FINANCIAL ANALYSIS

A. Financing of Education

1. **Fiscal climate**. Recent economic and social conditions, including the downturn of 2009, have challenged the performance of the Government of the Kyrgyz Republic. While revenue grew by an annual average of 8.2% from 2004 to 2012, own-source expenditures increased by an annual average of 10.7% in that period. Government expenditures rose to 35% of gross domestic product (GDP) in 2012; the government deficit was 8.5% of GDP (Table 1). Government debt showed a modest decline initially but increased rapidly after 2008.

Table 1: Kyrgyz Republic Gross Domestic Product and Government Expenditures

Item	2004	2005	2006	2007	2008	2009	2010	2011	2012[a]	Average Change (%/year)
Gross Domestic Product (Som[1] billion, 2004 prices)										
Total	94.4	94.2	97.1	105.4	114.3	117.6	117.0	124.0	122.9	3.4
Change (%/year)	7.0	(0.2)	3.1	8.5	8.4	2.9	(0.5)	6.0	(0.9)	
Government Expenditure (Som billion, 2004 prices)										
Total	19.3	19.2	21.8	26.6	27.4	34.3	36.5	39.7	43.3	10.7
Current exp.	17.3	17.7	19.7	21.9	22.5	29.3	32.7	35.8	40.4	11.2
Capital exp.	1.98	1.51	2.10	4.74	4.90	4.98	3.82	3.88	2.91	4.9
Total exp./GDP (%)	20.4	20.4	22.4	25.3	24.0	29.1	31.2	32.0	35.2	
Government Revenue (Som billion, 2004 prices)										
Total	17.6	18.6	21.2	25.4	27.5	26.6	27.1	30.0	32.9	8.1
Own source	17.4	18.6	21.1	25.1	26.8	26.4	26.7	29.8	32.8	8.2
Grants	0.72	0.37	0.23	1.33	0.85	5.96	3.73	3.79	2.26	15.5
Government Surplus / Deficit (Som billion, 2004 prices)										
Amount	(1.63)	(0.55)	(0.57)	(1.23)	0.10	(7.69)	(9.45)	(9.72)	(10.43)	26.1
Compared to revenue (%)	(9.3)	(2.9)	(2.7)	(4.9)	0.4	(28.9)	(34.9)	(32.4)	(31.7)	
Compared to GDP (%)	(1.7)	(0.6)	(0.6)	(1.2)	0.1	(6.5)	(8.1)	(7.8)	(8.5)	
Government Long-Term Debt (Som billion, current prices)										
Amount	74.3	68.3	73.5	70.8	71.8	99.5	112.2	120.8	na	7.2
As % of GDP (nominal)	78.8	67.7	64.6	49.9	38.2	49.5	50.9	42.2	na	

( ) = negative, GDP = gross domestic product, na = not available.
[a] Latest available data in Som.
Source: Asian Development Bank estimates.

2. Despite fiscal risks, the International Monetary Fund (IMF) considers the medium-term outlook for the country to be positive with expected average growth of 7.1% for 2013 and 2014. The fiscal deficit is expected to decline to 4.0% of GDP in 2013.[2] Inflation is expected to stabilize at about 7% over the next 5-10 years. Despite pressing funding needs for health, education, and infrastructure, budgetary restrictions are unlikely to be lifted in the next few years. Conservative budgeting will be needed to rebalance revenues and expenditures. Own-source revenues climbed from 18.4% of GDP in 2004 to 26.7% in 2012. At this level, revenue growth can only be expected as GDP grows and not through tax increases. The need for cost control will remain over the course of the proposed program and beyond.

[1] An exchange rate of Som to the US Dollar was Som51.95 to $1.0 as of 14 August 2014.
[2] IMF. 2013. *Kyrgyz Republic—Program Note*. http://www.imf.org/external/np/country/notes/kyrgyzrep.htm

3. **Education**. Education is the largest budgetary expenditure item for the government accounting for 6.9% of GDP in 2012 (Table 2). The high costs reflect certain unavoidable cost drivers such as the large number of small remote rural schools and the high proportion of the population (37%) of school age. Teacher salaries have doubled since 2011 to bring them into line with earnings in other sectors and to attract new and better-qualified teachers into the schools. This has also driven up education costs. Salaries now are by far the largest component of the Ministry of Education and Science (MES) budgets. Other cost drivers in the sector include a large teaching force with low pupil–teacher ratios.[3] Expenditure per student in the Kyrgyz Republic is only 14%–50% of the amount spent in neighboring countries (People's Republic of China, Kazakhstan, Russian Federation, and Ukraine).[4]

