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Chapter 9

Uzbekistan

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INTRODUCTION

The government of the Republic of Uzbekistan's commitment to the millennium development goals (MDGs) is a priority of the national development strategy. Goals include halving poverty and the number of underweight children under five between 2000 and 2015. The goal to achieve universal primary education has already been achieved when measured in terms of net enrolment. However, improving the quality of education remains an important challenge. A number of laws and national programmes have been adopted to promote gender equality and women's empowerment. The country has made tangible progress toward reducing child and maternal mortality, though current trends suggest that the targets would be met only through additional policy efforts and resources targeted to healthcare. Measures taken to protect the environment and to ensure the rational use of natural resources are expected to secure tangible results, reversing environmental damage. Access to safe drinking water and sewage system connections has notably improved for urban and rural households and the 2015 targets are likely to be met.

This chapter discusses key social and economic reforms that have taken place in Uzbekistan during 2000-2009, with a primary focus on their implications for progress toward meeting the MDGs. It also presents a summary of key findings based on results from simulated scenarios of alternative strategies to finance the increase in public spending required for the timely achievement of the MDGs in Uzbekistan. These scenarios reveal macroeconomic trade-offs that the country would have to deal with depending on the choice of the financing option.

The remainder of this chapter is divided into four sections. The next section begins with a brief overview of main economic reforms, economic performance and vulnerabilities of the country. The following section reviews the government's social policy and examines inequality and poverty trends and the progress made towards the MDGs during 2000-2009. The section also discusses whether the country is on track to achieve the MDGs under existing policies and what additional efforts might be needed. The next section presents the scenario analysis. It addresses the information and procedures used to implement the modelling framework used to simulate the scenarios. It also explains the assumptions and analyzes the main results of the various simulated scenarios. The main upshot is that the targets for child and maternal mortality rates, and, to a lesser extent, those for water and sanitation delivery, would only be fully met if the government steps up spending by nearly 5 per cent of GDP per year. In order to generate the resources, the chapter recommends broadening the tax base. Because this additional MDG spending would trigger macroeconomic trade-offs that may limit production capacity in the short run, higher GDP and employment growth will be essential to achieve the poverty goal. This and other key findings and policy recommendations are presented in the final section.

MACROECONOMIC PERFORMANCE AND POLICIES

When Uzbekistan emerged as an independent state in 1991, the government adopted an approach of gradual reform and transformation of the economy. The main goal at the time was to prevent a sharp fall in output, a reduction in people's incomes, and unemployment growth, which a more radical approach might have triggered. The focus of the economic transformation was placed on the privatization of small and medium companies, and of housing and other sectors (public utilities, retail trade and other services), and on comprehensive support to expanding private ownership. Unlike most other members of the Commonwealth of Independent States (CIS), Uzbekistan did not enter into a deep economic recession. This was a result of its gradual reform approach and targeted support and reforms to the industrial and agricultural sectors.

In the second half of the 1990s, the government pursued import-substitution policies with some success, motivated by the fact that the country's key exports consist of commodities that are characterized by low short to medium-run supply and demand responsiveness to exchange rate and international price adjustments. During that period, Uzbekistan's

economy was hit by two major external shocks: falling world prices for its main export commodities (cotton, in particular) and the 1998 Russian financial crisis. Despite these blows to foreign exchange earnings, the economy managed to achieve moderate, but stable growth averaging 5.7 per cent per year from 1996 (Figure 9.1). The country had a low initial level of industrial activity, but ample spare production capacity that helped it keep up the pace of growth. At the same time, cotton production continued to expand, and the country reached energy self-sufficiency by 1995. Inflation was cut considerably from 58.8 per cent in 1997 to a still high of 29.1 per cent in 1999. The budget deficit averaged 2.6 per cent of GDP in the second half of the 1990s, but given the pace of overall economic growth, did not lead to an unsustainable run up of public debt.

A clear need to shift economic policies emerged at the beginning of the new century. A continued appreciation of the real exchange rate had eroded the competitiveness of domestic producers and export potential. In response, the government introduced special programmes to support small and medium-scaled enterprises, while a beginning was made with the privatization of state-owned enterprises. Along with a significant devaluation of the official exchange rate, measures were also taken to move towards a unified exchange rate in mid-2003. In October 2003, the government also committed to regulations stipulated in Sections 2(a),

Figure 9.1:
Uzbekistan: Growth rates of real GDP and employment, 1996-2009

Source: The State Committee on Statistics, Ministry of Economy of the Republic of Uzbekistan.

3 and 4 of Article VIII of the Agreements of the International Monetary Fund (IMF) facilitating current account convertibility of the domestic currency.

Output growth accelerated to over 7 per cent per year during 2000-2009 (Figure 9.1). Growth was boosted by the greater openness to foreign markets, large-scale investments that supported export production capacity, and favourable external demand. In the second half of the 2000s, GDP increased by 50 per cent and exports by 150 per cent. Export growth rested primarily on the diversification into non-primary goods and services with high value added, such as cars and transportation services. The strong export drive turned the current account of the balance of payments into surplus. All main production sectors achieved fairly sustained output growth, but manufacturing and services contributed most to the expansion of aggregate GDP. By 2009, manufacturing's share of GDP reached 23.6 per cent and that of services 44.1 per cent.

