G|M|F The German Marshall Fund of the United States
STRENGTHENING TRANSATLANTIC COOPERATION

On Wider Europe

Black Sea Trust for Regional Cooperation

January 2014

The Modern Silk Road: One Way or Another?

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Summary: The technological developments of the last century made it possible to organize the production processes in international supply chains in a way that different stages of production for a single good take place over multiple locations. Given the over-congestion of the Chinese ports, rail freight emerges as a critical logistical alternate solution to support China's growing trade with Europe, and also as a tool to bring industrial development to the landlocked countries of Central Asia and the Caucasus. There are three alternative corridors along the Modern Silk Road to connect China to Europe, which should be regarded not as substitutes for but as compliments to each other, as they form a comprehensive network of railways along the Modern Silk Road. In order to reap the multiple benefits of the Modern Silk Road, the international community should have a clear road-map to engage all relevant actors, in particular the private sector, in a productive dialogue to set project policy priorities by assessing major bottlenecks and to build institutional capacity.

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Introduction

The idea of *reviving* historical *land routes that* connect Asia to Europe and realizing the benefits of expanded trade has drawn considerable interest in recent years. A key motivation has been a shift in U.S. foreign policy in Afghanistan, including the Obama administration's economics-focused approach to address long-standing *security concerns* and *political deadlocks in* the Eurasian continent. A central pillar of the administration's approach has been enhancement of land connectivity,[1] and multiple scenarios for a Modern Silk Road have emerged since 2010 based on the different strategic priorities that have been voiced by a number of countries and actors. Should these actors desire the Modern Silk Road to be more than a "buzzword," they would need to take immediate steps, including raising awareness of the benefits of rail freight connectivity for the region and identification of major bottlenecks impeding their operationalization. As important is to produce a road-map that outlines actions key actors, including governments and private sector, can take to advance the process. A previous paper authored by Iulian Chifu in GMF's *On Wider Europe* series[2] on transport corridors linking Europe to China showed that transport corridor initiatives are in fact an incentive for all en route countries as well as other strategic players involved in the region such as the United States.

This paper focuses specifically on railroad corridors. First, in the context of global supply chains, it addresses the importance of rail freight transport over the "Modern Silk Road," by focusing first on logistics challenges related to trade between China and Europe and secondly on possible developmental benefits for countries in Central Asia and in the Caucasus. The third section explores different alternatives for railway corridors along the Modern Silk Road, with a focus on routes that pass through the South Caucasus. Lastly, it proposes a *roadmap* identifying priority *action* areas.

The Age of Global Production and the Case for Rail Freight Transport along the Modern Silk Road

The strategic importance of a Modern Silk Road trade route that would link Asia to Europe is tied to the evolution and growth of international supply chains over the last three decades. Until the 1980s, the main driver of globalization was the fall in transportation costs and competition amongst nations at the sectoral level (i.e., Swedish cars v Japanese cars). Since the 1980s, rapid technological change, particularly the dramatic developments in communication and

[1] Starr, Frederick and Andrew Kuchins (2010). *The Key to Success in Afghanistan: A Modern Silk Road Strategy.*

[2] Chifu, Iulian (2012). "The East-West Strategic Corridor: Multiple Opportunities and Benefits," *On Wider Europe* series, German Marshall Fund, August.

information technologies, have marked the second wave of globalization. Technological developments made it possible to organize the production process in so-called supply chains, where different stages of production of a single good take place across multiple locations (i.e. Swedish cars may contain Japanese components and vice-versa). In the age of global production and interdependence, countries compete to attract different stages of production within the supply chain, and multi-national firms spread out different stages of production to different countries in order to become more efficient.[3]

In its initial phase, diversification of production resulted in firms moving their operations to locations with low-cost labor and access to low-cost maritime transport. Consequently, Asia became the global production center, or aptly "Factory Asia," led by China's remarkable economic boom. China's trade grew by an annual average of 25 percent in the past decade – more than twice the growth of world trade — and making China the largest trader in the world in 2013. Chinese exports largely shipped out from the ports on country's eastern shore, an area where most of the industrial production took place. However, the eastern ports have become congested over time. According to a World Bank study, China's demand for container port services is almost twice as high as the available supply[4] resulting in significant delays in shipments.

