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Chapter 3

Kyrgyz Republic

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INTRODUCTION

The Kyrgyz Republic (or Kyrgyzstan) is making progress towards the millennium development goals (MDGs) and is on track to achieve the first goal of halving extreme poverty between 2001 and 2015. For other important human development goals, however, the targets are likely to be missed, due to resource constraints and limited policy implementation capacity. There have also been setbacks owing to problems of governance and political instability that impeded effective policymaking during parts of the 2000s. As a consequence, finding a realistic pathway to achieve all MDGs remains a challenge.

This chapter recognizes that governance needs to improve on many fronts, but focuses on macroeconomic and sector policies as well as on resources that would be needed to timely achieve the MDGs in Kyrgyzstan. Those requirements are assessed under assumptions that the country remains free of conflict in the years ahead. In the second quarter of 2010, social and economic development was affected by political unrest. It caused an acute humanitarian crisis in the southern part of the country and also affected the functioning of social services. The precise economic and social costs of these events are difficult to estimate and could not be considered in the analysis of this chapter.

An important part of the policy analysis presented in this chapter is model-based, using a country-specific version of the computable general equilibrium (CGE) model known as MAMS (see Chapter 1). The model was applied using data that identify the structure and functioning of the Kyrgyz economy. Model scenarios were simulated to determine to what extent the targets for achieving universal primary school completion (MDG 2), reducing child and maternal

mortality (MDGs 4 and 5), and increasing access to safe water and sanitation (MDGs 7a and 7b) would be achieved with a continuation of existing policies and what additional policy and resource efforts would be needed to achieve them. In order to determine the impact on the extreme poverty goal (MDG 1) and inequality, the scenarios analysis with MAMS for Kyrgyzstan was complemented with the application of a microsimulation methodology. As explained in Chapter 1, this methodology takes the labour market outcomes of the MAMS scenarios and simulates how those outcomes affect the full income distribution and how this, in turn, translates into changes in the distribution of expenditure using data from a household survey. Indicators of poverty and expenditure inequality are subsequently estimated.

The remainder of this chapter is structured as follows. In the second section we provide a description of economic policies and performance in Kyrgyzstan in the 1990s and 2000s with a focus on fiscal space available for possible increases in social spending. We next discuss social policies implemented in the country since independence and progress achieved towards the MDGs. The findings of the MAMS-based scenario analysis under alternative assumptions of financing the MDG strategy are discussed in the following section. A key finding is that under a continuation of current policies, only the extreme poverty goal would be achieved, and in order for the government to close gaps in the primary cycle of education, health, and water and sanitation, additional public spending requirements would amount to around 8 per cent of GDP per year. The final section reflects on political difficulties associated with several of the financing options that are considered in the policy scenario analysis, and, as a consequence, makes some recommendations regarding other policies that would have to be undertaken in order to achieve the MDGs.

MACROECONOMIC POLICIES AND ECONOMIC PERFORMANCE IN 1991-2009

Economic reforms and performance after independence

The economy suffered a sharp downturn in the first half of 1990s, which by 1995, had cut its size nearly in half. At about the same time, a series of complex institutional, economic and social reforms led to the creation of new state institutions. Once they had matured, the reforms enabled the decline in output to be reversed and macroeconomic conditions stabilized,

preventing a further collapse of social services. The contribution of the private sector (mostly small and medium enterprises, or SMEs) to GDP and employment rose to more than 50 per cent as a result of price liberalization, the privatization of state-owned enterprises, the de-collectivization in agriculture coupled with land redistribution, as well as external economic liberalization. In 1996, the economy started to recover, driven in particular by agriculture and gold production.

Nonetheless, the reforms were not implemented consistently and in several respects were not bold enough. The government budget deficit remained unsustainably high and many structural reforms (privatization, restructuring of the infrastructural services, among others) were incomplete, while social spending commitments exceeded fiscal capacity. These flaws gradually undermined social and economic stability, culminating in the financial crisis of 1998-1999. The crisis caused a sharp reduction in GDP growth and an increase in poverty.

After the crisis, more responsible economic management helped cut the rate of inflation to a low single-digit level. The introduction of a new tax regime favouring SMEs in trade and services and a complex healthcare reform helped improve the socio-economic situation. A period of sustained economic growth averaging 5 to 8 per cent per year began in 2000, but was interrupted by the global economic crisis of 2008-2009. Kyrgyzstan's remittances and exports declined, but GDP growth remained positive.

Because of the mixed growth performance during the period of independence, real GDP in 2009 was still slightly below the 1990 level. However, when measuring economic welfare in terms of GDP per capita at purchasing power parity (PPP), a somewhat brighter picture emerges. According to the World Bank's World Development Indicators, the country had managed to surpass the 1990 mean income of PPP\$1,813 by 2007, reaching a level of PPP\$1,980. Nonetheless, Kyrgyzstan remains a low-income country, according to the World Bank's classification.

Remittances from Kyrgyz labour migrants working mainly in Russia and Kazakhstan have acted as an engine of economic growth through its impact on private consumption. According to different estimates, between 250,000 and 500,000 Kyrgyz workers (between 12 and 25 per cent of the total labour force) have migrated in search of employment abroad. According to the estimates of the National Bank of the Kyrgyz Republic (NBKR), remittance income exceeded \$1.4 billion in 2008, the equivalent of 28 per cent of that year's GDP.

The informal sector is a major component of the Kyrgyz economy. Many workers and their families are employed in small-scale enterprises or are

self-employed in agriculture, retail trade, transport, construction, tourism, other services, as well as some industrial sectors (e.g., in sewing industry). Incomes and employment from these activities tend to be underreported and hence not fully accounted for in official GDP and labour market data.

Poverty and inequality

Since 1996, poverty has been measured in Kyrgyzstan following the World Bank's methodology. Poverty indicators are calculated on the basis of per capita household expenditures and comparing it with, respectively, the “general” or moderate, and the extreme or food poverty lines. Expenditure data are derived from the Kyrgyz Integrated Household Survey covering more than 5,000 households, which are interviewed quarterly. Poverty trends are in line with those of GDP growth. Between 2002 and 2009, moderate poverty declined from 54.8 to 31.7 per cent and extreme poverty from 23.3 to 3.1 per cent. In the same period, real GDP per capita grew cumulatively by 29.9 per cent. Consequently, the elasticities of moderate and extreme poverty rates with respect to per capita income growth are equal to -0.77 and -0.68, respectively. These elasticity values are somewhat high and are possibly explained by the trickle-down effects of low inflation—which was maintained in the country until 2007—and the growth of worker remittances which stimulated consumption and benefitted the rural poor in particular. Social policies have also been favourable to the poor. Despite the limited scope and efficiency of the income redistribution policies, some social protection and insurance mechanisms (including pensions) helped prevent extreme poverty from rising in the most difficult period of the country's development at the end of 1990s and in the early 2000s (World Bank, 2003).

