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## Money Isn't Everything: The Challenge of Scaling Up Aid to Achieve the Millennium Development Goals in Ethiopia

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**Money Isn't Everything: The Challenge of Scaling Up Aid to Achieve the Millennium Development Goals in Ethiopia**

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**Abstract**

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This paper outlines the challenge of developing an operational macroeconomic framework in Ethiopia consistent with the large envisaged scaling up of aid to achieve the Millennium Development Goals (MDGs). This paper describes an MDG scenario that addresses both microeconomic and macroeconomic constraints, such as the need to boost sustainable growth, limit Dutch disease, formulate an exit strategy from aid dependency, enhance public financial management (PFM), and expand the supply of skilled labor. The paper will argue that a carefully sequenced MDG strategy is essential so that the scaled-up aid and public spending will remain in line with Ethiopia's absorptive capacity.

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## I. INTRODUCTION

This paper outlines the challenge of developing an operational macroeconomic framework in Ethiopia consistent with the large envisaged scaling up of aid to achieve the Millennium Development Goals (MDGs). With an annual per capita income of just US\$150, Ethiopia persistently ranks in the bottom 10 countries of the UN Human Development Index. However, Ethiopia has also garnered international recognition for strengthening its macroeconomic policies and fiscal management. Consequently, the donor community has committed to scale up substantially Official Development Assistance (ODA) to Ethiopia.<sup>1</sup> This paper describes the evolution of the Fund's work in developing a macroeconomic scenario in Ethiopia that is consistent with scaled-up ODA and higher public spending to improve human development outcomes. Based on the experience in Ethiopia, this paper identifies challenges in developing an operational framework to guide donors and budget planning in the scaling up of ODA.

Improving human development outcomes in low-income countries represents an enormous economic and social challenge. World leaders established eight MDGs as outlined in Table 1 at the UN Millennium Summit to accelerate progress on improving human development indicators. The subsequent Monterrey Consensus represented a global deal to match the MDGs with concrete financial commitments. Specifically, developing countries pledged to strengthen political and economic governance as the basis for increased aid, debt relief, and trade liberalization. However, the 2004 Global Monitoring Report<sup>2</sup> found that achieving the MDGs by 2015 is slipping out of reach, especially in sub-Saharan Africa. The report concluded that developing countries should aim higher to improve governance, while developed countries should scale up assistance more rapidly from a current average of 0.24 percent to 0.7 percent of GNP in line with their Monterrey commitments. In this context, low-income countries could soon face the challenge of maintaining macroeconomic stability and debt sustainability, while effectively absorbing a possibly unprecedented scaling up of aid.

The IMF is committed to providing policy advice and technical assistance to facilitate the large envisaged scaling up of aid. One mechanism to provide this policy advice is by supporting the development of a macroeconomic and fiscal policy scenario consistent with scaling up ODA to achieve the MDGs. In the case of Ethiopia, the MDG strategy is a principal feature of its new poverty reduction strategy.<sup>3</sup> The design of this strategy has been

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<sup>1</sup> The British *Commission for Africa Report* found that ODA to Ethiopia could be doubled over the next three to five years depending on governance and strong policies. In addition, the G-8 summit at Gleneagles in 2005 committed to double foreign aid to sub-Saharan Africa by 2010. This commitment translated into higher aid by US\$50 billion annually, of which half would accrue to Africa.

<sup>2</sup> The Global Monitoring Report (2004) is an annual joint World Bank-IMF report that takes stock of progress towards achieving the MDGs and related outcomes.

<sup>3</sup> The baseline scenario of the PRS typically reflects prudent macroeconomic and fiscal projections with donor support based on current trends and expectations. The MDG scenario reflects an alternative scenario. For additional information, refer to the IMF fact sheet on supporting low-income countries located on the Internet at the following web site: <http://www.imf.org/external/np/exr/facts/poor.htm>.

Table 1. Ethiopia: Current Progress Toward the Millennium Development Goals

	Ethiopia			Sub-Saharan Africa Average		
	1990	2000	2003	1990	2000	2003
<b>1. Eradicate extreme poverty and hunger (2015 target = halve 1990 \$1 a day poverty and malnutrition rates)</b>						
Population below \$1 a day (percent)	...	23.0	...	44.6	46.4	...
Poverty gap at \$1 a day (percent)	...	4.8	...	...	...	...
Percentage share of income or consumption held by poorest 20 percent	...	9.1	...	...	...	...
Prevalence of child malnutrition (percent of children under 5)	...	47.2	...	...	...	...
Population below minimum level of dietary energy consumption (percent)	...	...	46.0	...	...	...
<b>2. Achieve universal primary education (2015 target = net enrollment to 100)</b>						
Net primary enrollment ratio (percent of relevant age group)	23.3	43.9	47.4	53.5	...	63.7
Percentage of cohort reaching grade 5 (percent)	18.3	61.3	61.5	65.0	...	...
Youth literacy rate (percent ages 15-24)	...	...	57.4	...	...	71.9
<b>3. Promote gender equality (2005 target = education ratio to 100)</b>						
Ratio of girls to boys in primary and secondary education (percent)	68.2	68.0	69.3	79.0	...	83.5
Ratio of young literate females to males (percent ages 15-24)	...	...	82.2	...	...	84.9
Share of women employed in the nonagricultural sector (percent)	39.9	...	...	27.1	...	...
Proportion of seats held by women in national parliament (percent)	...	2.0	2.0	9.4	10.8	13.3
<b>4. Reduce child mortality (2015 target = reduce 1990 under 5 mortality by two-thirds)</b>						
Under 5 mortality rate (per 1,000)	204	176	169	187	...	171
Infant mortality rate (per 1,000 live births)	131	116	112	110	...	101
Immunization, measles (percent of children under 12 months)	38.0	52.0	52.0	57.1	54.9	60.8
<b>5. Improve maternal health (2015 target = reduce 1990 maternal mortality by three-fourths)</b>						
Maternal mortality ratio (modeled estimate, per 100,000 live births)	...	850	...	...	917	...
<b>6. Combat HIV/AIDS, malaria and other diseases (2015 target = halt, and begin to reverse, AIDS, etc.)</b>						
Prevalence of HIV (percent ages 15-24)	...	4.1	...	...	7.3	6.7
Number of children orphaned by HIV/AIDS	...	560,000	720,000	...	...	...
Incidence of tuberculosis (per 100,000 people)	123.6	308.7	356.1	154.1	312	352.8
<b>7. Ensure environmental sustainability (2015 target = various)</b>						
Forest area (percent of total land area)	...	4.6	...	30.7	27.3	...
GDP per unit of energy use (PPP \$ per kg oil equivalent)	2.1	2.3	2.4	2.8	2.7	2.8
Access to an improved water source (percent of population)	25.0	...	22.0	49	...	58
Access to improved sanitation (percent of population)	4.0	...	6.0	32	...	36
<b>8. Develop a Global Partnership for Development (2015 target = various)</b>						
Fixed line and mobile telephones (per 100 people)	2.6	3.9	7.7	10.0	32.3	61.9
Personal computers (per 100 people)	...	0.9	2.2	...	9.6	11.9

Source: World Bank, World Development Indicators Database, April 2004

Note: As many of these indicators are updated infrequently, observations do not always correspond precisely to the date shown in the table.

supported by rich analytical work such as the World Bank's *Maquette for MDGs Simulations* (MAMS) that links detailed sectoral strategies with macroeconomic projections.<sup>4</sup> The MDG strategy also builds on the recent MDG Needs Assessment Synthesis Report. The report estimated the public sector cost of achieving the MDGs at US\$58 billion (about 450 percent of current GDP) over the next 10 years based on a bottom-up costing exercise by sector.

Ethiopia and its development partners have made significant progress in developing an MDG scenario. The Fund prepared an initial scaling-up scenario for Ethiopia during its annual policy consultation in 2004.<sup>5</sup> This "first-generation" macroeconomic scenario was based on the Fund's standard financial programming framework that links the fiscal, monetary, balance of payments, and real sectors in a consistent framework using simple national accounting identities and macroeconomic relationships. As described in Section III, the first-generation scenario was limited in several important ways, such as incomplete analytical underpinnings for the higher growth projections and the absence of an MDG Needs Assessment to anchor the fiscal framework. The current "second-generation" scenario partly addresses these issues by incorporating analytical inputs from the World Bank's MAMS model and the authorities' MDG Needs Assessment. Despite these advancements, this paper argues that the MDG scenario is not yet an operational framework to guide donors and medium-term budget planning.

This remainder of this paper is organized as follows. Section II outlines key challenges in developing an operational MDG scenario. Section III describes the first-generation MDG model. The fourth section outlines the current "second-generation" MDG scenario based on more detailed analytical inputs from the World Bank and the authorities' MDG Needs Assessment. The paper concludes with lessons based on the Ethiopia experience.

## II. THE CHALLENGE OF FORMULATING AN MDG SCENARIO

Formulating an operational MDG scenario in Ethiopia will require addressing a complex set of macroeconomic and microeconomic problems. Given these challenges, a carefully sequenced MDG strategy is essential so that the scaled-up ODA and public spending remain in line with Ethiopia's absorptive capacity. Many of these general problems have been outlined in the literature.<sup>6</sup> For instance, absorptive capacity constraints include the limited supply of skilled labor, weak public administration, and bottlenecks stemming from inadequate infrastructure. There are also significant macroeconomic challenges from scaling up aid, such as Dutch disease and raising sustainable growth. In the context of Ethiopia, these issues can be assessed under two broad categories: (i) ensuring macroeconomic stability and

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<sup>4</sup> Refer to Sundberg, Lofgren, and Bourguignon (2005) and Lofgren and Diaz-Bonilla (2005) for a detailed overview of the MAMS model as applied to the case of Ethiopia.

<sup>5</sup> Federal Democratic Republic of Ethiopia: 2004 Article IV Consultation and Sixth Review under the Three-Year Arrangement under the Poverty Reduction and Growth Facility.