Table 2: Gross Domestic Product and Government Expenditures[a]

Item	2004	2005	2006	2007	2008	2009	2010	2011	2012
Government expenditure on education (Som billion)									
Current prices	4.36	4.92	6.31	9.18	11.12	12.54	12.82	19.42	22.93
2004 prices	4.36	4.59	5.39	6.82	6.76	7.33	6.81	8.42	9.25
Expenditure on education as a share of									
GDP (%)	4.6	4.9	5.5	6.5	5.9	6.2	5.8	6.8	6.9
Total government expenditures (%)	22.7	23.9	24.8	25.6	24.7	21.4	18.6	21.2	21.4

GDP = gross domestic product.
[a] Latest available data.
Source: Asian Development Bank estimates.

4. A comparison of budgets, actual expenditures, and estimated need for two budgetary items—"textbooks, furniture, computers" and "building purchase, repair, and maintenance"—highlights the extent of funding shortfalls in the sector (Table 3). The government's capacity to provide funding is limited by current fiscal constraints.

Table 3: Education Budget for Books and Buildings (Som million)

Expenditure Item	Textbooks, furniture, computers (account 3112)	Building purchase, repair, and maintenance (account 3111)
Budget (2012–2013 average)[a]	141.4	77.6
Actual expenditure (2012–2013 average)[a]	85.1	27.6
Annual need[b]	100.0 – textbooks 500.0 – furniture	700.0
Comment	Cutting back on funds allocated to textbook budgets is common. In 2012 the Som100 million allocated for textbooks was cut to 63 million. There is a 27% shortage of textbooks in the country in 2013–2014.[c] In previous years the shortage was much higher.	A national assessment conducted for the United Nations Children's Fund (UNICEF) concluded that Som2,322 million was needed to address deficiencies in school building structures and utility services.[d]

Notes:
[a] Data from the Ministry of Education and Science of the Kyrgyz Republic. Budget figures are final or adjusted budgets rather than initially approved budgets.
[b] Item 2.1.3 of the *Action Plan 2012–2014 for the Implementation of the Education Development Strategy of the Kyrgyz Republic (2012–2020).*
[c] ADB. 2014. *Textbook Development Sub-Sector Assessment*. Prepared for *Technical Assistance for Strengthening the Education System Sector Development Program*. Manila
[d] UNICEF. 2013. *Assessment of Safety in School and Pre-school Education Institutions in the Kyrgyz Republic.* New York.
Source: Asian Development Bank estimates.

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[3] Department for International Development (DFID). 2013. *Kyrgyz Republic: PETS Education Sector Final Report*. Unpublished (draft). DFID: London.
[4] ADB. 2011. *Diagnostic Assessment of the Education Sector of the Kyrgyz Republic*. Consultant's report. Manila.

5. **Financing of textbooks.** The government's textbook budget has been set at Som100 million per year since at least 2007. Since 1994, however, the government has relied heavily on contributions from projects funded by development partners to finance textbooks. From 2000 to 2006, development partners financed 4.7 million new textbooks, while MES financed 1.2 million.[5] More recent data on textbook supply shows this situation has not changed (Table 4).

Table 4: Textbook Procurement, school years 2010/11 and 2012/13
(copies)

Development Partners	SY2010/11	SY2011/12	SY2012/13	Total	
MES		1,180,160	1,085,200	2,265,360	(37%)
ADB	1,404,330			1,404,330	(23%)
World Bank	226,000	2,023,730		2,249,730	(37%)
Russian Federation			240,000	240,000	(4%)
Total	**1,630,330**	**3,203,890**	**1,325,200**	6,159,420	(100%)

ADB = Asian Development Bank; MES = Ministry of Education and Science; SY = school year.
Source: Asian Development Bank estimates.

6. Table 5 shows the current cost of supplying new textbooks to all students in primary and secondary schools. The recurrent annual cost to maintain a full inventory of textbooks is about Som283 million ($5.447 million), more than three times what was spent in SY2012/13.