Income inequality in Kyrgyzstan is relatively high and shows an ambiguous trend. According to the National Statistical Committee of the Kyrgyz Republic (NSC), the Gini coefficient for household incomes fluctuated in the range of 0.41-0.45 during the period 1996-2008, but declined to 0.37 in 2009. The precise causes of these fluctuations are subject to further investigation, but lie outside the scope of the present study.

Inflation

The history of the independent Kyrgyz economy started with a period of hyperinflation (1992-1994). Starting in 1994, the government avoided resorting to the inflationary sources of budget deficit financing and this

allowed for a gradual decline in inflation—as measured through the consumer price index—to 13 per cent in 1997. However, core problems causing macroeconomic instability—a huge budget and current account deficits—had not been eliminated and, as a result, the economy was strongly affected by the 1998-1999 Russian financial crisis. In 1999, the inflation rate climbed to almost 40 per cent. In the 2000s, the government switched to a much more conservative monetary and fiscal policy, with a view to reduce the government budget deficit and putting inflation control at the centre of monetary policy. The shift in policies helped curb inflation to nearly 5 per cent per year in 2001–2006. In 2007, however, consumer price inflation surged again to more than 20 per cent, pushed up by sharply rising world market prices for food and fuel. At the same time, money supply growth accelerated to 31 per cent per year on average during 2003-2007. Anti-inflationary efforts by the government and the NBKR and the collapse of global commodity prices after mid-2008 pushed the annualized inflation rate down to zero in December 2009.

Unemployment

Both an official estimate of the rate of unemployment and an estimate based on the International Labour Organisation (ILO) definition are used in Kyrgyzstan. The former is usually 2.5–3 times lower than that one would gauge using the ILO definition because incentives to register as unemployed are very weak (unemployment benefits are very low, vacancies provided by government employment services are usually not attractive, and so on).

The official unemployment rate was estimated at 0.1 per cent in 1992 and peaked at 4.3 per cent in 1996. Thereafter, it declined gradually and over the past decade it fluctuated between 2.8 and 3.5 per cent. The ILO-definition-based unemployment rate has been measured since 2003, when it was estimated at 9.9 per cent. It has oscillated between 8 and 9 per cent in the following years. The ILO definition seems to capture the unemployment reality relatively better, even as it shows little correlation with GDP growth. For example, robust GDP growth during the 2000s did not result in a visible decline in unemployment according to the ILO definition. This lack of correlation between economic growth and unemployment could be the result of the flexible and fluid forms of employment in the vast informal sector, which picks up much of the slack in the labour market.

In general, the labour market situation in the country is difficult and the number of well-paid jobs is limited. According to NSC, the average

monthly wage in 2009 was 6,161 soms (about \$150), inducing many to seek employment abroad (mostly in the Russian Federation and Kazakhstan).

Balance of payments

Kyrgyzstan is a small and very open economy. Many essential consumer goods (such as cereals, sugar and shoes) are imported, and a large number of economic agents are involved in exporting activities. The share of exports of goods and services in GDP has been growing constantly, reaching 56 per cent in 2009. The share of imports in GDP is much higher, at 93 per cent in 2008. Thus, the openness of the economy as measured by the ratio of total trade of goods and services to GDP was nearly 140 per cent in 2008–2009.

Imports have always been higher than exports. The trade deficit was especially high in 1995–1999 (except in 1997). Then, after a sharp devaluation of the som (by 250 per cent) in 1998–1999, the trade deficit was cut to near zero. This was short-lived, however, as the trade deficit started to widen again with the strong GDP growth and consequent accelerated import demand growth. Inflows of foreign direct investment (FDI) and foreign aid helped to finance the particularly large current account deficits of the 1990s. More recently, remittances have become a main source of financing of the trade deficit. Re-exports of commodities from China to Russia and Central Asia became another important source of foreign exchange. This form of export revenue is not captured by official statistics, however. Judging from the discrepancies between Kyrgyz statistics on imports from China and Chinese statistics on exports to Kyrgyzstan (in some years Kyrgyz customs reported less than one-tenth of the trade volumes reported by Chinese authorities) as well as on the size of the “errors and omissions” item of the balance of payments of Kyrgyzstan (which in 2008 was roughly equal to the current account deficit), it can be inferred that these flows are likely very large.

Public finances

The country inherited a system of public finances heavily dependent on transfers from the central budget of the former Union of Soviet Socialist Republics (USSR) with expenditures much exceeding the level of domestically mobilized revenues. For example, in 1992 the level of government expenditures was almost twice as high as the level of government revenues. Attempts to cover the budget deficit by monetary emission in the early 1990s resulted in hyperinflation. In the mid-1990s, the government

no longer used direct credits of the NBKR for deficit financing but switched instead to concessional foreign borrowing. The deficit remained very high at around 10 per cent of GDP (Figure 3.1). The large fiscal deficit proved unsustainable, causing macroeconomic instability. Relatively minor external shocks associated with the Russian financial crisis of 1998–1999 resulted in a sharp devaluation of the som, an acceleration of inflation, and a decline in GDP growth. Also, the external public debt (accumulated during the period of massive borrowing from foreign donors) levelled off above 100 per cent of GDP.

Figure 3.1
Kyrgyzstan: General government budget revenues and expenditures, 1992–2009

Source: Ministry of Finance of the Kyrgyz Republic (MoF), National Statistic Committee (NSC).

During and immediately after the Russian financial crisis, the government cut expenditures from 33.5 to 26.6 per cent of GDP between 1998 and 2001. This was done mainly by eliminating the indexation of government spending to inflation, as well as through discretionary spending cuts. The deficit of the general government budget was reduced to around 6 per cent of GDP. Strong growth during 2002–2008 permitted a substantial improvement of the budget situation: the budget showed a small surplus in 2008. In 2009, the situation changed dramatically and the deficit increased again (Figure 3.1).

The improvement in tax collection from 2001 to 2008 can be attributed to the growth of imports, because import taxes (VAT, excises and import tariffs) are the best administered component of the tax system. In 2007, the share of import taxes was close to 50 per cent of total tax collections.

Later on, due to the adoption of a new tax code in 2008, the structure of government revenue changed in favour of direct taxes and official transfers from abroad. Personal and corporate income taxes account for more than 20 per cent of total tax revenue. Personal and corporate income tax rates are flat and low at just 10 per cent, but nonetheless tax collection has improved compared with earlier periods when rates were much higher (including a top margin rate of 33 per cent for personal income tax and of 30 per cent for corporate income tax). Contributions to the Social Fund have the highest nominal rate (27.25 per cent of the payroll) among other taxes and mainly apply to incomes of incorporated enterprises. Self-employed, farmers and businesses in some sectors (trade, sewing industry etc.) only pay a lump sum tax with effective rates (specific by sector) much lower than those applied to incomes generated in the formal economy. A widely held perception in Kyrgyzstan is that the high tax rate, which is levied on a rather limited range of economic activities, turns the payments to the Social Fund into the most distorting tax, as it provides an incentive for businesses to remain in the informal economy. Domestic indirect taxes have the same nominal rates as those levied on imports, but their administration is less efficient and some sectors of the economy (such as, agriculture) are exempt from them, so collection of these taxes is not as large.