During the 2000s, fiscal policy aimed at a balanced budget, while reducing the tax burden on businesses. A gradual reduction of the corporate, individual income and the single social tax rates led to a decline in tax revenue by more than 5.5 percentage points of GDP between 2000 and 2009 in spite of respectable GDP growth rates. At the end of the period, the tax burden had dropped to 22.5 per cent of GDP. The reduction could have been more pronounced if revenues from natural resource and property taxes had not increased from 2.4 to 3.7 per cent of GDP in the same period. The tax reforms did little to protect the purchasing power of low-income groups or promote labour-intensive economic activities, however. High rates for excise taxes on basic consumption goods (vegetable oil, sugar, etc.) have been maintained to ensure parity of prices with neighbouring countries, thereby limiting the purchasing power of household incomes, especially for the poor. Furthermore, the individual income taxation system is sub-optimal, limiting tax collection.

Attainment of the MDGs has been facilitated by the international community through ample provisioning of preferential loans, credits and grants to Uzbekistan. The total foreign aid provided to Uzbekistan by international financial institutions, foreign governments and non-governmental organizations amounted to \$10.9 billion during 1993-2008 (United Nations Development Programme, 2009b). This represented on average a little less than 5 per cent of GDP per year. During 2004-2008, one third of foreign aid supplied during that period (about \$0.7 billion) directly supported policies and programmes aiming at the achievement of the MDGs, especially for the development of social infrastructure (education, health,

water supply, housing and public utilities). Projects aimed at reforming the healthcare system in rural areas, improving women's and children's health, as well as strengthening the emergency medical services in urban and rural areas. Initiatives in the areas related to water supply service provision in urban and rural areas mainly targeted improvements in facilities and infrastructure. Foreign aid has been decreasing steadily since 1993, an indication that Uzbekistan may no longer be considered a key beneficiary country by international donors. Aid is therefore not expected to be an important financing source for MDG investments in the near future.

The recent global financial crisis affected the Uzbek economy mainly through the impact on the world demand for the country's key export commodities, such as precious and non-ferrous metals, cotton, petroleum products, gas and mineral fertilizers. The government responded with the Anti-Crisis Programme, which was highly rated by international organizations such as the World Bank and the IMF and aimed at stimulating domestic demand through investments in core economic sectors, supporting domestic manufacturers with fiscal incentives, and creating new jobs through state-based projects. As a result, the Uzbek economy managed to sustain economic growth rates amidst the global crisis. In 2009, when many developing countries recorded negative growth, output growth in Uzbekistan—even if slowing somewhat from previous years—reached a robust per cent, while the number of workers employed in the economy increased by 2.7 per cent (Figure 9.1).

SOCIAL POLICIES AND PROGRESS TOWARDS THE MDGs

Social policy trends

The gradual economic reforms were not the only distinctive feature of Uzbekistan's approach in transitioning towards a market economy. The government also protected social expenditure levels and policies aiming at improving the wellbeing of the population.

The national educational reform envisaged a new concept for the country, creating a system enabling continuing education (that is to say, broadening the spectrum of post-secondary learning activities and programmes) and extending mandatory free education to 12 years of schooling. The latter includes nine years of mandatory, universal, and free-of-charge basic education plus three years of free, universal, and mandatory secondary special and vocational education. The reforms have been supported by

increasing the share of public current expenditure on education to over 7 per cent of GDP in 2008-2009 (Table 9.1). In effect, 100 per cent literacy and enrolment in primary education and high levels of enrolment in secondary and higher education were reached during the 2000s.

To improve the health system, the Healthcare Reform Programme was adopted for the period 1998-2004, while the Child Sports Development Programme was approved in 2004. The reforms aimed to create a more favourable environment to raise healthy generations of Uzbeks, support improvements in health sector infrastructure, and allocate more government funds to primary care. It also sought to enhance outpatient and polyclinic-based treatment and prevention in lieu of the inefficient use of costly hospital beds, and to create a nationwide system of emergency medical care. Despite the reforms, public health expenditure dropped from 3.6 per cent to 2.4 per cent of GDP between 1995 and 2002, due to insufficient revenues, forcing the government to prioritize spending on maternal and child health. In the course of the 2000s, health spending recovered somewhat to 2.7 per cent of GDP in 2008-2009 (Table 9.1).

Table 9.1

Uzbekistan: Government current expenditures on social sectors, 2000-2009

Per cent of GDP			
	2000-2003	2004-2007	2008-2009
Education	6.6	6.3	7.1
Healthcare	2.4	2.4	2.7
Social protection	2.0	1.5	2.1

Source: Ministry of Finance and Ministry of Economy of the Republic of Uzbekistan.

During 1996-2009, several programmes supported the expansion of water supply and sanitation systems. These included the installation of meters for utility services, major renovations to apartment blocks that had been built before 1991, the modernization of many houses, ensuring the supply of water to apartment blocks, and an overall improvement of access to water supply and sanitation facilities. In terms of public welfare programmes, the government introduced a financial aid system for deprived families in 1994. In addition, social support is now provided to all socially vulnerable groups, including retirees, disabled persons and children.

Despite the increase in welfare expenditures, the cost of social protection programmes has remained around 2.0 per cent of GDP during the 2000s (Table 9.1). Costs have been kept down as a result of more effective targeting. In August 2007, the government adopted the first national development

strategy, the MDG-based Welfare Improvement Strategy (WIS) for 2008–2010. The strategy aimed to spur sustained economic growth and enhance the population's wellbeing. As detailed further below, outcomes of recently implemented policies suggest that a number of challenges remain in order to achieve the MDGs: improving the quality of education and health services, job creation that is sufficient to keep households out of poverty, and better targeting of social programmes that provide income protection to vulnerable groups (through pensions, allowances and other transfers).

