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Analysis of the impact and effectiveness of official multilateral financing on socio-economic development: a case study of the Kyrgyz Republic (1992–2017)

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Abstract. This study analyzes the impact of officially multilateral foreign funds in the Kyrgyz Republic on its economy, on broader socio-economic development. It identifies key strengths, obstacles, weaknesses, lessons from different periods official multilateral financing and the key features of the public investment system with foreign loans. The analysis shows the positive impact of public investment on socio-economic development, although this positive effect is significantly reduced due to the debt trap, high servicing costs, a large share of lost effects from loans owed to both creditors and countries from operational failures as well as economic and financial mistakes. A sensitivity analysis is conducted showing the size and impact of possible additional effects on the country's economic development and growth, budgets and debt levels that could be achieved through more efficient implementation of public investment processes, improved project selection, preparation, and optimization of investment project implementation, as well as better utilization foreign financial funding.

Keywords: public investment, developing countries, international financial organizations, debt, credits management, investment projects

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Анализ эффективности и влияние официального многостороннего финансирования на социально-экономическое развитие на примере Кыргызской Республики в 1992–2017 гг.

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Аннотация. Проведен анализ влияния официальных многосторонних иностранных фондов на экономику Кыргызской Республики в целом, а также на различные параметры социально-экономического развития страны. Исследование выявляет ключевые преимущества, препятствия, слабости, уроки разных периодов официального многостороннего финансирования Кыргызской Республики и выделяет особенности государственной инвестиционной системы, опирающейся на иностранные кредиты. Анализ показал положительное влияние государственных инвестиций на социально-экономическое развитие, хотя этот эффект серьезно нивелируется из-за долговой ловушки, высоких расходов на обслуживание кредитов, большой доли упущенных эффектов от кредитов, причитающихся как кредиторам, так и другим странам, получающим благодаря операционным сбоям и другим экономическим и финансовым ошибкам. Результаты анализа экономической чувствительности для Кыргызской Республики показали размер и влияние возможных дополнительных эффектов для экономического развития и роста страны, бюджетов и уровней долга, которые могут быть достигнуты путем более эффективной реализации государственных инвестиционных проектов, улучшения отбора проектов, подготовки, и реализации инвестиционных проектов, а также лучшего использования иностранного официального финансирования.

Ключевые слова: государственные инвестиции, развивающиеся страны, международные финансовые организации, долг, управление кредитами, инвестиционные проекты

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Introduction

Countries need an influx of official foreign capital to solve problems associated with a shortage of foreign currency and savings (Van, Pham, Pham, 2023; Asatullaeva et al., 2021; Chenery, 1966; Lahiri, 1991). Research into the impact of public investment on the broader economy generally finds that this influx has a positive impact (Aschauer, 1989; Erenburg, Wohar, 1995; Abiad et al., 2015). More specifically, increased investment in infrastructure in accordance with (Calderon, Serven, 2008) helped the number of low-income countries reach the level of middle-income countries, with an additional annual GDP growth rate of 2%. Such positive effects, however, are not achieved by default or universally, as Warner (Warner, 2014) finds that public investment in large infrastructure projects has had little or no long-term impact in low-income countries.

The literature on public investment with foreign assistance, is split on the issue of its effectiveness, in two distinct camps of theoretical and empirical development economics studies:

- Public interest theory — argues that foreign aid is needed to fill the financing or investment gap, and this, in turn, will lift countries out of the so-called poverty poverty trap[1] (Sachs, 2005). However, to achieve this, proponents like Sachs and Stiglitz[2] argue, the way aid is delivered must be completely rethought.
- At the same time, public choice theory argues that foreign aid is ineffective and possibly harmful to recipient countries (Bauer, 2000; Easterly, 2001) because governments cannot do anything right (Grindle, Thomas, 1991). This literature argues that official aid is not only ineffective, but has also harmed developing countries by creating dependency (Easterly, 2014; Moyo, 2009; Rajan, Arvind, 2005, 2008; Rajan, Subramanian, 2011; Hayter, 1971; Dovern, Nunnemkamp, 2007).

[1] Sachs, J. (2009). Sachs Ironies: Why Critics are Better for Foreign Aid than Apologists. *Huffington Post*. May 25. Retrieved 15.03, 2024 from https://www.huffpost.com/entry/sachs-ironies-why-critics_b_207331 Sachs, J. (2009). Aid Ironies. *Huffington Post.* May 24. Retrieved 15.04, 2024 from http://www.huffingtonpost.com/jeffreysachs/aid-ironies_b_207181.html

[2] Stiglitz, J. (2002). Overseas Aid is Money Well Spent. *Financial Times* (April 14).

