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MOLDOVA'S TRADE CORRIDOR ASSESSMENT

SUMMARY



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INTRODUCTION

Most international trade occurs along corridors – particular routes where goods are carried via land, sea, or air. Trading through corridors allows for economies of scale, network effects, and the appropriate targeting of resources for transport sector improvements. But corridors can also be subject to a wide range of problems including infrastructure defects, administrative delays, regulatory complications, congestion, and many others. These can increase trade and transport costs as well as constrain growth. Therefore, it is important that trade corridors operate smoothly, rapidly, and efficiently. Corridor improvements can reduce trade and transport costs, which can lead to increased trade, lower prices to consumers, and more competitive businesses.

Trade corridor assessments such as this one can be used to measure corridor performance, identify bottlenecks and constraints, and determine solutions to improve corridor performance, which in turn make it easier to trade goods. Studies have shown that time, cost, and reliability are the key factors in determining corridor competitiveness from a transport logistics perspective. Therefore, measuring these indicators in a consistent manner across links and nodes is an important step in a trade corridor assessment. Both quantitative and qualitative methods are used in the assessment—to understand not only what the times and costs are, but why.

The first generation of TCAs, conducted in the late 2000s, led to a key insight: improving the regulatory environment can often provide more cost-effective solutions for alleviating bottlenecks than expensive infrastructure investments. Governments and development partners frequently focus on projects developing hard infrastructure and overlook soft dimensions such as the regulatory framework, which can provide good value. This is not to say that infrastructure investments are not important. Functioning roads, railways, and ports are required for trade to take place. However, while a well-functioning infrastructure is a *necessary* condition for trade, it is not a *sufficient* condition. Understanding why bottlenecks exist is the first step to developing action plans for improving trade corridor performance, which has the potential to unleash latent economic activity and trade. In the sections that follow, we aim to do just that.

MOLDOVA'S TRADE

Since 2000, Moldova has seen impressive GDP growth, averaging 6.7% per year from 2000 to 2017. Moldova's growth has been founded on a development policy that is focused on trade, with imports increasing 13% and exports by 18% per year over the same period.¹ Such a trade-focused development strategy requires well-functioning trade corridors. But despite Moldova's focus on trade, and positive developments in many particular sectors including agriculture, viniculture, and manufacturing, Moldova's trade corridors are functioning poorly, and are constraining growth from increasing even further. GDP growth over the past five years has slowed to an average of 3.8%, with two years (2012 and 2015) experiencing declines. Improving Moldova's trade corridor performance will reduce trade costs and could unleash latent potential, especially for small traders for whom current costs are too high to trade.

Current state of trade. In 2017, imports registered a value of around \$4.8 billion, decreasing from the peak of nearly \$5.5 billion in 2013. Romania, which joined the European Union (EU) in 2007, remains Moldova's largest import trading partner, and 49% of Moldova's overall imports were from the EU. Imports from Commonwealth of Independent States (CIS) countries had a share of 25% of the total imports, but the largest year-on-year growth in imports from 2016 to 2017 was comprised of imports from the Far East, including Japan (+33.4%), China (+28.4%), and Taiwan (+26.2%). Trade with the USA has also grown rapidly (+31.8%).²

Exports grew nearly 19% from 2016 to 2017, reaching \$2.4 billion in 2017.³ Since 2005, Moldova's export growth trend has been largely positive due to product diversification and entry into new markets. Increases have been particularly noteworthy in manufactured articles and in foodstuffs including processed agricultural goods. Export destinations have shifted from CIS countries towards the EU, with 66% of total exports (\$1.6 billion) to the EU in 2017. Four of five of Moldova's largest export trading partners are currently EU members, including Romania, Italy, Germany, and the United Kingdom.⁴ Meanwhile, exports to CIS countries have declined both in absolute and in relative terms, with Russia maintaining Moldova's lead CIS-partner status, followed by Belarus and Ukraine. Emerging export destinations include China, Saudi Arabia, Egypt, and Malaysia.

¹ Calculations using data from the World Bank World Development Indicators Database.

² National Bureau of Statistics of the Republic of Moldova.

³ Ibid.

⁴ Noting that the United Kingdom is planning on exiting the EU in 2019.

MOLDOVA'S TRADE CORRIDORS

Moldova is a small, south-eastern European country without any direct maritime access other than a very short (430m) stretch along the Danube River. Moldova has land borders with just two other countries: Romania to the west and Ukraine to the north, east, and south. Due to its landlocked location, its trade corridors are critical to the economy. In Moldova, trade corridors carry both national and transit cargo and consist of road and rail links as well as inland waterways and air cargo routes typically go to/from its main economic centers of Chişinău and Bălţi to/from economic centers

such as Bucharest, southern Germany, Milan, and Moscow, and regional ports including Odessa, Chornomorsk, Giurgiuleşti, and Constanţa, from where they are transported to overseas destinations (see Figure 1).



FIGURE 1.
MAP OF MOLDOVA'S
TRADE CORRIDORS

Source: Nathan 2018.

TABLE I. MOLDOVAN ROAD TRUCK TRAFFIC BY BCP, 2016

BORDER CONTROL POST	NUMBER OF TRUCKS	PERCENT OF TOTAL
Leușeni-Albița (to Romania)	197,716	23.0%
Sculeni – Sculeni (to Romania)	104,296	12.1%
Otaci- Mohyliv-Podilskyi (to Ukraine)	97,250	11.3%
Tudora-Starokazacie (to Ukraine)	86,587	10.1%
Giurgiulești-Reni (to Ukraine)	54,472	6.3%
Giurgiulești-Galați (to Romania)	51,877	6.0%
Criva-Mamaliga (to Ukraine)	47,502	5.5%
Other (28 BCPs)	219,374	25.5%
TOTAL	859,074	

Source: Moldovan Customs Service/Border Police.



PHOTO: Emil Bolocan / Nathan

Road transport comprises the majority of Moldova's trade, rendering the road system and land border crossing points (BCPs) the most critical components of Moldova's trade corridors. As Table I above shows, Leușeni-Albița and Sculeni-Sculeni BCPs to Romania handled over 35% of Moldova's road traffic by volume in 2016. Significant and time-consuming delays at the BCPs, mostly due to long queues, are a large and growing problem, and they are becoming a key constraining factor to trade. Border delays increase transit time, reduce corridor reliability, and have indirect impacts on transport costs due to reduced trucking utilization. Such delays have a particularly negative impact on time-sensitive goods, including high-value goods like auto parts and perishable goods such as fruits and vegetables—two subsectors that are particularly promising for long-term export growth.

With increasing trade to overseas destinations, access to regional ports is becoming more important as well. The Ukrainian ports of Odessa and Chornomorsk (including Illichevsk Fishing Seaport, which is universally known as the Fish Port) handle the majority of Moldova's



container trade as well as a significant portion of bulk cargo. However, the access roads from Moldova to these ports need improvement, the Odessa port faces congestion, and there are perceived geo-political risks of shipping via Ukraine which affect financing. For instance, some shippers have reported that they are unable to obtain letters of credit to export via Ukrainian ports, and so must now use Giurgiulești port. The Port of Constanța in Romania is an efficient port, but farther away such that the costs of the inland transport leg are currently cost-prohibitive. Moldova's own river port at Giurgiulești handled moderate amounts of container traffic in 2017, as well as significant bulk volumes including grains and fuels, and has the physical capacity to handle more. Nevertheless, access to the Giurgiulești port is also constrained by very poor conditions of road, rail and inland waterways access and possibly also by the domination of the port by a single large shipper, Trans-Oil. Low volumes of containerized traffic mean low frequency of container vessel service calls, served only by one weekly container vessel for transshipment of containers at Constanța. This situation increases transport times to and from the port. As a result, the Giurgiulești International Free Port (GIFP) is largely used for exports of bulk cargo (grain and vegetable oils) that are not time-sensitive. Table 2 provides a comparative assessment of corridor options consisting of ports, which shows the GIFP-Constanța option to offer the highest potential if road conditions could be improved.

TABLE 2. COMPETITIVENESS OF PORT-ANCHORED TRADE CORRIDORS SERVING MOLDOVA

METRIC	GIFF - CONSTANȚA	CONSTANȚA	ODESSA	ILLICHEVSK FISH PORT
Distance (km)	233 km	525km (via Albița); 477 km (via Cahul); 470km (via Galati)	Approx. 200 km (via Tudora)/205 km (via Palanca)	Approx. 200 km (via Tudora)/205 km (via Palanca)
2017 Freight	Containers: 6,420	Containers: 250	Containers: 9,343	Unknown
Corridor Transport Cost	Medium Road: \$350-500 OR Rail \$250 20' - \$363 40' + River shipping: \$400 (20') - \$500 (40') Total 20': \$650-\$900	High Truckload: €600-950 (\$720-\$1140); for Container: €1000-1300 (\$1200-1560) (incl. €300 gaur.)	Low Typically \$450-\$600 (incl. optional \$100 TIR), up to \$800 peak	Low \$450-\$600 (incl. optional \$100 TIR)
Corridor Transport Time Chișinău-Ship	High Road: 4-5 hours OR Rail 3-5 days Port: 2-3 days River: 12-48 hr Transshipment: Estimated 2-3 days Total: 6-14 days	Medium Road: 8 hours Border: 24-74 hours Port: 1 day Total: 3-5 days	Low Road: 4-5 hours Border: 2-3 hours Port: 1-2 days Total: 2-3 days	Low Road: 4-5 hours Border: 2-3 hours Port: 1-2 days Total: 2-3 days
Corridor Reliability	Low Feeder only weekly and occasional delays; rail very low	Medium Port ok but 1-3 day delay at BCP	Medium-High Currently few delays on corridor but congestion in port	High Currently no delays indicated
Port Terminal Handling Costs	(GIFF Unknown)+ \$250-260 Constanta	\$250-260	\$270	\$270-320
Port Performance	Poor	High	Mixed	Unknown, but indicated to be less congested and have smooth operations
-Crane moves/hr	4-6	Avg: 30-35; Max: 50	35	
-Processing time	2-3 days	1 day	M: 1-2 days, X: 1 day	
-Truck turn time	Unknown	20 minutes	2 – 6 hours, max 48h	
Border Crossing Post	Giurgiulești FEZ Customs	Most common: Albița, RO / Leușeni, MD Alt: Galati-Giurg.	Currently: Tudora, MD / Sarokazache, UA; Palanca Joint Border Post in progress	

METRIC	GIFP - CONSTANȚA	CONSTANȚA	ODESSA	ILLICHEVSK FISH PORT
Border Post/ Customs Performance	High Normal and fast operations, pre-arrival processing, no transit documents required Cheaper but slow and unreliable at present	Low Long wait in RO (1-3 days), nominal informal fees RO, MD	Medium-High Normal and fast operations (2-3 hours), some informal fees UA	
Rail Performance	Poor road condition, rehabilitation planned but delayed	Not available	Not operating or cost-effective due to Transnistrian region	
Access Road Performance	High potential due to benefits of no transit docs and short distance, but poor condition of access roads, high transport time and poor reliability. Despite this, receives 40% of MD's containers; proportion of bulk is unknown.	Mostly good condition via Leușeni but longest route (double the km); avoid Cahul/Galati due to road and BCP conditions	Varies from fair to poor; with poor roads on both sides of BCP.	
Overall Competitiveness			Ukraine ports have the lowest inland transport costs and times so are preferred at present, but there are geo- political risks.	
			Odessa has more ship calls but is congested and more expensive so some lines prefer the Fish Port and Maersk moved there in 2018.	Fewer ship calls than Odessa but less congested, cheaper and better operations.

MOLDOVA'S TRADE CORRIDOR PERFORMANCE

Traders and transporters will typically choose their transport routes and modes based on a combination of time, cost, and reliability, with competitiveness being determined by the weakest link in the logistics chain. While performance varies by mode and route, overall the cost and time for trade using Moldova's trade corridors is high:

- Road costs ranged from \$0.04 to \$0.13 per metric ton per kilometer (tkm), with most costs in the \$.06 to \$.10/tkm range. Prices per tkm were most competitive for routes with longer distances, high traffic, and competition from European transporters, such as routes to Italy, Germany, Austria, and Turkey. Relatively low prices to Moscow reflect in part the increased metric tons per truck allowed shipping east. Prices to Kazakhstan are high due to the long distance, which results in poor truck utilization rates, and the inability to drive to Russia through Ukraine, which increases the distance even more as trucks detour through Belarus.
- Truck prices are estimated at \$0.08/tkm to GIFP, \$0.10 to Ukrainian ports, and \$0.07 to Constanța. However, Constanța is farther away from Moldova, so a comparison in terms of price per metric ton is more appropriate; in this regard, Constanța is more expensive at \$36/t compared to \$18/t to GIFP and \$20/t to Ukrainian ports.
- Transport of containers is also more expensive than general trucking prices. It is our understanding that this is due to container guarantee fees imposed by the shipping lines. According to interviews, for Constanța this can equate to €200-€300 per trip, adding around 30% - 40% to the transport cost. Container transport costs to Constanța are higher than to the Ukrainian ports in terms of price per tkm and per metric ton. Transporters cited the following reasons for higher prices to Constanța: longer distance, container guarantee costs, lower axle load restrictions, more rigorous enforcement, and lack of backhaul from Romania / higher chance of backhaul from Odessa. Additionally, given the border delays, trips to Constanța take a minimum of two days, while trips to Odessa/ Chornomorsk can be made in one day.
- Rail costs were estimated to be \$0.03 to \$0.08/tkm, but in reality could be less



due to higher tonnage per unit, or more due to drayage costs to/from the rail yard.¹ Additionally, the reported rail costs are only for shipments within the Moldovan rail system; prices could vary dramatically if crossing on to other rail systems.

- In general, air freight is typically the most expensive form of transportation. This is also the case in Moldova, where air freight costs are the highest priced of all of the modes by far, at over \$1/tkm for exports and over \$2/tkm for imports using civil aviation. These rates are cost-prohibitive for all but samples and urgent shipments. Until the aviation sector deploys larger planes and freight capacity increases, it is unlikely that air freight prices will decrease. Current demand does not warrant dedicated air freight services. Charter flights are also expensive and limited in feasibility of operation due to insufficient and poor quality of air cargo infrastructure at the airports.



- Sea freight prices cannot be compared on a price per tkm basis other than for Turkey, where a sea freight price per tkm was calculated using the road distance. In this case, export prices were similar (\$0.07 by road-sea, and \$0.05-0.07 by road). Imports were cheaper by road using Moldovan carriers (\$0.05), but more expensive using Romanian carriers (\$0.13) or by sea (\$0.12). However, with prices being so similar, once transport time is considered, road transport would likely be the more competitive option at present as it is 2-5 days faster. In terms of cost per metric ton, road-sea rates are higher than road rates, but this a reflection of the long distance of routes using sea transport.
- Comparisons can be made across sea transport routes.² In this respect, exports to China are the cheapest on a per metric ton basis of the routes that we

¹ Cost of local transport from the farm/warehouse/factory, etc., to the railway station. This cost has not been estimated as it would vary greatly depending on the distance to/from the railway terminal. In the most efficient cases, like Moldovan wheat, product is directly discharged from the wheat silo to the railway hopper wagons and transported without the need for drayage.

