	7.3%
Donor Expenditure	898	1011	1135	1233	1313	1399	1489
Real Growth in Donor Expenditure	8.5%	5.7%	5.4%	2.0%	0.0%	0.0%	0.0%
Total Health Expenditure	2434	2799	3192	3596	4023	4501	5036
Real Growth in Total Health Expenditure	11.9%	8.0%	7.1%	5.8%	5.1%	5.1%	5.1%
As % Total Expenditure	6.32%	6.50%	6.71%	6.84%	6.92%	7.01%	7.10%
As % of GDP	0.91%	0.94%	0.97%	0.98%	0.98%	0.99%	0.99%

Total revenues grow at less than GDP growth declining as a proportion of GDP to 8% in 2006/07, less than the 1993 level. This is driven by relatively low import and GDP growth, the projected cuts in duties and zero efficiency gains in implementing non-trade revenue collection. Even with the high budget deficit, this implies a decline in the national expenditure budget to GDP ratio, which falls steadily to 14%, again very close to the 1993 level. In spite of this, however, total health expenditure (GoB and donor) grows faster than economic growth and total government expenditures, rising to 7.1% of total expenditure (the level attained in 1996 and 1997) and almost 1% of GDP, higher than at any time in the previous decade. Most of the growth is driven by revenue expenditure. Initially this grows rapidly at over 10% fuelled by increases in the health share of the national budget and transfer of development expenditures to the revenue budget. Beyond 2003, real growth in revenue expenditures declines as development transfers are exhausted and revenue growth declines. However, it remains significantly in excess of GDP growth. As stated, we assume that donor expenditure is constant in real terms¹². In respect of real growth in health expenditure and the proportion of national budget allocated to health, it is informative to note that similar results are obtained if we assume a lower MOHFW share of budget, fixed at 4% (close to the 1990s average) whilst the donor contribution increases at an average of 6% in real terms (significantly less than the 10% observed in the 1990s).

As stated above, our assumptions regarding prospective efficiency of tax collection and effective average duty are highly subjective. In light of this, in the following, we consider the impact on health expenditures of changes in our assumptions regarding revenue collection, given the underlying pessimistic macroeconomic scenario. We assume there are efficiency improvements in revenue collection, and set the parameters governing tax-efficiency and the trade revenue share such that the proportion of revenue to GDP rises to the 1996 level of 9.5%

¹² We observe non-zero real growth in donor spending up to 2004 because of a decreasing proportion of unspent budget, as procurement processes are improved.

(rather than falling to 8%, as in the baseline scenario above). The share of trade to total revenues falls from 57% to 51.5%¹³. This is not a very dramatic improvement in revenue collection, and 9.5% remains well beneath what it should be and the developing country average of 17%. Table 1.6 describes the important results.

Table 1.6: Baseline Scenario with Improved Tax-Efficiency

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Total Revenues	23587	25996	29127	32753	37016	42004	47915
As % GDP	8.90%	8.80%	8.80%	8.90%	9.10%	9.20%	9.50%
Total Expenditure	38522	43786	48923	54796	61543	69303	78297
As % GDP	14.50%	14.80%	14.80%	14.90%	15.10%	15.20%	15.50%
Health Expenditures							
Government Revenue Expenditure	1112	1301	1627	2027	2517	2938	3435
Real Growth in Revenue Expenditure	10.90%	9.80%	17.50%	17.00%	16.60%	9.60%	9.80%
Government Development Expenditure	423.000	518	488	435	351	410	480
Real Growth in Development Expenditure	22.50%	15.00%	-10.50%	-15.50%	-22.00%	9.60%	9.80%
Donor Expenditure	898.000	1011	1135	1233	1313	1399	1489
Real Growth in Donor Expenditure	8.50%	5.70%	5.40%	2.00%	0.00%	0.00%	0.00%
Total Health Expenditure	2434.000	2830	3250	3695	4182	4747	5404
Real Growth in Total Health Expenditure	11.86%	9.20%	7.80%	6.80%	6.30%	6.60%	6.90%
As % Total Expenditure	6.32%	6.50%	6.60%	6.70%	6.80%	6.80%	6.90%
As % of GDP	0.91%	0.94%	0.97%	1.01%	1.02%	1.04%	1.07%

As Table 1.6 illustrates, a marginal improvement in non-trade revenue collection makes a significant impact on real growth of health expenditure, which tends to 6.9% in 2006 as opposed to 5.2% in the earlier scenario, with nominal health expenditure in 2006, 8% higher than in the earlier scenario. As a percentage of GDP, health expenditure is 1.07% in 2006 compared to 0.99%.

We turn now to the adjustment scenario, and evaluate the impact on projected health expenditure of a stronger underlying macroeconomy. We make the following assumptions. (described in Table 1.7);

- In every year of the projection period, GDP growth is 6.50%.
- Inflation is 4.10%.
- Exports and import growth is significantly higher than in the baseline scenario, at approximately 10% and 9% respectively.
- The budget deficit is assumed to close over the period to 4.50%, as a result of stronger fiscal management. (Table 1.7).
- In order to isolate the impact of the macroeconomy on health expenditure, all other parameters are the same as those in the initial baseline scenario, as illustrated in Table 1.4 and 1.5, (i.e. no tax efficiency gains, no increases in the donor budget and so on.). Table 1.8 describes the results.