Over-congestion in Chinese ports makes rail freight emerge as an important alternative. Railway connections along the Modern Silk Road are already being used by a number of multi-national companies. HP, for example, uses cargo trains to ship its products from factories in China to Europe. On June 20, 2013, DHL announced that it had begun a weekly express freight train service from Chengdu, in central China, moving across Kazakhstan, to Poland.[5]

Linking China's trade to Europe is critical. In spite of weak recovery from the global financial crisis, Europe is the largest consumer market in the world. In 2012, 17 percent of Chinese exports were destined for the EU (27), making the region China's second largest export market, slightly behind the United States. In turn, Europe also has a large concentration of multi-national companies, therefore, is a big investor in supply chains that involve China.

In the case of Chinese exports to Europe, rail freight offers a clear advantage over maritime with respect to time. For instance, it takes as long as 35 days to ship a container from the industrial parts of China to the industrial heartland of Europe. By contrast, a freight train could transport the container in around 15 days.

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On the other hand, maritime freight rates are cheaper than railroad transport. For example, while transporting a container by train costs in the range of €3,500-5,500, shipping the container would cost €1,500.[6] However, as the value of products increase, the proportion of logistics costs in total price begins to fall. Given that China has begun to move away from low-value-added goods to specialize in high-value-added parts in the international supply chains (fast-fashion products, consumer electronics, etc), the relative cost of rail transport is likely to fall. Moreover, the shift toward high value products makes China's capability to respond quickly to changes in demand, and hence faster logistics connections, more critical.

While rail freight is increasingly acknowledged as the more practical way to operate supply chains between China and Europe, it is also important to note that it is the more environment-friendly option as well, having a smaller

[3] Baldwin, Richard (2011). "Trade and Industrialization after Globalisation's 2nd Unbundling: How Building and Joinin a Supply Chain are Different and Why It Matters." NBER Working Papers.

[4] Abe, Kazutomo and John Wilson (2009). "Weathering the Storm: Investing in Port Infrastructure to Lower Trade Costs in East Asia." World Bank Policy Research Working Paper.

[5] *The New York Times*. July 20, 2013. "Hauling New Treasure Along the Silk Road."

[6] The prices are for 20 TEU containers. Kulaklikaya, Omer (2013). "Modern Ipek Yolu: Orta Asya'nin Kuresel Ekonomiye Acilan Kapisi." TEPAV Policy Note.

carbon footprint. Freight carried by rail produces up to 20 percent fewer carbon emissions than if moved by ship. Moreover, surplus emissions can be sold in carbon markets in the future, therefore lowering the effective logistics cost of rail freight.

The Chinese government has recently made railway connectivity a central feature of its new economic development strategy. The strategy focuses on development of inland connections to address the congestion in China's eastern regions (i.e. congested ports and rising labor and land costs). The policy move has resulted in rapid railroad development on China's western (inland) parts, which now have more than twice as much track per capita as eastern (coastal) parts.[7]

A prime example on how a region's economic future is tied to railway development can be observed in recent developments taking place in China's northwestern Xinjiang province. Xinjiang, which shares borders with India, Pakistan, Afghanistan, Tajikistan, Kyrgyzstan, Kazakhstan, and Russia and was long regarded as the underdeveloped backwater of China, had missed out on the export potential of China's economic boom. Since 2006, the 1,904-kilometer double-tracked Xinjiang-Lanzhou Railway has connected Xinjiang to Northwest China and the main Chinese railway network. The railway corridor also extends to Kazakhstan, making Xinjiang region a hub with high development potential between Central Asia and industrialized parts of China.

Development Opportunities for the Larger Region

Along the Modern Silk Road, in between Europe and China, lies the vast Eurasian landmass, including Central Asia and the Caucasus. Some Central Asian and Caucasian countries, notably Azerbaijan, Kazakhstan, and Turkmenistan, are resource-rich. All countries in the region lack industrial development due to significant connectivity problems. In the international shipping connectivity index of the United Nations, which measures ease of importing and exporting across the borders as well as port logistics (using the shortest route to the sea for landlocked countries), the Central Asian countries have scored less than half of that of Turkey and a quarter of that of China. Connectivity problems also constrain export development. The non-oil, non-gas exports of Central Asia is 20 percent of the total GDP of the region; this ratio is 40 percent and 75 percent in Turkey and China, respectively.

