

## **ECONOMIC AND FINANCIAL ANALYSES**

1. The project builds on the Central Asia Regional Economic Cooperation (CAREC) transport and trade facilitation program that focuses on upgrading infrastructure along designated corridors. The project for border-crossing point (BCP) improvement and national single window (NSW) development will (i) improve CAREC corridor BCPs to remove bottlenecks and support the development of logistics near BCP areas, and (ii) support NSW development in selected CAREC member countries and interoperability of NSWs.
2. The economic evaluation considers all project components financed by the Asian Development Bank (ADB) or the government. Costs include (i) initial investment (all equipment, software development, construction, implementation supervision, and capacity building); and (ii) recurrent operation and maintenance (O&M) costs (administrative costs, maintenance of internet connections after implementation, and replacement of software and hardware). Benefits include (i) NSW outcomes for the private sector (reduced documentary requirements and time for obtaining regulatory certification, and processing time savings for imports and exports); (ii) NSW outcomes for government (time savings for completing import–export transactions); and (iii) BCP outcomes (time savings for trucks, cars, and passengers in terms of waiting time at the BCP; and savings in the idle time for trucks, passengers, and cars at the BCP).
3. The economic evaluation is based on a comparison of with- and without-project scenarios, in constant mid-2012 economic prices. The project benefits and costs are revalued in economic prices at the border price equivalent value by separating the cost items into tradable materials and equipment, nontradable materials, and labor. The prices are expressed in dollars using the foreign price numeraire with a standard conversion factor (SCF).<sup>1</sup>
4. All financial costs were converted into economic values. Price contingency, finance charges during project implementation, and customs duties and taxes are not included in restating financial costs in economic terms. This results in a financial to economic cost conversion rate of 1.06.
5. A shadow wage rate factor was used to put an economic value on the wages paid to unskilled labor but not on wages for skilled labor given the lack of a clear surplus of skilled workers.<sup>2</sup> Untraded materials use the SCF.
6. All project benefits are incremental and nontradable. The timesaving for border traders, passengers, cars, and trucks; and processing timesaving for import–export businesses are valued in economic terms by use of the SCF.

### **A. Description of Benefits and Methodology**

7. The economic benefits of the single window and BCP improvements follow.
8. Benefits from the single window for the private sector include:

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<sup>1</sup> For the Kyrgyz Republic, the SCF is 0.90 from ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Grant to the Kyrgyz Republic for the Power Sector Improvement Project*. Manila. For Tajikistan, the SCF is 0.85 from ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Grant to the Republic of Tajikistan for the CAREC Corridor 3 (Dushanbe-Uzbekistan Border) Improvement Project*. Manila.

<sup>2</sup> The value for shadow wage rate factor is 0.75 for the Kyrgyz Republic and 0.70 for Tajikistan; taken from the RRP's listed in footnote 1.

- (i) a more informed trade sector, through the information portal of the NSW, allowing traders to access relevant governing regulatory information, certification agencies' official specific documentary requirements, and official costs and times for issuance;
  - (ii) reduced documentary requirements for and time spent obtaining regulatory certification;
  - (iii) reduced time and costs for import and export businesses that lead to increases in supply chain productivity;
  - (iv) reduced scope for rent seeking at the trader, broker–regulatory agency interface as a result of the NSW, thereby removing the human factor that is currently required; and
  - (v) improved attractiveness for foreign investors as international trade processing becomes less cumbersome and more efficient.
9. Benefits from the single window for government include
- (i) significant productivity gains for customs and regulatory agencies through timesaving for transactions, especially as the fully integrated NSW automates agencies' processes and reduces public spending per transaction as a result of optimized agency processes;
  - (ii) more accurate trade data allowing a more comprehensive assessment of transactions through the NSW, enabling improved risk management and increased revenue collection;
  - (iii) more opportunity for tax authorities to perform analytical reviews of taxpayers through increased visibility of the volume and value of their foreign trade operations;
  - (iv) increased formalization of business practices as foreign trade becomes less burdensome and attracts new investment leading to an increase in government tax revenue; and
  - (v) accurate and better quality statistical data to improve government decision making.
10. Benefits from modernized BCPs include
- (i) timesaving for trucks, cars, and passengers in terms of waiting at BCPs;
  - (ii) savings in the idle time for trucks, passengers, and cars; and
  - (iii) efficiency gains for vehicle operators and passengers.
11. Many sources were used to estimate the economic benefits of the NSW, including case studies from other countries. Information on timesaving from stakeholders in the countries is also utilized. The survey conducted for the Kyrgyz Republic indicates that the estimated net timesaving of traders and brokers for customs preparation of declarations was 11 hours for imports and 4 hours for exports for the NSW.
12. A general rule often quoted by respondents is that the NSW will likely result in a reduction of 50% of the time currently spent to prepare and submit the various required documents. Economic benefits used in the economic analysis include the following:
- (i) timesaving of brokers and traders in preparation of customs declarations;
  - (ii) timesaving and productivity gains of agencies issuing permits; and
  - (iii) timesaving and productivity gains of customs staff.
13. Imports are projected to increase at the average annual growth rate of 5% and exports at 3% for both the NSW and the BCP components. These rates are well below the recent rates

in the countries.<sup>3</sup> Only direct benefits were used in the economic analysis with average salary and income used to measure the value of time in person-hour savings.

