

SECTOR ASSESSMENT (SUMMARY): RAIL TRANSPORT (NON-URBAN)

Sector Road Map

A. Sector Performance, Problems, and Opportunities

1. Azerbaijan is a landlocked country at the intersection of two important trade corridors—the east–west route from Central Asia to the Black Sea and Turkey and the north–south corridor linking Northern Europe and the Russian Federation to Iran, the Persian Gulf, and South Asia. Railways are essential to the country’s production, trade, and distribution of bulk materials such as oil-related products and agricultural products. The rail transport subsector in Azerbaijan is dominated by the vertically integrated state-owned Azerbaijan Railways Closed Joint Stock Company (ADY), established in 1995. Other than a few industrial railways operating within their own plants, ADY owns all the rail infrastructure and related assets and is the only rail operator of both passenger and freight services.¹

2. Azerbaijan’s rail network consists of 2,096 route-kilometers (km)² of track at the Russian gauge (1,520 millimeters), of which 802 km are double track and 1,294 km are single track. The main line network consists of four international routes from Baku (or nearby) to adjacent countries:

- (i) From Baku to the Russian border at Yalama—206 km of electrified (3 kilovolt [kV] direct current [DC]) double track.
- (ii) Trans-Caucasus route west from Bala Jari (near Baku) through Ganja to the Georgian border at Beyuk–Kasik—488 km of double-track electrified line (being converted from 3 kV DC to 25 kV alternate current).
- (iii) The previous main line to Armenia, diverging from the Trans-Caucasus route at Alyat. Closed to through traffic since 1993, it is operated as far as Goradiz, leaving a 150 km gap to the Nakhchivan section. It is electrified (3 kV DC) and partially double tracked as far as Osmanli. The Nakhchivan section has a connection to the Iranian system at Djulfa, requiring transshipment to standard gauge.
- (iv) Running south from Osmanli, on the Nakhchivan line, to a railhead at Astara on the Iran border—single track, apart from the first 17 km, and non-electrified.

In addition, rail ferries from Alyat operate across the Caspian to Turkmenbashi in Turkmenistan and Aktau in Kazakhstan.

3. The railway infrastructure is entrenched in the country’s economic activity, with installations in almost all strategic locations (border crossing points, ports, and oil production and agricultural regions). However, the lines have been under-maintained since independence in 1991, leading to a steady deterioration in track quality and travel speed. The average commercial speed of freight trains has fallen to 27 km/hour overall and 25 km/hour on the North–South line.

4. The signaling system is mainly automatic block, and most of the remainder is semi-automatic block. Maintenance has been limited by lack of funds, and the difficulty of obtaining spare parts is an increasing problem. Some 60% of the network is electrified at 3 kV DC. While the overhead catenary is generally in reasonable condition, the substations that supply power from the grid are in poor condition and suffer from lack of availability of spare parts. In 2016, ADY

¹ ADY is a state-owned enterprise charged with rail traffic management, safety, equipment, and construction. ADY reports directly to the Cabinet of Ministers. The President has authority over issues such as the appointment of the chair and deputy chair of ADY, and reorganization and de-registration of ADY. The board of directors comprises the chair, first deputy chair, four deputy chairs, and the director of Nakhichevan Railways.

² The network is dense (23.7 km/000 km²) compared with other countries in the region: Georgia 20.7, Turkmenistan 6.4, Kazakhstan 5.2, Uzbekistan 9.4, and Iran 4.9.

had 130 electric locomotives, of which only 84 were operational; nearly 60% of the fleet is over 40 years old. It has 202 diesel locomotives, mostly shunting locomotives, of which only half are operational and only 10 are less than 25 years old. In 2016, 50% of the operational fleet of about 6,000 freight wagons and 70% of the 168 operational passenger carriages were over 30 years old, close to (or beyond) their working lives.

5. ADY has retained its technical and operating expertise, despite falling productivity, and has about 21,900 employees. The workforce has reduced by only 10% since 2011, when ADY was carrying 35% more traffic. Labor productivity is about 260,000 traffic units³ per operating employee—low for a freight-dominated railway—40% less than Georgia and a fraction of Kazakhstan's level (3.2 million). Nearly 60% of ADY's staff is over 45 years old and only 13% are under 30. The modernization of equipment and systems, especially computerization, is likely to be a significant challenge.

6. Freight dominates ADY operations and revenue. Production from smaller onshore wells and refined product from Azerbaijan and neighboring countries has moved by rail to Georgian ports on the Black Sea. Freight traffic volumes in recent years have fluctuated as oil prices have risen and fallen. At the peak of Azerbaijan's economic growth in 2006, rail transported more than 26.5 million tons of goods,⁴ but this dropped to 22.4 million tons in 2010 and 15.5 million tons in 2016 with the current economic downturn.

