2013 EDITION

Freight Logistics Statistics Yearbook for Latin America and the Caribbean

A publication of the Inter-American Development Bank, Infrastructure and Environment Department

Prepared by Nathan Associates Inc.

April 11, 2014

Freight Logistics Statistics Yearbook

The objective of this consultancy is to produce a Freight Logistics Statistics Yearbook for Latin America and the Caribbean, encompassing relevant, standardized sector data to identify trends at the regional level and to inform transport policy decisions, planning and research activities.

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Any errors of fact or interpretation are solely those of the author.

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1. Introduction

In later regretting that he had not responded to a woman's query about whether she should accept a job, Sherlock Holmes, in *The Adventures of Copper Beeches*, cried out "Data! Data! Data! . . . I can't make bricks without clay", drawing attention to the fallacy of speculation – to speculate absent any hard facts. It points to a tendency that we make decisions without the benefit of necessary facts – we try to do the impossible, to make bricks without their proper material.

And so it is that without data to form the basis for informed decisions, Latin America's policy makers, investors, and business folks are often challenged to make good decisions about financing transportation projects, investing in a country, contemplating transport and logistics options for product distribution or export, or deciding on a place to do business. More and better quality data lead to positive externalities, accountability and transparency and better impact monitoring.

While we continue to play in the information age, we are also in an age of information dilemmas. Freight transport and logistics data are more available today than ever due to technology advances that facilitate data collection, generation, transmission, and sharing, but we still suffer from knowledge gaps, data asymmetries and lack of quality data. Gaps will persist as advances in data processing continue, but the challenge lies in bridging analytical understanding with needed data to effectively respond to local, regional, and global freight transport and logistics needs.

Freight transport and logistics statistics, indicators, and performance indexes are important resources for decision makers to navigate the uncertain information landscape. They distill complex information relevant to freight transportation and logistics, enabling business and public decision makers to efficiently spot trends and critical areas of concern, support policy development, establish priorities, make funding decisions, and measure impacts of policy, regulatory, and funding decisions.

And so we present here the first edition of the *Freight Logistics Statistics Yearbook for Latin America and the Caribbean* which aims to gather modal data on freight transport and logistics in one place to achieve a comprehensive view of the transport system from a public policy standpoint. This is the first attempt to measure performance relying in hard data to complement existing perception indicators. In addition to this report, the Yearbook includes:

- A database of100 data points relevant to transportation and logistics modes for the 26 member countries of the Inter-American Development Bank. The Yearbook's statistics are available via a mobile (tablet) application called BID LOGISTICA.
- Modal Indexes based on six dimensions of transport and logistics performance were generated for each country where data are available with the goal of rank countries accordingly (the United States was included as a "high-performing" benchmark with which Bank countries can compare). Modes include road, rail, maritime and inland waterways, air, and logistics; dimensions include availability, capacity, productivity, cost, quality and environmental impact.
- Country Scorecards that summarize 42 of the 100 indicators and present the modal indexes for each country. To emphasize the data challenge, a data completion metric is included in each country scorecard.

Chapter 2 of this report presents the indicators for each of the modes and the rankings of each country by Modal Index. Note that as relevant data were not available for all countries, only countries reporting the data are ranked.

Chapter 3 describes the challenges for policymakers relative to data collection and performance tracking, improving sector performance, leveraging transport and logistics for trade, environmentally friendly transport logistics systems, and data collection sustainability.

Chapter 4 is a brief conclusion to the report. Five appendices are also included in the report addressing the Yearbook database, the data collection method, the methodology for calculating the trucking tariffs, the methodology for calculating the indexes, and the Scorecards for each Bank member country.

2. Characteristics of Transport and Logistics Markets in Latin America and the Caribbean

The improvement in transport and logistics systems is not feasible without a suite of measurements that help identify shortcomings and define the pathways for better performance and consequently economic growth. Measurement and tracking performance are important inputs into the transport and logistics development process. Data can be used to identify points of strength and weakness in national transport and logistics systems. They can also put elements of national competitiveness into comparative perspective, and assist knowledge exchange and experience sharing among countries. Facilitating such processes, as well as performance upgrading, is one of the main purposes of this Yearbook.

To this end, the Yearbook contains three main elements in addition to this report that can be used for measuring and tracking performance: i) Yearbook database, ii) Country Scorecards and iii) Modal Indexes.

The Yearbook database contains 100 indicators for the 26 Latin America and the Caribbean countries from 2008 to 2012. Appendix A identifies the data sought for each of the relevant countries and definitions for each datum. Available sources of data are identified in Appendix B. We also identify data that, though available, are not necessarily reported on a continuing basis, such as, for example, data found in once-issued technical reports. Table 13 in Appendix A details the frequency available by indicator.

The Country Scorecards contain a selection of the most relevant data from the Yearbook database for the year 2012; they present 42 indicators out of the 100 indicators from the Yearbook database. They provide a snapshot of the most important data elements in relation to transport and logistics in the Latin American and Caribbean region. The Country Scorecards are designed to be user friendly and can serve policy experts and researchers as a ready reference and source of comparative information. Appendix E presents the 26 Country Scorecards.

The third element of the Yearbook's data presentation is the Modal Indices. Each index summarizes a set of raw data from the Country Scorecards and covers a single mode of transport or logistics. The Indices therefore provide an at-a-glance summary of performance in individual areas. They can readily be compared across countries. Appendix D introduces the PCA methodology applied to calculate the Modal Indices.

As the framework for the Modal Indices, six dimensions of transport and logistics performance are considered:

1. *Availability* is the ability of third parties to access transport and logistics infrastructure and services. In countries with high availability, transport and logistics operations are usually simpler to organize, more cost effective, and more reliable. A high degree of availability can also be a key input into ensuring domestic connectivity, i.e. strong interconnections between population centers within a country. This dimension applies not only to infrastructure, but also to service providers—both are required and need to work together to ensure a high level of performance.
2. *Capacity* is the ability of a transport system to move a high volume of goods from sellers to buyers. A system has to have reasonable capacity relative to a country's population, level of development, and per capita income, or it will become congested. Capacity measures are important indications of the extent to which the system can deal with a high level of traffic while

still providing high performance services to shippers and end -users.

3. *Productivity* is the ability of the transport and logistics sector to produce relatively high levels of output from relatively low levels of input. A more productive transport and logistics sector again provides end-users with options that tend to be cost effective and reliable. Technological advancement is a key driver of productivity, and indicators in this area thus capture to some degree the level of technology to which transport and logistics operators have access.

4. *Cost* refers to the ability of end-users to access cost effective transport and logistics solutions. Of course, cost is not synonymous with any of the other dimensions and is determined by a range of additional factors. Price levels tend to be higher for consumer markets that are relatively farther away from gateway ports or, on a ton–kilometer basis, will be higher for shorter distances to consumer markets. Cost is an important determinant of end-user behavior and as such is an important dimension of overall performance.

5. *Quality* is the ability of transport and logistics service providers to produce services that are of high quality or, alternatively, is the quality of transport and logistics infrastructure. Quality is distinguished from availability in that the former is a measure of performance and the latter is just a measure of quantity. Similarly, quality is distinguished from productivity by the fact that it captures factors that are not typically associated with that concept: for instance, in the case of road transport, the percentage of paved roads is an important indicator of infrastructure quality, but the overall productivity of the road transport sector is determined by the interplay between that infrastructure and private service providers.

6. *Environmental impact* is an element of transport and logistics performance that shippers and sector actors are increasingly taking into account. Transport and logistics produce emissions of CO2 as well as other pollutants. Packaging material used by shipping services also needs to be disposed of after use, which in turn has an environmental impact. Particularly in higher-income countries, shippers are increasingly demanding environmentally friendly transport and logistics options—the move towards "green logistics."

This following section of the Yearbook provides details on the Country Scorecard and Model Index methodologies, and highlights key results. Appendixes A to D describe the Yearbook database, the data collection process, the full technical detail of the Modal Index calculations and present the 26 Country Scorecards respectively.

2.1 COUNTRY SCORECARDS

The data reported in Appendix A are used in turn to generate the Country Scorecards presented in Appendix E. Each Scorecard presents information for the four modes of transport—road, rail, maritime and internal waterways, and air—and logistics separately. The data provided in the Scorecard cover the six performance dimensions described above. Table 1 provides the full list of data series included in the Country Scorecards and relate them to the six core performance dimensions.

In addition to the modal indicators, the Country Scorecards also present deflators such as country surface area, population, GDP, and total exports and imports. The purpose of these deflators is to make it possible to calculate "intensive" measures of performance (e.g., road network density), in addition to the raw, "extensive" data (e.g., length of the road network).

Table 1: Country Scorecard Indicators and Performance Dimensions

Sector	Unit	Dimension					
		Availability	Capacity	Productivity	Cost	Quality	Environmental Impact
Road							
Total Road Network	KM	•					
Heavy Vehicles	Number	•					
Motorway/Freeway/Express Road	KM	•					
Primary Network	KM	•					
Secondary Network	KM	•					
Other Networks	KM	•					
Domestic Freight Carried–Total	T		•				
Retail Price–Diesel	USD/L				•		
Average Freight Tariff	USD/TKM				•		
Estimated CO2 Emissions	T						•
Domestic Freight Carried–Productivity	M TKM			•			
Average Distance per Vehicle	KM/Year			•			
Paved Network (% Total)	KM					•	
Fleet Average Age	Years					•	
Rail							
Rail Network	KM	•					
Domestic Freight Carried–Total	T		•				
Railway Freight Companies	Number				•		
Average Freight Tariff	USD/TKM				•		
Estimated CO2 Emissions	T						•
Domestic Freight Carried–Productivity	M TKM			•			
Average Power of Freight Locomotives	HP					•	
Maritime and Inland Waterways							
Maximum Draft in Container Terminal	Ft	•					
Bridge (Gantry) Cranes	Number	•					
Container Storage Facilities Area	M2	•					
Container Terminals	Number	•					
Port Traffic	T		•				
Exports Port Traffic	T		•				
Imports Port Traffic	T		•				
Gateway Proximity to Population Center	Category				•		
Population Proximity to Gateway Port	%				•		
Gateway TEUs/Truck	TEU/Truck			•			
Container Terminal Utilization	Index			•			
Container Berth Length	M					•	
Liner Shipping Connectivity Index	Index					•	
Air							
International Airports with Cargo Terminal Facilities	Number	•					
Area of Cargo Facilities in International Airports	M2	•					
Domestic Freight Carried	T		•				
International Freight Carried	T		•				
Domestic Freight - Productivity	M TKM			•			
Logistics							
Logistics Centers' Surface Area	M2	•					
Logistics Performance Index Score	Index	•		•	•	•	
Logistics Performance Index Infrastructure Score	Index	•				•	

The Country Scorecards incorporate both intensive and extensive measures as appropriate. It is necessary to include both because some readers will be interested in the raw data, and will therefore need "extensive" data. Other readers will be interested in cross-country comparisons that do not reflect country size to an undue degree, and will therefore use "intensive" measures. Appendix A also defines the deflators selected for the Scorecards.

The data availability in the region varies from country to country. Table 2 presents the percentage of data availability for the 100 Yearbook indicators by mode. A traffic light color code shows the modes with better data availability (green cells) and highlights the modes with poor or non-data (red cells). The Latin and Central America regions have in average around 60 percent of total data availability while the Caribbean sub region only has 43 percent. In general, data for the road and maritime sectors are accessible. The important data gap in the pipeline and conveyor sector (between 13 and 15 percent in average in Latin and Central America countries and no data at all) was the reason to not include this sector in the Country Scorecards and to not calculate a Pipeline Index.

Table 2: Data Availability by Country (Percentage of Total Data)

LATIN AMERICA

	AR	BO	BR	CL	CO	EC	GY	PE	PY	SR	UY	VE
Gener'l	100	100	100	100	100	100	100	100	100	100	100	91
Road	97	45	94	61	100	55	61	61	97	39	87	26
Rail	58	53	63	53	47	5	5	58	0	0	74	5
Air	86	71	100	43	100	86	43	71	57	29	57	29
Port	74	16	84	84	84	68	74	89	53	74	89	53
Pipeline	0	25	25	75	50	0	0	0	0	0	0	0
Logistic	44	44	44	44	44	44	44	44	67	0	44	44
Total	76	48	80	66	80	52	52	67	61	39	77	35

CENTRAL AMERICA

	BZ	CR	SV	GT	HN	MX	NI	PA
Gener'l	100	100	100	100	91	100	100	100
Road	61	81	81	84	77	94	81	84
Rail	0	21	11	0	0	74	0	42
Air	43	71	71	71	86	86	43	86
Port	53	74	68	74	74	79	79	74
Pipeline	0	25	0	25	50	0	0	0
Logistic	0	44	44	44	56	56	0	44
Total	43	64	60	61	61	80	54	69

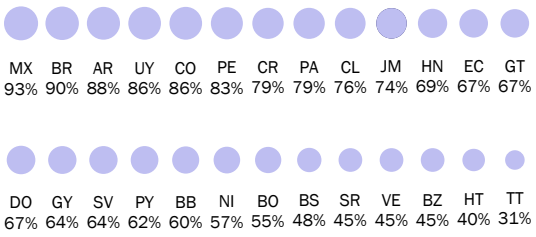
CARIBBEAN

	BB	BS	DO	HT	JM	TT
Gener'l	100	100	91	73	100	100
Road	45	32	58	23	61	29
Rail	0	0	0	0	26	0
Air	71	29	71	14	71	29
Port	79	58	68	68	84	53
Pipeline	0	0	0	0	0	0
Logistic	22	44	44	44	44	0
Total	47	38	50	33	60	32

Source: Nathan Associates Inc.

Given the data collection challenges associated with producing this first edition of the Country Scorecards, we have incorporated a data percentage completion index for the selected 42 indicators as one of the data items with the expectation that countries will strive to report these data (Figure 1); the data generally are required for planning and setting investment priorities anyway. Not having these selected data available means countries with low completion rates encounter difficulties in making rationalized planning and investment decisions. Note also in some cases that some countries collect the information (e.g., vehicle registrations) necessary for generating relevant data, but do not process the data they have from the information.

Figure 1: Scorecard Indicators Data Completion Rate



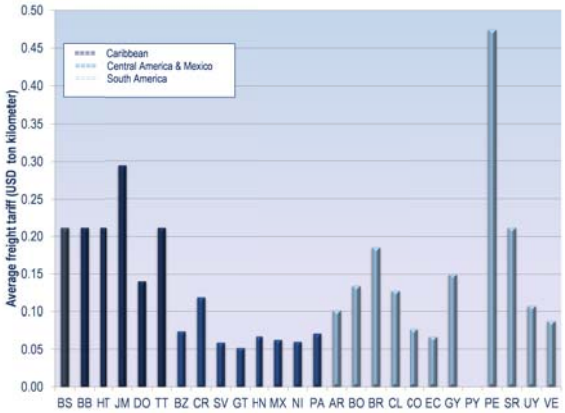
Source: Nathan Associates Inc.

2.2 SELECTED RESULTS FROM COUNTRY SCORECARDS

Based on the information compiled in the country scorecards, this section highlights relevant trends observed in transportation and logistics within the countries covered in the study.

In road transportation, the average freight tariff data for a 40 foot container (Figure 2) show that Central and South American countries have freight costs per metric ton ranging between 5 cents and 15 cents; Peru is the only country significantly outside this range. Caribbean countries as a group are significantly more expensive, with an average of 20 cents per ton. Appendix C presents the methodology to calculate the freight tariff per ton kilometer in countries in which data is not available.

Figure 2. Average Road Freight Tariff



Railway transportation (Figure 3) is almost nonexistent in Central America and the Caribbean; only Jamaica and Costa Rica have operational railways. Argentina, Brazil, Chile, Colombia, and Mexico are the only countries with intensive freight operations in their railway systems. Among this group of intensive users, Mexico has the most competitive tariffs at around 3 cents per ton–kilometer.

The maritime transportation indicator (Figure 4) shows that Brazil, Mexico, Colombia, Chile, and Peru handle the largest port volumes of the countries included in the study. It is significant to note that Brazil handles more than double the volume of the second country (Mexico). In terms of port operations, levels of competition seem to be low: 14 of the analyzed countries have only one port operator in their gateway ports, four countries have two, and only six countries have more than two. Mexico, Colombia, and Ecuador seem to have a competitive disadvantage: the distance between their main ports and major population centers is significantly higher (at least double) that in the rest of the analyzed countries.

Figure 3. Rail Freight Deflated by Population

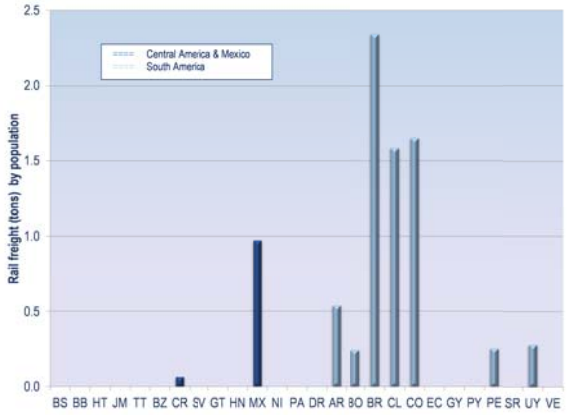
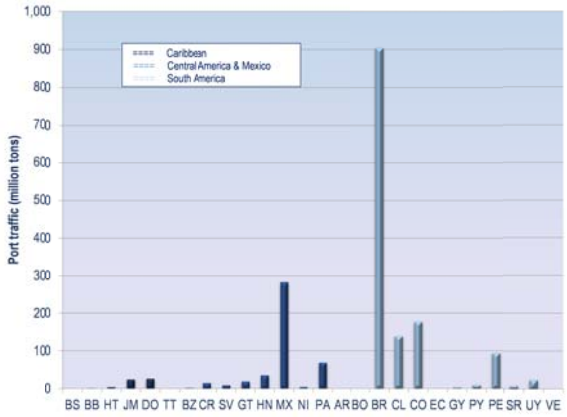


Figure 4. Port Traffic



For the analyzed group of countries, air freight (Figure 5), with the exception of Panama and Barbados, is less than 1.5 percent of the maritime freight volumes. Air transport indicators tend to be highly related to the size of the country and its population; therefore, Brazil is the undisputed leader in total air freight tonnages (Figure 6). However, it is worth noting that Colombia shows about 20 percent less air freight tonnage compared with Brazil's, which indicates for Colombia very high air freight activity relative to population. This is attributable in large part to Colombia's air freight reliance for flower and to a lesser extent textile-related exports.

Figure 5. International Air Freight (as % of Maritime Trade)

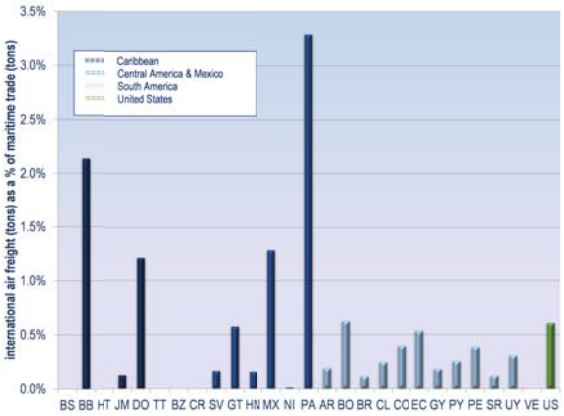
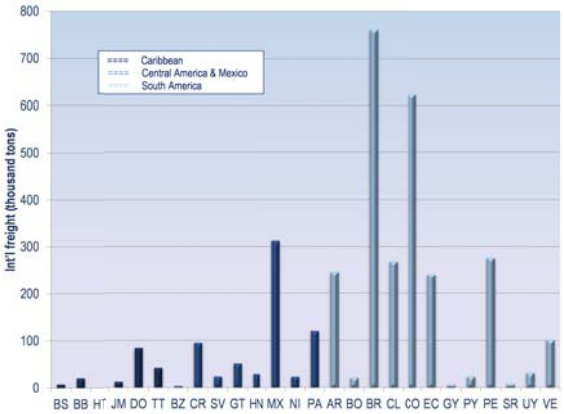


Figure 6. International Air Freight



2.3 TRANSPORT AND LOGISTICS MODAL INDEXES

In addition to the raw data contained in the Country Scorecards and the Yearbook database, a number of indices have been calculated as a way of summarizing performance. Each of the main modes of transport—road, rail, maritime, and air—has its own index, as does logistics, which is the set of processes that enables the modes to work together as efficiently as possible.

The method used to construct the indices is Principal Component Analysis (PCA). Full details are set out in Appendix D. PCA is a statistical technique for data compression. It takes a number of raw data series and compresses them into one or more summary indicators—"principal components," which are used here as indices—using an optimal weighting scheme. Each index is therefore a weighted average of the raw data used to produce it, with weights chosen so that the index accounts for the maximum possible proportion of the variance in the original data series.

PCA is a commonly used technique in statistics and econometrics. It has received a number of high profile applications in the transport and logistics context. For example, the World Bank's *Logistics Performance Index* (LPI) is a PCA-weighted average of six raw data series that capture performance along the most important dimensions of logistics activities.[1] Similarly, UNCTAD's *Liner Shipping Connectivity* uses PCA to produce an index based on a set of raw data that covers the main dimensions of international maritime transport.[2] Finally, the APEC Policy Support Unit has used PCA to produce an index of multimodal transport connectivity, this time based on raw performance data for the main modes of transport as well as the logistics sector.[3]

PCA determines weights based on a statistical procedure. They can therefore be considered objective, as they do not depend on the analyst's judgment. However, the raw data that go into the analysis have the potential to significantly affect results, and this represents an important analytical choice. The starting point for the index analysis in this case is the Country Scorecards. The approach taken in selecting data for inclusion in the PCA analysis, and thus the indexes, is to reconcile two competing criteria: 1) comprehensiveness and 2) data availability. Ideally, each index should cover as wide a range as possible of factors that influence transport and logistics performance.

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[1] The World Bank, *Connecting to Compete: Trade Logistics in the Global Economy, the Logistics Performance Index and its Indicators*, Washington, D.C., 2012 (www.worldbank.org/lpi).

[2] The Liner Shipping Connectivity Index (LSCI) is reported annually in: United Nations Conference on Trade and Development (UNCTAD), *Review of Maritime Transport,* Trade Logistics Branch of the Division on Technology and Logistics, Geneva, Switzerland (http://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=380); the LSCI tables can be accessed directly at: http://unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=92 .

[3] For a PCA application to multimodal connectivity, see Asia-Pacific Economic Cooperation (APEC), *The Economic Impact of Enhanced Multimodal Connectivity in the APEC Region*, APEC Policy Support Unit, Singapore, June 2012 (http://publications.apec.org/publication-detail.php?pub_id=1028).

However, it is necessary at the same time to be practical: missing observations prevent application of the PCA procedure and reduce the number of countries for which each index can be produced. There is necessarily a tension between the two goals. Future versions of the Yearbook, based on greater levels of data availability, may be able to relax that tension somewhat. At the present time, however, data availability is a serious constraint, and limits the amount of raw data that can be used to produce the PCA indices.

Road Index

The PCA is first applied to the road transport sector. Four series are used: road network density, as an indicator of infrastructure availability; the percentage of the road network that is paved, as an indicator of infrastructure quality; estimated CO2 emissions per heavy vehicle, as an indicator of environmental impact; and the average freight tariff deflated by per capita GDP in purchasing power parity (PPP) terms, as an indicator of the cost of road transport services. Higher scores on the first two data series translate into higher (better) index scores, as would be expected. Similarly, lower scores on the last two data series translate into higher (better) index scores.

Table 3: Road Index Components

Indicator	Dimension
Road network / country area	Availability
Paved network (%)	Quality
CO2 emissions / number of heavy vehicles	Environmental Impact
Average freight tariff / GDP PC	Cost

Results for 2012 are in Figure 7 and Table 4. The index—as is the case for all of the indices discussed in this section—is scaled so that the weakest performer in the region receives a score of one and the strongest performer receives a score of 100. Due to data availability restrictions, the index can be calculated for 19 of the 26 countries covered by the Yearbook. The United States is included as an extra-regional comparator country.

In terms of the pattern of regional performance, the figure shows that three small, Caribbean countries — Barbados,

Figure 7. Road Index by Subregion

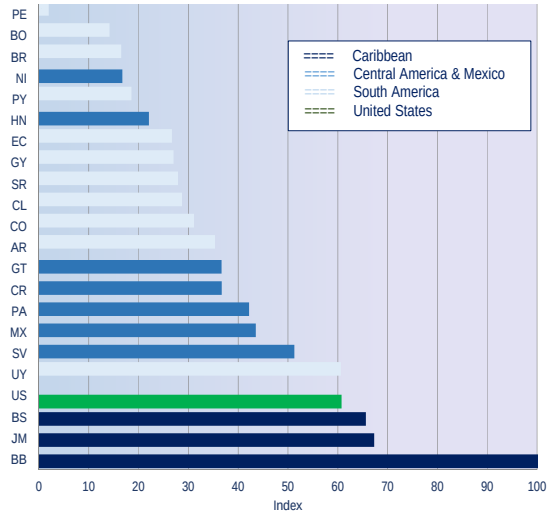


Table 4: Road Index Results

Rank	Country	Road Index
1	Barbados	100
2	Jamaica	66
3	Bahamas	65
4	United States	60
5	Uruguay	60
6	El Salvador	50
7	Mexico	43
8	Panama	41
9	Costa Rica	36
10	Guatemala	36
11	Argentina	34
12	Colombia	30
13	Chile	28
14	Surinam	27
15	Guyana	26
16	Ecuador	26
17	Honduras	21
18	Paraguay	18
19	Nicaragua	16
20	Brazil	16
21	Bolivia	13
22	Peru	1

Jamaica and the Bahamas -- have the highest index scores. The reason is that intensive measures are used for the calculation, and the countries have small but dense networks that are mostly paved. The United States comes in fourth place, which reflects its position as a developed country with high-quality infrastructure and services markets. Six countries score 50 or more, compared with the leading country at 100. After El Salvador (50), scores reduce gradually, with the exception of last-placed Peru (1). The average for Latin America and the Caribbean as a whole is 36, which suggests an overall mid-level of performance in the region, although there is of course a large degree of cross-country heterogeneity.

Results can also be analyzed on a sub-regional basis, breaking the countries into three groups: the Caribbean; Central America and Mexico; and South America. In the case of road transport, the last two groups of countries have very similar performance index scores: 35 and 25 respectively. The Caribbean sub-region has a significantly higher score, at 77. However, this result reflects two factors. First, the Caribbean countries are generally small, which results in high scores for network density. As a consequence of only having a small network, it is also a much easier proposition to pave a large proportion of it. Second, only three Caribbean countries are included in the index sample: Barbados, the Bahamas, and Jamaica. Other Caribbean countries would likely score much lower in the area of roads transport, so it seems likely that the average in this case is inflated due to data availability, which drives sample selection.

Rail Index

Next is the Rail Index. Of the 26 countries in the sample, 15 have a rail system. However, constraints on data availability mean that it is possible to calculate the index for only eight of them.

The index is based on three pieces of raw data: 1) network density (as an indicator of network availability); 2) the productivity of domestic freight carriage (as an indicator of productivity); and 3) the average freight tariff deflated by per capita GDP in PPP terms (as an indicator of the cost of rail transport services). A higher score on any of the three data series translates into a higher (better) index score. The reason for this result in the case of the average tariff is probably that higher prices reflect a higher quality of service, which reduces time and increases reliability, and which is therefore beneficial to the private sector.

Table 5: Rail Index Components

Indicator	Dimension
Rail network / country area	Availability
Domestic freight carried - productivity	Productivity
Average freight tariff / GDPPC	Cost

Results for 2012 are in Figure 8 and Table 6. The United States is again included as a comparator country. In this case, the United States' performance (100) is much higher than that of any of the regional countries. Performance falls off steadily from Mexico (15) to Argentina (5). The Latin American and Caribbean average in this case is 9, which indicates that performance in the region as a whole lags well behind the comparator country, namely the United States. In part, this is to be expected as rail transport is much better developed in the United States than elsewhere, with this development reflected in a relatively extensive and dense network. Although average tariffs are much higher in the United States than elsewhere, they are still low when compared with the country's high level of per capita income. Overall, however, it is the United States' strong performance in terms of productivity that results in such a striking difference between the Latin American countries and the United States comparator in this case.

Figure 8. Rail Index by Subregion

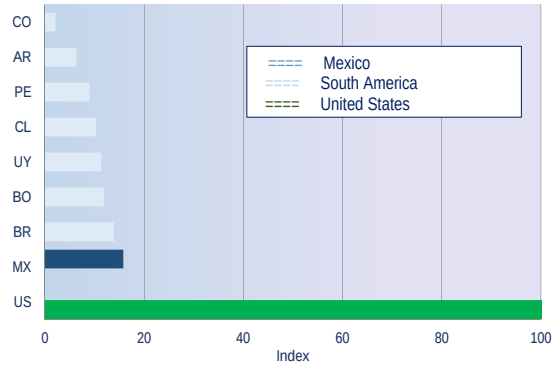


Table 6: Rail Index Results

Rank	Country	Rail Index
1	United States	100
2	Mexico	15
3	Brazil	13
4	Bolivia	11
5	Uruguay	10
6	Chile	9
7	Peru	8
8	Argentina	5
9	Colombia	1

At the sub-regional level, only Central America and South America can be compared: no data are available for the Caribbean, generally because it does not have a rail system. Indeed, outside South America only Mexico has needed data, for which the country receives a score of 15. The South American average is 8. Given the obvious difficulties of sample composition, it is difficult to identify performance differences at the sub-regional level. There is weak evidence that Central America performs more strongly than South America, but sample selection plays a major role in this result.

Maritime Index

The Maritime Index is constructed in the same way as for the two preceding sectors. PCA is used to compress three data series into one summary index with objectively chosen weights. The raw data series are: the maximum draft in the container terminal (as an indicator of infrastructure availability); UNCTAD's Liner Shipping Connectivity Index (as an indicator of infrastructure and service sector quality); and total port traffic per capita population (as an indicator of capacity). Higher scores on each of these series mean a higher index score following application of PCA. Constraints on data availability mean that it is possible to prepare a maritime index for only 19 out of the 26 regional countries, along with the United States as a comparator country.

Table 7: Maritime Index Components

Indicator	Dimension
Maximum draft in container terminal	Availability
Liner Shipping Connectivity Index	Quality
Port traffic / population	Capacity

Results for 2012 are in Figure 9 and Table 8. The leading country in Latin America and the Caribbean is Panama, closely followed by Brazil. These results are unsurprising in light of the important role in maritime transport played by both countries. Overall, however, the United States scores higher than either of these countries. The difference in this case is less stark than for some other sectors, such as rail transport. One of the main reasons for the United States' higher level of performance is that it has a much higher score than any of the regional countries on UNCTAD's Liner Shipping Connectivity Index (92, versus 42 for second-placed Panama). The United States' role in global trade as well as its access to both trans-Atlantic and trans-Pacific routes has a significant impact on results.

