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Chapter 4

Philippines

ROEHLANO M. BRIONES, FRANCIS QUIMBA, MYRNA ASUNCION,
JONATHAN B. BUNGAYAO, JOSEPH B. PAGLINGAYEN AND IVEE LIBUNAO

INTRODUCTION

The Philippines has progressed well towards the achievement of several of the millennium development goals (MDGs). Since 1990, considerable headway has been made towards the eradication of extreme poverty, reductions in child mortality, and improvements in household potable water and sanitation. However, the challenges remain formidable. In the 2000s there was an increase in poverty incidence, delaying the achievement of the goal for extreme poverty (MDG 1) and worsening prospects for a significant reduction in moderate poverty. Likewise, the goals for primary education, as well as for maternal and reproductive health, remain elusive.

For the Philippines, Manasan (2007 and 2010) estimated that achieving the MDGs over the period of 2007 to 2015 may require additional spending in the order of 0.6 to 1.4 per cent of GDP. The increase in spending, though seemingly modest, could take on greater significance depending on the fiscal and other macroeconomic constraints the country faces. The policy options to achieve human development goals while respecting macroeconomic stability constraints can be meaningfully assessed through the application of rigorous modelling of the socio-economic system at large.

This chapter explores the application of one such modelling exercise, using the *Maquette* for MDG Simulation (MAMS) calibrated to a Philippine dataset. Having discussed the country's economic performance and policies as well as the social sector trends and MDG achievement that provide sufficient, required background, results from various scenarios are scrutinized using MAMS in combination with a microsimulation approach that enables

adequate quantification of effects on poverty and inequality.¹ It is shown that the MDGs are achievable and affordable in the case of the Philippines, but in order to sustain macroeconomic stability, the government would need to step up efforts to collect more tax revenue. Other financing options to cover the required additional government spending are found to be less feasible. Stepping up efforts to enhance primary schooling performance, improve child and maternal health, and enhance access to drinking water and sanitation does not immediately translate into accelerated reduction of income poverty, however. For that, the Philippine government would need to pursue further policies promoting more inclusive growth.

ECONOMIC PERFORMANCE AND POLICIES

During the Aquino administration (1986–1992), real GDP growth recovered to 5.2 per cent per year between 1985 and 1989. The recovery was supported by market-oriented reforms that were implemented in response to the economic crisis of 1981–1984 when GDP shrank by 2.3 per cent per year. The Ramos administration (1992–1998) also embarked on a program of privatization and liberalization, mainly aiming to boost foreign direct investment and the expansion of the services sector (Abrenica and Llanto, 2003). By the end of the 1990s, the country's industrial sector had a “reasonably clean and undistorted trade regime” (Hill, 2003), unlike agriculture, where distortions in sheltered sub-sectors (notably rice) were amplified in the 1990s (David, 2003).

From 1990 to 2009, the economy grew modestly, averaging just 3.6 per cent (Figure 4.1). Services were the leading growth sector and expanded to account for nearly half of total output by 2006. The agricultural sector has lagged behind. Also, growth of industrial output has been below average taken over the three decades.

GDP fluctuations have been fairly pronounced, owing to a variety of shocks. In the early 1990s the economy was buffeted by natural disasters, high oil prices, and a balance of payments crisis. Incipient recovery in 1992 was nearly brought to a halt by crippling power shortages, which ended in 1994. After a period of fairly robust growth from 1994 to 1997, the economy was battered by the Asian financial crisis and a severe El Niño drought in 1997–1998. Economic growth picked up again after 2000, peaking at 7.1 per cent in 2007, until it was punctured by the global financial crisis of 2008–2009.

The maintenance of the external and fiscal balances has been a major macroeconomic policy challenge. Throughout most of the 1990s, the

Figure 4.1
Philippines: GDP growth, in constant 1985 prices, 1990–2010

Source: National Statistical Coordination Board (NSCB).
Available at: ADB Key Indicators 2009 – Philippines.

current account of the balance of payments (BOP) was persistently in deficit. Capital inflows, fed by liquid portfolio investments, complemented by the use of reserves avoided the country running overall BOP deficits, except in 1997 and the first years of the new millennium (Figure 4.2). The BOP position reverted thereafter with the current account increasingly moving into surplus allowing for net capital outflows and reserve accumulation.

During the 1980s and early 1990s, exchange rate stability was the main objective of the monetary authorities. However, achieving this objective has been difficult given the persistent fiscal imbalances and monetary expansion associated with deficit financing, as visible in several BOP crises, including a severe one in 1983 and a less severe one in 1990. From 1992 onwards, the foreign exchange regime was liberalized. This, however, attracted significant inflows from short-term portfolio investments, causing a sharp currency appreciation. The currency mismatch resulting from the large inflow of foreign capital and a domestic asset price bubble caused by inflation and currency appreciation, made the country vulnerable to contagion from the East Asia crisis and culminated in another exchange rate collapse in 1997. Subsequently, the Philippine independent Central Bank shifted to a policy of inflation targeting in 2001 (Gochoco-Bautista and Canlas, 2003).

Figure 4.2
Philippines: Balance of payments and its components, 1990–2010

Source: Bangko Sentral ng Pilipinas or BSP (Central Bank of the Philippines).

Figure 4.3
Philippines: Current account and its components, 1990–2010

Source: BSP. Available at: ADB Key Indicators 2011 – Philippines.

This and other developments appeared to tame inflation from an average of 8.7 per cent in the 1990s to an average of 5.3 per cent from 2000-2009. It allowed for more exchange rate flexibility, lesser penalization of exports and competitiveness and diminished BOP pressures.