7. Non-oil freight traffic remained reasonably stable throughout this period. Domestic traffic (4–5 million tons per year) is dominated by construction materials, which rise and fall in line with economic growth, and by fuel oil deliveries to local power stations. Import traffic comes from the Russian Federation (mostly grains, timber, and construction materials) and the Black Sea ports via Georgia, and was stable until the economic downturn since 2015. Non-oil transit traffic is mostly on the east–west Transport Corridor Europe Caucasus Asia but, despite efforts to promote it over the last 20 years, it has remained low because of strong competition from routes through the Russian Federation and problems in coordinating rail and shipping operators along the corridor. Passenger traffic fell steadily, driven by the growth in motor vehicles, the withdrawal of the Baku suburban services (because of aging rolling stock), and competition from low-cost airlines for long distance travels. ADY restarted the Baku suburban services with new rolling stock in 2015 and patronage has begun to increase again. Further rolling stock is being introduced and services extended, but suburban rail will remain a niche mode for Baku.

8. ADY has a group structure with 18 subsidiaries, many of which are outsourced activities such as a data center and security. Two construction companies in 2016 represented about 20% of ADY expenditure. Excluding the construction companies, ADY has had a surplus on working expenses (excluding depreciation) of about AZN70 million in recent years, with a working ratio in 2016 of 76%. This is good compared with almost all European railways,⁵ but worse than Georgia, which had a working ratio of 44% in 2015. However, ADY has very large depreciation and substantial interest expenses, and makes a substantial overall loss.

9. ADY is basically profitable but has fallen victim to a combination of heavy loans associated with a catch-up investment program, foreign exchange losses resulting from the 2015 devaluation of the Azerbaijan manat, and severely overvalued assets, generating depreciation that is

³ Passenger-km plus net ton-km.

⁴ This is only about one third of peak rail traffic handled during the Soviet era.

⁵ This is comparable with two of the Class 1 railroads operating in eastern United States – CSX Transportation (67%) and Norfolk Southern Railway (64%).

unsustainable. These issues need to be addressed if ADY is to finance at least part of its future investment from its own resources. Restructuring its finances is a priority.

10. Despite some operational improvements carried out over the last 2 decades, the rail transport subsector still faces excessive transit times, inadequate service quality, and high operating costs, because of aged or inadequate infrastructure, operational inefficiencies, and poor management. Increased competition from road transport has exposed these problems gradually over the years. This situation results in lost economic opportunities, suboptimal regional trade, and negative environmental impacts. The new management team of ADY (which took over gradually since mid-2015) and the Ministry of Finance face major challenges:

- (i) maintaining severely deteriorated infrastructure and rolling stock to a standard that will avoid further reductions in service competitiveness in the short term;
- (ii) financing key infrastructure rehabilitation and replacement investments to improve service competitiveness in the longer term;
- (iii) servicing legacy debt in the face of stagnating free cash flow;
- (iv) reducing and rationalizing an oversized workforce, to implement productivity-enhancing changes and pay better wages;
- (v) changing outdated and ineffective management information and financial control systems; and
- (vi) establishing proper accounting systems to provide key financial information to support effective service level and pricing decisions.

B. Government's Sector Strategies

11. The government's rail development strategy is in its logistics and trade development strategy,⁶ forming an integrated strategy with roads and ports, and shipping. The main components of the strategy that directly relate to ADY include:

- (i) improving the regulatory framework of the logistics sector, including railways. This includes creating a legal regime for the creation of free trade zones, with an emphasis on facilitating private sector participation;
- (ii) underlining the importance of transit freight, especially on the two main corridors.
- (iii) implementing three major infrastructure projects to support the strategy (Alat Port, the Baku–Tbilisi–Kars railway, and the Yalama–Astara corridor);
- (iv) improving operations (including ADY) through international experts, and the analysis and identification of issues, with emphasis on the improvement of railway infrastructure. This includes the identification and disposal of non-core assets (e.g., the subsidiary ADY construction companies) with the aim of simplifying its company structure to enable it to concentrate on its core business. This corporate restructuring effort includes the elimination of non-core activities and the introduction of outsourcing solutions to seek further efficiencies;
- (v) developing rail-served logistics centers in Baku and other strategic locations; and
- (vi) increasing private sector participation in rail transport, e.g., through the introduction of third-party operators, investment in rolling stock, and joint ventures.