## B. Economic Evaluation

14. The project investment costs for BCP improvements and for NSW, other customs improvements, and capacity building are shown in Table 1 for the countries and the region. Project implementation is during 2013–2017, and the evaluation utilizes a 20-year period. The economic evaluation includes all project-funded components whether financed by ADB or by government. During implementation, funds are allocated to enable collection of baseline data and monitoring. Annual O&M costs for the projects are estimated based on discussions with the implementation agencies of the countries. O&M costs include (i) administrative O&M, (ii) maintenance of internet connections after implementation, and (iii) replacement of assets (software and hardware) converted using the SCF.

15. Administrative O&M comprises salaries, transport, office rental and office supplies, utilities, and marketing. The planned staff size of the organization managing NSW varies among countries. Replacement of assets occurs at different times, thus O&M expenses vary per year over the time period: \$0.51 million–\$0.81 million in the Kyrgyz Republic and \$ 0.37 million–\$0.80 million in Tajikistan.

16. Traffic flow for the BCPs is based on 2010 data for the number of trucks, cars, and passengers entering or exiting a country. Effort was given to considering which BCPs should be upgraded and selection criteria were established (e.g., on a CAREC corridor or where a BCP of one country had been upgraded and the facing BCP of the other country had not, and where traffic justified upgrading). The identification of NSW components is based on an analysis of needs and a gap analysis that built on what had been done or was planned for a country.

17. The economic analysis yielded a 36.4% economic internal rate of return (EIRR) and a net present value (NPV) of \$11.4 million for the Kyrgyz Republic; an EIRR of 37.2% and NPV of \$19.5 million for Tajikistan; and an EIRR of 37.0% and NPV of \$30.9 million for the region. Thus, the investments are economically justifiable and implementation is recommended. These values do not include possible synergy resulting from the collective establishment of NSWs and BCP upgrades across the region, transforming it from one that has been considered “problematic”<sup>4</sup> to transit traffic to one that supports it.

**Table 1: EIRR and NPV for Single Window and BCP Investments**

Country	Project Cost (\$million)	EIRR	NPV
Kyrgyz Republic	9.9	36.37%	\$11,418,801
Tajikistan	11.1	37.19%	\$19,476,372
Regional (Total)	21.0	36.99%	\$30,894,759

Source: ADB estimates.

<sup>3</sup> The Kyrgyz Republic had 5.7% growth in 2011, 3.5% growth for 2003 through 2009, and a decrease of 5.4% in 2010 due to political unrest. Tajikistan's economy grew by 7.4% in 2011.

<sup>4</sup> World Bank Logistics Performance Index and World Bank Doing Business Survey both regularly rank the Central Asian countries quite low, e.g., the Kyrgyz Republic was rated 156th out of 183 countries in 2011 and Tajikistan 136th.