Altogether tax revenue represented 22.2 per cent of GDP in 2009, which both the government and private sector agents perceive to be rather high and a possible impediment to growth. Therefore, any substantial increase in nominal tax rates is hardly possible. As already mentioned, in 2008 a new tax code was adopted, which introduced several important changes to the tax system. Its main intention was to reduce the overall tax burden. Some taxes were eliminated, and new ones introduced. At the time of writing it was still too early to gauge the full impact of the tax reform, but one radical change—the reduction of the nominal VAT rate from 20 to 12 per cent—resulted in a sharp drop of tax revenue in 2009. The expected increase in the VAT base after lowering the tax rate was yet to materialize. In view of the very large budget deficit, further tax cuts would not seem to be desirable from a medium-term perspective. There is scope for further improving the tax administration and collection methods. Tax revenue may also obtain a boost from the post-crisis recovery in response to tax incentives provided in the past.

Non-tax revenues are also an important source of government revenues. To a large extent, these are revenues of budget-financed institutions (including medical establishments, universities etc.) from paid services. These revenues are accounted for in the budget, but remain with the entities

offering the services, such that the government has limited discretionary power over these resources.

Key components of general government expenditures are purchases of goods and services, wages, pensions and different transfers and subsidies. In recent years, the government has substantially increased domestically financed capital expenditures through investments in the construction of hydropower stations and social infrastructure. The government allots more than half of its budget to social sectors (education, healthcare, social protection including pensions, and utilities).

To finance its deficits, the government relies mainly on foreign financing. According to the law adopted in 1997, monetary emission can no longer be used as a means of deficit financing. Domestic borrowing through government securities is marginal and often negative.

Kyrgyzstan started its history as an independent country without foreign debt. Extensive borrowing in the beginning and middle of the 1990s led to some debt accumulation (Figure 3.2), which did not seem to be very high but became unsustainable after the national currency devaluation of 1998–1999. The main external creditors of the Kyrgyz government are the World Bank, the Asian Development Bank and the International Monetary Fund. Kyrgyzstan was granted two rounds of debt relief on highly concessional terms by the Paris Club. In 2006–2007, the country was on a brink of receiving debt relief in the framework of the Heavily Indebted

Figure 3.2
Kyrgyzstan: Total and public external debt, 1993–2009

Source: NBKR.

Poor Countries (HIPC) Initiative, but after some hesitation the government decided to refrain from joining the initiative. The debt situation improved radically after that, due to a healthier economic situation, the national currency appreciation against the United States dollar and the associated depreciation of mostly dollar-denominated debt as well as an increase in the grant element of aid. It must be noted, however, that the debt situation is still fragile: the debt indicators started to deteriorate again as a result of the 20 per cent devaluation of the som in late 2008 and early 2009 as well as increased borrowing for infrastructure projects, near-zero growth and a worsening of government revenue collection and exports.

Foreign aid provided by multilateral institutions and bilateral donors was extremely important for budget financing in the 1990s and in the early-2000s. Its role diminished somewhat later on though, as tax collection improved. In 2009, however, it dramatically increased again to more than 5 per cent of GDP.

Terms-of-trade and other external shocks

The small and open economy of Kyrgyzstan is highly vulnerable to external and weather shocks. The Russian Federation and Kazakhstan are major export markets for Kyrgyz goods and services, as well as major recipient countries of Kyrgyz migrants and providers of critical imports. Developments in these countries strongly affect economic development in Kyrgyzstan. The economies of the Russian Federation and Kazakhstan have shown strong performance during the 2000s, supported by buoyant oil prices. This has stimulated Kyrgyz exports and remittance income. It has also attracted FDI to the country and reduced the gap between labour supply and demand as increasing numbers of migrants exited the domestic labour market. The customs union between Belarus, Kazakhstan and the Russian Federation, which became operational from July 2010, may affect Kyrgyz exports and especially also re-exports of Chinese goods to the countries of the union, given the much stricter custom control procedures it will introduce.

The recent global increase in food and fuel prices substantially affected both relative prices and general inflation in the country as this relies on imports of gasoline, kerosene, natural gas and other fuel. Kyrgyz exports are rather diversified, providing greater resilience to export price shocks. World prices for gold (the largest export item) do influence export revenues significantly, but not as much the economy at large because much of the revenue is retained by foreign companies exploiting gold production. As

a result, revenues (and volatility therein) are offset by a financial outflow. Furthermore, production of this commodity is weakly linked to other sectors of the economy.

Weather conditions have a strong influence on agriculture, which is still the largest sector of the economy. Recently, droughts also affected electricity production in the country. Successive years of below-average inflow of water into reservoirs feeding hydropower stations significantly reduced energy generation capacity and negatively affected industrial production and living conditions of the population in 2008-2009.

In sum, the government managed to maintain short-term macroeconomic stability during the 2000s, despite a number of exogenous shocks that hit the economy. Nonetheless, the economic situation remains fragile. The fiscal burden is considered to be high with limited scope for further increasing tax revenue because of the vast informal sector (and hence limited tax base) and political and administrative (limited revenue collection capacity) constraints. Consequently, the options for financing government spending aiming at achieving MDG targets seem limited.

SOCIAL POLICIES AND MDG ACHIEVEMENT

The country inherited a well-developed but expensive system of social services from the Soviet period that was as extensive as that more typically found in countries with much higher income per capita. Therefore, since independence social policies have been mainly directed at sustaining existing levels of social development in a context of much reduced resource availability.

Overview of policies and reforms in key social sectors

After independence, the education system was reformed, including: (i) limiting the scope of government commitments to support education, including by reducing mandatory education from 11 (general secondary) to 9 grades (basic secondary) and by allowing a substantial reduction in the pre-school enrolment rate; (ii) concentrating resources on those components of the system left in the public domain (e.g., maintenance of near universal basic secondary school enrolment); (iii) allowing private provision of education services; and, (iv) tailoring educational curricula better to meet the requirements of the labour market.

Before 1993, general secondary education (grades 1–10/11) was mandatory and available for all children free of charge. With the adoption

of the Constitution in 1993, basic secondary education (grades 1-9)—which comprises primary education (grades 1-4)—became mandatory. Access to general secondary education remained free in public schools, but it was no longer guaranteed to everybody. Government funding of pre-school education was also substantially reduced. Most government resources are allocated to basic secondary education. In 2009, the number of schools had increased by 25 per cent in comparison with 1990 and the student population increased by 12 per cent during the same period. The student-to-teacher ratio is low and barely changed from 13.7 in 1990 to 14.8 in 2009. Despite the government's efforts to protect teacher salaries, financial constraints caused the average pay of teachers to fall from 77 per cent of the average wage in the economy in 1990 to 59 per cent in 2009. Most of the budget for primary, basic and general secondary education is spent on teacher salaries and utility services for schools, leaving little for new textbooks, equipment and other items necessary for the normal education process. This has affected the quality of education.