Table 5: Textbook Requirements in 2014

	Curriculum[a]	
Item	**Existing**	**New**
Textbooks Required ('000)[b]	**10,778**	**9,445**
Value of Textbooks[c]		
Total Inventory		
Som million	1,417	1,227
$ million	$28.33	$24.54
Annual Replacement Cost		
Som million	283	245
$ million	$5.67	$4.91

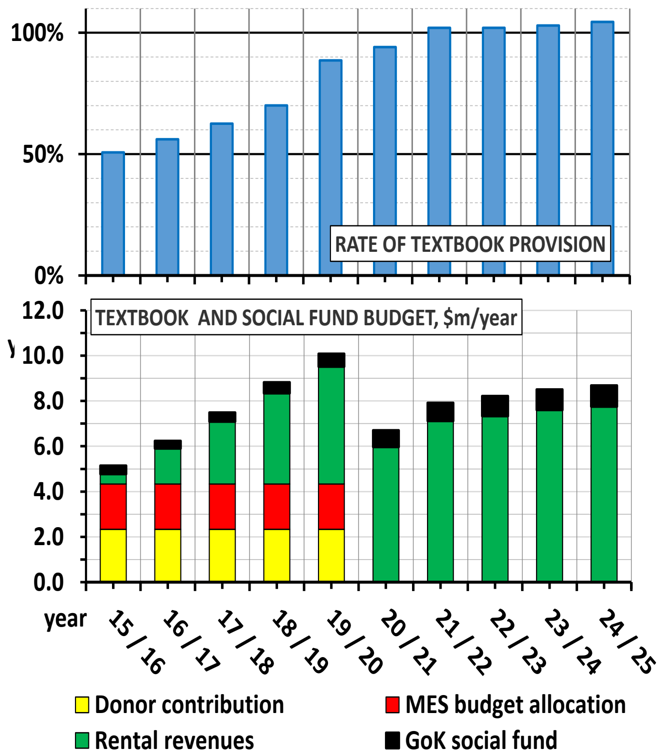
Notes:
[a] The average number of textbooks under the existing curriculum ranges from 5.6 to 17.1 per grade. A new curriculum would combine certain subjects to improve both the effectiveness and the efficiency of teaching. The number of subjects under a new curriculum would range from 6 to 14 per grade.
[b] Estimated as (number of students by class) x (books per student). Total students in 2014 estimated at 1,023,000. The number of books per student varies by grade from 5.6 in grade 1 to 17.1 in grade 9 (average = 11.2).
[c] Includes textbook costs plus teacher guides provided at a rate of 1 for every 20 textbooks. Textbook costs range from Som91 ($1.75) in Grade 1 to Som182 ($3.50) in grade 11 and teacher guide costs from Som52 ($1.00) to Som78 ($1.50). The average cost of textbooks plus teacher guides is Som131 ($2.52) per textbook. Replacement cost calculations assume an average textbook life of 5 years.
Source: Asian Development Bank estimates.

7. During project preparation, a financial model was developed to forecast the future financing of textbooks. Figure 1 depicts the future financing requirements with a textbook rental scheme (TRS) being implemented to supplement government financing. Under both scenarios (with and without a TRS) continued government and support from development partners is needed over the coming 5 years in order to create full stocks of textbooks. Assuming the phased implementation of the planned TRS, from 2020 onwards the direct MES contribution to textbook rentals is expected to be limited to a government social subsidy to loan textbooks free to the poorest 15% of students. Key assumptions in the

[5] Organisation for Economic Co-operation and Development. 2010. *Kyrgyz Republic 2010: Lessons from PISA*. Paris: OECD. http://dx.doi.org/10.1787/9789264088757-en

modelling are (i) numbers of new textbooks printed each year and associated expenditures are based on the assumed phased introduction of textbooks and teaching guides under the new curriculum each year: grade 5 in 2015, grade 6 in 2016, grade 7 in 2017; (ii) actual demand for textbooks each year is based on a demographic model that incorporates historical data and which predicts an average annual increase of 1.7% in the student population; (iii) TRS revenues are based on the assumed average rental rate per textbook, the number of new books in circulation and the 15% subsidy rate for poor households; (iv) the government contributions are set at a minimum of Som120 million ($2.31 million) for a period of 5 years to 2020. Donor contributions for textbooks are assumed to be a planned World Bank contribution of Som606.26 million ($11.67 million) (averaging spread over 5 years). These sources of funding in addition to a top up from TRS revenues is projected to be sufficient from 2016 to 2020 to cover expenditures and allow excess TRS funds to accumulate. By school year 2020/21, forecast TRS revenues plus accumulated reserves can cover forecast expenditures. Without the TRS, the annual cost for MES to fully finance textbook provision is predicted to increase to Som508 million ($9.78 million) by 2030.