<sup>6</sup> Heller and Gupta (2002a,b); Gupta, Powell, and Yang (2005); Heller (2005a,b,c); Eifert and Gelb (2005); Berg and Qureshi (2005), Aiyar, Berg, and Hussain (2005).

sustainable fiscal policies; and (ii) formulating an operational MDG scenario to guide donors and the government in the scaling-up process.

### **Macroeconomic stability and fiscally sustainable policies**

- **Identifying growth-enhancing reforms.** The first MDG involves reducing absolute poverty (Table 1), which requires a sustainable increase in pro-poor growth.<sup>7</sup> However, there has until recently been a lack of analytical work mapping specific sectoral policies and structural reforms to productivity growth. This represented a major weakness of the first-generation MDG scenario. The World Bank's MAMS model strengthened this aspect of Ethiopia's MDG strategy by linking sectoral spending plans to projected growth and real exchange rate movements. The model also incorporates macroeconomic and labor market feedback effects. As a result, the MAMS represents a key input into the second-generation MDG scenario.
- **Limiting Dutch disease.** The large envisaged inflow of ODA could trigger a real effective appreciation hampering international competitiveness and medium-term growth by drawing resources from the export sector. The prospect of Dutch disease depends on the extent that the scaled-up ODA is passed through into higher public spending and domestic demand,<sup>8</sup> and the import elasticity of the increase in domestic expenditure. For instance, if the import content of the scaled-up spending is low, then there could be significant pressure on domestic supply triggering inflationary pressure.<sup>9</sup> The first-generation MDG scenario projected a high import elasticity of demand that eased pressure on domestic supply and broad money growth. The second-generation model strengthened this aspect of the framework by better linking import projections to the composition of the scaled-up public spending.
- **Shifting expenditure composition.** The MDG scenario is largely driven by scaled-up public spending on social services and infrastructure. The MDG Needs

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<sup>7</sup> Berg and Qureshi (2005) and Radelet, Clemens, and Bhavnani. (2005).

<sup>8</sup> Aiyar, Berg, and Hussain (2005) illustrate that aid represents an effective resource transfer only if recipient countries allow public spending and domestic demand to expand proportionally with the increase in aid. If aid inflows are largely sterilized, then higher domestic interest rates could crowd out private sector credit and investment, partially offsetting the benefit of the resource transfer. This can be measured by a widening of the external current account deficit and fiscal balance excluding aid. In practice, many countries do not fully absorb and spend higher ODA, which can lead to crowding out of the private sector and growth in international reserves.

<sup>9</sup> For example, if public spending was allocated largely on nontradable goods and services, then there could be a ballooning in international reserves, strong broad money growth, and inflationary pressure as domestic production struggles to keep pace with domestic demand. Alternatively, the government could feel compelled to allow a more flexible exchange rate to absorb higher aid inflows through a nominal appreciation. If the aid inflows largely finance higher imports, then an increase in international reserves and broad money growth could be averted, thereby keeping inflationary pressures in check.



Assessment articulates a strategy focusing on the relative front loading of infrastructure investment. In this manner, domestic productivity is projected to increase ahead of scaled-up recurrent social spending, which should lessen the impact of Dutch disease. In contrast, the first-generation scenario was based on a rapid scaling up of wage-intensive social spending that risked fueling economy-wide wage pressures and inflation.

- **Formulating an exit strategy from aid dependency.** Following the 2015 target to achieve the MDGs, donors might scale back ODA again. In this context, an integral part of the MDG strategy is to ensure that declining ODA after 2015 does not lead to unsustainable borrowing to finance higher recurrent spending. The exit strategy in the second-generation scenario is based on raising domestic revenue to cover recurrent spending by 2015. In contrast, the first-generation framework focused on containing expenditures after 2015, which led to a more gradual exit from aid dependency.

### **Making the MDG scenario an operational framework to guide the scaling-up process**

- **Sequencing higher ODA and spending in the budget framework.** The annual phasing of scaled-up public spending has important macroeconomic implications. The sequencing of higher spending in the second-generation scenario is anchored by inputs from the MAMS model and the overall cost projection in the Needs Assessment. However, this approach presumes the availability of sufficient ODA each year in the projected amount. In practice, the strategy of front-loading infrastructure requires a dramatic jump in ODA during the first few years of implementation, which might not be forthcoming. As a result, the MDG strategy is difficult to make operational for actual budget planning purposes.
- **Strengthening public expenditure management.** The MDG strategy in the second-generation scenario is based on increasing domestic productivity resulting from scaling up infrastructure investment. However, weak government capacity to select and prioritize projects with high social rates of return could undermine the strategy. Moreover, donors are increasingly insisting on strengthened fiscal transparency and accountability, timely budget reporting on a consolidated basis, and a tighter link between spending appropriations and performance. The infrastructure focus of the strategy would also introduce new fiscal risks stemming from the quasi-fiscal activities of large public utilities.
- **Addressing shortages of skilled labor.** Both the first and second-generation scenarios entail a large increase in the public sector wage bill owing to the wage-intensive nature of health and education spending. The first generation-scenario did not formally model second-order effects arising from tight labor markets, such as rising wage premia. However, the MAMS model explicitly incorporates this factor into its macroeconomic projections. The main strategy to address this labor market constraint is to invest in the education system to steadily increase the availability of skilled labor over time assuming a sufficiently elastic labor supply response, easing pressure on economy-wide wages. In practice, nontraditional hiring practices are also being pursued, such as training semi-skilled “Health Extension Workers.”

- **Improving aid management.** Monetary management will be complicated without effective planning and coordination due to “lumpy” ODA disbursements that could result in large changes in broad money. Moreover, ODA is much more unpredictable and volatile than domestic revenue, which could expose the budget to costly bridge financing between disbursements. More work is needed to ensure predictable aid modalities while maintaining performance-related conditionality.<sup>10</sup>

### III. THE FIRST-GENERATION MDG SCENARIO FOR ETHIOPIA

In 2004, an initial scaling-up scenario was developed for Ethiopia based on the projected spending need in key social sectors to achieve the MDGs. Based on the Fund’s traditional financial programming framework, the scenario represented an initial attempt to identify macroeconomic constraints and corrective policies to help absorb substantially higher ODA. The specific objectives of the exercise were to (i) assess the feasibility of a pick-up in growth sufficient to halve income poverty by 2015; (ii) develop a medium-term fiscal framework in line with achieving the MDGs; and (iii) begin projecting the macro-fiscal impact of a substantial scaling up of aid.<sup>11</sup> This section assesses the analytical underpinning for higher growth, outlines the building blocks of the fiscal framework, and summarizes the implications for Dutch disease.

#### **Growth and structural reforms**

A significant break from past trends in total factor productivity growth (TFP) would be needed to raise average growth. The authorities projected average growth of 7 percent over the medium term in line with the required jump in agricultural yields to meet the government’s food security and income poverty objectives. This would require a sharp break from the average historical growth rate of 4 percent. Moreover, growth accounting demonstrated that annual TFP growth would need to jump from 0.7 to 1.7 percent (Table 2). This translated into an increase in average agricultural yield growth from 1.4 to 9 percent.<sup>12</sup> In contrast, the staff’s baseline projection entailed a more modest pick-up in average growth to 5.5 percent as strengthened implementation of the structural reform program was projected to raise average TFP growth to 1.1 percent.<sup>13</sup>

Achieving the envisaged growth rates would require a substantial increase in national investment assuming a constant investment-to-GDP ratio. Consistent with the fiscal framework described below, public investment was projected to increase by over 8 percent of GDP between 2003/04 and 2015/16 owing to scaled-up capital spending for schools, health

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<sup>10</sup> Eifert and Gelb (2005).

<sup>11</sup> Andrews, Erasmus, and Powell (2005).

<sup>12</sup> The sources of growth were decomposed into the weighted contributions of physical capital, employment, and a residual term capturing TFP growth.

<sup>13</sup> The baseline projection reflects the continuation of existing policies.

clinics, and infrastructure (Table 2).<sup>14</sup> Private investment was projected to increase at a similar rate as the return to investment was projected to increase in tandem with the expanded stock of public capital and the government's broader structural reform program.

The growth accounting exercise demonstrated that the scaling up of aid should be accompanied by strengthened policies to boost productivity growth. The exercise also highlighted the weak analytical underpinnings for the projected pick-up in growth. In particular, there was a need to map concrete structural reforms into expected productivity improvements to support the break with past trends. Potential agricultural sector reforms include enhancing the security of land tenure, expanding agricultural support and extension programs, facilitating greater access to markets for small farmers, and improving risk management given the vulnerability to climatic shocks. In terms of private sector development, securing higher growth would depend on accelerating the privatization process, reforming the financial sector to improve financial intermediation, and ensuring access to urban land for development.<sup>15</sup>

Table 2. Ethiopia: Sources of Growth

	Historical Actual	Baseline	Authorities'
	1991/92–2003/04	Projection	Projection
	2004/05–2020/21		
<b>Real GDP at factor cost (average growth)</b>	4.0	5.5	7.0
Agriculture	2.2	3.3	7.5
Non-agriculture	5.8	6.6	6.6
<b>Growth accounting (average growth)</b>			
Capital stock	1.4	2.1	3.0
Labor	2.0	2.3	2.3
TFP	0.7	1.1	1.7
Real GDP	4.0	5.5	7.0
<b>Investment ratios (percent of GDP)</b>			
Total	16.8	...	31.4
Private	9.1	...	15.6
Public	7.7	...	15.8

Source: 2004 IMF Article IV staff report.

<sup>14</sup> The fiscal year begins on July 8 in Ethiopia.

<sup>15</sup> The World Bank takes the lead on supporting structural reforms in these areas.