Table 1.7: Key Parameters of the Adjustment Scenario

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Growth	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
Inflation	4.10%	4.10%	4.10%	4.10%	4.10%	4.10%	4.10%
Real Export Growth	11.40%	10.95%	10.50%	10.05%	9.60%	9.15%	8.70%
Real Import Growth	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
Budget Deficit	-6.00%	-5.75%	-5.50%	-5.25%	-5.00%	-4.75%	-4.50%
Growth in Tax Efficiency	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Trade Share Adjustment Factor	-2.38%	-2.43%	-2.50%	-2.56%	-2.63%	-2.70%	-2.77%
GoB Health Exp./National Exp.	3.99%	4.15%	4.32%	4.49%	4.66%	4.83%	5.00%
Real Growth in Donor Exp.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

¹³ This is achieved by a modest 6% gain in tax-efficiency over the six-year period and a 1% average annual fall in duties

Table 1.8: Adjustment Scenario. Government and Donor Health Expenditure

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Total Revenues	23191	25708	28443	31451	34756	38383	42362
As % GDP	8.7%	8.7%	8.7%	8.7%	8.6%	8.6%	8.6%
Total Expenditure	38524	42696	46459	50516	54886	59585	64631
As % GDP	14.5%	14.5%	14.2%	13.9%	13.6%	13.3%	13.1%
Health Expenditures							
Government Revenue Expenditure	1112	1268	1545	1869	2245	2526	2836
Real Growth in Revenue Expenditure	10.9%	9.6%	17.0%	16.2%	15.4%	8.1%	7.8%
Government Development Expenditure	423	506	464	401	313	353	396
Real Growth in Development Expenditure	22.5%	14.7%	-11.9%	-16.9%	-24.9%	8.1%	7.8%
Donor Expenditure	898	988	1084	1152	1199	1248	1299
Real Growth in Donor Expenditure	8.5%	5.7%	5.4%	2.0%	0.0%	0.0%	0.0%
Total Health Expenditure	2434	2762	3093	3421	3757	4127	4531
Real Growth in Total Health Expenditure	11.9%	9.0%	7.6%	6.3%	5.5%	5.5%	5.5%
As % Total Expenditure	6.3%	6.5%	6.7%	6.8%	6.8%	6.9%	7.0%
As % of GDP	0.91%	0.93%	0.94%	0.94%	0.93%	0.92%	0.92%

The important result to look at here is the real growth in total health expenditures. As under-spending is eliminated, this converges to an annual rate of 5.5% in 2004 compared to 5.1% in the baseline scenario, indicating the importance of the underlying macroeconomy. In the adjustment scenario, higher real GDP growth and trade volume give rise to higher real growth in revenue. There are opposing effects on the national budget; a positive effect caused by greater revenues and a negative effect because of stronger fiscal management and/or decreased lending. As it turns out, the positive effect dominates and total real national expenditure is higher than in the baseline scenario, giving rise to higher real expenditure in the health sector¹⁴.

Allowing for a 6.5% increase in tax-efficiency (with revenue to GDP rising to 9.5%, and the share of trade to total revenue falling to 51%) has a major impact on health expenditure, as it did in the baseline scenario. In this case, real growth in health expenditure is 7.2% in 2006/07 compared to 5.5%

1.4 Summary

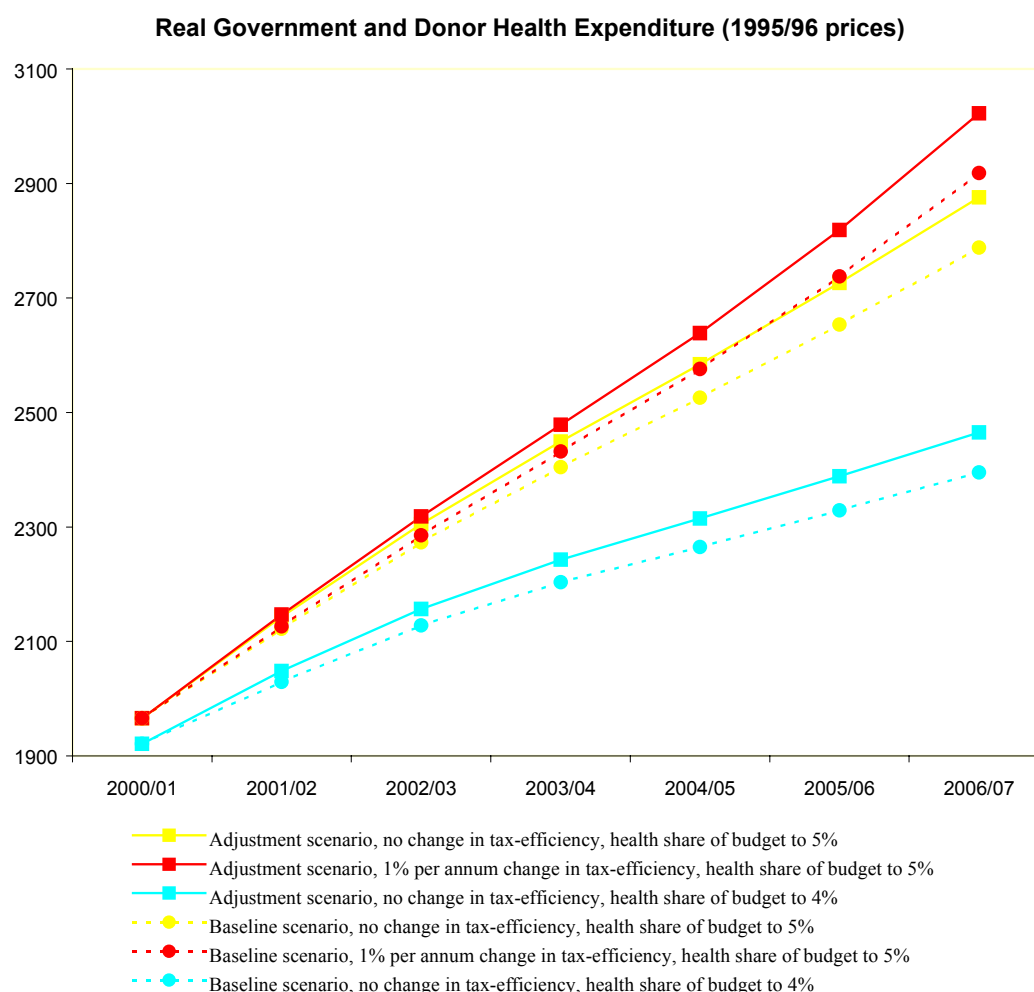
Figure 1.2 illustrates projections of real government and donor expenditure expressed in 1995/96 prices, subject to various scenario. The figure summarises the key results, focussing on the impact on health finances of the macroeconomic environment, the revenue base, and the share of government budget allocated to health. The three lines joining squares represent projections based on the adjustment scenario, whilst the lines joining series of circles are projections subject to the more pessimistic baseline scenario. The pair of continuous lines (which are uppermost in 2006) assume a modest improvement in the efficiency and implementation of tax collection¹⁵, and, as discussed above, a significant but not implausible increase in the share of non-donor

