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Commission**

Issues paper

Financing railway rolling stock: a new solution for Africa

Key questions

The present issue paper provides an exploration of a new global treaty for the recognition and prioritization of security interests held by creditors in railway rolling stock and includes responses to the following questions:

- Can the Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Aircraft Equipment be extended to apply to railways? What is the Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Railway Rolling Stock (Luxembourg Protocol)?
- What are the economic benefits of the Luxembourg Protocol?
- How can creditors who finance rolling stock through leases, secured credits and conditional sale contracts be protected?

Key messages

Arising from the questions and covered more broadly in the present paper are the following key messages:

- Railway infrastructure is an expensive economic venture and government resources are severely limited, with a number of African States already at the top of their sustainable debt levels.
- Unless there is investment-rated credit support from the State, private sector funders of railway equipment will require security to ensure that credit provided through loans or leases will be repaid and that their property rights will be respected even when their collateral moves across borders in order for the assets to be repossessed by the creditor on non-payment or insolvency of the debtor.

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- A key problem is that there is no international registry system for security interests and often no asset-specific registry on a national level regulating the priority of creditor rights.
- A diplomatic conference sponsored by the International Institute for the Unification of Private Law and the Intergovernmental Organization for International Carriage by Rail and attended by representatives of 42 States and 12 international organizations was held in Luxembourg in February 2007, at which the Luxembourg Protocol was adopted. The Protocol created a new worldwide legal framework to recognize and regulate security interests of lenders, lessors and vendors selling under conditional sale agreements, ensuring that each is secured by rolling stock.
- The Protocol applies to all rolling stock (from high-speed trains to trams) and will create an international system of registration and priorities for secured parties. The registry is accessible 24 hours a day on the Internet, allowing parties to register their interests and facilitating the checking of any rival claims by prospective creditors to the equipment being financed.
- The Protocol will also create a common system for repossession of an asset on default or insolvency of the debtor, subject to public interest safeguards.
- The Protocol will be particularly helpful in respect of equipment that crosses borders, avoiding the present difficulties of security created when the law of one State is challenged in the courts of another in which the asset is located; it will also assist in domestic financing.
- By reducing risk for rail equipment financiers, the Protocol will:
 - Attract more private sector lenders to the market, resulting in cheaper finance for operators that are not State-guaranteed, because the risks for private sector funders decrease and more funders come into the market, resulting in greater choice for operators in relation to costs and types of financing.
 - Facilitate lending to customers who previously were unable to access lending from banks, either as the result of poor credit or a lack of legal infrastructure.
 - Encourage capital investment, which will in turn promote the expansion of rolling stock manufacturing facilities.
 - Facilitate short-term operating leases of rolling stock, not just from financiers to railway operators but also between operators, ensuring more efficient use of rolling stock.

I. Introduction

1. Africa has enjoyed significant social and economic progress over the past 15 years, with the average growth rate in gross domestic product (GDP) estimated to be 4.5 per cent in 2015 (African Economic Outlook, 2015). However, that progress has not resulted in commensurate job creation or meaningful economic transformation. Infrastructure deficit, hard and soft, has been undermining all the efforts towards achieving sustainable development and structural transformation in Africa, particularly in view of a rapidly growing population. Indeed, the emergence of a large middle class estimated at nearly 350 million in 2010 is driving the demand for socioeconomic infrastructure, including access to modern transport services. Further, structural transformation and industrialization require an adequate infrastructure to power economic activity, fuel industrialization, connect producers to markets,

enhance intra-African trade and foster regional integration. Projections indicate that transportation volumes on the continent will increase by as much as six to eight times over the next 15 years and even higher for landlocked countries. Port throughput is projected to rise from 265 million tons in 2009 to more than 2 billion tons in 2040 (UNCTAD, 2017).