Table 9.2

Uzbekistan: Progress towards the MDGs, 2000–08 and the 2015 target

Per cent of GDP				
<i>MDG and related indicator</i>	<i>2000</i>	<i>2005</i>	<i>2008</i>	<i>2015 (target)</i>
MDG 1: People living below the national poverty line (per cent of population)	27.5 ¹	25.8	19.5 ²	14.0
MDG 2: Primary school completion rate (per cent of relevant age group)	98.9	98.4	99.0	100.0
MDG 4: Under-five mortality rate (per 1,000 live births)	28.5	20.6	17.3	13.4 ³
MDG 5: Maternal mortality rate (per 100,000 live births)	33.1	29.2	22.4	17.4 ⁴
MDG 7a: Access to improved drinking water (per cent of population)	80.2	82.6	82.6	100.0
MDG 7b: Access to improved sanitation facilities (per cent of population)	46.6	48.2	51.5 ⁵	65.0

¹ Estimate computed by the World Bank for 2001 based on data from the first Household Budget Survey.

² Value for 2009.

³ The under-five child mortality rate would be reduced from 20.1 per 1,000 live births in 2006, by one-third in 2010, and by another one-third by 2015.

⁴ The maternal mortality rate would be reduced from 24.8 per 100,000 live births in 2006, by 15 per cent in 2010 and a further 15 per cent by 2015.

⁵ Value for 2007.

Source: UzbekInfo 1.0 and United Nations Development Programme (2009a).

MDG PROGRESS AND POLICIES

The WIS (Government of Uzbekistan, 2007) defines country-specific MDG targets for 2015 (see Table 9.2). Overall, much progress has been made towards all targets though important gaps remain in some areas.

The government has made substantial efforts to achieve MDG 1—eradication of poverty and malnutrition—in the framework of national strategies and development programmes, and in partnership with

international development institutions. In unison with sustained economic growth, the poverty incidence started to fall steadily from 44.5 per cent in 1994 (based on an ad hoc sample survey), to 19.5 per cent in 2009 (estimated from the Household Budget Survey). For each 1 per cent growth in per capita GDP, poverty decreased by 0.38 per cent. Nevertheless, the gains from economic growth have not been distributed equally. The Gini coefficient of income inequality was quite high in 2000-2006 (0.45-0.50). Urban average incomes are significantly higher than those in rural areas. Consequently, rural poverty is higher than urban poverty, with the incidence in rural areas about 4 percentage points higher than the national average. This is due to the prevalence of low-paid jobs, large household size, and poorer social infrastructure compared with urban areas.

A key challenge to poverty reduction is the creation of more remunerative jobs for a growing labour force. About 50 per cent of the rural workforce is employed in the agricultural sector, which is characterized by low productivity and labour incomes. Civil service wages paid to 20 per cent of the workers are also below average. Recently, however, increased public spending on social sectors has allowed for higher wages for civil service workers. In recent years, overall jobs growth has pushed down the rate of open unemployment to below 5 per cent of the economically active population. High rates of underemployment remain a concern, however.

The government has supplemented the WIS with the 2009-2011 National Nutrition Improvement Strategy, which has already yielded visible results. The quality of public nutrition in general and child nutrition in particular have improved. Iron/folic acid supplementation and the first stage of the flour fortification helped to reduce the incidence of under-five child anaemia from 66.6 per cent in 2000 to 33.5 per cent in 2009, while the prevalence of diseases caused by iodine deficiency dropped from 47.7 to 28.6 per cent. Greater birth spacing and better awareness of childcare among parents have also helped reduce malnutrition.

In spite of observed progress, a linear continuation of past trends would take the incidence of poverty to 16 per cent by 2015, which is short of the target of 14 per cent. Therefore, meeting the target for reducing income poverty will require broader based growth, requiring the enhanced creation of remunerative jobs. The World Bank (2005) and the Asian Development Bank (2006) have arrived at the same conclusion that despite the steady decline in poverty rates, it is unlikely that MDG 1 will be achieved at the current pace of poverty reduction.

Nearly all boys and girls at school age complete the primary education cycle on time in Uzbekistan (Table 9.2). Accordingly, the targets of achieving universal primary education (MDG 2) and eliminating gender disparities in (primary) education (part of MDG 3) have already nearly been met. The literacy rate among the population aged between 16 and 24 years is nearly 100 percent. Given these achievements, improving the quality of primary and secondary education, while maintaining universal access to it, has become a central educational goal. The government is implementing the State School Education Programme to improve school infrastructure, supply schools with equipment and information technologies and create a solid ground for further qualitative changes in the primary and basic education. However, the quality of education will not increase sufficiently without addressing problems such as the lack of teachers with certain types of specialization or for certain educational levels, insufficient logistical support to schools, and inadequate levels of textbook availability.

Targets set by Uzbekistan for MDGs 4 and 5 fully correspond to the targets set by the international community to reduce the under-five and maternal mortality rates by two-thirds and three-quarters by 2015, respectively. Child mortality in the country is considered to be one of the lowest among the Central Asian countries. The under-five mortality rate was 28.5 per 1,000 live births in 2000 and it was brought down to 17.3 in 2008. The maternal mortality rate also decreased notably from 33.1 to 22.4 per 100,000 live births over the same period. These achievements have been the result of programmes and reforms to the health system, promotion of healthier habits, and the improvement of maternal health. As explained earlier, health expenditures remained unchanged during the first half of the 2000s and began to increase in 2006 in order to reach 2.7 per cent of GDP in 2008-2009. Nevertheless, child mortality indicators are still high compared with developed countries. Moreover, observed maternal mortality rates show unstable trends, which may reflect both problems in measurement and considerable differences in maternal mortality indicators across regions in the country. Based on current trends, Uzbekistan is likely to meet the under-five and maternal mortality targets if better policies and additional resources are put in place. Healthcare financing in Uzbekistan should improve further in the foreseeable future. Currently, the Programme for Improvement of the Health Infrastructure and Facilities for 2010-2014, and the Law on Mandatory Health Insurance are under consideration. Implementation of the mandatory health insurance will help to improve the mechanisms of health system financing, which should help improve public health in general, and maternal and child health in particular.