¹⁴ Comparing the nominal figures and the ratios above with those obtained in the baseline scenario can be misleading. For example, nominal total health expenditure is higher in the baseline scenario, but, as stated, this does not reflect greater real expenditures, but results from higher average inflation. Similarly, the ratio of health to total expenditure and GDP is higher in the baseline scenario because of relatively sluggish GDP growth and lower growth in total expenditure.

¹⁵ It is assumed that the efficiency of non-trade revenue collection (i.e. VAT and income taxation) increases by 1% per annum, corresponding to an increase of the ratio of revenue-to-GDP over the projection period to its 1990s high of 9.5%, and a fall in share of trade to total revenue from circa 55% to 50%.

budget allocated to health, rising from 4% in 2000 to 5% (an increase of 0.4% over the 1990s peak). To generate the projections illustrated by the two pairs of dotted and dashed lines, these two assumptions are relaxed in turn. The two dotted lines assume no change in the efficiency of tax collection (leading to a decrease in the revenue to GDP ratio to approximately 8%). The dashed lines also assume no change in tax-efficiency gains, and in addition, that the share of national budget allocated to GDP is fixed at the 1999 level of 4%, lower than the average for the 1990s. These may plausibly be viewed as a worst-case scenario.

Figure 1.2



Accordingly, the distance between each pair of lines represents the impact on real health expenditure of a stronger macroeconomy (that is, the effect of increasing growth by 2%, trade volume by 5% and lowering inflation by 2%), and, as we can see, this is significant. The distance between the set of continuous and dotted lines (the upper and middle pairs) represents the impact of modest improvements in tax-collection, representing, in 2006, approximately 5% of real health expenditure. The relative distance between the dotted and dashed lines illustrates the impact of improvement in the government's relative commitment to the health sector. The distance between the highest and lowest of our series can plausibly represent the range between best and worst-case scenarios (from 2395 to 3022 in 2006/07, equivalent to 25% of 'best-case' health projections).

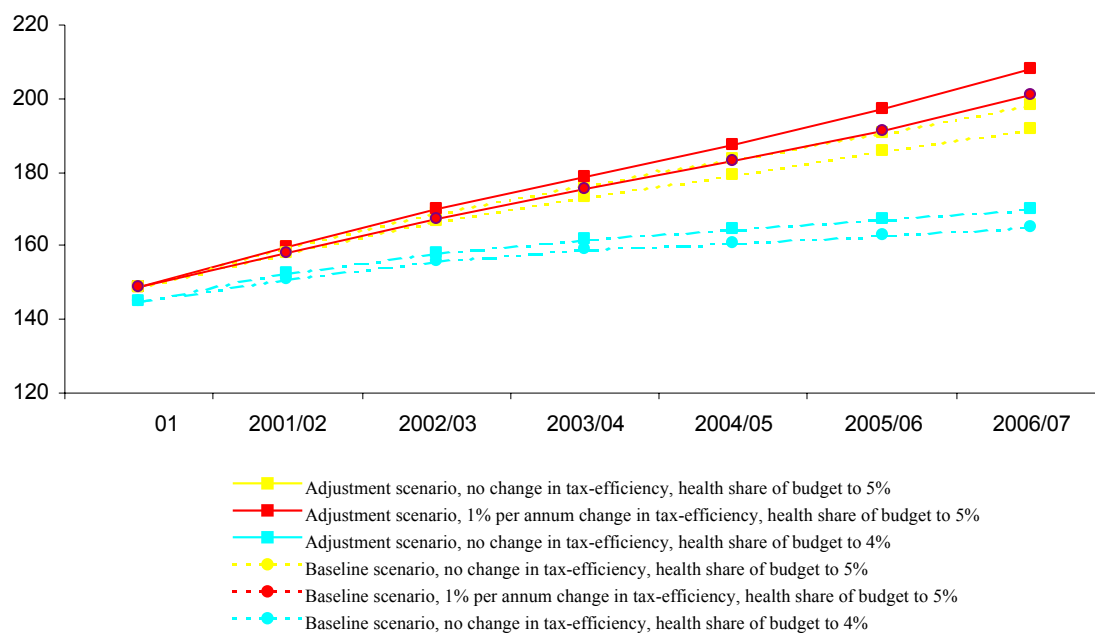
Figure 1.2: Per Capita Real Government and Donor Health Expenditure (1995/96 prices)