2. The infrastructure of Africa lags behind that of other regions of the world. Approximately 60 per cent of the continent's population lacks access to modern infrastructure, which isolates communities; prevents access to health care, education and jobs; and impedes economic growth (OSAA, 2015). In addition, 75 per cent of road networks in Africa are unpaved, and poor port facilities add 30 to 40 per cent to intra-African trading costs and foreign direct investment. According to the Global Competitive Index 2014-2015 of the World Economic Forum, more than half of the 20 least competitive countries in the world are found in sub-Saharan Africa, owing in large part to the region's deep infrastructure deficit. Furthermore, African infrastructure services are among the most costly worldwide, according to the Infrastructure Consortium for Africa. For instance, freight costs per ton in Africa range from \$0.05 to \$0.13 compared with \$0.01 to \$0.04 in developed countries, making African markets less competitive on the international level. The situation worsens for the 16 African landlocked developed countries where trading costs are 50 times higher than in African coastal countries (ECA, 2017).

3. The development of well-functioning railway infrastructure is critical to social and economic development in Africa. Not only does railway infrastructure contribute to economic growth, it is also an important input into human development. Railway networks provide links to global and local markets for goods and services and reduce transaction costs. Unfortunately, much of the current railway infrastructure in Africa is in poor condition. Estimates indicate that the poor quality of African overall infrastructure has the effect of decreasing the productivity of industries by about 40 per cent, thus contributing to the higher cost of doing business. The inefficient functioning of ports, deficiencies in transport infrastructure and in information and communication technology further constrain economic growth and development in the continent (ECA, 2011). Those challenges have led directly to renewed interest by African Governments to strengthen the continent's weak infrastructure so as to achieve sustainable economic growth and wealth creation. Accordingly, African leaders have made infrastructure development a pillar of the development strategy of the continent, which is anchored on regional integration and the Treaty establishing the African Economic Community.

4. More recently, several blueprints and initiatives emphasized the importance of infrastructure for the continental transformation, as captured by the launch of the New Partnership for Africa's Development in 2001; the adoption of the integrated strategic blueprint for continental infrastructure transformation for 2012-2040, also known as the Programme for Infrastructure Development in Africa in 2012; and the adoption of Agenda 2063: The Africa We Want, of the African Union, and its first 10-year implementation plan, in 2015. Agenda 2063 envisions the development of world class integrative infrastructure to support accelerated integration and growth, technological transformation, trade and development in Africa through the implementation of the Programme for Infrastructure Development in Africa. That Programme is aimed at the development of 30,200 km of railways and 16,500 km of interconnected power lines by 2040, an increase of 54,150 megawatt of hydroelectric power generation capacity and growth of 1.3 billion tons throughput capacity at the ports. That infrastructure will be a catalyst for job creation, manufacturing, skills development, technology, research and development, and integration, as well as intra-African trade, investments and tourism. The amount of African trade that is intra-African is expected to reach 50 per cent by 2045, and the African share of global trade is expected to increase to 12 per cent by 2063.

II. Status of railway development in Africa

A. Railways and rail transport in Africa

5. Railways are the most cost-effective mode of transport for moving bulk cargo for long distances over land. They are suited to container traffic between ports and capitals. The relative importance of the rail system compared with other modes of transport is the advantage it has gained from recent economic and technological trends, including higher energy prices, the growth of container stations and new increases in the flows of bulk trade and traffic (Economic and Social Council and ECA, 2009). However, the railways in Africa carry only 1 per cent of the global railway passenger traffic and 2 per cent of the goods traffic (The World Fact Book, 2016). The rate of railway connectivity is very low. In 2005, the total railway network in Africa measured 90,320 km, which is equivalent to 3.1 km of rail track per 1,000 km² of land mass. Most of the network was built at the end of the nineteenth century or the beginning of the twentieth century, when the most important demand for transport emanated from the need to link ports to the hinterland, where primary commodities were produced for export. Poor management, old and poorly maintained track, rolling stock and other facilities have left the railways in Africa in poor condition. The only exceptions are the railway linking the United Republic of Tanzania with Zambia, known as the Tanzania Zambia Railway Authority (TAZARA), the Trans-Gabon Railway, the Trans-Cameroon Railway and the mining lines, which were built in the late 1970s. Of all the African Union member States, the following 16 have no railway: Burundi, Cabo Verde, Central African Republic, Chad, Comoros, Equatorial Guinea, Gambia, Guinea-Bissau, Libya, Mauritius, Niger, Rwanda, Sao Tome and Principe, Seychelles, Sierra Leone and Somalia.