Arndt and Jones (Arndt, Jones, Tarp, 2013) argue that "in light of the high expectations surrounding aid in the 1960s and early 1970s, the magnitude of estimated aid effects tends to be modest but becomes substantial in the long run". They further argue that while aid contributes to faster expansion of "modern" sectors (industry) and a relative decline in the share of agriculture in GDP, it should not be viewed as a universal panacea for promoting growth and development.

The theory argues that aid-recipient countries would be able to achieve significant economic success and begin to make do with their own resources; in addition, they would become attractive to foreign private capital, writes Andronova, posing the question: "Why did the theories of development assistance turn out to be untenable and ultimately failed prevent the crisis of 1982, the epicenter of which was the countries that accounted for the largest volumes of official multilateral funding?" Andronova diagnoses the problem as: "The root reasons for this lie in the flaws in the foreign borrowing policies of the recipient countries, as well as in the nature of the use of funds received through these channels" (Andronova, 2004). This suggests that certain investments as those in physical capital and improvements in human capital, such as improvements in education, social capital and health care, are likely to be key transmission channels through which aid promotes growth (Arndt, Jones, Tarp, 2013).

Can we gain insight into the relevant transmission channels through which aid can promote economic growth by stimulating some of its determinants? Where research is not divided is the general agreement that a minimum degree of institutional development and a positive policy environment is required for international assistance[3] to bear fruit (Burnside, Dollar, 2000; Tadesse, Guttormsen, 2011; Collier, Dollar, 2001). Research identifies that the broader institutional context and institutional quality and governance within which investment decisions are made and the quality of project selection, management and implementation of public investments play a critical role in determining the return on investment and its growth dividends (Esfahani, Ramirez, 2003; Haque, Kneller, 2008; Dabla-Norris et al., 2012, Rajaram et al., 2010).

However, we also find strong evidence that the impact of aid on economic growth may be undermined by the volatility of public investment (the main mechanism of aid transmission), which in turn may be associated with the volatility of government revenues and aid itself (Museru, Toerien, Gossel, 2014). It is not surprising, they continue, "that we found that institutional quality (consisting of methodological indicators of the quality of bureaucracy, rule of law, and corruption) is a strong and significant variable influencing GDP growth" (Museru, Toerien, Gossel, 2014).

The key aspects of institutional failure affecting public investment in developing countries can be grouped into three broad areas: limited capacity, limited commitment, limited responsibility.

- Limited Capacity: Lack of institutional instruments of professional competence, tools and capacity for policy development and implementation is the most

[3] Forms of multilateral foreign financial assistance are funds for projects and programs accompanied by technical assistance, which includes the provision of skills, knowledge and advice.

common obstacle to nation states making the best use of public investment (Allain-Dupré, 2011; Domah, Pollitt, Stern, 2002).

- Limited Commitment: The institutional structure in many developing countries makes it impossible to rely on contracts, illustrated by the prevalence of contract reframing (Stern, Holder, 1999; Guasch, Laffont, Straub, 2003). Such fears of politicization and future contract renegotiations based on changes in governments are a major obstacle.
- Limited responsibility: The weak accountability is more likely to lead to collusion between the government and various interest groups in public investments (Bergara, Henisz, Spiller, 1998; Gutiérrez, Berg, 2000; Henisz, 2000; Henisz, Zelner, 2001).

While many developed countries also suffer from some of these weaknesses, many of these problems are more acute in low-income countries. Consequently, the size and nature of these constraints in developing countries often dominate the results of public investment.

As an example of such weaknesses, Feyzogly, Swarup, and Zhu (Feyzogly, Swarup, Zhu, 1998) concluded that foreign aid is fungible, meaning that loans in agriculture, education, etc. channelled by recipient governments and used elsewhere, with only the transport and communications sector typically used for donor purposes. This makes sectoral analysis of donor aid difficult, and project-specific rates of return provide little information about the impact of foreign aid on a sector (Feyzogly, Swaroop, Zhu, 1998).

In this study, we will analyze the impact of both the Public Investment Projects (PIP) and foreign aid to Kyrgyzstan on the broader economy and specific socio-economic sectors, followed by some key points of the PIP nature of official multilateral financing in different periods in Kyrgyzstan, its consequences, as well as lessons learned and recommendations.

Methodology for researching public investment projects with official multilateral financing in Kyrgyzstan

The study uses statistical, comparative typological and analytical methods from which we draw results which ensure the reliability of the theoretical and practical conclusions obtained. This review of the development performance of government-funded investment projects was undertaken to provide advice on strengthening government capacity to manage development projects and improve the development performance of government-funded investment projects. The review covered the impact of the PIP on development from 1992 to 2022 and focused more closely on the period from 2008 to 2017, a period following the Western world's financial crisis of 2008, which dramatically undermined the focus and volume of investment in developing countries around the world. The studio also focuses on donor-funded projects from the World Bank, ADB, EBRD, KFW, comparing their effects with those from China, Russia, etc. Sectors analyzed are health, education, energy, transport, telecommunications, agriculture, and social services. Project documents

were collected from the donors themselves and from national data on PIP projects that were provided by the Ministry of Finance of the Kyrgyz Republic. One problem is the lack of oversight by the Ministry of Finance of off-budget development projects, thus risking duplication in the government budget with the intervention of existing donors, especially at the local level.