Figure 1.2 illustrates projections given the same underlying scenario as described in Figure 1.2 but in terms of real per-capita spending, given projected population growth of 1.57% per annum. In the worst-case scenario, (indicated by the lower line in the Figure above) real government and donor expenditure grows at an average of only 2% per annum, whilst in the best-case, average annual growth is approximately 6%. In current prices, projected per capita expenditure in 2006/07 ranges from 298 taka in the worst-case to 376 in the best-case.

2. Additional Sources of Funding

In Bangladesh, as in many countries of the developing world, it has been recognised that taxation alone is insufficient to meet the financing requirements of the health sector, and accordingly, there is growing interest in alternative funding sources (Ensor, T., 2000; Ensor, T. and P. D. Sen, 2000). In our model we consider the revenue potential of three alternative financing sources; insurance (community and social insurance), user fees and expansion of local government tax. In each case, projections are based on the baseline macroeconomic scenario, referred to above.

2.1 Health insurance

Health insurance has potential to generate valuable revenue in addition to reducing risk of uncertain illness and potentially catastrophic healthcare costs. Social insurance is compulsory and paid by formal employers such as government and industry as a benefit to employees. Whilst limited in terms of the target population, social insurance schemes have the advantage of being relatively easy to implement. Community insurance, by contrast, is voluntary, and typically targets the poorer sections of society. The attraction of such schemes is that they may promote

community participation in health care and accountability of providers. Typically, however, they will require significant subsidisation by the state.

2.1.1 Community Insurance

It has been recognised in the Health and Population Sector Programme that medical care should be financed through a range of direct payments and voluntary insurance. However, insurance is currently still a matter for government consideration with existing schemes provided by NGOs to a limited population.

In our projections, considering that willingness to pay for health services is highly sensitive to the quality of care provided¹⁶, as a starting-point, we assume that insurance is introduced in three sample groups distinguished by quality of service. These are; areas with NGO coverage and TFIPP¹⁷ areas (serving largely a rural population), and district capitals (where relatively high quality district hospitals provide primary and secondary level services to a largely urban population). To estimate the number of households that purchase insurance within these groups (and, relatedly, the revenue derived from insurance) we first estimate the expenditure that an average household (in each of 19 rural and urban income groups) is willing/able to set aside for health insurance^{18 19}. If this is greater/lower than the projected household premium, we assume that the household is willing/unwilling to buy. Following this simple model, in the baseline case, we calculate that the lowest earners will be willing to set aside approximately 0.5% of total household income for insurance. For a household premium of 220 taka per household member (approximately the per capita cost of secondary services, Bangladesh NHA 1996/97), 89% of the urban population and 19% of the rural population purchase insurance, the marked difference across the two population groups reflecting significant average income differentials. Assuming that economic growth is equitably distributed (all households benefit equally) the proportion of the rural population purchasing health insurance is projected to rise to 45% in 2006/07²⁰. Details of the methodology are given below.

Within each sub-group, we assume that health insurance is not implemented instantaneously but becomes available to the target population at a slow and constant rate. We assume that the population covered by TFIPPs grows at the projected national rate of population growth (1.57%), and that insurance is available to a proportion of this, increasing to 15% by 2006. The population covered by NGOs (and therefore targeted by insurance) is assumed to grow more rapidly than population growth as NGOs expand facilities in response to the financing possibilities arising from insurance, reaching 40% of the total rural population by 2006. In respect of district capitals, calculations of the target population are more complex. We first estimate change in the proportion of population formally employed and assume that these are targeted by social insurance (see below). The remainder are targeted for community insurance, although, as with areas covered by NGOs and TFIPPs, we assume that only an (increasing) proportion of the target population are offered

¹⁶ In a recent survey of three sample populations (IHE), 80% of respondents living in an area with good quality NGO health services indicated a willingness to purchase health insurance

¹⁷ Thana Functional Improvement Pilot Project – this project helped to upgrade the quality of services through selective investments in infrastructure, management and clinical skills.

¹⁸ Using household expenditure data from the 1995/96 Household Expenditure Survey and Bangladesh NHA 1996/97

¹⁹ This varies according to the income group, but, in our baseline scenario, is approximately 9% of non-essential expenditure, itself comprising from 5% to 25% of total expenditure.

²⁰ The difference in willingness to pay across the two populations results from significant income differential across the urban and rural populations.