Private educational establishments have been created at all education levels and are financed by parents' contributions. Their role is still marginal in the overall pre-school, primary, basic and general secondary education systems, covering less than 1 per cent of all enrolled children. The role of private institutions is much more important in tertiary education: 33 per cent of all universities are private and 11 per cent of students are enrolled in private universities.

While these policies allowed preserving and improving enrolment, as further explained below, the quality of education has visibly deteriorated. For example, the results of an independent assessment of fourth grade students' learning achievements show declining educational performance: in 2001, 80 per cent of the students successfully passed a test on math and 60 per cent a test on reading, but by 2007 these numbers had dropped to, respectively, 38 and 36 per cent. Similarly discouraging results were recorded by the 2006 and 2009 PISA studies on schoolchildren's literacy in reading, math and sciences. The quality of education thus seems to be of major concern in Kyrgyzstan.

Unlike its mostly conservative education policies, since 1996 the government has been implementing a far-reaching health reform program, aimed at increasing the effectiveness of the healthcare system and maintaining near-universal access of the population to healthcare services. Implementation of the reform received significant support from the World Health Organization (WHO), the World Bank and the donor community. Key components of this reform are: (i) strengthening primary care and enhancing the efficiency of the network of healthcare establishments;

(ii) changing the financing mechanisms in the sector, including the introduction of mandatory medical insurance and patient's co-payments, the transition from input-based (e.g., per bed) to output-based (e.g., per treated case) system of financing of medical establishments, and so on; (iii) changing medical treatment practices towards improved quality of medical services and introduction of elements of evidence-based healthcare; and (iv) transferring some healthcare system functions (e.g., provision of medicines and dental care) to private establishments.

The health reforms are still ongoing and it is still premature to make definite judgments on their success or failure. Some outcome indicators of the health system reform are improving (e.g., more effective use of available resources), as further indicated below, whereas others are not (e.g., the level of patients' unofficial payments during treatment in hospitals). However, the main result of the reforms is that the healthcare system seems to be sustained at considerably lower levels of government health expenditures without radically deteriorating the health situation in the country: that is, efficiency has improved.

Last but not least, access to safe water has improved and covered 90.4 per cent of the total population in 2009, up from 81.3 per cent in 1996. Progress in access to improved sanitation has been much more modest, as coverage expanded from 24.4 per cent in 1996 to only 25.2 per cent in 2009. In fact, there has been a setback from the coverage of around 30 per cent that had been reached in the early 2000s. Major gaps are mostly seen in rural areas where, compared to urban areas, access to safe water is between 15 and 20 per cent lower and access to improved sanitation is between 50 and 60 per cent lower. In the cities these services are provided by specialized utility companies, whereas in rural areas they are mostly provided by the communities themselves.

Government policies in water and sanitation are focused mainly on sector regulation, rehabilitation of existing and construction of new infrastructure and institutional development. Regulatory activities cover quality standards (e.g., a law on drinking water was adopted in 1999) and the level of user fees that utility companies are allowed to charge to consumers. Institutional development relates to establishing and enabling self-governing Rural Communities of Drinking Water Users, which received all previously created rural water pipelines as well as responsibilities for this infrastructure operation and maintenance and setting of water tariffs.

Recurrent expenditures of utility companies and rural water suppliers are covered by user fees, but revenue is not sufficient to finance new

investments in any significant degree. As a consequence, water and sanitation infrastructure development relies almost entirely on government spending. In 2002, the government introduced the “Taza Suu” (clean water) program, with loans from the World Bank and the Asian Development Bank worth \$70 million. Hundreds of villages and water supply projects have been implemented in the framework of this program. Yet, much more public investments will be needed to provide all of the population with access to safe water and appropriate sanitation. At the same time, it seems imperative that also households take greater responsibility in financing and implementing improvements, especially in rural areas, in order to accelerate the expansion of coverage of sanitation.

Public social spending

Social spending has always been a very large component of government expenditures in Kyrgyzstan. Since 1990 the share of social spending in general government expenditures has been above or equal to 50 per cent (Figure 3.3). The share of these expenditures was especially high in the mid-1990s, when the economy was going through its most difficult episode. In the 2000s, the government managed to sustain and even increase the shares of education and health in total expenditures, as these were considered priority sectors. At the same time, from the late 1990s, the share of social protection spending has been on the decline, in part because the government allowed for a reduction in social benefits in real terms; pensions did increase in real terms, but fell relative to wages.

However, while the share of social sectors in total government expenditures has always been high, the real value of these expenditures has had different dynamics. As total government resources were shrinking in real terms and as a percentage of GDP in the 1990s, even the increase in the share of social expenditures did not prevent them from falling sharply in absolute terms. Real per capita social expenditures dropped to half or less between 1990 and 2000. The situation changed in the 2000s, when the level of all types of social expenditures corrected for inflation recovered. The recovery was stronger in expenditures on education, housing and community services than those for social protection. Yet there was no full recovery, as in 2009 the per capita spending on education, health and social protection was still only about 65–75 per cent of 1990 levels.

While public social spending has declined, private spending on similar services has increased with government encouragement. Only

Figure 3.3
Kyrgyzstan: Composition of social expenditures, 1990-2009

¹ Excluding Public Investment Program (PIP).

Source: NSC.

few establishments engaged in social service provision are wholly private. Government establishments nowadays often charge consumers for the use of services to complement funding from the government budget. In 2009, 15 per cent of total financing of government educational establishments came from user fees (this share is higher in secondary professional training and especially in university education). Co-payments of patients in the public healthcare system contributed 10 per cent of total resources of the sector. When also accounting for other out-of-pocket expenses in healthcare (medicines, informal payments, etc.), users covered 57 per cent of total health spending.

The reduction in public spending on education and health contrasts with policies of neighbouring countries which are investing heavily in human capital. The current level of public education and health spending in Kyrgyzstan should be seen as inadequate to ensure minimum service quality by any modern international standard.

MDG progress in 1991–2008

In Kyrgyzstan, the first MDG progress report was published in 2003 and the second in 2009. Taking into account its development situation, the country has substantially adjusted some of the MDG targets and indicators.

A summary of key MDG indicators, most of which are relevant for the purposes of the scenario analysis presented below, is provided in Table 3.1.