Figure 4.3 presents the trends in the various components of the current account. During the 1990s until the Asian crisis, net income from investment, transfers and other services were not sufficient to offset the increasing trade deficit. In the first half of the 2000s, the current account deficit gradually dissipated and turned into a surplus in 2005, largely due to the surge in workers' remittances from abroad. Remittances accounted for as much as 12 per cent of gross national product (GNP) in 2009, up from just 2.3 per cent in 1993. The extraordinary growth in remittances resulted from both the increasing number of deployed workers as well as their rising skill levels.

As for public finances, the early 1990s witnessed the rapid escalation of public debt, mainly from increased domestic borrowing (Figure 4.4). After 1994, fiscal adjustment and higher economic growth led to budget surpluses, lowering the public debt-to-GDP ratio. Reduction of the debt burden foundered, however, in the years after the Asian financial crisis. Only with spending cuts and tax reforms introduced in 2005 did public indebtedness begin to decline again. Nonetheless, the level of indebtedness remains a cause for concern. One international benchmark suggests that

Figure 4.4
Philippines: Domestic and foreign debt, 1990-2010

Source: Bureau of Treasury.

the debt-to-GDP ratio should not exceed 49.7 per cent in order to avoid the risk of a sovereign debt crisis (Manasse and Roubini, 2009). The Philippines has persistently breached this benchmark. In 2010, the ratio fell to its lowest level in 15 years, but at 55 per cent it is still too high for comfort, according to that standard.

At the start of the 1990s, the country's fiscal deficit averaged 3.5 per cent of GDP (Figure 4.5). The deficit was then contained by raising revenues and by reducing the spending-to-GDP ratio. The revenue increase was temporary, however, arising largely from the sale of government assets, and the deficit worsened as revenue collection deteriorated after the Asian financial crisis. The revenue decline persisted despite the subsequent recovery, leading to continuing deficits in the 2000s. When the fiscal deficit began to fall in 2003, it was as a result of slashing spending rather than raising revenues (which actually did increase temporarily from 2005 to 2007). However, the global financial crisis of 2008 and 2009 took a toll on public finances and the fiscal deficit widened again.

Official development assistance (ODA) has been a major source of government finance, growing substantially over the MDG period, amounting to as much as one fifth of GDP in the early 1990s and peaking in 2002 at over \$13 billion. It has dropped since because of two factors

Figure 4.5

Philippines: National government spending and revenues, 1990-2010

Source: Bureau of Treasury; NSCB. Available at: ADB Key Indicators 2011 – Philippines.

(Kang, 2010): the rise in foreign remittances, which diminished the need for ODA as an external financing source and the lack of absorptive capacity of the government to fully use all foreign assistance. During 2002-2008, the government was only able to spend 17 per cent of committed ODA and 82 per cent of programmed disbursements, primarily due to governance issues. Against this backdrop, ODA does not seem the most effective means to finance the MDG strategy.

Increasing tax revenue might be a better option. According to Manasan (2007), the country raises less than half its total revenues from direct taxes (23 per cent). Of the various indirect taxes, the largest share is still generated from taxes on imports (45 per cent), followed by the VAT (17 per cent); other domestic taxes and the excise tax account for the rest (15 per cent). In fact, several new tax measures pending in Congress that seek to increase revenues from direct and indirect taxes would provide the government with more space to finance its developmental goals. Of these, Manasan (2010) recommends: (i) restructuring the excise tax on sin products, (ii) rationalizing fiscal incentives and (iii) reforming the road user charge. In addition, the government could also consider simplifying the tax structure, in terms of: (i) reducing the number of rates at which any given tax is imposed (e.g., multi-tiered rate structure for excise taxes, different rates for different types of passive income), and (ii) reducing the number of exemptions (e.g., exemptions under the expanded Senior Citizens Act, the tax on interest income).

In summary, through a series of policy reforms, the Philippines has achieved economic openness and a certain degree of macroeconomic stability. Public finance, however, remains a weak point, raising concerns for the public sector's capacity to invest in human development, as discussed in the following section.

SOCIAL POLICY AND MDG ACHIEVEMENT

An analysis of national government spending by sector as a proportion of GDP finds that social spending took the brunt of increasing outlays on debt service, which grew to 5.5 per cent of GDP in 2005 from 3.2 per cent in 1997 (Table 4.1). After reaching 5.5 per cent in 1998, social spending declined to just 3.1 per cent by 2005, recovering to 3.6 per cent by 2006. Spending on national defence, law and order, and public administration remained fairly stable.

Economic sector spending, which includes infrastructure, appears to be the most vulnerable spending item. Treasury data show that capital

Table 4.1

Philippines: National government spending and its composition, 1990-2006

Per cent of GDP									
	1990	1992	1994	1996	1998	2000	2002	2004	2006
Social services	4.2	3.9	3.7	4.9	5.5	5.0	4.4	3.4	3.6
Economic services	4.8	3.9	4.3	3.9	3.8	3.8	2.6	2.5	2.7
Security and administration	3.7	3.8	4.0	4.1	4.2	3.8	3.6	3.4	3.1
Debt service	6.6	5.9	4.7	3.5	3.7	4.2	4.8	5.4	5.1
Others	1.2	1.5	2.8	2.7	3.0	3.6	3.6	3.0	2.9
Total	20.5	19.0	19.5	19.1	20.2	20.4	19.0	17.7	17.4

Source: Data taken from Manasan (2007).

outlays peaked at 17 per cent of government expenditure in 1992. By 2000, however, the share had fallen to below one tenth. The share continued to fall until 2006. In 2007, the national government managed to simultaneously increase the share of capital outlays (to 11 per cent of total spending) while reducing the spending-to-GDP ratio.