**Table 2: Economic Analysis of the Regional Improvement of Border Services Project**

Year	Capital Cost (real prices)	Economic Cost	O & M Cost	Road Import Preparation	Rail Import Preparation	Road Export Preparation	Rail Export Preparation	Permits Issuance	Import Customs	Export Customs	BCP Vehicles	Total Gross Benefits	Import Growth Rate	Export Growth Rate	BCP AAGR	Factor Adjustment	Benefits Adjusted	Net Benefits
2012				2,335,304	508,825	428,712	63,948	1,640,272	655,343	50,957	35,540	4,987,648	1.05	1.03	1.04	0	0	0
2013	3,080,934	3,282,427	271,408	2,452,069	534,266	441,573	65,866	1,722,285	688,110	52,485	36,961	5,993,617	1.05	1.03	1.04	0.2	1,198,723	-2,355,112
2014	5,190,176	5,529,613	471,435	2,574,673	560,979	454,821	67,842	1,808,399	722,516	54,060	38,440	6,281,730	1.05	1.03	1.04	0.3	1,884,519	-4,116,529
2015	4,457,881	4,749,427	571,950	2,703,406	589,028	468,465	69,878	1,898,819	758,642	55,682	39,978	6,583,898	1.05	1.03	1.04	0.4	2,633,559	-2,687,818
2016	1,595,790	1,700,155	716,396	2,838,577	618,480	482,519	71,974	1,993,760	796,574	57,352	41,577	6,900,812	1.05	1.03	1.04	0.4	2,760,325	343,774
2017	1,595,790	1,700,155	716,396	2,980,505	649,404	496,995	74,133	2,093,448	836,402	59,073	43,240	7,233,200	1.05	1.03	1.04	0.5	3,616,600	1,200,049
2018	0	0	716,396	3,129,531	681,874	511,905	76,357	2,198,121	878,223	60,845	44,969	7,581,824	1.05	1.03	1.04	1	7,581,824	6,865,427
2019			767,396	3,286,007	715,968	527,262	78,648	2,308,027	922,134	62,670	46,768	7,947,483	1.05	1.03	1.04	1	7,947,483	7,180,087
2020			767,396	3,450,308	751,766	543,080	81,007	2,423,428	968,240	64,550	48,639	9,331,018	1.05	1.03	1.04	1	9,331,018	8,563,622
2021			1,122,696	3,622,823	789,354	559,372	83,438	2,544,600	1,016,652	66,487	50,584	9,733,310	1.05	1.03	1.04	1	9,733,310	8,610,613
2022			1,387,056	3,803,964	828,822	576,153	85,941	2,671,830	1,067,485	68,481	52,608	10,155,283	1.05	1.03	1.04	1	10,155,283	8,768,227
2023			857,301	3,994,162	870,263	593,438	88,519	2,805,421	1,120,859	70,536	54,712	10,597,910	1.05	1.03	1.04	1	10,597,910	9,740,609
2024			1,216,937	4,193,870	913,776	611,241	91,174	2,945,692	1,176,902	72,652	56,901	11,062,208	1.05	1.03	1.04	1	11,062,208	9,845,271
2025			1,216,937	4,403,564	959,465	629,578	93,910	3,092,977	1,235,747	74,831	59,177	11,549,249	1.05	1.03	1.04	1	11,549,249	10,332,311
2026			1,085,589	4,623,742	1,007,438	648,465	96,727	3,247,625	1,297,535	77,076	61,544	12,060,153	1.05	1.03	1.04	1	12,060,153	10,974,564
2027			888,486	4,854,929	1,057,810	667,919	99,629	3,410,007	1,362,411	79,389	64,005	12,596,100	1.05	1.03	1.04	1	12,596,100	11,707,614
2028			1,216,937	5,097,676	1,110,701	687,957	102,618	3,580,507	1,430,532	81,770	66,566	13,158,326	1.05	1.03	1.04	1	13,158,326	11,941,388
2029			1,153,281	5,352,559	1,166,236	708,596	105,696	3,759,532	1,502,059	84,223	69,228	13,748,130	1.05	1.03	1.04	1	13,748,130	12,594,849
2030			955,727	5,620,187	1,224,547	729,854	108,867	3,947,509	1,577,161	86,750	71,997	14,366,874	1.05	1.03	1.04	1	14,366,874	13,411,146
2031			1,122,696	5,901,197	1,285,775	751,749	112,133	4,144,885	1,656,020	89,353	74,877	15,015,988	1.05	1.03	1.04	1	15,015,988	13,893,291
2032			821,229	6,196,257	1,350,064	774,302	115,497	4,352,129	1,738,821	92,033	77,872	15,696,974	1.05	1.03	1.04	1	15,696,974	14,875,744
2033			2,338,598	6,506,070	1,417,567	797,531	118,962	4,569,735	1,825,762	94,794	80,987	16,411,407	1.05	1.03	1.04	1	16,411,407	14,072,809
15,920,571																		36.99% IRR
																		\$30,894,759.14 NPV

Source: Asian Development Bank estimates.

### **C. Financial Analysis and Sustainability**

18. No financial analysis was undertaken as neither the NSW nor the BCP components in any of the countries have new revenue sources or increases in fees or user charges.

19. The fiscal impact of the project is expected to be positive. Improvement in efficiency of cross-border facilities will enable to both expand the official volume of trade and deter underreporting and under-evaluation. Increased trade volume will increase customs revenue collection.

20. The economic analysis includes O&M costs as well as replacement costs for key equipment (e.g., computer hardware) and periodic refurbishment of facilities and upgrading of software. The robustness of the EIRR indicates that the participating agencies will be able to support the investments over the long term.

21. Importantly, the customs services in both countries generate substantial revenues and they are able to allocate these revenues to the O&M of their facilities. This indicates the sustainability of the investments in the BCPs.

22. For the NSW investments, the respective governments have made commitments to ensure the sustainability of the investments. The two governments have successfully received and properly administered loans and grants from ADB as well as other international financing institutions.

23. The fiscal projections for both countries are improving. The Kyrgyz Republic is receiving investment in its minerals subsector. The Canadian owner of its largest gold mine (\$800 million invested) reported in early November 2012 that gold reserves are 58% higher than anticipated, and the life of the mine will be extended into the mid-2020s, with the government receiving at least an additional \$1.5 billion in taxes and royalties. Tajikistan is also increasing its revenue flows including through its sales of hydro-generated electricity to neighboring countries. These exports are expected to increase dramatically over the next decade. Revenue projections for both countries will be more than sufficient to meet O&M costs as well as loan repayments.

24. While both economies experienced severe contractions following the breakup of the Soviet Union as well as political instability, significant reforms have been enacted to spur investment and private sector growth. In addition, the countries have instituted policies and infrastructure to increase tax collection and other revenue-generating mechanisms via improved transparency and accountability.

25. International trade has become a key engine of economic development for both countries. The governments acknowledge this through policy reforms and have made commitments to continue to support trade and international investment. With these parameters, the governments will sustain the project investments.