During the Soviet period most cities and towns were already connected to centralized water supply and sewage systems. In rural areas, other forms of semi-centralized systems to provide access to potable water were in widespread use, including wells, springs, rainwater collection, and so on. As a result, from Uzbekistan independence, a large share of the population already enjoyed access to improved water supplies and sanitation technologies.¹ Special government programmes for the construction of water pipelines were implemented during 2001-2009, allowing for the construction of about 54,000 km of new water pipelines, of which 47,900 km were in rural areas. They have resulted in increased access to potable water (MDG 7a) from 80.2 per cent in 2000 to 82.6 per cent in 2008. The percentage of the population with access to sanitation services (MDG 7b) has also gradually increased from 46.6 per cent in 2000 to 51.5 per cent in 2007. More progress, mainly in rural areas where the shortage is much larger, would put the country on track to achieve the two targets related to MDG 7.

MAMS SCENARIO ANALYSIS

Various scenarios were simulated with the economy-wide model known as MAMS (see Chapter 1), in order to determine whether the above-presented MDG targets (Table 9.2) are likely to be met by 2015 under current policies and, if not, what additional policies would need to be put in place to meet all the goals. The model was calibrated to Uzbek data to ensure the scenario analysis reflects as good as possible the country's reality.

Calibration of MAMS

The core database of MAMS consists of a social accounting matrix (SAM), which was constructed for Uzbekistan for the year 2005. The same year is the base year of MAMS for Uzbekistan and the starting year of the simulation period. National accounts data and the 2005 input-output matrix (prepared by the State Committee on Statistics of Uzbekistan) were key data sources. Following the accounting structure and other requirements of MAMS, the MDG-related government activities were disaggregated as follows: education (by cycle), health, provision of water and sanitation, other public infrastructure services, and other government services. Investment and capital stocks are explicitly disaggregated for each of these government sectors. In the case of the education and health sectors, the SAM also accounts for private provisioning of these services. In addition to the eleven

MDG-related sectors, the SAM includes eleven production sectors and three types of labour classified by the level of education attained by the worker.

Due to the absence of sufficient data to econometrically estimate the model's standard elasticities (such as those for substitution and transformation in production, savings and consumption demand with respect to income levels, etc.) as well as those of determinants of MDG achievement, most of the required model elasticities had to be based on existing MAMS applications and computable general equilibrium models for other countries. The choice of elasticities was validated through expert opinion on the functioning of the Uzbek economy and social sectors. Borrowing “extraneous” values could have a negative impact on the accuracy and precision of the model simulation results, but this approach was used with certain confidence for two reasons. First, all parameters used are within the model's possible and plausible ranges and they generate a baseline scenario that reasonably replicates the aggregate functioning of the economy—as well as a smooth continuation of past trends for key macroeconomic variables. Second, a sensitivity analysis indicated that the elasticities did not for the most part have a significant impact on the simulation results and performance of the model. With such caveats, the calibrated model was expected to provide useful results to inform recommendations on how the country should strategize to achieve the MDGs as well as the costs involved.

The MDG elasticities are of particular importance as they define the extent to which each MDG-related indicator would respond to changes in their corresponding determinants (see Chapter 1). The values used are presented in Table 9.3. Taking into consideration that mortality among children and mothers has common causes and correlates, the same elasticities were used for both child and maternal mortality rates. In the case of access to improved water and sanitation facilities, the elasticities were derived from information from the 2005 SAM and COWI (2004). Regarding the range and sign of the elasticities, reasonable and informed assumptions were made based on existing studies, economic logic and the opinion of experts in the field. For example, since public provision of primary education is mandatory and the constitutional responsibility of the state, the wage premium, household consumption and public infrastructure are likely to have only a small impact or none at all on household decisions to enrol children in primary schools. This is reflected in values near the lower limit of the feasibility range assigned for the elasticity in question (Table 9.3). The above-mentioned determinants are likely of greater importance in the demand for higher education.

Table 9.3

Uzbekistan: Elasticities of MDG-related outcome indicators with respect to their determinants in MAMS

MDG-related indicator	Health service delivery per-capita	Water & sanitation delivery per-capita	Education service delivery per-capita	Public infrastructure	Household consumption per capita	MDGs			Wage premium
						4	7a	7b	
MDG 1					-0.32				
MDG 4	-0.75			-0.05	-0.10		-0.05	-0.05	
MDG 5	-0.75			-0.05	-0.10		-0.05	-0.05	
MDG 7a		0.50		0.10	0.09				
MDG 7b		0.20		0.10	0.12				
Primary education									
entry rate			0.08	0.01	0.02	-0.03			0.10
promotion rate			0.08	0.01	0.02	-0.01			0.10
Secondary education									
promotion rate			0.10	0.01	0.02	-0.01			0.20
graduation (primary) and continuation rate			0.10	0.01	0.02	-0.01			0.20
Tertiary education									
promotion rate			0.10	0.01	1.00	-0.01			0.40
graduation (secondary) and continuation rate			0.10	0.01	1.00	0.00			0.40

Source: Authors' assumptions and estimates based on United Nations Department of Economic and Social Affairs (2010).

The logistic functions that define trends in MDG-related indicators were calibrated to reproduce observed trends for each corresponding indicator. The procedures and the compilation of other information used to calibrate MAMS are described in more detail in Olimov and Fayzullaev (2011).