Figure 4.6 presents Manasan's (2007) estimates of real government spending per capita on basic services. Spending peaked in 1997 at P1,482, equivalent to just \$36 at the market exchange rate. Following the trend in overall social service spending as shown in Table 4.1, per capita spending on basic services declined steadily thereafter to about P1,000 in 2005, with a slight recovery the subsequent year.

Although the brunt of the decrease in social service spending was borne by basic education, whose share in the total is by far the largest, bigger relative reductions were observed for housing (10 per cent per year), water and sanitation (7 per cent), and health and nutrition (4 per cent). As we shall see later, the declining level of social spending—largely traceable to the overall fiscal bind—may be one reason why progress in MDG achievement has been insufficient to put the country on track to meet the targets by 2015.

Manasan (2007) provides estimates of the cost of achieving the various MDGs (Table 4.2). Her baseline estimate pertains to a *status quo* in terms of service delivery, called a “high cost” assumption. Improvements in service delivery and quality would enhance efficiency, which, if realized, would yield “low cost” estimates. A limitation of Manasan's calculations is that she assumes a simple linear relationship between changes in an MDG indicator

Figure 4.6

Philippines: National government spending per capita, 1996-2006

Source: Manasan (2007).

and changes in public expenditure, while more likely the relationship is nonlinear in reality, owing to diminishing returns to the interventions (an issue described in more detail in Chapter 1).

In the following review of MDG gaps, we focus on MDG 2 (education), MDG 4 (child mortality), MDG 5 (maternal mortality), MDG 7a (household potable water), and MDG 7b (household sanitation), as well as MDG 1, which pertains to income poverty. Projections for social MDGs are available from the application of MAMS, while income poverty will be analysed through a separate microsimulation module.

Table 4.2

Philippines: Cost estimates for attaining education and health MDGs, 2007 and 2015

Millions of pesos				
MDG	Cost level	Item	2007	2015
Education	Low	Classrooms	14,179	17,690
		All other expenses	156,396	333,681
	High	Classrooms	17,724	22,113
		All other expenses	158,515	345,690
Health	Low		8,961	14,650
	High		10,448	17,521

Source: Manasan (2007).

Figure 4.7

Philippines: Indicators associated with MDG 2, 1990–2008¹

¹ Primary completion rate data were not available for 1991.

Source: NSCB; Economic Database, PIDS.

Primary education – In 1990s, the base year of the MDG framework, the primary completion rate was about 64 per cent. In 2006, it had increased to over 71 per cent, after peaking at 75 per cent in 2003 (Figure 4.7). By 2008, the completion rate was back up to 73 per cent, just below the peak level.

Likewise, the cohort survival rate at the primary level started out at 70 per cent and barely increased, reaching 75.4 per cent by 2008, just below the peak level of 76 per cent that was reached in 2001. The net enrolment rate, which is a good indicator of the “access” to basic education, started out at a high 85 per cent in 1990, increasing further to about 97 per cent by around 2000, before dropping sharply in subsequent years. According to the National Economic Development Authority, poverty, poor health, law and order problems, and child labour all combine to keep children out of school despite the availability of free public education (National Economic Development Authority, 2010). At the same time, underspending remains a problem despite the large resource allocation for education in the government budget.

Child mortality – Clear gains have also been made in reducing child mortality (Table 4.3). Both the infant mortality rate and the under-five mortality rate have fallen steeply, respectively, from 57 per 1,000 live births in 1990 to 25 in 2008 and from 80 in 1990 to 34 in 2008. Expanding the coverage of child health programs, particularly immunization programs,

Table 4.3

Philippines: Indicators associated with MDGs 4 and 5, 1990–2008

	<i>Infant mortality (per 1,000 live births)</i>	<i>Under-five mortality (per 1,000 live births)</i>	<i>Maternal mortality (per 100,000 live births)</i>	<i>Births attended by trained professionals (per cent)</i>
1990	57	80	209	58.8
1991			203	59.7
1992			197	59.4
1993	34	54	191	60.0
1994			186	60.9
1995			180	62.7
1996				64.1
1997				65.0
1998	35	48	172	69.2
1999				69.5
2000				69.0
2001				69.1
2002				67.0
2003	29	40		60.0
2004				63.0
2005				63.7
2006			162	
2007				
2008	25	34		

Source: NSCB.

would accelerate progress to achieving the target of 26.7 child deaths per 1,000 live births by 2015.

Maternal health – Unfortunately, progress in reducing the maternal mortality rate has been very slow due in large part to a lag in the percentage of births attended by trained professionals. In many remote areas, childbirth is still assisted only by traditional birth attendants.

Environmental sustainability – The country has already achieved and surpassed the 2015 target of 83.8 per cent access to sanitary toilet facilities in 2004. The 2015 target of 86.5 per cent access to safe drinking water is likely to be achieved.

Extreme poverty – Official statistics on household incomes and expenditures are available only every three years starting in 1991. Table 4.4 presents these figures at the time this study was conducted.² Based on the official headcount ratio, nearly half of the population lived in poverty in 1991. By this measure, the poverty rate dropped to below one third in 2006.

Table 4.4

Philippines: Poverty incidence by poverty line, 1991–2006

Per cent of the population			
<i>Year</i>	<i>Official poverty line</i>	<i>Official food poverty line</i>	<i>PPP-adjusted \$1.25/day</i>
1991	45.3	24.3	30.7
1994	40.6		28.1
1997	33.0	17.0	21.6
2000	33.0	15.8	22.5
2003	30.4	13.5	22.0
2006	32.9	14.6	22.6

Sources: Official poverty line and food line: NSCB (2009). www.nscb.gov.ph/MDGs/index.asp (accessed September 15, 2009); \$1.25/day line: <http://unstats.un.org/unsd/mdg/default.aspx> (accessed September 15, 2009).