Methodology for determining willingness to pay for community insurance and projecting revenue from insurance. (bulletpoints denote key steps):

The Household Expenditure Survey divides the rural and urban population into 19 income groups, and estimates, for each, average monthly consumption expenditure by category (food, housing, clothing, and non-essential expenditure including, *inter alia*, all health expenditure). There is no data, however, on health expenditure, so we estimate this;

- by estimating, for each group, the proportion of non-essential spending used for healthcare, using estimates of average national health expenditure by quintile (Bangladesh National Health Accounts 1996/97), and assuming that all income groups within a quintile of rural and urban population spend the same proportion on health care.

Calculated in this way, for the lowest three quintiles, the proportion of non-essential expenditure used for health services is approximately 35%, which is 2% of total expenditure for the poorest households (not implausible).

- Having estimated health expenditure for each group at a point in time, we allow this to grow at the projected rate of GDP growth, assuming that economic growth is evenly distributed across income groups, and that health expenditure is income elastic.
- As households would be unwilling to substitute all existing health expenditure to purchase an insurance policy, the next step is to estimate what proportion of health expenditure they would forego to purchase insurance. In our baseline scenario, we take this as 30% (i.e. all households will forego 30% of estimates of existing health expenditure to purchase an insurance package). Rather crudely, we exclude the possibility of substitution of other forms of 'essential expenditure'.

As stated above the willingness to purchase insurance depends simply on whether the household insurance premium is greater or lower than the level of expenditure that we estimate households are willing to set aside for insurance.

- We assume that insurance is offered to a household at a premium based on numbers of household members and a fixed per capita rate, equal to 220 taka in the baseline case, approximately the average per capita cost of secondary care.

Finally, having estimated numbers of households willing to pay in the rural and urban areas (and therefore the proportion of the typical rural and urban community willing to pay), revenue projections are determined by the proportion of total rural and urban population actually targeted by community insurance (deduced from the population of targeted areas, population growth-rates and so on).

In addition to projecting revenue, the model also allows us to estimate the required government subsidy of insurance, assuming that government pays the cost of care for those unwilling to purchase insurance, and the difference between cost and premium charged for purchasers of care, where these differ.

insurance (reflecting the costs of implementation). Taking all sub-groups together, in our baseline scenario (that is, assuming poor macroeconomic performance), we project that, by 2006/07, 17% of the national population have access to voluntary insurance, and approximately 6% of the national population is covered. These figures are appropriately modest and in line with international experience of successful implementation of community insurance (Shaw, R. P. and Ainsworth, M., 1996; De Graeve D. (ed.) 1999)

Table 2.1 gives us projected finances. Note: The target population of district capitals changes little over the period as population growth is offset by an increasing proportion of workforce formally employed and therefore covered under social insurance (which we discuss later). As stated above, the proportion of the total population approached and enrolled, by 2006/07 are 17% and 6% respectively – that is, approximately 35% of all approached are enrolled. Total revenues by 2006/07 are 7% of total government and donor expenditure on health. For the adjustment scenario, total revenue rises to 365 crore, and the proportion of population covered to 6.1%.

Table 2.1: Revenue from Community Insurance (per capita premium 220 taka, ‘baseline’)

		2000	2001	2002	2003	2004	2005	2006
TFIPPs	Target Population (mn)	14	14	14	15	15	15	15
	Proportion of Target Population Approached	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%
	Revenues	8	12	23	30	38	47	57
NGOs	Target Population	16	19	22	26	29	32	36
	Proportion of Target Population Approached	10.0%	15.0%	20.0%	25.0%	30.0%	35.0%	40.0%
	Revenues	9	16	38	58	84	117	158
DCs	Target Population	23	23	23	23	23	23	23
	Proportion of Target Population Approached	0.0%	5.0%	10.0%	15.0%	20.0%	25.0%	25.0%
	Revenues	0	14	31	49	70	94	100
TOTAL	Total Revenue	17	42	92	138	192	257	315
	Proportion of National Population Approached	2.3%	4.4%	6.7%	9.2%	11.9%	14.7%	16.9%
	Proportion of National Population Covered	0.6%	1.3%	2.3%	3.2%	4.1%	5.0%	5.5%

We now consider the impact of changing the rural premium to capture a larger proportion of the targeted population. As Table 2.2 illustrates, for a per capita premium of 120 taka in 2000/01, the enrolled population increases substantially although total revenue is barely affected, marginally higher for 2006/07 than in the baseline case.

Table 2.2: Revenue from Community Insurance (per capita rural premium, 120 taka, ‘baseline’)

		2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
TFIPPs	Target	14000000	14219800	14443051	14669807	14900123	15134055	15371659
	Proportion of Target Population	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%
	Revenues	4	16	26	34	43	53	64
NGOs	Target	16310216	19284656	22342376	25485948	28717850	32040505	35456314
	Proportion of Target Population	10%	15%	20%	25%	30%	35%	40%
	Revenues	5	22	43	66	95	132	178
DCs	Target	22713750	22814019	22911837	23007103	23099713	23189561	23276535
	Proportion of Target Population	0.0%	5.0%	10.0%	15.0%	20.0%	25.0%	25.0%
	Revenues	0	14	31	49	70	94	100
TOTAL	Total	9	53	100	149	208	278	342
	Proportion of National Population	2.3%	4.4%	6.7%	9.2%	11.9%	14.7%	16.9%
	Proportion of National Population	1.4%	2.7%	4.2%	5.7%	7.2%	8.8%	10.0%

Results are highly sensitive to the assumption of how much of non-essential income and total health expenditure households are willing to forego to purchase insurance. For example, comparing with the baseline case, if households only set aside 15% as opposed to 30% of existing health expenditure for purchase of health insurance, 2006/07, revenues fall dramatically to 142 crore (compared to 357 crore). Of course, by contrast, if the insurance package and associated provision is high-quality, households may substitute out of other types of non-essential expenditure (and indeed other essential expenditure) and revenues will be far higher than projected. Evidently,

in demand for health insurance (as with any other good) demand is highly sensitive to the quality of product offered, and difficult to predict.