² Noting that the price quotes we received were spot prices and sometimes varied widely. However, our experience is worth noting, as it is similar to the constraints that a small shipper would face who wanted to explore new markets.

report. We suspect this is due to excess capacity in sea shipping flows to China compared to exports from China, which are the main flow. This situation presents an opportunity for Moldovan exporters. On the other hand, imports from China are more expensive, and Moldova imports a significant amount of input materials and consumer goods from China. Overall, prices to/from Dubai were the most expensive, despite the short distance relative to other routes such as China and the US. Imports from Turkey were expensive as well, again despite the even shorter distance.

- Informal fees at the borders were reported to be minimal, but still required — typically just several token dollars or Euros.³ However, with an estimated 859,074 trucks crossing Moldova's borders in 2016 (estimated from Moldova Customs Service data), this would still amount to a cost of several million dollars to traders and transporters. Transporters reported that in some places in Ukraine, refusal to pay the several dollar fee results in physical inspection taking several hours. In terms of the Romania/Moldova border, payments seem to be higher for LCL (Less than Container Load) or groupage shipments than for FTLs (Full Container Loads), which disproportionally affects small traders in terms of both cost and transport time.
- Most shippers reported increased prices during peak harvest seasons due to lack of available trucking capacity. There were also many reports of container shortages for export during these times.
- In terms of transport times, GIFF and the Ukrainian ports can be reached in less than one day. Transport to Constanța depends on the amount of time spent at the border, but typically takes at least 2 days.
- Bucharest and other destinations in Romania also typically take 2 days. Travel to Western Europe typically takes 3-5 days depending on the border delays at Leușeni or Sculeni. Transport time to Turkey is similar.
- Transport to the North and East takes 2-4 days depending on the time at the Northern border (mainly Otaci) and destination. Transport time to Kazakhstan at present is 5-8 days. Transport to Russia and destinations beyond via Russia requires a detour through Belarus, as the typical Ukrainian route to Russia is not now open. In general, trips east require a detour around the Transnistrian region as well, either to the North or South; the South is the preferred route due to better road conditions, but only the Tudora BCP is open to trucks while Palanca is under construction.
- Rail transit times at present are not efficient or competitive. Transporters report that a 3+ day transit time for the 238 km trip from GIFF to Chișinău is common or standard.

³ Based on interviews. By far the most common informal payment appears to be a few euros or dollars for “speed money” that is charged for faster processing. Interviewees reported that this was an occasional issue on the Moldovan side and a universal and unavoidable one on the Ukrainian side. Some corridor users also apparently pay informal fees at the border to surpass regulations / violations such as overweight vehicles or lack of authorizations; this is much less common but the amounts involved are said to be larger (\$50-70 per transaction). Note: not all interviewees were willing to discuss informal payments.



BORDER WAITING TIMES IN AN INTERNATIONAL CONTEXT

During our assessment, it became clear that the time spent at Moldova's borders, especially the border with Romania, can include substantial delays. Shippers and transporters consistently mentioned that it takes 1-3 days to traverse the Leușeni-Albița BCP. Delays were also reported at Sculeni-Sculeni and the northern borders with Ukraine, especially at Otaci-Mohyliv-Podilskyi (up to 1 day). Transporters typically fared better at Tudora-Starokazacie (typically 3 hours).

Delays are found in all directions, but are more likely to be encountered (and are longer) when crossing the Romanian border to enter the EU. It is important to appreciate that the border between Moldova and Romania is not simply a border between two countries, but also an external border of the European Union. The EU's external borders differ from most national borders in that they represent the gateway to a region of 28 countries and over half a billion people. However, according to a comparison of 23 EU/Non-EU borders undertaken in 2016, the overall waiting time for goods entering Romania generally takes significantly longer than at all other external EU BCPs. The results indicate that the overall average time needed to cross a (non-Romanian) EU border was 23.8 minutes. However, the average time needed to cross a Romanian border (6 of the 23 border crossings assessed), was 380.4 minutes. The six Romanian BCPs were the top six overall in terms of total average time. And of those 6 Romanian border crossings, the waiting time at the Moldovan-Romanian border (Leușeni-Albița) had the worst performance, and was significantly higher than any of the others (1032.9 minutes). This has a significant impact on the performance of Moldova's trade corridors.

Anecdotal evidence suggests that there are issues with both Romanian Customs and the Romanian Border Police. The Romanian Border Police regularly hold vehicles in "no man's land," which adds significant delays without affecting the official statistics on the Romanian side. Part of the problem is certainly that this is an EU border, with high levels of scrutiny and control, as discussed more in the full report. However, this is clearly not the only reason. Romania's BCPs compare poorly to other EU BCPs, such as Estonia-Russia and Poland-Belarus. As Moldova's external trade has shifted westward over the last decade, these problems have become both more obvious and more pressing.

COMMODITY ANALYSIS

The complete report includes analysis of four specific commodities: perishable fruits, wine, textiles, and auto parts. These goods are subject to various aspects along Moldova's trade corridors that could impact performance differently. For instance:

- **Perishable fruits** are agricultural (needing phytosanitary certificates), require cold storage, and must have fast and reliable transport times. Border crossing times are unreliable and vary throughout the season, but long lines at the borders put perishable goods at risk of spoilage. International supermarkets also impose steep fees on deliveries made outside of scheduled drop-off times. Additionally, high cost and limited knowledge of air and sea shipment options for perishable goods discourage producers from exporting to new markets in the Middle East and South East Asia. Transport costs of refrigerated containers (reefers) are much more expensive than regular containers: according to one source, exports of reefers from the Fish Port cost 72% more to Baltimore, 43% more to Dubai and 40% more to China; according to a second source, exports of refrigerated goods from Odessa cost more than double non-refrigerated containers for every port we quoted.
- **Auto parts** include both imports and exports. As exports, they are often high value and “just in time” goods, which face heavy fines if they arrive late to their destination. Thus, border delays put producers at risk of high penalty fees for late deliveries. To avoid issues with driver rest time, some transporters use teams of two drivers per truck, at a higher cost.
- **Textiles** are a high volume, containerized export, and the Moldovan textile market relies on imports for most of its inputs. E-commerce transactions are growing in this sector; however, high air transport costs and inefficient customs procedures constrain producers from expanding this area of their business.
- **Wine** is a heavy good that faces SPS requirements and can be transported via both containers and tank-tainers in bulk; in bottles, it is also breakable, and this is sensitive to road and rail conditions. Wine producers noted that the numerous documentation requirements add costs and can delay shipments. Also, increased shipping costs to Kazakhstan and Kyrgyzstan due to unusable trade routes through Ukraine have hurt sales.

TRADE CORRIDOR CONSTRAINTS

The costs of transport on Moldova's trade corridors are higher than they should be due to a variety of factors that can be summarized into a few main topics, as shown in Table 3.

TABLE 3. KEY ISSUES AFFECTING MOLDOVA TRADE CORRIDOR TIME AND COST

WHAT	WHY	IMPACT-TIME	IMPACT-COST
Poor and insufficient infrastructure	<ul style="list-style-type: none"> • Years of deferred maintenance • Lack of available funding • Lack of private sector investment • Misuse/inefficient use of available funds • Delays in procurements • Overloading of trucks • Lack of transport master plan • CFM freight cross-subsidizes passengers • Lack of resources to enforce regulations 	<ul style="list-style-type: none"> • Diversion of traffic to roads and BCP with good infrastructure creating congestion • Diversion to longer but better condition road routes increases time • Reduced reliability of transport services impacts products that can be exported • Increased rail transit time • Increased air cargo unloading/loading time 	<ul style="list-style-type: none"> • Increased trucking maintenance costs → increased tariffs • Increased distance → increased tariffs • Increased transport → increased tariffs • Reduced availability of trucking services on routes with poor roads = less competition → increased tariffs • Overloading leads to poor roads and increased truck maintenance costs
Trade facilitation and border delays	<ul style="list-style-type: none"> • Poor roads lead to congestion at BCP with good access infrastructure • Inadequate BCP infrastructure (such as only 1 entrance lane) • Romania is gateway to EU • Transnistrian region limits crossing points to the East • Need to improve risk management, especially risk profiling • Lack of adequate resourcing for border controls on the Romanian side of the border¹ • Lack of use of security seals for cargo transiting across borders 	<ul style="list-style-type: none"> • Border delays can last 1-3 days, mostly in queues • Creates further delays due to driver rest requirements • Cannot make trip to Bucharest or Constanța in same day • LCL (consolidated shipments) considered high risk and subject to reports of 100% physical inspection, leading to increased time of several hours • Detours around Transnistrian region add time • Reduced reliability 	<ul style="list-style-type: none"> • Increased trucking costs due to increased time • Reduced truck utilization rates (trips/month) which increases costs • Time-sensitive products require 2 drivers at higher cost • Shippers have to pay costs of physical inspection • Minimal, but nuisance, informal fees

WHAT	WHY	IMPACT-TIME	IMPACT-COST
Asymmetrical information in markets and lack of information systems	<ul style="list-style-type: none"> • Poor collection and dissemination of statistics and data • Lack of digitization and online systems 	<ul style="list-style-type: none"> • Increased time to trade • Transporters use known routes even with delays 	<ul style="list-style-type: none"> • Lack of backhaul increases transport cost • ANTA cannot properly enforce regulations which ultimately leads to increased costs
Lack of affordable and sustainable financing	<ul style="list-style-type: none"> • Increased risk of Moldovan banking sector since banking crisis has led to tighter lending criteria, higher collateral requirements, and higher interest rates • International funding institutions stopped backing letters of credit • SMEs lack credit history to acquire affordable financing • Lack of private sector financing due to perceived risks • Insufficient PPP framework • Non-transparent procurements 	<ul style="list-style-type: none"> • Increased risk of shipping through Ukraine limits financing and so some shippers have to ship via GIFF adding a week of transit time • Some border delays if transit bond guarantee limits are exhausted 	<ul style="list-style-type: none"> • Trucking companies face high down payments and interest rates so can't afford new trucks; old trucks have increased maintenance costs • Transit guaranties are more expensive due to high collateral costs and interest rates to brokers • Traders have to make upfront payments to transporters but lack financing mechanisms • Importers have to pay for inputs upfront

¹ An examination of Romanian Customs is beyond the scope of this report, but it bears mentioning here that it does have a number of problems. Not all of the problems at Moldova's border with Romania are Moldova's fault; this situation is discussed later in this report.



PHOTO: Emil Bolocan / Nathan

INFRASTRUCTURE ISSUES

The overall condition of much of Moldova’s transport infrastructure is poor and in urgent need of rehabilitation, largely attributable to deferred maintenance. In 2017, Moldova was ranked 111 of 137 countries in quality of transport infrastructure by the World Economic Forum with the quality of its transport infrastructure receiving a rating of only 2.7 out of 7.0 (see Table 4). In particular, Moldova’s road infrastructure (its most used infrastructure accounting for 71% of trade in 2017) also scored and ranked poorly, receiving a 2.5 out of 7.0 and a rank of 132 out of 136 countries in 2016 and 128 of 137 countries in 2017. Many of Moldova’s roads need rehabilitation, and in some areas new road infrastructure—ranging from roads to bypasses—is required to make traffic flows more efficient.

TABLE 4. COMPETITIVENESS OF MOLDOVA’S TRANSPORT INFRASTRUCTURE, 2016-2017

METRIC	RANKING 2016	SCORE 2016	RANKING 2017	SCORE 2017
Quality of overall infrastructure	110 of 136	3.1 of 7.0	102 of 137	3.3 of 7.0
Quality of transport infrastructure	N/A	N/A	111 of 137	2.7 of 7.0
Quality of roads	132 of 136	2.5 of 7.0	128 of 137	2.5 of 7.0
Quality of railroad infrastructure	70 of 136	2.7 of 7.0	71 of 137	2.7 of 7.0
Quality of port infrastructure	127 of 136	2.2 of 7.0	126 of 137	2.4 of 7.0
Quality of air transport infrastructure	94 of 136	3.9 of 7.0	86 of 137	4.1 of 7.0

Source: World Economic Forum’s Global Competitiveness Index, 2016-2017 edition and 2017-2018 edition.

Among other infrastructure needs:

- the railway faces significant track maintenance and rehabilitation needs and improved rolling stock.
- Chişinău International Airport (KIV)'s cargo terminal needs significant upgrading in order to handle freight, especially high-value or perishable goods. The two Bălţi-area airports are not ready to handle traffic in their current conditions, with studies required to determine the merits for investment; both airports have significant investment needs ranging from runway lighting to runway or terminal development.
- GIFF requires additional handling equipment and dredging, which is also required for Moldova's inland waterways.
- the country lacks multi-modal inland terminals, cargo consolidation points, and inland customs clearance points; while there is interest in establishing a logistics hub, a study is needed to determine its feasibility.

The lack of sufficient quantity and quality of infrastructure has many impacts on the performance of Moldova's trade corridors. For instance, while there are 30+ BCPs, cargo is disproportionately diverted to corridors with good access roads and BCP infrastructure, creating congestion at up to 7 BCPs while rendering others under-utilized (see Figure 2). Competition for trucking services is limited on routes with poor road conditions, such as to GIFF, as poor road conditions lead to increased breakdowns and truck maintenance costs, thereby increasing the cost of trucking services. Due to poor air sector cargo infrastructure as well as high prices, many traders have abandoned use of the sector altogether. The same could be said for the railway sector, which has seen volumes drop from nearly 3 billion metric ton-km in 2005 to only 793 million metric ton-km in 2016.¹ The reliability of transport services, as well as high times and costs, also impacts which products can feasibly be exported.

This leads to the question of *why is Moldova's infrastructure so poor, despite the increased focus on trade?* The answer is complex, but stems from years of deferred maintenance, which, simply put, is a result of funding issues. These range from lack of available funds, particularly since the banking crisis, to misuse or inefficient use of funds (see the recent Road Fund audit report), along with a lack of private sector investment. The country has struggled to attract private investment in infrastructure, and the country's two highest profile public-private infrastructure transactions—the port at GIFF and the airport concession at Chişinău International Airport—have demonstrated the need for improving the Public-Private Partnership (PPP) framework, shortcomings of which may be addressed through recent amendments to

¹ World Bank WDI.

the PPP legislation. Further, when funding has been available, there have been delays in procurements and construction, such as with the road to GIFF that was only 3% completed by its scheduled construction end date, leading to a re-procurement in 2018 and a five-year delay. Finally, the lack of proper regulations, or poor enforcement of existing regulations, have made problems worse, such as the common problem of overloading trucks, which eventually damages both trucks and roads.

What can be done?