Measured against the subsistence threshold (the food poverty line), poverty has dropped even more: from 24.3 to 14.6 per cent. The final column in Table 4.4 shows that poverty as measured by the international threshold of PPP-adjusted \$1.25 per day has also fallen as much as the official poverty headcount during 1991–2006.

Hence, the country expects to meet MDG 1 on the basis of past trends, and for this very reason the government has adopted somewhat more ambitious income poverty targets for the Philippine Development Plan.³ Income poverty is generally thought to track overall economic growth rather closely. However, poverty incidence across measures registered an increase from 2003 to 2006 during an episode of fast growth. In fact, averaging over the two decades, the responsiveness of poverty to growth has been weak. Accelerating income poverty reduction, therefore, will require reducing income inequality and instituting policies that would help make economic growth more inclusive.

When extrapolating past trends, the Philippines is expected to meet most of its MDG targets, except for primary education and maternal health, where gaps are pronounced and could only be closed if additional policy efforts are made (Table 4.5). Given the more ambitious national targets for poverty reduction, achieving the income poverty MDG may also be a challenge.

Table 4.5
**Philippines: MDG gaps—with respect to targets—
 and likelihood of meeting targets at the national level**

<i>MDG Goals and Targets</i>	<i>Value at 2006 or nearest year</i>	<i>Target by 2015</i>	<i>Likelihood of meeting target</i>
1. Eradicate extreme poverty and hunger			
Subsistence incidence (per cent of population)	14.6	12.2	High
Prevalence of malnutrition, aged 0-5 (per cent of population)	26.2	17.2	High
Households with inadequate kcal intake (per cent of population)	56.9	34.7	High
2. Achieve universal primary education			
Elementary completion rate	73.3	81.0	Low
3. Promote gender equality			Achieved
4. Reduce child mortality			
Under 5-mortality rate (per 1,000 live births)	34.0	26.7	High
Infant mortality rate (per 1,000 live births)	25.0	19.0	High
5. Improve maternal health			
Maternal mortality ratio (per 100,000 live births)	162	52.2	Low
Couples practicing responsible parenthood (per cent)	51.0	80.0	Low
6. Combat HIV/AIDS, and other diseases			
HIV prevalence (per cent of population)	below 1 per cent	below 1 per cent	High
Malaria morbidity rate (per 100,000 population)	55.0	24.0	High
7. Ensure environmental sustainability			
Households with access to safe drinking water (per cent)	80.4 (2004)	86.8	Medium
Households with sanitary toilet (per cent)	86.2 (2004)	83.8	Achieved

Source: NEDA (2010).

Note that these extrapolations do not incorporate possible nonlinearities, such as when the marginal returns of MDG spending decline after an inflection point. The MAMS analysis does incorporate such nonlinear effects, hence it provides a means to validate and broaden the analysis based on linear extrapolation such as in Table 4.5. This will be taken up in the next section.

POLICY SCENARIO ANALYSIS

Calibration with country-specific data

The general structure and implementation of MAMS is described in Chapter 1. This section focuses on the calibration of the model to Philippine data and elasticities. A full account is provided in Briones and others (2011).

In order to calibrate the model, a Social Accounting Matrix (SAM) was constructed for 2006. Unlike most typical SAMs that have been built for the Philippines, the SAM constructed for this study disaggregates MDG-related services (education by cycle, health, water and sanitation) into private and public provisions. The Philippines' SAM for MAMS also accounts for institutional capital accounts and investment by sector of destination. To construct this, data from the following sources were used: the official input-output table of 2000, updated to 2006 using the RAS method which is most commonly applied to update the matrix of technical coefficients used in input-output analysis; the National Accounts of the Philippines for 2006; the Budget Expenditure and Sources of Financing (BESF) of the Department of Budget and Management; and the Philippine Statistical Yearbook (2008 edition).

Moreover, to calibrate MAMS, values of elasticities and/or parameters had to be obtained from: other country models for the Philippines, such as the PCGEM (Cororaton, 1997); imputation based on existing empirical literature for the Philippines (as shown further below) and other developing countries (as reported in Lofgren, 2010); calibration to reproduce observed values (particularly for the linear expenditure system); growth accounting (for measurement of Total Factor Productivity, TFP); and regression analysis by the authors (for estimating some of the TFP elasticities). As explained in Chapter 1, MAMS possesses an MDG module by means of which MDG indicators are estimated as a function of a series of MDG determinants. However, due to data limitations, microeconomic regression analysis could only be conducted for determinants of primary education outcomes as measured by passing and continuation to secondary rates associated with the construction of the MDG-2 indicator in MAMS.

A probit model was used to estimate the elasticities of passing rates and continuation to secondary school with respect to various determinants, using household-based data from the Multiple Indicator Cluster Survey. Table 4.6 summarizes the elasticity estimates for those determinants that are specific in the education module of MAMS. These elasticities, together with suggestions from the literature such as Orbeta and others (1999), are the basis for calibrating the MDG 2 production function in MAMS' MDG module. More detailed estimation results for education and assumptions made for other elasticities and/or parameters can be found in Briones and others (2011).

Except for the wage premium, parameter estimates in Table 4.6 were all found to be statistically significant in determining the likelihood of passing in each grade of primary school. Nevertheless, elasticities tend to be on the low side, which could be due to measurement errors related to inaccuracies in the proxy variables used to measure effects on educational outcomes. The measurement errors are traceable to insufficient or fragmentary data. More substantively, however, the low elasticities likely also reflect either weak contemporaneous effects of public spending on education outcomes, owing to poor quality of past service delivery and inadequate infrastructure.