2.1.2 Social Insurance

Typically, social insurance contributions are based on compulsory payroll deductions, and revenue projections from social insurance therefore depend on the extent of the formal workforce, estimated at 5.3% of the total population and 13% of the working population in 1995 (Labour Force Survey 1996). We project that this will increase, from 15.6% of the workforce in 2001 to 20.7% in 2006/07, from 6.6% to 8.4% of the total population, driven largely by the relatively high projected growth of the large-scale manufacturing sector, 8.4%, the average 1990s rate. Details of the methodology in projecting the formal workforce are given below.

Projected revenues from social insurance are displayed in Table 2.3. These are simply the product of the number of workers formally employed (as estimated), the rate of insurance coverage and the per capita premium, which, conservatively, we set at the equivalent of 10 dollars, based on existing government health insurance. As we can see from Table 2.3, in the baseline case, the rate of coverage is set such that half of the eligible population are covered by 2006.

Projecting the Size of the Formal Workforce

The projected proportions of formal and informal workforce are based on estimates of GDP growth in the formal and informal sectors assuming that the working share of the population stays constant at 1995 levels of approximately 45%. [This definition of labour excludes children under 14, students, the disabled and retired]. We assume zero labour growth in the formal public sector, as pressure to generate leaner more efficient public administration at least precludes increases in employment in the sector. GDP growth in the formal private sector is an equally weighted sum of projected aggregate GDP growth, and growth in the large-scale manufacturing sector (roughly 30% of the formal workforce in 1995). As stated above, manufacturing is projected to continue at the 1990s average of 8.45% per annum. The informal sector, by contrast, is dominated by the agricultural sector (70% of the informal labour market in 1995), and, accordingly, projected GDP growth in this sector depends largely on projections of agricultural growth, approximately 5.8% per annum. To derive labour growth from GDP growth, we assume that the labour, capital and productivity share of output is equal with constant returns to scale (i.e. labour force growth is one-third of GDP growth). Evidently, formalisation of the workforce does not depend exclusively on sectoral shares but also on institutional development, and accordingly we assume that the rate of formalisation of the working population depends also on a factor of GDP growth, which we control such that the working population is projected to be fully formalised in 50 years.

Summarising the results, revenues from social insurance are sizeable, and roughly equivalent to the revenue acquired from community insurance, whilst the proportion of national population enrolled is projected to reach 4%. Taken together, therefore, social and community insurance may cover approximately 10% of the population in 6 years. The adjustment scenario makes little significant difference to the projections and therefore, results are not reported.

Table 2.3: Revenue from Social Insurance (baseline scenario)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Projected Revenue	0	0	0	114	193	289	401
Proportion of Eligible Pop. Enrolled	0.0%	0.0%	0.0%	20.0%	30.0%	40.0%	50.0%
Proportion of Total Pop. Enrolled	0.0%	0.0%	0.0%	1.4%	2.2%	3.0%	3.9%

2.2 User Charges

User charges have been introduced in 35 TFIPPs with some success, revenues growing by at least 100% year on year, with average revenue per thana, 130,000 taka in 1997/98. The TFIPP Working Paper 10 (1999) estimates that the potential for revenues with full implementation of charges and introduction of additional charges is 300,000 to 500,000 per thana, which aggregates to approximately 16 crore, if implemented across the nation. Whilst not an enormous amount of revenue, it is suggested that this may make a significant difference to quality of care where revenues are retained locally.

Our estimates of revenue from user charges uses estimates of inpatient and outpatient attendance, per capita charges and levels of exemption, generating in the baseline case, estimated potential revenue of 12 crore at the primary level, if fully implemented, not far from the 16 crore estimated in the working paper.

Table 2.4 describes baseline parameter values. Two criteria drive the setting of charges and levels of exemption. Inpatient and outpatient tickets for 2000/01 are set at existing TFIPP levels, whilst tickets and charges for other levels of facility are assumed to be increasing in the level of facility to reflect both the increased cost of care at higher levels and the oft-stated objective of re-allocating resources towards primary care. For the same reason, exemption levels are decreasing in the level of care, and, in addition, are set such that all are able to pay for tertiary care (using the model of household health expenditure described above). To determine ability to pay we assume that exemptions apply to the poorest sections of the population, and, as in the case of community insurance, that households are willing to spend 30% of current health expenditure on user fees for one individual per annum. Note, at the baseline charge for secondary care, of 100 taka, all households are able to pay for one case of secondary case, and exemptions are justified on reasons of re-distribution. As can be seen from the Table, the revenue potential of user charges is relatively small compared with insurance, and its introduction needs be justified on other grounds apart from revenue.