Figure 9. Maritime Index by Subregion

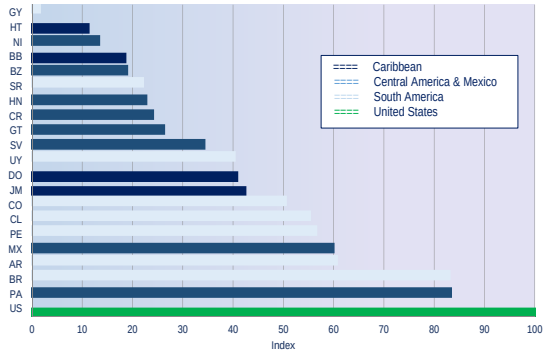


Table 8: Maritime Index Results.

Rank	Country	Maritime Index
1	United States	100
2	Panama	83
3	Brazil	82
4	Argentina	60
5	Mexico	59
6	Peru	56
7	Chile	55
8	Colombia	50
9	Jamaica	42
10	Dominican Republic	40
11	Uruguay	40
12	El Salvador	34
13	Guatemala	26
14	Costa Rica	23
15	Honduras	22
16	Suriname	22
17	Belize	18
18	Barbados	18
19	Nicaragua	13
20	Haiti	11
21	Guyana	1

After Brazil, performance falls off relatively steadily, with a few more significant jumps. The largest is at the low performance end, where Guyana scores 1 compared with Haiti's 11. The average for Latin America and the Caribbean taken together is 38, which is comparable to the score for roads but well in excess of the rail score.

In the case of maritime transport, South America clearly performs better than the other two regions. It has an average score of 46, compared with 35 in Central America, and 28 in the Caribbean. The performance gap with the Caribbean is particularly striking. Both of the larger sub-regions have stronger performers—such as Brazil and Panama—but a number of Central American countries, such as Nicaragua, perform poorly, which takes the sub-regional average down.

Air Index

The Air Index is the simple average of two series: airport density, as an indicator of infrastructure availability; and international freight per head of population, as an indicator of capacity. (In a case, like this one, of two series with identical means and variances, PCA produces a simple average.)

Table 9: Air Index Components

Indicator	Dimension
International airports with cargo terminal facilities / country area	Availability
International freight carried / population	Capacity

It is not possible to include additional raw data at this time due to availability constraints. However, the index as constructed covers 25 of 26 countries in Latin America and the Caribbean, along with the United States as a comparator country (Figure 10 and Table 10).

As in the case of roads, the use of intensive measures means that a small Caribbean country, Barbados, comes out on top of the list. Indeed, the first four countries are all small, and the first large country in the list is the United States, which comes in fifth. The reason is that these countries are geographically small, with very small populations, which means that on a per unit area or per head of population basis, they perform very well.

Other than the difference between Barbados and the next-placed country, air index scores fall off steadily. The Latin American and Caribbean average is 11, compared with a score of 16 for the United States. Excluding Barbados from the calculation, however, causes the average to drop significantly, to 7. The general picture that emerges from the data is therefore one of weaker performance in Latin America and the Caribbean compared with the United States.

Figure 10. Air Index by Subregion

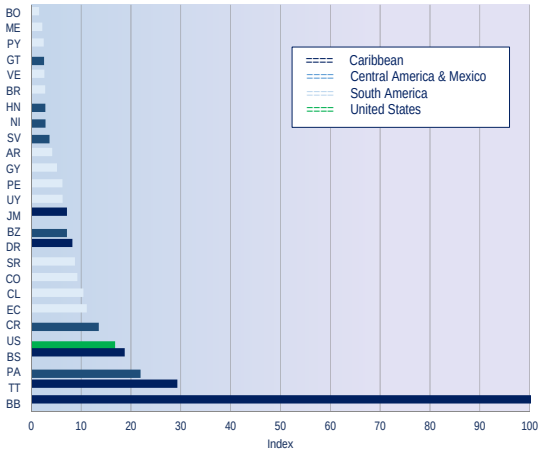


Table 10: Air Index Results

Rank	Country	Air Index
1	Barbados	100
2	Trinidad and Tobago	29
3	Panama	21
4	Bahamas	18
5	United States	16
6	Costa Rica	13
7	Ecuador	11
8	Chile	10
9	Colombia	9
10	Suriname	8
11	Dominican Republic	8
12	Belize	7
13	Jamaica	7
14	Uruguay	6
15	Peru	6
16	Guyana	5
17	Argentina	4
18	El Salvador	3
19	Nicaragua	2
20	Honduras	2
21	Brazil	2
22	Venezuela	2
23	Guatemala	2
24	Paraguay	2
25	Mexico	2
26	Bolivia	1

Even excluding the extreme case of Barbados, the Caribbean performs more strongly on average than the other two sub-regions in the case of air transport. The Caribbean has an average score of 32 including Barbados, and 15 excluding it. By contrast, Central America (including Mexico) and South America have reasonably similar levels of performance, at 7 and 5 respectively. Although the index tends to rate small countries very highly due to the use of intensive measures, the United States' score (16) suggests that many countries in the region have much to do to improve their air transport systems.

Logistics Index

The Logistics Index is based on two pieces of raw data from the World Bank's *Logistics Performance Index*: an index of infrastructure availability and quality; and an index of logistics competence, as an indicator of the productivity and cost associated with logistics services. Both data series are on the same scale, so PCA produces a simple average as the summary index, which was also the case for air transport. The overall *Logistics Performance Index* is not included because it already takes account these two original indices, and hence there would be double counting. Data are available for 21 Latin American and Caribbean countries and the United States as a comparator country.

Table 11: Logistics Index Components

Indicator	Dimensions
LPI infrastructure score	Availability and quality
LPI services (logistics competence) score	Productivity and cost

Results for 2012 are in Figure 11 and Table 12. The United States is by far the strongest performer in logistics, which is in line with expectations. The highest performing Latin American and Caribbean countries are Brazil and Chile, with scores of 59 and 58, respectively. With the exception of the difference between the United States and the leading regional countries, scores drop off steadily with the exception of Haiti (1), which scores substantially lower than the next lowest country (Jamaica, with a score of 22). The

average for Latin America and the Caribbean is 39, which indicates that, on the whole, performance in this area has significant space for catching up with respect to the comparator country, the United States.

Breaking down the data into sub-regional groups shows that performance in the Caribbean is significantly lower than elsewhere: it has an average score of 27, compared with 41 in Central America and 42 in South America. There is therefore considerable work for all sub-regions to do in catching up to the leaders, but deficiencies in the logistics sector are particularly evident in the Caribbean.

Figure 11. Air Index by Subregion

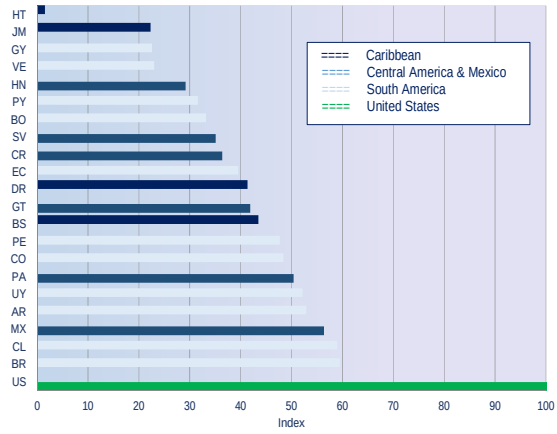


Table 12: Logistics Index Results

Rank	Country	Logistics Index
1	United States	100
2	Brazil	59
3	Chile	58
4	Mexico	56
5	Argentina	52
6	Uruguay	52
7	Panama	50
8	Colombia	48
9	Peru	47
10	Bahamas	43
11	Guatemala	41
12	Dominican Republic	41
13	Ecuador	39
14	Costa Rica	36
15	El Salvador	35
16	Bolivia	33
17	Paraguay	31
18	Honduras	29
19	Venezuela	22
20	Guyana	22
21	Jamaica	22
22	Haiti	1

3. Challenges for Policymakers

This Section of the Yearbook discusses some of the challenges that policymakers face in the transport and logistics sectors based on the data and results presented in Section 2. The discussion focuses on four areas: data collection, performance tracking and strategy for sustainable data; improving infrastructure and service sector performance; leveraging transport and logistics for trade; and environmentally friendly transport and logistics.

3.1 DATA COLLECTION, PERFORMANCE TRACKING AND STRATEGY FOR SUSTAINABLE DATA

As noted above, data are crucial in policymakers' efforts to improve performance in the transport and logistics sector. Measurement enables accurate diagnosis of problems, learning from successful interventions, and tracking of performance changes over time so that diagnosis and learning can become dynamic programs rather than one-off events.

Despite the importance of data collection for planning, upgrading, and investment purposes, experience with the Yearbook database suggests that this is an area of serious weakness on the ground in a number of countries. Overall, the database completion rate is 52 percent; the figure for the most important 2012 data in the Country Scorecards is better, at 66 percent. However, in both cases, results indicate that there is considerable room for improvement in data collection and dissemination.

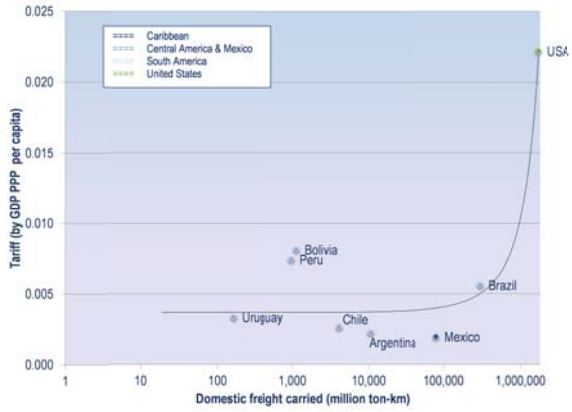
One aspect of improving data collection and performance tracking relates to statistical capacity building. There is clear need for a region-wide program targeting the important yet often underreported statistics in the Yearbook database. Reasons for the lack of data vary from country to country, but a region-wide approach has the benefit of facilitating information and experience sharing. In some cases, the data are not collected at all because statistical capacity is generally weak. In others, the data are collected but not analyzed or disseminated in an appropriate way. The solution for each problem is different, but some countries in the region have managed to overcome these types of difficulties. The Yearbook database therefore provides relatively complete statistical pictures in those cases. However, there is much to do in most countries in building capacity, ensuring that relevant data are both collected and analyzed, and improving dissemination so that data are available to industry, researchers, and policy experts.

A second aspect of improving data collection and performance tracking relates to more detailed data not presented in the Yearbook. The database and Scorecards are a just a starting point for the diagnosis of problems, solution design, and implementation monitoring. In most cases, far more detailed data are required at the level of individual pieces of infrastructure, such as ports, or at the corridor level in the case of transnational transport infrastructure, such as cross-border road networks. Cross-border links are vital to encourage intra-regional trade and, in some cases, extra-regional trade through well-developed infrastructure gateways.

Of course, care is needed in interpreting some data. In transport and logistics, considerable attention is sometimes paid to average tariffs as an indicator of cost. However, cost is only one dimension of performance. Low cost is not an unambiguous indicator of high performance; it can also be linked to low productivity, or low service quality. From a private sector perspective, what matters is the overall balance between cost, time, and reliability. Companies will sometimes be willing to pay more for a superior service. Quality upgrading, to the extent that it requires investments and ongoing maintenance costs from transport and logistics operators, can sometimes lead to higher, not lower, costs. Of course, high cost can also be a function of a lack of competition in transport markets, in which case it

is usually linked to poor performance. Interpreting cost therefore needs to be done on a case-by-case basis, and from a whole of supply chain perspective. As Figure 12 indicates, data from the Yearbook suggest that average tariffs and productivity are positively linked in the case of rail services in Latin America and the Caribbean.

Figure 12. Productivity vs. Rail Tariff



Data Collection Challenges

Various challenges have been encountered during data collection. Many countries do not collect data for the different transport modes because they do not consider it important or necessary for their own information system. Another reason is insufficient financial resources. In cases where information is collected, it may happen that no formal systematization of the data is done. This means that even if the information exists it is not possible to use it because the information is not processed adequately. Additionally, because not all the countries collect the same type of information, data are not always homogeneous. This makes the data less comparable.

A second challenge found was the lack of coordination between the institutions that had data on transport modes. In many countries the statistical office or the central bank is responsible for the national statistical system and they are responsible for conducting the surveys needed to nourish the different statistical programs. In the case of transport statistics, the ministries of public works and transportation collect a lot of information that is not shared with other institutions. Information is stored in different organizations without being used.

Another difficulty is that many national agencies were reluctant to give some piece of information because they considered it "sensitive". They needed the approval of high level directors to provide the data. Although formal letters introducing presenting the project have been sent to the different institutions, the countries did not have as a priority to supply the information. A fourth problem was with countries where a certain transportation service is managed by a private company that has the monopoly on the service. In those cases countries refused to supply the data, saying the information was confidential.

It is important to note that the transport sector is organized in some cases through private business associations. The associations also collect information, so it is necessary to take them into consideration when researching this sector. Even if the associations have partial data, the information could be complemented with that of the public sector to have the entire picture of a certain transportation mode.

Strategies for Sustainable Data Collection

A first step toward improving the data collection procedure is to create awareness of the importance of transport and logistics statistics for policymakers and for decision-making. To make the right decisions, it is of utmost importance to have accurate and updated information. This idea can be disseminated through regional meetings involving stakeholders from the different countries. Countries should be encouraged to collect data regularly on the transport and logistics sector. A seminar presenting the Yearbook's results and the difficulties encountered could show the countries the present status of data available in the region.

A second step to improve transport statistics is to offer the countries technical assistance on how to collect, process, and validate the key information needed to have a clear picture of the sector's structure and performance.

A third strategy to improve the data available is to help the countries implement the transport satellite account as a component of the national measure of economic activity. Clear guidelines on the implementation of this account can be given through a technical document and through technical assistance.

A fourth strategy to coordinate data collection efforts in the region is to establish a regular statistical program at national levels with clear common guidelines and objectives. With the data obtained in this program, indexes could be built to measure the performance and contribution of the transport and logistics sector.

The project could be organized as follows: It would have centralized coordination, which could be carried out by an international organization. This coordinator would search for the participation and commitment of the participating countries. The coordinator would bring together the government institutions involved in the transport sector in the different countries such as the road authority, the port authority, the civil aviation authority, the ministry of public works, and the ministry of energy, among others. The private sector's representatives could also participate.

The coordinator would build a list of indicators with definitions to be presented to the local authorities. This presentation could be done at a high-level meeting so that decision-makers of the transport sector could be aware of what is involved in the program. This would be like a formal presentation of the project where main objectives and guidelines would be explained. There would then be a second meeting at a technical level with representatives of each transportation mode. This could be done in sub-meetings, that is to say, one meeting with road transport representatives, one with air transport representatives, and so forth. The list of indicators and the definitions would be presented and discussed to check if changes need to be introduced. More indicators that countries were interested in could be added to the list. The key issue to be discussed in this meeting would be the definition of the indicators to guarantee the comparability of the data among countries. Data collection forms should be designed homogeneously so that all participating countries gathered the same information and could account for any deviations found in the field. In this meeting a clear indication of how data would be submitted to the coordinator would be given. National Accounts experts could also be invited to participate, because they are the main information users when calculating GDP or when trying to build the transport satellite account. They have a clear view of the data requirements for those calculations.

The coordinator would give the countries a certain period of time (3 to 4 months) to check for data availability and to make a first collection of data. Information gathered for the Yearbook could be the starting point for this process. The country spreadsheets prepared for the Yearbook could be distributed among the countries so that they could check them and complete them. This first data collection period would be like a “diagnose phase,” because countries would need to verify exactly which type of information is available and which information should start being collected.

After this first data collection period, the available data would be submitted to the coordinator. The coordinator would then validate the information, look for outliers and send feedback to the countries. This person would also check to determine the indicators for which no information is available at all. The data collected and the problems encountered in this first round could be discussed in a second meeting at technical level. Countries would present the difficulties encountered in the field as well as their experience with the lack of data. The coordinator could give guidelines to countries lacking information on a particular transportation mode so that the country could start collecting and systematizing the information. This would be mainly the problem of roads, pipelines, and logistics data. Common guidelines could be given to the countries so that they all started from the same basis. Surveys could be implemented for those transportation modes where no data have been collected. There would be then a second period of data collection and data processing in the countries; this could last approximately 6 months. Countries would then send the information to the coordinator. The coordinator would validate the information

and look for outliers in the data. A first round of index calculations could be implemented at this stage with the data gathered.

A third data collection period could be instrumented to complete the requested information and to double-check data from previous collection rounds. This could take up to 2 or 3 months. A final meeting at technical level could be held to discuss the final results.

The key to succeed in this type of programs is the commitment of high-level authorities and of the technical experts to provide the information accurately and on time. Additionally, financial resources need to be available to support the data collection efforts.

3.2 IMPROVING INFRASTRUCTURE AND SERVICE SECTOR PERFORMANCE

In transport and logistics markets, infrastructure and services interact against a background of regulation to influence overall performance. All factors are important. Infrastructure reforms sometimes do not bear the expected fruit because of inefficient services markets that allow operators to capture the gains from reform as economic rents. Similarly, service sector reforms, for example to introduce greater competition, can only improve overall performance to a certain degree in the absence of infrastructure upgrading. It is therefore important for policymakers to keep both aspects in mind.

In terms of infrastructure availability, the situation varies markedly across Latin American and Caribbean countries. Figure 13 shows the case of air transport: the number of international airports with cargo terminal facilities is highly variable from country to country. Of course, country size and level of development both influence these numbers. Nevertheless, the point remains that in a number of countries in the region, infrastructure investments remain a high-priority issue.

Investments in infrastructure—accompanied by the setting aside of funds for ongoing maintenance—can promote substantial performance improvements. In addition to improving the time, cost, and reliability of transport and logistics processes, the investments can have flow-on benefits to areas such as connectivity. For example, Figure 14 shows that the maximum draft in container terminals across the region is positively correlated with maritime connectivity.

Figure 13. International Airports with Cargo Terminal Facilities

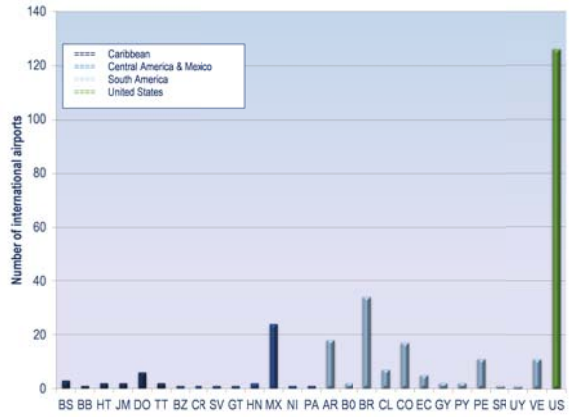
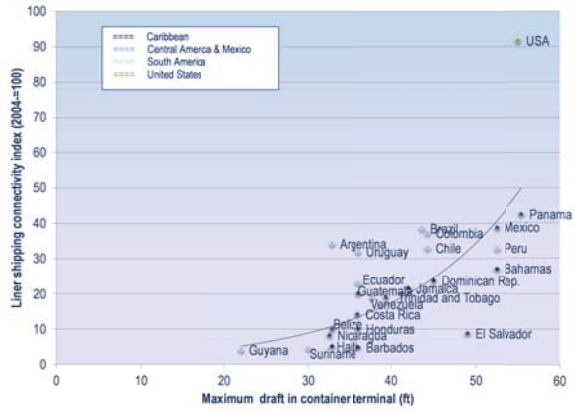


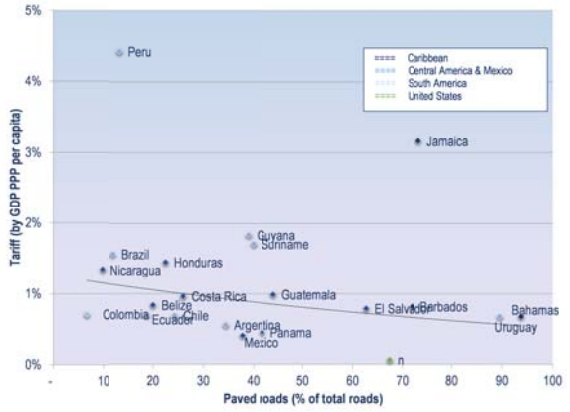
Figure 14. Maximum Draught vs Maritime Connectivity Index



As it will be discussed in Section 3.3 below, connectivity is itself a major determinant of trade outcomes. Upgrading infrastructure, particularly in areas such as road and maritime transport, can therefore have major trade implications. These two modes of transport are particularly important from a trade point of view because they carry a large amount of goods trade by both volume and value. Air freight tends to be limited to merchandise with a high value-to-weight ratio, and is overall less developed in the region than these two other modes (Figure 5 in section 2.2).

As noted above, infrastructure can also have an important impact on services markets, and the interaction between the two influences overall performance of the sector. Although cost is not an unambiguous indicator of performance, the Yearbook data for road transport show a clear link between the quality of road transport infrastructure and the cost of road transport services: better quality infrastructure is associated with lower-cost road transport services (Figure 15). Of course, the full gains from infrastructure improvements are passed along only to road transport users—and through them, final consumers—in a relatively competitive environment. The link is, however, clear using cross-country data for the Latin America and Caribbean region.

Figure 15. Road Tariff (as a % of GDP) vs. Percentage of Paved Roads



3.3 LEVERAGING TRANSPORT AND LOGISTICS FOR TRADE

Increased intra- and extra-regional trade integration is high on the policy agendas of many countries in the region. Transport and logistics, if appropriately leveraged, can be an important way of moving forward in this area. Results from the Yearbook support this view and highlight some important considerations for policymakers when looking for ways in which transport and logistics upgrading can best support international trade.

First, logistics performance is particularly important for trade in the region. Figure 16 shows that there is a strong, positive correlation between the World Bank's Logistics Performance Index and trade outcomes (the sum of exports and imports by value). This result shows that Latin America and the Caribbean is no exception to the general trends noted in the Logistics Performance Index Reports from 2007–2012: logistics performance is an important driver of trade.

Moreover, logistics is believed to be particularly important for emerging trade in global value chains. Trade in global value chains often requires that intermediate inputs cross borders multiple times before they finally reach the consumer market as a finished product. Firms involved in this kind of internationalized production structure maintain very low levels of inventory, and rely on just-in-time methods of management. It is therefore crucial that goods arrive reliably on time, in a fit state, and at minimum cost while taking account of the quality of service provided. All of these factors are reflected in measures like the Logistics Performance Index. Importantly, trade in global value chains is not limited to sectors such as consumer electronics; it increasingly covers important sectors for some countries in the region, such as textiles and apparel and agribusiness. Although many other challenges exist for firms seeking to break into these chains, or move up to higher value-added activities, logistics is an important part of the equation.

Another aspect of transport and logistics markets that is particularly important for trade is connectivity. A recent World Bank estimate suggests that together, logistics and connectivity are more important determinants than geographical distance of trade costs between countries.[4] Although geography plays a significant role in shaping the global pattern of production and trade, countries can do much to overcome factors such as distance. Improving connectivity is one such action. As Figure 17 demonstrates, there is again a strong positive correlation between maritime connectivity and trade volume in the Latin American and Caribbean region.

[4] Arvis, Jean-Francois; Duval, Yann; Shepherd, Ben; and Utoktham, Chorthip; Trade Costs in the Developing World *1995–2010*, Policy Research Working Paper 6309The World Bank, January 2013. Policy Research Working Paper 6309

Figure 16. Trade Value vs. Logistics Performance Index

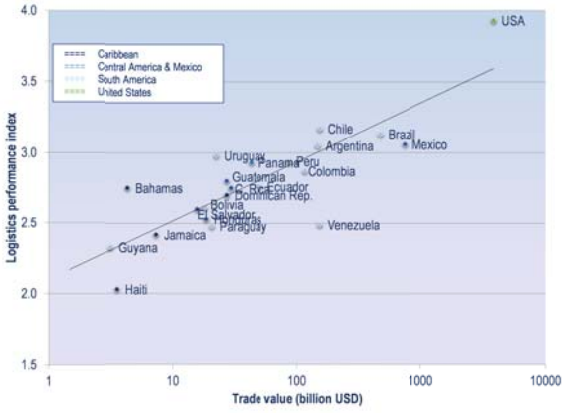
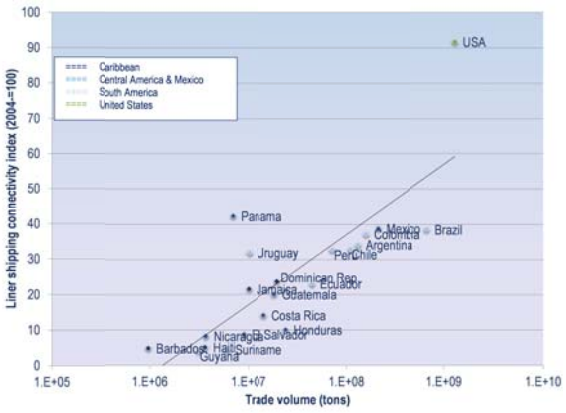


Figure 17. Trade Volume vs Maritime Connectivity Index



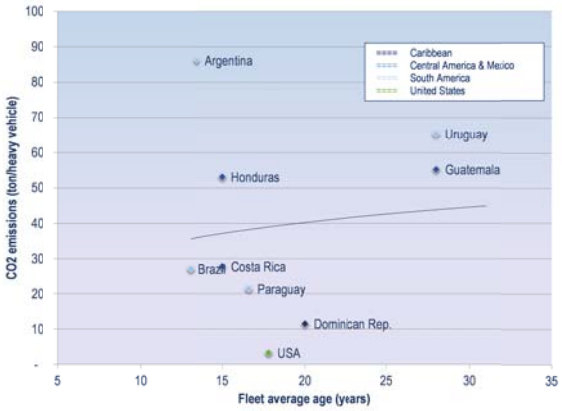
3.4 ENVIRONMENTALLY FRIENDLY TRANSPORT AND LOGISTICS

Shippers around the world, but particularly in the developed Northern markets, are increasingly demanding environmentally friendly options from transport and logistics service providers: this is the rise of "green logistics." Latin American and Caribbean countries are not immune from this trend. Two main factors are at play: demand from domestic consumers who are becoming better informed on environmental issues; and demand from overseas consumers, particularly in the United States, who are concerned with issues such as carbon dioxide emissions from the transport sector.

Dealing effectively with environmental challenges requires an approach that encompasses infrastructure, services, regulation, and private sector development. Policy intervention is often justified on the basis that environmental issues, such as pollution or carbon dioxide emissions, create negative externalities that can be corrected by appropriate taxes or other regulations.

As an example of the types of issues that arise, Figure 18 shows the positive correlation between carbon dioxide emissions of the road transport sector and average fleet age. There is a clear negative environmental effect, which is to be expected: older vehicles generally emit higher levels of carbon dioxide than newer ones. One possible way of addressing this issue in the absence of a comprehensive scheme to price carbon emissions would be to encourage fleet renewal on a policy level, through taxes or subsidies. Alternatively, tougher emissions standards would lead to retirement of older vehicles and their replacement with newer ones. The investment costs involved for operators would sometimes be substantial, and costs might increase as a result. As indicated previously in this section, however, cost is not an unambiguous measure of performance: in this case, cost increases associated with the use of newer vehicles that are more productive and emit less carbon dioxide may well be viewed as a positive overall development by the user and consumer communities. The view could eventually be shared by truck operators as maintenance and operational costs of newer fleets are lower than aged fleets; aged fleets are at greater risk of unplanned maintenance and disruptive vehicle downtime.

Figure 18. Fleet Average Age vs. CO2 Emissions



4. Conclusion and Policy Implications

Capacity and efficiency of Latin America's and the Caribbean's transportation system is an important determinant of future trade and hence economic growth. Not only are freight transport facilities a prerequisite for trade, but the good performance of those facilities will reduce transport logistics and production costs. Selecting meaningful and effective measures of freight transport performance are becoming more important due to the increasing transport system costs; their effects on competitiveness; and market, regulatory and public pressures for improvements. As production plants become more efficient and technological, the supply chain becomes more critical for reducing product costs. Effectively, as Michael Porter has suggested, the supply chain has become the value chain.

Many freight transport metrics are already in use today. The World Economic Forum's *Global Competitiveness Report*, the World Bank's *Doing Business* and *Logistics Performance Index* reports, and the increasing focus in the academic literature to freight systems performance measures are emblematic of the greater awareness of the role that transport and logistics infrastructure play in economic growth. The Economic Forum and World Bank reports depend largely on perception surveys; while useful, they do not provide the detailed benchmark information from which countries can gauge their progress and relative competitiveness.

The experience in producing the Yearbook's first edition underscores the need for countries to collect data. Some countries have basic data for generating statistics but do not process what they have. Motor vehicle authorities, for example, collect vehicle type, weight, and age for vehicle registration purposes, but do not produce these data. The inclusion of the data availability metric, we hope, will encourage countries to produce the data to allow for comparative performance benchmarking and to gauge the impact of their policy changes, infrastructure improvements, and regulatory reforms over time.

We have outlined a strategy for ensuring the sustainability of the Yearbook in the coming years. Raising the level of awareness of the importance of data collection and reporting, providing technical assistance and guidelines to countries in data collection and processing, implementing satellite accounts as a component of GDP, improving coordination across transport modal agencies to share and report data they collect, engaging transport associations in the data reporting efforts, and enlisting a coordinator and country-level sub-coordinators are all important for generating the Yearbook data that are consistent, reliable, and periodically updated. Digitalization of the transport activity should be encouraged to facilitate data sharing among private and public sectors.

With the use of the Yearbook's data and indices, countries can anticipate and better respond to needed changes in their freight transport and logistics systems. Not generating the reliable data the Yearbook engenders means a country's competitive stance could be curtailed, new business and investment activity may be discouraged, and access to domestic and foreign markets may be more limited. These are issues of concern to the public agencies that have a mission to stimulate the economy and allow for the ease of flow of people and goods. They are also of concern to the private sector, which has at stake the ability to conduct business profitably, productively, and at reasonable cost. Additionally, since both sectors rely on data analysis to support policies and logistics operations that affect each other, shortening the information gap among them is crucial.