Baseline scenario

Once calibrated, MAMS was used to generate a baseline scenario that projects the functioning of the economy under the assumption of business

Table 4.6

Philippines: Elasticity estimates for determinants of primary school completion and of continuation to secondary school

	<i>Passing rate (in each grade)</i>	<i>Continuation to secondary rate</i>
Public spending per student	0.03	0.00
Household purchasing power	0.16	0.03
Infrastructure index	0.21	0.01
Wage premium	-0.00	0.00
Under-5 mortality rate	0.06	0.04

Sources: Briones and others (2011).

as usual. This scenario serves two purposes: one is to gauge whether the MDGs would be achieved by 2015 under assumptions of continued trends and policies; the other is to define a benchmark against which results from alternative scenarios are compared. Figure 4.8 shows the baseline results for growth of GDP and its major components over the projection period 2006-15. GDP growth averages 5.0 per cent, taking a deep dip in 2009 because of the global financial crisis, but showing robust recovery after that. The domestic debt-to-GDP ratio declines by nearly 8 percentage points, while the public foreign debt-to-GDP ratio rises slightly between 2006 and 2015 (Figure 4.9). This is consistent with observed trends which show a shift from domestic to foreign borrowing, as well as declining debt-to-GDP ratio (36 to 32 per cent from 2006 to 2009). Overall, the debt-to-GDP ratio drops slightly from 61.8 to 56.7—still exceeding the 49.7 per cent benchmark, but at more sustainable debt levels compared to the present.

Figure 4.8
Philippines: Annual growth of macroeconomic variables
in the baseline scenario, 2007-2015

Source: Authors' estimates based on application of MAMS for the Philippines.

The baseline scenario for measuring progress towards the MDGs is shown in Figure 4.10. By 2015, the target would be met for MDGs 7a and 7b. It would also be met for MDG 4 and shows minor shortfalls for MDG 5. Progress towards MDG 2 would fall well short of the target, however. Accordingly, a set of scenarios were simulated to estimate the cost of achieving the education and health goals by 2015.

Figure 4.9

Philippines: Debt stocks in the base year and 2015 (per cent of GDP) **Source:** Authors' estimates based on application of MAMS for the Philippines.

Figure 4.10

Philippines: MDG indicators¹ in the baseline scenario, 2006-2015

¹ MDG 2: net primary completion rate (in per cent); MDG 4: under-five mortality rate (per 1,000 live births); MDG 5: maternal mortality rate (100,000 live births); MDG 7a: share of households with access to sanitary toilet (in per cent); MDG 7b: share of households with access to potable water (in per cent).

Source: Authors' estimates based on application of MAMS for the Philippines.

MDG scenarios

In this section, we focus on two sets of MDG scenarios. The first set (mdg2) targets only the MDG gap for education where the gap to target is biggest. The second set (mdg245) targets achieving all relevant social MDGs that are not fully achieved in the baseline scenario (namely, MDGs 2, 4, and 5). Within each set, four financing options are evaluated, namely: foreign transfers (ftr), domestic taxes (tax), foreign borrowing (fb) and domestic borrowing (db).

Depending on the financing mechanism, the government would have to increase MDG-related spending by 6.3 to 7.4 per cent of GDP per year in order to close the gaps in primary education and child and maternal mortality by 2015 (Table 4.7). This estimation accounts for what the government should have spent since 2007. Most of the additional spending requirement would be for education expenditures (that is, teacher salaries and other inputs). Financing through taxation or domestic borrowing is relatively more costly as they crowd out private spending—on education and health services—that, in turn, needs to be compensated by more

Table 4.7
Philippines: Additional annual public spending required to close social MDG gaps—relative to the baseline scenario

Per cent of GDP												
	(a) 2010-2015				(b) 2007-2009				(c) = (b) + (a) 2010-2015			
	ftr	tax	fb	Db	ftr	tax	fb	db	Ftr	tax	fb	db
Healthcare	0.51	0.79	0.51	1.09	0.31	0.64	0.31	0.33	0.82	1.42	0.82	1.42
current	0.50	0.78	0.50	1.04	0.30	0.61	0.30	0.33	0.80	1.39	0.80	1.37
investment	0.02	0.01	0.02	0.04	0.00	0.03	0.00	0.01	0.02	0.04	0.02	0.05
Education	2.43	2.67	2.43	2.66	3.05	3.32	3.05	3.09	5.48	5.99	5.48	5.75
current	2.33	2.55	2.33	2.55	2.46	2.68	2.46	2.49	4.79	5.23	4.79	5.04
investment	0.10	0.12	0.10	0.11	0.59	0.64	0.59	0.60	0.69	0.75	0.69	0.72
Total	2.94	3.46	2.94	3.75	3.35	3.96	3.35	3.43	6.30	7.41	6.30	7.17
current	2.83	3.33	2.83	3.59	2.76	3.29	2.76	2.82	5.59	6.62	5.59	6.41
investment	0.12	0.13	0.12	0.16	0.59	0.66	0.59	0.61	0.71	0.79	0.71	0.76

Source: Authors' estimates based on application of MAMS for the Philippines.

government spending. However, it is only under the domestic borrowing scenario that annual GDP growth is slower than that of the baseline (on average by -0.6 and -1.6 percentage points under mdg2 and mdg245 scenarios, respectively) owing to crowding out of private investment. GDP growth is only marginally higher in the other MDG scenarios, however, as gains from health and education improvements would be expected to translate into productivity growth in the medium to longer run.