As follows from the table, the assessment of the country's progress towards the MDGs is mixed. The country has already achieved the goal of

Table 3.1
Kyrgyzstan: Actual and expected MDG progress

	Base year		Last observation		2015 target	Progress assessment
	Year	Value	Year	Value		
MDG 1: reduction of extreme poverty						
Extreme poverty level (national poverty line) (per cent)	2000	32.9	2007	6.6	12.9	On track
MDG 2: Achieve universal basic secondary education						
Net enrolment ratio in basic secondary education, girls (per cent)	1990	92.3	2007	97.3	100	On track
Net enrolment ratio in basic secondary education, boys (per cent)	1990	91.7	2007	97.8	100	On track
MDG 3: Promote gender equality and empower women						
Ratio of women's wages to men's wages (per cent)	1996	73.0	2007	67.3	100	Off track
MDG 4: Reduce child mortality						
Under-five mortality rate (per 1,000 live births)	1990	41.3	2007	35.3	10.4	Off track
MDG 5: Improve maternal health						
Maternal mortality ratio (per 100,000 live births)	1990	62.9	2007	51.9	15.7	Off track
MDG 6: Combat HIV/AIDS, malaria and other diseases						
Tuberculosis prevalence (cases per 100,000 people)	1990	52.1	2007 ¹	115.5	52.0	Off track
MDG 7: Ensure environmental sustainability						
Access to an improved water source (per cent of the population)	1996	81.3	2007	93.0	90.0	On track
Access to improved sanitation (per cent of the population)	1996	24.0	2007	24.2	40.0	Off track

¹ 2001 value of this indicator was 167.8

Source: United Nations Development Programme (2009)

extreme poverty reduction (MDG 1) and, based on a linear continuation of past trends, it seems to be on track with regards to providing universal access to basic secondary education¹ (MDG 2) and access to an improved water source (MDG 7a). However, as mentioned above, the poverty situation in Kyrgyzstan is precarious and subject to influences of exogenous shocks. The main problem in education is not so much with access to schooling, but rather with the quality of education, as said. The second MDG Progress Report (United Nations Development Programme, 2009) warns that quality of potable water does not always correspond to standards. The country has made insufficient progress towards reducing child and maternal mortality (MDGs 4 and 5) and tuberculosis prevalence (MDG 6), such that it would be off track with regard to meeting the corresponding targets. There has been no progress—setbacks, rather—towards the goals of gender equality (MDG 3) and access to improved sanitation (MDG 7b). In all, the country faces enormous challenges to achieve the MDGs by 2015. Some targets will likely not be achieved without significant additional policy efforts.

Some MDG progress can be attributed to lower inflation resulting from more prudent macroeconomic policies in the 2000s. Certain changes in the economic and social situation also have been important, such as increased labour migration to abroad generating remittance income, reduced fertility causing a decline in child and maternal mortality, and population becoming increasingly urban which has eased the expansion of the clean water supply. Social policies have been unable to prevent service quality from deteriorating, especially in education and more sophisticated healthcare. Limited supply of quality services is being balanced with existing demand mainly by means of out-of-pocket user payments. As a result, the poor population is in an even more disadvantaged position to access quality services.

MODEL-BASED SCENARIO ANALYSIS OF AN MDG STRATEGY FOR KYRGYZSTAN

The analysis presented in this section considers two types of scenarios with MAMS for Kyrgyzstan. The first is a baseline or business-as-usual scenario of unchanged policies and absence of major exogenous shocks during 2011–2015. Second, taking the baseline as the benchmark, a set of MDG-achieving scenarios are assessed in which public spending is scaled up to the level required to meet some or all MDG targets, using alternative mechanism of financing.

Calibration of MAMS for Kyrgyzstan

MAMS includes three key data blocks: a social accounting matrix (SAM); miscellaneous macroeconomic, social and education-related time series; and elasticities values.

The Kyrgyz SAM has twelve production sectors (and their corresponding goods or services produced), of which five are directly associated with the MDG (i.e., three cycles of education, health, and water and sanitation). Labour is disaggregated into three categories defined by the level of education achieved by a worker. The Kyrgyz SAM for MAMS includes a capital account per institution and investment by sector of destination. Altogether the SAM contains fifty-four accounts.

The base year of the SAM and MAMS for Kyrgyzstan is 2006. This year has been selected because that was the year for which the most recent input-output table—a central part of the SAM—was available. Other data sources used for the construction of the SAM include the balance of payments (NBKR), fiscal accounts (MoF and IMF), as well as detailed information for the education sector needed to estimate parameters related to student behaviour by cycle (UNESCO data supplemented by NSC data).

The calibration of the model also required using data on population in total and by age cohorts, employment by labour type, unemployment rates by labour type, government investments and consumption by sector, and public and private foreign debt. Sources for these data are also NSC, NBKR and MoF, as well as the UN Department of Statistics for population dynamics.

For the proper estimation of some elasticities, such as those related to structural behaviour in production and trade, sufficiently long time series would be needed for periods of relative economic stability. Unfortunately, given its relatively short history of independent development and the turbulent conditions of transition from one social-economic system to another, Kyrgyzstan lacks such data. Therefore, values of a number of elasticities have been borrowed from models of other countries that are comparable to Kyrgyzstan in terms of size of the economy, its sector structure, and degree of openness—including existing studies on MAMS applications (see, for instance, Sánchez and others, 2010). Multiple runs of the model for different scenarios demonstrated the ability of chosen elasticity values to provide a reasonable description of behaviour of the Kyrgyz economy. More details about the calibration procedure and some of the key assumptions made to input data and key elasticity values are provided in Mogilevsky and Omorova (2011).

Baseline scenario

A baseline scenario was first generated to reproduce the aggregate functioning of the Kyrgyz economy for the period 2007–2010. It is calibrated to an assumed GDP growth rate of 7 per cent per year during 2011–2015, which is consistent with the government's and IMF's projections. Export and import prices and remittances in the coming years are expected to grow by 5 per cent per year, which reflect previous trends in these variables and seem to be conservative assumptions. The baseline scenario also assumes that all government expenditures change in fixed proportion to domestic absorption. Foreign transfers received by the government and FDI are assumed to change in a fixed proportion relative to GDP, while foreign borrowing by the government is expected to stay fixed in United States dollar terms at the 2006 level.

So-called closure rules were also used to maintain macroeconomic balances (government budget, savings-investments, and external balance) and equilibrium in the factor markets. Accordingly, taxes adjust endogenously to clear the government budget balance; savings become equal to investment by endogenously adjusting the households' savings rate; and external balance is maintained through a flexible real exchange rate. Labour markets for all three labour types are initially cleared through the changes in the level of employment, as long as the unemployment rate is higher than a minimum rate of 4 per cent. Real wage adjustment clears the labour market when the unemployment rate drops to the minimum. Simulations show that quantity adjustment tends to clear supply and demand for relatively abundant labour types (that is those with basic secondary education and with tertiary education), while price (wage) adjustment tends to clear the market for the scarce labour types (that is, workers with general/professional secondary education).

Simulation results for the baseline scenario show that of all GDP components only exports are expected to grow faster than GDP; all other components would grow during 2007–2015 by an average rate in the range of 4–5 per cent per year (see Table A3.1 in Appendix A3.1). Government expenditures would represent 31.3 per cent of GDP, on average, which is below the 2006 level. Tax revenue increasingly finances government spending, gradually replacing foreign borrowing. This outcome results from the assumed recovery of economic growth in 2011–2015, lifting tax revenue in spite of recent tax rate cuts. In the baseline, the share of MDG-related government expenditures declines from 8.2 per cent of GDP in 2006 to an average of 7.0 per cent of GDP per year during 2007–2015.