- First, Moldova should consider developing a comprehensive freight logistics master plan, consisting in part of a set of feasibility studies and financing options to make it easier for the Government of Moldova (GoM), international funding institutions (IFIs), and potential private investors to prioritize projects.
- In parallel, Moldova should work to increase the use of private sector funding and public-private partnerships (PPPs), including ensuring full and open tenders and proper oversight of procurements.
- Infrastructure investments should first prioritize improving access to key BCPs and ports, including GIFF. Once key trade corridors have sufficient infrastructure, the second phase should be to improve access to secondary crossing points to alleviate congestion.
- To avoid further degradation of infrastructure, the National Agency of Auto Transport (ANTA) should be given the resources to properly conduct its regulatory functions, including enforcement of axle-weight violations.
- Moldova should also work to implement the suggestions in the audit of the Road Fund.
- In regards to aviation, accelerating improvements to the cargo terminal at KIV, or providing minor investments into handling equipment in the meantime, would improve short-term performance. A feasibility study should also be conducted to assess rehabilitation possibilities of Balti-area airports.

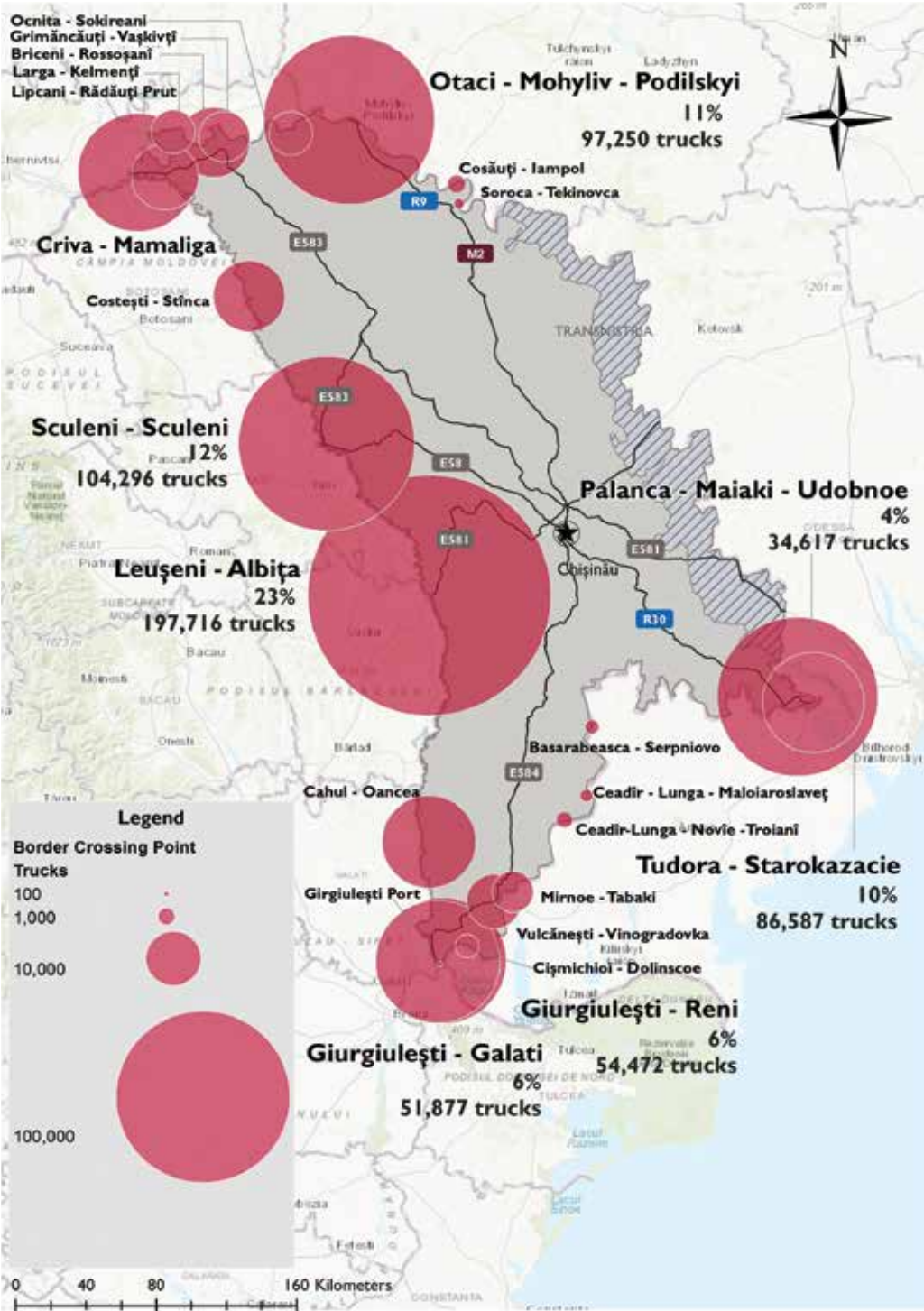
TRADE FACILITATION ISSUES

The largest issue in terms of time to trade across many routes is related to BCP queues. For instance, for trips to Western Europe, we estimate that over 40% of the transit time can be spent at the borders. For a trip to Bucharest, long queues at Leușeni-Albița can result in 90% of the transit time across Moldova being spent at the border.

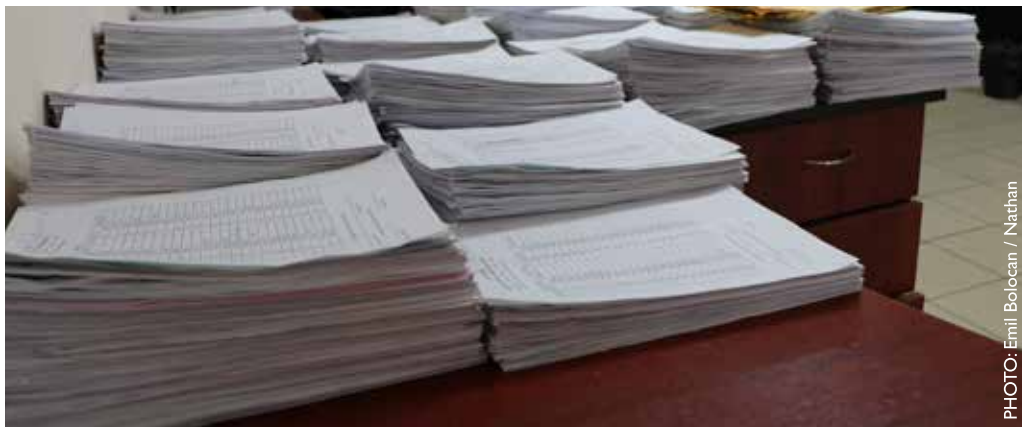
From our assessment, we found a wide disparity in terms of the overall performance of border crossings both between locations and at the same location, depending on day and time of travel. Taking the busiest BCP Leușeni-Albița as a case in point, the total border waiting time can vary between 1 hour and more than 24 hours. Since Leușeni-Albița is by far the most important BCP (see Figure 2), this means that a large variable element is thrown into Moldova's external trade. As noted above, border delays increase transit time, reduce corridor reliability, and increase transport costs.

It is clear that many of the problems and excessive delays occurring at Moldovan BCPs are outside of the control of Moldova's Customs Service (MCS) and other regulatory authorities. For instance, as discussed above, the Moldova-Romania border is an external entry/exit point to the EU, which creates complications. But also as noted, the overall waiting time for goods entering Romania generally take significantly longer than at all other external EU BCPs. This is not to say that some improvements cannot be made in the operation of Moldova's own border regulatory controls. They clearly can. In the full report, we provide a series of specific recommendations which should not only deliver some savings in terms of processing times and costs but also, critically, should allow MCS and other agencies to improve their overall performance in terms of improved risk management and meeting their objectives in terms of revenue collection and protection of society. For example, Moldova and Romania could jointly develop a cross-border vehicle appointment system, similar to the systems at the US-Canada, Estonia-Russia, and Lithuania-Russia borders. Combining pre-arrival notification, arrival slots / virtual queues, license plate recognition systems, RFID, truck staging areas, and waiting time (queue) electronic notification capabilities, these systems have been successful at reducing border processing and queue time. Our case study below describes some of the technology solutions used along the borders of other countries, solutions that can potentially become available via a PPP approach.

FIGURE 2. MAP OF TOP MOLDOVAN BCP WITH NUMBER OF TRUCKS IN 2016



Source: Data from Moldovan Customs Service/Border Police. Nathan 2018.



ASYMMETRICAL INFORMATION AND LACK OF INFORMATION SYSTEMS

In the modern business environment, information systems and networks play a critical role in the efficiency and, ultimately, cost-effectiveness of trade corridor and logistics performance. Lack of such systems, along with other market inefficiencies, can lead to problems of asymmetrical information, which increase the time and cost to trade and limits traders' abilities to access new markets. For instance:

- Traders and transporters have a more difficult time finding one another and matching return loads, which increases transport costs
- Traders spend more time looking for trade information and completing paperwork
- Transporters do not have the systems to efficiently plan routes
- Traders and transporters cannot track and trace shipments
- Customs brokers cannot access their guarantee limits or usage without physical interaction with customs officials
- Transporters do not have accurate information on real-time BCP queues

In this regard, Moldova lags behind international standards in several regards including:

- Collection and publication of statistical data
- The version of ASYCUDA (Automated System for Customs Data) currently being used

- Lack of online services (i.e., ANTA has a One-Stop Shop which cannot be accessed online)
- Lack of transport corridor monitoring

Moldova can consider the following recommendations that would improve access to information:

- Development of a Trade Information Portal
- Develop and pilot a GPS or Radio Frequency Identification (RFID)-based truck/cargo tracking system
- Develop an app building on Moldovan Border Police waiting times to include total queue /processing time and allow mobile access, and consider developing a cross-border vehicle appointment system, as described above
- Upgrade ASYCUDA and increase functionality
- Develop a corridor development committee, or at a minimum, build relationships with regional ports and corridor players affecting Moldova's trade corridors to allow for better sharing of information
- Implement e-signatures for Eastern Partnership (EaP) countries

ACCESS TO CREDIT AND FINANCING ISSUES

Access to affordable and sustainable financing was an overarching theme that emerged in the interviews conducted in the course of our fieldwork for this Trade Corridor Assessment (TCA). There are financing constraints at all levels, whether it be at the national government level or the level of an individual farmer. Key issues include the following:

- **Government:** Reliance on loans and funding from IFIs for infrastructure investments. Lack of sustainable funding for the railways, roads, and airports.
- **Transporters:** High interest rates and down payment requirements are a barrier to buying trucks, and lead to the purchase of more affordable used trucks, which have higher operation and maintenance costs. Based on interviews, the average truck age in Moldova appears to be in the range of 6-10 years, compared to 1-3 years for foreign trucks. One transporter indicated that 15-20% of his costs were comprised of financing. Others stated that they pay a minimum 30% down payments plus interest rates of 10-20%, compared to loans in Romania with no down payment and interest rates of 3-7%.
- **Traders:** Since the banking crisis, IFIs have stopped guaranteeing letters of credit in Moldova. It is expensive and difficult to get letters of credit without these guarantees. When traders have to pay transporters or input suppliers upfront, it leads to cash-flow issues. One trader also mentioned having to move shipments from Odessa to GTFP due to the perceived risk of shipping through Ukraine and its impact on financing; this process increased their transport time by 1+ weeks.
- **Farmers:** Moldovan banks now have a low risk tolerance, and the conditions are too stringent for farmers who often have limited credit histories, or poor credit histories due to past crop losses (and lack of available insurance). Farmers also are not able to lease agricultural equipment and have trouble getting loans to purchase it. Further, they note that cash payments are an issue in their industry and would like better use or requirement of e-payments. These issues have led to a greater uptake of microfinance and trading companies, both of which come at a substantially higher cost. This situation also reduces the ability of small farmers to export profitably.
- **Customs Brokers:** Customs brokers have to put up guarantees for transit cargo until it is cleared by customs. Since the banking crisis, it is harder for brokers to get access to affordable credit/credit limits, and banks want hard collateral at rates of over 100%.

This TCA is not tasked with providing recommendations on how to improve Moldova's capital and banking markets, but the Moldova Structural Reform project is in the progress of developing a separate report addressing some of these issues. But where banking reforms will take time, there are some areas where other sectors can make changes that would positively impact access to financing. For example, MCS can reduce the guarantee requirement for Authorized Economic Operators (AEOs) from 100% to a lower amount. It could also introduce a deferral system for the payment of duties (this is already being done for AEOs). The GoM can facilitate private sector investment and PPPs by improving the regulatory framework and financing feasibility studies aimed at attracting investment. Agricultural associations can require e-payments. The Organization for Small and Medium Enterprises Sector Development (ODIMM) can be expanded to include loan guarantees for traders and other participants in the logistics sector.

NEED FOR INSTITUTIONAL AND REGULATORY STRENGTHENING

A final, cross-cutting theme is the need to improve the institutional structure governing the transport and logistics sector, as well as to strengthen the regulatory environment. Moldova has a number of options to pursue, but the global practice seems to be a combination of assigning logistics sector responsibility to an existing agency, in combination with a national logistics council consisting of private and public sector representatives. While the details of such a structure should be ironed out in the course of an institutional assessment, the agency should have broad decision-making power on matters of strategy, investment, marketing and promotion, and performance monitoring, with a national logistics council serving in an advisory capacity.

Moldova should also ensure that it has supportive policies and regulatory frameworks that generate trade and improve conditions in which freight is processed or moved. This action would mean improving the capacity of the Ministry of Economy and Infrastructure (MoEI) to develop regulations concerning the logistics sector, and of other agencies to enforce these regulations.

In terms of regulations, a major improvement to the road sector would be to liberalize the market, removing the need for authorizations. A secondary issue is developing standards and requirements for the freight forwarding industry.

To properly conduct its regulatory enforcement functions of the road sector, ANTA needs trained staff and proper equipment such as weigh stations. This process also includes increasing ANTA's use of technology and management information systems. For example, the One-Stop Shop should be moved online, and the industry should move towards developing a logistics management and freight tracking system using technology such as GPS trackers or RFID.

The planned Calea Ferata din Moldova (CFM or Moldovan Railways) restructuring should move forward, separating the freight, passenger and maintenance responsibilities, developing a regulator, and allowing private sector investment. At the same time, the MoEI will need to find ways to finance the passenger subsidies and track maintenance costs previously cross-subsidized by rail freight.

The Maritime Authority should be established as planned, and should begin with a mandate of improving environmental, safety and port state control, as well as ensuring fair competition. One of the agency's initial goals should be to get Moldova removed from the Paris Memorandum of Understanding's blacklist for port state control, which shows a lack of proper regulatory enforcement and negatively impacts the country's image.

Finally, Moldova should further promote air transport liberalization and competition, new routes, increased services, and air connectivity. Private operators, in coordination with the Moldovan government, should effectively promote and improve quality standards for freight handling at its international airports.