12. Following the establishment of ADY in 1995, some progress was made in introducing improved processes (e.g., International Financial Reporting Standards accounting and the shedding of ancillary activities) but overall it remained a Soviet-style railway. The government started to implement more radical reforms in 2015; and management structure, business practices, and internal systems are being overhauled, assisted by Asian Development Bank

⁶ Republic of Azerbaijan. 2016. *Strategic Roadmap for the Development of Logistics and Trade*. Baku.

(ADB) consultants and the business plan produced as part of the ongoing World Bank Rail, Trade, and Transport Facilitation Project.

13. This restructuring is in the early stages, but is consistent with the logistics strategy (para. 11). ADY is becoming business-led, supported by the introduction of a modern accounting and information system. It is also moving away from its reliance on oil traffic, with an emphasis on general freight, particularly on the two international corridors that intersect in Baku. This is designed to support the national objective of developing Azerbaijan as a major regional trade and logistics hub. Its two major infrastructure projects will also provide a major upgrade to these corridors.

14. Many steps need to be taken before ADY can compete effectively with road transport for general freight. It is heavily overstaffed, much of its rolling stock is reaching end of service life, and it has large financial debts. The rail transport subsector has little private investment, which is unlikely to change significantly while policy and regulation remain within ADY rather than an independent body (a regulator or government ministry).

15. While the immediate problem of improving sector performance centers on service delivery, especially the condition of the infrastructure on the two main routes, several issues need to be addressed in the medium to long term. Effective private participation in the rail transport subsector is most successful when the policy, regulatory, and operational roles are clearly separated; without such separation, the private sector is unwilling to commit significant capital in anything other than highly mobile assets such as wagons. At the same time, ADY needs major financial restructuring of its debts to enable it to raise funds independently of the government, as well as a review of its asset valuations. It should be capable of funding its asset renewals on an ongoing basis, although major infrastructure projects may require government assistance. This needs to be complemented by a much stronger internal investment appraisal process and a heightened role of financial management in decision making.

16. ADY has substantial social obligations—providing employment and operating loss-making passenger services. The government needs to recognize these and provide appropriate compensation. Undertaking commercial and social roles is difficult for a railway. Railways have been a convenient source of employment for governments, but this creates major difficulties in the competitive environment in which ADY operates. Apart from the additional labor costs, it is hard to find meaningful work for temporary staff and this spills over onto the attitude of permanent staff. Compensation for losses in passenger services is important in instilling the need for efficiency in rail operations; this is especially important given the planned expansion of the Baku suburban services.

C. ADB Sector Experience and Assistance Program

17. ADB's support to transport in Azerbaijan is primarily through the Central Asia Regional Economic Cooperation (CAREC) program. Of the six CAREC multimodal corridors that link the region's key economic hubs to each other and connect the landlocked CAREC countries to other Eurasian and global markets, two corridors transit through Azerbaijan.

18. In 2013, CAREC member countries endorsed the Transport and Trade Facilitation Strategy, which calls for a more integrated approach to improving transport and logistics infrastructure, and trade and transport facilitation.⁷ Compared with the original strategy, endorsed

⁷ ADB. 2014. *CAREC Transport and Trade Facilitation Strategy 2020*. Manila.

in 2008, the 2020 strategy emphasizes the importance of increased investments in railway infrastructure, and institutional and operational reforms. The 2020 strategy includes six investment projects in Azerbaijan with a total estimated value in 2012–2021 of about \$4.6 billion.