## **A fiscal framework to achieve the MDGs**

The initial fiscal framework was intended to be guided by an MDG Needs Assessment prepared with UNDP and World Bank assistance. However, the Needs Assessment was delayed to strengthen the bottom-up costing exercise by sector, and to account for cross-cutting synergies that would lower the overall cost of the MDGs. In the absence of a Needs Assessment, the fiscal framework was driven by an assumed doubling of external budget financing from under 9.5 to about 18.5 percent of GDP, which was viewed as the approximate external resource need to achieve the MDGs. This corresponded to a jump in annual ODA in 2015/16 by about US\$5 billion compared to 2003/04 or an increase in ODA per capita to about US\$63 in 2015/16.<sup>16</sup> By way of comparison, ODA per capita in Ethiopia is currently about US\$11, which is well below the sub-Saharan African average of US\$23.

### ***Incorporating World Bank inputs***

The pattern of increased public spending to achieve the MDGs was guided by the World Bank's social sector Public Expenditure Review (PER) (2003).<sup>17</sup> The PER provided preliminary cost estimates in constant prices for achieving the MDGs in the health, education, water and food security sectors at five-year intervals between 2005 and 2015.<sup>18</sup> Mapping the PER cost projections in constant prices into an annual medium-term fiscal framework based on current prices required several simplifying assumptions. Specifically, the phasing was determined by projecting the cost estimates as a share of GDP and then linearly interpolating between five-year intervals. The annual increase in spending as a share of GDP by sector was added to the latest fiscal outturn in 2003/04 to construct the medium-term projections.

Table 3 illustrates the projected fiscal impact by sector. Recurrent spending steadily builds, including after the 2015 target for achieving the MDGs. This path illustrates the risk of increasing aid dependency implied by the MDG strategy as the higher level of recurrent spending will still need to be financed after ODA presumably declines in 2015. The increase in recurrent health and education spending by 5.1 percent of GDP during 2003/04 and 2020/21 is driven by wage-intensive spending. In contrast, capital spending is projected to peak in 2010/11, reflecting the need for additional schools and health clinics to accommodate the expanded delivery of basic health and primary education.<sup>19</sup>

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<sup>16</sup> This external resource need is also in line with a rough estimate suggested by Jeffrey Sachs (IRIN News Service; July 23, 2003).

<sup>17</sup> The PER (2003) outlined a low case, an Extended PRSP case and a MDG Plus scenario. The spending profile in the Fund's MDG scenario was guided by the Extended PRSP framework, which were more ambitious than the targets in Ethiopia's poverty reduction strategy, but less ambitious than the MDG Plus scenario, which entailed over-performing in selected areas.

<sup>18</sup> The PER did not provide cost estimates of the required infrastructure spending to achieve the MDGs.

<sup>19</sup> The cost projections for the water sector did not incorporate recurrent spending for operations and maintenance. Declining recurrent spending on food safety nets reflects rising domestic food productivity.

Although the fiscal framework captured the general pattern of social spending in the PER, it did not easily allow for macroeconomic feedback effects to impact the cost of achieving the MDGs. For instance, the wage-intensive nature of scaling up recurrent health and education spending would likely put upward pressure on economy-wide wages. In this regard, the PER estimated that at least 40,000 additional teachers would be needed to achieve universal primary education even before reducing large classroom sizes that currently average about 75 students per instructor. In the health sector, the PER noted that a country of 70 million people had fewer than 2,000 doctors and 19,000 nurses (Box 1), suggesting that a similarly large increase in hiring would be required to expand health services. The PER estimated the wage bill component of primary education and basic health spending at about 90 and 60 percent of operating costs, respectively, which implied a large scaling up of the government wage bill by 3.3 percent of GDP between 2003/04 and 2020/21. Moreover, the actual cost of achieving the MDGs could be higher than what was projected as the relative cost of skilled labor would likely increase sharply with demand pressures.

Table 3. Ethiopia: Social Sector Spending to Achieve the MDGs  
(as a share of GDP)

	<u>2003/04</u>	<u>2005/06</u>	<u>2010/11</u>	<u>2015/16</u>	<u>2020/21</u>
<b><u>Recurrent Spending</u></b>	9.5	10.8	11.4	12.5	12.8
Education	3.6	4.4	5.3	5.8	6.0
Health	1.9	2.7	3.1	4.1	4.6
Water supply	0.0	0.0	0.0	0.0	0.0
Safety net	4.0	3.7	3.0	2.6	2.2
<b><u>Capital Spending</u></b>	4.0	4.7	5.7	5.0	4.0
Education	2.5	2.6	3.3	2.8	2.1
Health	0.5	0.7	0.7	0.9	0.9
Water supply	1.0	1.4	1.7	1.3	1.0
Safety net	0.0	0.0	0.0	0.0	0.0
<b><u>Total</u></b>	13.6	15.5	17.1	17.6	16.8
<b><u>Wage bill</u></b>	3.7	4.5	5.5	6.6	7.0

Source: IMF staff projections and the World Bank PER (2003).

### *Incorporating the social sector projections into the overall fiscal framework*

The medium-term fiscal framework in the first-generation approach was anchored by the social sector PER and the assumed doubling of external aid.<sup>20</sup> The second-generation framework differs from this approach by assuming frontloaded infrastructure investment

<sup>20</sup> A large statistical revision to the National Accounts subsequent to the 2004 Article IV staff report led to an approximately 20 percent increase in the level of nominal GDP.

ahead of scaling up recurrent social spending. In line with the social spending focus of the PER, expenditure allocations were determined in the first-generation model by first increasing social sector spending as a share of GDP in line with the annual phasing illustrated in Table 3. The remaining external resources were distributed to infrastructure sectors in line with their past shares of total expenditure. This approach was consistent with a strategy focusing on social service delivery while recognizing the complementary need for infrastructure spending.

Table 4 illustrates the resulting expenditure framework consistent with scaled up social spending. Total expenditure was projected to increase by about 9.2 percent of GDP between 2004/05 and 2015/16 mainly due to higher recurrent pro-poor spending by 6.8 percent of GDP. Pro-poor spending was projected to increase by 11.5 percent of GDP, representing an increase by about US\$55 per capita from an estimated US\$22 in 2004/05. Total capital spending was projected to peak around 2010/11 after increasing by about 5 percent of GDP.

In contrast to the first-generation MDG model, subsequent work has focused on frontloading infrastructure. The World Bank argued in its Country Assistance Strategy (2003) for Ethiopia that weak infrastructure “represents a tax on development” following under-investment by previous political regimes and the impact of the 1980s civil war. Table 5 illustrates that Ethiopia has among the lowest levels of road density, telecommunications, and power capacity in sub-Saharan Africa. This problem has raised the cost of delivering social services in rural areas where 85 percent of the population resides, and has hindered private sector development by raising transport and communication costs. As a result, the recent policy focus has been expanding public infrastructure to “crowd in” private investment and boost domestic supply responsiveness to scaled-up demand. This is a major feature of the second-generation MDG scenario described in the next section.

### ***Increasing domestic revenue and the exit strategy***

Domestic revenue and financing projections remained prudent in the fiscal framework. Revenue was projected to increase by about 1 percent of GDP, while net domestic financing declined from about 1.2 percent of GDP to just ½ percent of GDP. The modest projected revenue gains are consistent with empirical concerns that higher ODA could discourage domestic revenue effort.<sup>21</sup> The fiscal framework also aimed to highlight the need for additional resources to achieve the MDGs relative to baseline fiscal policies. Domestic budget financing was also projected to decline to ensure a downward trend in the domestic public debt as a share of GDP. As discussed below, securing a low domestic debt would be essential to ensure sufficient borrowing space to offset macroeconomic shocks, including unpredictable donor disbursements.

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<sup>21</sup> Gupta and others (2003).

### **Box 1. Findings of the World Bank's Social Sector PER (2003)**

Ethiopia is confronting large social deficits with respect to universal primary education, gender disparity, basic health care, and the prevalence of major diseases.

**Health:** Only 62 percent of the population has access to basic health care services, implying that 26 million people lack access. The prevalence of HIV/AIDS is estimated at about 2 million people. The key health sector goals are to extend primary health coverage to 85 percent of the population and lower the rate of HIV/AIDS infection from 5.9 to 3.4 percent by 2020.

**Education:** Completion rates in primary education are low with over half of students dropping out by grade 3. Enrollment in secondary schools is only 14 percent implying that 12 million children are not in school. Key objectives are to achieve universal primary education by 2015; increase secondary enrollment from 14 to 23 percent; double university intake to 39,000 students; and absorb 40 percent of grade 10 students in training and vocational education.

**Population dynamics:** Large investments will be required just to maintain the currently low level and quality of public service given an estimated fertility rate of 5.9 children per woman of childbearing age that will boost the population by 50 percent within 20 years. A key objective will be to lower the fertility rate to 3.4 percent by 2020.

**Water:** Just one-fourth of the population has access to safe drinking water, and only 15 percent has access to sanitation services. Despite the need to extend coverage, the PER also found that 20–30 percent of existing rural water infrastructure is not functioning. Achieving the MDG in this area entails extending water access to about 44 million people, or 61 percent of the population.

Source: World Bank social sector PER (2003).

Although domestic resources were conservatively projected, such a realization would complicate the exit strategy from heightened aid dependence. The focus of the exit strategy was to contain expenditure growth after 2015/16, however this approach would clearly require a prolonged period of donor support. For instance, scaled-up ODA was projected to result in a higher budget balance excluding grants from 10.7 to 18.9 percent of GDP between 2004/05 and 2015/16. Moreover, domestic revenue would be insufficient in 2015/16 to cover the scaled-up level of recurrent spending by about 4 percent of GDP. Consequently, Ethiopia would require sustained donor support well after 2015/16 to maintain basic social services and cover the scaled-up wage bill.

### **Managing Dutch disease**

The first-generation scenario was consistent with a limited real appreciation owing to the estimated strong import content of higher domestic spending.<sup>22</sup> A significant share of the higher wage bill was also projected to cover increased households imports of final consumption goods. Moreover, the import content of higher non-wage public spending was

<sup>22</sup> Heller and Gupta (2002a) also discussed how the import elasticity of demand plays a crucial role in determining the macroeconomic impact of scaled-up aid.