The baseline scenario does not imply any changes in the structure of labour demand, so all changes on the labour market are induced by changes in the composition of the work force. The skill composition of the labour force and employment shifts in favour of unskilled workers (those with basic secondary education or less). This is the consequence of the transition from the mandatory general secondary to the basic secondary education made in 1993. Young people, many of whom leave the education system after completion of the first cycle, would be gradually replacing retiring workers with mostly general/professional secondary education. Due to high university enrolment, the number of workers with higher education is expected to grow faster than the demand for their skills. This dynamics of labour supply explains changes in real wages, implied by the baseline scenario: wages for abundant labour type with basic secondary education decrease relative to those with other skill levels, whereas wages for relatively scarcer labour with general/professional secondary education increase.

The baseline scenario leads to some improvement in all MDG indicators under consideration; nevertheless, none of the targets for MDGs 2–7 would be achieved (Figure 3.4).

MDG-achieving scenarios

The MDG scenarios differ from the baseline in that government expenditures no longer change in fixed proportion to domestic absorption, but adjust in function of spending needs for achieving the MDG targets for education, health and access to drinking water and sanitation. The scenarios also consider alternative sources of financing for the additional government spending. Domestic public borrowing is not considered to be a feasible financing option because the domestic capital market is too shallow. Therefore, increased tax collection (tax), foreign transfers to the government (ftr) and a mix of these two are considered as options in the subsequent analysis. The option of foreign borrowing (fb) has also been added to the analysis for illustrative purposes only, because this option is not seen as politically feasible given the already high level of external indebtedness and the reluctance of the government to borrow abroad in order to finance social programs.

The financing source matters. Tax financing, for example, means substantial resources are to be redistributed from the private sector to the government budget. This will likely slow growth of private consumption and crowd out private investments, affecting overall economic growth

Figure 3.4
Kyrgyzstan: Dynamics of the MDG indicators under the baseline scenario, 2006-2015

Source: Authors' estimates based on MAMS for Kyrgyzstan.

and poverty reduction. Financing through foreign transfers increases the total amount of resources in the economy and does not reduce resources of the private sector, but a massive inflow of foreign exchange to the economy could cause “Dutch disease” effects through an appreciation of the real exchange rate, eroding export competitiveness and increasing import demand. Foreign borrowing would induce similar effects but with the difference that this kind of financing and its borrowing cost build up a debt stock. A mixed financing option that combines increased taxation and foreign transfers would produce results somewhere in between the two extreme cases—tax and ftr—requiring less reduction in economic growth rates than the tax option alone. In this chapter’s scenario analysis the mixed financing option consists of increasing the collection of domestic indirect taxes (VAT, excises, sales tax, etc.) up to 15 per cent GDP (from 11.7 per cent in 2006) and allowing foreign transfers to the government to be scaled up endogenously as much as needed to finance the required additional MDG spending.

Altogether, ten MDG-achieving scenarios were simulated and scrutinized under the different financing options that would be relevant for Kyrgyzstan, targeting one or two goals at the time, or all of them simultaneously: MDG2-ftr, MDG2-tax, MDG45-ftr, MDG45-tax, MDG7-ftr, MDG7-tax, MDG2457-ftr, MDG2457-fb, MDG2457-tax, and MDG2457-mix. The main results of these scenarios are presented in Table A3.1 in combination with those of the baseline.

As expected, economic growth is slower in all tax-financing scenarios compared to the baseline, whereas growth rates are roughly the same seen for the other foreign-financing scenarios relative to the baseline. The more the extra public spending needed to achieve the MDGs, the more the deviations from the baseline scenario. When MDGs 2 or 7 are targeted individually, such deviations are not very large. In contrast, deviations are quite substantial for the MDGs 4 and 5 achievement scenarios. These two goals are among the most problematic from the point of view of their achievement (see Table 3.1), such that the resource requirements in health spending to achieve them are of significance. Also, as expected, the utilization of the mix-financing scenario allows for less reduction in the economic growth rates in comparison to the tax scenario.

A considerable increase in government spending is found to be needed for achieving the targeted MDGs in comparison to the baseline scenario (Table 3.2 and Table A3.1). The highest government spending level, above 39 per cent of GDP, is seen when all five MDGs are targeted. This is understandable as the government spending is to increase in all three

MDG-related sectors (education, health and water and sanitation). The additional total government expenditure necessary to achieve the MDGs simultaneously—relative to the baseline—is estimated to be in the range 7.8–8.1 per cent of GDP per year, depending on the financing option. It is worth noting, however, that the increase in government consumption and investments is not as much when all five goals are targeted simultaneously as opposed to targeting only one or two at the time, owing to synergy effects allowed in the MAMS model. In the case of Kyrgyzstan, the synergy effects at work relate in particular to the positive impact of greater access to safe water and basic sanitation on reducing mortality rates.

Analysis of government spending by sector indicates that the main increases are needed for recurrent spending in the primary cycle of education (2.0–2.2 per cent of GDP per year), recurrent health spending (1.9–2.0 per cent of GDP per year), and, mainly, investments in primary cycle of education (2.9–3.1 per cent of GDP per year). The latter result could be expected taking into account under-investments in the education sector during the past two decades and the increasing number of children in the country. All these increases look quite sensitive, and their implementation would require making hard policy choices.

Scenarios based solely on the tax financing option require a very substantial (up to 8.3 per cent of GDP) increase in the tax collections, which would be a real challenge for the government revenue collection service. On the other side, using foreign transfers allows to keep tax collections at baseline or lower levels. However, an additional inflow of foreign grant

Table 3.2

Kyrgyzstan: Additional government expenditures necessary to achieve the MDGs as percentage of GDP, 2007-2015

Average annual deviation from baseline scenario									
	MDG2		MDG45		MDG7		MDG2457		
	<i>ftr</i>	<i>tax</i>	<i>ftr</i>	<i>tax</i>	<i>ftr</i>	<i>tax</i>	<i>ftr/fb</i>	<i>tax</i>	<i>mix</i>
Recurrent spending									
First education cycle	2.1	2.0	0.1	0.0	0.0	0.0	2.2	2.0	2.1
Health	0.1	0.0	5.6	6.2	0.0	0.0	1.9	2.0	1.9
Water and sanitation	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.6	0.5
Investment									
First education cycle	2.9	3.1	-0.1	-0.1	0.0	0.0	2.9	3.1	3.0
Health	0.0	0.0	0.5	0.6	0.0	0.0	0.1	0.1	0.1
Water and sanitation	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3
Total	5.1	5.1	6.1	6.7	0.7	0.7	7.8	8.1	7.9

Source: Authors' estimates based on MAMS for Kyrgyzstan.

aid in the amount equivalent to 9.1 per cent of GDP per year (under the scenario of simultaneous MDG achievement) is found to be needed for with this financing option. This is a huge amount (more than \$400 million per year), and the ability of the country to compromise assistance from the international community to supply this amount seems to be far from being guaranteed. The mix-financing option is more acceptable as it requires only a relatively moderate increase in tax collections (by 2.5 per cent of GDP in comparison to the baseline) and a smaller (albeit still very high) inflow of grant aid (6.1 per cent of GDP in comparison to 9.1 per cent of GDP under the foreign-transfers option alone). The foreign borrowing option leads to additional government debt servicing expenditures equivalent of 0.3 per cent of GDP per year and foreign debt accumulates up to 71.8 per cent of GDP in 2015.²

Labour market shifts of the MDG-achieving scenarios are not as dramatic. Consistent with slower economic growth projections, demand for unskilled workers is less than in the baseline scenario. Real wage growth for this labour type is also lower than in the baseline. In contrast, wages of skilled workers (those, who completed tertiary education cycle) would improve under the MDG-achieving scenarios reflecting higher demand for skilled workers in education and health.