Under debt financing options, the feasibility of the MDG scenarios can be evaluated by the debt-to-GDP ratios by 2015 (Figure 4.11). Consider foreign borrowing: to close the MDG 2 gap, total public debt would increase by an additional 26 per cent of GDP by 2015 compared with the baseline, and by up to 29 per cent of GDP to close all the MDG gaps. The overall debt-to-GDP ratio would climb to between 83 to 86 per cent when achievement of the three goals is targeted, up from 57 per cent projected for 2015 in the baseline, raising questions about debt sustainability.

The increase in public debt indebtedness is even greater in the domestic borrowing scenario, given dynamics between additional domestic borrowing, increased debt servicing burden and growth costs of crowding out of private investment. From 27 per cent of GDP at the baseline scenario, the domestic debt stock would need to rise to 90 per cent of GDP to close

Figure 4.11:
Philippines: Debt-to-GDP ratios in the baseline and MDG scenarios with domestic and foreign borrowing

Source: Authors' estimates based on application of MAMS for the Philippines.

the MDG 2 gap, and about the size of GDP to close all the gaps. The resulting levels of total debt stock—between 113 and 135 per cent of GDP—should be considered unsustainable.

Government revenues as a share of GDP are shown in Figure 4.12 for the baseline and tax-financing scenarios. For the baseline, tax income rises from about 13 to about 15 per cent of GDP over the projection period. However the increase in tax effort is faster for the MDG 2 target, rising over 18 per cent of GDP by 2015. Moreover, the projected increase in tax effort up to 2009 is fairly sharp (owing to the need to frontload spending so as to ensure timely enrolment of all boys and girls in order to achieve the target for primary school completion by 2015).

Figure 4.12

Philippines: Government revenue in the baseline and MDG scenarios with tax financing

Source: Authors' estimates based on application of MAMS for the Philippines.

The fact that actual tax collection over the period 2006-2009 was far lower than the projected requirement suggests the tax-financing option is challenging for the Philippines. Trends are nearly the same when targeting the three MDGs simultaneously, except that, logically, the required tax effort is higher. On average, the projected tax burden is 14.1 per cent of GDP in the baseline, compared to 16.8 per cent when MDG 2 is targeted, and 17.2 per cent when all three MDGs are targeted. In these simulations, additional spending is assumed to be financed by increasing the direct tax

rate. Direct tax revenue averages 6.4 per cent of GDP over the baseline simulation period, while it would need to increase to an average of 9.2 per cent to finance achievement of MDG 2 and to 9.6 per cent in order to finance spending requirements for achieving MDGs 2, 4 and 5.

In summary, under business as usual, there remains a major gap in achievement of MDG 2, a minor one for MDG 5, with MDG 4 close to being achieved and the targets for water and sanitation easily met. Closing all gaps, however, would require substantial increases in government spending, particularly on education. Financing through domestic borrowing would lead to alarming levels of domestic government debt. Similarly, under foreign borrowing, MDG achievement implies dangerous levels of foreign debt.

ANALYSIS OF THE MICROSIMULATION RESULTS FOR POVERTY AND INEQUALITY

This section presents the results for progress towards the poverty reduction target after applying the microsimulation approach to Philippine data. The labour market outcomes of the various policy scenarios simulated with MAMS were imposed on micro level data as provided by the Family Income and Expenditure Survey (FIES) of 2006 and the contemporaneous Labor Force Survey (LFS).

Baseline scenario

The results presented in Table 4.8 suggest that the MDG 1 target of 12.2 per cent for extreme poverty (based on the subsistence poverty line) would not be reached under the baseline scenario. This is despite the fact that not much additional poverty reduction is required, since subsistence poverty had already fallen to 14.4 per cent by 2006. Instead, the microsimulation results show that, between 2006 and 2010, extreme poverty would have increased with the economic downturn caused by the global financial crisis. The trend towards poverty reduction resumes again during the (projected) subsequent recovery.

Similar trends are observed in other poverty measures (Table 4.8). The poverty incidence based on official poverty line and the \$1.25 and \$2.00 per day poverty lines (PPP-adjusted) increases slightly before returning close to the level of the base year. Income inequality, whether measured by the Gini ratio or the Theil index, worsens.

Table 4.8

Philippines: Poverty incidence by poverty line and inequality indices¹
for the baseline scenario

	<i>Poverty incidence (per cent of population)</i>				<i>Gini</i>	<i>Theil</i>
	<i>Official poverty line</i>	<i>Official food poverty line</i>	<i>\$1.25/day line</i>	<i>\$2/day line</i>		
2006	31.4	14.4	17.9	48.7		
2010	32.7	15.4	19.0	49.9	0.498	0.483
2015	31.3	14.7	18.1	48.6	0.500	0.485

¹ Based on household income per capita data.

Source: Authors' estimates based on application of MAMS for the Philippines and the microsimulation methodology drawing data from FIES and LFS.

The rise in inequality and poverty—despite income growth—is due to the simulated changes in the labour market. The projected unemployment rate holds steady at 5.0 per cent for workers that have completed primary school in the baseline, but rises dramatically for secondary and tertiary school graduates (Figure 4.13). As a result, unemployment for all workers increases from 7.3 to 9.5 per cent between 2006 and 2015. Although not shown in Figure 4.13, the increase is strongest during 2008–2010. Wages increase for unskilled workers (by less than 1 per cent), but because of excess supply decline for workers with secondary and tertiary education (respectively, by -0.8 and -1.1 per cent). Overall, the simulated changes in employment and wages cause per capita household income to fall, mainly as a result of the worsening conditions for workers with secondary and tertiary education, especially during the 2008–2010 crisis. This also explains the aggregate outcome for poverty.