Table 4. Ethiopia: Consolidated Fiscal Operations of MDG Scenario  
(as a percent of GDP)

	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2015/16
	Est.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.
<b>Total revenue and grants</b>	<b>23.0</b>	<b>26.4</b>	<b>25.9</b>	<b>26.6</b>	<b>27.9</b>	<b>29.3</b>	<b>33.2</b>
<b>Revenue</b>	<b>15.3</b>	<b>15.4</b>	<b>15.5</b>	<b>15.7</b>	<b>15.7</b>	<b>15.7</b>	<b>16.2</b>
Tax revenue	12.3	12.6	12.6	12.9	12.9	12.9	13.4
Nontax revenue	3.0	2.8	2.8	2.8	2.8	2.8	2.8
<b>Grants</b>	<b>7.7</b>	<b>11.1</b>	<b>10.4</b>	<b>10.9</b>	<b>12.1</b>	<b>13.6</b>	<b>17.0</b>
<b>Total expenditure and net lending</b>	<b>26.0</b>	<b>28.8</b>	<b>29.7</b>	<b>30.3</b>	<b>31.1</b>	<b>32.2</b>	<b>35.1</b>
<b>Recurrent expenditure</b>	<b>14.8</b>	<b>16.1</b>	<b>16.4</b>	<b>16.5</b>	<b>16.6</b>	<b>17.0</b>	<b>20.2</b>
Defense spending	2.5	2.4	2.4	2.1	1.9	1.9	1.9
Pro-poor spending	6.0	7.0	7.5	7.9	8.4	9.0	12.8
Interest payments	1.2	1.7	1.7	1.6	1.5	1.4	1.0
Emergency food assistance	0.9	0.8	0.7	0.7	0.7	0.6	0.3
Other recurrent spending	4.1	4.1	4.1	4.1	4.1	4.1	4.1
<b>Total capital expenditure</b>	<b>11.2</b>	<b>12.6</b>	<b>13.2</b>	<b>13.8</b>	<b>14.5</b>	<b>15.2</b>	<b>15.0</b>
Central treasury (own-source capital outlays)	7.9	8.9	8.9	9.6	10.4	11.2	12.3
External project support (grants and loans)	3.2	3.7	4.3	4.2	4.0	4.0	2.6
<i>Of which: pro-poor spending</i>	8.2	9.8	10.4	11.2	11.9	12.6	12.9
<b>Overall balance</b>							
Including grants	<b>-3.0</b>	<b>-2.3</b>	<b>-3.8</b>	<b>-3.7</b>	<b>-3.2</b>	<b>-3.0</b>	<b>-1.9</b>
Excluding grants	<b>-10.7</b>	<b>-13.4</b>	<b>-14.2</b>	<b>-14.6</b>	<b>-15.4</b>	<b>-16.5</b>	<b>-18.9</b>
<b>Financing</b>	<b>3.0</b>	<b>2.3</b>	<b>3.8</b>	<b>3.7</b>	<b>3.2</b>	<b>3.0</b>	<b>1.9</b>
<b>External (net)</b>	<b>1.8</b>	<b>1.5</b>	<b>3.0</b>	<b>3.0</b>	<b>2.6</b>	<b>2.3</b>	<b>1.4</b>
Gross borrowing	2.0	1.7	3.1	3.1	2.7	2.4	1.6
Capital loans	1.5	1.7	1.8	1.8	1.6	1.4	0.9
Program loans	0.5	0.0	1.3	1.3	1.2	1.0	0.7
Amortization repayment	0.2	0.2	0.2	0.2	0.1	0.1	0.2
<b>Total domestic financing</b>	<b>1.2</b>	<b>1.0</b>	<b>0.8</b>	<b>0.7</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>
Domestic(net)	1.2	1.0	0.8	0.7	0.7	0.7	0.5
Banking system	0.9	0.7	0.5	0.4	0.4	0.4	0.3
Nonbank sources	0.3	0.3	0.3	0.2	0.2	0.2	0.2
<b>Memorandum items:</b>							
Population (millions)	73.0	75.1	77.2	79.2	81.2	83.2	95.5
Pro-poor spending (as a percent of GDP)	14.2	16.8	17.9	19.1	20.3	21.7	25.7
Pro-poor spending per capita (in US dollars)	21.9	27.1	30.8	35.0	39.7	45.0	78.4
Wages and salaries	6.8	7.3	7.4	7.7	7.9	8.3	10.2
External grant and loan financing (as a share of GDP)	9.7	12.7	13.6	14.0	14.9	16.0	18.6

Source: IMF staff projections at the time of the 2004 staff report. The estimated outcome for 2004/05 has since been revised as shown in Table 8.



Table 5. Ethiopia: Infrastructure Indicators

	Access to water source (percent of population)	Road Density (km/sq. km of land)	Installed electrical capacity per 1,000 persons (kW)	Electricity consumption per capita (kWh)	Average telephone mainlines per 1,000 persons
Year	2000	1999	2001	2001	2002
<b>Ethiopia</b>	<b>24</b>	<b>0.03</b>	<b>8</b>	<b>22</b>	<b>5</b>
Developed countries	99	0.43	2,044	8,421	585
Sub-Saharan Africa	58	0.07	105	456	15
Low income countries	76	0.18	n/a	317	28
Least developed countries: UN classification	62	0.06	n/a	89	7

Source: World Development Indicators.

estimated to be relatively high, such as medicines to treat HIV/AIDS and construction materials to build health clinics and schools.<sup>23</sup> The MDG scenario was also premised on a policy of liberalizing trade to facilitate import growth and slow the accumulation of international reserves.<sup>24</sup> Although the MDG scenario supported a relatively flat real exchange rate path, the projection was subject to significant risks. Given the unprecedented scale of the aid inflows, the historical trend in the import elasticity of demand might not be a reliable indicator.

### Debt sustainability

An essential aspect of the first-generation MDG scenario was ensuring that the macroeconomic and fiscal frameworks were consistent with public and external debt sustainability. Ethiopia had reached the Completion Point in 2004 under the Enhanced HIPC Initiative, which in conjunction with topping up assistance lowered the net present value (NPV) of its external debt to near the upper threshold of 150 percent of exports. The NPV of the total public debt was estimated at about 55 percent of GDP in 2003/04 of which the

<sup>23</sup> The exact import content of building materials for schools and clinics remains uncertain, and is an important issues for further work as discussed in the next section.

<sup>24</sup> Ethiopia currently has six import tariff bands, including the zero band. However, the average effective tariff is near 20 percent. Indirect taxes on international trade are also high at near 25 percent of taxable imports. The customs code also has numerous commodity- and industry-specific exemptions. As a result, the MDG scenario presumes measures to liberalize trade to ease the accumulation on international reserves.

domestic debt represented about 35 percent of GDP.<sup>25</sup> A key policy recommendation was to establish a number of separate targets for the domestic and external debt stocks and debt-service ratios. In this manner, fiscal policy could avert an upward creep in the interest bill that would crowd out pro-poor spending.

The still vulnerable public debt position suggested that scaled-up ODA should be delivered largely as grants. The large scaling up in ODA would have quickly led to an unsustainable jump in debt levels if provided as loans, even on highly concessional terms. As a result, the MDG scenario projected a large expansion in untied budget support grants to cover the scaled up public spending. This assumption also reflected the donors' shift in 2004 towards providing more predictable modalities of assistance that supported general government policies rather than earmarking grants to specific purposes that might not be consistent with development priorities.<sup>26</sup>

### **Absorptive capacity, public expenditure management, and the labor market**

The first-generation MDG scenario focused on the macroeconomic aspects of scaling up, implicitly assuming that microeconomic constraints were effectively addressed by supporting structural reforms. In this manner, the scenario outlined a framework that was consistent with a stable real exchange rate assuming a sufficiently high import elasticity of demand. However, the MDG scenario did not incorporate the quantitative impact of microeconomic constraints, such as increasingly tight labor markets or weak public administration that resulted in waste and inefficiency. The impact of infrastructure gaps on growth and private sector development were also difficult to capture in the first-generation scenario.

Strengthening public administration was identified as a key priority to strengthen absorptive capacity. Structural reforms to enhance budgetary management are summarized in Box 2. These include efforts to enhance budget preparation and timely reporting on a consolidated basis. The public expenditure management of local governments would also need to be substantially strengthened given that 70 percent of recurrent social spending would be spent by small district governments. In addition, more rapid auditing and finalization of the fiscal accounts are required so that budget planning is based on recent information about performance. Recent steps in implementing performance-based budgeting are also welcome to ensure that the envisaged scaling up of ODA is effectively utilized. Another critical aspect of the reform program is to strengthen the government's capacity to select and prioritize investment projects based on economic criteria, such as cost-benefit analysis.

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<sup>25</sup> The NPV of the total public debt is defined as the nominal value of the domestic debt plus the NPV of the external debt to account for the grant element of concessional foreign loans. Estimates of the NPV of public debt were subsequently revised following the Multilateral Debt Relief Initiative (MDRI) in 2006. A large portion of the domestic debt consists of non-interest bearing bonds owed to the central bank in connection with financing the 1998–2000 conflict with Eritrea.

<sup>26</sup> Berg and Qureshi (2005).

Increasing the supply of skilled labor would require major investments in the education system as well as alternative hiring practices. The dramatic jump in the required number of teachers and health care providers to achieve the MDGs (Box 1) will require large investments in the education system to meet the MDGs. However, the initial capacity of the higher education system is quite limited, essentially producing enough new skilled graduates to replace existing job turnover. This suggests that Ethiopia will need to pursue non-traditional solutions, such as training semi-skilled “Health Extension Workers” (HEWs) that will be deployed to rural areas to improve access to basic health care services.