In the context of the new economic architecture characterized by global supply chains, strong railway networks could bring industrial development to Central Asia and the Caucasus. Manufacturers in China and Europe would have the opportunity to diversify their supply chains by investing in these regions. For instance, the textile industry and other industries that were abandoned after the collapse of the Soviet Union can be revitalized, as 90 percent of Soviet factories already have railway connections.

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We suggest a "transport corridor approach" for the development of railways. Efficient transport corridors ensure seamless integration of different transport modes, such as maritime and railways. Linking missing parts by targeted infrastructure investments, coordinating schedules of services in different transport modes, and facilitating traffic at bottlenecks such as border crossings are essential elements of the corridor approach.

As an element of the corridor approach, construction of dry ports along the Modern Silk Road will increase benefits. Dry ports and logistics centers, which handle containers and other cargoes by any mode of transport including railways as well as roads, inland waterways, or airports, provide customs and storage services to clients. Azerbaijan, for instance, has an impressive plan to develop an air-cargo hub to take advantage of its low-cost fuel[8] to fly out high-value

[7] Bilgic, Idil Alparslan (2013). "Bir Bolgesel Kalkinma Hikayesi: Bati Cin." TEPAV Policy Note.

[8] Ziyadov, Taleh (2012). "Azerbaijan as a Regional Hub in Central Eurasia." Azerbaijan Diplomacy Academy.

manufactured goods from the countries along the Modern Silk Road to distant markets.

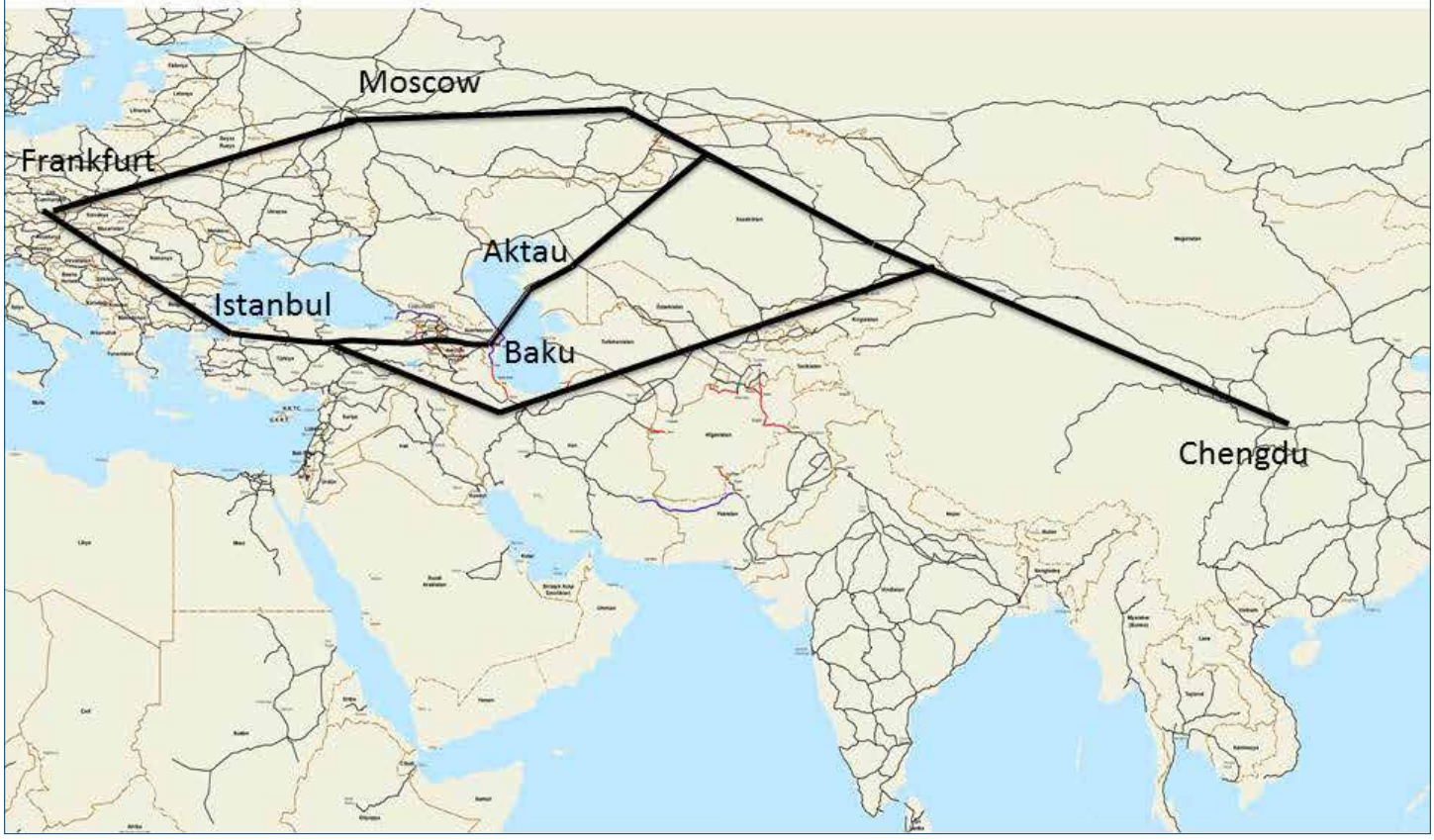
Lastly, connectivity provided by transport corridors must be complemented by other industrial policies that will strengthen connectivity and economic integration in the region. A case point is Kazakhstan's ambitious development plan to diversify production beyond the natural resource sector. The government of Kazakhstan designated 10 special economic zones around the country, and invested millions of dollars in building industrial infrastructure including electricity grids, substations, natural gas connections and grids, internal and external roads, and railway connections. Furthermore, the government will provide incentives to investors in these zones including exemptions from tax and custom duties and a liberal regime that will allow companies to employ foreign workers. One of the zones that specialize in logistics is based in the Aktau port on the Caspian Sea, also an important hub along the Modern Silk Road.