Baseline scenario: key assumptions and results

Once calibrated, MAMS enabled the generation of a baseline scenario for the period 2005-2015 that follows the current optimistic medium-term projections and assumptions. This scenario assumes no additional public interventions are put in place to target MDG achievement. In the baseline scenario, real GDP grows on average by 8.1 per cent and the population by 1.5 per cent per year. Real public spending is assumed to increase at the same

annual growth rate as GDP. In general, the baseline scenario reasonably replicates the aggregate functioning of the economy and generates a smooth continuation of past trends for key macroeconomic variables (Table 9.4).

The baseline scenario further assumes that the market for foreign exchange clears through adjustments in the real exchange rate. The latter appreciates over the simulation period to eliminate excess demand for foreign exchange, as a result of which the GDP share of exports declines notably whereas that of imports increases. Foreign savings decreases relative to GDP in view of the real exchange rate adjustment. GDP growth is mostly explained by growth in consumption and private investment.

An exogenous rule is imposed on all sources of financing for the government budget (taxation and domestic and foreign borrowing) except for foreign transfers which are assumed to be endogenous. Consequently, foreign aid is assumed to adjust to ensure full financing of any budget imbalance. Government consumption is also assumed to evolve according to an exogenously set rule that public spending replicates a 'business-as-usual' pattern. According to this pattern, current public spending grows by 9.3 per cent per year on average in the 2006-2009 period of the baseline scenario, which is close to the observed rate of 9.4 per cent. Public investment is allowed to grow such that the capital stock for social infrastructure increases commensurately with the provision of government services—though it shows a small reduction as a share of GDP towards the end of the simulation period due to the effect of capital accumulation. In the baseline scenario, tax revenue remains constant at 20.8 per cent of GDP throughout the simulation period. The government's budget balance for current spending and revenue is in surplus, but decreases from 4.6 per cent in 2006 to 3.5 per cent of GDP by the end of the simulation period owing to the fact that current spending increases faster than GDP growth. Domestic borrowing requirements are negative (-2.0 per cent of GDP), reflecting net repayment of domestic public debt and net lending to the non-government sector. Foreign borrowing declines in tandem with foreign savings. The government debt shows a clear reduction in the baseline.

Total employment increases at an average annual rate of 2.9 per cent over the simulation period in the baseline. Employment growth is lower for unskilled labour the bulk of which attends the first cycle of school. Progress in education translates into a relatively larger participation of and demand for more qualified workers, especially semi-skilled (who have completed the second cycle of education). The average real wage increases by 5.3 per cent per year during the simulation period, and given the aforementioned changes in employment, the increase is relatively lower for semi-skilled workers.

Table 9.4

Uzbekistan: Key results of the MAMS scenarios¹, 2005, 2015 and period annual average for 2010-2015

	Base year (2005)	Baseline scenario		Scenario where MDGs 4, 5, 7a and 7b are achieved with:			
		2015	2010-2015	direct taxes		foreign borrowing	
				2015	2010-2015	2015	2010-2015
Real exchange rate (2005 = 100)	100.0	100.1	99.4	100.2	99.5	99.3	99.1
Real GDP growth rate (per cent)	8.2	8.0	8.1	7.4	7.8	7.2	7.8
Private consumption	49.8	58.8	58.9	53.7	56.0	58.1	58.6
Government consumption	16.6	19.1	18.5	24.7	21.8	26.3	22.7
Private investment	18.5	20.5	20.4	18.6	19.1	20.3	20.3
Government investment	4.2	3.4	3.4	5.0	4.7	4.8	4.6
Exports of goods and services	39.2	30.5	31.2	28.1	29.8	22.9	26.6
Imports of goods and services	31.3	32.2	32.4	30.1	31.1	32.4	32.7
Foreign savings	8.0	1.5	0.9	1.5	0.8	9.5	5.2
Government savings	4.6	3.5	3.6	5.1	4.8	5.1	4.9
Tax revenue	20.8	20.7	20.9	28.1	25.6	20.3	20.7
Domestic government borrowing ²	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
External government borrowing	0.7	-0.1	-0.8	-0.1	-0.8	7.8	3.6
Domestic government debt	2.5	0.4	0.8	0.4	0.8	0.3	0.8
External government debt	25.0	6.4	9.3	6.2	9.1	33.8	24.3
Employment ³							
Unskilled workers	583,932	0.7	-0.2	0.2	-0.5	0.4	-0.4
Semi-skilled workers	211,998	5.8	6.5	6.5	7.2	4.6	7.0
Skilled workers	223,800	4.5	4.4	4.5	4.4	4.6	4.5
Real wage per worker ⁴							
Unskilled workers	347,246	10.3	11.0	9.0	10.4	11.8	12.1
Semi-skilled workers	624,620	3.5	1.8	3.7	2.2	9.4	4.2
Skilled workers	608,098	6.0	5.4	6.0	5.7	9.2	7.6

¹ In per cent of GDP unless specified otherwise.³ Number employed in thousands for the base year and growth rates in the scenarios.**Source:** Author's estimates based on MAMS for Uzbekistan.² A negative entry indicates lending.⁴ In Uzbek Soums (local currency unit) in the base year and growth rate in the scenarios.

As said earlier, social programmes in the education (the National Human Resources Training and the School Education Development Programmes) and health (the Healthcare Reform Programme) sectors have resulted in substantial progress towards the MDGs. However, the baseline results suggest that without additional efforts, progress would be insufficient to fully close existing MDG gaps by 2015. Under the assumptions of this scenario, even with continued increases in public spending and expected improvements in per capita consumption, the targets would not be met by 2015, although shortfalls are not large (Table 9.5).