A large number of Project Completion Reports (PCRs) and Ex-Post reviews were reviewed of projects funded by key traditional donors in the sectors mentioned below, and a large number of interviews were conducted with Project Implementation Units (PIUs) officials, and with representatives of international organizations in order to provide a better picture of the historical and current state of development effectiveness in the implementation of the PIP in the Kyrgyz Republic. Particular attention was paid to identifying the causes of deficiencies, and recommendations for improving development efficiency and lessons learned and recommendations for improving both institutional and personnel deficiencies that can lead to such undesirable results, both at project approval and at the projects' management level.

Public Investment Projects and impact on GDP

Volume of PIP. Like other developing and low-income countries, growth in the Kyrgyz Republic is highly dependent on maintaining current high levels of public investment, and any shortcomings in PIP implementation could limit the broader economic benefits of current public sector investment in the Kyrgyz Republic (fig. 1).

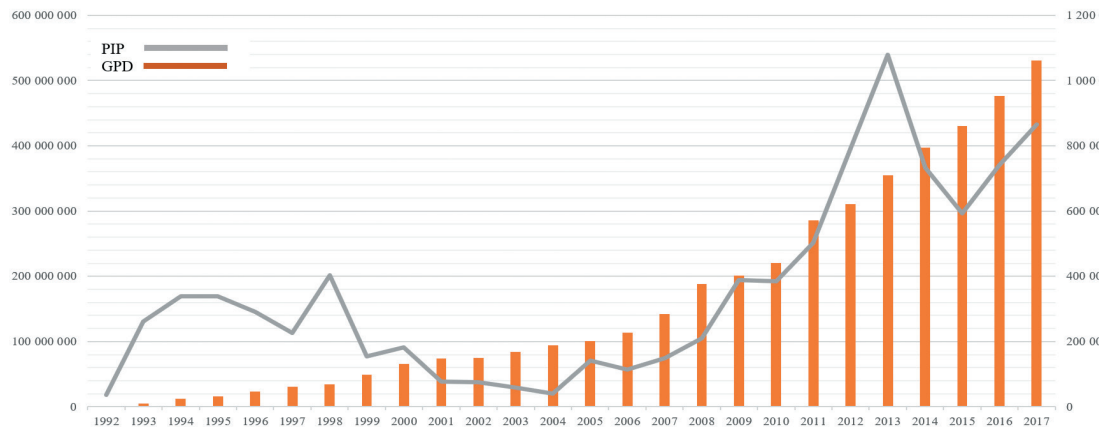

Figure 1. Public Investment Projects and Debt in Kyrgyz Republic between 1992–2017 (left axis — PIP; right axis — GDP; Kyrgyz som)

Source: compiled by R.V. Manshin, G.A. Sumkoski.

The country's average annual capital expenditure between 2010 and 2017 was 5.97% of GDP, an increase from the peak annual average of 4.6% of GDP between 2005 and 2009.

Types of PI. The PIP portfolio mainly includes investments (loans and grants), mixed projects (investments and TA) and technical assistance (TA). The share of TA projects has decreased significantly from 14% in 2008 in the Kyrgyz Republic and consists almost exclusively of projects financed by traditional donors (Table 1).

Table 1

PIP expenses by project type, Kyrgyz som

Projects	Years											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PIP without TA	3.815.8	3.744.0	3.414.8	5.652.3	8.334.7	13.159.5	20.360.2	17.440.5	24.492.5	19.766.2	24.675.4	28.865.1
PIP-investment projects	3.627.3	3.441.0	2.922.2	5.145.9	8.185.3	12.017.5	17.940.2	16.809.2	23.261.2			
Mixed projects	176.2	249.7	308.3	400.8	374.3	1.233.1	2.425.2	1.051.2	1.231.3			
TA Projects	326.3	507.0	527.8	564.5	273.8	535.3	544.2	631.3	240.9			
Total PIP	4.129.7	4.197.6	3.758.3	6.111.2	8.833.4	13.785.9	20.909.6	18.491.7	25.723.8			

Source: G.A. Sumkoski calculated based on Ministry of Finance of the Kyrgyz Republic data.