Appendix A: Yearbook Indicators

COUNTRY SCORECARD INDICATORS

The second page of the Country Scorecards shows the country performance for each of the selected 42 indicators presented in Table 1. The first page of the Country Scorecards displays also some general indicators which are used to create additional performance indicators. For clarification purposes, definition of each indicator can be found below.

General Indicators

- Transport share of GDP (%): Extent of the transport sector in the total GDP. Each country specifies how it is computed using the International Standard Industrial Classification (ISIC).
- Population (millions): Total number of inhabitants of a country.
- Land area (square kilometers): Area occupied by the country.
- Gross Domestic Product (GDP) (US$ billions): Economic indicator that reflects the total output of goods and services (monetary value) associated with a country over a period of time (year).
- Transport service imports (US$ billions): Monetary value of all services related to the transport sector, imported by a country.
- Transport service exports (US$ (billions): Monetary value of all services related to the transport sector, exported by a country.

Road Indicators

- Road network (kilometers): Consisting of paved and unpaved network. Rural roads are included.
- Motorway/freeway/express road (kilometers): No standardized definition. Each country has a specific classification. Indicated in each country.
- Primary network (kilometers): No standardized definition. Each country has a specific classification. Indicated in each country.
- Secondary network (kilometers): No standardized definition. Each country has a specific classification. Indicated in each country.
- Other networks (kilometers): No standardized definition. Each country has a specific classification. Indicated in each country.
- Paved network (% total): Percentage of paved road network relative to the total or primary network. Indicated in each country.
- Heavy vehicles (# vehicles): Number of vehicles used to carry freight.
- Fleet average age (years): Average number of years of the active truck fleet in the country.
- Retail diesel oil price (US$/liter): Annual average price per liter of diesel fuel type.
- Estimated CO2 emissions (tons): Carbon dioxide emissions due to road transport activity.
- Domestic road freight productivity (million ton-kilometers): Average weight per kilometer traveled of cargo transported by road within the national territory.
- Domestic road freight carried (tons): Weight of cargo transported by road within the national territory.
- Average distance per vehicle (kilometers): Average distance traveled in a year by a freight carrier.
- Average road freight tariff (US$/ton-kilometers; 40-ft container): Average dollar value per ton-kilometer. Base rate refers to the price of transporting a 40-foot container. It is assumed that the truck can load 34 tons. Appendix C presents the details for calculating the road tariffs.

Rail Indicators

- Railway network (kilometers): Total length of the national railway network in operation.
- Average power of freight locomotives (horse power): Average power of available locomotives used to transport goods.
- Railway freight companies (# companies): Number of companies engaged in related railway freight activities.
- Estimated CO2 emissions (tons): Carbon dioxide emissions due to railway transport activity.
- Domestic rail freight productivity (million ton-kilometers): Average weight per kilometer traveled of cargo transported by rail within the national territory.
- Domestic rail freight carried (tons): Weight of cargo transported by rail within the national territory.
- Average rail freight tariff (US$/ton-kilometers; 40-ft container): Average dollar value per ton-kilometer. Base rate refers to the price of transporting a 40-foot container.

Port Indicators

- Maximum draft in container terminal (feet): Depth of the maneuvering and berthing areas in the main port which determines maximum vessel draft allowed.
- Bridge (gantry) cranes (# bridge cranes): Total number of gantry cranes operating in the main port of each country.
- Container and multipurpose berth length (meters): Quay length of each country's main port.
- Container storage facilities area (square meters): Total existing container yard area of the main port of each country.
- Total port traffic (tons): Total volume of maritime cargo handled by the port system of each country. Includes imports, exports, shipping and transit.
- Exports port traffic (tons): Total volume of maritime cargo handled by the port system of each country for exports.
- Imports port traffic (tons): Total volume of maritime cargo handled by the port system of each country for imports.
- Liner shipping connectivity index (2004 = 100): Level of integration and connectivity of a country with global maritime network, based on the conditions of maritime transport of that country.
- Container terminal utilization (%): Degree of utilization for the three main components of a container terminal: berth length, terminal area and specialized equipment (gantry cranes). Annual output (TEU) per unit of equipment (cranes), berth length and terminal area can be calculated and compared with performance averages for the region as published by industry sources (Drewry). The Latin America average equals 100%.
- Container terminal extent of competition (# terminals): Number of terminals serving the main consumer market.
- Gateway proximity to population center (category): Proximity of the country's main production/consumption center to the main port. Category 1 proximity includes population center within 0-24 km of its gateway, category 2 proximity within 25-59 km, category 3 proximity within 60-124 km, category 4 proximity within 125-249 km, category 5 proximity within 250-499 km, and category 6 proximity more than 500 km.
- Truck supply relative to port volume (TEU/truck): Indicates availability of road transport. It is constructed with the number of mobilized containers by the port (including imports and exports) divided by the number of vehicles used for road freight.

Air Indicators

- International airports with cargo terminal facilities (# airports): Number of international airports with facilities for international air cargo handling.
- Area of cargo facilities in international airports with cargo terminal facilities (square meters): Surface

occupied by cargo terminal area at international airports.

- Domestic air freight carried (tons): Weight of cargo transported by air inside the country.
- International air freight carried (tons): Weight of cargo transported internationally by air.
- Domestic air freight productivity (million ton-kilometers): Average weight per kilometer traveled of cargo transported by air within the national territory.

Logistics Indicators

- Logistics centers' surface (square meters): Total surface area for infrastructure logistics activities.
- Logistics performance index (LPI) (#): Logistics Performance Index overall score reflects perceptions of a country's logistics based on efficiency of customs clearance process, quality of trade- and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time. The index ranges from 1 to 5, with a higher score representing better performance.
- LPI infrastructure index (#): Performance Infrastructure Index reflects perception of a country's logistics based on the quality of trade and transport related infrastructure (e.g. ports, railroads, roads, information technology). The index ranges from 1 to 5, with a higher score representing better infrastructure performance.
- LPI competence (services) index (#): Performance Competence (Services) Index reflects perception of a country's logistics based on the competence and quality of logistics services (e.g., transport operators, customs brokers). The index ranges from 1 to 5, with a higher score representing better service performance.

COMPREHENSIVE YEARBOOK DATABASE

The original Yearbook database contained 94 indicators of which 13 had been eliminated due to reliability and availability issues. To enhance the Yearbook database, six additional performance indicators were included (four new maritime indicators and two new logistics indicators). Table 13 below presents the 100 Yearbook indicators and the current data frequency for each. The table highlights the eliminated and the additional Yearbook indicators as well.

Data frequency currently ranges from 58 percent (Brazil) to 17 percent (Belize) with a standard deviation of 12 data points. Data in the Caribbean region is the most challenging to collect; 22 data points in average are frequent. In Latin and Central America, 41 and 30 indicators are frequently reported respectively.

Taking into consideration that just 17 of the 100 indicators are used to calculate the modal indexes, it is good to highlight that countries like Brazil, Peru, Paraguay and Mexico report frequently 14 of the 17 indicators. Trinidad and Tobago, and Belize only report frequently 5 of the 17 indicators.

Table 13: Data Frequency of 100 Yearbook Indicators

N	Indicator	AR	BB	BO	BR	BS	CL	EC	GY	HT	JM	PE	PY	SR	TT	UY	VE	BZ	CO	CR	SV	GT	HN	MX	NI	PA	DO
	GENERAL																										
1	Transport sector (% of GDP) *	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y		Y	Y	Y	Y
2	Total population (million) *	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3	Land area (km2) *	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4	GDP (US$ billion) *	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
5	GPD-PPP (US$ billion)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
6	Imports of transport services (US$ billion) *	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
7	Exports of transport services (US$ billion) *	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
8	Exports – value (US$ billion)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9	Exports – volume (tons)	Y	N	Y	Y	Y	Y	Y	Y		Y	Y		Y		N			N	Y	N	N	N		N	N	N
10	Imports – value (US$ billion)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
11	Imports- volume (tons)	Y	N	Y	Y	Y	Y	Y	Y		Y	Y		Y		N			N		N	N	N		N	N	
	ROADS																										
12	Road network (km) *		N	N	Y		Y	N			Y	Y	Y	N	N	N	N	N	Y	Y	N	N	N	Y	Y	Y	
13	Motorway/freeway/express road (km) *	Y		N					N		N		N			N	N		N			N		Y		N	
14	Primary network (km) *	Y	N	N	N		Y	N	N		N	Y	N		N	N	N	N	Y	Y	N	N	N	Y	N	N	N
15	Secondary network (km) *	N	N		Y		Y	N	N		N	Y	Y		N	N	N	N	Y	Y	N			Y	N	N	N
16	Other networks (km) *	N	N		Y			N	N		N	Y	N		N	N		N	Y	N	N	N	N	Y	N	N	
17	Paved network (% total) *	N	N	N	Y	N	Y	N	N			N	N	N	N	N	N	N	N	Y	N	N	N	Y	Y	N	
18	Heavy vehicles (# vehicles) *	Y	N	Y	Y		Y	Y	N		N	Y	Y			N		N	Y	Y	Y	N	N	Y	Y	Y	Y
19	Light trucks -under 3.5 ton (# vehicles)	N			Y			Y	N		N	Y	Y	Y						Y	Y	N			N	N	
20	Heavy trucks -over 3.5 ton (# vehicles)	N			Y			Y	N		N	Y	Y	Y					N	Y	Y	N			N	N	
21	Fleet static capacity (ton)	N						Y																			
22	Fleet average age (years)	N			Y							N	N			N	N	N	N	N		N	N	Y		N	N
23	Number of trailers (#)		N		Y		Y		N		N	N	Y			N			N		Y	N	N	Y	Y	N	
24	Total vehicles (#)	Y	N	N	Y		Y	Y	N		N	Y	N	Y		N	N	N	Y	Y		N	N	N	Y	Y	N
25	Number of motor carrier operators (#)				Y		Y				N	Y	N			N			Y	N	N	N	N	Y	N	N	
26	Motor carrier operators with 1 or 2 units (#)																							Y			
27	Vehicles per operator (#)				Y														N	N	N	N	N	N	N	N	N
28	Direct employment in surface transportation (# of employees)	N			Y		Y				N					N						N					N
29	Annual diesel oil consumption (thousands of barrels)	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

N	Indicator	AR	BB	BO	BR	BS	CL	EC	GY	HT	JM	PE	PY	SR	TT	UY	VE	BZ	CO	CR	SV	GT	HN	MX	NI	PA	DO
30	Annual gasoline consumption (thousands of barrels)	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
31	Retail price diesel oil (US$/liter) *	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y		Y	N	N	N	N	N	N	N	N	N	N	
32	Retail price gasoline (US$/liter)	N	Y	N	N	N	Y	N	Y	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N
33	Estimated CO2 emissions (tons) *	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
34	Domestic road freight productivity (million t·km) *	N																	Y					Y			
35	Domestic road freight carried (tons) *	N					Y												Y	Y				Y			
36	Median distance per vehicle (km)	N							N										Y					Y			
37	Freight vehicle traffic – productivity (vehicle km)															N											
38	Private transportation (own account) (% of total)	N																									
39	Annual distance per vehicle (km) *	N						N	N			N	N						Y	N	N	N	N				N
40	Empty hauls (%)	N																		N	N	N		Y			N
41	Average load factor (%)	N																									
42	Average road tariff of freight (US$/ton-km; 40-ft container) *	N							N			N	N					N	N	N	N	N	N	N	N	N	N
	RAIL																										
43	Railway network (km) *	N		N	Y		Y				N	Y	Y			N	N		Y	N	N			Y		N	
44	Railway network with two or more tracks (km)										N					N								N			
45	Electrified railway network (km)				N						N																
46	Total locomotives (#)			Y	Y		Y				N	Y	Y			Y			Y		N			Y		N	
47	Locomotives -freight train engine (#)											Y	Y													N	
48	Average power of freight locomotives (HP) *										N													Y		N	
49	Freight cars (#)	N		Y	Y							Y	Y			Y			Y					Y		N	
50	Freight car fleet static capacity (tons)																							N			
51	Freight cars average age (year)																										
52	Railway freight companies (#)*	Y		Y	Y		Y				N	Y	Y			Y			N					Y		N	
53	Direct employment in railway transportation –freight (# of employees)			Y	Y		Y				N					N								Y			
54	Fuel consumption –freight (litters)	N			N											N								Y			
55	Electric power consumption –freight (kWh)				N		Y																				
56	Estimated CO2 emissions (tons) *															N											
57	Domestic railway freight productivity (million ton-km) *	Y		Y	Y		Y					Y	Y			N			Y					Y			
58	Domestic railway freight carried (tons) *	Y		Y	Y		Y					Y	Y			Y			Y	Y				Y			
59	Train engine productivity (ton-kilometer)	Y																	N					Y			

N	Indicator	AR	BB	BO	BR	BS	CL	EC	GY	HT	JM	PE	PY	SR	TT	UY	VE	BZ	CO	CR	SV	GT	HN	MX	NI	PA	DO
60	Freight car productivity (ton kilometer)																		N					Y			
61	Average rail tariff of freight (US$/ton-km; 40-ft container) *	Y										Y	Y			N				N				N		N	
	PORT																										
62	Maximum draft in container terminal (feet) *	Y	N		Y	N	N	N	N	N	N			N		N		N	N	N	N	N	N	N	N	N	N
63	Bridge (gantry) cranes (#) *	N	N		Y	N	N	N			N			N		N			N	N		N	N	N	N	N	N
64	Container and multipurpose berth length (meters) *	N	N		Y	N	N	N		N	N			N		N		N	N	N	N	N	N	N	N	N	N
65	Container storage facilities area (m2) *	Y	N		Y	N	N	N	N		N			N		N					N	N	N		N	N	N
66	Flag state commercial vessels (DWT)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N
67	Total port traffic (tons) *		N		Y		Y			N	N	Y	Y	Y		N	N	N	Y	Y	N	Y	N	Y	Y	N	N
68	Export port traffic (tons) *	Y	N	Y	Y	N	Y	Y		N	N	Y	Y	Y		N			Y	Y	N	Y	N	Y	Y	N	N
69	Import port traffic (tons) *	Y	N	Y	Y	N	Y	Y		N	N	Y	Y	Y		N			Y	Y	N	Y	N	Y	Y	N	N
70	Total port traffic - domestic movements (inbound & outbound) (ton)		N		Y		Y			N	N	Y	Y	Y		N								Y			
71	Total container traffic (TEU)		N		Y	N	Y	Y	N	N	N	Y	Y	N		Y		N	Y	N	N	Y	N	Y	N	N	N
72	Total inland waterway traffic (tons)	Y			Y							Y	Y			N			Y						Y		
73	Total maritime cabotage traffic (tons)						Y		N		N	Y	Y						Y						Y		
74	Average inland waterways tariff of freight (US$/ton-km; 4-ft container))																										
75	Average maritime cabotage tariff of freight (US$/ton-km; 40-ft container)															N											
76	Liner shipping connectivity index (2004 = 100) *	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
77	Container terminal utilization (%) *	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
78	Container terminal extent of competition (# terminals) *	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
79	Gateway proximity to population center (category) *	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
80	Gateway (TEUs /truck) *	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	AIR																										
81	International airports with cargo terminal facilities (# airports) *		N		N		N	Y			N	Y	Y		N	Y		N	N	N	N	N	N	Y	N	N	N
82	Maximum aircraft approach category (FAA/OACI category)		N		N						N	N	N			N		N	N	N	N	N	N	N		N	N
83	Instrument approach available in international airports with cargo terminal facilities (yes=1/no=0)		N		N						N	N	N			N			N	N	N	N	N	Y		N	N
84	Area of cargo facilities in international airports with cargo terminal facilities (m2) *		N	N	N						N					Y			N	N	N	N	N	N		N	N
85	Domestic air freight carried (tons) *	Y			Y		Y	Y	N		N	Y	Y						Y				N	Y	Y	Y	
86	International air freight carried (tons) *	Y	Y	Y	Y	Y	Y	Y	Y		N	Y	Y		N	Y		N	Y	Y	Y	Y	N	Y	Y	Y	N

N	Indicator	AR	BB	BO	BR	BS	CL	EC	GY	HT	JM	PE	PY	SR	TT	UY	VE	BZ	CO	CR	SV	GT	HN	MX	NI	PA	DO
87	Domestic air freight productivity (million ton kilometer) *				Y														Y								
	PIPELINE																										
88	Pipeline network for fluids transportation (km)			N	N		N												N	N		N	N	N	N	N	
89	Conveyor network for bulk transportation (km)						N																				
90	Pipeline traffic (tons)				N		N												N								
91	Conveyor traffic (tons)																										
	LOGISTICS																										
92	Logistics centers' surface (m2) *		N																					N			
93	Cold facilities total surface (m2)		N																				N				
94	Cold facilities for public use total surface (%)																										
95	Outsourcing of logistics activities (%)																										
96	Logistics costs (% of sales)																										
97	Logistics Performance Index (LPI) ranking (#)	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
98	LPI (#) *	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
99	LPI infrastructure index (#) *	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
100	LPI competence (services) index (#) *	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: “Y” means that the indicator is frequently collected; “N” means that the indicator is not frequently collected; empty cells mean that frequency is not known.

“*” means that the indicator is reported in Country Scorecard.

Indicator added after consultations with the IDB team as detailed in Technical Report for Component 1 (July 2013).

Indicator eliminated after consultations with the IDB team as detailed in Technical Report for Component 1 (July 2013).

Appendix B: Data Collection

DATA COLLECTION METHODOLOGY

The data collection effort has gradually increased the data coverage and allowed the illustration of the methodology to calculate each Modal Index. Table 14 below present information of data completion rates for the full dataset abd the proposed set of indicators included in the Country Scorecards.

Table 14: Yearbook and Scorecard Data Coverage

Year 2012 Database	Coverage
Yearbook Indicators 100 indicators 26 countries 2600 possible data points	57% completion rate (Mexico/, Brazil/Colombia 80%, Uruguay 77%, Argentina 76%, Panama 69%, Peru 67%)
Scorecard Indicators 42 indicators 26 countries 1092 possible data points	66% completion rate (Mexico 93%, Brazil 90%, Argentina 88%, Uruguay/Colombia 86%, Peru 83%, Costa Rica/Panama 79%, Chile 76%)

The starting point of the data collection process was the list of required indicators for each country received from IDB. Each indicator had a specific definition and the data requested had to comply with it. There was a first revision of the definitions to check for misspecifications. For most indicators it was straight forward to find the data complying with the definition, however, there were some for which there was a slight modification. This was noted in the Yearbook database.

The data collection process was organized in three stages. In the first stage, we collected data online from international organizations and official country sources. The advantage of international organizations is the homogeneity of data across countries. Examples of these sources are The International Monetary Fund, The World Bank, UN ECLAC, OLADE, COMTRADE, etc. The use of these sources guarantees easy follow up and regular update of the database. The second source of online data was the official government websites. We reviewed all web pages related to transport and logistics in the 26 countries to extract information relevant to the Yearbook. Many countries publish an annual report on transport statistics on the websites of statistical institutes or ministries of transport. All the sources reviewed in this stage have been listed together with the websites so that data can be updated in the future with information of these sources.

After determining the missing information in these online publications, local institutions were contacted to inquire if the information exists or not. Contact was established with official transportation and logistics institutions in all 26 IDB countries. It is important to highlight that in many countries the information was difficult to obtain since there are no formal efforts to collect and systematize this type of information on a regular basis. Most of the difficulties were found in the road transport sector, pipelines and in the logistics sector. Port cargo data, air cargo data and train cargo data are more frequently collected in a systematic way, though not always available in all countries. One can also note that in the case of port, railways and air infrastructure the data are not always available. Another encountered difficulty was that the information was dispersed among various institutions that have their own roles in government and sectors. A third obstacle was that in some countries a transportation mode may have a monopoly position and hence considered some of the information sought as confidential.

The second stage consisted in hiring individuals to collect information directly in country. In countries where it was possible to verify the existence of information, local experts

were engaged to personally collect information, as was the case in Argentina and Bahamas. The final stage consisted of reviewing academic papers for relevant data to incorporate in the dataset along with their citations.

After completing the research phase, we decided to analyze options to address the high number of missing data in the data set. In time series with sufficient data points, data were interpolated and extrapolate. Separate compounded average growth rates for Caribbean and South American countries were also calculated and used to generate data for missing years in various indicators. All data processing is clearly indicated in the database. Quality checks were also performed in order to validate the data. An example of this procedure was to compare countries with similar characteristics to verify that there were no outliers in the data.

Collected and generated data were then sent to IDB local offices for verification and, in cases where data gaps remained, to attempt to identify other sources for the missing data. The IDB also provided information on railways and volume data for imports and exports included in the database.

DATA SOURCES BY COUNTRY

Subregion 1: South America

Argentina

The first stage of data gathering was based on information available at the following entities' webpages:

1. Secretaría de Transporte www.transporte.gob.ar
2. Comisión Nacional Reguladora de Transporte www.cnrt.gob.ar
3. INDEC www.indec.gob.ar
4. Administración Nacional de Aviación Civil www.anac.gob.ar
5. Administración de Infraestructura Ferroviaria www.adifise.com.ar
6. Ministerio de Energía http://energia3.mecon.gov.ar/home/
7. Aeropuertos Argentina 2000 www.aa2000.com.ar
8. Administración Nacional de Puertos www.agp.gob.ar
9. Organismo Regulador del Sistema Nacional de Aeropuertos www.orsna.gob.ar
10. Dirección Nacional de Vialidad www.vialidad.gov.ar
11. ADEFA www.adefa.com.ar
12. ONDAT (www.ondat.utn.edu.ar), Observatorio Nacional de Datos de Transporte

During the data collection effort we contacted directly each institution. Some institution indicated that the information was not available.

A government agency, "Vialidad Nacional"; provided the road indicators information for National Roads. For provincial roads the information is disaggregated. In the case of trucks and vehicles, we extracted the information from ADEFA (transport association). We contacted them to request a detailed description of the methodology of how they account for obsolete fleet for total vehicles and for trucks. They estimate that approximately 3 percent of the fleet becomes obsolete each year.

We contacted the person in charge of infrastructure information on railways at the Comisión Nacional Reguladora de Transporte by phone and mail. According to our source, the information requested exists but they have not submitted it.

We also established direct contact with Organismo Regulador del Sistema Nacional de Aeropuertos for airport infrastructure information. According to our source, the information requested exists but they have not submitted it.

Brazil

The first stage of data gathering was based on information available at the following entities' webpages:

1. IBGE www.ibge.gov.br
2. ANTT - Agência Nacional de Transportes Terrestres- WWW.ANTT.GOV.BR
3. ANAC- Agência Nacional de Aviação Civil- www.anac.gov.br

4. ANTAQ- Agencia Nacional de Transporte Aquaviario- www.antaq.gov.br
5. ANP- Agencia Nacional de Petróleo, Gás Natural e Biocombustíveis - www.anp.gov.br
13. ANTP Associação Nacional de Transportes Públicos www.antp.org.br

For airport infrastructure information, a representative from INFRAERO was contacted; information for all airports with cargo terminals was collected and incorporated in data base.

The Ministry of Transportation was also contacted, which provided additional data sources. Most of the information for Brazil is available on line. There is also a Logistics observatory (PNLT) which collects data and publishes it online.

ANTT was also contacted by phone to request the data not available online, while SIFRECA was also contacted for transport rates, which offered to conduct a special study to provide that information at some cost.

Bolivia

The National Institute of Statistics was contacted, but data provided was older than required for the Yearbook. The National Accounts Department, in particular a representative in charge of the transportation sector was also contacted. Some information on the various types of transportation was provided, but obsolete. The Director General of Transportation was also contacted, for which no reply was received. Several transport agencies through the contact forms in the webpages (roads authorities, airports authorities, river ports authorities) were also contacted, but with no response.

Chile

The first stage of data gathering was based on information available at the following entities' webpages:

1. Ministerio de transporte e Infraestructura www.mtt.gob.cl
2. Ministerio de Obras Públicas WWW.mop.cl
3. Empresas Portuarias www.dipres.gob.cl
4. INE www.ine.cl
5. DIRECTEMAR www.directemar.cl
14. Ultramar Agencia Marítima www.ultramar.cl

No response from communication relative to data needs sent to the Ministry of Transportation was received. Similarly, there was no success from information requests sent to other agencies, with the exception of the port authority.

The Maritime Chamber of Chile provided sources for maritime ports data. This information has been compiled and entered into the database.

The UN ECLAC in Chile was also contacted, which in turn provided guidance about sources available at ECLAC and contacts at the Ministry of Transport in Chile. No response was received to a request made to the Ministry of Transport.

Colombia

There is information available online which was used to verify the information provided by ALG and also to complete some missing data. We have also contacted DANE which is the National Statistical Office. They have provided some useful information from National Accounts transport specialist. They have also provided a contact person at the Ministry of transportation but this person did not answer our information request. The on line sources are:

1. Banco Central de Colombia http://www.banrep.gov.co/
2. Ministerio de Transporte https://www.mintransporte.gov.co/
3. Departamento Administrativo Nacional de Estadística www.dane.gov.co
4. Superintendencia de Puertos y Transportes http://www.supertransporte.gov.co/super/
5. Autoridad de Aeronáutica Civil http://www.aerocivil.gov.co/AAeronautica/Paginas/Inicio.aspx

Ecuador

Our team contacted the National Institute of Statistics the National Accounts Department at the Central Bank. It was indicated that information was available online and we were also redirected to the Ministry of Transportation. Our attempt to contact a person at the Ministry was unsuccessful.

Data gathering was based partially on information available at the following entities' webpages:

1. INEC (Anuario de transporte 2010) www.inec.gob.ec
2. Ministerio de Transporte y Obras Públicas www.obraspublicas.gob.ec
3. The airport of Quito has provided the infrastructure information.

Guyana

No online information for Guyana is available. The National Accounts Department, the Ministry of Transportation and different transportation agencies in Guyana such as the Shipping Association and Guyana Civil Aviation Authority were contacted directly, for which 2011 data were made available. At the time of publication of this report, a response had not been received following a request for 2012 data.

Paraguay

We established contact with the Central Bank, the National Accounts Department and they have pointed out the following sources of information:

1. Dirección Nacional de transporte www.dinatran.gov.py
2. Ministerio de Obras Públicas y Comunicaciones, Vice Ministerio de transporte. www.mopc.gov.py
3. Secretaria de Transporte del Área Metropolitano de Asunción, SETEMA, www.setama.gov.py
4. Dirección Nacional de Aeronáutica Civil. DINAC, www.dinac.gov.py
5. Administración Nacional de Navegación y Puertos. www.annp.gov.py

The National Logistics Observatory, a joint project with the IDB, was also contacted, which in turn provided available information for 2011, with prior years' data not available. The Observatory is currently processing the information of a survey carried out in 2012.

Peru

The National Institute of Statistics provided the following online sources:

1. Ministerio de Transporte y comunicaciones www.mtc.gob.pe
2. Instituto Nacional de Estadistica e Informatica www.inei.gob.pe

Information was received from the port authority, which was then compiled and entered into the database. No response came from a data query sent to the airport authority.

Suriname

Some of the sought information was received from the National Institute of Statistics, but very little data are available from the Ministry of Transportation and other transport agencies.

The Central Bank was also contacted to provide transport mode data, but the information relative to modal transport of imports and exports is not available. The Suriname's "Transport Master Plan" dated January 2011, provided by the IDB, contains some data, but only to 2009.

Uruguay

The primary data source for Uruguay was the National Institute of Statistics and the National Accounts Department at the Central Bank. Additionally, information was gathered from the following webpages:

1. Dirección Nacional de transporte www.dnt.gub.uy
2. Instituto Nacional de Estadística www.ine.gub.uy
3. Ministerio de Transporte y Obras Públicas www.mtop.gub.uy
4. Banco Central de Uruguay www.bcu.gub.uy

The Minister of Transportation suggested contacting INALOG, the National Logistics Institute. INALOG provided precise information on port infrastructure, road transport, particularly data related to fleets and roads, some of which is not publically available.

TCU, the cargo terminal concessionaire of the Montevideo airport, provided information on airport infrastructure and air transport information.

Venezuela

The Central Bank's National Accounts Department was contacted and requested information was not available. It was not possible to identify a contact person at the Ministry of Transportation that could provide some guidance on data sources.

Several webpages were identified and queries sent to various entities, but no response was received. Some of the websites reviewed include:

1. Instituto de Ferrocarriles del Estado www.ife.gob.ve
2. Ministerio de transporte de Venezuela www.mtc.gob.ve
3. Bolivariana de Puertos www.bolipuertos.gov.ve
4. Instituto Nacional de Aeronáutica civil. www.inac.gob.ve

The IDB's local representative explained the situation in Venezuela and provided a report from where some data could be extracted.

Subregion 2: Caribbean Countries

Bahamas

There is no information published online for the Bahamas, but a local partner was engaged to collect information from the following agencies:

1. The Road Traffic Department
2. The Nassau Harbour Control
3. Ministry of Works and Transport
4. The Airport Authority

Information was received from different ports in the Bahamas. There is also information on fuel prices and consumption. Data for road transportation was not available at the governing agency. Only the percentage of paved roads was obtained due to a private study that was conducted in 2012. Concerning the fleet, efforts were made to acquire data from the Road Traffic Department, the governing agency responsible for licensing heavy vehicles, but data are unavailable. In relation to air transportation, the leading airport in the Bahamas was initially contacted and the IDB was referred to the Fixed Based Operators (FBOs). After numerous attempts were made, no data were obtained, as was the case from the airport within Grand Bahamas.

Barbados

The National Institute of Statistics in Barbados, the port authority, airport authority, roads authority, central bank and other agencies were contacted and provided some of the elicited information.

Haiti

There is no information available online. The National Institute of Statistics indicated they do not have the kind of information needed for the Yearbook and that the last effort to collect transportation data in Haiti done by IDB in 2005. They pointed out that the information may be available at the institutions listed below, but no information was provided following direct requests to each of these agencies:

1. l'Office National de l'Aviation Civile (OFNAC)
2. La Direction des Transports du Ministère des Travaux Publics (MTPTC);
3. Le Service Maritime et de Navigation Haïtienne (SEMANAH) et l'Autorité Portuaire Nationale (APN)
4. L'Office d'Assurance Véhicule Contre Tiers (OAVCT) et le Service de la Circulation des Véhicules

Jamaica

Little of the needed information is available online in Jamaica. The National Institute of Statistics and the Ministry of Transportation provided some of the needed data.