6. African railway lines primarily use three gauges:(a) 1.067 m gauge, representing 61.3 per cent of the network, mainly in sub Saharan African countries; (b) 1.000 m gauge, representing 19.2 per cent; and (c) 1.435 m gauge, representing 14.5 per cent (predominant in North Africa) (ECA, 2009). Those physical characteristics of the rail networks in Africa are hindrances to the introduction of modern trains, which are characterized as having high speed and carrying capacity. In spite of the major investments made during the 1970s and 1980s in infrastructure and rolling stock, the role of railways, both in the transport of goods and of persons, has continued to decline at national and subregional levels. The poor maintenance of rail infrastructure and the paucity of available rolling stock have contributed to the deterioration of rail service quality. In addition, railways are facing competition from road transport with regard to long haul transport, an area in which they previously had enjoyed a comparative advantage. Moreover, railway companies tended to have a reputation for being over staffed, inefficient and unproductive. The situation called for reform in a number of African countries through privatization, commercialization or simply the closure of some railways. The railway companies in both South Africa and the region of North Africa have been revamped, giving them greater management autonomy.

B. The rationale for developing railway in Africa

7. Economic opportunities have arisen for railway development in Africa as a consequence of a number of elements, including the following:

(a) Growing urbanization and industrialization will pose new transportation challenges that railways are well suited to handle;

(b) Africa will produce large volumes of goods such as bulk minerals and commodities that are natural markets for railways;

(c) The huge continental mass of Africa and the existence of many landlocked countries will encourage the development of high-capacity and efficient transport corridors;

(d) Higher sensitivity towards environmental and safety issues will result in railways getting more public attention and social support;

(e) The need to reduce the extremely high external costs, including those related to noise, pollution, congestion and accidents, which are associated with the constant increase in the use and ownership of private vehicles.

8. Railways, however, are not the sole solution to all transportation challenges. Projects should be concentrated in segments where railways can bring higher efficiency at lower costs than other modes of transportation, particularly when moving high volumes of persons or goods over a given distance (ADB, 2018). Accordingly, the areas deemed to be most appropriate for railway projects in Africa are:

(a) Major African metropolitan areas for urban and suburban passenger railways;

(b) Densely populated areas and corridors where high volumes for freight or passengers are possible;

(c) Corridors from ports to inland markets with freight trains moving containerized or bulk materials from or to ports over long distances;

(d) Major mining basins with freight trains moving minerals and other raw materials to export ports.

III. Private sector participation in infrastructure delivery in Africa

9. Africa has attracted only a small share of private investment in infrastructure, with almost no participation at all in the railway sector. Infrastructure projects with private participation are often financed with a mix of equity and project finance, the latter being non-recourse debt (debt contracted without recourse to the sponsors). Non-recourse debt is often raised from foreign capital markets. Three related sets of factors limit the ability of Africa to tap into both global and domestic capital markets.

10. First, the majority of African countries have low sovereign credit ratings owing to a plethora of risk factors, which include political, commercial, technical and currency exposure for projects that generate cashflows in inconvertible local currencies. Only a handful of countries have credit ratings of BB- or higher. Those countries account for 43 per cent of the gross national income, with South Africa being responsible for the largest share. In contrast, in East Asia and the Pacific, the countries with credit ratings of BB- or higher account for close to 100 per cent.

11. Second, most African local capital markets do not have the depth and range of instruments to raise large long-term infrastructure financing. For most African countries, commercial lending can therefore be accessed only through short-term transactions, a fact that is not suited to long-term infrastructure projects, especially those in the energy and transport sectors. The availability of a local financing component for a large infrastructure project would improve its chances of attracting external foreign funding.