Analysis of microsimulation results for MDG 1

Using the microsimulation methodology (see Chapter 1), with data from the Kyrgyz Integrated Household Survey for 2007 conducted by NSC, estimations were carried out to determine how poverty and inequality indicators would trend under the assumptions of the baseline and MDG-achieving scenarios. The results are presented in Table 3.3—excluding the MDG-achieving scenarios where only one or two targets at the time are achieved. Poverty rates and Gini coefficient values in this table incorporate all effects related to changes in unemployment rates, shifts in employment by labour type (i.e., workers' education) and sector of occupation, and wages for both the average level of the economy and the relative structure by sector of occupation. All of these changes are translated into effects on income per capita, and, subsequently, we estimate how this results in a new consumption distribution in order to compute inequality and poverty indicators.³

As mentioned earlier, the extreme poverty reduction goal has already been achieved in Kyrgyzstan; extreme poverty was 6.6 per cent in 2007 and

the target set for 2015 is 12.9 (see Table 3.1). The microsimulation results indicate that MDG 1 would continue to be achieved under any scenario—including the MDG-achieving scenarios where only one or two targets are achieved at a time (not shown in Table 3.3). Thus, the formulation of MDG 1 could be revised in order to set a more ambitious target in poverty reduction; for example, setting the target for the moderate (and not the extreme) poverty rate at the level of, say, 20 per cent by 2015.

Poverty outcomes vary substantially across scenarios. Higher economic growth and education spending yield lower poverty rates. Increased spending on education results in better households' incomes (as follows from the simulations results, the higher education spending the better skills composition in the labour force with positive consequences for average wages and households' incomes), thus reducing poverty. Foreign-financing scenarios imply faster economic growth and thus would have better outcomes in terms of poverty reduction than the tax-financing scenario. The baseline scenario also produces poverty outcomes that are better in comparison with the tax-financing scenario. So, there appears to be a trade-off between, on one hand, higher economic growth rates and faster progress with regards to MDG 1 under the baseline scenario and, on the other hand, efforts towards the achievement of the other MDGs when financed through tax increases because of adverse effects on economic growth over the simulation period. However, a trade off of this nature may disappear over the longer run as higher education levels achieved with the MDG strategy translate into higher productivity growth.

The Gini coefficient of inequality in consumption expenditures varies little across scenarios. Achievement of MDGs 2, 4-5, and 7 generally results

Table 3.3

Kyrgyzstan: Poverty and inequality estimates for the base year and for 2015 for selected scenarios

	2006 (actual)	2015			
		Baseline	MDG2457		
			ftr/fb	tax	mix
Extreme poverty rate (per cent of population)	9.1	7.1	6.3	7.9	6.6
Moderate poverty rate (per cent of population)	39.9	25.1	22.4	27.7	23.8
Gini coefficient for consumption per capita	0.402	0.409	0.405	0.404	0.404

Source: Authors' estimates based on MAMS for Kyrgyzstan and microsimulations using the Kyrgyz Integrated Household Survey for 2007.

in slightly lower inequality than in the baseline. This is due to a shift in employment from lower-paid agriculture and some other sectors to higher-paid government services as well as a general improvement in the labour-skill composition. From this perspective the strategy of targeting MDGs 2-5 is somewhat more pro-poor compared to current policies simulated in the baseline scenario.

CONCLUSIONS AND POLICY IMPLICATIONS

After a difficult period in the 1990s, the economic situation has substantially improved in the 2000s in Kyrgyzstan. Responsible macroeconomic policies in 2000-2008, adaptation of the population to new realities and new opportunities, and positive developments in the economies of neighbouring countries have allowed for several years of good economic growth and significant poverty reduction. Yet, the country remains vulnerable to numerous external and internal shocks, and its public finance and balance of payments are still fragile.

The government's social policies have been directed towards sustaining the most important country's achievements in education, health and access to water and sanitation. While access to essential social services has been mostly preserved, the quality of a broad range of services has suffered. Achievement of many MDGs is at risk without additional policy efforts.

The scenario analysis performed in this chapter, based on the use of MAMS, helped us conclude that under a continuation of current policies only MDG 1, the goal for extreme poverty, would be achieved. Under business-as-usual policies, Kyrgyzstan would fall short of all other MDG targets. Large deviations from the targets would be expected in reducing child and maternal mortality, accessing improved sanitation for a large share of the population, and in increasing the net completion rate for basic secondary education. In order to achieve all of these MDGs, the country would need to increase government spending on MDG-relevant sectors (education, health, water and sanitation) by 7.8–8.1 per cent of GDP per year in comparison to the baseline scenario of business-as-usual policies.

This increase in government spending could be financed either through increased domestic tax collections, official foreign transfers to the government, concessional foreign borrowing, or a mix of these options. All of these financing options seem to be politically difficult. One complication is that the MDG achievement would require the implementation of rather radical sector shifts in the government expenditures (almost all additional

revenues would need to go to the social sector only, increasing its share in the general government expenditures enormously). Then, according to the scenario analysis, the estimated increase in government revenue collections by 8.3 per cent of GDP—in comparison to the baseline—would require a substantial upgrade in government's tax collection capacity. Due to the impact of increased taxation on private consumption, the financing strategy would result in a somewhat slower economic growth (-0.4 per cent per year on average). It is important to note that the required large investments into human capital to achieve the MDGs possibly may affect growth rates in the short- to medium-term only. In the long-term (after 2015) these investments may be expected to contribute to increased labour productivity and hence higher economic growth. Alternative scenarios based on inflows of grant aid do not create these problems, but are based on an ungrounded assumption that donors would channel levels of aid that have never been seen in the past for Kyrgyzstan (that is around 9.6 per cent GDP per year). In a foreign-borrowing scenario, the level of the government foreign debt reaches more than 70 per cent of GDP in 2015. This is below the levels registered in the country's recent history, but taking into account that most probably the government would also borrow for different energy, transport and other infrastructure projects, the summary level of the foreign debt is going to become unsustainable. Finally, a scenario that combines increased taxation and aid inflows seems to be more realistic, but it would still require very substantial increases in both tax collections (by 2.5 per cent GDP per year) and grant aid (by 6.1 per cent GDP per year). Thus, none of the MDG-achieving scenarios under consideration seem feasible. Obviously, an underlying issue is that targets for most MDGs under study are very ambitious in the Kyrgyz context, and time remaining for their achievement by 2015 is very short.

The MDG challenge would be less if projected economic growth rates were to be higher. Then the resources to be redistributed to the MDG-related sectors would amount to a smaller share of GDP, making this redistribution more politically feasible. This is possible if the government succeeds in implementing structural reforms, and there is sufficient attraction of FDI and private domestic investments and mobilization of resources for infrastructure development.