Achieving the MDGs under alternative financing scenarios

In MDG-achievement scenarios, public interventions are scaled up such that, alternatively, one or two of the MDGs are achieved or all of them are achieved simultaneously. The scenarios further assess the implications of different forms of financing of the additional spending efforts, that is, through direct taxation, foreign borrowing or domestic borrowing. As said, foreign aid is not expected to be an important source of financing for

Table 9.5

Uzbekistan: MDG indicators in the baseline scenario and targets, 2005-2015

<i>MDG and related indicator</i>	<i>2005</i>	<i>2010</i>	<i>2015</i>	<i>2015 target</i>
MDG 1: People living below the national poverty line (per cent of population)	25.6	20.4	14.9	14.0
MDG 2: Primary school completion rate (per cent of relevant age cohort) ¹	98.9	98.5	98.5	100.0
MDG 4: Under-five mortality rate (per 1,000 live births)	20.6	17.1	15.8	13.4
MDG 5: Maternal mortality rate (per 100,000 live births)	29.2	23.4	21.2	17.4
MDG 7a: Access to improved drinking water (per cent of population)	82.6	92.4	97.5	100.0
MDG 7b: Access to improved sanitation facilities (per cent of population)	48.2	54.6	60.2	65.0

¹ The figures for MDG 2 are calculated directly from the MAMS model. For this reason, they are not fully comparable with the observed figures presented in Table 9.2, except for the base year, 2005.

Source: Authors' estimates based on MAMS for Uzbekistan.

MDG investments in the near future, which is why it was not considered as part of the set of MDG-achieving scenarios. These scenarios do not consider additional measures to achieve the target for poverty reduction for methodological reasons, either, as explained in the below. The goal of achieving universal access to primary education (MDG 2) is also excluded from the targeting as this has by and large been met, as explained earlier. Hence, the simulations consider full achievement of the targets for health (MDG 4 & 5) and water and sanitation (MDG 7a & 7b) only.

In order to keep primary completion rates at least as high as projected in the baseline, these scenarios assume that education spending per student (which in MAMS is assumed to be both a proxy for the quantity and quality of service delivery) is maintained at the same level as in the baseline scenario. Increases in public current and investment spending on health and drinking water and sanitation are strictly associated with achieving one or two of the related MDGs separately or all of them simultaneously.

The results shown in Table 9.6 indicate that the additional public spending required to simultaneously meet the targets for reducing child and maternal mortality and improve access to drinking water and sanitation would range between 4.6 and 4.8 per cent of GDP per year on average during 2010-2015, depending on the financing mechanism. Most of the additional spending would be needed to achieve the health MDGs. A comparison of the scenarios in which the MDGs are attained separately or simultaneously, shows that the latter produces synergistic effects. Progress towards MDGs 7a and 7b, for example, would accelerate the reduction in mortality rates. During 2010-2015, the cost of achieving the MDGs would be 0.06, 0.04 and 0.02 percentage points of GDP per year less under the three different financing scenarios—respectively, external borrowing, higher income taxes or domestic borrowing because of these synergistic effects (Table 9.6). The additional cost required to maintain primary completion rates as in the baseline is marginal and this basically reflects very small reductions in GDP in the MDG-achieving scenarios relative to the baseline (see Table 9.4).

Table 9.7 presents a further specification of the required additional public spending. These calculations should be treated as representing order of magnitude rather than precise estimates. The immediate conclusion to be drawn from this table is that, in the case of the MDG achieving simulations, there is a need to increase MDG-related spending—relative to the baseline scenario—from 6.3 to 11.2 per cent of GDP from 2010 to 2015, almost doubling it in terms of Uzbek soums (UZS). However, this could overestimate the actual cost owing to existing interrelationships

Table 9.6

Uzbekistan: Public spending on MDG-related services in the baseline and MDG-achieving scenarios under alternative financing strategies, 2005 and 2010-2015

Per cent of GDP					
	Base year 2005	Baseline scenario (2010-2015) ¹	Required additional public spending under alternative financing scenarios (difference with respect to the baseline scenario), 2010-2015 ¹		
			direct taxes	foreign borrowing	domestic borrowing
			Scenario where MDGs 4 & 5 are achieved		
Environment ²	0.06	0.05	0.00	0.00	0.00
current	0.04	0.04	0.00	0.00	0.00
investment	0.02	0.01	0.00	0.00	0.00
Healthcare	2.84	3.00	4.12	4.15	4.26
current	2.40	2.63	2.81	2.93	2.88
investment	0.44	0.37	1.30	1.22	1.37
Education ³	3.05	3.24	0.17	0.27	0.19
current	2.18	2.42	0.11	0.22	0.12
investment	0.87	0.82	0.06	0.05	0.06
Total (1)	5.94	6.28	4.29	4.42	4.44
			Scenario where MDGs 7a & 7b are achieved		
Environment ²	0.06	0.05	0.37	0.37	0.37
current	0.04	0.04	0.36	0.36	0.36
investment	0.02	0.01	0.01	0.01	0.01
Healthcare	2.84	3.00	0.00	0.01	0.00
current	2.40	2.63	0.00	0.01	0.00
investment	0.44	0.37	0.00	0.00	0.00
Education ³	3.05	3.24	0.01	0.02	0.01
current	2.18	2.42	0.00	0.01	0.01
investment	0.87	0.82	0.00	0.00	0.00
Total (2)	5.94	6.28	0.38	0.40	0.38
			Scenario where all MDGs are achieved		
Environment ²	0.06	0.05	0.38	0.37	0.41
current	0.04	0.04	0.37	0.36	0.39
investment	0.02	0.01	0.01	0.01	0.01
Healthcare	2.84	3.00	4.07	4.11	4.21
current	2.40	2.63	2.78	2.90	2.85
investment	0.44	0.37	1.29	1.21	1.36
Education ³	3.05	3.24	0.18	0.28	0.19
current	2.18	2.42	0.11	0.23	0.13
investment	0.87	0.82	0.07	0.05	0.06
Total (3)	5.94	6.28	4.62	4.76	4.81
Synergy effect ⁴			0.04	0.06	0.02

¹ Period annual average. Some minor discrepancies between the total value and the sum of items are due to rounding.