12. Lastly, infrastructure projects in the energy and transport sectors have very long payback and build-out periods. They are more susceptible to political and regulatory interference, thus raising the regulatory risk. While public-private partnerships have emerged as financial instruments for infrastructure investment in Africa, their success is dependent on an adequate institutional environment, including political commitment and transparent legislative and regulatory frameworks. Public-private partnerships require adequate sharing of risks and rewards between the

Government and the private sector; they also require guarantees that the project will remain viable beyond its implementation. Given the lack of affordability in Africa, pricing infrastructural services becomes critical.

13. For large long-term projects, therefore, a number of risk mitigation factors are necessary to secure financing. For example, an important consideration is how countries should mitigate against exchange rate volatility for projects that earn mainly local currency and are susceptible to politically motivated commercial decisions. Exchange rate shifts can limit the project's ability to service foreign debts and lower investor dividends. How those issues should be addressed is a matter that warrants careful reflection. In addition to that is the matter of how local financing can be increased in the wake of constrained African financial markets that do not have instruments to facilitate long-term borrowing. Another issue is the reform of financial markets, the aim of which is to undertake more effectively large infrastructure projects in power and transportation, in the light of their long payback periods. Africa is making improvements in regulatory and macroeconomic reform, but the question is whether progress in that regard is sufficient. A further matter for consideration is whether African Governments would be capable of offering more debt guarantees for public-private partnerships, in the light of the need to maintain debt sustainability.

A. Financing railways in Africa: more rail, but who pays?

14. The strategic direction has been agreed at the highest level to prioritize investment in the railways across Africa, but a question that demands an answer is where the money will come from. The African Union argues that lack of infrastructure in Africa is reducing growth by up to 2 per cent a year. In 2013, the African Development Bank stated that the cost of transporting goods in sub-Saharan Africa was the highest in the world. The 2015 Africa Competitiveness Report of the World Economic Forum described the region's infrastructure shortfall as a critical bottleneck to reaping the benefits of increased regional integration. At present, only 11.3 per cent of trade in Africa is intraregional. The Programme for Infrastructure Development in Africa predicted an increase in African transport needs of 600 to 800 per cent in the period 2010-2040.

15. Railways could transform the continent, but they currently play an insignificant role, which is not surprising, given the continent's rail density of one km of rail track for every 357 km² of land. In comparison, the rail density in the United States is one km of track for every 43 km², and in Germany, it is greater than one km per 10 km² (Rosen, 2015).

16. The situation in Africa, however, is getting worse. Between 2005 and 2011, the volume of usable railway tracks in Africa diminished from 58,000 km to 50,000 km. Railways are essential for economic growth and they are also a crucial part of any sustainable development agenda. According to the 2014 world rail market study of the Association of the European Rail Industry (Union des industries ferroviaires européennes), however, annual investment in new railway rolling stock in Africa was about 4 per cent of global procurement, averaging just over \$2 billion per year. If there is to be more rail, the question must be who will pay for it.

17. It is nevertheless true that the position is gradually changing. Large rail projects are under way in countries such as Ethiopia, Kenya, Morocco, Mozambique, Nigeria, Senegal and the United Republic of Tanzania, and there are plans to bring railways to Burundi and Rwanda. The Addis Ababa Light Rail Transit network, which cost \$475 million and has a total route length of 34 km, is now operational. It is the first light rail service in sub-Saharan Africa. However, such projects stretch State financial resources to the limit. The new line in Kenya between Mombasa and Nairobi has raised the external debt of Kenya by about 17 per cent (Rosen, 2015). Implementing national plans to extend the same line from north to Naivasha will increase the debt even further. Other costs stem from the fact that the African rail system operates on three incompatible rail gauges. While African Union policy

encourages new rail initiatives to use the European standard gauge, standardization will have a heavy price. A former Transport Minister of South Africa recently called for the conversion of the country's 20,000 km of track to standard gauge; it is a project that could cost up to \$110 billion.