STRATEGIC ENABLERS AND ACTIONS

The last section of the full report outlines a strategy for Moldova to pursue in order to improve logistics sector performance. The strategy consists of seven strategic enablers and associated goals and actions. The strategic enablers include:

1. Improving the Logistics Sector's Institutional Effectiveness
2. Ensuring Supportive Policies and Legislative and Regulatory Frameworks
3. Improving Trade Facilitation
4. Developing Efficient and Productive Infrastructure
5. Providing an Efficient Transport Logistics System
6. Facilitating Sustainable Financing
7. Logistics Sector Promotion

The seven enablers as a whole constitute 25 strategies and 71 actions. Each enabler's goal, strategy rationale, and the strategies to be executed for each are provided in the full report. Specific implementing actions are also provided, and those entailing projects supporting implementation are presented in the form of 31 project profiles. Ultimately, the promise of this strategy is that it focuses on providing logistics services and assets while aligning and strengthening finances, people, systems, policies, processes and administration. Because setting a course for success requires the right craft and crew, the strategy calls for adjustments to the institutional arrangements intended to provide a coordinated and collaborative sector improvement strategy, engaging public and private sector stakeholders. Enabler 1 is thus a critical enabler, as it addresses the changes required to ensure that Moldova can institutionally anticipate and respond to issues and opportunities the sector faces. Through commitment to the strategy, Moldova will realize its highest potential as a country offering industry best standard logistics services and assets. The 31 project profiles are summarized in the table 5.

CONCLUDING REMARKS

In summary, Moldova's trade corridors face a wide array of issues, which affect the time and cost for Moldovan traders and transporters to move goods.

- **Chișinău – Giurgiulești – Constanța:**

- **Time:** poor access road and rail infrastructure add 1-2 hours by road and several days by rail; lack of dredging can lead to delays in river transport; lack of port handling equipment increases port handling time; queues where BCP and port converge; infrequent container feeder service can increase transport time by a week; lack of online and trade related e-systems increases time to trade.
- **Cost:** high truck maintenance cost and increased transport time due to poor road conditions increases cost; limited trucking companies willing to travel route leads to higher prices due to lack of competition.

- **Moldova – EU:**

- **Time:** poor road conditions to the borders combined with limited services at secondary BCPs lead to congestion at key BCP and increased road transport distances to reach the BCPs; several BCPs require additional access lanes, leading to queues; long queues at BCP due to insufficient resources; no OSBP at many borders; high incidence of physical inspection for LCL adds several hours of transport time; no mutual recognition of AEO; transit times limited by regulation when hotter than 30C; different rail gauges in RO/MD limit possibilities for rail and increase time; KIV cargo terminal needs rehabilitation and equipment; Bălți and Mărculești airports require substantial infrastructure investments; use of IWW requires dredging; lack of online and e-systems increases time to trade.
- **Cost:** limited civil aviation capacity leads to high prices; BCP delays impact transport costs; issues with access to affordable credit increase trucking costs; high trucking costs to Constanța port due to high container guarantee fees and transport time; nominal informal fees at BCP; additional costs of physical inspection; higher truck and road maintenance costs due to lack of axle-load enforcement.

- **Moldova – Odessa/Chornomorsk/Fish Port:**

- **Time:** poor road conditions in both Moldova and Ukraine, as well as “no man’s land” between the BCP; access to Palanca BCP on Moldovan side is through a village; lack of technology used by Ukrainian customs; no freight rail service through Transnistrian region due to complexities and high costs of 3 systems for such a short distance; no IWW; poor road conditions in Odessa port; main public truck access gate to Odessa port is not operational requiring a detour through EuroTerminal at 20+ minutes; Moldovan shippers can’t use e-signatures in Ukraine; delays when authorizations are exhausted; lack of online and e-systems increases time to trade.
- **Cost:** poor road conditions lead to increased maintenance costs; rail through Transnistrian region is too expensive to be a competitive service; informal fees when authorizations run out; extra fee to Euro Terminal (\$15) to enter Odessa port; high cost of Transports Internationaux Routiers (International Road Transport) (TIR) limits use.

- **Moldova – CIS**

- **Time:** poor road conditions in both Moldova and Ukraine; delays when authorizations are exhausted; some delays at northern BCP; southern BCP have delays during peak periods such as grain harvest; detouring around Transnistrian region adds to transport time; Transnistrian region-shippers face additional time to go to Căușeni for customs processing; have to detour through Belarus (instead of traditional Ukrainian route) to get to Russia and Kazakhstan; lack of online and e-systems increases time to trade.
- **Cost:** some informal fees at BCP and checkpoints (outside of Moldova); higher informal fees when authorizations are exhausted; lack of axle weight enforcement increases maintenance costs; increased distance to Russia/ Kazakhstan increases cost; shippers from Transnistrian region face additional road use fees in Moldova and costs of going to Căușeni for customs processing.

Despite the challenges described above, this is an exciting time in terms of Moldova’s trade corridors, with many ongoing reforms and planned projects ranging from implementation of trade agreements to infrastructure reconstruction projects to restructuring CFM, the Moldovan railway. The transport logistics and trade facilitation environment is evolving rapidly, and it seems like there are new developments every day. For instance, it was just announced that Moldova and Ukraine are liberalizing

their air and road transport markets with one another. These evolutions will continue to make it easier for Moldovan traders to import goods and reach new export markets. In fact, the fastest growing export markets in 2017 were Asia and the US—very different than the historical markets of nearby CIS countries and Romania.

As Moldova endeavors to reach new markets, new challenges will continue to arise, and the sector will have to be ready to face these challenges in order to take advantage of new opportunities. While sufficient, quality infrastructure is surely a prerequisite to trade, as trade corridors expand and markets grow, the service markets, trade facilitation, and the regulatory framework will become increasingly important.

TABLE 5. SUMMARY OF RECOMMENDED PROJECT PROFILES

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
1	Logistics Sector Institutional And Regulatory Reform	Institutional and regulatory reform assessment to ensure appropriate institutional and regulatory arrangements are in place to facilitate improved logistics sector performance.	MoEI in collaboration with the proposed National Logistics Council (NLC)	Year 1: Feasibility study + reforms approved, Years 2-3: Implementation	\$300-\$400k	Significant impact on logistics efficiency and logistics costs.
2	Develop National Freight Logistics Master Plan	Develop a comprehensive, freight logistics plan covering all sectors and modes of transport with potential to be utilized in Moldova.	MoEI, with other potential funding sources	Immediately, 18 months	\$2 mil	Create cheaper access to national and foreign markets, safer passenger transport, reducing emissions.
3	Technical Assistance and Capacity Building Support to ANTA	To provide technical assistance and training support to increase institutional capacity and the ability of ANTA staff to complete their regulatory functions.	ANTA	24 months	\$126k	Increase the number of inspectors and officials, increase traffic safety, institutional capacity, understanding of international experience. Improved food safety, strategic management processes
4	Implementation of Mobile Weighing Points for Heavy Goods Vehicles Circulating on The Public Roads on The Republic of Moldova	Implementation of Weigh in Motion stations for weighing vehicles circulating on public roads of the Republic of Moldova in order to better enforce axle weight limitations.	ANTA	ASAP	\$22 mil	21 additional weigh stations, public service modernization, statistic recording ability, decisional transparency, increased penalty collection, fewer costs associated with road maintenance.

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
5	IT Solutions for Enhancing Real Time Logistics Information Conveyance and Information Sharing	Develop and implement eLogistics System that provides real time track and trace capability to facilitate status reports on freights and vehicles.	MoEI, NLC	Year 2: Feasibility Study, Year 3-4: system transaction and implementation	TBD	Significant impact on logistics system efficiency.
6	Moldova-Romania Cross Border Cooperation	To improve the efficiency of the Moldova-Romania land border in order to reduce waiting times and more efficient target non-complaint traders.	Moldovan customs service, Romanian customs service	24 months	TBA	Reduce or remove unnecessary check and improve risk-based selection while reducing unnecessary waiting times.
7	Cross Border Vehicle Appointment System	To reduce vehicular waiting time at Moldova's borders by developing a vehicle appointment system at key Moldovan BCP.	MoEI, NLC, Romanian Customs	Year 1: Feasibility Study, First 2 Years: implementation	TBD	Significant positive impact on border crossing delays.
8	Development of National Trade Information Portal	To develop a single, comprehensive national trade portal, containing all relevant information for importers and exporters in Moldova.	MoEL, Economic Council, Customs & other agencies; donor assistance	12-24 months	\$200k	Reduction in non-complaint actions and a reduction in time and cost to comply with regulations.
9	Capacity Building of PPP Unit	To prepare PPP staff to undertake project appraisal and associated analytical methods, develop a multitude of different projects.	Ministry of Finance	Year 2	\$400-\$500k + \$200k follow-on	Significant impact in leveraging investment for needed infrastructure in all sectors.
10	Time Release Study and Waiting Time App	To better understand where border delays are occurring and to increase access to information.	MCS, Border Police, Romanian Customs	Immediately, 12 months	TBD	Improve border efficiency, reduce waiting times at the borders.

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
11	Improve Construction Procurement Process	To improve the road construction procurement and oversight process to avoid procurement delays and to prevent the risk of failed construction projects.	MoEI	Year 2 after approval of the logistics sector strategy	\$200k	Significant impact on freight shipments and road safety.
12	Improve The Regulatory Framework for the Freight Forwarding Industry in Moldova	To develop the required regulations that would ensure a fair and open rules of the game on the freight forwarding market in Moldova	MoEI, ANTA	2019	\$40-\$50k	Ensure proper standards for the freight forwarding sector that will raise the service standards and increase competitiveness.
13	Improve Regulations of the Freight Forwarding Market	Improve Moldova's regulatory capacity in terms of port state control to abide by international conventions.	Maritime Authority or ministry in charge of port state control	ASAP before next review period in June 2019	TBD	Improve compliance with international conventions, removal of Paris MOU blacklist, and improve safety and visibility.
14	Develop Competitive Railway Container Blocktrain Shuttle Service(s)	To develop competitive railway container block train shuttle services.	CFM	Locomotives are acquired and CFM can guarantee transit times	Marketing + Contract Development	Cost saving to shipper, alleviate traffic on the roads, and would provide CFM with a consistent source of revenue.
15	Feasibility Study for Balti-Area Airport Rehabilitation	To develop a feasibility study assessing potential costs, benefits, design and requirement of airport rehabilitation at both Balti International/Marculesti.	GoM or development partners	Immediately	\$400-\$700k + \$10 mil	Provide a second national airport that can handle passengers and cargo. Easier access to foreign marketing in the northern region
16	Feasibility Study for Chisinau Logistics Hub	To complete a feasibility studying, including a cost-benefit analysis of building logistic hub, either with state/donor funds or as a PPP, in or near Chisinau.	MCS, MoEI, Possible donors	Next 3 months	Feasibility: \$200k, hub: €25-30 mil	Would clarify whether this is worth pursuing.

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
17	Implementation of System for Internal DCFTA Implementation Monitoring	To populate the existing DCFTA monitoring system with the required data on DCFTA implementation, test and validate the operational functionality and put it into operation.	MoEL, National Trade Facilitation Committee	3 months	\$20k	Faster and more reliable identification of future needs and better targeting of resources to maximize DCFTA implementation.
18	Review of Donor Support for WTO TFA Implementation and Agreement of a Coordinated Action Plan for Future Work	To update the assessment of gaps and needs in terms of achieving full WTO TFA implantation, to identify donor support for those needs and to agree specific donor commitments and action plans.	National Trade Facilitation Committee, MoEI	3 months	\$10k	An estimated reduction of 17.4% of the total cost of trade
19	Provision of Technical Advice to the NTFC	To recruit a long-term technical advisor for the NTFC who can provide advice and support on implementation of the NTFAP.	MoEL, NTFC	3-12 months	\$150k	Same as above and faster more reliable implementation of the existing NTFAP and identification of any additional needs.
20	Review of WTO TFA Category A Commitments	To assess level of implementation of Category A commitments and identify measure to enhance compliance.	NTFC	3 months	\$20k	Higher level of effective implementation of the WTO TFA, resulting in increased cost savings to Moldovan businesses.
21	Review of Customs Administrative Sanctions and Penalties	To Review the levels of administrative sanction and penalties defined in the draft code and ensure they are consistent with the needs of the Code.	Customs services	3 months	\$60k	Discourages non-compliance, and does not create unacceptable financial risks to companies that may discourage trade.

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
22	Preparation of Sectoral Strategies and Business Plans for Customs	To draft and apply a range of sectoral strategies and business plans within the MCS to support implementation of overall business strategy.	Customs services	6 months	\$80k	Producing better value for money and meeting strategic objective of facilitation legitimate trade.
23	Review of Deployment of Customs Staff and Resources	To assess the suitability of the current deployment of resources and to provide recommendation for the re-allocation of resources.	Customs services	6 months	\$80k	Higher level of effective operation by customs and a reduction in operational and administrative bottlenecks
24	Review and Enhancement of Customs Professional Standards	To assess the current level of application of professional standard within the MCS.	Customs services	6 months	\$80k	A more responsive and constructive approach to business and a reduced level of corruption.
25	Enhancement of the Customs Broker System	To increase the professionalism/ effectiveness of the customs broker system so it better meets regulatory compliance of customs/ commercial needs.	Customs services, Chamber of Commerce, Association of Customs Brokers	12 months	\$120k	Reduce costs to business and also reduce the risks of revenue loss to the state.
26	Enhancement of Customs Risk Analysis Function	To enhance the capacity of the customs risk analysis function and improve its ability to identify/ target consignments and movements of goods.	Customs services, law enforcement agencies	6 months	\$100k	More effective targeting of non-complaint traders, protection of the revenues, reducing burden on legitimate traders.

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
27	Development of a National Risk management Strategy and Function	To develop a coordinated approach to the identification and management of major risks, including risks of revenue fraud, and criminal crime.	Government of Moldova, Ministry of Interior, law enforcement agencies	12 months	\$200k	Better targeting of resources to risks and a reduction in fraud and other criminal activity.
28	Enhancement of Customs Inland Clearance Systems and Procedures	To identify improvements to the facilities for the customs clearance of goods.	Customs services	3 months	\$40k	Deliver savings of cost and time to businesses and enhance capacity to customs to protect revenue and society.
29	Enhancement of Customs Investigation and Intelligence Capacity	To strengthen the ability of customs to undertake effective investigation and intelligence actions.	Customs services	24 months	TBA	Improve the effectiveness of customs in protecting revenue and society, preventing fraud and max. trader compliance.
30	Enhancement of Customs Audit Capacity	To improve the capacity of customs to increase the volume and improve the quality of their audit0based controls.	Customs service	24 months	\$250k	A reduction in the need for checks at borders/ inland, maintaining an effective compliance and protecting revenue.
31	Enhancement of National Audit Capacity AEO Program	To improve the operations of the AEO program, expand the number of members, and improve the benefits for both customs and AEOs.	Customs service, Chamber of Commerce	6 month	\$80k	Large number of companies joining the program, delivering a greater level of trade facilitation to compliant traders.