The data presented here does not cover investments financed solely from the domestic budget, which is low compared to the donor-funded PIP. Investments financed solely by the domestic budget are shown in Table 2 compared to the donor-funded investment projects, showing that domestic PIP funding peaks at 10.8% in 2007 and slows to 4% in 2014. This is one source of confusion when research claims that it is ODA, and not PIP, that has a positive impact on GDP and broader socio-economic indicators.

Table 2

Total PIP, with both foreign and domestic funding, %

Direction of funding	Years								
	2006	2007	2008	2009	2010	2011	2012	2013	2014
Foreign	92.4	89.2	90.9	92.6	94.4	95.5	97.4	95.4	96.3
Domestic	7.6	10.8	9.1	7.4	5.6	4.5	2.6	4.6	3.7

Source: G.A. Sumkoski calculated based on Ministry of Finance of the Kyrgyz Republic data.

Donors to the PIP in the Kyrgyz Republic. The PIP portfolio maintained by the Ministry of Finance does not include all donor-funded projects, and a number of small off-budget donor projects fall under the radar of the PSU unit. Separately from non-Western financing, Russian loans, by their nature, are not reflected as budgetary support during crisis periods, separately in the department of project implementation DPI — ORP of the Ministry of Finance, with the exception of the Chinese loans, which mainly go to infrastructure, and since 2008 they have become significantly dominant compared to Western financing, marking this as a distinct and separate period for the

PIP in the Kyrgyz Republic. Also not included are projects implemented under public private partnerships (PPPs), where legal frameworks have been introduced but overall active PPPs are generally very low (Table 3).

Table 3

Total PIP per donor, %

Countries and organisations	Years								
	2006	2007	2008	2009	2010	2011	2012	2013	2014
ADB	42.4	37.7	40.6	31.2	17.1	23.6	14.8	12.0	8.3
China	0	0	0	26.7	52.7	40.6	57.3	62.8	67.6
EBRD	0	0	0	0	2	3.8	3.8	3.4	1.3
IDB	5.1	5.5	2.7	6.5	8	3.6	0.5	0.5	0.4
KFW	9.1	9.1	3.5	2.4	2.9	2.9	2.7	2.9	6.0
Switzerland	1.4	3.7	2.2	2.2	0.7	0.8	0.7	0.7	0.7
WB	33	28.1	23.3	21.6	13.3	19.1	14.4	12.8	13.8
Other (Russia, Turkey)	9	16	27.6	9.5	3.4	5.4	5.8	5.0	1.9

Source: G.A. Sumkoski calculated based on Ministry of Finance of the Kyrgyz Republic data.

Estimated Macroeconomic Impact of the PIP in the Kyrgyz Republic. For the empirical study, multivariate linear regression technique is used to extract the statistical significance of the impact of variables on the performance of the economy and various sectors, as well as the impact of official multilateral financing in various socio-economic sectors and whether it helps attract higher foreign direct investment. We conduct the empirical analysis for two separate dependent variables, PIP and ODA. Data on investment in the period 1991–2022 is collected from MoF, World Bank, ADB. In addition to a year-on-year analysis we show the results of a 3-year lagged impact of the independent variables to allow for changes in the investment levels to trickle down since these are processes that require time to be felt in practice. We first conduct a linear regression analysis year-on-year and with a 3-year lag, and, for additional robustness test we use the 2SLS method with additional independent variables known to have impact on GDP/Sectors such as Money, Education, Health spending, introduced in the regression equation as instrumental variables as to test the robustness of the results of the original regression.

We test the assumption that PIP and ODA positively impacts GDP, and, that PIP and ODA positively affect socio-economic aspects such as Health, Education and Poverty, using following empirical models:

$$\ln\beta GDP\,(t) = \beta 0 + \beta 1 \ln PIP + \beta 2 \ln MONEY + \beta 3 \ln ODA + \mu\,(t) + \delta\,(t) + \varepsilon\,(t); \quad (1)$$

$$\ln\beta Health\ (t) = \beta 0 + \beta 1 \ln PIP + \beta 2 \ln TRADE + \beta 3 \ln ODA + \mu\ (t) + \delta\ (t) + \varepsilon\ (t); \quad (2)$$

$$\ln\beta Poverty\ (t) = \beta 0 + \beta 1 \ln PIP + \beta 2 \ln TRADE + \beta 3 \ln ODA + \mu\ (t) + \delta\ (t) + \varepsilon\ (t); \quad (3)$$

$$\ln\beta Education\ (t) = \beta 0 + \beta 1 \ln PIP + \beta 2 \ln TRADE + \beta 3 \ln ODA + \mu\ (t) + \delta\ (t) + \varepsilon\ (t); \quad (4)$$

where $\mu\ (t)$, $\delta\ (t)$ = *Country and time specific unobserved effects*; $\varepsilon\ (t)$ = *error term*.