Data gathering was based partially on information available at the following entities' webpages:

1. Minisitry of Transport and Works www.mtw.gov.jm
2. AirPorts Authority of Jamaica www.airportsauthorityjamaica.aero
3. Maritime Authority of Jamaica www.jamaicaships.com
4. Civil Aviation Authority www.jcaa.gov.jm
5. Jamaica Urban Transit Company www.jutc.com
6. Caribbean Maritime Institute www.cmi.edu.jm
7. Port Authority of Jamaica www.portjam.com
8. Transport Authority www.ta.org.jm

Trinidad and Tobago

The National Institute of Statistics was contacted and the IDB was referred to the Permanent Secretary of Transportation. As of this writing, the Secretary had not secured the needed information and hence it is not reported here. The National Accounts Department provided data on GDP and transport to GDP ratio.

Data gathering was based partially on information available at the following entities' webpages:

1. Statistical Office www.cst.gov.tt
2. Ministry of Works and transport www.mowt.gov.tt
3. The Port Authority - www.patnt.com/
4. The Airport Authority - www.tntairports.com
5. WASA for water pipelines www.wasa.gov.tt
6. The Ministry of Energy for the oil and gas pipelines www.energy.gov.tt

Subregion 3: Mesoamerica (excluding Colombia)

The IDB created a database for Mesoamerican countries, which reports information for the following ten countries: Colombia, Panama, Honduras, Nicaragua, El Salvador, Mexico, Guatemala, Costa Rica, Belize and Dominican Republic. Data sources for each country are the following:

Belize

There is little information available on line and very little information available from the Statistics Office. Data requests were sent to the Ministry of Transportation, which in turn suggested the following sources:

1. Ministry of Works and Transport http://www.belize.gov.bz/index.php/ministry-of-works-and-transport
2. Statistical Institute of Belize http://www.statisticsbelize.org.bz
3. Civil Aviation Authority http://www.civilaviation.gov.bz/
4. Belize port Authority http://www.portauthority.bz/index.php?section=1

Costa Rica

There is some information available on line. We have contacted the Central Bank of Costa Rica, the National Accounts Department. They have provided information and also contacts at the Ministry of Transportation. The on line sources are:

1. Instituto de Estadísticas y Censos, INEC http://www.inec.go.cr
2. Banco Central de Costa Rica http://indicadoreseconomicos.bccr.fi.cr/indicadoreseconomicos
3. Ministerio de Obra Pública y Transporte (MOPT) http://www.mopt.go.cr/
4. Instituto Nacional de Seguros (INS) http://www.ins-cr.com/index.html
5. Dirección General de Aviación Civil (DGAC) http://www.dgac.go.cr/
6. Instituto Costarricense de Puertos http://www.incop.go.cr/

Dominican Republic

There was no information available on line. We have contacted the National Accounts Department at the Central Bank. They have provided the available information. They have also provided the name of a contact person at the Ministry of Public Works which is in charge of the transport policy. The person could not be reached. The on line webpages consulted are:

1. Banco Central República Dominicana http://www.bancentral.gov.do/
2. Ministerio de Obras Públicas http://mopc.gob.do/
3. Autoridad Portuaria http://www.apordom.gov.do/
4. Instituto Dominicano de Aviación Civil http://www.idac.gob.do/
5. Oficina Técnica de Transporte Terrestre http://www.ottt.gov.do

El Salvador

There is some information available online. We have contacted the Central Bank, in particular the National Accounts Department and they have provided some information and also contacts at the Ministry of Transportation. We have sent a formal information request to the Ministry and they answered that they would give us the information they had available but most of the requested information was not available. The on line sources are:

1. Banco Central de El Salvador http://www.bcr.gob.sv/esp/
2. Ministerio de Obras Públicas, a través de la Oficina de Información: oir@mop.gob.sv http://www.mop.gob.sv
3. Servicios de transito Centroamérica http://www.sertracen.com.sv/
4. Ministerio de Economía http://www.minec.gob.sv
5. Ministerio del Medio Ambiente http://www.marn.gob.sv/
6. Comisión Ejecutiva Portuaria Autónoma http://www.cepa.gob.sv

Guatemala

There was little information available on line. We have contacted the Central Bank of Guatemala, in particular the National Accounts department and they have no information available. We have also consulted the INE (National Statistical Office) and they said the information was not available. They told us to contact the Ministry of Transportation. We called and sent e mails. They said they would look for the available information. No information was received so far.

1. Banco Central de Guatemala http://www.banguat.gob.gt/
2. Ministerio de transporte de Guatemala http://www.civ.gob.gt/web/guest/83
3. Puerto Quetzal http://www.puerto-quetzal.com/web/guest/inicio

Honduras

No information available online. We have contacted the National Accounts Department at the Central Bank but they have not replied. The sources researched are:

1. Banco Central de Honduras http://www.bch.hn/
2. Autoridad portuaria de Honduras http://www.enp.hn/web/index.html
3. Dirección General de Aeronáutica Civil http://www.dgachn.org/

Mexico

There is information available on line which was used to check ALG data and also to complete missing information. We have also contacted the Ministry of Transportation and they have provided the available information. The sources reviewed for this country are:

1. Secretaría de Transporte y Comunicaciones http://www.sct.gob.mx/
2. Instituto Nacional de Estadísticas y Geografía http://www.inegi.org.mx/
3. Banco Central de México http://www.banxico.org.mx/

4. Dirección General de Aeronáutica Civil
   http://aicm.com.mx/Dependencias/DGAC/

Nicaragua

There is some information available on line. We have contacted the National Accounts Department at the Central Bank of Nicaragua. They said that they did not have the information requested and suggested we should contact the ministry of transportation. They have provided the name and phone of a contact person. We have phoned the ministry of transportation several times and there was no answer. We have sent a request of information by e mail and we have received some data. The sources reviewed on line are:

1. Ministerio de transporte de Nicaragua
   http://www.mti.gob.ni/ http://biblioteca.mti.gob.ni
2. Instituto Nicaragüense Aeronáutica Civil
   http://www.inac.gob.ni
3. Empresa Portuaria Nacional
   http://www.epn.com.ni/
4. Empresa Administradora de Aeropuertos
   http://www.eaai.com.ni/

Panama

There was no information available on line. We have contacted the National Accounts Department at The Contraloria General de Panama. They have provided the available information. Concerning the railway data, we have contacted the railway company but they said that the data were confidential. We have also contacted the ministry of transportation but no information was received. The webpages reviewed for this country are:

1. Banco Central de Panamá
   https://www.banconal.com.pa/
2. Instituto Nacional de Estadísticas y Censos
   http://www.contraloria.gob.pa/inec/
3. Autoridad de tránsito y transporte terrestre
   http://www.transito.gob.pa/
4. Ministerio de Obras Públicas de Panamá
   http://www.mop.gob.pa/
5. Autoridad Marítima de Panamá
   http://www.amp.gob.pa/newsite/spanish/home_mirror.html
6. Autoridad Aeronáutica Civil de Panamá
   http://www.aeronautica.gob.pa/
7. Panama Canal Railway Company
   http://www.panarail.com/sp/historia/

Collaboration from IDB local offices

As part of the effort to collect more information and to validate the already collected data, the local IDB offices were contacted. We have received feedback from the following offices

- Argentina
- Chile
- Suriname
- Venezuela
- Bolivia
- Colombia
- Paraguay
- Ecuador
- Dominican Republic
- Haiti

We have also received information from IDB which was incorporated to the general database. This information includes:

- Railway data for Latin America. This information was validated with the different sources and it was also updated.
- Trade Volume data from COMTRADE

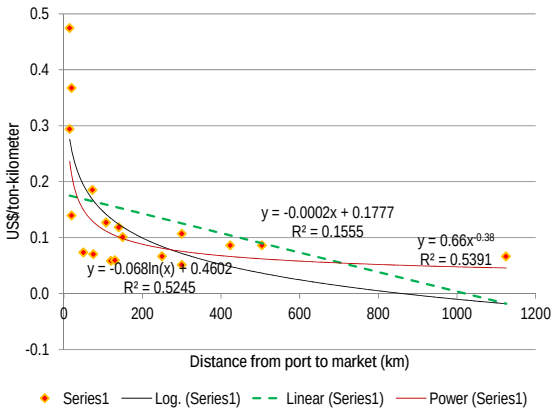
Appendix C: Freight Rates' Calculations

The freight rates were calculated relative to the distance between the main gateway port and the primary consumer market. Countries whose consumer markets are further away from ports are at a "total cost" disadvantage from those that have consumer markets that are closer. Having said this, shorter distances also result in higher ton/km cost. The data collected for Latin America and the Caribbean illustrate clearly this fact.

Freight rates data for a full 40-ft container[5] from 16 Latin America and the Caribbean countries were gathered from interviews with shippers and trucking companies showing actual freight rates between key origin (port) and destination (main consumption center) pairs in the region. The data were plotter on order to establish a pattern of how trucking costs might vary as a function of distance traveled. While there are many factors that influence trucking costs and freight rates, it is common that costs per unit of distance (kilometers) will decline as the length of a trip increases. Figure 19 shows the results of plotting the actual tariffs with the distance between the port and the market.

Three types of regressions (linear, logarithmic and power) were analyzed using the actual data to estimate the missing rates. The power regression best adjusted to the actual data (i.e. higher correlation, R^2 equal to 0.54) and it was applied to fill data gaps. In general, for the data collected for most port-city pairs, the unit costs can be grouped by distance range. The resulting average unit costs by distance rage show distinctive values with extremely high unit costs for distances under 20 kilometers, decreasing evenly for distances between 20 and 100 kilometers, and tempering off for distances longer than 100 kilometers (Table 15).

Figure 19: Actual Freight Rates by Distance for a Full 40-ft Container



Source: Nathan Associates Inc.

Table 15: Estimated Trucking Tariffs for a 40-ft Container by Distance from the Port to Market

Distance (km)	US$/ton-kilometer
<20	0.319
21-100	0.110
101-500	0.086
>500	0.076
Average	0.141

Source: Nathan Associates Inc. Note: Based on a total of 16 observations.

[5] It is assumed that the truck can load 34 tons.

Appendix D: Index Methodology

Measuring transport and logistics performance is a many-faceted exercise as indicated by the variety of data collected for the Yearbook. There is no single statistic that easily summarizes a country's performance in all areas that are relevant. Rather, it is performance in a range of areas—as well as the interactions between those areas—that determine overall performance. With that observation in mind, this Note sets out the methodological approach that has been used for producing the Modal Indexes described in Section 2 of the Yearbook.

As noted in Section 2, the framework for the methodology considers six core dimensions of transport and logistics performance: availability; capacity; productivity; cost; quality; and environmental impact. We consider four modes of transport: road, rail, maritime and inland waterways, and air. Additionally, we consider logistics as a separate sector that brings all of the others together to the extent that it provides the mechanism in which they can operate seamlessly to move goods from sellers to buyers.

Although we endeavor to bring together data on all six dimensions for each mode of transport and logistics, it is not always possible due to the limits of the data that are currently collected and available. Future editions of the Yearbook will be able to expand the dataset used here to include additional indicators that cover those dimensions for which data are not currently available. Indeed, the difficulty of data collection and consolidation for the first edition Yearbook suggests that a major data capacity building effort is required in the area of transport and logistics across the region. Regional organizations can play a role in raising awareness among national statistical agencies of the importance of these data for measuring, and ultimately improving, performance. Alternatively, a future possibility might be to implement a general survey for freight logistics operators so as to overcome the fact that many data series are not collected officially in some countries. This approach reflects practice in the area, particularly the World Bank's *Logistics Performance Index*, which uses a web-based survey of logistics professionals to provide new data, rather than collect existing data, on a number of important performance dimensions.[6]

CONSTRUCTING MODAL INDEXES

An important aim of the Country Scorecards is to provide summary indicators of performance by mode of transport and for logistics. This section describes the methodology applied to create those Modal Indexes. In each case, a common statistical technique—Principal Components Analysis (PCA)—is applied to produce the Modal Index.[7] PCA is a statistical technique designed to compress a large number of data series into a smaller number of weighted averages, known as components. It is widely used in economics and statistics, and has two high profile applications in the transport and logistics context: the noted World Bank's *Logistics Performance Index* (LPI) and UNCTAD's *Liner Shipping Connectivity Index*[8].[9] PCA

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[6] The World Bank, *Connecting to Compete: Trade Logistics in the Global Economy, the Logistics Performance Index and its Indicators*, Washington, D.C., 2012 (www.worldbank.org/lpi).

[7] For a more detailed description of PCA, see Jon Shlens, "A Tutorial on Principal Component Analysis: Derivation, Discussion and Singular Value Decomposition", March 25, 2003 (Version 1), available at http://cs.princeton.edu/picasso/mats/PCA-Tutorial-Intuition_jp.pdf

[8] The Liner Shipping Connectivity Index (LSCI) is reported annually in: United Nations Conference on Trade and Development (UNCTAD), *Review of Maritime Transport,* Trade Logistics Branch of the Division on Technology and Logistics, Geneva, Switzerland (http://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=380); the LSCI tables can be accessed directly at: http://unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=92 .

[9] For a PCA application to multimodal connectivity, see Asia-Pacific Economic Cooperation (APEC), *The Economic Impact of Enhanced Multimodal Connectivity in the APEC Region*, APEC Policy Support Unit, Singapore, June 2012 (http://publications.apec.org/publication-detail.php?pub_id=1028).

exploits the correlation among different data series to construct a summary series ("index") that is a weighted average of the original data, with weights ("loadings") chosen so as to maximize the amount of variation in the original data that the index accounts for.

We apply PCA separately to each mode of transport and logistics to produce the four modal and logistics Indexes. Each index is scaled so that the top performing country in the relevant mode in 2012 has 100 points, the weakest regional performer has a score of one point, and all other countries have scores expressed relative to those benchmarks. This indexing is necessary because in the absence of upper and lower bounds on the underlying data, PCA produces Indexes that are not pre-scaled. Application of a scaling factor is thus unavoidable.[10]

To deal with the fact that the data are expressed in different units, the series need to be normalized prior to running PCA. The standard way of doing this is to subtract each mean and divide by each standard deviation. The result is a set of data series that all have a mean of zero and a standard deviation of one.

The LPI is a good example of the application of PCA. Through a web-based survey, logistics professionals provide scores ranging from one to five in the following six areas of performance: efficiency of the clearance process; quality of trade and transport related infrastructure; ease of arranging competitively priced shipments; competence and quality of logistics services; ability to track and trace consignments; and timeliness of delivery. Respondents rate up to eight countries with which they do business, thereby giving rise to a total of some 6,000 observations covering 155 countries. The average response by country for each of the dimensions is calculated, and PCA is used to determine the weight that is applied to each of the six dimensions in determining the final LPI score.

Additionally, it is important to ensure that country size does not play an undue role in determining index scores. For example, Brazil is geographically much larger than many other Latin American and Caribbean countries, and so it tends to have larger transport networks. If the Indexes rely on "extensive" data, Brazil will usually have a high score because availability and capacity are high due to the country's large size. However, "intensive" measures are not a function of country size and represent a more comparable measure across countries. We therefore use intensive measures to create each index.

Road Index

The *Road Index* is created by performing PCA on the indicators in the following table, retaining the first principal component, and rescaling it as indicated in the previous section (i.e., the top performer in 2012 is given a score of 100, the weakest performer is given a score of one, and all other scores are expressed relative to those benchmarks). In Table 16, the "loadings" column indicates the weight that each indicator is given in construction of the final index. The sign of the loading shows the direction of the association between each data point and the index. Thus, a negative loading means that countries with a higher score for that data point receive a lower score on the *Road Index*. Examining the signs and weights suggests that PCA has produced appropriate output in this case, based on the underlying economics of the roads sector.

Table 16: Road Index Loadings

Indicator	Dimension	Loading
Road network / country area	Availability	0.620
Paved network (%)	Quality	0.722
CO2 emissions / number of heavy vehicles	Environmental Impact	-0.089
Average freight tariff / GDP PC	Cost	-0.296

Source: Nathan Associates Inc.

PCA is a well-known statistical technique, and it is possible to provide some formal diagnostics as a guide to assessing its performance. Table 17 presents full PCA output. It shows that the first eigenvalue of the data correlation

[10] The LPI data contain built in upper and lower bounds, and so rescaling of the type conducted here is unnecessary. Our approach follows the rescaling approach of the LSCI, where it is similarly made necessary by the type of data being used.

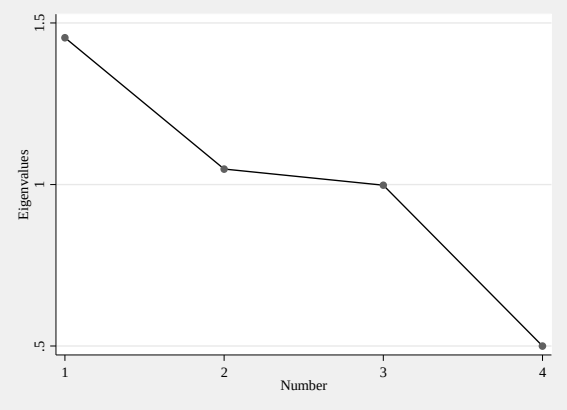
matrix, which is associated with the first principal component, is well in excess of unity (the Kaiser criterion). It is also substantially greater than the other eigenvalues, which suggests that it is appropriate to retain just one component as a summary measure, an impression that is reinforced by the rapid falling away of the eigenvalue screeplot in Figure 20. Finally, the PCA analysis indicates that the *Road Index* accounts for around 36 percent of the variation in the original data series, and thus is a useful and informative summary measure.

Table 17: Road Index Eigenvalues and Proportions

Component	Eigenvalue	Proportion
1	1.455	0.364
2	1.050	0.262
3	0.997	0.249
4	0.500	0.125

Source: Nathan Associates Inc. Note: Based on a total of 22 observations, and the series described in the first table in this subsection.

Figure 20: Road Index Eigenvalues Screeplot



Source: Nathan Associates Inc

Rail Index

The *Rail Index* is created by performing PCA on the indicators in the Table 18, retaining the first principal component, and rescaling it as indicated in the previous section (i.e., the top performer in 2012 is given a score of 100, the weakest performer is given a score of one, and all other scores are expressed relative to those benchmarks). The "loadings" column indicates the weight that each indicator is given in construction of the final index. The sign of the loading shows the direction of the association between each data point and the index. Thus, a negative loading means that countries with a higher score for that data point receive a lower score on the *Rail Index*. Examining the signs and weights provides results that largely accord with expectations: countries with denser and more productive rail networks have higher index scores.

However, countries with higher prices receive higher scores too, not lower ones as in the case of roads. The reason could be that higher technology services that provide quicker and more reliable movement of goods tend to cost more, even after accounting for differences in national income levels. Final results suggest that the PCA index produces acceptable results that accord reasonably well with experience in the region.

Table 18: Rail Index Loadings

Indicator	Dimension	Loading
Rail network / country area	Availability	0.553
Domestic freight carried - productivity	Productivity	0.606
Average freight tariff / GDPPC	Cost	0.572

Source: Nathan Associates Inc

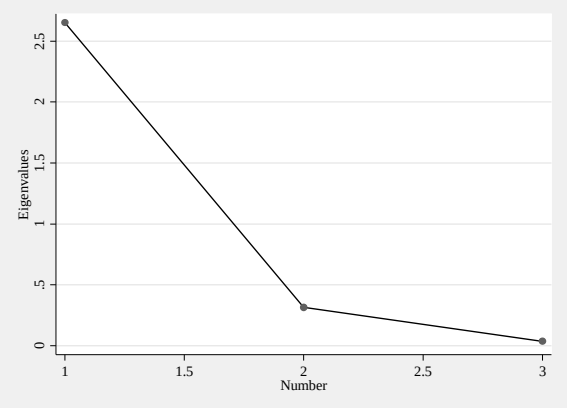
Turning again to diagnostics, Table 19 presents full PCA output. It shows that the first eigenvalue of the data correlation matrix, which is associated with the first principal component, is well in excess of unity (the Kaiser criterion). It is also substantially greater than the other eigenvalues, which suggests that it is appropriate to retain just one component as a summary measure, an impression that is reinforced by the rapid falling away of the eigenvalue screeplot also reproduced below (Figure 21). Finally, the PCA analysis indicates that the *Rail Index* accounts for nearly 90 percent of the variation in the original data series, and thus is a useful and informative summary measure.

Table 19: Rail Index Eigenvalues and Proportions

Component	Eigenvalue	Proportion
1	2.651	0.884
2	0.314	0.105
3	0.035	0.012

Source: Nathan Associates Inc. Note: Based on a total of nine observations, and the series described in the first table in this subsection.

Figure 21: Rail Index Eigenvalues Screeplot



Source: Nathan Associates Inc.

Maritime Index

The *Maritime Index* is created by performing PCA on the indicators in the Table 20, retaining the first principal component, and rescaling it as indicated in the previous section (i.e., the top performer in 2012 is given a score of 100, the weakest performer is given a score of one, and all other scores are expressed relative to those benchmarks). The "loadings" column indicates the weight that each indicator is given in construction of the final index. The sign of the loading shows the direction of the association between each data point and the index. Examining the signs and weights shows that, as was the case for roads and rail, the PCA output accords with economic logic and experience.

Turning again to diagnostics, Table 21 presents full PCA output. It shows that the first eigenvalue of the data correlation matrix, which is associated with the first principal component, is well in excess of unity (the Kaiser criterion). It is also substantially greater than the other eigenvalues, which suggests that it is appropriate to retain just one component as a summary measure, an impression that is reinforced by the rapid falling away of the eigenvalue screeplot in Figure 22.

Table 20: Maritime Index Loadings

Indicator	Dimension	Loading
Maximum draft in container terminal	Availability	0.684
Liner Shipping Connectivity Index	Quality	0.690
Port traffic / population	Capacity	0.237

Source: Nathan Associates Inc,

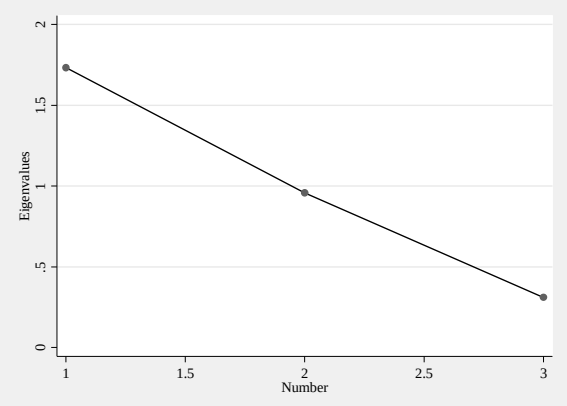
Finally, the PCA analysis indicates that the *Maritime and Waterways Index* accounts for 58 percent of the variation in the original data series, and thus is a useful and informative summary measure.

Table 21: Maritime Index Eigenvalues and Proportions

Component	Eigenvalue	Proportion
1	1.733	0.578
2	0.957	0.319
3	0.310	0.103

Source: Nathan Associates Inc. Note: Based on a total of 21 observations, and the series described in the first table in this section.

Figure 22: Maritime Index Eigenvalues Screeplot



Source Nathan Associates Inc.

Air Index

The *Air Index* is created by performing PCA on the indicators in Table 22, retaining the first principal

component, and rescaling it as indicated in the previous section (i.e., the top performer in 2012 is given a score of 100, the weakest performer is given a score of one, and all other scores are expressed relative to those benchmarks).

The "loadings" column indicates the weight that each indicator is given in construction of the final index. The sign of the loading shows the direction of the association between each data point and the index. Examining the signs and weights shows that, as was the case for roads and maritime, the PCA output accords with economic analysis and experience.

Table 22: Air Index Loadings

Indicator	Dimension	Loading
International airports with cargo terminal facilities / country area	Availability	0.707
International freight carried / population	Capacity	0.707

Source: Nathan Associates Inc.

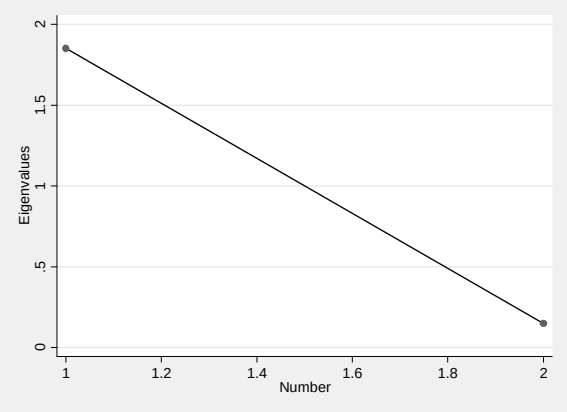
Turning again to diagnostics, the Table 23 presents full PCA output. It shows that the first eigenvalue of the data correlation matrix, which is associated with the first principal component, is well in excess of unity (the Kaiser criterion). It is also substantially greater than the other eigenvalues, which suggests that it is appropriate to retain just one component as a summary measure, an impression that is reinforced by the rapid falling away of the eigenvalue screeplot in Figure 23. Finally, the PCA analysis indicates that the *Air Index* accounts for over 90 percent of the variation in the original data series, and thus is a useful and informative summary measure.

Table 23: Air Index Eigenvalues and Proportions

Component	Eigenvalue	Proportion
1	1.851	0.926
2	0.149	0.074

Source: Nathan Associates Inc. Note: Based on a total of 26 observations, and the series described in the first table in this section.

Figure 23: Air Index Eigenvalues Screeplot



Source: Nathan Associates Inc.

Logistics Index

The *Logistics Index* is created by performing PCA on the indicators in Table 24,[11] retaining the first principal component, and rescaling it as indicated in the previous section (i.e., the top performer in 2012 is given a score of 100, the weakest performer is given a score of one, and all other scores are expressed relative to those benchmarks). The "loadings" column indicates the weight that each indicator is given in construction of the final index. The sign of the loading shows the direction of the association between each data point and the index. Examining the signs and weights shows that, as was the case for roads, maritime, and air, the PCA output accords with economic analysis and experience.

Table 24: Logistics Index Loadings

Indicator	Dimension	Loading
LPI infrastructure score	Availability and quality	0.707
LPI services (logistics competence) score	Productivity and cost	0.707

Source: Nathan Associates Inc.

Turning again to diagnostics, Table 25 presents full PCA output. It shows that the first eigenvalue of the data correlation matrix, which is associated with the first

[11] The overall LPI score is not included in the PCA analysis, because it is already based on a PCA analysis of six data series, including the infrastructure and services scores. Inclusion would therefore be redundant.

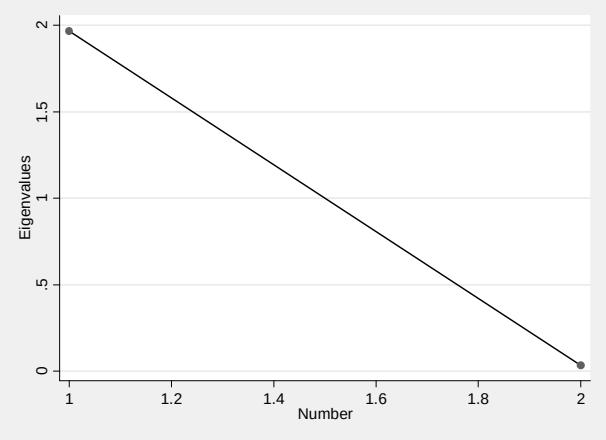
principal component, is well in excess of unity (the Kaiser criterion). It is also substantially greater than the other eigenvalues, which suggests that it is appropriate to retain just one component as a summary measure, an impression that is reinforced by the rapid falling away of the eigenvalue screeplot in Figure 24. Finally, the PCA analysis indicates that the *Logistics Index* accounts for around 98 percent of the variation in the original data series, and thus is a useful and informative summary measure.

Table 25: Logistics Index Eigenvalues and Proportions

Component	Eigenvalue	Proportion
1	1.967	0.984
2	0.033	0.017

Source: Nathan Associates Inc. Note: Based on a total of 22 observations, and the series described in the first table in this section.

Figure 24: Logistics Index Eigenvalues Screeplot



Source: Nathan Associates Inc.

TREATMENT OF MISSING DATA IN THE MODAL INDICES

It is important to note that PCA cannot be run effectively when there is a high number of missing observations for one or more of the data series that form part of the index. The same is true, indeed, of any system for index construction that relies on some form of weighted average of underlying data. One possible solution to the problem of missing data that has been adopted in some contexts (e.g., the *DHL Global Connectedness Index*) is to re-weight data points proportionately when some are missing, with a cutoff applied to avoid undue reliance on a very small number of data series. We have not adopted this approach, however, because the re-weighting necessarily produces Indexes that are not comparable across countries due to the different weighting schemes used to construct them. It is a methodology that is more applicable in a setting with a large number of data series, in which re-weighting does not result in significant overall changes; that is not the case here. Our Indexes therefore necessarily cover fewer data series than would be desirable in an ideal situation, but they represent the best available compromise between comprehensiveness and practicality. Despite their relatively narrow coverage due to data availability constraints, they are cross-country comparable, which is an important advantage over alternative approaches.

PCA is not the only aggregation technique that suffers from the problem of breaking down in the presence of missing data. In fact, it is only a weighting technique that produces a particular type of weighted average. Any alternative system, such as the use of professional judgment to derive weights, also suffers from the same problem. After the application of all available techniques to fill in missing data points in the database, which is the case here, there is no other choice but to reduce the number of data series that are used in the index in order to increase cross-country availability.

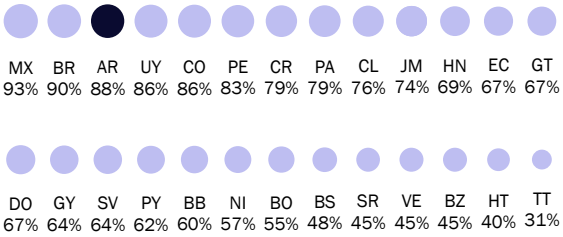
Appendix E: Country Scorecards

ARGENTINA

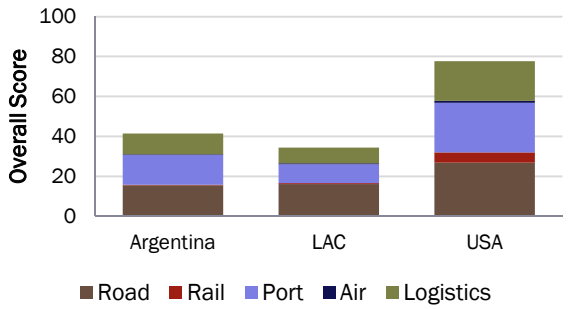
2012 FAST FACTS	
Population	41,116,746
Land area (km2)	2,780,400
GDP (US$ billions)	475
Transport share of GDP (%)	7.20
Transport service imports (US$ billions)	747
Transport service exports (US$ billions)	5.38
Overall Score (1-100)	41.39
Overall Rank (1-26)	4

Source: WDI-World Bank and IMF.