The increase in the number of better-educated workers is a product of rapid population growth and a continued emphasis on secondary and tertiary educational attainment. Although it does not account for the extent to which overseas migration may be an outlet for educated workers, the projection puts a spotlight on the economy's failure to create jobs requiring more human capital. It also confirms a tendency toward “over-education” in the Philippine labour market (Asian Development Bank, 2007). As the educational qualifications of workers in the same job and skill set rise over time, actual returns decline. The next section examines how an MDG strategy—of the sort modelled here—would help to solve this structural constraint and contribute to reducing poverty.

Figure 4.13
Philippines: Unemployment rate by category of worker
 under the baseline scenario, 2006 and 2015

Source: Authors' estimates based on application of MAMS for the Philippines.

Alternative scenarios for MDG achievement

We now examine alternate scenarios for closing the MDG gaps in primary education and mortality rates on income poverty. When domestic borrowing is used to finance additional MDG spending (compare Tables 4.8 and 4.9), poverty worsens towards the end of the simulation period compared to the baseline scenario, and the increase in moderate poverty is sharper than for extreme poverty. For the other options, poverty declines compared to the baseline scenario. The tax-financing option produces the biggest declines: moderate poverty falls by 2.2 percentage points and extreme poverty drops noticeably.

Under most financing options, the additional government spending targeted at closing the MDG gaps improves overall employment prospects compared to the baseline. Notably, the biggest reduction in unemployment is for workers with tertiary schooling. Under domestic borrowing, whether the target is MDG 2 only or all the social MDGs, unemployment prospects are somewhat dimmer, with workers with secondary schooling taking the biggest hit. (As explained earlier, GDP growth is less under the domestic

Table 4.9

Philippines: Poverty incidence measured against the official poverty lines under the MDG scenarios, 2006, 2010 and 2015

Per cent of the population				
<i>MDG scenario</i>	<i>Poverty line</i>	<i>2006</i>	<i>2010</i>	<i>2015</i>
mdg2-tax	Extreme	14.4	14.1	13.7
	Moderate	31.4	30.5	29.5
mdg2-db	Extreme	14.4	15.1	16.5
	Moderate	31.4	31.7	33.7
mdg2-ftr	Extreme	14.4	14.2	13.7
	Moderate	31.4	30.5	29.6
mdg2-fb	Extreme	14.4	14.2	13.7
	Moderate	31.4	30.5	29.6
mdg245-tax	Extreme	14.4	14.1	13.5
	Moderate	31.4	30.3	29.2
mdg245-db	Extreme	14.4	15.1	16.7
	Moderate	31.4	31.6	33.8
mdg245-ftr	Extreme	14.4	14.1	13.6
	Moderate	31.4	30.5	29.4
mdg245-fb	Extreme	14.4	14.1	13.6
	Moderate	31.4	30.5	29.4

Source: Authors' estimates based on application of MAMS for the Philippines and the microsimulation approach drawing data from FIES and LFS.

borrowing because private investment is crowded out and as a result workers are laid off.) Employment and wages do not grow as much as they do under the tax-financing scenario because the inflow of foreign exchange triggers a real exchange rate appreciation that penalizes labour-intensive export sectors.

Although incomes are more evenly distributed than under the baseline scenario, inequality still increases under the various MDG scenarios, regardless of which goal is targeted, financing option, or inequality indicator (compare Tables 4.8 and 4.10). Nevertheless, despite the worsening income distribution, poverty is projected to fall under the MDG scenarios by slightly more than under business as usual. This is likely attributable to the increase in real labour incomes triggered by MDG targeting strategy that addresses the structural issue of “over-education” as discussed above.

Table 4.10

Philippines: Inequality indices under the MDG scenarios,¹ 2006-2015

Per cent of the population				
<i>MDG scenario</i>	<i>Index</i>	<i>2006</i>	<i>2010</i>	<i>2015</i>
mdg2-tax	Gini	0.496	0.502	0.505
	Theil	0.479	0.487	0.491
mdg2-db	Gini	0.496	0.502	0.504
	Theil	0.479	0.489	0.494
mdg2-ftr	Gini	0.496	0.502	0.504
	Theil	0.479	0.486	0.490
mdg2-fb	Gini	0.496	0.502	0.504
	Theil	0.479	0.486	0.490
mdg245-tax	Gini	0.496	0.502	0.504
	Theil	0.479	0.486	0.490
mdg245-db	Gini	0.496	0.502	0.505
	Theil	0.479	0.487	0.492
mdg245-ftr	Gini	0.496	0.502	0.504
	Theil	0.479	0.486	0.491
mdg245-fb	Gini	0.496	0.502	0.504
	Theil	0.479	0.486	0.491

¹ Based on household income per capita.**Source:** Authors' estimates based on the application of MAMS for the Philippines and the microsimulation approach drawing data from FIES and LFS.

CONCLUSIONS AND POLICY RECOMMENDATIONS

The Philippines has committed itself to a development strategy aimed at attaining the MDGs. However, prospects are mixed, based on official and largely qualitative assessments. The MDGs for the environment, child mortality and extreme poverty are likely to be achieved. Under a continuation of current policies, however, the MDGs for moderate poverty, education, and maternal mortality are unlikely to be met by 2015.

Development and policy literature has proposed a number of reforms in policy, investment, institutions, and governance that are needed to translate MDG expenditure into achievement; the National Economic Development Authority deals fairly extensively with such quality and service improvements (National Economic Development Authority, 2010). Even with these reforms, however, a substantial increase in public spending is

required to close the MDG gaps. Hence, a critical element in medium-term development planning is a more quantitative assessment of the financing requirements and the fiscal implications of expanded MDG programs, one that also accounts for second-order and dynamic effects.