² Spending on potable water and improved sanitation facilities.

³ Includes the primary, secondary and tertiary education.

⁴ Total (1) + Total (2) – Total (3).

Source: Authors' estimates based on MAMS for Uzbekistan.

between the various kinds of diseases.² For instance, like many infectious diseases, tuberculosis spreads more quickly and is much more dangerous in the presence of HIV/AIDS, which in turn may have an impact on child and maternal mortality. In contrast, oral rehydration therapy, vaccinations, and the promotion of breast feeding contribute to reduction in infant mortality. On the other hand, these model-based estimates may overlook limited absorptive capacity of social sectors. Solving capacity constraints are not just a matter of money, but require overcoming administrative and other hurdles and adequate time to build additional infrastructure. For that reason, careful sequencing of public investment across sectors as well as improvement of governance and institutional structures can significantly reduce the cost of achieving the MDGs.³

Table 9.7

Uzbekistan: Average annual cost of achieving the MDGs, 2010-2015

	<i>Baseline scenario</i>		<i>MDG scenarios</i>	
	<i>Billion UZS</i>	<i>Per cent of GDP</i>	<i>Billion UZS</i>	<i>Per cent of GDP</i>
Education (primary)	919	3.24	954–1,014	3.5–3.6
Health (child and maternal mortality)	851	3.00	1,917–1,957	6.9– 7.1
Environment (water and sanitation)	14	0.05	116–121	0.41–0.45

Source: Authors' estimates based on MAMS for Uzbekistan.

From this point of view, for all the health-related goals, it is estimated that the additional total cost of achieving the respective millennium targets by 2015 ranges from 1,917 to 1,957 billion UZS depending on whether the increased spending would be financed through tax increases, external borrowing, or domestic borrowing (Figure 9.2).

In the simulated scenarios, achieving the MDGs would not only require increasing public spending, but accounting for macroeconomic trade-offs. Real GDP growth is less under the MDG achievement scenarios, particularly when the additional public spending is financed through domestic borrowing (Table 9.4).

In the domestic-borrowing scenario, the government absorbs more resources by mobilizing private savings that would otherwise be used for private investment, which is notably much less compared to the other scenarios. In terms of the additional public spending required to meet the targets, this financing option is also more costly because the reduction in private spending in MDG-related sectors is compensated by more public spending to fully meet the targets (see Table 9.6). The internal public debt

Figure 9.2:
Uzbekistan: Public spending required to achieve the MDGs under alternative financing scenarios, 2010-2015

Source: Authors' estimates based on MAMS for Uzbekistan.

would increase to 41.9 per cent of GDP in 2015 from an initial level of 2.5 per cent of GDP in the base year (Table 9.4). Domestic borrowing would lead to a doubling of the fiscal deficit with respect to the baseline scenario, while tax revenues almost do not change and external government debt falls from 25.0 to 7.1 per cent of GDP, as expected owing to the nature of the scenario.

In the case of the tax-financing scenario, to finance the additional public spending tax revenues need to increase from 20.7 to 28.1 per cent of GDP (Table 9.4). As a result, the transfer of resources from the private to the public sector crowds out private spending and import demand. The government needs to offset the reduction of private spending in education, health, and water and sanitation in order to achieve the MDGs and, even so, GDP growth is on average slightly less than in the baseline scenario. In general, the required increase in the tax revenues seems to be an unfeasible scenario because of two reasons: (i) political constraints—the government's fiscal policy in the past ten years has been focused on ensuring a balanced government budget, for which, as explained, it has concurrently reduced the tax burden on businesses; and (ii) due to the high share of agriculture and informal economic activity typical of economies in transition, direct taxes (corporate and personal) are unlikely to be a major source of domestic revenues in the short- to medium-term (World Bank and International Monetary Fund, 2004).

Policies that help generate additional revenues by broadening the tax base need to be formulated. At the same time, measures need to be taken to increase the efficiency of existing MDG-related spending (or general budget management and tax administration) in conjunction with efforts to attract external resources.

The external-borrowing scenario leads to an increase in the external debt-to-GDP ratio to 33.8 per cent in 2015, up from 25.0 per cent in the baseline, putting the feasibility of this scenario for Uzbekistan into question as it would represent a turning point for the stable debt dynamics shown since 2000. In addition, consistent with the existing MAMS literature, reliance on foreign resources tends to induce a real exchange rate appreciation which slows export growth (Table 9.4). These trends are clear Dutch disease symptoms, which reflect damage to the economy in the form of a structural shrinkage of the tradable sector, risking the capacity of the economy to sustain growth over time. Compared with the domestic-borrowing scenario, the availability of external resources allowed an increase in government absorption (31 per cent of GDP in 2015 against 22.5 percent in the baseline) without crowding out private sector demand. The trade deficit would widen substantially as a result of the real exchange rate appreciation, reaching 9.5 per cent of GDP by the end of the simulation period.