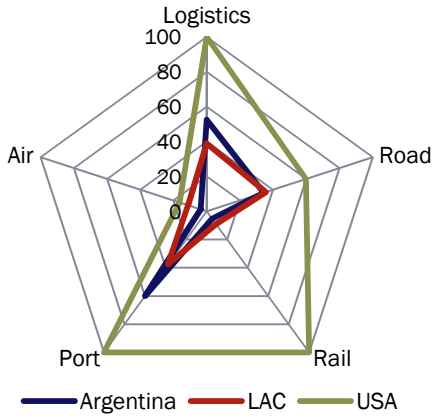
Overall Data Completion Rate



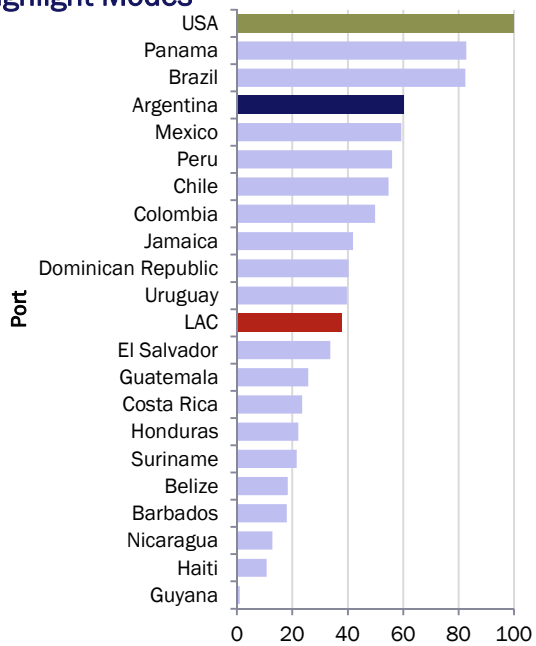
Benchmarking Argentina's Overall Score

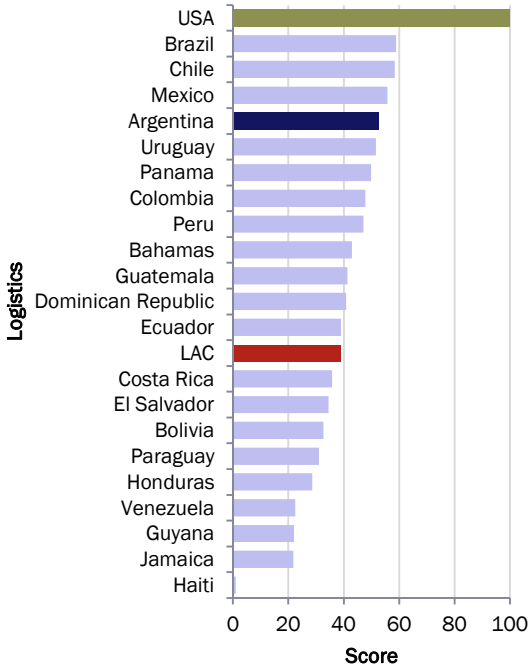


Overall Score by Mode



Highlight Modes





2012 ARGENTINA SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*34*	*11*
Road network (km)	628,693	2
Motorway/freeway/express road (km)	1,071	4
Primary network (km)	38,549	3
Secondary network (km)	189,073	2
Other networks (km)	400,000	2
Paved network (% total)	34	11
Heavy vehicles (#)	593,476	3
Fleet average age (years)	13	4
Estimated CO2 emissions (ton)	51,157,190	24
Domestic freight productivity (million ton-km)	335,105	2
Domestic freight carried (ton)	670,211,000	2
Average distance per vehicle (km/year)	150,000	1
Retail diesel oil price (US$/liter)	1.258	15
Average freight tariff (US$/ton-km)	0.101	11
RAIL		
Mode Score (1-100)	*5*	*8*
Railway network (km)	28,898	3
Average power of freight locomotives (HP)		
Railway freight companies (#)	6	4
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)	10,583	4
Domestic freight carried (million ton)	22,032,833	5
Average tariff of freight (US$/ton-km)	0.041	6
PORT		
Mode Score (1-100)	*60*	*4*
Maximum draft in container terminal (ft)	33	3
Bridge (gantry) cranes (#)	18	2
Container berth length (m)	26,447	3
Container storage facilities area (m2)	354,920	10
Port traffic (ton)		
Exports port traffic (ton)	94,187,195	4
Imports port traffic (ton)	36,662,289	4
Liner shipping connectivity index (2004 = 100)	34	5
Container terminal utilization (Latin America average = 100%)	48.70	15
Container terminal extent of competition (# terminals)	4	5
Gateway proximity to population center (category)	2	9
Gateway (TEU/truck)	3	15
AIR		
Mode Score (1-100)	*4*	*17*
International airports with cargo terminal facilities (#)	18	3
Area of cargo facilities in international airports with cargo terminal facilities (m2)	60,000	6
Domestic freight carried (ton)	9,901	8
International freight (ton)	245,749	6
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*52*	*5*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	3.05	4
LPI infrastructure index	2.94	4
LPI competence (services) index	2.95	5
Overall Score	**41**	**4**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

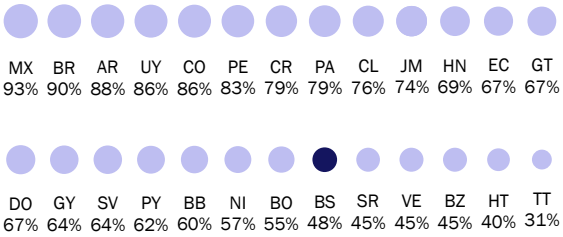
BAHAMAS

2012 FAST FACTS	
Population	352,000
Land area (km2)	13,880
GDP (US$ billions)	8
Transport share of GDP (%)	3.91
Transport service imports (US$ billions)	11
Transport service exports (US$ billions)	0.39
Overall Score (1-100)	na
Overall Rank (1-26)	na

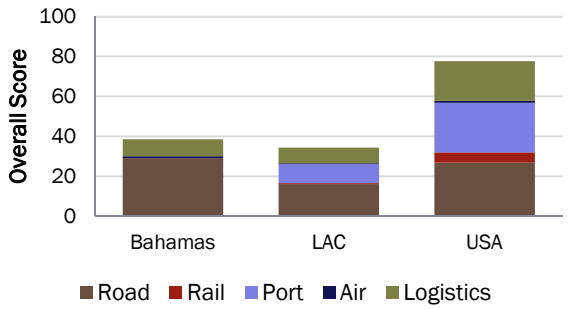
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

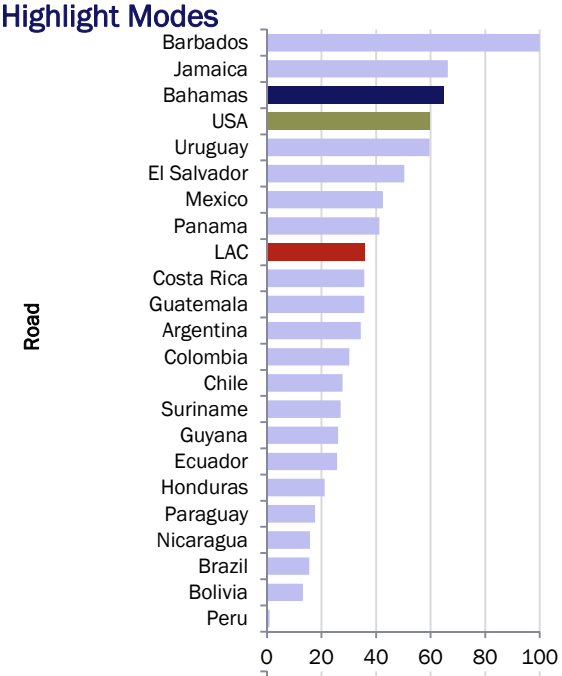
Overall Data Completion Rate

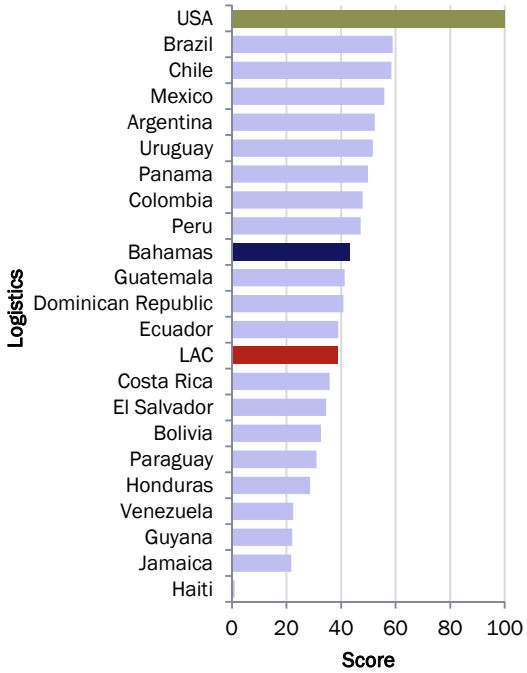


Benchmarking Bahamas' Overall Score

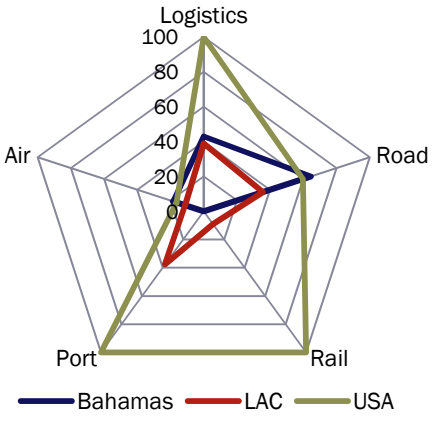


Highlight Modes





Overall Score by Mode



2012 BAHAMAS SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*65*	*3*
Road network (km)	2,717	25
Motorway/freeway/express road (km)		
Primary network (km)		
Secondary network (km)		
Other networks (km)		
Paved network (% total)	94	1
Heavy vehicles (#)	5,898	22
Fleet average age (years)		
Estimated CO2 emissions (ton)	660,448	4
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)		
Retail diesel oil price (US$/liter)	5.200	24
Average freight tariff (US$/ton-km)	0.211	18
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*na*	*na*
Maximum draft in container terminal (ft)	52	4
Bridge (gantry) cranes (#)	10	9
Container berth length (m)	1,036	20
Container storage facilities area (m2)	57,000	19
Port traffic (ton)		
Exports port traffic (ton)		
Imports port traffic (ton)		
Liner shipping connectivity index (2004 = 100)	27	9
Container terminal utilization (Latin America average = 100%)	90.80	10
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	1	3
Gateway (TEU/truck)	204	1
AIR		
Mode Score (1-100)	*18*	*4*
International airports with cargo terminal facilities (#)	3	10
Area of cargo facilities in international airports with cargo terminal facilities (m2)		
Domestic freight carried (ton)		
International freight (ton)	7,443	22
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*43*	*10*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.75	11
LPI infrastructure index	2.77	7
LPI competence (services) index	2.69	11
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

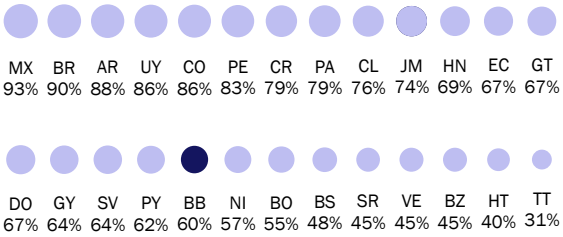
BARBADOS

2012 FAST FACTS	
Population	274,519
Land area (km2)	430
GDP (US$ billions)	5
Transport share of GDP (%)	6.62
Transport service imports (US$ billions)	7
Transport service exports (US$ billions)	0.17
Overall Score (1-100)	na
Overall Rank (1-26)	na

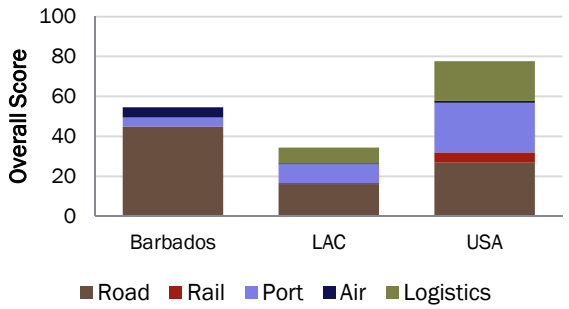
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

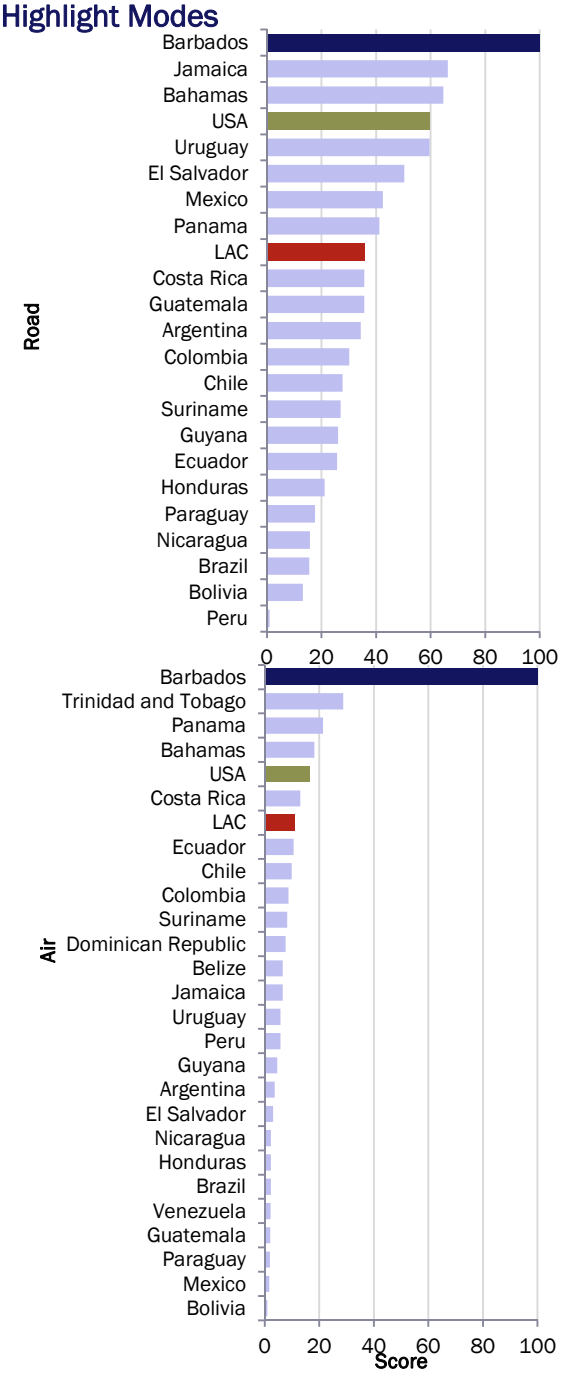
Overall Data Completion Rate



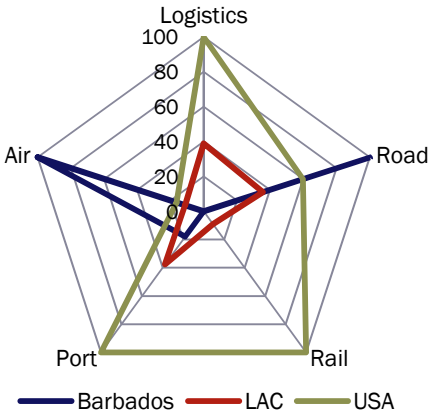
Benchmarking Barbados' Overall Score



Highlight Modes



Overall Score by Mode



2012 BARBADOS SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*100*	*1*
Road network (km)	1,570	26
Motorway/freeway/express road (km)		
Primary network (km)	374	20
Secondary network (km)	222	19
Other networks (km)	974	20
Paved network (% total)	72	4
Heavy vehicles (#)	5,053	23
Fleet average age (years)		
Estimated CO2 emissions (ton)	410,900	1
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)		
Retail diesel oil price (US$/liter)	1.250	14
Average freight tariff (US$/ton-km)	0.211	18
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*18*	*18*
Maximum draft in container terminal (ft)	36	18
Bridge (gantry) cranes (#)	1	17
Container berth length (m)	550	23
Container storage facilities area (m2)	47,348	20
Port traffic (ton)	1,001,722	20
Exports port traffic (ton)	161,071	21
Imports port traffic (ton)	802,713	21
Liner shipping connectivity index (2004 = 100)	5	22
Container terminal utilization (Latin America average = 100%)	43.17	16
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	1	3
Gateway (TEU/truck)	14	7
AIR		
Mode Score (1-100)	*100*	*1*
International airports with cargo terminal facilities (#)	1	18
Area of cargo facilities in international airports with cargo terminal facilities (m2)	4,600	15
Domestic freight carried (ton)		
International freight (ton)	20,610	19
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*na*	*na*
Logistics centers' surface (km2)	16,215	2
Logistics performance index (LPI)		
LPI infrastructure index		
LPI competence (services) index		
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

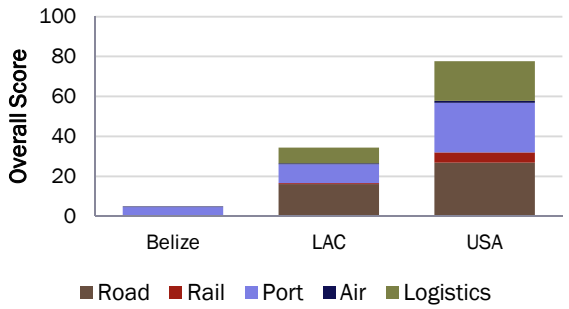
BELIZE

2012 FAST FACTS	
Population	341,956
Land area (km2)	22,970
GDP (US$ billions)	2
Transport share of GDP (%)	3.61
Transport service imports (US$ billions)	3
Transport service exports (US$ billions)	0.08
Overall Score (1-100)	na
Overall Rank (1-26)	na

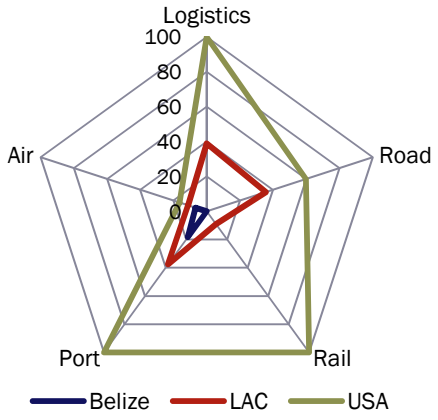
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

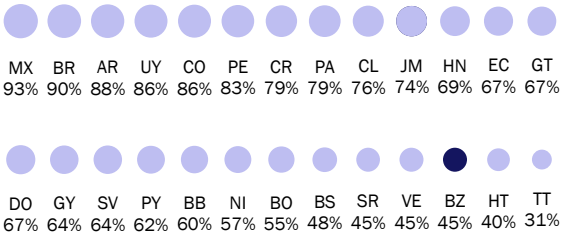
Benchmarking Belize's Overall Score



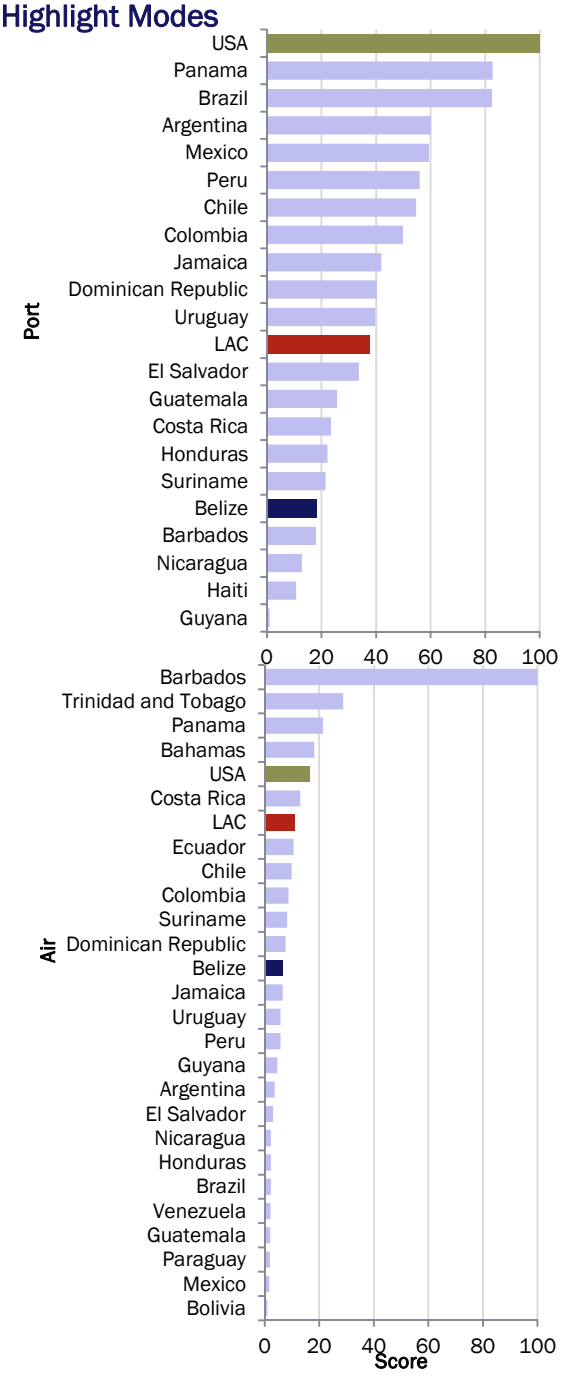
Overall Score by Mode



Overall Data Completion Rate



Highlight Modes



2012 BELIZE SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*na*	*na*
Road network (km)	3,281	24
Motorway/freeway/express road (km)		
Primary network (km)	573	18
Secondary network (km)	765	17
Other networks (km)	1,943	17
Paved network (% total)	20	15
Heavy vehicles (#)		
Fleet average age (years)	31	13
Estimated CO2 emissions (ton)	525,410	2
Domestic freight productivity (million ton-km)	285	6
Domestic freight carried (ton)	2,071,774	9
Average distance per vehicle (km/year)	15,000	12
Retail diesel oil price (US$/liter)	1.585	22
Average freight tariff (US$/ton-km)	0.074	8
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*18*	*17*
Maximum draft in container terminal (ft)	33	21
Bridge (gantry) cranes (#)	0	20
Container berth length (m)	2,330	14
Container storage facilities area (m2)	302,343	11
Port traffic (ton)	1,502,886	19
Exports port traffic (ton)		
Imports port traffic (ton)		
Liner shipping connectivity index (2004 = 100)	10	18
Container terminal utilization (Latin America average = 100%)		
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	2	9
Gateway (TEU/truck)		
AIR		
Mode Score (1-100)	*7*	*12*
International airports with cargo terminal facilities (#)	1	18
Area of cargo facilities in international airports with cargo terminal facilities (m2)		
Domestic freight carried (ton)		
International freight (ton)	3,163	25
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*na*	*na*
Logistics centers' surface (km2)		
Logistics performance index (LPI)		
LPI infrastructure index		
LPI competence (services) index		
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

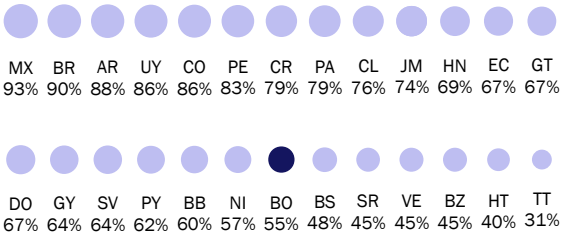
BOLIVIA

2012 FAST FACTS	
Population	10,030,000
Land area (km2)	1,098,581
GDP (US$ billions)	27
Transport share of GDP (%)	6.95
Transport service imports (US$ billions)	54
Transport service exports (US$ billions)	0.63
Overall Score (1-100)	na
Overall Rank (1-26)	na

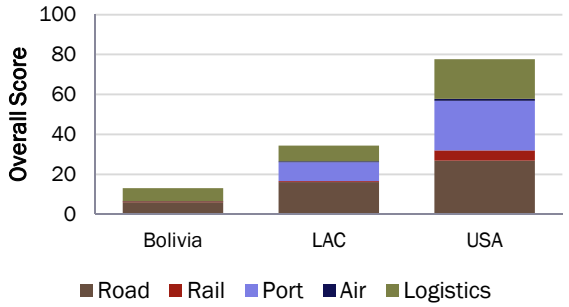
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

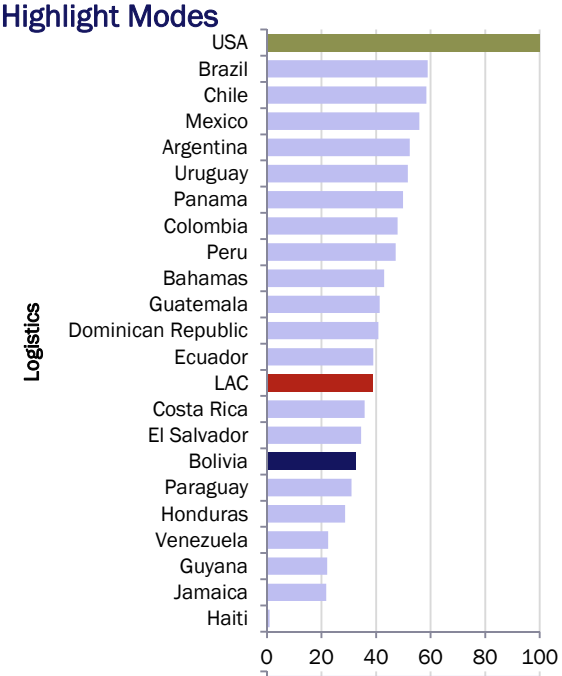
Overall Data Completion Rate

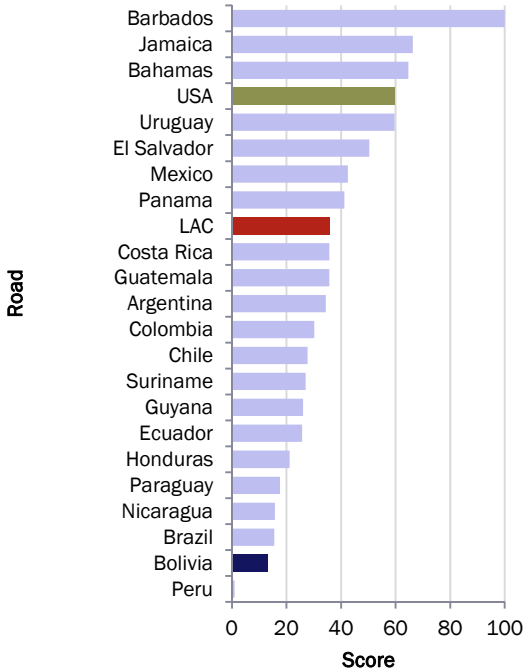


Benchmarking Bolivia's Overall Score

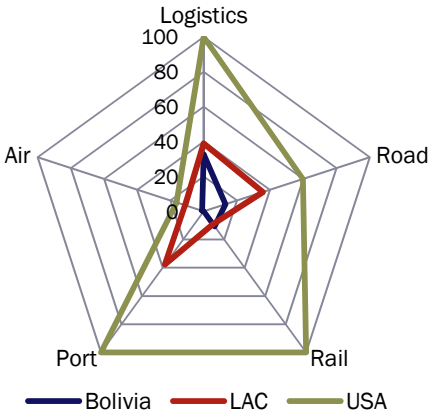


Highlight Modes





Overall Score by Mode



2012 BOLIVIA SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*13*	*21*
Road network (km)	81,022	7
Motorway/freeway/express road (km)	13	10
Primary network (km)	16,054	7
Secondary network (km)	24,531	8
Other networks (km)	40,822	6
Paved network (% total)	8	21
Heavy vehicles (#)	98,688	13
Fleet average age (years)		
Estimated CO2 emissions (ton)	6,168,610	17
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)		
Retail diesel oil price (US$/liter)	0.530	3
Average freight tariff (US$/ton-km)	0.134	25
RAIL		
Mode Score (1-100)	*11*	*4*
Railway network (km)	3,216	5
Average power of freight locomotives (HP)		
Railway freight companies (#)	2	7
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)	1,123	6
Domestic freight carried (million ton)	2,407,959	7
Average tariff of freight (US$/ton-km)	0.044	5
PORT		
Mode Score (1-100)	*na*	*na*
Maximum draft in container terminal (ft)		
Bridge (gantry) cranes (#)		
Container berth length (m)		
Container storage facilities area (m2)		
Port traffic (ton)		
Exports port traffic (ton)	3,019,041	15
Imports port traffic (ton)	258,555	22
Liner shipping connectivity index (2004 = 100)		
Container terminal utilization (Latin America average = 100%)		
Container terminal extent of competition (# terminals)		
Gateway proximity to population center (category)		
Gateway (TEU/truck)		
AIR		
Mode Score (1-100)	*1*	*26*
International airports with cargo terminal facilities (#)	2	11
Area of cargo facilities in international airports with cargo terminal facilities (m2)	36,660	8
Domestic freight carried (ton)		
International freight (ton)	20,447	20
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*33*	*16*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.61	14
LPI infrastructure index	2.39	16
LPI competence (services) index	2.58	14
Overall Score	**na**	**na**

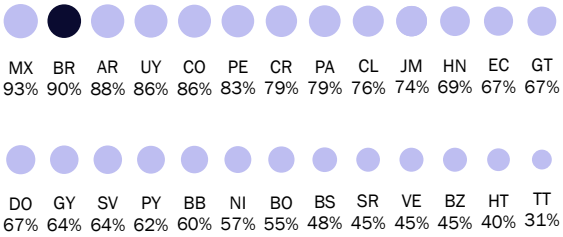
Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

BRAZIL

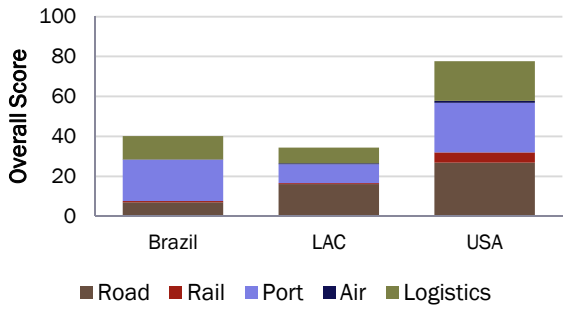
2012 FAST FACTS	
Population	198,363,558
Land area (km2)	8,514,880
GDP (US$ billions)	2,396
Transport share of GDP (%)	4.53
Transport service imports (US$ billions)	2,356
Transport service exports (US$ billions)	16.97
Overall Score (1-100)	40.14
Overall Rank (1-26)	5

Source: WDI-World Bank and IMF.