18. According to the United Nations Conference on Trade and Development (UNCTAD), African countries invested an average of 15-25 per cent of GDP in transport infrastructure from 2005 to 2012. In the same period, India invested approximately 32 per cent of GDP and China, 42 per cent. Richer countries in Africa can draw on their own resources and borrow on the capital markets, although that has limits, particularly when commodity prices fall. Nevertheless, a recent report by the Programme for Infrastructure Development in Africa highlighted an annual funding gap for infrastructure of close to \$60 billion. There is an urgent need to attract investment from the private sector and for States to work with banks, investment funds and institutional investors to cover that shortfall. Another report by the Programme acknowledged that, in order to succeed in attracting investors, countries must guarantee at the national level a competitive market based on clear legislation with the enforcement of commercial law and transparency in procurement. The report also noted that the absence of enabling legislation and regulations, a lack of local skills and a poor understanding of public-private partnership risk allocation are all bottlenecks currently preventing many countries from fully unlocking private sector interest, particularly on regional projects. If put to broader use, public-private partnerships hold the potential for true transformational impact. As for the private sector, such partnerships provide access to secure, long-term investment opportunities. Private sector partners can profit from those partnerships by achieving efficiencies based on their managerial, technical, financial and innovation capabilities. In order to drive the imperative for public-private partnerships, African Governments need strong political will in combination with the following:

- (a) Solidly constructed pipelines of infrastructure projects that have a sound economic and social basis;
- (b) Efficient, transparent and standardized procurement procedures for public-private partnerships, including consistent agreements and payment mechanisms, evaluation methodologies and financing requirements;
- (c) Frameworks of mutual trust between the public and private sectors to elicit and sustain the development of a diverse and competitive infrastructure supply ecosystem;
- (d) Financing instruments that support long-term low-interest lending.

B. The hope of a radical new solution for Africa

19. The provision of rolling stock is a critical part of any partnership between the public and private sectors. One example is the "build-operate-transfer" financing structure. In any new rail project, the cost of rolling stock represents 25-30 per cent of total expenditure over the life of the partnership. Fortunately, a radical new tool will allow States to pass on that cost to the private sector. That tool is the Luxembourg Protocol, which will play a key role in attracting private capital to support existing and new rail projects by facilitating the provision of finance from banks and other funders for rolling stock procurement.

20. Once in force, the Luxembourg Protocol will offer a new global system of international security rights for secured creditors (that is, secured lenders and lessors). The Protocol will provide the legal framework for new and cheaper sources of private sector finance for railway equipment with a key advantage: creditors will be able to provide capital secured on the collateral of the financed assets, instead of having to rely solely on the credit status of the borrower. The new system will apply whether the debtor is State-owned or private. Indirectly, it will lead to a more competitive and dynamic rail industry worldwide, and it will provide important social, environmental,

developmental and economic advantages, together with as new business opportunities (Rosen, 2017). By giving lessors a clear set of rules for protecting their interests, the Protocol will open the way to the provision of rolling stock in Africa through operating leasing. As a result, there will be lower barriers to entry for new operators – which are currently a high risk and therefore high-cost business. In addition, it will create a system for more efficient use (including sharing) of existing and new railway equipment across the continent, moving the industry towards more standardized equipment and more consistent technical support and maintenance.

21. This is not a theoretical tool. The rolling stock leasing joint venture with a company in South Africa already offers leasing solutions for railway equipment across Africa. According to that company, the capital-intensive nature of rolling stock and the ageing African fleet present a compelling demand for rolling stock leasing solutions, which are the preferred model worldwide. With opportunity comes risk, and for rolling stock leasing companies to survive in Africa, they need to have the ability to track and trace their assets, ensure the locomotives are maintained in line with Original Equipment Manufacturer (OEM) standards, and that they have the ability to uplift their assets on client non-payment (Rosen, 2015).

C. The Luxembourg Protocol: a common, coherent system

22. The Luxembourg Protocol sets out a common and coherent system for railway rolling stock finance. It establishes clear creditor rights, both during the financing term and on termination due to default, insolvency, or otherwise where the creditor holds an “international interest” in the asset as set out in the Protocol. The new international interest arises from security created on the rolling stock in favour of three defined categories of creditors: a lessor under a lease, a conditional seller under a title reservation agreement and a secured lender. In each case, the counterparty (lessee, conditional purchaser or chargor) must have its principal place of business in a country that has ratified the Protocol (Rail Working Group, 2017).