Table 2.4: Projections Of Revenue From User Fees, (Baseline Scenario)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Proportion of facilities charges apply to (not including tickets):							
Tertiary	10%	25%	40%	55%	70%	85%	100%
District	10%	25%	40%	55%	70%	85%	100%
Primary	10%	15%	20%	25%	30%	35%	40%
Inpatient ticket (Taka)							
Tertiary	20	20	20	20	20	20	20
District	10	10	10	10	10	10	10
Primary	5	5	5	5	5	5	15
Inpatient charges (Taka)							
Tertiary	500	500	500	500	500	500	750
District	100	100	100	100	100	100	130
Primary	50	50	50	50	50	50	50
Exemption rates							
Tertiary	20%	20%	20%	20%	20%	20%	20%
District	40%	40%	40%	40%	40%	40%	40%
Primary	60%	60%	60%	60%	60%	60%	60%
Revenue from inpatients	62,310,170	80,021,188	98,272,972	117,078,139	136,449,564	156,400,393	242,531,033
Outpatient ticket (Taka)							
Tertiary	10	30	30	30	30	30	30
District	10	15	15	15	15	15	15
Primary	3	3	3	3	3	3	3
Treatment charge (Taka)							
Tertiary	40	50	50	50	50	50	70
District	10	20	20	20	20	20	30
Primary	10	10	10	10	10	10	10
Exemption rates							
Tertiary	20%	20%	20%	20%	20%	20%	20%
District	40%	40%	40%	40%	40%	40%	40%
Primary	60%	60%	60%	60%	60%	60%	60%
Revenue from outpatients	124,548,952	182,226,210	202,017,927	222,386,188	243,344,216	264,905,511	324,171,782
TOTAL REVENUE, Crore	19	26	30	34	38	42	57

2.3 Local Government Financing

The Health Sector Programme is primarily focussed on providing essential services to rural areas, whilst principle responsibility for healthcare in urban areas lies with local government. This is an issue of some concern²¹, as the health needs of the urban population are increasing rapidly and local government revenues are very limited, obliging urban residents to spend significant out-of-pocket resources on private facilities of varying quality. For example, in 1999/00, the total budget for Dhaka City Corporation was 521 Crore, of which 191 was locally generated revenues which is less than 1% of total central government revenue. In the following, we show that there is considerable potential to mobilise resources to meet some of these needs through appropriate property taxation. Attention is restricted to Dhaka city which is by far the largest conurbation.

The principal source of local revenue in Dhaka is property tax, generating revenues of 110 Crore in 1999/00, 55% of total City Revenue²² (Asian Development Bank 2000). The tax bill is calculated at 12% of property value computed at fixed values per square foot in individual districts. For example, property in the relatively affluent suburbs of Dhanmondi and Gulshan is valued at 30 and 35-40 taka per square foot, whilst property in Badda is valued at 5 taka per square foot. However, research has brought to light that true 'market' values are over 2000 taka per square foot for high-income areas (Gulshan) and 650 taka for low income areas (Mirpur); that is, of the order of 85 times current norm-based valuations. Adjusting for this alone generates total property revenues of over 9000 crore, and total DCC revenues in

²¹ Civil Society meeting in respect of World Bank study for HPSP, March 2001.

²² Other sources include fees for shops and market stalls, trade licences and property transfer fees

2001/02 of over 11000, approximately 45% of central government revenues. Apportioning to health according to national data (i.e. approximately 4%), this generates over 700 crore, in excess of projected 2006 revenues from insurance and user charges combined. (see Table 2.5).

Whilst property is considerably under-valued, the tax-rate of 12% is relatively high, corresponding to an annual bill, if correctly calculated, of \$US12000 on a property of \$100000. Assuming a more plausible rate of 1-2% (roughly equivalent to UK rates) generates revenues at 11 times current revenues (6% central government revenue), still a considerable increase on the current revenue take.

Table 2.5: Dhaka city corporation: revenue and projected health expenditure (baseline scenario)

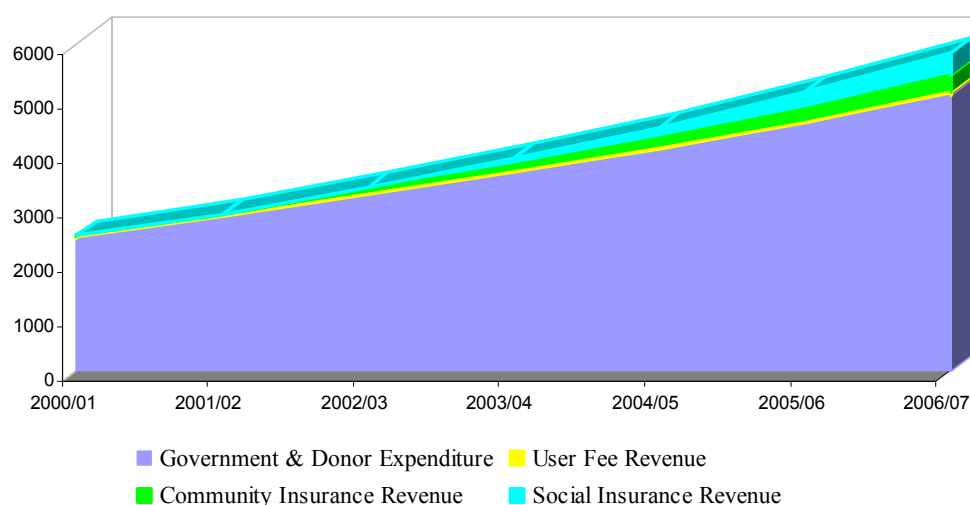
	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
DCC property	105	116	128	142	158	176	196	218
DCC total	191	210	232	258	287	320	356	396
Expenditure on	11	13	14	16	18	20	22	24
Projections Post-Revaluation of								
DCC property	9132	10029	11077	12328	13720	15270	16994	18913
DCC total	9218	10124	11182	12444	13850	15414	17154	19092
Potential expenditure on	533	625	695	781	868	957	1055	1165