### **Box 2. Reforming Public Financial Management (PFM)**

**Ethiopia is pursuing a comprehensive PFM reform under the umbrella of the Civil Service Reform Project (CSRP).** Enhancing administrative capacity is essential to improve the efficiency of public spending and to effectively absorb scaled-up donor assistance. In this context, accelerated implementation of reforms in budgetary management is especially critical.

- **Budget preparation:** To improve the link between policy objectives, appropriations and performance indicators, the government is embarking on a transition towards program-based budgeting. The government may proceed on a pilot basis with a number of line departments during 2005/06. In support of this initiative, the medium-term expenditure framework will also require strengthening. In addition, better coordination with donors on expected ODA disbursements is essential to address unpredictable aid flows.
- **Budget execution:** More timely reconciliation of financing and fiscal accounting data with banking statements and the monetary accounts of the central bank are critical to enhance accountability and transparency.
- **Budget reporting:** Timely reporting of the consolidated government outturn is essential to better manage macroeconomic and fiscal policy. As an urgent step, the authorities should clear the backlog of annual fiscal accounts to be finalized and audited so that current budget planning can be based on an assessment of recent performance rather than incremental costing. The authorities should also re-double efforts to include the extrabudgetary funds in fiscal reporting. Consolidated monthly reporting based on double-entry accounting data should become more readily available once the Budget Disbursement and Accounting system has been fully rolled out to budget users across all levels of government by end-2006. As an interim step, local governments should submit monthly fiscal reports to the federal consolidation department as well as the regional ministries of finance.
- **Public investment program:** The public investment program requires strengthened project selection, prioritization, and project management. The infrastructure program of the major public enterprises is reportedly integrated into the project planning of line departments. However, the rapid scaling up of large investment programs could lead to misallocations.

#### IV. A “SECOND-GENERATION” MDG SCENARIO FOR ETHIOPIA

The second-generation MDG scenario addresses several key limitations of the first-generation exercise. The key differences are summarized below and are discussed in greater detail in this section:

- **MDG Needs Assessment.** The scenario incorporates the estimated cost of achieving the MDGs as identified in the Needs Assessment, which is based on a bottom-up and donor-assisted costing exercise of the sectoral plans in the health, education, infrastructure, and other MDG-related sectors.
- **Sequencing the scaling-up process.** The annual phasing of the scaled-up aid and public spending is guided by the MAMS model that links sectoral spending plans to growth and real exchange rate movements. The MAMS model also incorporates macroeconomic feedback effects and absorptive capacity constraints.
- **Infrastructure focus.** Consistent with the government’s strategy articulated in the MDG Needs Assessment, infrastructure spending is relatively front loaded. In this manner, domestic productivity is projected to increase significantly ahead of scaling up social spending to improve human development indicators, which should lessen the Dutch disease problem.
- **Exit strategy.** The scenario incorporates an exit strategy from heightened aid dependence by programming a sufficient increase in domestic revenue to meet higher recurrent spending.

#### **Incorporating the MDG Needs Assessment and the MAMS model in the scenario**

The Needs Assessment estimates the total cost of achieving the MDGs at US\$101 billion (789 percent of current GDP) over the next 10 years. The public sector component is estimated at US\$76 billion (577 percent of current GDP). These estimates reflect the sum of cost projections by sector that do not account for cross-cutting synergies. For example, improving access to potable water reduces water-borne diseases that contribute to health costs, while expanding the education system eases wage pressures that lead to higher operating costs. Both the extent of synergies and the required level of infrastructure investments were determined in a computable general equilibrium model patterned after the World Bank’s MAMS. Factoring in these synergies reduces the estimated public sector cost by over 20 percent to US\$58 billion (441 percent of current GDP), which would increase foreign aid per capita from around US\$11 in 2004/05 to over US\$65 by 2015/16. The first generation MDG framework arrived at a remarkably similar estimate of US\$63 in per-capita aid by assuming a doubling of ODA as a share of GDP. However, the composition and sequencing of the scaled-up spending differs significantly with the focus in the second-generation model on frontloaded infrastructure. The MDG scenario described in what follows corresponds to the scenario summarized in Table 6.

Table 6. Ethiopia: Estimated Cost of Achieving the MDGs  
(In millions of constant 2005 US dollars and shares of 2005/06 Ethiopian GDP)

	MDG-UPP Scenario		MDG-LOW Scenario	
	mln USD	Percent of GDP	mln USD	Percent of GDP
<b>Education</b>	<b>9,583</b>	<b>72.7</b>	<b>6,650</b>	<b>50.4</b>
<b>Health</b>	<b>14,532</b>	<b>110.2</b>	<b>10,756</b>	<b>81.6</b>
Services	8,374	63.5	8,374	63.5
HIV/AIDS	6,000	45.5	2,224	16.9
Population	158	1.2	158	1.2
<b>Rural</b>	<b>11,288</b>	<b>85.6</b>	<b>11,073</b>	<b>84.0</b>
Water and sanitation	4,468	33.9	4,468	33.9
Food security	1,691	12.8	1,691	12.8
Agriculture and rural development	5,129	38.9	4,914	37.3
<b>Gender</b>	<b>76</b>	<b>0.6</b>	<b>76</b>	<b>0.6</b>
<b>Urban development</b>	<b>4,145</b>	<b>31.4</b>	<b>3,972</b>	<b>30.1</b>
<b>Private sector development</b>	<b>2,702</b>	<b>20.5</b>	<b>2,589</b>	<b>19.6</b>
<b>Public investment</b>	<b>33,797</b>	<b>256.4</b>	<b>22,999</b>	<b>174.5</b>
Roads	23,018	174.6	15,664	118.8
Irrigation/hydro/water infrastructure	5,549	42.1	3,776	28.6
Telecom	3,005	22.8	2,045	15.5
Power	568	4.3	387	2.9
Rail	1,657	12.6	1,128	8.6
<b>Total</b>	<b>76,123</b>	<b>577.4</b>	<b>58,116</b>	<b>440.8</b>

Source: The Millennium Development Goals (MDGs) Needs Assessment Synthesis Report.

The World Bank's MAMS model is the principal analytical tool linking MDG-related spending plans to projected macroeconomic outcomes. The MAMS is an economy-wide simulation model to assess the macroeconomic impact of alternative MDG strategies. The model adopts a standard dynamic general equilibrium structure with an added MDG module that disaggregates the education and health sectors in detail.<sup>27</sup> In this manner, the composition of functional spending can be linked to the attainment of specific health and education MDGs. The model also incorporates macroeconomic feedback effects. For instance, the effectiveness of a marginal dollar in aid declines with a real appreciation or higher wages. In addition, the model links private productivity growth to the stock of public capital through a calibrated cross-elasticity parameter. In this manner, front-loaded

<sup>27</sup> The MDG module includes four types of education, three types of health services, infrastructure spending, and water-sanitation spending. Refer to Lofgren and Diaz-Bonilla (2005) for details.

investments in education and infrastructure boost the responsiveness of domestic supply to gradually increasing social spending.

The MAMS model is a major step forward in terms of strengthening the analytical underpinnings of the MDG scenario, but the growth projections are vulnerable to model misspecification. As a calibrated simulation model, the conclusions of the MAMS model largely reflect the assumed model structure, behavioral relationships, and calibrated parameter values. However, the assumed endogenous relationship between infrastructure and productivity growth might not be empirically valid. For instance, the link between infrastructure and productivity could break down owing to weaknesses in public expenditure management, such as an ineffective public investment program that fails to select projects with a high social rate of return.

The growth projections in the MDG scenario are consistent with the Needs Assessment and supported by the MAMS model. The average target rate of growth is 7.2 percent as front-loaded infrastructure investments raise the productivity of other MDG-related spending. This growth rate is also in line with the MAMS simulation, which finds that higher growth rates enable private consumption to increase sharply. As a result, the headcount poverty rate is estimated to fall by more than half. This optimistic result stems from modeling assumptions that infrastructure projects are effectively selected and spill over into higher growth and household consumption. Growth accounting suggests that the projected acceleration in average growth rates would require a significant pick-up in TFP growth to 1.5 percent from just 0.5 percent historically (Table 7). In addition, the higher level of public investment would play a critical role in contributing to higher average growth. In line with the medium-term fiscal framework, public investment increases by over 15 percent of GDP leading total domestic investment higher by 18 percent of GDP.

## **The revised MDG fiscal framework**

### ***Coverage of fiscal activities***

The accounting coverage of fiscal operations in the MDG scenario is broader than the typical general government definition. A significant share of infrastructure investments would be undertaken by the largest public enterprises, including the Ethiopia Electricity and Power Company (EEPCo), the Ethiopia Telecommunications Company (ETC), and the railway. The aim of these programs is to extend electricity coverage from 15 to 50 percent of the population during the next five years, and improve telecommunications and Internet connectivity rates. These social development investments are generally not commercially oriented, and if prices are not permitted to rise sufficiently to cover the higher operating costs, then the budget might need to absorb these quasi-fiscal costs through explicit transfers, or implicitly through lower dividends and tax concessions. In addition, a significant share of these investments is to be financed by government-guaranteed bond sales to the major state-dominated commercial bank. Given these contingent liabilities, the fiscal presentation for the MDG scenario consolidates the full costs of achieving the MDGs, including the off-budget social development mandates of public enterprises.

Table 7. Ethiopia: Sources of Growth in the Second-Generation MDG Scenario

	Actual 1991/92-2004/05	MDG Scenario 2005/06-2015/16
<b>Real GDP at factor cost</b>	<b>4.1</b>	<b>6.9</b>
Agriculture	2.9	6.9
Non-agriculture	5.1	6.9
Real per capita GDP	1.4	4.7
<b>Nominal Investment/Nominal GDP</b>		
Total	19.6	37.6
Private	12.8	15.8
Public	6.5	21.8
<b>Growth accounting</b>		
Real GDP at factor cost	4.1	7.0
Capital stock	1.5	3.3
Labor	2.1	2.2
TFP	0.5	1.5

Source: Ethiopian authorities, and staff estimates and calculations.