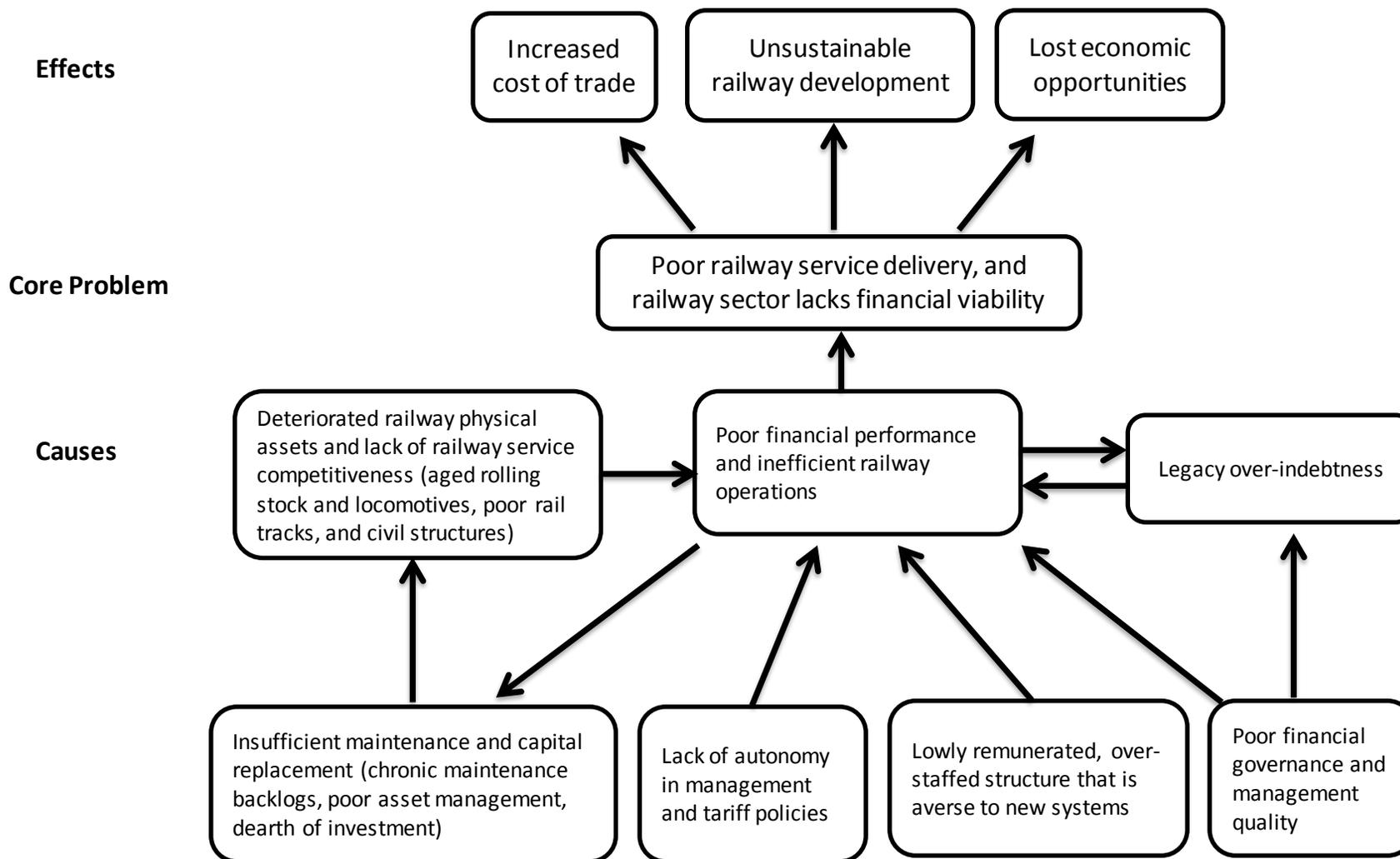
19. Future investments in physical infrastructure, and commercialization and reforms of Azerbaijan’s railways, will be aligned with the CAREC Railway Strategy 2030, endorsed in 2016.⁸ While the strategy recognizes the importance of building missing railway links, and investments in modern railway technologies, it also pays significant attention to promoting cooperative operational arrangements among regional railways and commercial reforms in rail transport.

20. The World Bank and Agence Française de Développement are active in the rail transport subsector. ADB’s railway sector development program will support infrastructure needs and the institutional and operational reforms of Azerbaijan’s railways. The project loan will support investment in the Baku–Yalama rail line—a key link in the North–South Railway Corridor within the CAREC network—to improve rail network serviceability. The policy-based loan will support reforms with key policy actions to enhance sector competitiveness and ADY’s financial sustainability. Key aspects in the scope of the program have benefited from past advisory support and recent project implementation assistance from the World Bank, and support and comply with the objectives of the Transport Corridor Europe Caucasus Asia. This has ensured that the proposed program reforms complement related (past or present) technical assistance initiatives by development partners in the sector, and develop synergies between the East–West Rail Line (financed by the World Bank) and the North–South Rail Line where feasible.

21. Although the program will be the first cooperation between ADB and ADY, its design considered lessons from preparing and implementing transport projects in Azerbaijan and from railway restructuring in other developing member countries. These include keeping reform objectives and/or policy loan triggers separate from construction and/or rehabilitation milestones, ensuring ownership by the main stakeholders, tailoring the program objectives to the local institutional capacity, ensuring synchronization of the railway corridor development, and providing adequate support to the implementing agency.

⁸ ADB. 2016. *Unlocking the Potential of Railways: A Railway Strategy for CAREC, 2017–2030*. Manila.

Problem Tree for Rail Transport (Non-Urban)



Source: Asian Development Bank.