Both IVs and DV are logged variables using natural logarithm ln for a better interpretability of the results where 1% increase in IV leads to intercept β% increase/decrease of DV. The VIF results are showing no multicollinearity in most of the different regressions and show moderate multicollinearity in two of them. The data met the assumption of independent errors (Durbin — Watson). Visual review of the scatterplot for each regression does not show presence of heteroskedasticity. Results are robust to several sensitivity checks with additional control variables and instrumental variables using 2SLS regression. In order to check the reliability of the initial regression results, a 2SLS analysis is carried out, adding to the model an endogenous variable for Credit, which is instrumented on the basis of GDP, (and the variable Trade in the analysis of the sectors) using the method of additional analysis with using different sets of indicators from Sumkoski (Sumkoski, 2022).

The results of the regression of independent variables on indicators for Kyrgyzstan are shown in Tables 4 and 6. The results show a statistically significant impact of both the PIP and the ODA on GDP as an indicator of economic growth, with a large difference in the strength of the statistical significance of the impact in favor of the PIP. It is worth noting the period around 2008, which marks a critical transition between two different periods of external loans to Kyrgyzstan. Namely, the Western financial crisis of 2008 marks the beginning of Chinese loans for public investment in Kyrgyzstan, significantly surpassing Western multilateral ones as of 2006. The key difference is that Chinese loans under the Belt and Road Initiative were more targeted, quickly and efficiently implemented, and did not come with strings attached or advisory technical assistance like the Western loans. And statistical analysis confirms a big leap in the statistical assessment of the impact of loans on Kyrgyzstan's GDP after 2008 compared to the previous period, when Chinese loans and a further tranche of Russian budget loans (In kind of grants because the loans were always written off by Russia) poured into the economy of Kyrgyzstan.

The β standardized coefficients are reported and marked with (***), (**) and (*) marking statistical significance at 1%, 5% and 10% level respectively. p values given in brackets.

Each cell of columns OLS, Lag, 2008 to 2022, and 2SLS instrumented reports the standardized coefficient β and p reports the corresponding probability that the true parameter is equal to zero on GDP from individual variable (ODA, Money, Accumulated Capital) reduced from times series regression for the years 1992–2017 in which Adj. R. Sq and Number of observations are given at the bottom of each

column, in which the row variable enters as the dependent variable; adjacent columns. "Endog test" reports the probability from a Durbin chi2, Wu — Hausman tests that aid can be treated as exogenous.

However, as we indicated in the literature review, the study must go beyond GDP, so we conduct additional analysis, which is presented in the following tables.

Table 4

Kyrgyz Republic — Impact of ODA, Money, PIP on GDP4 1992–2022

		Indicators					
GDP		**OLS (1)**	**OLS 1Y Lag (2)**	**2Y Lag OLS (3)**	**3Y Lag OLS (4)**	**GDP 2008/ 22 OLS (5)**	**2SLS GDP (6)**
ODA	β	– 0.26*	–0.28**	–0.23*	–0.22*	0.56 **	–2.92
	p	(0.055)	(0.046)	(0.084)	(0.088)	(0.016)	(0.132)
Money	β	–0.01	0.05	0.10	–0.12	–0.18 **	0.33
	p	(0.945)	(0.726)	(0.494)	(0.370)	(0.42)	(0.297)
PIP	β	1.74***	1.81***	1.72***	1.67 **	–0.28	3.84***
	p	(0.000)	(0.000)	(0.000)	(0.000)	(0.369)	(0.010)
Credit/GDP	β						1.632
	p						(0.183)
Adj. R.Sq		0.8422	0.8163	0.8129	0.8173	0.9758	0.5166
Num. Obs.		19	20	20	20	7	18

Source: G.A. Sumkoski empirical analysis.

Impact on FDI and broader socio-economic development indicators. An analysis of the sectoral direction of foreign direct investment in developing countries shows that in first place, 43% of the total volume of FDI falls on the mining industry, and 36% on the manufacturing industry. These data reflect the desire of these countries to create their own heavy industry and thereby reduce their dependence on imports of finished products, for which the governments of most developing countries have created significant incentives for foreign companies.

PIP by sector and examples of project development analysis. The expansion of public investment in Kyrgyzstan after 2008 was aimed at the energy and transport sectors. Roads have traditionally been the most important investment area until 2009 when increased investment is observed in the energy sector, largely financed by China, reflecting the changing regional and global political situation.

Significant progress has been made in rehabilitating key transport corridors, improving domestic and regional connectivity. In the social sectors, public investment has contributed to improved implementation and management of basic education, the development of an integrated system for the treatment of childhood diseases and an improved delivery system for essential medicines. State-Owned Enterprise (SOE) reforms, forced by Western credit conditions, were carried out in transforming what

had been a public sector into a private sector economy, although efforts to develop good corporate governance had not yet been embraced.