Figure 1: Financing Requirements for Textbook Provision under a Textbook Rental Scheme



GoK = Government of the Kyrgyz Republic; MES = Ministry of Education and Science.
Source: Asian Development Bank estimates.

8. **Teacher training costs**. From 2011 to 2013, the average annual MES budget for the “purchase of other services” (account category 2215) was Som189.5 million ($3.648 million). This budget category covers teacher training as well as 32 other service cost categories, ranging from legal services to maintenance and security. At an estimated cost of Som9.091 ($175) per teacher for training in the new curricula,6 a teacher training budget amounting to half of the budget for this account provides training for about 11,000 teachers, while actual expenditures would train only 8,000 teachers. The number of teachers in the schools, provided in the full financial analysis, suggests a need to train 15,000 teachers every year, assuming retraining is provided every 5 years.

[6] Assumes a 5-day course per subject at $35 per day.

B. Financial Sustainability Analysis

9. The financial sustainability analysis considers recurrent cash flows for textbook provision, teacher training, and school maintenance. These components constitute an integrated effort to upgrade the quality of primary and secondary school education.[7] The analysis evaluates the incremental cost burden imposed by these recurrent expenditures. The fiscal sustainability of the Kyrgyz education sector depends on the materialization of IMF economic forecasts and the implementation of cost-reduction measures within the MES budget. The proposed program will support a process to identify and then implement cost reductions in the MES budget.

10. **Fiscal impact of the program.** The analysis of fiscal impact completed for the program starts with a cash flow analysis of textbook provision, teacher training, and facilities maintenance. Based on this analysis, a financial plan is evaluated to show the fiscal impact of the program and identify the funding needed to finance the expenditures under the investment component of the program during and beyond the implementation period. Recurrent costs are summarized in Table 6.

Table 6: Incremental Recurrent Costs

Outputs	Average Annual cost	Discussion
1. Quality of curriculum and learning and teaching materials	Som280.48 million ($5.61 million)	Budget required to develop and print all textbooks for grades 1 to 11 less current budget of Som100 million. Annual costs rise in proportion to growing student population. The cash flow analysis for textbooks is described in the full financial analysis.
2. Quality of teachers and teacher training	Som67.01 million ($1.34 million)	75,500 teachers trained over a 5-year cycle at a unit cost of Som9.091 ($175). This is on top of an estimated expenditure on teacher training of Som70 million ($1.35 million) per year.
3. Access to quality education	Som227.23 million ($4.55 million)	Required investments of Som3,600 million ($69.3 million) for all schools based on the funds needed for capital repairs, furniture, and equipment identified in Item 2.1.3 of the Action Plan, 2012–2014 for the implementation of the Education Development Strategy of the Kyrgyz Republic (2012–2020).

Source: Asian Development Bank estimates.

11. In the evaluation of fiscal impact, two scenarios are considered: the base case assumes MES funding of all recurrent costs, while the second scenario assumes that a textbook rental scheme (TRS) is implemented. Since recurrent costs are phased in, they increase as a percentage of the total MES budget initially, peaking at 2.1% of the budget in 2021 and falling thereafter as the MES budget grows. With implementation of the TRS, recurrent costs increase to 1.3% and then fall to 0.6% by the end of the forecast period. Since MES budgets represent about 20% of total government budgets, the peak impacts for the base case is 0.42% of the overall government budget; for the TRS scenarios, the peak impact is 0.25% of the total budget. Over the forecast period, the impact on the government budget averages 0.30% for the base case and 0.17% for the TRS scenarios. Therefore, incremental cost burdens are sustainable assuming continued support from development partners in the period to 2020, the economy grows as the IMF predicts, and the government budget plans and fiscal reform measures are implemented. Prospects for sustainability are significantly improved if the MES cost burden is lightened by a carefully designed TRS and other cost reduction measures that the program will help to identify and implement.

[7] Counterpart funding from the government under the program is limited to payment of taxes and in-kind support in the form of office facilities and related utility services. As this entails no new expenditures, it is not considered in this analysis.