INTRODUCTION

Most international trade occurs along corridors – particular routes where goods are carried via land, sea, or air. Trading through corridors allows for economies of scale, network effects, and the appropriate targeting of resources for transport sector improvements. But corridors can also be subject to a wide range of problems including infrastructure defects, administrative delays, regulatory complications, congestion, and many others. These can increase trade and transport costs as well as constrain growth. Therefore, it is important that trade corridors operate smoothly, rapidly, and efficiently. Corridor improvements can reduce trade and transport costs, which can lead to increased trade, lower prices to consumers, and more competitive businesses.

Trade corridor assessments such as this one can be used to measure corridor performance, identify bottlenecks and constraints, and determine solutions to improve corridor performance, which in turn make it easier to trade goods. Studies have shown that time, cost, and reliability are the key factors in determining corridor competitiveness from a transport logistics perspective. Therefore, measuring these indicators in a consistent manner across links and nodes is an important step in a trade corridor assessment. Both quantitative and qualitative methods are used in the assessment—to understand not only what the times and costs are, but why.

The first generation of TCAs, conducted in the late 2000s, led to a key insight: improving the regulatory environment can often provide more cost-effective solutions for alleviating bottlenecks than expensive infrastructure investments. Governments and development partners frequently focus on projects developing hard infrastructure and overlook soft dimensions such as the regulatory framework, which can provide good value. This is not to say that infrastructure investments are not important. Functioning roads, railways, and ports are required for trade to take place. However, while a well-functioning infrastructure is a *necessary* condition for trade, it is not a *sufficient* condition. Understanding why bottlenecks exist is the first step to developing action plans for improving trade corridor performance, which has the potential to unleash latent economic activity and trade. In the sections that follow, we aim to do just that.

MOLDOVA'S TRADE

Since 2000, Moldova has seen impressive GDP growth, averaging 6.7% per year from 2000 to 2017. Moldova's growth has been founded on a development policy that is focused on trade, with imports increasing 13% and exports by 18% per year over the same period.¹ Such a trade-focused development strategy requires well-functioning trade corridors. But despite Moldova's focus on trade, and positive developments in many particular sectors including agriculture, viniculture, and manufacturing, Moldova's trade corridors are functioning poorly, and are constraining growth from increasing even further. GDP growth over the past five years has slowed to an average of 3.8%, with two years (2012 and 2015) experiencing declines. Improving Moldova's trade corridor performance will reduce trade costs and could unleash latent potential, especially for small traders for whom current costs are too high to trade.

Current state of trade. In 2017, imports registered a value of around \$4.8 billion, decreasing from the peak of nearly \$5.5 billion in 2013. Romania, which joined the European Union (EU) in 2007, remains Moldova's largest import trading partner, and 49% of Moldova's overall imports were from the EU. Imports from Commonwealth of Independent States (CIS) countries had a share of 25% of the total imports, but the largest year-on-year growth in imports from 2016 to 2017 was comprised of imports from the Far East, including Japan (+33.4%), China (+28.4%), and Taiwan (+26.2%). Trade with the USA has also grown rapidly (+31.8%).²

Exports grew nearly 19% from 2016 to 2017, reaching \$2.4 billion in 2017.³ Since 2005, Moldova's export growth trend has been largely positive due to product diversification and entry into new markets. Increases have been particularly noteworthy in manufactured articles and in foodstuffs including processed agricultural goods. Export destinations have shifted from CIS countries towards the EU, with 66% of total exports (\$1.6 billion) to the EU in 2017. Four of five of Moldova's largest export trading partners are currently EU members, including Romania, Italy, Germany, and the United Kingdom.⁴ Meanwhile, exports to CIS countries have declined both in absolute and in relative terms, with Russia maintaining Moldova's lead CIS-partner status, followed by Belarus and Ukraine. Emerging export destinations include China, Saudi Arabia, Egypt, and Malaysia.

¹ Calculations using data from the World Bank World Development Indicators Database.

² National Bureau of Statistics of the Republic of Moldova.

³ Ibid.

⁴ Noting that the United Kingdom is planning on exiting the EU in 2019.

MOLDOVA'S TRADE CORRIDORS

Moldova is a small, south-eastern European country without any direct maritime access other than a very short (430m) stretch along the Danube River. Moldova has land borders with just two other countries: Romania to the west and Ukraine to the north, east, and south. Due to its landlocked location, its trade corridors are critical to the economy. In Moldova, trade corridors carry both national and transit cargo and consist of road and rail links as well as inland waterways and air cargo routes typically go to/from its main economic centers of Chişinău and Bălţi to/from economic centers

such as Bucharest, southern Germany, Milan, and Moscow, and regional ports including Odessa, Chornomorsk, Giurgiuleşti, and Constanţa, from where they are transported to overseas destinations (see Figure 1).



FIGURE 1.
MAP OF MOLDOVA'S
TRADE CORRIDORS

Source: Nathan 2018.

TABLE I. MOLDOVAN ROAD TRUCK TRAFFIC BY BCP, 2016

BORDER CONTROL POST	NUMBER OF TRUCKS	PERCENT OF TOTAL
Leușeni-Albița (to Romania)	197,716	23.0%
Sculeni – Sculeni (to Romania)	104,296	12.1%
Otaci- Mohyliv-Podilskyi (to Ukraine)	97,250	11.3%
Tudora-Starokazacie (to Ukraine)	86,587	10.1%
Giurgiulești-Reni (to Ukraine)	54,472	6.3%
Giurgiulești-Galați (to Romania)	51,877	6.0%
Criva-Mamaliga (to Ukraine)	47,502	5.5%
Other (28 BCPs)	219,374	25.5%
TOTAL	859,074	

Source: Moldovan Customs Service/Border Police.



PHOTO: Emil Bolocan / Nathan

Road transport comprises the majority of Moldova's trade, rendering the road system and land border crossing points (BCPs) the most critical components of Moldova's trade corridors. As Table I above shows, Leușeni-Albița and Sculeni-Sculeni BCPs to Romania handled over 35% of Moldova's road traffic by volume in 2016. Significant and time-consuming delays at the BCPs, mostly due to long queues, are a large and growing problem, and they are becoming a key constraining factor to trade. Border delays increase transit time, reduce corridor reliability, and have indirect impacts on transport costs due to reduced trucking utilization. Such delays have a particularly negative impact on time-sensitive goods, including high-value goods like auto parts and perishable goods such as fruits and vegetables—two subsectors that are particularly promising for long-term export growth.

With increasing trade to overseas destinations, access to regional ports is becoming more important as well. The Ukrainian ports of Odessa and Chornomorsk (including Illichevsk Fishing Seaport, which is universally known as the Fish Port) handle the majority of Moldova's



container trade as well as a significant portion of bulk cargo. However, the access roads from Moldova to these ports need improvement, the Odessa port faces congestion, and there are perceived geo-political risks of shipping via Ukraine which affect financing. For instance, some shippers have reported that they are unable to obtain letters of credit to export via Ukrainian ports, and so must now use Giurgiulești port. The Port of Constanța in Romania is an efficient port, but farther away such that the costs of the inland transport leg are currently cost-prohibitive. Moldova's own river port at Giurgiulești handled moderate amounts of container traffic in 2017, as well as significant bulk volumes including grains and fuels, and has the physical capacity to handle more. Nevertheless, access to the Giurgiulești port is also constrained by very poor conditions of road, rail and inland waterways access and possibly also by the domination of the port by a single large shipper, Trans-Oil. Low volumes of containerized traffic mean low frequency of container vessel service calls, served only by one weekly container vessel for transshipment of containers at Constanța. This situation increases transport times to and from the port. As a result, the Giurgiulești International Free Port (GIFP) is largely used for exports of bulk cargo (grain and vegetable oils) that are not time-sensitive. Table 2 provides a comparative assessment of corridor options consisting of ports, which shows the GIFP-Constanța option to offer the highest potential if road conditions could be improved.

TABLE 2. COMPETITIVENESS OF PORT-ANCHORED TRADE CORRIDORS SERVING MOLDOVA

METRIC	GIFF - CONSTANȚA	CONSTANȚA	ODESSA	ILLICHEVSK FISH PORT
Distance (km)	233 km	525km (via Albița); 477 km (via Cahul); 470km (via Galati)	Approx. 200 km (via Tudora)/205 km (via Palanca)	Approx. 200 km (via Tudora)/205 km (via Palanca)
2017 Freight	Containers: 6,420	Containers: 250	Containers: 9,343	Unknown
Corridor Transport Cost	Medium Road: \$350-500 OR Rail \$250 20' - \$363 40' + River shipping: \$400 (20') - \$500 (40') Total 20': \$650-\$900	High Truckload: €600-950 (\$720-\$1140); for Container: €1000-1300 (\$1200-1560) (incl. €300 gaur.)	Low Typically \$450-\$600 (incl. optional \$100 TIR), up to \$800 peak	Low \$450-\$600 (incl. optional \$100 TIR)
Corridor Transport Time Chișinău-Ship	High Road: 4-5 hours OR Rail 3-5 days Port: 2-3 days River: 12-48 hr Transshipment: Estimated 2-3 days Total: 6-14 days	Medium Road: 8 hours Border: 24-74 hours Port: 1 day Total: 3-5 days	Low Road: 4-5 hours Border: 2-3 hours Port: 1-2 days Total: 2-3 days	Low Road: 4-5 hours Border: 2-3 hours Port: 1-2 days Total: 2-3 days
Corridor Reliability	Low Feeder only weekly and occasional delays; rail very low	Medium Port ok but 1-3 day delay at BCP	Medium-High Currently few delays on corridor but congestion in port	High Currently no delays indicated
Port Terminal Handling Costs	(GIFF Unknown) + \$250-260 Constanta	\$250-260	\$270	\$270-320
Port Performance	Poor	High	Mixed	Unknown, but indicated to be less congested and have smooth operations
-Crane moves/hr	4-6	Avg: 30-35; Max: 50	35	
-Processing time	2-3 days	1 day	M: 1-2 days, X: 1 day	
-Truck turn time	Unknown	20 minutes	2 – 6 hours, max 48h	
Border Crossing Post	Giurgiulești FEZ Customs	Most common: Albița, RO / Leușeni, MD Alt: Galati-Giurg.	Currently: Tudora, MD / Sarokazache, UA; Palanca Joint Border Post in progress	

METRIC	GIFP - CONSTANȚA	CONSTANȚA	ODESSA	ILLICHEVSK FISH PORT
Border Post/ Customs Performance	High Normal and fast operations, pre-arrival processing, no transit documents required	Low Long wait in RO (1-3 days), nominal informal fees RO, MD	Medium-High Normal and fast operations (2-3 hours), some informal fees UA	
Rail Performance	Cheaper but slow and unreliable at present	Not available	Not operating or cost-effective due to Transnistrian region	
Access Road Performance	Poor road condition, rehabilitation planned but delayed	Mostly good condition via Leușeni but longest route (double the km); avoid Cahul/Galati due to road and BCP conditions	Varies from fair to poor; with poor roads on both sides of BCP.	
Overall Competitiveness	High potential due to benefits of no transit docs and short distance, but poor condition of access roads, high transport time and poor reliability. Despite this, receives 40% of MD's containers; proportion of bulk is unknown.	Currently uncompetitive by road due to higher inland cost and long BCP times. However, the port processes a significant proportion of MD's containers via GIFP.	Ukraine ports have the lowest inland transport costs and times so are preferred at present, but there are geo-political risks.	
			Odessa has more ship calls but is congested and more expensive so some lines prefer the Fish Port and Maersk moved there in 2018.	Fewer ship calls than Odessa but less congested, cheaper and better operations.

MOLDOVA'S TRADE CORRIDOR PERFORMANCE

Traders and transporters will typically choose their transport routes and modes based on a combination of time, cost, and reliability, with competitiveness being determined by the weakest link in the logistics chain. While performance varies by mode and route, overall the cost and time for trade using Moldova's trade corridors is high:

- Road costs ranged from \$0.04 to \$0.13 per metric ton per kilometer (tkm), with most costs in the \$.06 to \$.10/tkm range. Prices per tkm were most competitive for routes with longer distances, high traffic, and competition from European transporters, such as routes to Italy, Germany, Austria, and Turkey. Relatively low prices to Moscow reflect in part the increased metric tons per truck allowed shipping east. Prices to Kazakhstan are high due to the long distance, which results in poor truck utilization rates, and the inability to drive to Russia through Ukraine, which increases the distance even more as trucks detour through Belarus.
- Truck prices are estimated at \$0.08/tkm to GIFP, \$0.10 to Ukrainian ports, and \$0.07 to Constanța. However, Constanța is farther away from Moldova, so a comparison in terms of price per metric ton is more appropriate; in this regard, Constanța is more expensive at \$36/t compared to \$18/t to GIFP and \$20/t to Ukrainian ports.
- Transport of containers is also more expensive than general trucking prices. It is our understanding that this is due to container guarantee fees imposed by the shipping lines. According to interviews, for Constanța this can equate to €200-€300 per trip, adding around 30% - 40% to the transport cost. Container transport costs to Constanța are higher than to the Ukrainian ports in terms of price per tkm and per metric ton. Transporters cited the following reasons for higher prices to Constanța: longer distance, container guarantee costs, lower axle load restrictions, more rigorous enforcement, and lack of backhaul from Romania / higher chance of backhaul from Odessa. Additionally, given the border delays, trips to Constanța take a minimum of two days, while trips to Odessa/ Chornomorsk can be made in one day.
- Rail costs were estimated to be \$0.03 to \$0.08/tkm, but in reality could be less



due to higher tonnage per unit, or more due to drayage costs to/from the rail yard.¹ Additionally, the reported rail costs are only for shipments within the Moldovan rail system; prices could vary dramatically if crossing on to other rail systems.

- In general, air freight is typically the most expensive form of transportation. This is also the case in Moldova, where air freight costs are the highest priced of all of the modes by far, at over \$1/tkm for exports and over \$2/tkm for imports using civil aviation. These rates are cost-prohibitive for all but samples and urgent shipments. Until the aviation sector deploys larger planes and freight capacity increases, it is unlikely that air freight prices will decrease. Current demand does not warrant dedicated air freight services. Charter flights are also expensive and limited in feasibility of operation due to insufficient and poor quality of air cargo infrastructure at the airports.



- Sea freight prices cannot be compared on a price per tkm basis other than for Turkey, where a sea freight price per tkm was calculated using the road distance. In this case, export prices were similar (\$0.07 by road-sea, and \$0.05-0.07 by road). Imports were cheaper by road using Moldovan carriers (\$0.05), but more expensive using Romanian carriers (\$0.13) or by sea (\$0.12). However, with prices being so similar, once transport time is considered, road transport would likely be the more competitive option at present as it is 2-5 days faster. In terms of cost per metric ton, road-sea rates are higher than road rates, but this a reflection of the long distance of routes using sea transport.
- Comparisons can be made across sea transport routes.² In this respect, exports to China are the cheapest on a per metric ton basis of the routes that we

¹ Cost of local transport from the farm/warehouse/factory, etc., to the railway station. This cost has not been estimated as it would vary greatly depending on the distance to/from the railway terminal. In the most efficient cases, like Moldovan wheat, product is directly discharged from the wheat silo to the railway hopper wagons and transported without the need for drayage.