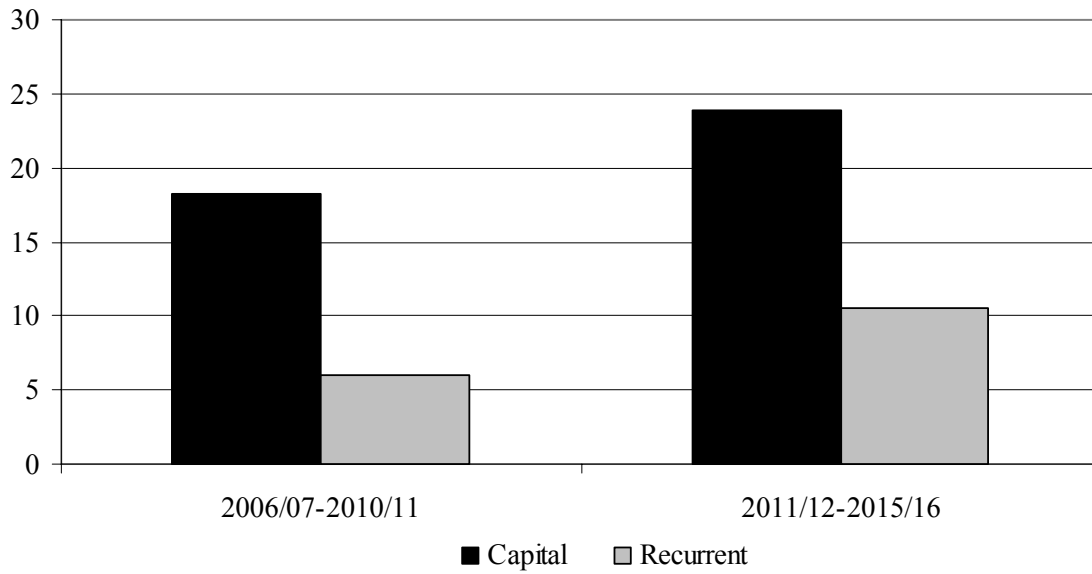
### *Infrastructure composition*

The fiscal strategy is driven primarily by the relative front loading of infrastructure investments. Figure 1 compares the phasing of recurrent and capital spending during the first and second five-year periods leading up to 2015.<sup>28</sup> Although infrastructure investments do not contribute directly to the MDGs, the relative front loading of this spending is projected to lessen the cost of recurrent social service delivery over the medium term while “crowding in” private savings and investment. In this manner, higher public and private productivity growth will mitigate the risk of Dutch disease by enabling the economy to more effectively absorb higher public spending with a relatively higher domestic content. External financing of the scaled-up level of capital spending would require a dramatic jump from 6.5 percent of GDP in 2005/06 to 20.4 percent of GDP in 2006/07, representing an increase in ODA per capita by US\$25 in just one year (Table 9).

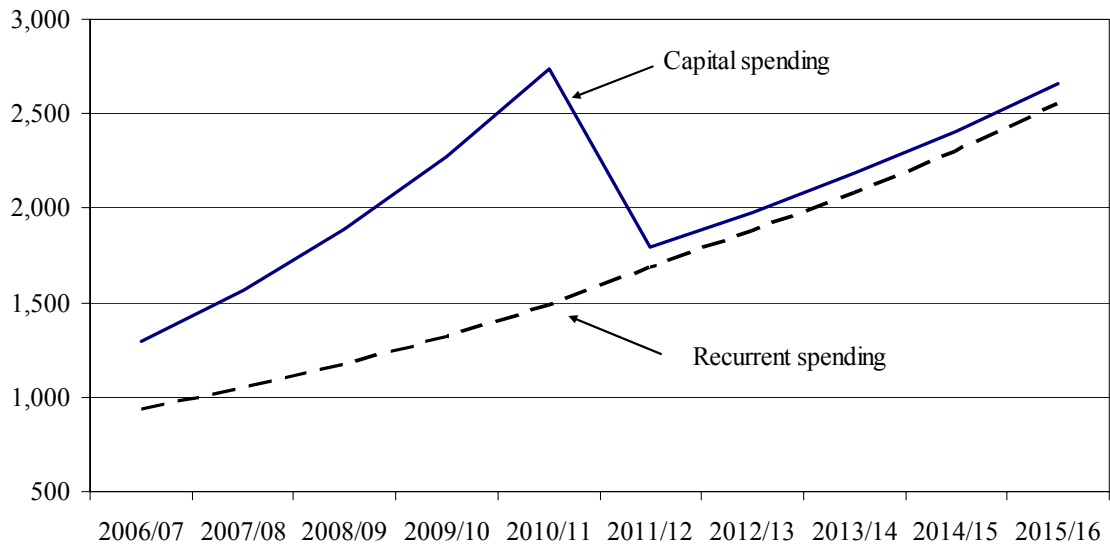
<sup>28</sup> The large decline in capital spending during 2010/11 in Panel B of Figure 1 corresponds to the completion of front-loaded investments in infrastructure.

Figure 1. Ethiopia: Phasing of Capital and Recurrent Costs to Achieve the MDGs

Panel A: Expenditure phasing in billions of constant 2005 US dollars



Panel B: Capital and recurrent spending in millions of constant 2005 US dollars



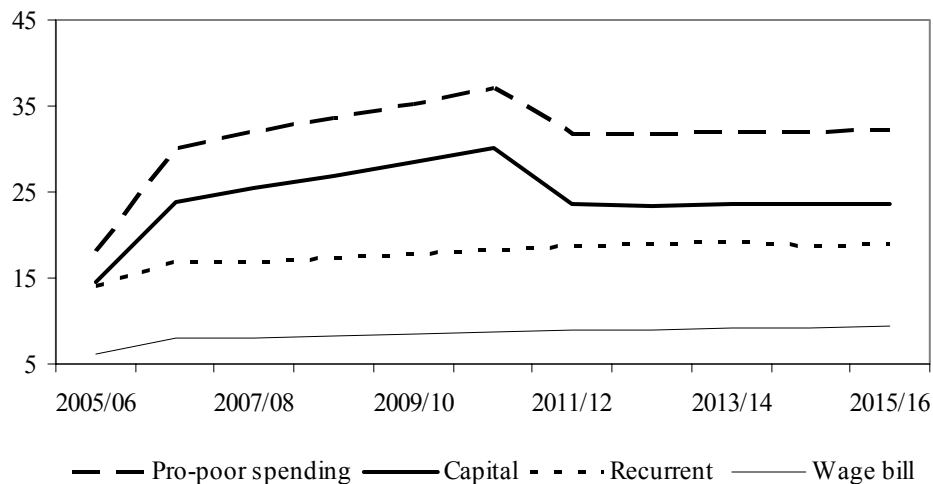
Sources: Staff calculations and World Bank's MAMS simulation.



### Expenditure composition

The medium-term fiscal framework involves a significant shift in expenditure composition (Table 8).<sup>29</sup> Total infrastructure spending on roads, power, telecom, and the railroad increases by 12.2 percent of GDP between 2005/06 and 2010/11. Capital spending on roads is the largest cost in the public investment program with an increase by about 6.3 percent of GDP between 2005/06 and the peak in 2010/11. In contrast, recurrent pro-poor spending increases steadily to reach 10.7 percent of GDP by 2015/16, or 5.3 percent of GDP higher than 2005/06. Defense outlays continue to adjust as a share of GDP to create additional fiscal space for pro-poor expenditures. Pro-poor spending peaks in 2010/11 at 37 percent of GDP, but remains steady at about 75 percent of total spending throughout the scenario (Figure 2). Between 2005/06 and 2015/16, pro-poor expenditures increase by almost four times in per-capita dollar terms.

Figure 2. Ethiopia: Expenditure Composition of the MDG Scenario  
(as a percent of GDP)



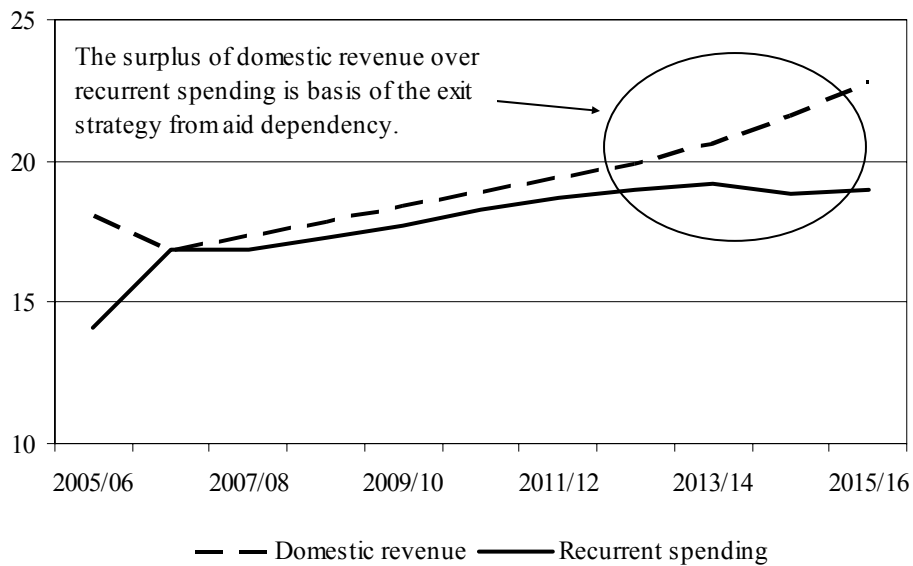
The public sector wage bill increases in line with the scaling up of recurrent social spending. The wage bill is projected to increase by 3.2 percent of GDP between 2005/06 and 2015/16 consistent with the findings in the first-generation MDG scenario. However, these projections are based on annual sequencing generated by the MAMS model. As a result, the projections depend on the success of investments in the education system in producing sufficient skilled workers to alleviate pressure on economy-wide wages.