However, in policy development and planning, they suffered from weak coordination, poor incentives, frequent staff turnover, and a tendency to abandon new systems and institutions after aid projects were completed. With the significant expansion of infrastructure projects, the share of social sector projects in the PIP has decreased. For example, the share of PIPs dedicated to the education sector fell from a peak of 14.6% in 2008 to 2.1% in 2012. Rural development also saw a sharp decline in its budget share from a peak of 14% in 2007 to 0.3% in 2012 (Table 5).

Table 5

Total PIP by sector, %

Sectors	Years						
	2006	2007	2008	2009	2010	2011	2012
Agriculture	7.8	6.4	8.1	0.6	0	0	0
Education	3.5	10.8	14.6	8.1	2.3	3	2.1
Emergency	3.3	2.4	1.4	0.5	0.8	1.1	0.4
Energy	5.9	8.9	7.2	5.9	3.2	16.3	49.7
Environment	0.1	0	0	0	0.1	0	0.1
Finance	7.3	2.1	0.7	0.1	0	0.2	2.7
Administration	1	0.3	1.2	3.7	1.7	2.1	1.3
Health	2.7	1.7	2.6	3.3	3.1	1.7	1.2
Housing	0	0	0	0	0	6	2.4
Infrastructure	8.9	10.4	10.2	7.6	4.5	3.6	0.4
Irrigation	8.2	5.3	1.9	2.9	1.9	1.4	1
Land resources	1.5	1.3	0.4	0.8	0.4	0.9	0.5
Various	0.1	0.3	0.2	1	0.6	4.1	5.6
Public transport	0	0	0	0	0	0	0.5
Roads	34.8	28.2	27.4	51.5	73.8	49.4	24.5
Rural development	5.9	14	13.9	3.4	1.1	2.8	0.3
Water	5.8	5	5.1	6.4	3	2.8	3.6

Source: G.A. Sumkoski calculated based on Ministry of Finance of the Kyrgyz Republic data.

Progress was recorded in the financial area in stabilizing the banking system and improving bank supervision, although efforts to create a rural financial market and develop capital markets had little success. In agriculture, the policy reform and development programs have been fairly successful in achieving their goals, while efforts to reform the Ministry of Agriculture and encourage agricultural commercialization have not seen the same success (Table 6).

Table 6

Kyrgyz Republic — impact of ODA, PIP on socio-economic factors and FDI

Indicators	Indicators and empirical analysis					
		PIP OLS (1)	ODA OLS (2)	Trade OLS (3)	3Y Lag O.L.S. (4)	2SLS Shk.En (6)
Health care	β	0.03* **	1.23			
	p	(0.003)	(0.632)			
Adj. R.Sq		0.6326	0.6326			
Education	β	–0.82**	0.34			
	p	(0.030)	(0.443)			
Adj. R.Sq		0.5196	0.5196			
Poverty	β	–0.44*	6.29**			
	p	(0.061)	(0.027)			
Adj. R.Sq		0.6763	0.6763			
FDI	β		–0.03	0.80***	0.96***	0.06
	p		(0.817)	(0.003)	(0.008)	(0.95)
Adj. R.Sq	23		0.7271	0.7271	0.4058	0.7335
Instr/FDI	β			0.94***		
	p			(0.010)		
Num. Obs.		23	22	22	23	19

Source: G.A. Sumkoski empirical analysis.

The β standardized coefficients are reported and marked with (***), (**) and (*) marking statistical significance at 1%, 5% and 10% level respectively. p values given in brackets.

Each cell of columns OLS for Life expectancy, Teriary School Enrolment and Poverty level (ODA and TradeOpeness), reduced from times series regression for the years 1992–2017, and 2SLS instrumented regression, reports the standardized coefficient β and p reports the corresponding probability that the true parameter is equal to zero on FDI for individual dependent variables, where Adj. R. Sq and Number of observations are given at the bottom of each column, in which the row variable enters as the dependent variable; adjacent columns. “Endogenity test” reports the probability from a Durbin chi2, Wu — Hausman tests that aid can be treated as exogenous; estat hettest Source: authors’ calculations.

In terms of other broader and more comprehensive socio-economic indicators, we see that the impact of accumulated public investment in the PIP has a deeper impact on issues such as health (life expectancy), education (tertiary enrolment) and the social sphere (poverty level) Similarly, we see that the PIP has a statistically insignificant impact on attracting FDI and on the development of healthcare and education in the Kyrgyz Republic.