23. The Protocol applies to all railway rolling stock in the broadest sense, from conventional rail locomotives and wagons through to light rail and metro trains, trams and even cable cars. The international interest can (and should) be registered on closing of the financing at an international registry to be based in Luxembourg. If there is more than one international interest created on an asset, this ensures that the first registration will have priority unless the creditors agree otherwise. The new registry will be entirely electronic, accessible via the Internet, and searchable by the public 24 hours a day. Prospective purchasers and financiers will be able to see, in real time, if another party has a claim on the asset about to be purchased or financed. The Protocol also recognizes and regulates the right of a State to prevent repossession in the public interest in specific circumstances; deals with security rights in rail assets created prior to the Protocol coming into force; and guarantees the rights of parties to choose the law applicable to the security or lease agreements (Rail Working Group, 2017).

24. One consequence of this new system is that for the first time in the rail industry, there will be a lifelong, unique identifier for each item of rolling stock, issued by the registry and fixed permanently on the asset. This will bring additional industry benefits, facilitating instant tracking of asset location and helping with insurance issues and accurate maintenance records over the entire life of the asset. The Protocol will be particularly important for ensuring a creditor’s security when the rolling stock crosses borders because the creditor’s rights will be recognized in the same way in each of the States where the rolling stock happens to be (as long as that State has ratified the Protocol), and also because it will make multinational financing easier, since the same rules will apply in different jurisdictions. The application of the Protocol to pure domestic transactions, where all of the parties or financed assets are in the same country, will also be important, because currently there are often no clear rules on a creditor’s security position in any given State, or even a local title registry.

25. This new instrument will preserve capital for Governments and save money for borrowers and lessees because the increased legal certainty for a creditor will lower risks generally – leading to greater readiness by banks, institutions and other private investors to provide funding for rolling stock procurement at a cheaper rate – and will facilitate significant savings by reducing bank capital requirements under Basel III. In a recent presentation in South Africa, a major bank estimated that the positive difference in funding rates if the Protocol were operating would range from 0.45 to 1.9 per cent over a five-year period, depending on the customer's credit status (Rosen, 2015).

IV. Conclusion

26. The Luxemburg Protocol is part of a system that is already tried and tested. The Convention on International Interests in Mobile Equipment and the Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Aircraft Equipment were both adopted in 2001. The Protocol is now operating in about 60 countries, including many States in Africa, with the aviation international registry in Dublin. It has been a remarkable success: over 500,000 registrations covering 110,000 aircraft objects with an estimated value of over \$500 billion have been completed since it was entered into in 2006. Moreover, export credit agencies in member States of the Organization for Economic Cooperation and Development are permitted by a special industry understanding with the Organization, in defined circumstances, to offer lower financing rates for airframes and aircraft engines where the Protocol applies.

27. The Luxembourg Protocol was adopted in 2007. The European Union has already ratified the Protocol, in respect of its competences. A growing number of countries in Europe, and outside Europe, including South Africa, are working towards its ratification. Countries in Africa are encouraged to ratify the Luxembourg Protocol at the earliest opportunity. There are no downsides, since the costs of registrations should be easily outstripped by savings on documentation and cheaper finance rates. This new instrument will provide relief to States in terms of significant financial burdens, create fresh sources of investment for the rail industry and thereby attract entrepreneurs and investors, and help underwrite the economic development of Africa in the coming decades. It will also make future financing more focused and transparent, and empower African manufacturers, operators, lessors and financiers to provide solutions for the needs of the continent in this area.

28. The commitment by African leaders to a major expansion of the rail sector, as a key component of a sustainable growth and development agenda, has already been made (NEPAD Planning and Coordinating Agency, 2017). The logic is undeniable and construction has begun. The only question is how to pay for it. By facilitating cost-effective private sector finance for rolling stock, the Luxembourg Protocol will provide an important part of the answer.

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