Another possible way out is a substantial increase in government spending efficiency, which would result in higher social returns for money spent. This seems to correspond to government policies as they have been formulated in strategic documents of the country. If properly implemented, efficiency-oriented policies are able to reduce resource requirements substantially.

Thus, MDG achievement in the Kyrgyz Republic seems to require a combination of four types of policies: (i) the promotion of economic growth in the country, (ii) increased domestic financing of MDG-related sectors through redistribution of resources between sectors, (iii) an increase in cost efficiency of social policies, and (iv) increased attraction of foreign aid.

NOTES

- 1 However, with regard to the net basic secondary school completion rate—another MDG indicator, which is used in the MAMS model by means of which the scenario analysis below is implemented—the country is off track. Based on UNESCO data, this rate reached 84.1 per cent in 2006.
- 2 All other scenarios lead to the foreign debt levels in the range 24.1–26.2 per cent of GDP at the end of 2015.
- 3 All poverty and inequality indicators have been computed using data on consumption per capita as customary in Kyrgyzstan. Consumption per capita for years other than the base year has been estimated for the relevant years in all scenarios using income per capita results from the microsimulations and assuming a fixed marginal propensity to consume for each household.

REFERENCES

- Mogilevsky, Roman, and Anara Omorova (2011). Assessing Financing Strategies to Achieve the MDGs in the Kyrgyz Republic. Final report prepared for the Project Realizing the Millennium Development Goals through socially-inclusive macroeconomic policies. New York: United Nations Department of Economic and Social Affairs. Available from http://www.un.org/en/development/desa/policy/capacity/output_studies.shtml.
- Sánchez, Marco V., Rob Vos, Enrique Ganuza, Hans Lofgren and Carolina Díaz-Bonilla, eds. (2010). *Public Policies for Human Development: Achieving the Millennium Development Goals in Latin America*. Basingstoke, U.K.: Palgrave Macmillan.
- United Nations Development Programme (2009). The second periodic progress report on the Millennium Development Goals in the Kyrgyz Republic. Bishkek.
- World Bank (2003). Kyrgyz Republic. Enhancing pro-poor growth. Report No. 24638-KG.

APPENDIX A3.1. SIMULATION RESULTS

Table A3.1
Kyrgyzstan: Summary of results from MAMS scenarios, 2006-2015

	2006	MAMS scenarios											
	Actual	Baseline	MDG2		MDG45		MDG7		MDG2457				
			ftr	tax	ftr	tax	ftr	tax	ftr	fb	tax	mix	
Macroeconomic aggregates	Bill. soms	Average annual growth for 2007-2015, per cent											
GDP at market prices	113.8	5.6	5.5	5.3	5.3	4.9	5.6	5.5	5.5	5.5	5.5	5.2	5.3
Private consumption	108.1	4.8	4.9	4.6	5.0	2.7	4.8	4.7	4.9	4.9	4.9	4.0	4.4
Government consumption	20.5	4.1	4.7	4.5	10.3	10.6	4.8	4.7	6.8	6.8	6.8	6.5	6.7
Private investments into fixed capital	18.7	4.9	4.9	4.7	5.1	3.3	4.9	4.8	5.0	5.0	5.0	4.2	4.6
Government investments into fixed capital	7.5	4.1	3.4	3.2	5.7	5.0	5.0	4.9	4.6	4.6	4.6	4.2	4.4
Exports	47.4	6.8	6.5	6.4	2.9	4.6	6.6	6.7	5.4	5.4	5.4	5.8	5.7
Imports	89.8	4.6	4.6	4.4	5.0	3.4	4.7	4.6	4.7	4.7	4.7	4.0	4.3
Public finance	Per cent of GDP	Annual average for 2007-2015, per cent of GDP											
Receipts/Expenditures - total	33.5	31.3	37.0	36.4	38.1	37.9	32.1	32.0	40.0	40.4	39.5	39.7	
Receipts													
Taxes	23.2	24.1	23.8	29.3	23.9	30.9	24.1	24.7	23.7	23.7	32.4	26.5	
Foreign transfers	0.5	0.5	6.6	0.5	7.6	0.5	1.2	0.5	9.6	0.5	0.5	6.6	
Foreign borrowing	5.6	2.3	2.2	2.3	2.2	2.3	2.3	2.3	2.2	11.7	2.3	2.2	
Other receipts	4.2	4.5	4.4	4.4	4.4	4.2	4.6	4.5	4.5	4.5	4.4	4.4	
Expenditures													
Final consumption in first education cycle	1.5	1.4	3.0	3.1	1.4	1.4	1.4	1.4	3.6	3.6	3.5	3.5	

(continued)

Table A3.1 (continued)
Kyrgyzstan: Summary of results from MAMS scenarios, 2006-2015

		2006	MAMS scenarios											
		Actual	Baseline	MDG2		MDG45		MDG7		MDG2457				
			ftr	tax	ftr	tax	ftr	tax	ftr	tax	ftr	fb	tax	mix
Final consumption in health	3.0	2.7	2.7	2.7	8.2	9.0	2.7	2.7	4.8	4.8	4.9	4.8	4.9	4.8
	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.4
Investments in first education cycle	0.8	0.5	3.2	3.3	0.4	0.4	0.5	0.5	3.4	3.4	3.6	3.5	3.6	3.5
Investments in health	0.1	0.0	0.0	0.0	0.6	0.7	0.1	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Investments in water and sanitation	0.2	0.0	0.0	0.0	0.1	0.0	0.3	0.4	0.3	0.3	0.4	0.3	0.4	0.3
Other expenditures	27.9	26.4	27.0	26.5	27.1	26.3	26.6	26.5	27.4	26.5	27.0	27.7	27.0	27.7
	Percent of GDP	2015, per cent of GDP												
Foreign debt of the government	33.5	26.0	25.8	26.2	24.1	25.5	25.8	25.9	25.2	71.8	26.0	25.4	26.0	25.4
Labour market		Average annual growth for 2007-2015, per cent												
Employment	Mill workers													
Unskilled workers	0.188	8.1	8.0	8.0	7.7	8.0	7.4	8.1	7.9	7.9	7.8	7.8	7.8	7.8
Semi-skilled workers	1.554	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Skilled workers	0.354	4.2	4.3	4.2	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.2	4.2	4.2
Total	2.096	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Real wage	Soms/month													
Unskilled workers	1,519	-4.2	-4.2	-4.5	-4.9	-6.3	-4.2	-4.3	-4.4	-4.4	-5.1	-4.8	-5.1	-4.8
Semi-skilled workers	1,924	4.3	4.4	4.0	5.2	3.4	4.4	4.2	4.6	4.6	3.7	4.0	4.6	4.0
Skilled workers	2,472	-0.2	1.1	0.9	2.4	0.3	-0.1	-0.2	1.9	1.9	1.1	1.3	1.9	1.3

Source: Authors' estimates based on MAMS for Kyrgyzstan.