Debt and Credits of Kyrgyzstan

PIP benefits in the Kyrgyz Republic. The Kyrgyz Republic has benefited from international donor-funded PIP projects received between 1992 and 2023 amounting to 9.41 bln. doll., of which US 5.38 bln. doll., and 4.03 bln. doll. to multilateral Western institutions. Russia provided Kyrgyzstan with the majority of grants or forgiven loans: once 300 mln. doll. budget loans after independence, another 350 mln. doll. to support Kyrgyzstan's budget in 2005, and another development fund in 2011 of 350 mln. doll., and in 2020 year another 100 mln. doll. in budget support. Russian loans and investments are especially necessary for Kyrgyzstan in order not to completely succumb to the burden of public debt both to Western Creditors and to China. As of 2021, China has launched 46 projects in Kyrgyzstan as part of a number of infrastructure projects under the Belt and Road Initiative, totalling approximately 5.4 bln. doll. (Aminjonov et al., 2019), and the debt is held primarily by Chinese Export-Import Bank (fig. 2).

Figure 2. Kyrgyz debt 2013 (January/April/July/October) to 2022 (January/April/July/October) mln. doll.
Source: URL: https://www.ceicdata.com/en/indicator/kyrgyzstan/external-debt-short-term

The significant depreciation of the som against the US dollar in 2014–2015 led to an increase in public debt to 67% of GDP in 2015. Strengthening of the som against the US dollar since 2015, write-off of Russian debt in 2018 (240 mln. doll. in 2018, or 3 percent of GDP), and low general government deficits in 2018 (0.6 percent of GDP) and 2019 (0.1 percent of GDP) led to a decrease in total government debt[5] (Table 7).

[5] IMF. Kyrgyz Republic. Retrieved 18.04.2024 from https://www.imf.org/external/pubs/ft/dsa/pdf/2020/dsacr2090.pdf

Table 7

Dynamic of Kyrgyz debt from 1994 to 2026

Years	Debt service on external debt, total (TDS, current doll.) DT.TDS. DECT.CD	Years	Debt service on external debt, total (TDS, current doll.) DT.TDS. DECT.CD
1994	1411819	2009	336039195
1995	16371843	2010	269201742
1996	59869035	2011	557179400
1997	74235941	2012	410465165
1998	77794763	2013	347495444
1999	114940769	2014	388543579
2000	114088236	2015	403285938
2001	178127651	2016	412737172
2002	179258840	2017	677754958
2003	132375399	2018	583467194
2004	164961663	2019	563598951
2005	169901512	2020	760236777
2006	142600517	2021	628666439
2007	101388433	2022	570043833
2008	194082966	Total	8630125188

Sources: compiled by the R.V. Manshin, G.A. Sumkoski.

The country's obligations to Beijing risk the loss of many of Kyrgyzstan's facilities and assets if the debt is not paid on time, with the possibility of a partial government withdrawal from management of the country's energy sector. Kyrgyz President Sadyr Japarov himself, in an interview with the state news agency Kabar in 2021, admitted that the large amount of debt that Kyrgyzstan owes to China could lead to the fact that "if we do not pay part of the debt on time, we will lose many of our possessions". And if Russia wrote off Kyrgyzstan's debts, showing that economically it always makes loses in relations with its FSU neighbours, Beijing is still demonstrating its readiness to defer some loans, but not offer direct

[6] CEIC Data Portal. Kyrgyzstan External Debt. Retrieved 18.04, 2024 from https://www.ceicdata.com/en/indicator/kyrgyzstan/external-debt

relief, showing, as in Latin America and Africa, that it is not charitable and that it is a very pragmatic partner in terms of repaying its debts. However, China remains concerned about its reputation in Kyrgyzstan because the seizure of the asset is a political move that will confirm the countries' worst fears about China and the Belt and Road[7]. Kyrgyzstan also secured help from international creditors through an agreement with the western Paris Club in 2020, which suspended 11 mln doll. in debt payments (only until the end of 2021). Bishkek collectively owes Denmark, France, Germany, Japan and South Korea more than 300 mln. doll. (2023 — USD 324.3 billion)[8], and this deal offers only temporary relief and does not address the broader structural problems associated with Kyrgyzstan's inability to service its debt obligations.

Analysis of losses from interests from official multilateral financing of PIP projects in Kyrgyzstan. The sensitivity analysis in the table below examines scenarios for the benefits or losses from additional interest rates and from the inefficiencies of the World Bank and ADB projects, and finds how significant they are. This means a comparison with a projected expected rates for such loans for the 5%, 3% and 1% scenarios and the most neutral case of 3%, resulting in savings over the period 1992 and 2014 for the total amount of 4.485 bln. doll. Another problem is that such large loans are rarely available in the commercial sector, especially for developing or transition countries so that other countries and their sovereign wealth funds remain the only other option for commercial financing, and they are expensive and often politically motivated.