Alternative Railway Corridors along the Modern Silk Road

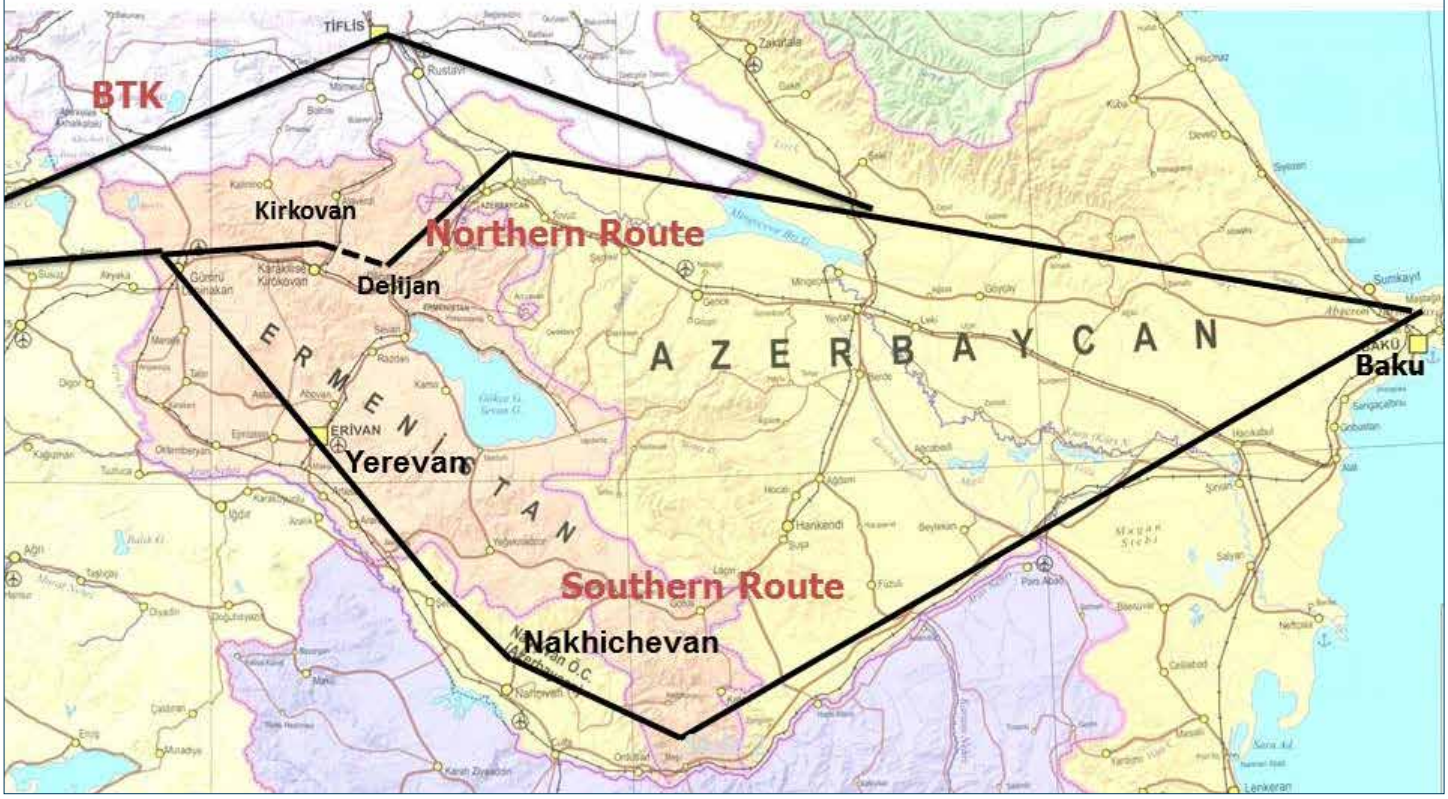
There are three alternative corridors along the Modern Silk Road to connect China to Europe:

- The Northern Corridor: This corridor uses the Russian Trans-Siberian Railway line, starting in Kazakhstan and connecting to Russia. Passing through the Russian mainland, the Northern Corridor reaches Belarus and ultimately Europe. This corridor is currently operational. It also crosses through the least number of countries, hence involves least number of border crossings, amongst the three alternatives. However, it crosses the harshest climate conditions.
- The Southern Corridor: The Southern Corridor starts from Kazakhstan, passes through Turkmenistan or Kyrgyzstan and Tajikistan to Iran. Through Iran, the Southern Corridor reaches Turkey and then finally

Map 1. Modern Silk Road: Three East-West Corridors
(The lines show the main routes and only approximate the real locations of the railways.)



Map 2. Routes over Southern Caucasus in the Middle Corridor
(The lines show the main routes and only approximate the real locations of the railways.)



connects with Europe. The main disadvantages of this corridor are the high number of border crossings and political instability in the region.

- The Middle Corridor: The Middle Corridor crosses Kazakhstan to reach the Kazakh Caspian port of Aktau. Using a sea connection, it reaches the newly built Azeri port of Alat. The corridor then passes through the South Caucasus and reaches Europe via Turkey. The Middle Corridor is a politically viable alternative with the countries en route having relatively Western-friendly regimes. The main disadvantages are inter-modality at the Caspian crossing and the frozen conflicts in the Caucasus region.

Turkey, Georgia, and Azerbaijan have been working together to build the Baku–Tiflis–Kars (BTK) railway, which is expected to be completed soon. When operational, the BTK railway will make the Middle Corridor of the Modern Silk Road fully complete (with the inter-modal crossing at the Caspian Sea).

Furthermore, there already is a railway connection between Turkey and Azerbaijan through Soviet railway lines in Armenia. These lines have not been operational since the dissolution of the Soviet Union due the Nagorno-Karabakh conflict between Armenia and Azerbaijan, and the closed border between Armenia and Turkey. The former Soviet Railways have the potential to provide two alternative routes, which are also not fully functional at the moment:

The northern route has a connection from the Turkish border to Vanadzor in Armenia. From Vanadzor to Dilijan, Armenia, there is a short section of missing track (the Soviet railway lines meet each other in Tbilisi). From Dilijan, the railway reaches the Caspian shores through Azerbaijan territory.