² Noting that the price quotes we received were spot prices and sometimes varied widely. However, our experience is worth noting, as it is similar to the constraints that a small shipper would face who wanted to explore new markets.

report. We suspect this is due to excess capacity in sea shipping flows to China compared to exports from China, which are the main flow. This situation presents an opportunity for Moldovan exporters. On the other hand, imports from China are more expensive, and Moldova imports a significant amount of input materials and consumer goods from China. Overall, prices to/from Dubai were the most expensive, despite the short distance relative to other routes such as China and the US. Imports from Turkey were expensive as well, again despite the even shorter distance.

- Informal fees at the borders were reported to be minimal, but still required — typically just several token dollars or Euros.³ However, with an estimated 859,074 trucks crossing Moldova's borders in 2016 (estimated from Moldova Customs Service data), this would still amount to a cost of several million dollars to traders and transporters. Transporters reported that in some places in Ukraine, refusal to pay the several dollar fee results in physical inspection taking several hours. In terms of the Romania/Moldova border, payments seem to be higher for LCL (Less than Container Load) or groupage shipments than for FTLs (Full Container Loads), which disproportionally affects small traders in terms of both cost and transport time.
- Most shippers reported increased prices during peak harvest seasons due to lack of available trucking capacity. There were also many reports of container shortages for export during these times.
- In terms of transport times, GIFF and the Ukrainian ports can be reached in less than one day. Transport to Constanța depends on the amount of time spent at the border, but typically takes at least 2 days.
- Bucharest and other destinations in Romania also typically take 2 days. Travel to Western Europe typically takes 3-5 days depending on the border delays at Leușeni or Sculeni. Transport time to Turkey is similar.
- Transport to the North and East takes 2-4 days depending on the time at the Northern border (mainly Otaci) and destination. Transport time to Kazakhstan at present is 5-8 days. Transport to Russia and destinations beyond via Russia requires a detour through Belarus, as the typical Ukrainian route to Russia is not now open. In general, trips east require a detour around the Transnistrian region as well, either to the North or South; the South is the preferred route due to better road conditions, but only the Tudora BCP is open to trucks while Palanca is under construction.
- Rail transit times at present are not efficient or competitive. Transporters report that a 3+ day transit time for the 238 km trip from GIFF to Chișinău is common or standard.

³ Based on interviews. By far the most common informal payment appears to be a few euros or dollars for “speed money” that is charged for faster processing. Interviewees reported that this was an occasional issue on the Moldovan side and a universal and unavoidable one on the Ukrainian side. Some corridor users also apparently pay informal fees at the border to surpass regulations / violations such as overweight vehicles or lack of authorizations; this is much less common but the amounts involved are said to be larger (\$50-70 per transaction). Note: not all interviewees were willing to discuss informal payments.



BORDER WAITING TIMES IN AN INTERNATIONAL CONTEXT

During our assessment, it became clear that the time spent at Moldova's borders, especially the border with Romania, can include substantial delays. Shippers and transporters consistently mentioned that it takes 1-3 days to traverse the Leușeni-Albița BCP. Delays were also reported at Sculeni-Sculeni and the northern borders with Ukraine, especially at Otaci-Mohyliv-Podilskyi (up to 1 day). Transporters typically fared better at Tudora-Starokazacie (typically 3 hours).

Delays are found in all directions, but are more likely to be encountered (and are longer) when crossing the Romanian border to enter the EU. It is important to appreciate that the border between Moldova and Romania is not simply a border between two countries, but also an external border of the European Union. The EU's external borders differ from most national borders in that they represent the gateway to a region of 28 countries and over half a billion people. However, according to a comparison of 23 EU/Non-EU borders undertaken in 2016, the overall waiting time for goods entering Romania generally takes significantly longer than at all other external EU BCPs. The results indicate that the overall average time needed to cross a (non-Romanian) EU border was 23.8 minutes. However, the average time needed to cross a Romanian border (6 of the 23 border crossings assessed), was 380.4 minutes. The six Romanian BCPs were the top six overall in terms of total average time. And of those 6 Romanian border crossings, the waiting time at the Moldovan-Romanian border (Leușeni-Albița) had the worst performance, and was significantly higher than any of the others (1032.9 minutes). This has a significant impact on the performance of Moldova's trade corridors.

Anecdotal evidence suggests that there are issues with both Romanian Customs and the Romanian Border Police. The Romanian Border Police regularly hold vehicles in "no man's land," which adds significant delays without affecting the official statistics on the Romanian side. Part of the problem is certainly that this is an EU border, with high levels of scrutiny and control, as discussed more in the full report. However, this is clearly not the only reason. Romania's BCPs compare poorly to other EU BCPs, such as Estonia-Russia and Poland-Belarus. As Moldova's external trade has shifted westward over the last decade, these problems have become both more obvious and more pressing.

COMMODITY ANALYSIS

The complete report includes analysis of four specific commodities: perishable fruits, wine, textiles, and auto parts. These goods are subject to various aspects along Moldova's trade corridors that could impact performance differently. For instance:

- **Perishable fruits** are agricultural (needing phytosanitary certificates), require cold storage, and must have fast and reliable transport times. Border crossing times are unreliable and vary throughout the season, but long lines at the borders put perishable goods at risk of spoilage. International supermarkets also impose steep fees on deliveries made outside of scheduled drop-off times. Additionally, high cost and limited knowledge of air and sea shipment options for perishable goods discourage producers from exporting to new markets in the Middle East and South East Asia. Transport costs of refrigerated containers (reefers) are much more expensive than regular containers: according to one source, exports of reefers from the Fish Port cost 72% more to Baltimore, 43% more to Dubai and 40% more to China; according to a second source, exports of refrigerated goods from Odessa cost more than double non-refrigerated containers for every port we quoted.
- **Auto parts** include both imports and exports. As exports, they are often high value and “just in time” goods, which face heavy fines if they arrive late to their destination. Thus, border delays put producers at risk of high penalty fees for late deliveries. To avoid issues with driver rest time, some transporters use teams of two drivers per truck, at a higher cost.
- **Textiles** are a high volume, containerized export, and the Moldovan textile market relies on imports for most of its inputs. E-commerce transactions are growing in this sector; however, high air transport costs and inefficient customs procedures constrain producers from expanding this area of their business.
- **Wine** is a heavy good that faces SPS requirements and can be transported via both containers and tank-tainers in bulk; in bottles, it is also breakable, and this is sensitive to road and rail conditions. Wine producers noted that the numerous documentation requirements add costs and can delay shipments. Also, increased shipping costs to Kazakhstan and Kyrgyzstan due to unusable trade routes through Ukraine have hurt sales.

TRADE CORRIDOR CONSTRAINTS

The costs of transport on Moldova's trade corridors are higher than they should be due to a variety of factors that can be summarized into a few main topics, as shown in Table 3.

TABLE 3. KEY ISSUES AFFECTING MOLDOVA TRADE CORRIDOR TIME AND COST

WHAT	WHY	IMPACT-TIME	IMPACT-COST
Poor and insufficient infrastructure	<ul style="list-style-type: none"> • Years of deferred maintenance • Lack of available funding • Lack of private sector investment • Misuse/inefficient use of available funds • Delays in procurements • Overloading of trucks • Lack of transport master plan • CFM freight cross-subsidizes passengers • Lack of resources to enforce regulations 	<ul style="list-style-type: none"> • Diversion of traffic to roads and BCP with good infrastructure creating congestion • Diversion to longer but better condition road routes increases time • Reduced reliability of transport services impacts products that can be exported • Increased rail transit time • Increased air cargo unloading/loading time 	<ul style="list-style-type: none"> • Increased trucking maintenance costs → increased tariffs • Increased distance → increased tariffs • Increased transport → increased tariffs • Reduced availability of trucking services on routes with poor roads = less competition → increased tariffs • Overloading leads to poor roads and increased truck maintenance costs
Trade facilitation and border delays	<ul style="list-style-type: none"> • Poor roads lead to congestion at BCP with good access infrastructure • Inadequate BCP infrastructure (such as only 1 entrance lane) • Romania is gateway to EU • Transnistrian region limits crossing points to the East • Need to improve risk management, especially risk profiling • Lack of adequate resourcing for border controls on the Romanian side of the border¹ • Lack of use of security seals for cargo transiting across borders 	<ul style="list-style-type: none"> • Border delays can last 1-3 days, mostly in queues • Creates further delays due to driver rest requirements • Cannot make trip to Bucharest or Constanța in same day • LCL (consolidated shipments) considered high risk and subject to reports of 100% physical inspection, leading to increased time of several hours • Detours around Transnistrian region add time • Reduced reliability 	<ul style="list-style-type: none"> • Increased trucking costs due to increased time • Reduced truck utilization rates (trips/month) which increases costs • Time-sensitive products require 2 drivers at higher cost • Shippers have to pay costs of physical inspection • Minimal, but nuisance, informal fees

WHAT	WHY	IMPACT-TIME	IMPACT-COST
Asymmetrical information in markets and lack of information systems	<ul style="list-style-type: none"> • Poor collection and dissemination of statistics and data • Lack of digitization and online systems 	<ul style="list-style-type: none"> • Increased time to trade • Transporters use known routes even with delays 	<ul style="list-style-type: none"> • Lack of backhaul increases transport cost • ANTA cannot properly enforce regulations which ultimately leads to increased costs
Lack of affordable and sustainable financing	<ul style="list-style-type: none"> • Increased risk of Moldovan banking sector since banking crisis has led to tighter lending criteria, higher collateral requirements, and higher interest rates • International funding institutions stopped backing letters of credit • SMEs lack credit history to acquire affordable financing • Lack of private sector financing due to perceived risks • Insufficient PPP framework • Non-transparent procurements 	<ul style="list-style-type: none"> • Increased risk of shipping through Ukraine limits financing and so some shippers have to ship via GIFF adding a week of transit time • Some border delays if transit bond guarantee limits are exhausted 	<ul style="list-style-type: none"> • Trucking companies face high down payments and interest rates so can't afford new trucks; old trucks have increased maintenance costs • Transit guaranties are more expensive due to high collateral costs and interest rates to brokers • Traders have to make upfront payments to transporters but lack financing mechanisms • Importers have to pay for inputs upfront

¹ An examination of Romanian Customs is beyond the scope of this report, but it bears mentioning here that it does have a number of problems. Not all of the problems at Moldova's border with Romania are Moldova's fault; this situation is discussed later in this report.



PHOTO: Emil Bolocan / Nathan

INFRASTRUCTURE ISSUES

The overall condition of much of Moldova’s transport infrastructure is poor and in urgent need of rehabilitation, largely attributable to deferred maintenance. In 2017, Moldova was ranked 111 of 137 countries in quality of transport infrastructure by the World Economic Forum with the quality of its transport infrastructure receiving a rating of only 2.7 out of 7.0 (see Table 4). In particular, Moldova’s road infrastructure (its most used infrastructure accounting for 71% of trade in 2017) also scored and ranked poorly, receiving a 2.5 out of 7.0 and a rank of 132 out of 136 countries in 2016 and 128 of 137 countries in 2017. Many of Moldova’s roads need rehabilitation, and in some areas new road infrastructure—ranging from roads to bypasses—is required to make traffic flows more efficient.

TABLE 4. COMPETITIVENESS OF MOLDOVA’S TRANSPORT INFRASTRUCTURE, 2016-2017

METRIC	RANKING 2016	SCORE 2016	RANKING 2017	SCORE 2017
Quality of overall infrastructure	110 of 136	3.1 of 7.0	102 of 137	3.3 of 7.0
Quality of transport infrastructure	N/A	N/A	111 of 137	2.7 of 7.0
Quality of roads	132 of 136	2.5 of 7.0	128 of 137	2.5 of 7.0
Quality of railroad infrastructure	70 of 136	2.7 of 7.0	71 of 137	2.7 of 7.0
Quality of port infrastructure	127 of 136	2.2 of 7.0	126 of 137	2.4 of 7.0
Quality of air transport infrastructure	94 of 136	3.9 of 7.0	86 of 137	4.1 of 7.0

Source: World Economic Forum’s Global Competitiveness Index, 2016-2017 edition and 2017-2018 edition.

Among other infrastructure needs:

- the railway faces significant track maintenance and rehabilitation needs and improved rolling stock.
- Chişinău International Airport (KIV)'s cargo terminal needs significant upgrading in order to handle freight, especially high-value or perishable goods. The two Bălţi-area airports are not ready to handle traffic in their current conditions, with studies required to determine the merits for investment; both airports have significant investment needs ranging from runway lighting to runway or terminal development.
- GIFP requires additional handling equipment and dredging, which is also required for Moldova's inland waterways.
- the country lacks multi-modal inland terminals, cargo consolidation points, and inland customs clearance points; while there is interest in establishing a logistics hub, a study is needed to determine its feasibility.

The lack of sufficient quantity and quality of infrastructure has many impacts on the performance of Moldova's trade corridors. For instance, while there are 30+ BCPs, cargo is disproportionately diverted to corridors with good access roads and BCP infrastructure, creating congestion at up to 7 BCPs while rendering others under-utilized (see Figure 2). Competition for trucking services is limited on routes with poor road conditions, such as to GIFP, as poor road conditions lead to increased breakdowns and truck maintenance costs, thereby increasing the cost of trucking services. Due to poor air sector cargo infrastructure as well as high prices, many traders have abandoned use of the sector altogether. The same could be said for the railway sector, which has seen volumes drop from nearly 3 billion metric ton-km in 2005 to only 793 million metric ton-km in 2016.¹ The reliability of transport services, as well as high times and costs, also impacts which products can feasibly be exported.

This leads to the question of *why is Moldova's infrastructure so poor, despite the increased focus on trade?* The answer is complex, but stems from years of deferred maintenance, which, simply put, is a result of funding issues. These range from lack of available funds, particularly since the banking crisis, to misuse or inefficient use of funds (see the recent Road Fund audit report), along with a lack of private sector investment. The country has struggled to attract private investment in infrastructure, and the country's two highest profile public-private infrastructure transactions—the port at GIFP and the airport concession at Chişinău International Airport—have demonstrated the need for improving the Public-Private Partnership (PPP) framework, shortcomings of which may be addressed through recent amendments to

¹ World Bank WDI.

the PPP legislation. Further, when funding has been available, there have been delays in procurements and construction, such as with the road to GIFF that was only 3% completed by its scheduled construction end date, leading to a re-procurement in 2018 and a five-year delay. Finally, the lack of proper regulations, or poor enforcement of existing regulations, have made problems worse, such as the common problem of overloading trucks, which eventually damages both trucks and roads.

What can be done?