<sup>29</sup> The annual phasing is based on simulations produced by the MAMS model. The phasing envisaged by the authorities entails an even sharper front-loading of infrastructure investments, but would require a corresponding larger scaling up of aid inflows in the initial five years.

### *Domestic revenue and the exit strategy*

Domestic revenue needs to increase dramatically to enable an orderly exit from heightened aid dependence after 2015. Following the 2015 target to achieve the MDGs, donors could revert to previous ODA levels. As a result, the exit strategy from aid dependence should aim to raise domestic revenue during the next 10 years so that at least recurrent spending can be financed from own resources. In this manner, the government can avoid recourse to unsustainable domestic borrowing to offset declining external assistance. The Needs Assessment projects higher domestic revenue by almost 7.5 percent of GDP. Consistent with this target, the MDG scenario targets a revenue ratio of just over 22.5 percent of GDP from under 17 percent of GDP in 2006/07. The higher level of domestic revenue would cover both the scaled-up level of recurrent spending at 19 percent of GDP, and a portion of the public investment program (Figure 3).

Figure 3. Ethiopia: Formulating an Exit Strategy from Aid Dependency  
(as a share of GDP)



The large revenue increase would need to be supported by both strong structural reforms in revenue administration and improved tax policies. Structural reforms need to focus on strengthening the large taxpayer office, and institute the functional reorganization of tax administration. In particular, the audit, compliance, and taxpayer service functions need to be significantly enhanced to support a more effective revenue administration. Reforms in the customs administration should aim to strengthen post-release verification, anti-smuggling efforts, and modernize human resources. The distortionary system of commodity- and industry-specific exemptions from import tariffs should be reviewed to broaden the tax base and lower the average effective tariff rate, which is currently high at almost 20 percent. In addition, tax policy reforms should aim to bolster buoyancy given the envisaged pick-up in growth. Figure 4 illustrates that achieving the domestic revenue target would place Ethiopia on the high end of current revenue ratios among sub-Saharan African countries. Tax policy

reforms also need to avoid an adverse incidence effect that would run counter to the pro-poor objective of the MDG strategy.

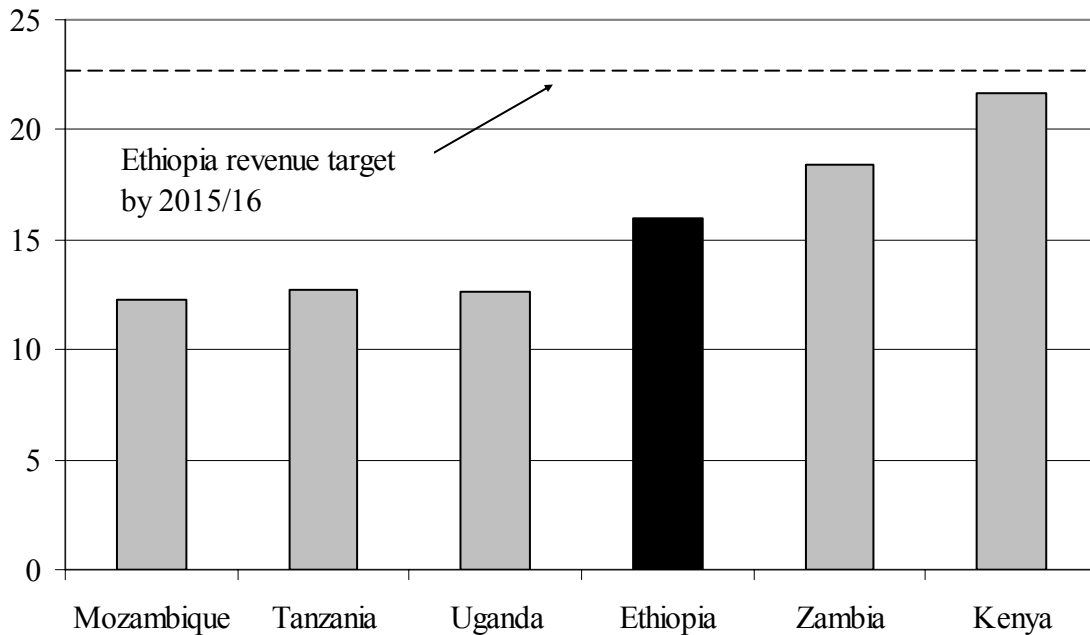
Table 8. Ethiopia: Consolidated Public Sector Fiscal Operations to Achieve the MDGs  
(as a percent of GDP)

	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2015/16
	Act.	Proj.	MDG	MDG	MDG	MDG	MDG	MDG
Total revenue and grants	20.7	22.8	35.5	37.2	39.0	41.0	43.6	38.4
Revenue	16.0	18.1	16.9	17.4	17.9	18.4	18.9	22.8
Tax revenue	12.7	13.2	13.8	14.4	15.0	15.6	16.2	20.6
Nontax revenue	3.3	4.9	3.1	3.0	2.9	2.8	2.7	2.2
Grants 2/	4.7	4.7	18.6	19.9	21.1	22.6	24.7	15.7
Total expenditure and net lending	25.6	28.6	40.8	42.3	44.2	46.2	48.3	42.6
Recurrent expenditure	13.5	14.1	16.9	16.9	17.3	17.7	18.3	19.0
Defense spending	3.0	2.6	2.3	2.0	2.1	2.1	2.1	2.1
Poverty-reducing expenditure	5.0	5.4	8.5	8.8	9.1	9.4	9.8	10.7
Education	3.0	3.1	3.1	3.2	3.3	3.4	3.5	3.4
Health	0.7	0.8	1.8	1.9	2.1	2.2	2.4	3.3
Agriculture	1.2	1.4	1.2	1.2	1.1	1.1	1.1	1.0
Roads	0.1	0.1	0.6	0.7	0.8	0.9	1.0	1.2
Public investment (energy, telecom, rail, water)	...	...	0.2	0.3	0.3	0.3	0.4	0.4
Private sector and urban development, gender	...	...	1.6	1.5	1.5	1.5	1.5	1.3
Interest payments	1.0	1.2	1.3	1.4	1.3	1.4	1.5	1.5
Emergency assistance 2/	0.7	0.5	0.5	0.4	0.4	0.4	0.5	0.3
Other recurrent spending	3.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Capital expenditure	11.9	14.5	23.9	25.4	26.9	28.4	30.0	23.6
Central Treasury (own-source capital outlays)	8.8	10.1	10.4	10.2	9.7	9.6	9.5	8.2
Project grants	1.6	2.6	11.7	13.5	15.2	16.9	18.5	13.4
Project loans	1.5	1.8	1.8	1.8	2.0	2.0	2.0	2.0
Of which: poverty-reducing expenditure	9.5	12.7	21.7	23.1	24.4	25.9	27.3	21.5
Education	2.0	3.0	3.0	3.1	3.2	3.2	3.3	3.3
Health	0.5	0.4	2.1	2.2	2.3	2.5	2.6	3.4
Agriculture	4.2	4.9	5.1	5.0	4.9	4.8	4.6	3.9
Roads	2.8	3.4	6.2	7.0	7.8	8.7	9.6	6.0
Public investment (energy, telecom, rail, water)	...	1.1	3.3	3.7	4.1	4.6	5.1	3.2
Private sector and urban development, gender	...	...	2.2	2.1	2.1	2.0	2.0	1.7
Overall balance								
Including grants	-6.0	-5.8	-5.3	-5.0	-5.2	-5.2	-4.7	-4.2
Excluding grants	-10.7	-10.5	-23.9	-24.9	-26.3	-27.8	-29.4	-19.8
Financing	6.0	5.8	5.3	5.0	5.2	5.2	4.7	4.2
Net external financing	2.5	1.8	1.8	1.8	2.2	2.2	2.2	2.2
Net domestic financing	3.5	4.0	3.5	3.3	3.0	3.0	2.5	2.0
<b>Memorandum items:</b>								
Nominal GDP	96,676	113,611	129,207	147,821	170,937	197,323	228,512	483,036
Real growth	8.8	5.2	6.7	7.0	7.1	7.2	7.2	7.2
Poverty-reducing spending (as a percent of GDP)	14.5	18.1	30.2	31.9	33.5	35.3	37.1	32.2
Poverty-reducing spending per capita in US dollars	22.2	30.8	54	60	68	77	87	116
Domestic public debt	34.8	33.6	33.1	32.1	30.8	29.7	28.1	21.9
Wages and salaries	6.1	6.2	7.9	8.1	8.2	8.4	8.6	9.4
External grants and net external financing (millions of birr)	7.2	6.5	20.4	21.6	23.3	24.8	26.9	17.8
in millions of US dollars	803	832	2,796	3,227	3,820	4,479	5,397	6,129
in US dollars per capita	11	11	36	41	47	54	63	64

1/ Fiscal year ending July 7.

2/ Baseline external financing and grants are provided by donors, and differ in some cases from government estimates.

Figure 4: Ethiopia: Regional Comparisons of Domestic Revenue Effort  
(as a share of GDP)



Source: IMF staff estimates and country authorities. Revenue ratios are calculated on the basis of data for 2003/4 for Kenya, Tanzania, and Uganda and calendar year 2004 for Mozambique and Zambia.. Ethiopia data correspond to 2004/5.