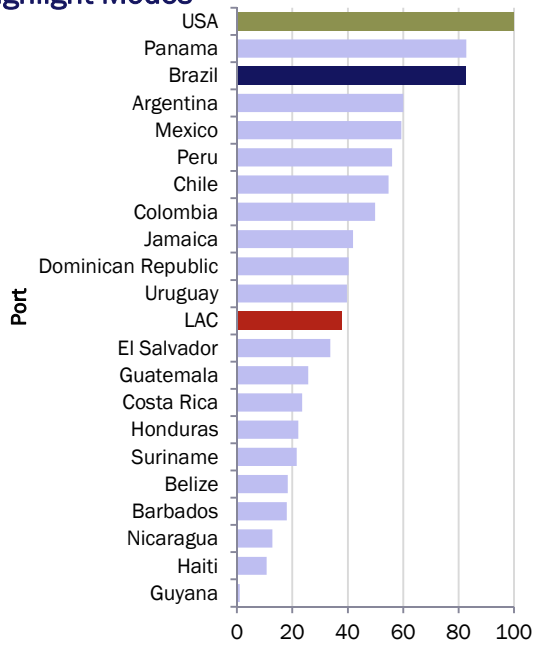
Overall Data Completion Rate

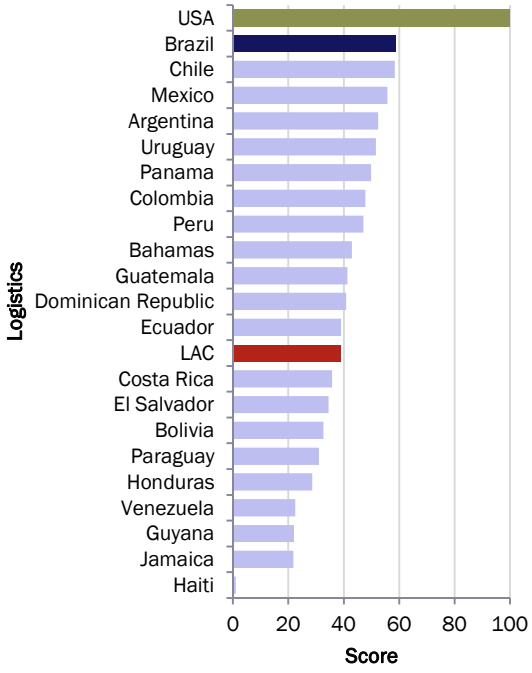


Benchmarking Brazil's Overall Score

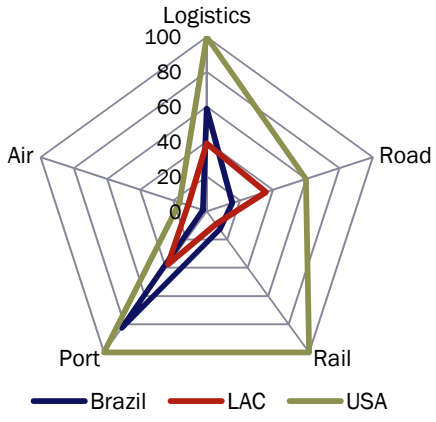


Highlight Modes





Overall Score by Mode



2012 BRAZIL SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*16*	*20*
Road network (km)	1,691,164	1
Motorway/freeway/express road (km)	9,060	11
Primary network (km)	119,807	1
Secondary network (km)	255,040	1
Other networks (km)	1,339,127	1
Paved network (% total)	12	19
Heavy vehicles (#)	7,619,436	1
Fleet average age (years)	13	2
Estimated CO2 emissions (ton)	206,775,060	26
Domestic freight productivity (million ton-km)	1,152,306	1
Domestic freight carried (ton)	1,665,873,710	1
Average distance per vehicle (km/year)	56,121	5
Retail diesel oil price (US$/liter)	1.072	9
Average freight tariff (US$/ton-km)	0.185	17
RAIL		
Mode Score (1-100)	*13*	*3*
Railway network (km)	27,217	1
Average power of freight locomotives (HP)	2,790	6
Railway freight companies (#)	12	1
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)	297,800	1
Domestic freight carried (million ton)	464,568,000	1
Average tariff of freight (US$/ton-km)	0.067	2
PORT		
Mode Score (1-100)	*82*	*3*
Maximum draft in container terminal (ft)	44	1
Bridge (gantry) cranes (#)	28	3
Container berth length (m)	60,417	1
Container storage facilities area (m2)	1,900,674	3
Port traffic (ton)	903,765,474	1
Exports port traffic (ton)	525,431,565	1
Imports port traffic (ton)	144,822,121	1
Liner shipping connectivity index (2004 = 100)	39	3
Container terminal utilization (Latin America average = 100%)	96.19	9
Container terminal extent of competition (# terminals)	5	3
Gateway proximity to population center (category)	3	16
Gateway (TEU/truck)	1	20
AIR		
Mode Score (1-100)	*2*	*21*
International airports with cargo terminal facilities (#)	34	1
Area of cargo facilities in international airports with cargo terminal facilities (m2)	435,887	1
Domestic freight carried (ton)	871,726	1
International freight (ton)	761,120	1
Domestic air freight carried (million ton-km)	9,590	1
LOGISTICS		
Mode Score (1-100)	*59*	*2*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	3.13	2
LPI infrastructure index	3.07	2
LPI competence (services) index	3.12	1
Overall Score	**40**	**5**

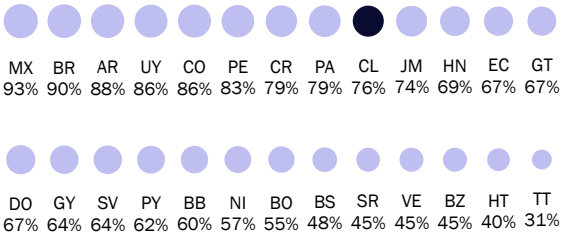
Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

CHILE

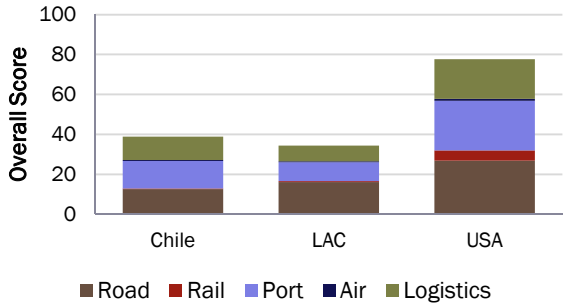
2012 FAST FACTS	
Population	17,403,000
Land area (km2)	756,090
GDP (US$ billions)	268
Transport share of GDP (%)	4.01
Transport service imports (US$ billions)	321
Transport service exports (US$ billions)	7.19
Overall Score (1-100)	38.81
Overall Rank (1-26)	7

Source: WDI-World Bank and IMF.

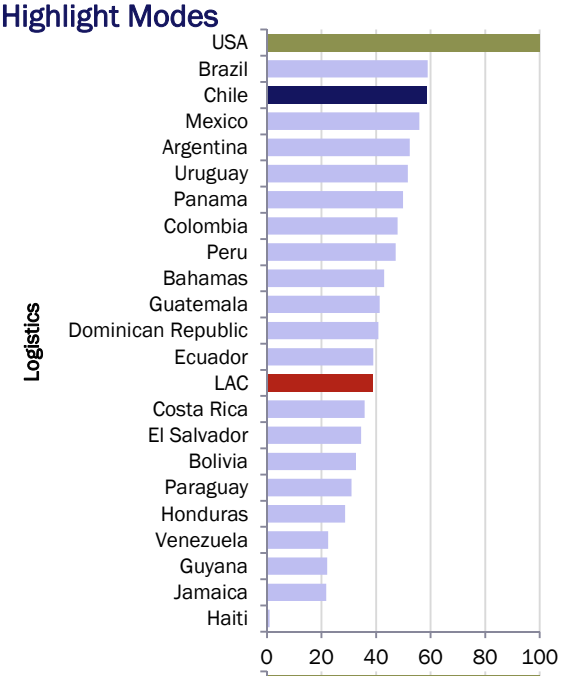
Overall Data Completion Rate

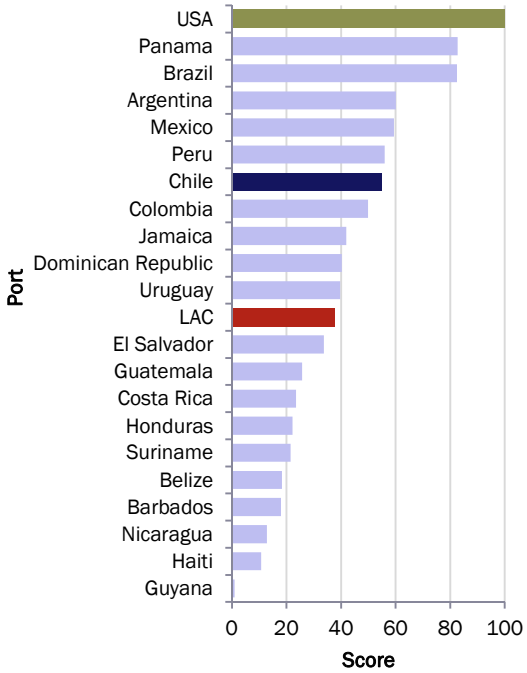


Benchmarking Chile's Overall Score

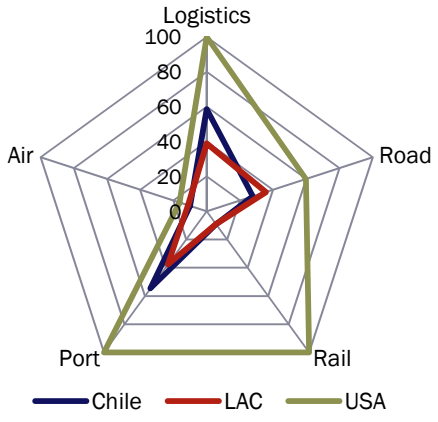


Highlight Modes





Overall Score by Mode



2012 CHILE SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*28*	*13*
Road network (km)	77,442	8
Motorway/freeway/express road (km)		
Primary network (km)	26,885	4
Secondary network (km)	50,558	4
Other networks (km)		
Paved network (% total)	24	13
Heavy vehicles (#)	201,531	8
Fleet average age (years)	10	14
Estimated CO2 emissions (ton)	30,725,490	21
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)	500,744,230	3
Average distance per vehicle (km/year)		
Retail diesel oil price (US$/liter)	1.475	19
Average freight tariff (US$/ton-km)	0.127	14
RAIL		
Mode Score (1-100)	9	6
Railway network (km)	2,133	4
Average power of freight locomotives (HP)		
Railway freight companies (#)	2	5
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)	4,090	5
Domestic freight carried (million ton)	27,536,726	4
Average tariff of freight (US$/ton-km)	0.049	4
PORT		
Mode Score (1-100)	*55*	7
Maximum draft in container terminal (ft)	44	8
Bridge (gantry) cranes (#)	11	7
Container berth length (m)	27,346	2
Container storage facilities area (m2)	2,446,868	2
Port traffic (ton)	138,334,273	4
Exports port traffic (ton)	58,046,546	5
Imports port traffic (ton)	52,103,586	3
Liner shipping connectivity index (2004 = 100)	33	6
Container terminal utilization (Latin America average = 100%)	131.51	7
Container terminal extent of competition (# terminals)	2	7
Gateway proximity to population center (category)	3	16
Gateway (TEU/truck)	17	6
AIR		
Mode Score (1-100)	*10*	*8*
International airports with cargo terminal facilities (#)	7	7
Area of cargo facilities in international airports with cargo terminal facilities (m2)		
Domestic freight carried (ton)	32,750	6
International freight (ton)	268,355	5
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*58*	*3*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	3.17	1
LPI infrastructure index	3.18	1
LPI competence (services) index	3.00	3
Overall Score	**39**	**7**

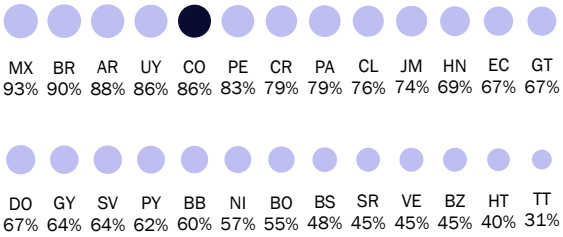
Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

COLOMBIA

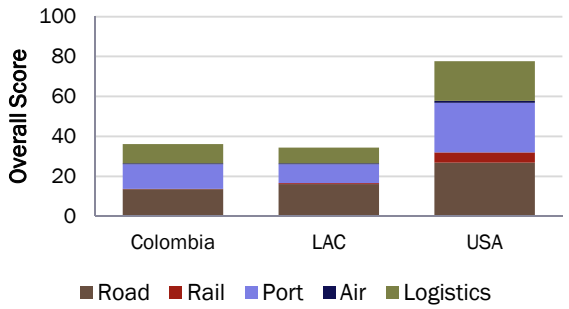
2012 FAST FACTS	
Population	46,598,000
Land area (km2)	1,141,748
GDP (US$ billions)	366
Transport share of GDP (%)	7.73
Transport service imports (US$ billions)	503
Transport service exports (US$ billions)	3.46
Overall Score (1-100)	36.10
Overall Rank (1-26)	8

Source: WDI-World Bank and IMF.

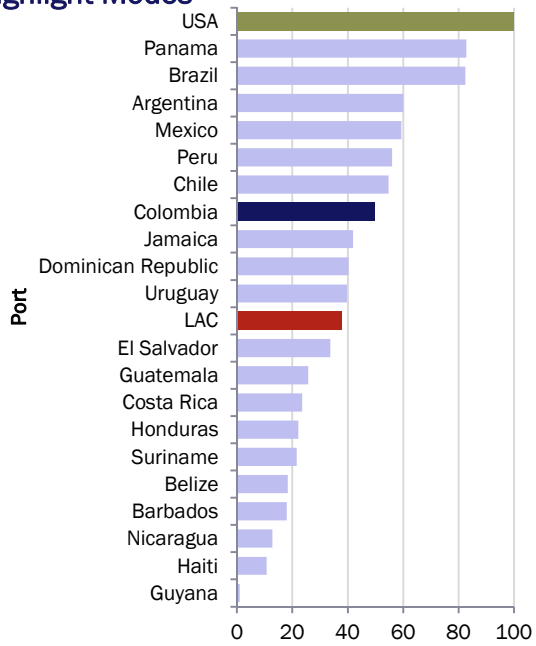
Overall Data Completion Rate

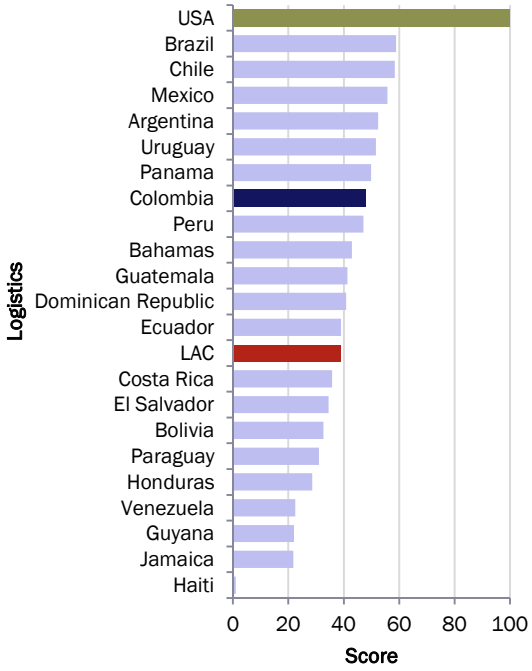


Benchmarking Colombia's Overall Score

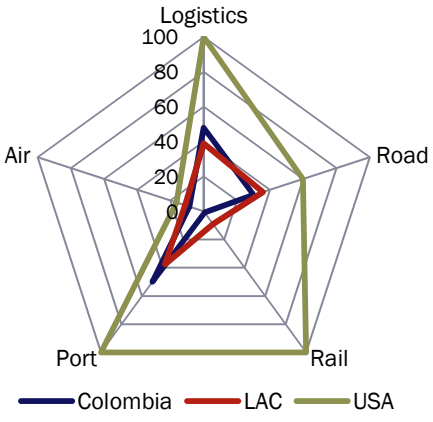


Highlight Modes





Overall Score by Mode



2012 COLOMBIA SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*30*	*12*
Road network (km)	214,946	4
Motorway/freeway/express road (km)	845	11
Primary network (km)	17,423	6
Secondary network (km)	43,327	5
Other networks (km)	154,196	4
Paved network (% total)	7	22
Heavy vehicles (#)	306,012	6
Fleet average age (years)	21	9
Estimated CO2 emissions (ton)	33,360,410	22
Domestic freight productivity (million ton-km)	65,688	4
Domestic freight carried (ton)	199,369,000	5
Average distance per vehicle (km/year)	64,584	2
Retail diesel oil price (US$/liter)	1.190	11
Average freight tariff (US$/ton-km)	0.076	9
RAIL		
Mode Score (1-100)	*1*	9
Railway network (km)	940	9
Average power of freight locomotives (HP)		
Railway freight companies (#)	5	5
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)	15,360	3
Domestic freight carried (million ton)	76,800,000	3
Average tariff of freight (US$/ton-km)	0.040	7
PORT		
Mode Score (1-100)	*50*	*8*
Maximum draft in container terminal (ft)	44	10
Bridge (gantry) cranes (#)	20	6
Container berth length (m)	12,496	4
Container storage facilities area (m2)	580,552	7
Port traffic (ton)	176,797,901	3
Exports port traffic (ton)	127,656,588	2
Imports port traffic (ton)	30,141,481	5
Liner shipping connectivity index (2004 = 100)	37	4
Container terminal utilization (Latin America average = 100%)	164.14	4
Container terminal extent of competition (# terminals)	6	2
Gateway proximity to population center (category)	6	24
Gateway (TEU/truck)	7	13
AIR		
Mode Score (1-100)	*9*	9
International airports with cargo terminal facilities (#)	17	4
Area of cargo facilities in international airports with cargo terminal facilities (m2)	115,326	4
Domestic freight carried (ton)	145,503	4
International freight (ton)	623,792	2
Domestic air freight carried (million ton-km)	74	2
LOGISTICS		
Mode Score (1-100)	*48*	*8*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.87	8
LPI infrastructure index	2.72	9
LPI competence (services) index	2.95	5
Overall Score	**36**	**8**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

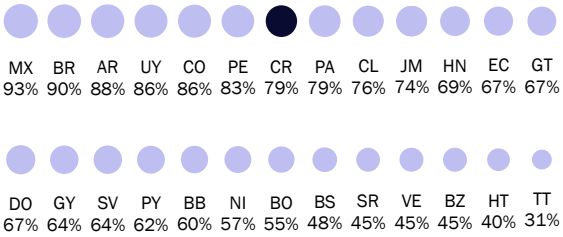
COSTA RICA

2012 FAST FACTS	
Population	4,782,000
Land area (km2)	51,100
GDP (US$ billions)	45
Transport share of GDP (%)	6.86
Transport service imports (US$ billions)	59
Transport service exports (US$ billions)	0.88
Overall Score (1-100)	na
Overall Rank (1-26)	na

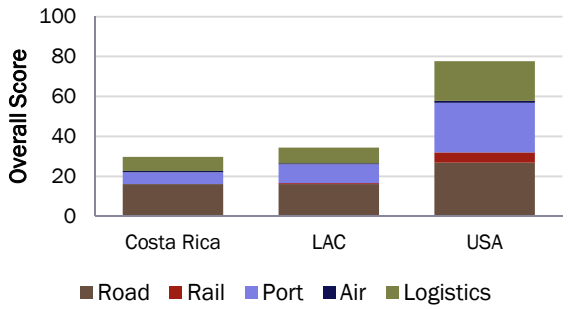
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

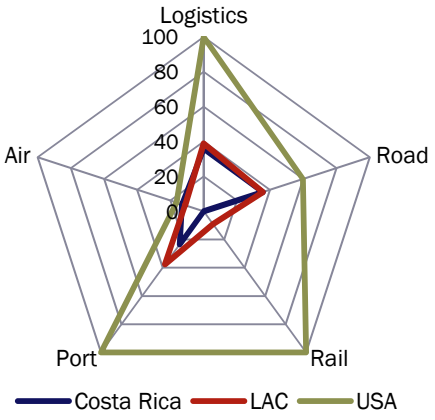
Overall Data Completion Rate



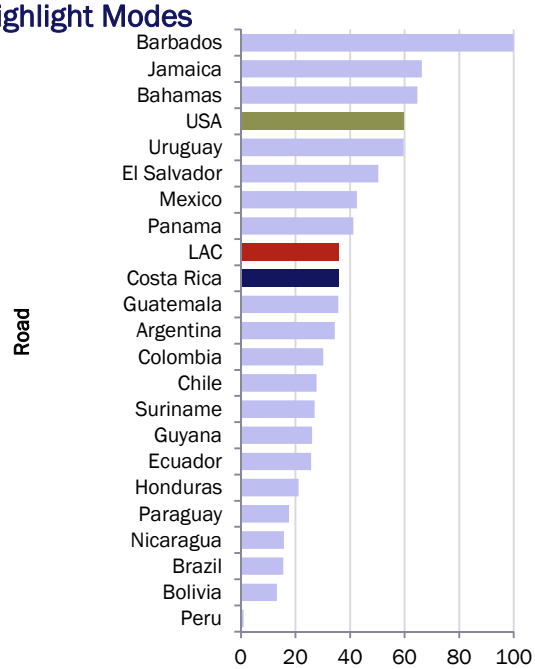
Benchmarking Costa Rica's Overall Score

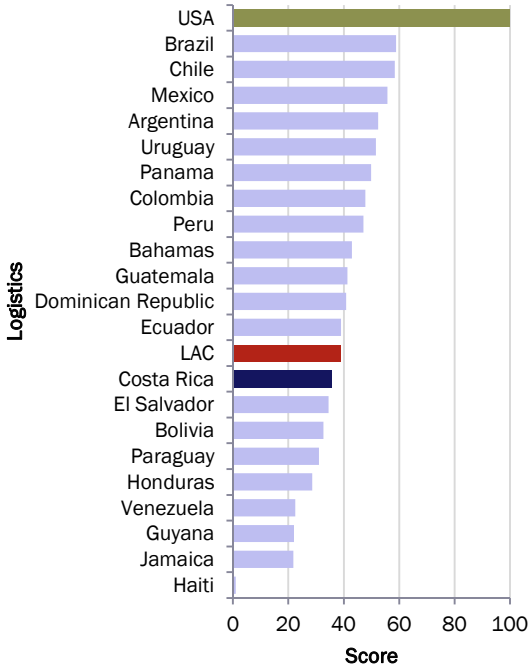


Overall Score by Mode



Highlight Modes





2012 COSTA RICA SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*36*	9
Road network (km)	44,950	9
Motorway/freeway/express road (km)	78	8
Primary network (km)	7,519	11
Secondary network (km)	34,524	6
Other networks (km)	2,829	15
Paved network (% total)	26	12
Heavy vehicles (#)	195,784	9
Fleet average age (years)	15	5
Estimated CO2 emissions (ton)	5,448,750	16
Domestic freight productivity (million ton-km)	5,513	6
Domestic freight carried (ton)	2,272	8
Average distance per vehicle (km/year)	30,000	10
Retail diesel oil price (US$/liter)	1.360	18
Average freight tariff (US$/ton-km)	0.118	13
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)	270	11
Average power of freight locomotives (HP)		
Railway freight companies (#)	1	12
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)	19	9
Domestic freight carried (million ton)	300,568	9
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*23*	*14*
Maximum draft in container terminal (ft)	36	19
Bridge (gantry) cranes (#)	2	14
Container berth length (m)	3,103	12
Container storage facilities area (m2)	219,600	15
Port traffic (ton)	14,399,967	12
Exports port traffic (ton)	6,566,271	12
Imports port traffic (ton)	7,833,697	11
Liner shipping connectivity index (2004 = 100)	14	16
Container terminal utilization (Latin America average = 100%)	405.05	1
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	4	23
Gateway (TEU/truck)	6	14
AIR		
Mode Score (1-100)	*13*	*6*
International airports with cargo terminal facilities (#)	1	18
Area of cargo facilities in international airports with cargo terminal facilities (m2)	15,450	9
Domestic freight carried (ton)		
International freight (ton)	94,775	10
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*36*	*14*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.75	11
LPI infrastructure index	2.60	12
LPI competence (services) index	2.53	15
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

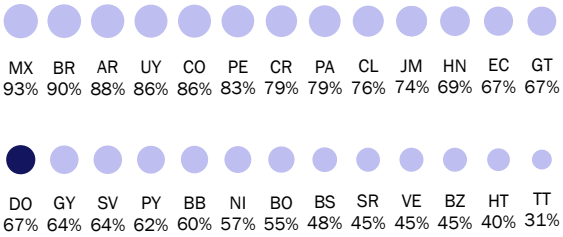
DOMINICAN REPUBLIC

2012 FAST FACTS	
Population	10,237,000
Land area (km2)	48,670
GDP (US$ billions)	59
Transport share of GDP (%)	8.44
Transport service imports (US$ billions)	99
Transport service exports (US$ billions)	0.97
Overall Score (1-100)	na
Overall Rank (1-26)	na

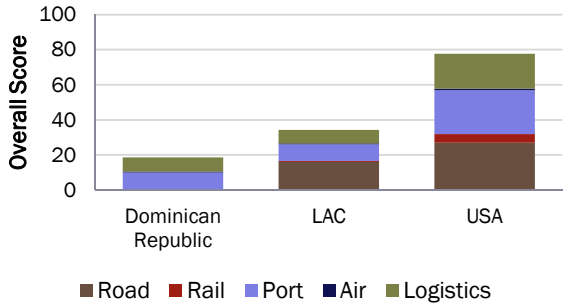
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

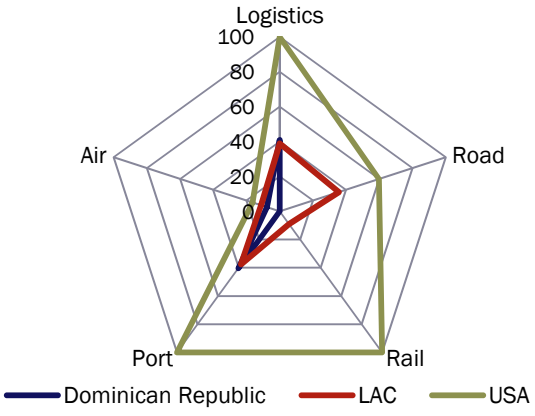
Overall Data Completion Rate



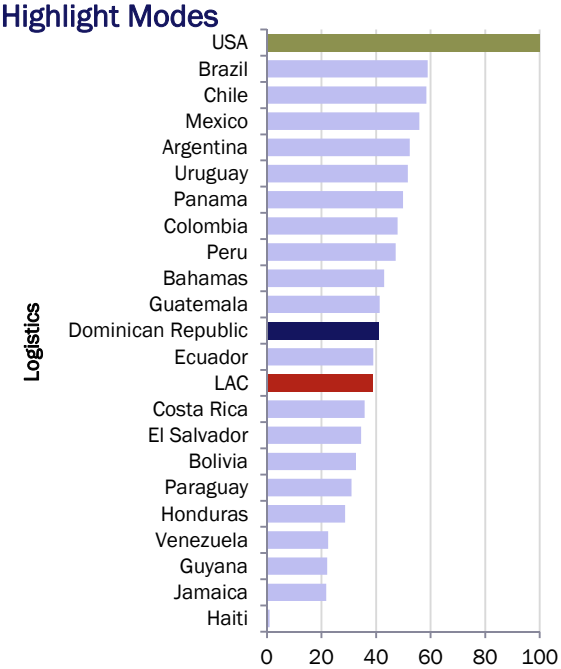
Benchmarking Dominican Republic's Overall Score

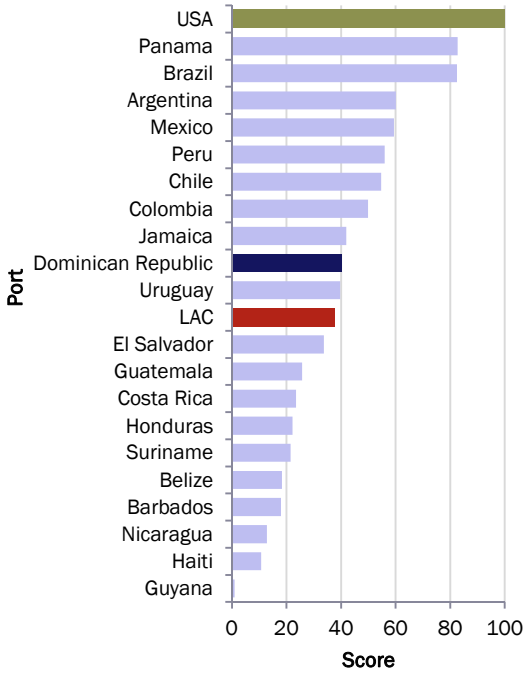


Overall Score by Mode



Highlight Modes





2012 DOMINICAN REPUBLIC SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*na*	*na*
Road network (km)	19,320	14
Motorway/freeway/express road (km)	355	5
Primary network (km)	267	21
Secondary network (km)	4,698	13
Other networks (km)	14,000	10
Paved network (% total)		
Heavy vehicles (#)	363,439	5
Fleet average age (years)	20	10
Estimated CO2 emissions (ton)	4,170,530	13
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)	9,000	11
Retail diesel oil price (US$/liter)	1.350	17
Average freight tariff (US$/ton-km)	0.140	15
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*40*	*10*
Maximum draft in container terminal (ft)	45	9
Bridge (gantry) cranes (#)	11	7
Container berth length (m)	4,022	9
Container storage facilities area (m2)	750,000	5
Port traffic (ton)	25,804,124	8
Exports port traffic (ton)	3,601,722	14
Imports port traffic (ton)	16,124,140	7
Liner shipping connectivity index (2004 = 100)	24	10
Container terminal utilization (Latin America average = 100%)	72.43	13
Container terminal extent of competition (# terminals)	2	7
Gateway proximity to population center (category)	2	9
Gateway (TEU/truck)		
AIR		
Mode Score (1-100)	*8*	*11*
International airports with cargo terminal facilities (#)	6	8
Area of cargo facilities in international airports with cargo terminal facilities (m2)	49,515	7
Domestic freight carried (ton)		
International freight (ton)	83,910	11
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*41*	*12*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.70	13
LPI infrastructure index	2.61	11
LPI competence (services) index	2.74	10
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