The effect of surcharges in practice appears to have a transfer effect, and the IMF estimates that from the start of the COVID-19 crisis to the end of 2022, countries will pay more than 4 bln. doll. in surcharges on top of interest payments and fees. Moreover, the IMF estimates that allowances have become the Fund's largest source of income, accounting for almost half of receipts during this period[10]. They are estimated to account for nearly two-thirds of loan lending revenues by fiscal year 2027, nearly double the level of fiscal year 2018[9]. The second objection is that the IMF now risks countries defaulting on debt because of its high surcharges (Table 8).

Low-income countries "receive preferential interest rates on financing with a service fee of 0.75%", but due to late payments and surcharges they go up to much higher rates, ranging from 0.9 to 1.4% at a minimum and most often up to 5% and above, while for chronic defaulters it is even higher. The Kyrgyz Republic has already paid 1,157,012,349 doll. by 2022, without reducing the amount of loans, but increasing it (Table 9).

[7] Hillman, J. 2018. Game of Loans: How China Bought Hambantota. Center for Strategic and International Studies.

[8] Paris Club. The paris club releases comprehensive data on its claims as of 31 december 2022. Retrieved 18.04, 2024 from https://clubdeparis.org/en/communications/press-release/the-paris-club-releases-comprehensive-data-on-its-claims-as-of-31-6

[9] IMF Executive Board. Reviews of the Fund's Income Position for FY2020 and FY 2021–2022. Washington, IMF, 2021.

Table 8

Sensitivity analysis — overpayment by Kyrgyzstan for every additional 1% of ODA debt

Years Persentages	1992	1993	2001	2002	2003	2011	2012	2013	2014	Total
5%	1.821	12.781	3.118	3.500	1.839	20.050	33.556	43.805	21.495	
	54.615	383.425	93.553	105.000	55.170	601.500	1.006.681	1.314.150	644.835	**8.070.300**
4%	1.456	10.225	2.495	2.800	1.471	16.040	26.845	35.044	17.196	
	43.692	306.740	74.842	84.000	44.136	481.200	805.345	1.051.320	515.868	**6.456.240**
3%	1.092	7.669	1.871	2.100	1.103	12.030	20.134	26.283	12.897	
	32.769	230.055	56.132	63.000	33.102	360.900	604.009	788.490	386.901	**4.842.180**
2%	728	5.112	1.247	1.400	736	8.020	13.422	17.522	8.598	
	21.846	153.370	37.421	42.000	22.068	240.600	402.673	525.660	257.934	**3.228.120**
1%	364	2.556	624	700	368	4.010	6.711	8.761	4.299	
	10.923	76.685	18.711	21.000	11.034	120.300	201.336	262.830	128.967	**1.614.060**

Source: calculated by R.V. Manshin, G.A. Sumkoski.

Table 9

Kyrgyzstan: Multilateral Debt Service (TDS, current doll.) DT.TDS.M.L.A.T.CD

Years	TDS, current doll.	Years	TDS, current US doll.
1994	348957.6	**2009**	42055740
1995	5108012	**2010**	44955144
1996	33044475	**2011**	47414615
1997	2648000	**2012**	50468215
1998	5809711	**2013**	48414743
1999	10957004	**2014**	53672673
2000	7874896	**2015**	64075210
2001	18472237	**2016**	58706261
2002	19190031	**2017**	66362149
2003	18772213	**2018**	71123005
2004	22950232	**2019**	77498287
2005	23885546	**2020**	83781829
2006	28056013	**2021**	882324909
2007	32284958	**2022**	96576032.9
2008	34273671	**Total**	1157012349

Source: World Development Indicators — Kyrgyzstan, Retrieved 15.04.2024 from https://data.worldbank.org/indicator/DT.TDS.MLAT.CD?locations=KG

Argentina, for example, is trying to work out a new repayment schedule for a 45 bln. doll. loan package that the government estimates will cost more than 5 bln. doll. in surcharges alone by the end of 2024. In 2023, 70% of Argentina's nearly 1.6 bln. doll. IMF bill consists of surcharges.

Conclusion

The study analyzes the benefits that the Kyrgyz Republic has received from public development investments since its independence and identifies challenges that hinder the country's efforts to implement these projects even more effectively and in accordance with the country's strategy and needs to fully realize economic benefits that provide public investment. The study eliminates the confusion associated with mixing the real impact of the PIP on the economy with the ODA and presenting it as an effect due to similar volumes in poor countries, and shows significantly stronger statistics of the positive impact of the PIP on GDP and socio-economic development than ODA. The study confirms that ODA has also created a debt trap, and the failure to repay debt on time, costly restructurings and surcharges have left Kyrgyzstan in permanent debt, causing it to pay high debt service fees. This significantly reduces, and in some cases even renders as failure, the PIP outcomes. The study shows the potential positive impact on the country's economic development and growth, budgets and debt levels, from increased development efficiency in the implementation of PIP projects through addressing institutional and capacity issues in project selection, approval, and implementation.

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