The southern route starts at the Turkish border, passes through Yerevan and enters Nakhichevan, Azerbaijan, where it crosses the Megri corridor in Armenian territory. It then passes through the Azeri provinces under Armenian occupation before reaching the Azeri ports on the Caspitan

Sea. The parts of this route in Armenia before entering Nakhichevan are already operational.

Making these routes fully functional will depend on full normalization of relationships in the South Caucasus. It will also require a comprehensive rehabilitation of the lines, most of which have been defunct since Soviet times. When functional, these railroad corridors have a potential to bring balanced economic growth, contributing to peace, stability, and prosperity in the region.

The Next Step: Building a Road Map

Making the Modern Silk Road a reality requires a framework that involves coordination of activities of all relevant actors, setting of policy priorities by assessing major bottlenecks, and building institutional capacity.

1. **Engage all actors in a coherent dialogue framework, and let the private sector lead**. Developing the Modern Silk road requires innovative approaches, often utilizing bilateral and multilateral platforms, and including all (sometimes conflicting) parties. The scope of the dialogue should not be kept to en route countries, but should also include the EU and China on the two ends of the corridors, as well as other countries with major economic interests such as the United States. Transport corridors present a complex issue that involves technical, business, economic policy, and international policy dimensions. As such, its dialogue requires a framework that includes multiple actors from these spheres, including multilateral financial institutions and private sector representatives, in addition to the sovereign states.

   The private sector should take a lead role in the design and facilitation of projects and in the institutional bodies. Experience shows that, for infrastructure development projects, the "build and they will come" approach does not work. Engaging private sector at the outset is of particular importance. The private sector can also contribute financially to the various activities and infrastructure projects. It is possible to design cross-border public-private partnerships (PPPs) to help sovereign states cope with financing problems. These links would also reinforce peace and stability.

   Private sector interests, which are often similar across borders, could act as a driver of cooperation. Given that the private sector includes a variety of different sectors and firms with no single structure or hierarchy, there is a need to utilize umbrella organizations, such as chambers of commerce, in countries where they are influential. For instance, the Turkish Union of Chambers of Commerce (TOBB) has been taking an active role in transport initiatives and is in dialogue with public agencies. TOBB also established BALO, a logistics company, to run scheduled container train services to Europe. BALO also works on the Istanbul-Tehran-Islamabad-Delhi-Kolkatta-Dhaka corridor, providing a railway connection to South Asia. TOBB also modernized and runs major border gates of Turkey under a PPP framework.[9]

2. **Avoid misinformation**. A major impediment to fruitful dialogue on transport corridors is the abundance of information that can be misleading, irrelevant, or simply inaccurate. Competing national interests also contribute to misinformation. For progress to be made, the general approach needs to be revised. First, countries should not see each other as competitors, since the transport corridors make sense only if they are part of a larger network. For instance, the corridors over the Modern Silk Road, and the routes over the South Caucuses (over Georgia or Armenia) must not be viewed as substitutes for each other. On the contrary, alternative routes will complement each other in creating a comprehensive network of railways to connect Eurasian countries. Moreover, multiple corridors will help manage the risks associated with supply chain disruptions, especially given the political instability and natural and technical risks in the region.

   For all these reasons, traffic along the Modern Silk Road will keep increasing. In any case, China's exports are

When functional, these railroad corridors have a potential to bring balanced economic growth, contributing to peace, stability, and prosperity in the region.

[9] UNESCAP (2013). "Towards Seamless Connectivity in South and South-West Asia."

expected to maintain a positive trend. This is expected for its imports as well as the country's consumer market expands. As supply chains diversify to en route countries, alternative routes will lower monopoly rents on logistics and hence lower the costs. This, in turn, will encourage more supply chain diversification to en route countries. Corridors are likely to struggle to keep up with the increased traffic, rather than competing with each other to find enough cargo.

3. **Prioritize projects by assessing the bottlenecks.** The international community should go beyond a "project menu" approach for the development of the Modern Silk Road. When it comes to transport corridors, many international organizations adopt long lists of projects that neither countries nor the international community have the financial or administrative resources to implement. Therefore, it is essential to have priorities.