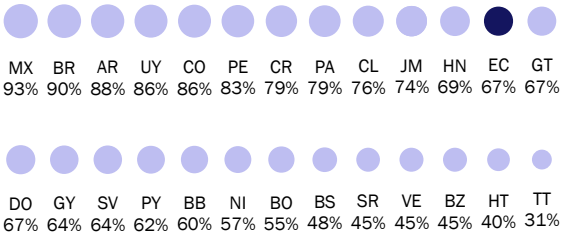
ECUADOR

2012 FAST FACTS	
Population	14,867,371
Land area (km2)	256,370
GDP (US$ billions)	86
Transport share of GDP (%)	5.27
Transport service imports (US$ billions)	142
Transport service exports (US$ billions)	3.39
Overall Score (1-100)	na
Overall Rank (1-26)	na

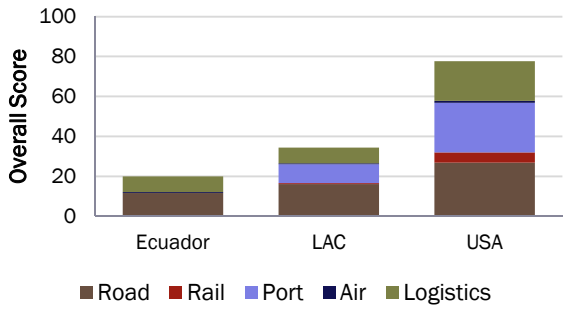
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

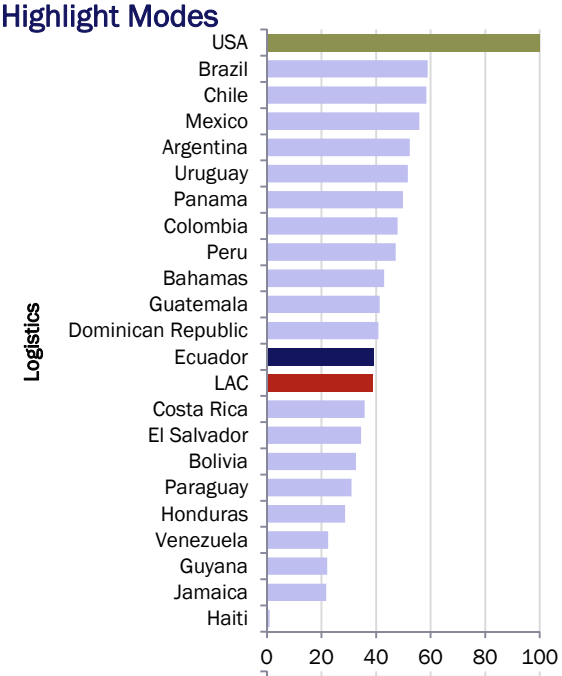
Overall Data Completion Rate

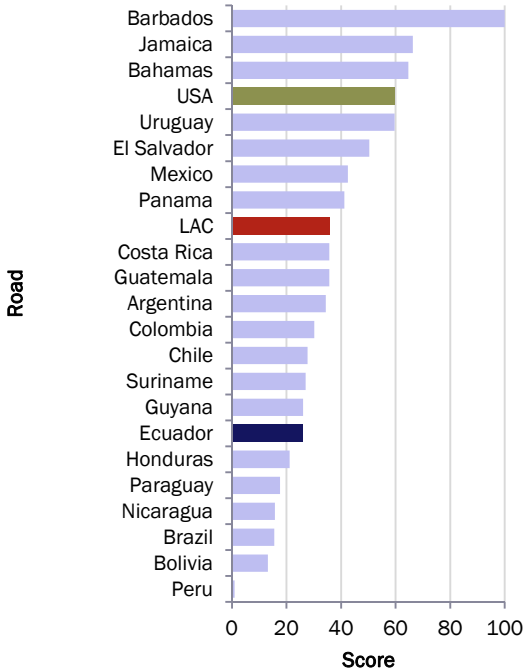


Benchmarking Ecuador's Overall Score

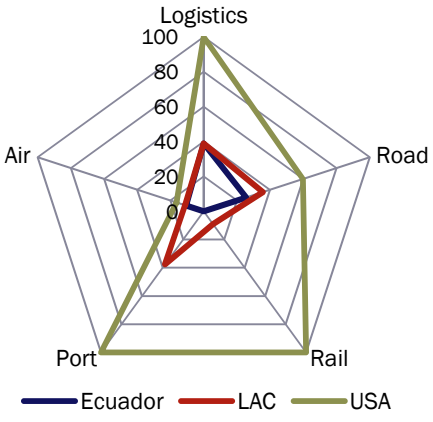


Highlight Modes





Overall Score by Mode



2012 ECUADOR SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*26*	*16*
Road network (km)	43,762	10
Motorway/freeway/express road (km)		
Primary network (km)	8,873	10
Secondary network (km)	12,350	10
Other networks (km)	22,539	7
Paved network (% total)	19	16
Heavy vehicles (#)	128,874	10
Fleet average age (years)		
Estimated CO2 emissions (ton)	18,795,540	20
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)	80,000	12
Retail diesel oil price (US$/liter)	0.269	2
Average freight tariff (US$/ton-km)	0.066	5
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)	966	8
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*na*	*na*
Maximum draft in container terminal (ft)	36	13
Bridge (gantry) cranes (#)	5	12
Container berth length (m)	2,880	13
Container storage facilities area (m2)	2,903,493	1
Port traffic (ton)		
Exports port traffic (ton)	33,856,379	7
Imports port traffic (ton)	10,986,450	10
Liner shipping connectivity index (2004 = 100)	23	11
Container terminal utilization (Latin America average = 100%)	138.21	6
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	6	24
Gateway (TEU/truck)	12	10
AIR		
Mode Score (1-100)	*11*	*7*
International airports with cargo terminal facilities (#)	5	9
Area of cargo facilities in international airports with cargo terminal facilities (m2)	120,000	3
Domestic freight carried (ton)	16,594	7
International freight (ton)	240,197	7
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*39*	*13*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.76	10
LPI infrastructure index	2.62	10
LPI competence (services) index	2.65	12
Overall Score	**na**	**na**

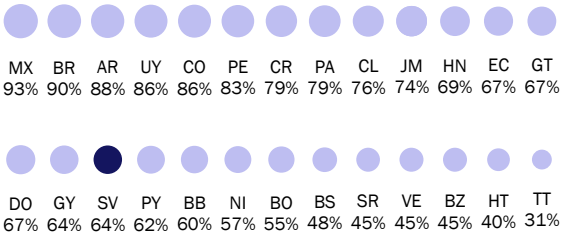
Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

EL SALVADOR

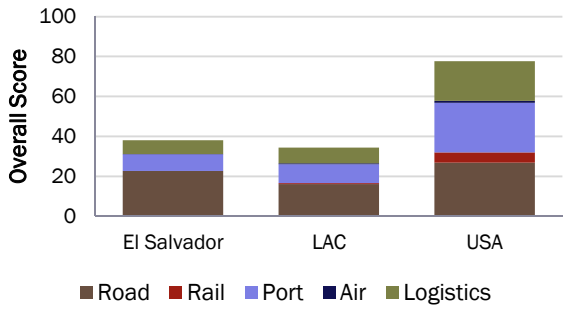
2012 FAST FACTS	
Population	6,249,262
Land area (km2)	21,040
GDP (US$ billions)	24
Transport share of GDP (%)	5.60
Transport service imports (US$ billions)	46
Transport service exports (US$ billions)	0.53
Overall Score (1-100)	40.13
Overall Rank (1-26)	6

Source: WDI-World Bank and IMF.

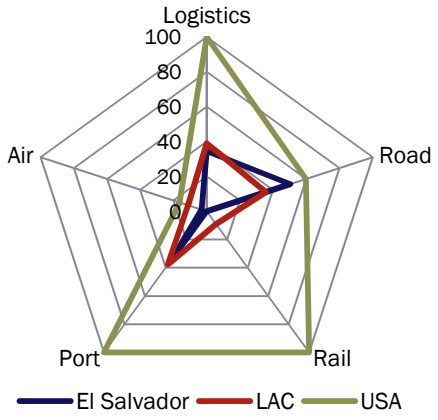
Overall Data Completion Rate



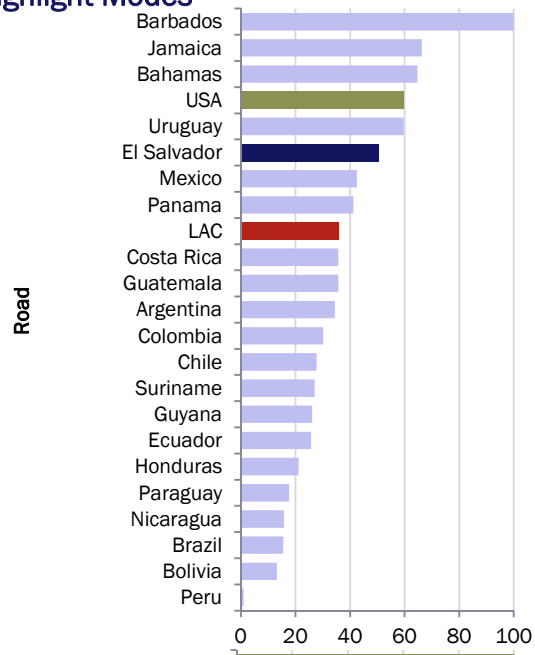
Benchmarking El Salvador's Overall Score

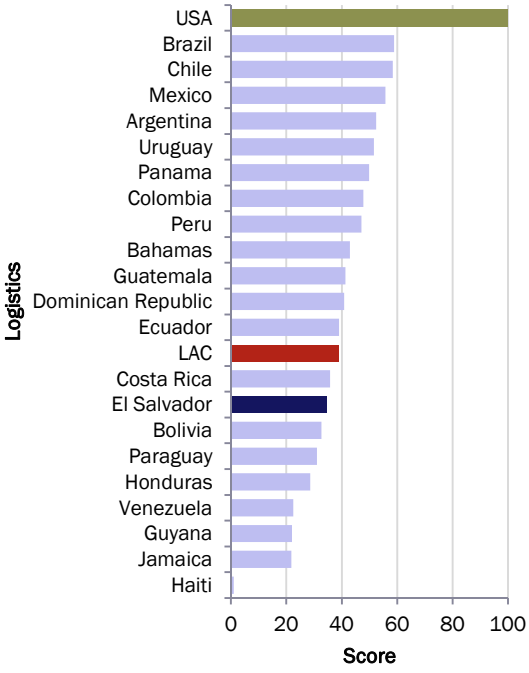


Overall Score by Mode



Highlight Modes





2012 EL SALVADOR SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*50*	6
Road network (km)	9,297	19
Motorway/freeway/express road (km)		
Primary network (km)	3,130	14
Secondary network (km)	1,188	16
Other networks (km)	4,980	13
Paved network (% total)	63	5
Heavy vehicles (#)	61,046	14
Fleet average age (years)		
Estimated CO2 emissions (ton)	3,542,460	11
Domestic freight productivity (million ton-km)	3,068	6
Domestic freight carried (ton)	10,128,102	9
Average distance per vehicle (km/year)	42,000	8
Retail diesel oil price (US$/liter)	0.890	25
Average freight tariff (US$/ton-km)	0.059	2
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)	13	13
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*34*	*12*
Maximum draft in container terminal (ft)	49	7
Bridge (gantry) cranes (#)	0	20
Container berth length (m)	3,438	11
Container storage facilities area (m2)	445,444	9
Port traffic (ton)	8,512,000	14
Exports port traffic (ton)	2,315,698	17
Imports port traffic (ton)	6,555,416	12
Liner shipping connectivity index (2004 = 100)	9	19
Container terminal utilization (Latin America average = 100%)		
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	3	16
Gateway (TEU/truck)	3	17
AIR		
Mode Score (1-100)	*3*	*18*
International airports with cargo terminal facilities (#)	1	18
Area of cargo facilities in international airports with cargo terminal facilities (m2)	10,286	12
Domestic freight carried (ton)		
International freight (ton)	23,363	16
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*35*	*15*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.60	15
LPI infrastructure index	2.46	14
LPI competence (services) index	2.60	13
Overall Score	**40**	**6**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

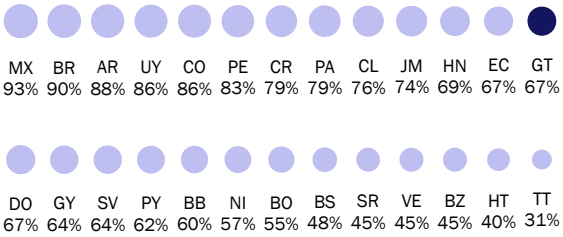
GUATEMALA

2012 FAST FACTS	
Population	15,105,000
Land area (km2)	108,890
GDP (US$ billions)	50
Transport share of GDP (%)	7.80
Transport service imports (US$ billions)	79
Transport service exports (US$ billions)	1.29
Overall Score (1-100)	na
Overall Rank (1-26)	na

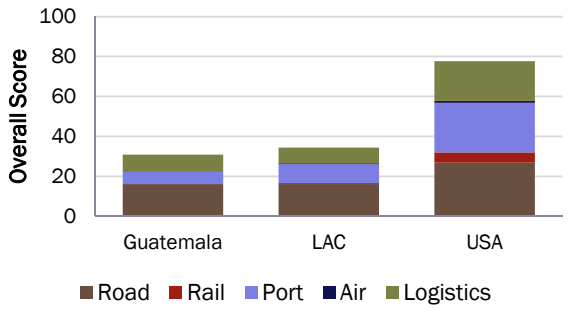
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

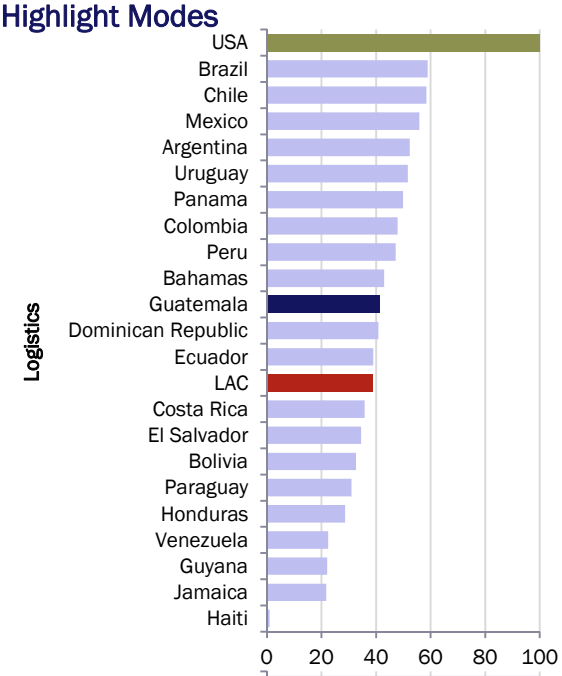
Overall Data Completion Rate

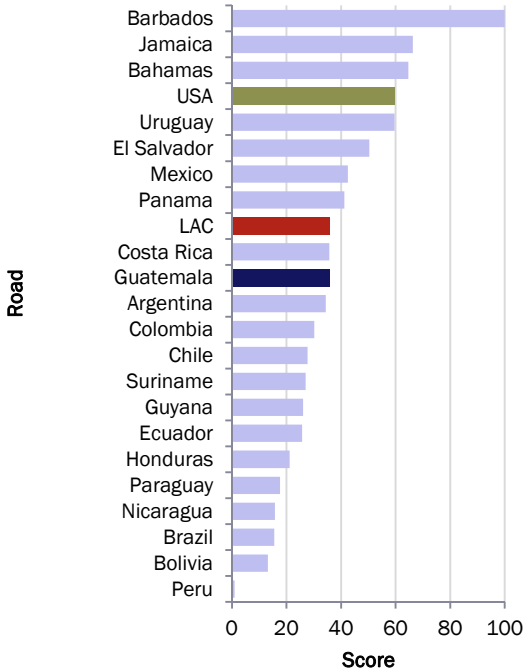


Benchmarking Guatemala's Overall Score

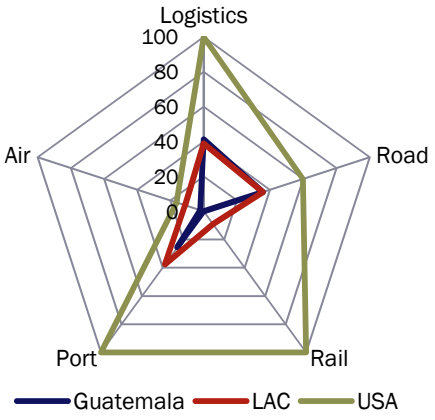


Highlight Modes





Overall Score by Mode



2012 GUATEMALA SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*36*	*10*
Road network (km)	18,830	15
Motorway/freeway/express road (km)		
Primary network (km)	11,598	8
Secondary network (km)		
Other networks (km)	4,102	14
Paved network (% total)	44	6
Heavy vehicles (#)	121,753	11
Fleet average age (years)	15	11
Estimated CO2 emissions (ton)	6,726,000	18
Domestic freight productivity (million ton-km)	7,286	6
Domestic freight carried (ton)	24,104,520	9
Average distance per vehicle (km/year)	50,667	6
Retail diesel oil price (US$/liter)	1.040	7
Average freight tariff (US$/ton-km)	0.051	1
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*26*	*13*
Maximum draft in container terminal (ft)	36	15
Bridge (gantry) cranes (#)	1	17
Container berth length (m)	1,315	17
Container storage facilities area (m2)	38,000	21
Port traffic (ton)	18,466,000	11
Exports port traffic (ton)	7,157,620	11
Imports port traffic (ton)	11,309,000	9
Liner shipping connectivity index (2004 = 100)	20	13
Container terminal utilization (Latin America average = 100%)	248.67	2
Container terminal extent of competition (# terminals)	3	6
Gateway proximity to population center (category)	3	16
Gateway (TEU/truck)	10	12
AIR		
Mode Score (1-100)	*2*	*23*
International airports with cargo terminal facilities (#)	1	18
Area of cargo facilities in international airports with cargo terminal facilities (m2)	12,553	11
Domestic freight carried (ton)		
International freight (ton)	50,995	12
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*41*	*11*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.80	9
LPI infrastructure index	2.59	13
LPI competence (services) index	2.78	9
Overall Score	**na**	**na**

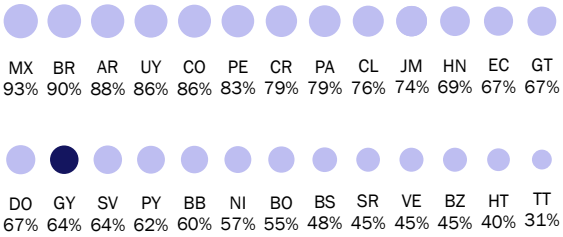
Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

GUYANA

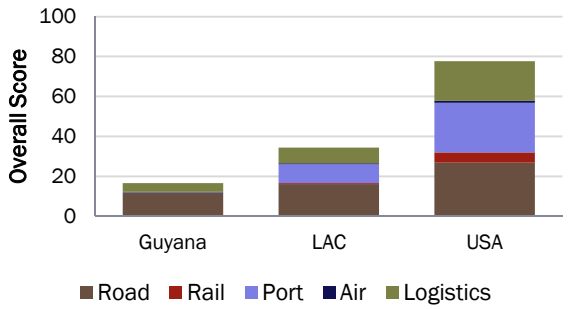
2012 FAST FACTS	
Population	757,587
Land area (km2)	214,970
GDP (US$ billions)	3
Transport share of GDP (%)	6.30
Transport service imports (US$ billions)	6
Transport service exports (US$ billions)	0.23
Overall Score (1-100)	17.48
Overall Rank (1-26)	10

Source: WDI-World Bank and IMF.

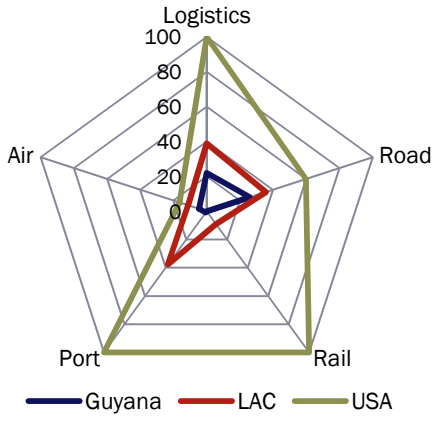
Overall Data Completion Rate



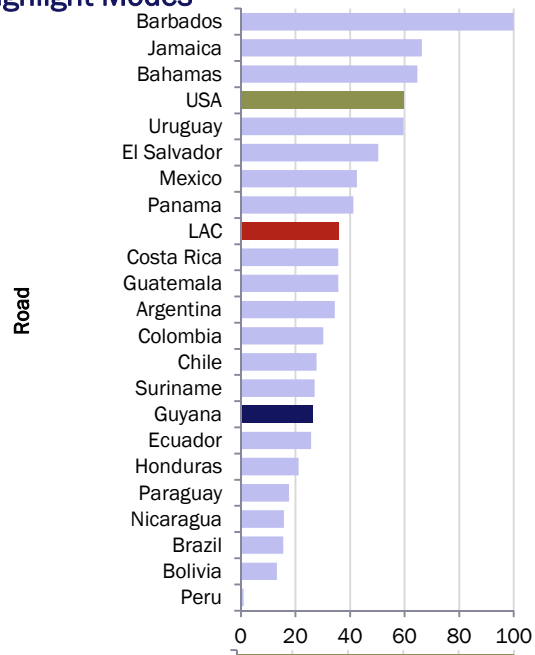
Benchmarking Guyana's Overall Score

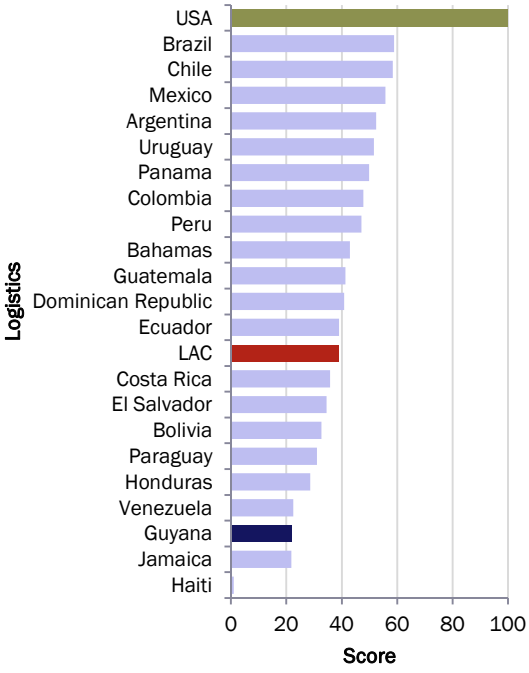


Overall Score by Mode



Highlight Modes





2012 GUYANA SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*26*	*15*
Road network (km)	5,206	21
Motorway/freeway/express road (km)	2,603	2
Primary network (km)	428	19
Secondary network (km)	582	18
Other networks (km)	1,593	18
Paved network (% total)	39	9
Heavy vehicles (#)	11,998	21
Fleet average age (years)		
Estimated CO2 emissions (ton)	606,470	3
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)	42,280	7
Retail diesel oil price (US$/liter)	1.050	8
Average freight tariff (US$/ton-km)	0.149	16
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)	98	14
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*1*	*21*
Maximum draft in container terminal (ft)	22	24
Bridge (gantry) cranes (#)	0	20
Container berth length (m)		
Container storage facilities area (m2)	62,087	17
Port traffic (ton)	3,081,370	18
Exports port traffic (ton)	174,404	20
Imports port traffic (ton)	2,906,966	17
Liner shipping connectivity index (2004 = 100)	4	24
Container terminal utilization (Latin America average = 100%)		
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	1	3
Gateway (TEU/truck)	12	9
AIR		
Mode Score (1-100)	*5*	*16*
International airports with cargo terminal facilities (#)	2	11
Area of cargo facilities in international airports with cargo terminal facilities (m2)		
Domestic freight carried (ton)	9,125	9
International freight (ton)	5,571	24
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*22*	*20*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.33	20
LPI infrastructure index	2.15	20
LPI competence (services) index	2.33	18
Overall Score	**17**	**10**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

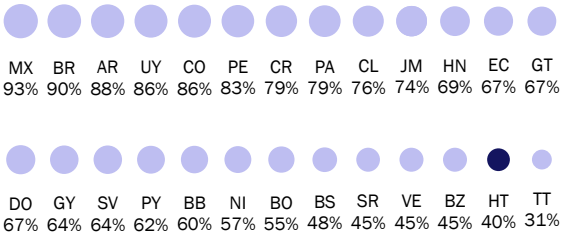
HAITI

2012 FAST FACTS	
Population	10,254,327
Land area (km2)	27,750
GDP (US$ billions)	8
Transport share of GDP (%)	7.69
Transport service imports (US$ billions)	13
Transport service exports (US$ billions)	0.70
Overall Score (1-100)	na
Overall Rank (1-26)	na

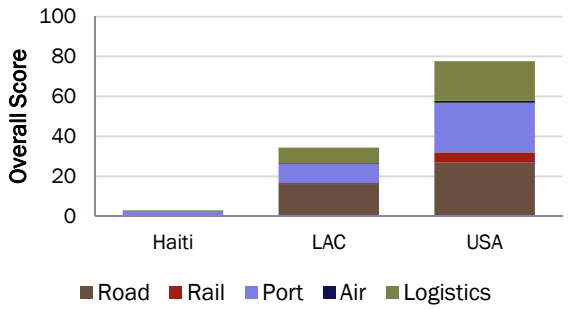
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

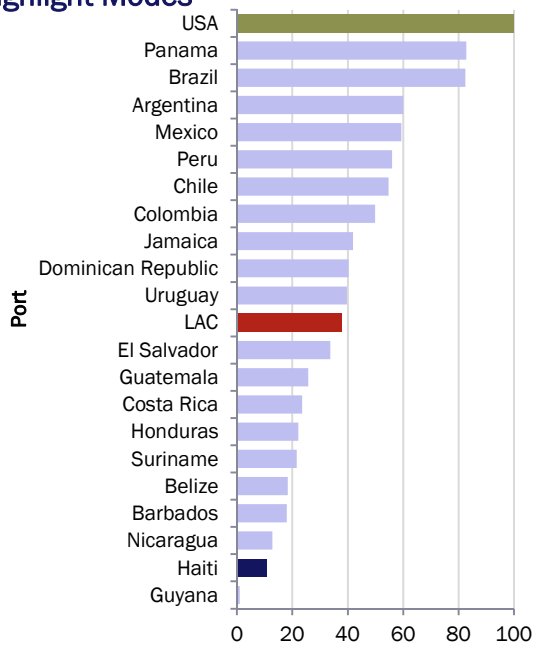
Overall Data Completion Rate

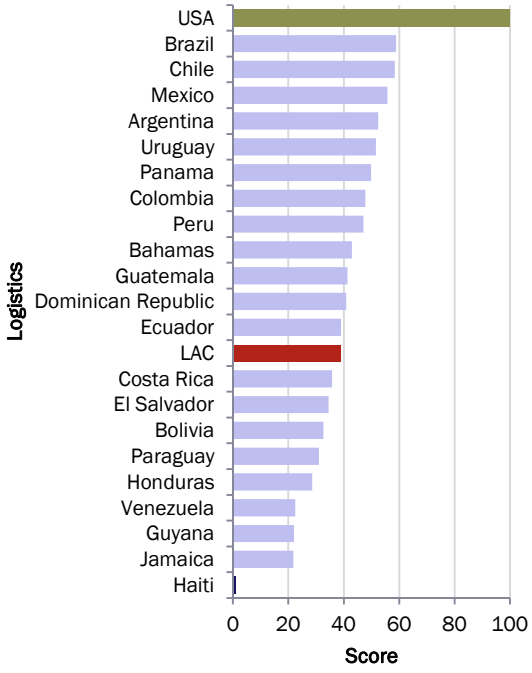


Benchmarking Haiti's Overall Score

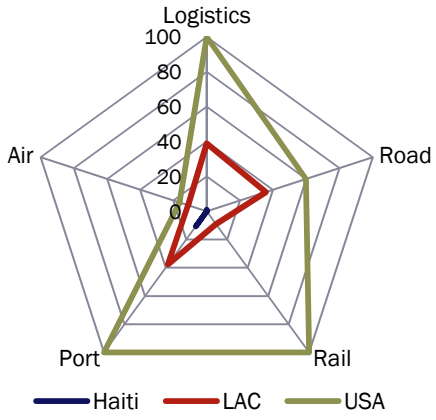


Highlight Modes





Overall Score by Mode



2012 HAITI SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*na*	*na*
Road network (km)	4,266	23
Motorway/freeway/express road (km)		
Primary network (km)		
Secondary network (km)		
Other networks (km)		
Paved network (% total)		
Heavy vehicles (#)		
Fleet average age (years)		
Estimated CO2 emissions (ton)	1,214,890	6
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)		
Retail diesel oil price (US$/liter)	1.030	6
Average freight tariff (US$/ton-km)	0.211	18
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*11*	*20*
Maximum draft in container terminal (ft)	33	20
Bridge (gantry) cranes (#)	0	20
Container berth length (m)	900	21
Container storage facilities area (m2)		
Port traffic (ton)	3,582,994	17
Exports port traffic (ton)	111,870	22
Imports port traffic (ton)	3,471,124	15
Liner shipping connectivity index (2004 = 100)	5	21
Container terminal utilization (Latin America average = 100%)		
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	1	3
Gateway (TEU/truck)		
AIR		
Mode Score (1-100)	*na*	*na*
International airports with cargo terminal facilities (#)	2	11
Area of cargo facilities in international airports with cargo terminal facilities (m2)		
Domestic freight carried (ton)		
International freight (ton)		
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*1*	*22*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.03	21
LPI infrastructure index	1.78	21
LPI competence (services) index	1.74	21
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

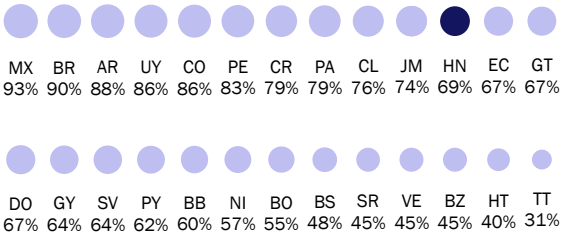
HONDURAS

2012 FAST FACTS	
Population	8,201,000
Land area (km2)	112,490
GDP (US$ billions)	18
Transport share of GDP (%)	#VALUE!
Transport service imports (US$ billions)	38
Transport service exports (US$ billions)	0.80
Overall Score (1-100)	na
Overall Rank (1-26)	na