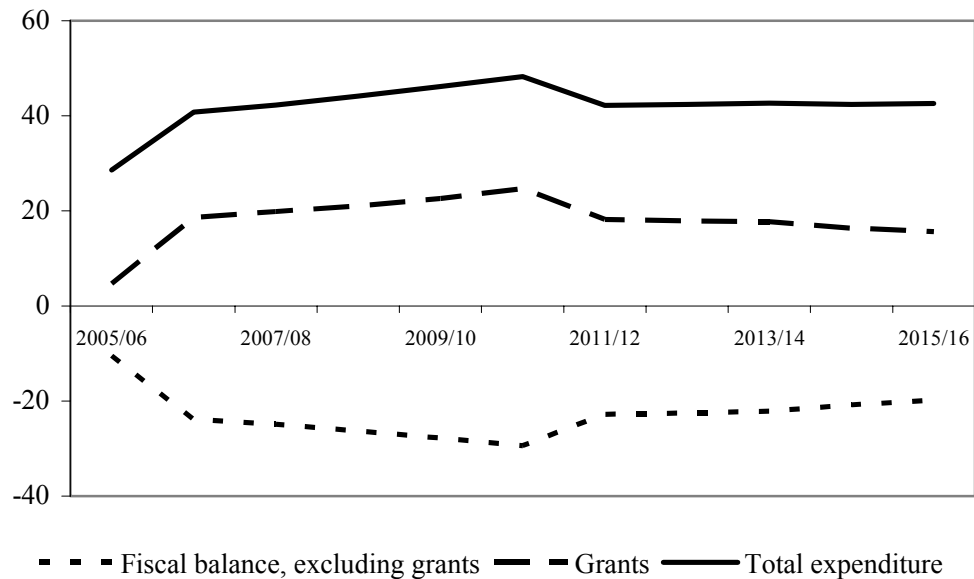
### Resource gaps and the need for external financing

Despite the large increase in targeted revenue, scaled-up spending would result in large annual financing gaps without increases in ODA. Figure 5 illustrates that the fiscal deficit excluding grants increases sharply, peaking in 2010/11 at almost 30 percent of GDP compared to 10.5 percent of GDP in 2005/06. MDG-related expenditure is the driving factor behind the widening fiscal deficit; however, domestic resources would be clearly inadequate to finance higher spending by 20 percent of GDP between 2005/06 and 2010/11. The resulting annual resource gaps are met by a projected increase in ODA, reaching over US\$6 billion in 2015/16 compared to about US\$800 million in 2004/05. The increase in financial assistance boosts per capita ODA from about US\$11 in 2004/05 to almost US\$65 by 2015/16.

The composition of scaled-up aid in the second-generation model is more heavily weighted towards earmarked project support than the first-generation scenario. The principal aid modalities in this scenario include project grants tied to infrastructure and road investments, and direct budget support to cover higher recurrent pro-poor spending and related capital spending in the health and education sectors. This represents a shift in the projected composition of aid compared to the first-generation model that presumed scaled-up ODA would be largely delivered as untied direct budget support. The shift in aid composition

reflects attention by donors to the transparent and accountable use of aid in light of recent concerns about political governance.<sup>30</sup>

Figure 5. Ethiopia: Assessing Aid Dependency  
(as a share of GDP)



### Managing Dutch disease

One of the central pillars of the MDG strategy is to sequence the scaled-up ODA and public spending in a manner that limits Dutch disease. However, mapping the sequencing of higher public spending into real exchange rate movements remains problematic. The front loading of infrastructure investments with a large import component might be successful in limiting pressure on domestic supply and inflation until productive capacity can improve. However, recurrent social spending with a relatively high domestic spending component still increases sharply as a share of GDP in the initial years of the scenario. Specifically, wage-intensive recurrent pro-poor spending increases by over 3.5 percent of GDP in the first three years of the scenario. Domestic productive capacity will take time to expand as private investment responds to the higher stock of public capital. As a result, the higher absolute level of recurrent social spending is likely to increase inflationary pressure in the short term that results in a real appreciation.

The MDG Needs Assessment and the MAMS model project significantly different real exchange rate paths. For example, the MAMS identified a cumulative real appreciation of about 20 percent by 2015, whereas the authorities' projected a more limited cumulative real appreciation of just over 6 percent. The Fund's MDG scenario follows the authorities' MDG

<sup>30</sup> For example, the World Bank is discussing a Protection of Basic Services (PBS) grant to ensure the continuity of donor financing for essential services despite increased concern about political governance.

Needs Assessment, but recognizes the upward risk in the scenario based on the MAMS result. In the event that the real appreciation is more substantial than projected in the MDG Needs Assessment, the external resources needed to achieve a given spending objective in domestic currency terms will increase proportionally.

The MDG scenario involves higher international reserves as a ratio of imports. International reserves are projected to increase from about three months in 2005/06 to 5.8 months by 2015/16. This level of international reserves is based on import projections linked to the estimated import component of scaled-up public investment, and annual export growth of about 10.5 percent. The increased level of reserves serves multiple purposes, such as absorbing part of the large inflow of ODA, while also providing an additional reserve cushion to absorb the impact of unpredictable aid disbursements. In this context, Ethiopia should revisit its fiscal and reserve management rules to ensure that reserves can be utilized to cushion short-term disbursement shocks.<sup>31</sup> The rising level of international reserves also implies that the full external resource transfer is being partially offset through monetary policy operations. As a result, donors might also be hesitant to finance rising international reserves rather than MDG-related spending.

### **Debt sustainability and aid management**

The second-generation MDG scenario continues to assume that scaled-up aid is provided as grants. The public and external debt position in Ethiopia is projected to improve dramatically following the extension of full debt relief by multilateral lenders under the recent Multilateral Debt Relief Initiative (MDRI).<sup>32</sup> The NPV of external public debt will largely be eliminated. However, the enormous scaling up required to achieve the MDGs would rapidly reverse the gains achieved under the Enhanced HIPC Initiative and the MDRI. Consequently, a key concern in these scenarios is to ensure that the scaling-up process remains consistent with public debt sustainability.

The high domestic debt level constraints the scope to smooth the impact of macroeconomic shocks and unpredictable donor disbursements. Domestic debt in Ethiopia is relatively high by regional standards (Table 9), but projected to decline steadily in line with favorable debt dynamics due to strong nominal GDP growth and negative real interest rates.<sup>33</sup> However, the high initial domestic debt constrains the scope for domestic borrowing to smooth the fiscal impact of macroeconomic shocks and unpredictable ODA disbursements. Pro-poor spending is also vulnerable to a potentially increasing interest bill following unexpected financial sector shocks that could raise real borrowing rates. Consequently, the scenario aims to steadily lower domestic debt to a more comfortable level of about 20 percent of GDP by 2015/16 from about one third of GDP in 2005/06.

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<sup>31</sup> Eifert and Gelb (2005).

<sup>32</sup> The IMF extended full debt relief to qualified HIPC countries in January 2006, and should be followed by the World Bank and African Development Bank later in 2006.

<sup>33</sup> Sustained negative real interest rates reflect significant excess liquidity in the domestic banking system, especially at the predominant state-owned bank at over 30 percent of deposits.

Table 9. Ethiopia: Comparison of Domestic Debt in Selected Sub-Saharan African Countries  
(as a share of GDP)

	2000/01	2001/02	2002/03	2003/04	2004/05
<b>Ethiopia</b>	<b>35.1</b>	<b>39.5</b>	<b>39.0</b>	<b>35.0</b>	<b>34.8</b>
<b>Selected East Africa countries</b>					
Kenya	19.6	21.9	25.0	26.8	24.8
Sudan	0.2	1.2	1.3	2.1	...
Tanzania	...	...	15.2	15.0	15.8
Uganda	4.1	5.9	9.0	9.5	9.7

Source: IMF staff estimates.

### **Absorptive capacity, public expenditure management, and labor markets**

The MDG scenario does not address weaknesses in public expenditure management, such as the capacity to effectively scale up the public investment program. This latter problem is especially pertinent to the second-generation scenario given the focus on raising domestic productivity through infrastructure investment. As outlined in Box 2, structural fiscal reforms remain essential in this scenario to enhance budgetary management, especially at the subnational level where the scaled-up resources to enhance social services will be ultimately spent. In this regard, ensuring timely fiscal reporting based on double-entry accounting data will be a priority to improve fiscal transparency and accountability. This represents a critical step to reassure donors that the scaled-up ODA is being well utilized. In addition, timely preparation and auditing of the fiscal accounts will be priorities to ensure that budget appropriations are tied to audited performance.

## **V. REMAINING CHALLENGES**

The second-generation MDG scenario entails numerous implementation problems that undermine its effectiveness as an operational framework to guide donors and medium-term budget planning. For instance, even if the front-loading of infrastructure successfully enhances domestic productivity to mitigate Dutch disease, the required increase in ODA by 14 percent of GDP (almost US\$2 billion) in the first year of implementation might not be available from donors. Recent political uncertainty amplifies this risk given new concerns about political governance following post-election instability. Consequently, budget planners are likely to be reticent about proceeding with expenditure commitments based on uncertain disbursements, while donors are likely to question the credibility of the front-loaded ODA. As a result, a second-best MDG scenario that entails a more gradual increase in performance-related ODA might be more realistic. The sequencing of infrastructure spending might need to be reconsidered in this light.

The scenario presumes that most of the scaled-up ODA is absorbed and spent, adding pressure for a real appreciation. Consequently, the average import elasticity of demand will

be the critical parameter that determines the impact of Dutch disease. Moreover, lumpy aid disbursements will present significant challenges for monetary policy to maintain stable liquidity and exchange rates during the scaling up process. These policy challenges highlight the need to revisit the sectoral costing of the MDG Needs Assessment to identify the import content of the additional spending. The projected import elasticity of private demand is another key variable given that the rising wage bill could result in rapid import growth of final consumption goods.

Many of the key issues are difficult to quantify using standard approaches. The first-generation model was based primarily on the Fund's financial programming framework. However, the approach lacked strong analytical underpinnings for key relationships, such as the link between spending and growth. The second-generation model was able to strengthen these underpinnings by drawing on outside models and cost assessments, such as the MAMS model and the MDG Needs Assessment. However, the potential impact of key absorptive capacity constraints in PFM are not adequately modeled, especially the capacity of the public investment program to select projects with a high return and the capacity of subnational governments to improve generally weak administrative capacity.



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