   A transport corridor is only as strong as its weakest link. The weakest links can occur at border crossings, at inter-model ports, in conflict zones, or in areas where infrastructure is weak or non-existent. Projects should target the bottlenecks at these weakest links. A technical assessment of the bottlenecks along a transport corridor is critical. Private sector is generally the most useful source of information when assessing these bottlenecks. There are also robust methodologies to pinpoint the weakest links. One example is the time-cost-distance methodology developed by the United Nations.[10]

   Problems encountered at the border crossings are the most common bottlenecks. Physical modernization is one way to improve border crossings; another is to make customs procedures move faster by developing cooperation between border agencies of neighboring countries. Methods such as reducing the number of procedures, sharing data, and eventually merging crossings under a single-window border system are currently being used throughout the world, but hardly applied along the Modern Silk Road. Another bottleneck is the intermodal transshipments. The ports along the Caspian Sea remain unmodernized. A cross-country coordination of ferry services should complement these investments.

[10] For an application, see UNESCAP (2003). "Transit Transport Issues in Landlocked and Transit Developing Countries."

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4. **Build institutions.** The international community can transform the dialogue mechanism in institutions that will facilitate and support the development of the Modern Silk Road. Two types of institutions could be created, which should be established with a simple institutional structure but with a comprehensive participation of relevant players:

   - **A corridor management agency** to assume coordination of actions of relevant players in planning, financing, regulation, operation, monitoring, and promotion of the Modern Silk Road corridors. The critical function of the agency will be leadership, coordination, and stakeholder management. The body could bring together high-level representatives of ministries of transport from different countries as well as the private sector. In spite of political conflict between some countries along the Modern Silk Road, examples of multilateral platforms such as the Organization of Black Sea Economic Cooperation show that conflicting parties can be brought together on technical issues.

     The agency will implement assessments of bottlenecks along the corridors. A core function will be project development that will ease these bottlenecks. These projects may involve investments as well as other facilitating measures such as reduction of procedures and information exchange at the border gates.

     The agency will also work towards harmonizing the rules and standards regarding traffic, signalization, and rolling stock. It will coordinate the locations of dry-ports and logistics centers. It will also market the Modern Silk Road in the international arena.

     There are experiences of transport corridors for which corridor management agencies have led the development process. The Maputo Corridor in Southern Africa, UN-ECOWAS' role in Western Africa, Can-Mex corridor in Northern America, and TEN network in the EU are few examples. Another is TRACECA (Transport Corridor Europe-Caucasus-

Asia), an intergovernmental ministerial commission that since 1998 has functioned to improve the East-West Eurasian transport corridors.

- **A transport development fund** to serve as a complement to the corridor management agency, and would co-finance priority projects. The corridors not only contribute to the economies of countries en route, but also bring positive spillovers to other economies. Accordingly, the cost should not be borne entirely by en route countries. A transport development fund for the Modern Silk Road can get contributions from China, the EU, and the United States, as well as multilateral finance institutions such as the World Bank, the European Bank for Reconstruction and Development, and the Asian Development Bank. The management of the fund can be embedded in the corridor management agency, and the governance can be modeled after the experiences of trust funds used in international development. The funds should be used only to finance priority projects as decided by the corridor management agency. It is essential that projects are co-financed by other sources, in particular by the private sector.

From ancient times to the 1400s, the Silk Road served as the main route for trade between China and Europe. When railroads were invented in 1800s, the heyday of the Silk Road was already over. Today, technological developments make it possible to organize production processes in international supply chains in ways that different stages of production for a single good take place over multiple locations. Railroads emerge as a fast, reliable, and eco-friendly transport alternative that can link not only China and Europe to each other, but also the Central Asia and the Caucasus regions along the way. Railroad corridors along the Modern Silk Road have a potential to bring balanced economic growth, contributing to peace, stability, and prosperity in the Central Asia and the Caucasus. To make them fully functional, the international community should adopt a private sector-led and project-focused strategy to build institutions and funding mechanisms for corridor development and management.

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The author thanks Feride Inan, Irem Kizilca, Idil Bilgiz Alparslan, and Bilgi Aslankurt for their contributions.

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