- First, Moldova should consider developing a comprehensive freight logistics master plan, consisting in part of a set of feasibility studies and financing options to make it easier for the Government of Moldova (GoM), international funding institutions (IFIs), and potential private investors to prioritize projects.
- In parallel, Moldova should work to increase the use of private sector funding and public-private partnerships (PPPs), including ensuring full and open tenders and proper oversight of procurements.
- Infrastructure investments should first prioritize improving access to key BCPs and ports, including GIFF. Once key trade corridors have sufficient infrastructure, the second phase should be to improve access to secondary crossing points to alleviate congestion.
- To avoid further degradation of infrastructure, the National Agency of Auto Transport (ANTA) should be given the resources to properly conduct its regulatory functions, including enforcement of axle-weight violations.
- Moldova should also work to implement the suggestions in the audit of the Road Fund.
- In regards to aviation, accelerating improvements to the cargo terminal at KIV, or providing minor investments into handling equipment in the meantime, would improve short-term performance. A feasibility study should also be conducted to assess rehabilitation possibilities of Balti-area airports.

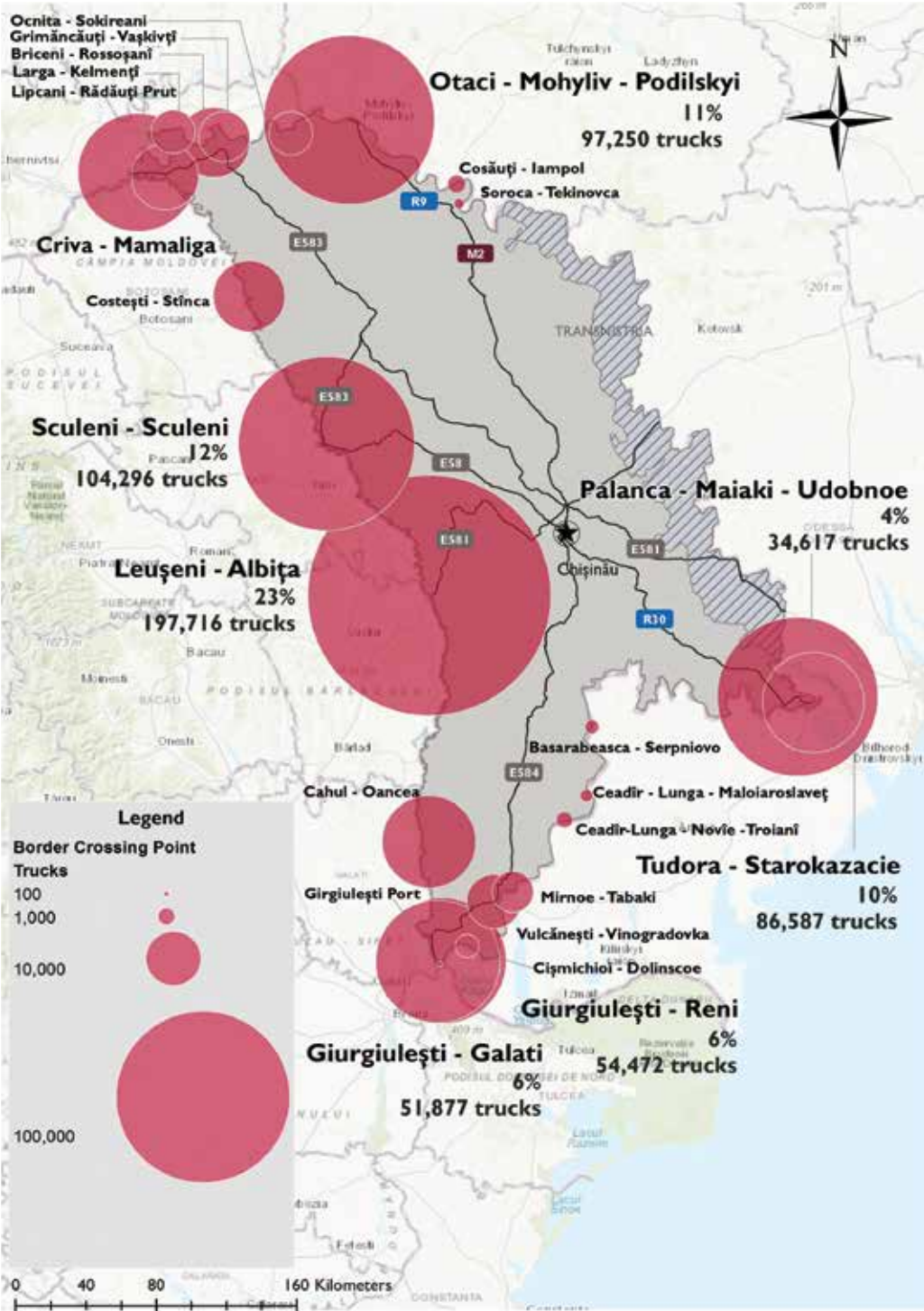
TRADE FACILITATION ISSUES

The largest issue in terms of time to trade across many routes is related to BCP queues. For instance, for trips to Western Europe, we estimate that over 40% of the transit time can be spent at the borders. For a trip to Bucharest, long queues at Leușeni-Albița can result in 90% of the transit time across Moldova being spent at the border.

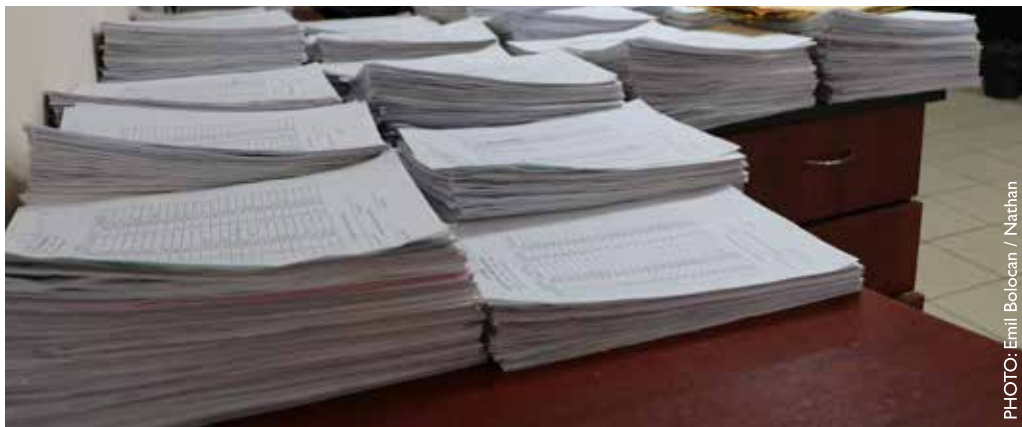
From our assessment, we found a wide disparity in terms of the overall performance of border crossings both between locations and at the same location, depending on day and time of travel. Taking the busiest BCP Leușeni-Albița as a case in point, the total border waiting time can vary between 1 hour and more than 24 hours. Since Leușeni-Albița is by far the most important BCP (see Figure 2), this means that a large variable element is thrown into Moldova's external trade. As noted above, border delays increase transit time, reduce corridor reliability, and increase transport costs.

It is clear that many of the problems and excessive delays occurring at Moldovan BCPs are outside of the control of Moldova's Customs Service (MCS) and other regulatory authorities. For instance, as discussed above, the Moldova-Romania border is an external entry/exit point to the EU, which creates complications. But also as noted, the overall waiting time for goods entering Romania generally take significantly longer than at all other external EU BCPs. This is not to say that some improvements cannot be made in the operation of Moldova's own border regulatory controls. They clearly can. In the full report, we provide a series of specific recommendations which should not only deliver some savings in terms of processing times and costs but also, critically, should allow MCS and other agencies to improve their overall performance in terms of improved risk management and meeting their objectives in terms of revenue collection and protection of society. For example, Moldova and Romania could jointly develop a cross-border vehicle appointment system, similar to the systems at the US-Canada, Estonia-Russia, and Lithuania-Russia borders. Combining pre-arrival notification, arrival slots / virtual queues, license plate recognition systems, RFID, truck staging areas, and waiting time (queue) electronic notification capabilities, these systems have been successful at reducing border processing and queue time. Our case study below describes some of the technology solutions used along the borders of other countries, solutions that can potentially become available via a PPP approach.

FIGURE 2. MAP OF TOP MOLDOVAN BCP WITH NUMBER OF TRUCKS IN 2016



Source: Data from Moldovan Customs Service/Border Police. Nathan 2018.



ASYMMETRICAL INFORMATION AND LACK OF INFORMATION SYSTEMS

In the modern business environment, information systems and networks play a critical role in the efficiency and, ultimately, cost-effectiveness of trade corridor and logistics performance. Lack of such systems, along with other market inefficiencies, can lead to problems of asymmetrical information, which increase the time and cost to trade and limits traders' abilities to access new markets. For instance:

- Traders and transporters have a more difficult time finding one another and matching return loads, which increases transport costs
- Traders spend more time looking for trade information and completing paperwork
- Transporters do not have the systems to efficiently plan routes
- Traders and transporters cannot track and trace shipments
- Customs brokers cannot access their guarantee limits or usage without physical interaction with customs officials
- Transporters do not have accurate information on real-time BCP queues

In this regard, Moldova lags behind international standards in several regards including:

- Collection and publication of statistical data
- The version of ASYCUDA (Automated System for Customs Data) currently being used

- Lack of online services (i.e., ANTA has a One-Stop Shop which cannot be accessed online)
- Lack of transport corridor monitoring

Moldova can consider the following recommendations that would improve access to information:

- Development of a Trade Information Portal
- Develop and pilot a GPS or Radio Frequency Identification (RFID)-based truck/cargo tracking system
- Develop an app building on Moldovan Border Police waiting times to include total queue /processing time and allow mobile access, and consider developing a cross-border vehicle appointment system, as described above
- Upgrade ASYCUDA and increase functionality
- Develop a corridor development committee, or at a minimum, build relationships with regional ports and corridor players affecting Moldova's trade corridors to allow for better sharing of information
- Implement e-signatures for Eastern Partnership (EaP) countries

ACCESS TO CREDIT AND FINANCING ISSUES

Access to affordable and sustainable financing was an overarching theme that emerged in the interviews conducted in the course of our fieldwork for this Trade Corridor Assessment (TCA). There are financing constraints at all levels, whether it be at the national government level or the level of an individual farmer. Key issues include the following:

- **Government:** Reliance on loans and funding from IFIs for infrastructure investments. Lack of sustainable funding for the railways, roads, and airports.
- **Transporters:** High interest rates and down payment requirements are a barrier to buying trucks, and lead to the purchase of more affordable used trucks, which have higher operation and maintenance costs. Based on interviews, the average truck age in Moldova appears to be in the range of 6-10 years, compared to 1-3 years for foreign trucks. One transporter indicated that 15-20% of his costs were comprised of financing. Others stated that they pay a minimum 30% down payments plus interest rates of 10-20%, compared to loans in Romania with no down payment and interest rates of 3-7%.
- **Traders:** Since the banking crisis, IFIs have stopped guaranteeing letters of credit in Moldova. It is expensive and difficult to get letters of credit without these guarantees. When traders have to pay transporters or input suppliers upfront, it leads to cash-flow issues. One trader also mentioned having to move shipments from Odessa to GTFP due to the perceived risk of shipping through Ukraine and its impact on financing; this process increased their transport time by 1+ weeks.
- **Farmers:** Moldovan banks now have a low risk tolerance, and the conditions are too stringent for farmers who often have limited credit histories, or poor credit histories due to past crop losses (and lack of available insurance). Farmers also are not able to lease agricultural equipment and have trouble getting loans to purchase it. Further, they note that cash payments are an issue in their industry and would like better use or requirement of e-payments. These issues have led to a greater uptake of microfinance and trading companies, both of which come at a substantially higher cost. This situation also reduces the ability of small farmers to export profitably.
- **Customs Brokers:** Customs brokers have to put up guarantees for transit cargo until it is cleared by customs. Since the banking crisis, it is harder for brokers to get access to affordable credit/credit limits, and banks want hard collateral at rates of over 100%.

This TCA is not tasked with providing recommendations on how to improve Moldova's capital and banking markets, but the Moldova Structural Reform project is in the progress of developing a separate report addressing some of these issues. But where banking reforms will take time, there are some areas where other sectors can make changes that would positively impact access to financing. For example, MCS can reduce the guarantee requirement for Authorized Economic Operators (AEOs) from 100% to a lower amount. It could also introduce a deferral system for the payment of duties (this is already being done for AEOs). The GoM can facilitate private sector investment and PPPs by improving the regulatory framework and financing feasibility studies aimed at attracting investment. Agricultural associations can require e-payments. The Organization for Small and Medium Enterprises Sector Development (ODIMM) can be expanded to include loan guarantees for traders and other participants in the logistics sector.

NEED FOR INSTITUTIONAL AND REGULATORY STRENGTHENING

A final, cross-cutting theme is the need to improve the institutional structure governing the transport and logistics sector, as well as to strengthen the regulatory environment. Moldova has a number of options to pursue, but the global practice seems to be a combination of assigning logistics sector responsibility to an existing agency, in combination with a national logistics council consisting of private and public sector representatives. While the details of such a structure should be ironed out in the course of an institutional assessment, the agency should have broad decision-making power on matters of strategy, investment, marketing and promotion, and performance monitoring, with a national logistics council serving in an advisory capacity.

Moldova should also ensure that it has supportive policies and regulatory frameworks that generate trade and improve conditions in which freight is processed or moved. This action would mean improving the capacity of the Ministry of Economy and Infrastructure (MoEI) to develop regulations concerning the logistics sector, and of other agencies to enforce these regulations.

In terms of regulations, a major improvement to the road sector would be to liberalize the market, removing the need for authorizations. A secondary issue is developing standards and requirements for the freight forwarding industry.

To properly conduct its regulatory enforcement functions of the road sector, ANTA needs trained staff and proper equipment such as weigh stations. This process also includes increasing ANTA's use of technology and management information systems. For example, the One-Stop Shop should be moved online, and the industry should move towards developing a logistics management and freight tracking system using technology such as GPS trackers or RFID.

The planned Calea Ferata din Moldova (CFM or Moldovan Railways) restructuring should move forward, separating the freight, passenger and maintenance responsibilities, developing a regulator, and allowing private sector investment. At the same time, the MoEI will need to find ways to finance the passenger subsidies and track maintenance costs previously cross-subsidized by rail freight.

The Maritime Authority should be established as planned, and should begin with a mandate of improving environmental, safety and port state control, as well as ensuring fair competition. One of the agency's initial goals should be to get Moldova removed from the Paris Memorandum of Understanding's blacklist for port state control, which shows a lack of proper regulatory enforcement and negatively impacts the country's image.

Finally, Moldova should further promote air transport liberalization and competition, new routes, increased services, and air connectivity. Private operators, in coordination with the Moldovan government, should effectively promote and improve quality standards for freight handling at its international airports.