2.4 Summary

Figure 2.1 illustrates projections of government and donor finances based on the baseline macroeconomic scenario and additional sources of finance (excluding projections of Dhaka city expenditures as these are not utilised in the HPSP). Projections of community insurance assume a per capita premium of 220 taka as per 2.1 above.

Figure 2.1

Projected Resource Envelope for the Health Sector baseline scenario (current prices, CR)



As the Figure illustrates, government and donor funds will continue to dominate the financing of the health sector, although alternative sources of funding can, if

implemented seriously, make a significant difference, equivalent to approximately 13.% of total health resources in 2006/07, the bulk of which deriving from insurance. The potential for exploiting high land and property inflation in order to finance the burgeoning needs of urban populations should however, be considered seriously. If Dhaka city health expenditure is included (and property appropriately re-valued), alternative sources of funds may total at least 20% of total health sector funding.

Figure 2.2

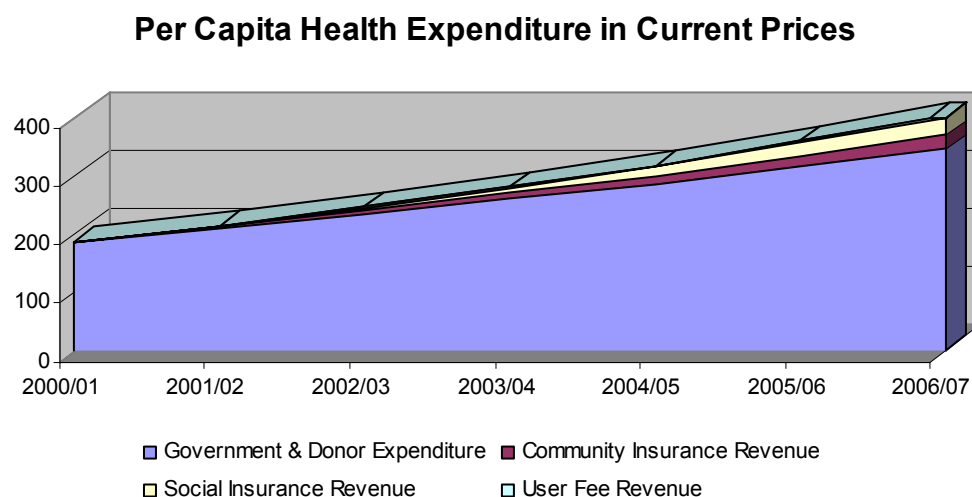


Figure 2.2 illustrates the summary statistics of Figure 2.1 (for government and donor health spending, insurance and user charge revenues) in terms of per capita spending. As shown, the total spend is projected to increase to 405 taka in 2006/07 current prices. In 1995/96 prices (not illustrated), total per capita spending is projected to increase from 151 taka in 2000/01 to 224 taka in 2006/07. Statistics are detailed in Annex 1.

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Annex 1: Summary Statistics: Baseline Scenario

Summary Statistics: Projected Resource Envelope for the Health Sector, baseline scenario (current prices, crore)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Government & Donor Expenditure	2434	2799	3192	3596	4023	4501	5036
Community Insurance Revenue	17	42	92	138	192	257	315
Social Insurance Revenue	0	0	51	114	193	289	401
User Fee Revenue	19	26	30	34	38	42	57
Dhaka City Health Exp. Pre-Revaluation	13	14	16	18	20	22	24
Dhaka City Health Exp. Post-Revaluation	533	625	695	781	868	957	1055

Summary Statistics: Per Capita Health Expenditure in Current Prices by Source

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Government & Donor Expenditure	184	208	234	259	286	315	347
Community Insurance Revenue	1	3	7	10	15	19	24
Social Insurance Revenue	0	0	4	9	15	22	30
User Fee Revenue	1	2	2	3	3	3	4
Total of above Health Expenditure	187	214	247	281	318	359	405
Dhaka City Health Exp. Pre-Revaluation	1	1	1	1	2	2	2
Dhaka City Health Exp. Post-Revaluation	40	47	53	59	66	72	80

Summary Statistics: Per Capita Health Expenditure in Constant Prices (1995/96 prices)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Government & Donor Expenditure	149	158	167	173	179	186	192
Community Insurance Revenue	1	2	5	7	9	11	13
Social Insurance Revenue	0	0	3	6	9	13	17
User Fee Revenue	1	2	2	2	2	2	2
Total of above Health Expenditure	151	162	176	188	199	212	224
Dhaka City Health Exp. Pre-Revaluation	1	1	1	1	1	1	1
Dhaka City Health Exp. Post-Revaluation	33	36	37	40	41	43	44