This chapter has presented such a quantitative assessment using a policy-modelling tool called MAMS applied to Philippine data and elasticities. Under the baseline or business-as-usual scenario, macroeconomic trends persist over the duration of the projection period, and the fiscal situation, while worrisome, is not dire. Per capita income growth fails to translate into poverty reduction, as the economy fails to create higher paying jobs (for better-educated workers) fast enough. Under this scenario, the targets for increasing access to water and sanitation are attained, while the health MDGs are within grasp. The poverty and education MDGs, however, would remain elusive. Poverty reduction is greater when more government spending is targeted towards achievement the goals for education and health in the MDG scenarios, although the target for extreme poverty is not met. More gains likely will take effect over the longer run when improved education and health conditions may support higher productivity growth. However, it is critical that additional policies are put in place to encourage the creation of jobs requiring higher skills to match labour demand with an increasingly educated work force.

The MDG scenarios suggest that closing the gaps for social indicators would require substantial increases in government spending, particularly for education services, in the range of 6.3 to 7.4 per cent of GDP per year, depending on the financing mechanism. Debt financing either by domestic or foreign borrowing would likely lead to unsustainable levels of public debt. Financing through foreign transfers is more consistent with debt sustainability criteria, but may not be a realistic option given recent trends in ODA flows to the Philippines. Tax financing of the MDG strategy would also be consistent with debt sustainability objectives, but require increasing direct tax revenue by between 3 and 4 per cent of GDP. Given past levels of the total tax burden, such an increase should not be inconceivable, but likely will be challenging given weak tax collection efforts of the past decade. The current government's efforts to improve tax collection are laudable, but in order to achieve the required levels of government revenue additional tax measures may need to be taken.

NOTES

- 1 The methodological framework is explained in detail in Chapter 1 of this volume.
- 2 By early 2011, the country had adopted a new set of poverty lines leading to revisions in official figures which are not reflected here.
- 3 Based on new official figures, the target would be to reduce moderate poverty by 51.4 per cent from 1991 to 2015 (that is, to 16.1 per cent down from 33.1 per cent).

REFERENCES

- Abrenica, Ma. Joy V., and Gilberto M. Llanto (2003). Services. In *The Philippine Economy: Development, Policies, and Challenges*, Arsenio Balisacan and Hal Hill, eds. Quezon City: Ateneo de Manila University Press.
- Asian Development Bank (2007). *Asian Development Outlook 2007*. Manila.
- Briones, Roehlano M., Francis Quimba, Myrna Asuncion, Jonathan B. Bungcayao, Joseph B. Paglingayen, and Ivey Libunao (2011). Assessing development strategies to achieve the MDGs in The Republic of the Philippines. Project Final Report, UN Department of Economic and Social Affairs (UN-DESA), UNDP, Philippine Institute for Development Studies and the National Economic and Development Authority, March. Available from http://www.un.org/en/development/desa/policy/capacity/output_studies.shtml.
- Cororaton, Caesar B. (1997). Simulating the effects of GATT-UR/WTO on the *Philippine economy*. *Journal of Philippine Development*, Vol. 24, No. 44, pp. 191-222.
- David, Cristina C. (2003). Agriculture. In *The Philippine Economy: Development, Policies, and Challenges*, Arsenio Balisacan and Hal Hill, eds. Quezon City: Ateneo de Manila University Press.
- Gochoco-Bautista, Maria Socorro, and Dante Canlas (2003). Monetary and exchange rate policies. In *The Philippine Economy: Development, Policies, and Challenges*, Arsenio Balisacan and Hal Hill, eds. Quezon City: Ateneo de Manila University Press.
- Hill, Hal (2003). Industry. In *The Philippine Economy: Development, Policies, and Challenges*, Arsenio Balisacan and Hal Hill, eds. Quezon City: Ateneo de Manila University Press.
- Kang, Hyewon (2010). The Philippines' absorptive capacity for foreign aid. Discussion Paper Series No. 2010-15. Manila: Philippine Institute for Development Studies (PIDS). Available from <http://dirp4.pids.gov.ph/ris/dps/pidsdps1015.pdf>.
- Lofgren, Hans (2010). MAMS—A Guide for Users. (November 21 draft). Development Prospects Group (DECPG). Washington, D.C.: World Bank.
- Manasan, Rosario G. (2007). Financing the Millennium Development Goals: Philippines. Discussion Paper Series No. 2007-06. Manila: Philippine Institute for Development Studies (PIDS). Available from <http://publication.pids.gov.ph/details.php?pid=4129>.

- Manasan, Rosario G. (2008). Are recent gains in BIR tax effort sustainable? PIDS Policy Notes No. 2008-07. Manila: Philippine Institute for Development Studies. Available from <http://dirp4.pids.gov.ph/ris/pn/pidspn0807.pdf>.
- Manasan, Rosario G. (2010). Financing the MDGs and inclusive growth in the time of fiscal consolidation. Discussion Paper Series No. 2010-34. Manila: Philippine Institute for Development Studies (PIDS). Available from http://dirp4.pids.gov.ph/ris/dps/pidsdps1034_rev2.pdf.
- Manasse, Paolo, and Nouriel Roubini (2009). 'Rules of thumb' for sovereign debt crises. *Journal of International Economics*, No. 78, Vol. 2, pp. 192-205.
- National Economic Development Authority (2010). Philippines 2010: Progress Report on the Millennium Development Goals. Manila.
- Orbeta, Aniceto Cubil, Edith Laviña, and Mildred Belizario (1999). Population and Development Planning (PDP) Model: the 1998 update. Population and Development Planning for the Philippine Future Project. Quezon City: Demographic Research and Development Foundation and Makati City: UN Population Fund.