STRATEGIC ENABLERS AND ACTIONS

The last section of the full report outlines a strategy for Moldova to pursue in order to improve logistics sector performance. The strategy consists of seven strategic enablers and associated goals and actions. The strategic enablers include:

1. Improving the Logistics Sector's Institutional Effectiveness
2. Ensuring Supportive Policies and Legislative and Regulatory Frameworks
3. Improving Trade Facilitation
4. Developing Efficient and Productive Infrastructure
5. Providing an Efficient Transport Logistics System
6. Facilitating Sustainable Financing
7. Logistics Sector Promotion

The seven enablers as a whole constitute 25 strategies and 71 actions. Each enabler's goal, strategy rationale, and the strategies to be executed for each are provided in the full report. Specific implementing actions are also provided, and those entailing projects supporting implementation are presented in the form of 31 project profiles. Ultimately, the promise of this strategy is that it focuses on providing logistics services and assets while aligning and strengthening finances, people, systems, policies, processes and administration. Because setting a course for success requires the right craft and crew, the strategy calls for adjustments to the institutional arrangements intended to provide a coordinated and collaborative sector improvement strategy, engaging public and private sector stakeholders. Enabler 1 is thus a critical enabler, as it addresses the changes required to ensure that Moldova can institutionally anticipate and respond to issues and opportunities the sector faces. Through commitment to the strategy, Moldova will realize its highest potential as a country offering industry best standard logistics services and assets. The 31 project profiles are summarized in the table 5.

CONCLUDING REMARKS

In summary, Moldova's trade corridors face a wide array of issues, which affect the time and cost for Moldovan traders and transporters to move goods.

- **Chișinău – Giurgiulești – Constanța:**

- **Time:** poor access road and rail infrastructure add 1-2 hours by road and several days by rail; lack of dredging can lead to delays in river transport; lack of port handling equipment increases port handling time; queues where BCP and port converge; infrequent container feeder service can increase transport time by a week; lack of online and trade related e-systems increases time to trade.
- **Cost:** high truck maintenance cost and increased transport time due to poor road conditions increases cost; limited trucking companies willing to travel route leads to higher prices due to lack of competition.

- **Moldova – EU:**

- **Time:** poor road conditions to the borders combined with limited services at secondary BCPs lead to congestion at key BCP and increased road transport distances to reach the BCPs; several BCPs require additional access lanes, leading to queues; long queues at BCP due to insufficient resources; no OSBP at many borders; high incidence of physical inspection for LCL adds several hours of transport time; no mutual recognition of AEO; transit times limited by regulation when hotter than 30C; different rail gauges in RO/MD limit possibilities for rail and increase time; KIV cargo terminal needs rehabilitation and equipment; Bălți and Mărculești airports require substantial infrastructure investments; use of IWW requires dredging; lack of online and e-systems increases time to trade.
- **Cost:** limited civil aviation capacity leads to high prices; BCP delays impact transport costs; issues with access to affordable credit increase trucking costs; high trucking costs to Constanța port due to high container guarantee fees and transport time; nominal informal fees at BCP; additional costs of physical inspection; higher truck and road maintenance costs due to lack of axle-load enforcement.

- **Moldova – Odessa/Chornomorsk/Fish Port:**

- **Time:** poor road conditions in both Moldova and Ukraine, as well as “no man’s land” between the BCP; access to Palanca BCP on Moldovan side is through a village; lack of technology used by Ukrainian customs; no freight rail service through Transnistrian region due to complexities and high costs of 3 systems for such a short distance; no IWW; poor road conditions in Odessa port; main public truck access gate to Odessa port is not operational requiring a detour through EuroTerminal at 20+ minutes; Moldovan shippers can’t use e-signatures in Ukraine; delays when authorizations are exhausted; lack of online and e-systems increases time to trade.
- **Cost:** poor road conditions lead to increased maintenance costs; rail through Transnistrian region is too expensive to be a competitive service; informal fees when authorizations run out; extra fee to Euro Terminal (\$15) to enter Odessa port; high cost of Transports Internationaux Routiers (International Road Transport) (TIR) limits use.

- **Moldova – CIS**

- **Time:** poor road conditions in both Moldova and Ukraine; delays when authorizations are exhausted; some delays at northern BCP; southern BCP have delays during peak periods such as grain harvest; detouring around Transnistrian region adds to transport time; Transnistrian region-shippers face additional time to go to Căușeni for customs processing; have to detour through Belarus (instead of traditional Ukrainian route) to get to Russia and Kazakhstan; lack of online and e-systems increases time to trade.
- **Cost:** some informal fees at BCP and checkpoints (outside of Moldova); higher informal fees when authorizations are exhausted; lack of axle weight enforcement increases maintenance costs; increased distance to Russia/Kazakhstan increases cost; shippers from Transnistrian region face additional road use fees in Moldova and costs of going to Căușeni for customs processing.

Despite the challenges described above, this is an exciting time in terms of Moldova’s trade corridors, with many ongoing reforms and planned projects ranging from implementation of trade agreements to infrastructure reconstruction projects to restructuring CFM, the Moldovan railway. The transport logistics and trade facilitation environment is evolving rapidly, and it seems like there are new developments every day. For instance, it was just announced that Moldova and Ukraine are liberalizing

their air and road transport markets with one another. These evolutions will continue to make it easier for Moldovan traders to import goods and reach new export markets. In fact, the fastest growing export markets in 2017 were Asia and the US—very different than the historical markets of nearby CIS countries and Romania.

As Moldova endeavors to reach new markets, new challenges will continue to arise, and the sector will have to be ready to face these challenges in order to take advantage of new opportunities. While sufficient, quality infrastructure is surely a prerequisite to trade, as trade corridors expand and markets grow, the service markets, trade facilitation, and the regulatory framework will become increasingly important.

TABLE 5. SUMMARY OF RECOMMENDED PROJECT PROFILES

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
1	Logistics Sector Institutional And Regulatory Reform	Institutional and regulatory reform assessment to ensure appropriate institutional and regulatory arrangements are in place to facilitate improved logistics sector performance.	MoEI in collaboration with the proposed National Logistics Council (NLC)	Year 1: Feasibility study + reforms approved, Years 2-3: Implementation	\$300-\$400k	Significant impact on logistics efficiency and logistics costs.
2	Develop National Freight Logistics Master Plan	Develop a comprehensive, freight logistics plan covering all sectors and modes of transport with potential to be utilized in Moldova.	MoEI, with other potential funding sources	Immediately, 18 months	\$2 mil	Create cheaper access to national and foreign markets, safer passenger transport, reducing emissions.
3	Technical Assistance and Capacity Building Support to ANTA	To provide technical assistance and training support to increase institutional capacity and the ability of ANTA staff to complete their regulatory functions.	ANTA	24 months	\$126k	Increase the number of inspectors and officials, increase traffic safety, institutional capacity, understanding of international experience. Improved food safety, strategic management processes
4	Implementation of Mobile Weighing Points for Heavy Goods Vehicles Circulating on Public Roads on The Republic of Moldova	Implementation of Weigh in Motion stations for weighing vehicles circulating on public roads of the Republic of Moldova in order to better enforce axle weight limitations.	ANTA	ASAP	\$22 mil	21 additional weigh stations, public service modernization, statistic recording ability, decisional transparency, increased penalty collection, fewer costs associated with road maintenance.

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
5	IT Solutions for Enhancing Real Time Logistics Information Conveyance and Information Sharing	Develop and implement eLogistics System that provides real time track and trace capability to facilitate status reports on freights and vehicles.	MoEI, NLC	Year 2: Feasibility Study, Year 3-4: system transaction and implementation	TBD	Significant impact on logistics system efficiency.
6	Moldova-Romania Cross Border Cooperation	To improve the efficiency of the Moldova-Romania land border in order to reduce waiting times and more efficient target non-complaint traders.	Moldovan customs service, Romanian customs service	24 months	TBA	Reduce or remove unnecessary check and improve risk-based selection while reducing unnecessary waiting times.
7	Cross Border Vehicle Appointment System	To reduce vehicular waiting time at Moldova's borders by developing a vehicle appointment system at key Moldovan BCP.	MoEI, NLC, Romanian Customs	Year 1: Feasibility Study, First 2 Years: implementation	TBD	Significant positive impact on border crossing delays.
8	Development of National Trade Information Portal	To develop a single, comprehensive national trade portal, containing all relevant information for importers and exporters in Moldova.	MoEL, Economic Council, Customs & other agencies; donor assistance	12-24 months	\$200k	Reduction in non-complaint actions and a reduction in time and cost to comply with regulations.
9	Capacity Building of PPP Unit	To prepare PPP staff to undertake project appraisal and associated analytical methods, develop a multitude of different projects.	Ministry of Finance	Year 2	\$400-\$500k + \$200k follow-on	Significant impact in leveraging investment for needed infrastructure in all sectors.
10	Time Release Study and Waiting Time App	To better understand where border delays are occurring and to increase access to information.	MCS, Border Police, Romanian Customs	Immediately, 12 months	TBD	Improve border efficiency, reduce waiting times at the borders.

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
11	Improve Construction Procurement Process	To improve the road construction procurement and oversight process to avoid procurement delays and to prevent the risk of failed construction projects.	MoEI	Year 2 after approval of the logistics sector strategy	\$200k	Significant impact on freight shipments and road safety.
12	Improve The Regulatory Framework for the Freight Forwarding Industry in Moldova	To develop the required regulations that would ensure a fair and open rules of the game on the freight forwarding market in Moldova	MoEI, ANTA	2019	\$40-\$50k	Ensure proper standards for the freight forwarding sector that will raise the service standards and increase competitiveness.
13	Improve Regulations of the Freight Forwarding Market	Improve Moldova's regulatory capacity in terms of port state control to abide by international conventions.	Maritime Authority or ministry in charge of port state control	ASAP before next review period in June 2019	TBD	Improve compliance with international conventions, removal of Paris MOU blacklist, and improve safety and visibility.
14	Develop Competitive Railway Container Blocktrain Shuttle Service(s)	To develop competitive railway container block train shuttle services.	CFM	Locomotives are acquired and CFM can guarantee transit times	Marketing + Contract Development	Cost saving to shipper, alleviate traffic on the roads, and would provide CFM with a consistent source of revenue.
15	Feasibility Study for Balti-Area Airport Rehabilitation	To develop a feasibility study assessing potential costs, benefits, design and requirement of airport rehabilitation at both Balti International/Marculesti.	GoM or development partners	Immediately	\$400-\$700k + \$10 mil	Provide a second national airport that can handle passengers and cargo. Easier access to foreign marketing in the northern region
16	Feasibility Study for Chisinau Logistics Hub	To complete a feasibility studying, including a cost-benefit analysis of building logistic hub, either with state/donor funds or as a PPP, in or near Chisinau.	MCS, MoEI, Possible donors	Next 3 months	Feasibility: \$200k, hub: €25-30 mil	Would clarify whether this is worth pursuing.

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
17	Implementation of System for Internal DCFTA Implementation Monitoring	To populate the existing DCFTA monitoring system with the required data on DCFTA implementation, test and validate the operational functionality and put it into operation.	MoEL, National Trade Facilitation Committee	3 months	\$20k	Faster and more reliable identification of future needs and better targeting of resources to maximize DCFTA implementation.
18	Review of Donor Support for WTO TFA Implementation and Agreement of a Coordinated Action Plan for Future Work	To update the assessment of gaps and needs in terms of achieving full WTO TFA implantation, to identify donor support for those needs and to agree specific donor commitments and action plans.	National Trade Facilitation Committee, MoEI	3 months	\$10k	An estimated reduction of 17.4% of the total cost of trade
19	Provision of Technical Advice to the NTFC	To recruit a long-term technical advisor for the NTFC who can provide advice and support on implementation of the NTFAP.	MoEL, NTFC	3-12 months	\$150k	Same as above and faster more reliable implementation of the existing NTFAP and identification of any additional needs.
20	Review of WTO TFA Category A Commitments	To assess level of implementation of Category A commitments and identify measure to enhance compliance.	NTFC	3 months	\$20k	Higher level of effective implementation of the WTO TFA, resulting in increased cost savings to Moldovan businesses.
21	Review of Customs Administrative Sanctions and Penalties	To Review the levels of administrative sanction and penalties defined in the draft code and ensure they are consistent with the needs of the Code.	Customs services	3 months	\$60k	Discourages non-compliance, and does not create unacceptable financial risks to companies that may discourage trade.

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
22	Preparation of Sectoral Strategies and Business Plans for Customs	To draft and apply a range of sectoral strategies and business plans within the MCS to support implementation of overall business strategy.	Customs services	6 months	\$80k	Producing better value for money and meeting strategic objective of facilitation legitimate trade.
23	Review of Deployment of Customs Staff and Resources	To assess the suitability of the current deployment of resources and to provide recommendation for the re-allocation of resources.	Customs services	6 months	\$80k	Higher level of effective operation by customs and a reduction in operational and administrative bottlenecks
24	Review and Enhancement of Customs Professional Standards	To assess the current level of application of professional standard within the MCS.	Customs services	6 months	\$80k	A more responsive and constructive approach to business and a reduced level of corruption.
25	Enhancement of the Customs Broker System	To increase the professionalism/ effectiveness of the customs broker system so it better meets regulatory compliance of customs/ commercial needs.	Customs services, Chamber of Commerce, Association of Customs Brokers	12 months	\$120k	Reduce costs to business and also reduce the risks of revenue loss to the state.
26	Enhancement of Customs Risk Analysis Function	To enhance the capacity of the customs risk analysis function and improve its ability to identify/ target consignments and movements of goods.	Customs services, law enforcement agencies	6 months	\$100k	More effective targeting of non-compliant traders, protection of the revenues, reducing burden on legitimate traders.

#	ACTION	OBJECTIVE	IMPLEMENTER	TIMEFRAME	EST. COST	POTENTIAL BENEFITS
27	Development of a National Risk management Strategy and Function	To develop a coordinated approach to the identification and management of major risks, including risks of revenue fraud, and criminal crime.	Government of Moldova, Ministry of Interior, law enforcement agencies	12 months	\$200k	Better targeting of resources to risks and a reduction in fraud and other criminal activity.
28	Enhancement of Customs Inland Clearance Systems and Procedures	To identify improvements to the facilities for the customs clearance of goods.	Customs services	3 months	\$40k	Deliver savings of cost and time to businesses and enhance capacity to customs to protect revenue and society.
29	Enhancement of Customs Investigation and Intelligence Capacity	To strengthen the ability of customs to undertake effective investigation and intelligence actions.	Customs services	24 months	TBA	Improve the effectiveness of customs in protecting revenue and society, preventing fraud and max. trader compliance.
30	Enhancement of Customs Audit Capacity	To improve the capacity of customs to increase the volume and improve the quality of their audit0based controls.	Customs service	24 months	\$250k	A reduction in the need for checks at borders/ inland, maintaining an effective compliance and protecting revenue.
31	Enhancement of National Audit Capacity AEO Program	To improve the operations of the AEO program, expand the number of members, and improve the benefits for both customs and AEOs.	Customs service, Chamber of Commerce	6 month	\$80k	Large number of companies joining the program, delivering a greater level of trade facilitation to compliant traders.