Incidence of poverty under all scenarios

Computable general equilibrium (CGE) models, including MAMS, typically fail to specify the income distribution with sufficient detail to properly estimate poverty at the household level, given the use of aggregated “representative households” (Vos and Sánchez, 2010). To deal with this limitation, most country applications in this volume use a microsimulation methodology that takes into account the full income distribution, and allows obtaining poverty and inequality estimates using the labour market results of MAMS-based scenarios and imposing these onto a micro-level household survey dataset (see Chapter 1). Lacking direct access to household survey data, the microsimulation analysis could not be implemented for Uzbekistan’s study. Instead, in order to make at least some inferences about how poverty could evolve under the simulated scenarios analyzed up until now, progress towards MDG 1 is examined using a simple constant-elasticity relationship between the headcount poverty rate and real household consumption per capita—thus essentially ignoring income distribution effects that would likely affect the final estimates on poverty.⁴

The main findings from these simplistic estimations are threefold: (i) the poverty target would not be met under the assumptions of the baseline and the non-poverty MDG-achieving scenarios, (ii) the remaining shortfall varies across scenarios, and (iii) meeting the targets for education, health and water and sanitation by means of increasing public spending on social sectors does not have a substantial impact on poverty outcomes during the simulation period.

The last finding would not come as a surprise since, as explained earlier, GDP grows relatively less when the MDGs are targeted in the MDG scenarios—compared to the baseline scenario, owing to the macroeconomic trade-offs. These, in turn, have different effects on the structure of the labour market that lead to different results in terms of household income per capita. The distance to the poverty target for 2015 varies across different simulations, with the more prominent progress being shown under the baseline and foreign borrowing scenarios (Figure 9.3). In the foreign borrowing scenarios employment and real wages improve for the more skilled workers over the period 2010-2015 relative to the baseline (Table 9.4), resulting in a lower poverty incidence. Poverty increases less in the domestic-borrowing scenario compared to that of increased taxation where private consumption is severely constrained (see Table 9.4 and Figure 9.3).

Figure 9.3:
Uzbekistan: Distance to poverty reduction (MDG 1) target in the baseline and scenarios of simultaneous MDG achievement under different financing options, 2015

Source: Authors' estimates based on MAMS for Uzbekistan.

CONCLUSIONS AND POLICY IMPLICATIONS

The scenario analysis presented in this chapter helps to conclude that, by and large, most MDGs under study can be achieved in Uzbekistan by 2015. But this will depend on the successful implementation of a growth-driven strategy that enables public resource mobilization to spur service delivery in health, water and sanitation and education.

Optimistic medium-term baseline projections existing at the time of elaborating this study suggest that the country would make significant MDG progress, but targets for child and maternal mortality rates, and water and sanitation delivery would not be fully met by 2015. The government would need to boost spending by about 4.6 to 4.8 per cent of GDP per year, depending on whether it resorts to tax revenue, external borrowing, or domestic borrowing to finance the additional expenditures. Most of this spending would be needed to scale up health services. The amount is slightly less compared to what the scenario analysis indicated would be needed if the strategy is one in which the health-related MDGs are targeted at the same time as the water and sanitation goals, given the latter's synergistic effect on diminishing mortality rates. In order to achieve the poverty goal, higher GDP and employment growth would be required, as the additional MDG spending (on health and water and sanitation) would trigger macroeconomic trade-offs that may limit production capacity in the short run.

With regard to public health expenditures, it is necessary to both increase resources for the modernization of the health sector and to improve the efficient use of those resources. Increased financing should be channelled to capital investment aimed at securing quantitative and qualitative improvements in the infrastructure as well as to operational costs such as remunerating health workers and maintaining and upgrading medical equipment. In the education sector, government policies should focus on upgrading the country's education profile, including improving the quality of education and further developing a lifelong training system for public and private sector workers. The current level of public spending on water and sanitation is far too low; it needs to be increased by more than ten times in order to improve access to safe water and sanitation, primarily in rural areas in Uzbekistan.

How to finance the additional public spending required to meet the MDGs was also addressed in the scenario analysis. Direct tax financing may lead to an expansion of the tax burden, and due to the high share of agriculture and informal economic activity in a transition economy like Uzbekistan's,

direct taxes (corporate and personal) would unlikely be a major source of domestic revenues in the short- to medium-term. Higher taxation would also sting household consumption, slowing poverty reduction. Meanwhile, domestic borrowing would affect economic growth by crowding out private investment and lead to a rapid build-up of public debt. In the case of foreign borrowing, heavy reliance on foreign resources would lead to real exchange rate appreciation, causing export growth to slow. This in turn could limit the economy's capacity to sustain growth in the medium run.

Despite these trade-offs, financing the required public spending through taxation seems to be the most convenient option since domestic revenue mobilization needed to achieve the MDGs could be generated at relatively low cost. Feasible policies that help generate additional revenues by broadening the tax base need to be explored and formulated. But also, measures to increase the efficiency of existing MDG-related spending need to be taken and some external resources may need to be attracted. Providing productive jobs to the growing labour population is particularly important in addressing the issue of poverty in Uzbekistan. In this regard, the development of labour-intensive sectors (including textile, shoemaking and food industries), higher territorial and sector mobility of the workforce, particularly in the rural areas, as well as the creation of a legal framework to increase employment through the legal and socially protected export of labour resources are among the policy priorities. Moreover, reducing informal sector employment by encouraging the legalization of such employment, particularly amongst start-up small businesses, could play an important role in mitigating poverty and inequality.

NOTES

- 1 According to the Eastern Europe, Caucasus and Central Asia (EECCA) region definitions, "improved" water supply is a household connection, public stand-pipe, borehole, protected dug well and spring, and rainwater collection. "Improved" sanitation technologies include connection to a public sewer, connection to septic system, pour-flush latrine, simple pit latrine, and ventilated improved pit latrine.
- 2 At the same time, it could also be an underestimation considering that other MDGs are not being modelled here.
- 3 See Bourguignon and Sundberg (2006) for a detailed discussion of building absorptive capacity in order to reach the MDGs.
- 4 The estimated value for this elasticity turned out to be 0.32.

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