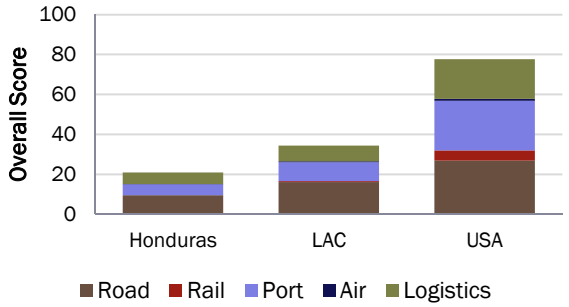
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

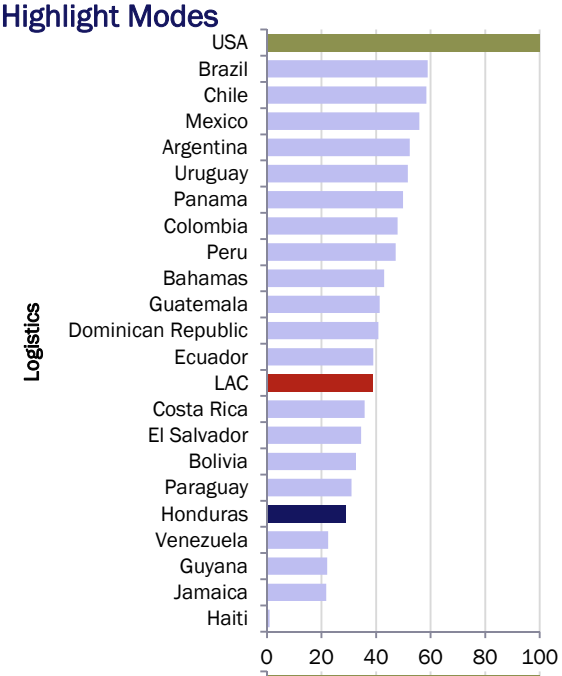
Overall Data Completion Rate

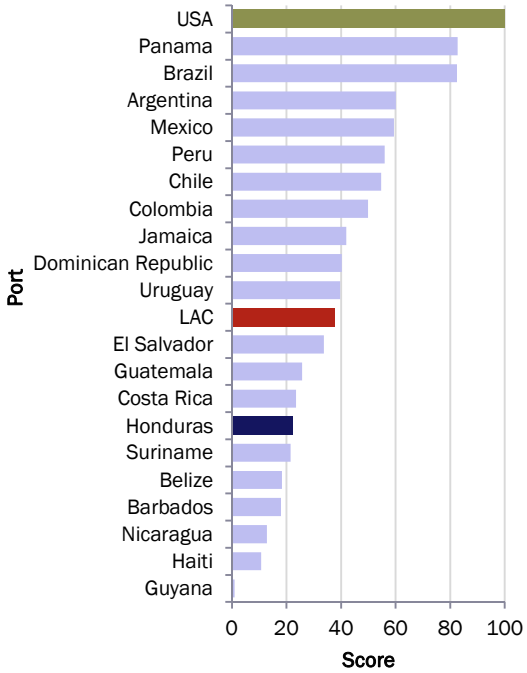


Benchmarking Honduras' Overall Score

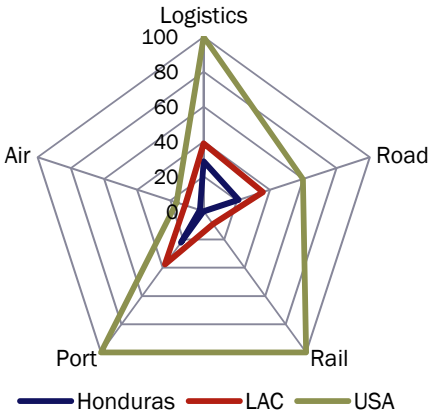


Highlight Modes





Overall Score by Mode



2012 HONDURAS SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*21*	*17*
Road network (km)	14,296	17
Motorway/freeway/express road (km)		
Primary network (km)	3,220	13
Secondary network (km)		
Other networks (km)	11,076	11
Paved network (% total)	23	14
Heavy vehicles (#)	59,151	15
Fleet average age (years)	15	5
Estimated CO2 emissions (ton)	3,142,220	8
Domestic freight productivity (million ton-km)	1,218	6
Domestic freight carried (ton)	7,886,290	9
Average distance per vehicle (km/year)	38,000	9
Retail diesel oil price (US$/liter)	1.150	10
Average freight tariff (US$/ton-km)	0.067	6
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*22*	*15*
Maximum draft in container terminal (ft)	36	15
Bridge (gantry) cranes (#)	2	14
Container berth length (m)	2,002	15
Container storage facilities area (m2)	14,400	23
Port traffic (ton)	34,854,933	7
Exports port traffic (ton)	9,688,300	8
Imports port traffic (ton)	14,585,046	8
Liner shipping connectivity index (2004 = 100)	10	17
Container terminal utilization (Latin America average = 100%)	207.57	3
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	3	16
Gateway (TEU/truck)	11	11
AIR		
Mode Score (1-100)	*2*	*20*
International airports with cargo terminal facilities (#)	2	11
Area of cargo facilities in international airports with cargo terminal facilities (m2)	4,645	14
Domestic freight carried (ton)	2,820	10
International freight (ton)	28,632	15
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*29*	*18*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.53	16
LPI infrastructure index	2.35	17
LPI competence (services) index	2.44	17
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

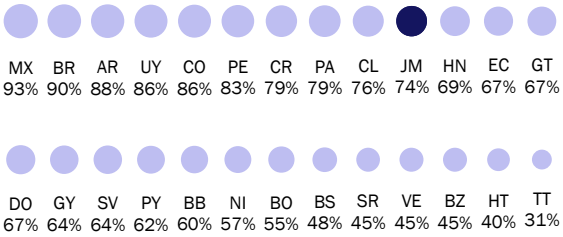
JAMAICA

2012 FAST FACTS	
Population	2,711,476
Land area (km2)	10,990
GDP (US$ billions)	15
Transport share of GDP (%)	8.05
Transport service imports (US$ billions)	25
Transport service exports (US$ billions)	0.97
Overall Score (1-100)	na
Overall Rank (1-26)	na

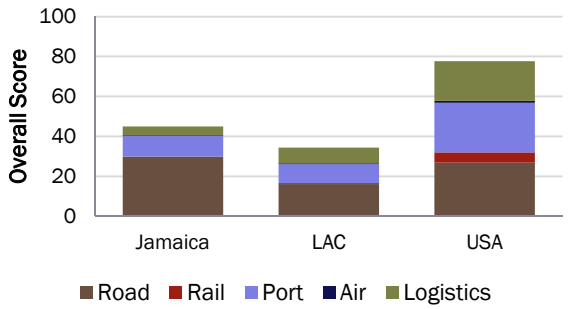
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

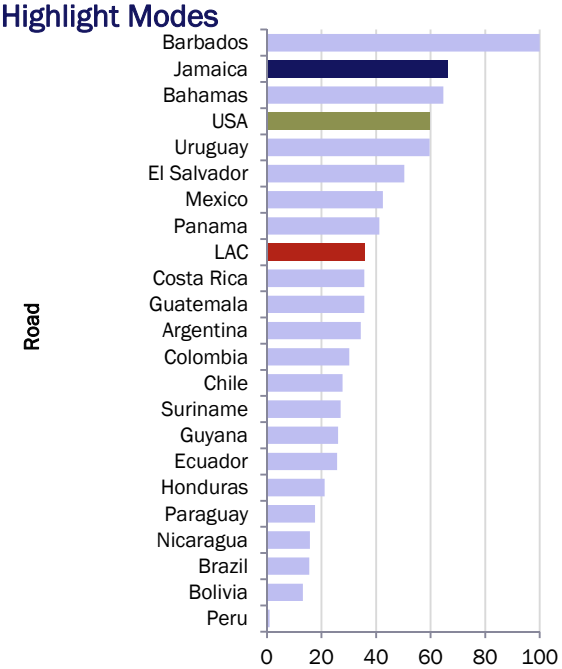
Overall Data Completion Rate

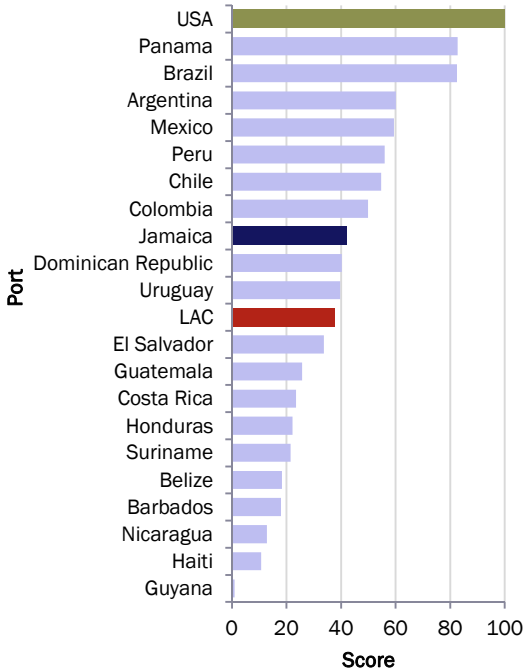


Benchmarking Jamaica's Overall Score

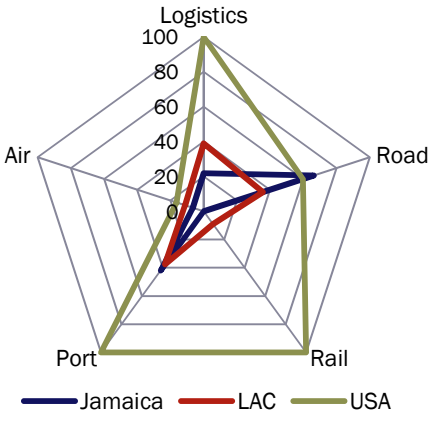


Highlight Modes





Overall Score by Mode



2012 JAMAICA SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	66	*2*
Road network (km)	22,066	13
Motorway/freeway/express road (km)	54	9
Primary network (km)	4,857	12
Secondary network (km)	14,895	9
Other networks (km)	2,260	16
Paved network (% total)	73	3
Heavy vehicles (#)	19,825	20
Fleet average age (years)		
Estimated CO2 emissions (ton)	3,784,330	12
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)		
Retail diesel oil price (US$/liter)	1.190	11
Average freight tariff (US$/ton-km)	0.294	23
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)	334	10
Average power of freight locomotives (HP)	1,050	5
Railway freight companies (#)	1	8
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*42*	9
Maximum draft in container terminal (ft)	43	11
Bridge (gantry) cranes (#)	19	5
Container berth length (m)	3,728	10
Container storage facilities area (m2)	1,413,000	4
Port traffic (ton)	23,704,005	9
Exports port traffic (ton)	7,619,485	10
Imports port traffic (ton)	2,347,561	20
Liner shipping connectivity index (2004 = 100)	22	12
Container terminal utilization (Latin America average = 100%)	38.05	17
Container terminal extent of competition (# terminals)	2	7
Gateway proximity to population center (category)	1	3
Gateway (TEU/truck)	94	3
AIR		
Mode Score (1-100)	*7*	*13*
International airports with cargo terminal facilities (#)	2	11
Area of cargo facilities in international airports with cargo terminal facilities (m2)	7,521	13
Domestic freight carried (ton)		
International freight (ton)	12,322	21
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*22*	*21*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.42	19
LPI infrastructure index	2.27	18
LPI competence (services) index	2.21	20
Overall Score	**na**	**na**

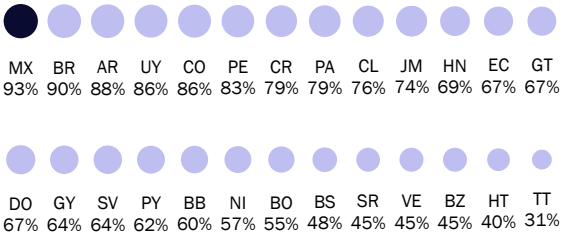
Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

MEXICO

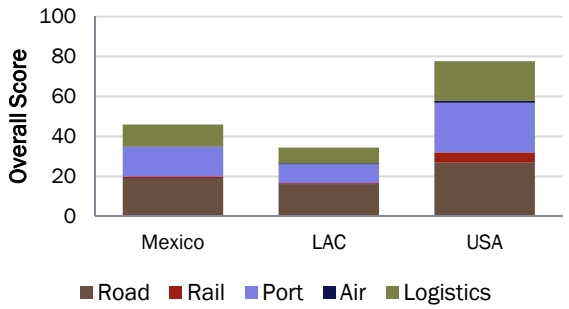
2012 FAST FACTS	
Population	114,872,000
Land area (km2)	1,964,380
GDP (US$ billions)	1,177
Transport share of GDP (%)	5.92
Transport service imports (US$ billions)	1,759
Transport service exports (US$ billions)	14.02
Overall Score (1-100)	45.96
Overall Rank (1-26)	3

Source: WDI-World Bank and IMF.

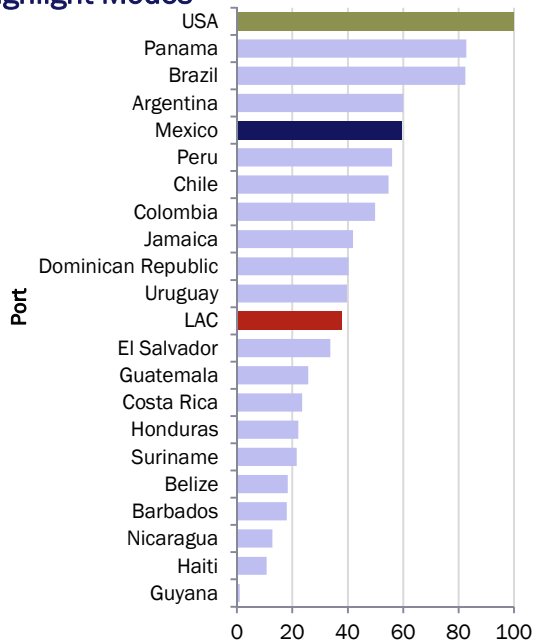
Overall Data Completion Rate

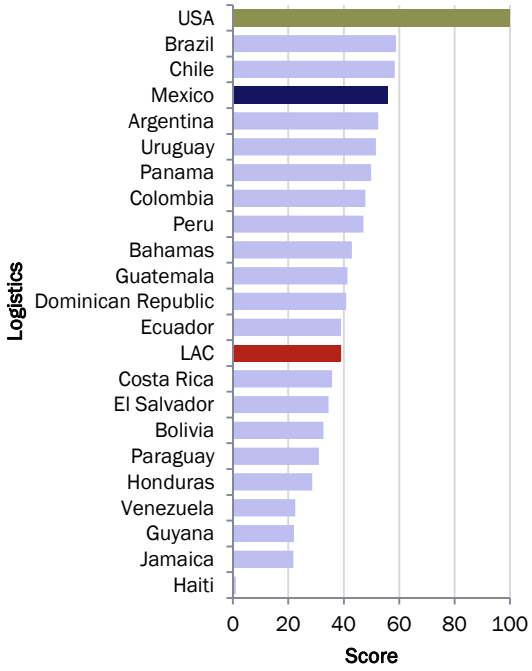


Benchmarking Mexico's Overall Score

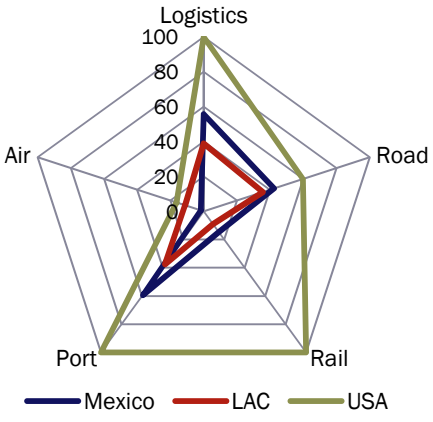


Highlight Modes





Overall Score by Mode



2012 MEXICO SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*43*	*7*
Road network (km)	374,262	3
Motorway/freeway/express road (km)	4,069	1
Primary network (km)	49,102	2
Secondary network (km)	80,774	3
Other networks (km)	240,317	3
Paved network (% total)	38	10
Heavy vehicles (#)	380,342	4
Fleet average age (years)	17	8
Estimated CO2 emissions (ton)	166,367,730	25
Domestic freight productivity (million ton-km)	233,464	3
Domestic freight carried (ton)	498,147,000	4
Average distance per vehicle (km/year)	72,667	12
Retail diesel oil price (US$/liter)	0.850	4
Average freight tariff (US$/ton-km)	0.062	4
RAIL		
Mode Score (1-100)	*15*	*2*
Railway network (km)	26,727	2
Average power of freight locomotives (HP)	3,354	1
Railway freight companies (#)	7	2
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)	79,353	2
Domestic freight carried (million ton)	111,607,200	2
Average tariff of freight (US$/ton-km)	0.030	8
PORT		
Mode Score (1-100)	*59*	*5*
Maximum draft in container terminal (ft)	52	5
Bridge (gantry) cranes (#)	32	4
Container berth length (m)	4,851	8
Container storage facilities area (m2)	260,000	12
Port traffic (ton)	282,125,604	2
Exports port traffic (ton)	123,972,231	3
Imports port traffic (ton)	87,008,207	2
Liner shipping connectivity index (2004 = 100)	39	2
Container terminal utilization (Latin America average = 100%)	88.33	12
Container terminal extent of competition (# terminals)	10	1
Gateway proximity to population center (category)	6	24
Gateway (TEU/truck)	13	8
AIR		
Mode Score (1-100)	*2*	*25*
International airports with cargo terminal facilities (#)	24	2
Area of cargo facilities in international airports with cargo terminal facilities (m2)	93,301	5
Domestic freight carried (ton)	292,589	3
International freight (ton)	312,811	3
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*56*	*4*
Logistics centers' surface (km2)	161,197,465	1
Logistics performance index (LPI)	3.06	3
LPI infrastructure index	3.03	3
LPI competence (services) index	3.02	2
Overall Score	**46**	**3**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

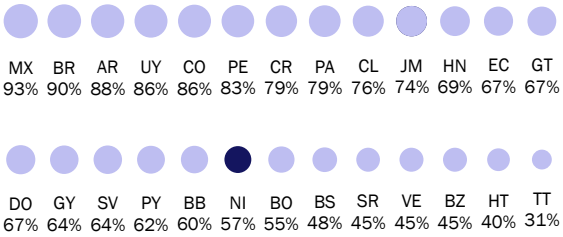
NICARAGUA

2012 FAST FACTS	
Population	5,981,000
Land area (km2)	130,370
GDP (US$ billions)	11
Transport share of GDP (%)	5.00
Transport service imports (US$ billions)	27
Transport service exports (US$ billions)	0.40
Overall Score (1-100)	na
Overall Rank (1-26)	na

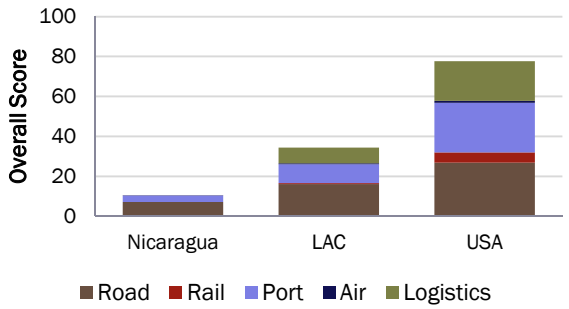
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

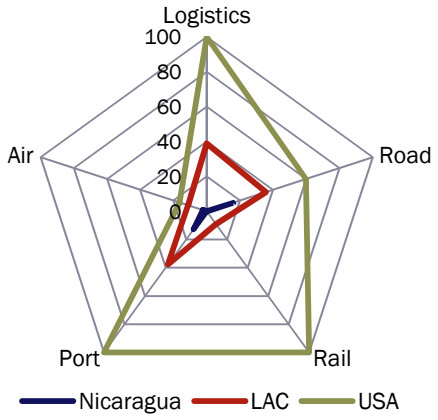
Overall Data Completion Rate



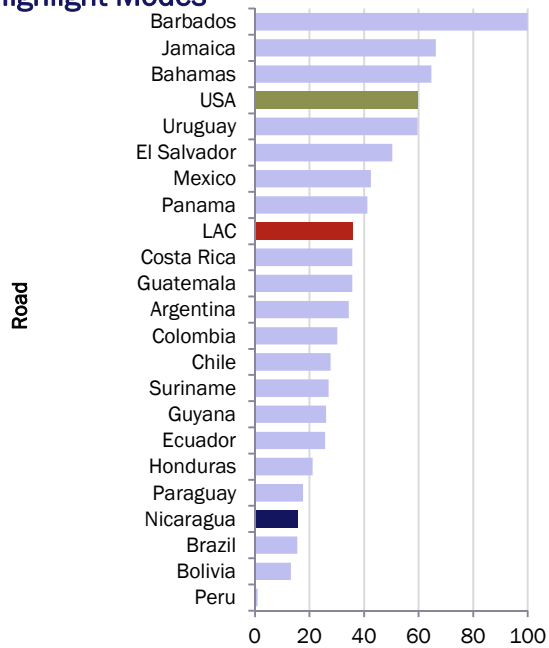
Benchmarking Nicaragua's Overall Score

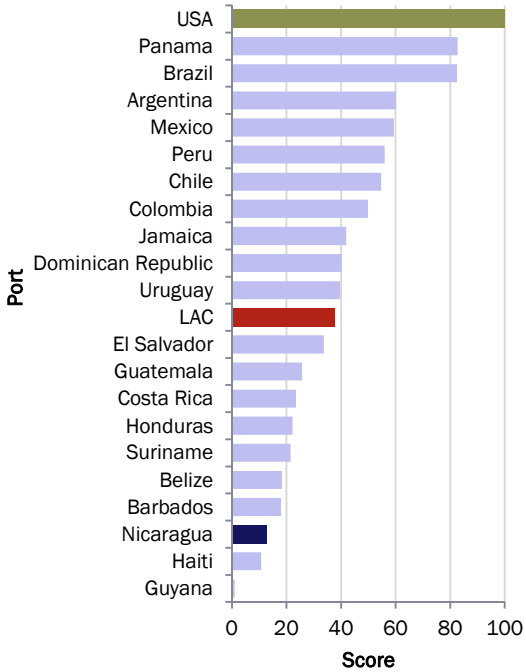


Overall Score by Mode



Highlight Modes





2012 NICARAGUA SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*16*	*19*
Road network (km)	23,897	12
Motorway/freeway/express road (km)		
Primary network (km)	2,082	15
Secondary network (km)	3,936	14
Other networks (km)	17,630	8
Paved network (% total)	10	20
Heavy vehicles (#)	42,721	17
Fleet average age (years)	23	14
Estimated CO2 emissions (ton)	1,972,450	7
Domestic freight productivity (million ton-km)	630	6
Domestic freight carried (ton)	5,899,807	7
Average distance per vehicle (km/year)	48,400	12
Retail diesel oil price (US$/liter)	1.190	11
Average freight tariff (US$/ton-km)	0.060	3
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*13*	*19*
Maximum draft in container terminal (ft)	33	22
Bridge (gantry) cranes (#)	1	17
Container berth length (m)	510	24
Container storage facilities area (m2)	23,000	22
Port traffic (ton)	3,909,829	16
Exports port traffic (ton)	768,136	19
Imports port traffic (ton)	2,883,311	18
Liner shipping connectivity index (2004 = 100)	8	20
Container terminal utilization (Latin America average = 100%)		
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	2	9
Gateway (TEU/truck)	2	18
AIR		
Mode Score (1-100)	*2*	*19*
International airports with cargo terminal facilities (#)	1	18
Area of cargo facilities in international airports with cargo terminal facilities (m2)		
Domestic freight carried (ton)	141	11
International freight (ton)	22,979	17
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*na*	*na*
Logistics centers' surface (km2)		
Logistics performance index (LPI)		
LPI infrastructure index		
LPI competence (services) index		
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

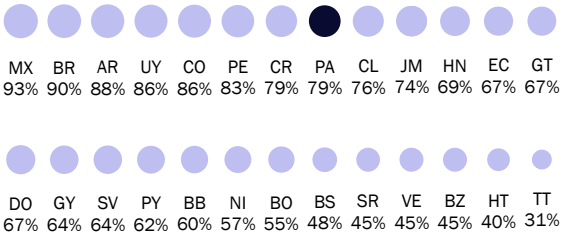
PANAMA

2012 FAST FACTS	
Population	3,655,000
Land area (km2)	75,420
GDP (US$ billions)	36
Transport share of GDP (%)	17.60
Transport service imports (US$ billions)	57
Transport service exports (US$ billions)	1.94
Overall Score (1-100)	na
Overall Rank (1-26)	na

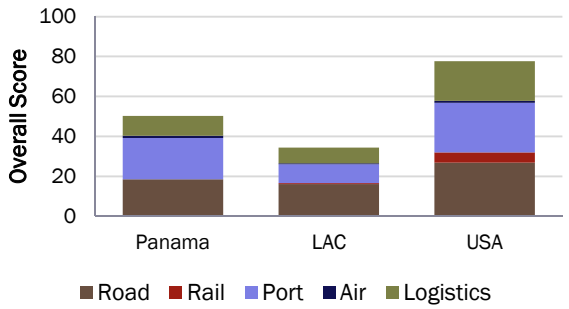
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

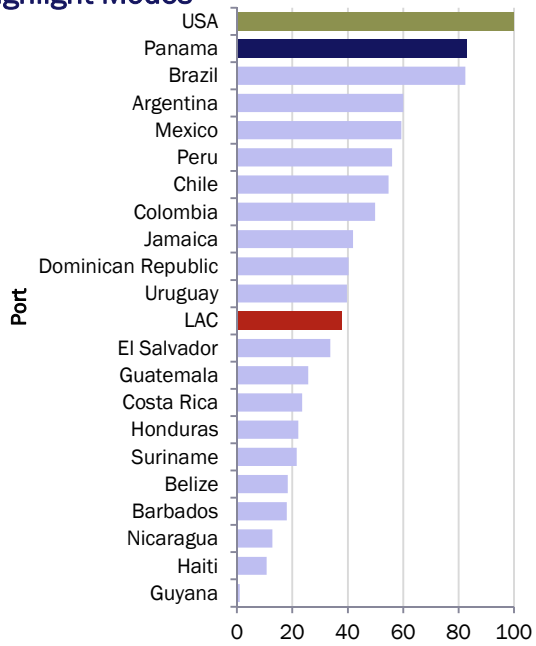
Overall Data Completion Rate

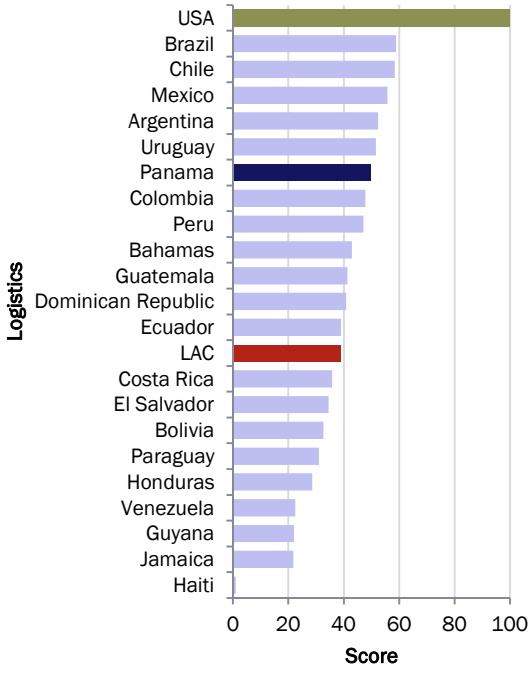


Benchmarking Panama's Overall Score

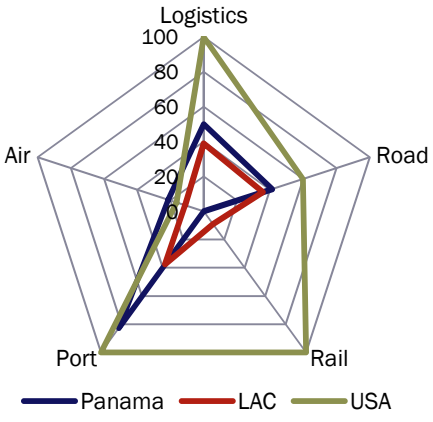


Highlight Modes





Overall Score by Mode



2012 PANAMA SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*41*	*8*
Road network (km)	15,556	16
Motorway/freeway/express road (km)	94	6
Primary network (km)	1,224	17
Secondary network (km)	5,182	12
Other networks (km)	8,920	12
Paved network (% total)	42	7
Heavy vehicles (#)	21,912	19
Fleet average age (years)	12	1
Estimated CO2 emissions (ton)	5,288,720	15
Domestic freight productivity (million ton-km)	833	6
Domestic freight carried (ton)	8,006,276	9
Average distance per vehicle (km/year)	60,000	12
Retail diesel oil price (US$/liter)	1.020	5
Average freight tariff (US$/ton-km)	0.071	7
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)	77	12
Average power of freight locomotives (HP)	3,250	2
Railway freight companies (#)	1	8
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*83*	*2*
Maximum draft in container terminal (ft)	56	2
Bridge (gantry) cranes (#)	63	1
Container berth length (m)	7,827	5
Container storage facilities area (m2)	98,000	16
Port traffic (ton)	68,191,687	6
Exports port traffic (ton)	1,790,938	18
Imports port traffic (ton)	5,100,541	13
Liner shipping connectivity index (2004 = 100)	42	1
Container terminal utilization (Latin America average = 100%)	131.50	8
Container terminal extent of competition (# terminals)	5	3
Gateway proximity to population center (category)	2	9
Gateway (TEU/truck)	187	2
AIR		
Mode Score (1-100)	*21*	*3*
International airports with cargo terminal facilities (#)	1	18
Area of cargo facilities in international airports with cargo terminal facilities (m2)	168,448	2
Domestic freight carried (ton)	677,184	2
International freight (ton)	120,066	8
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*50*	*7*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.93	7
LPI infrastructure index	2.94	4
LPI competence (services) index	2.84	8
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

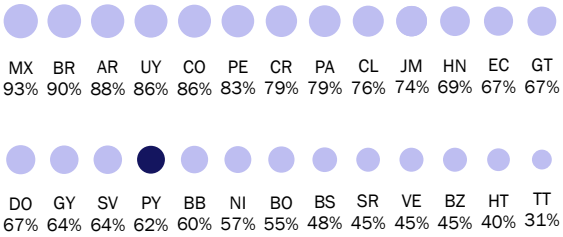
PARAGUAY

2012 FAST FACTS	
Population	6,682,032
Land area (km2)	406,750
GDP (US$ billions)	26
Transport share of GDP (%)	2.50
Transport service imports (US$ billions)	41
Transport service exports (US$ billions)	0.70
Overall Score (1-100)	na
Overall Rank (1-26)	na

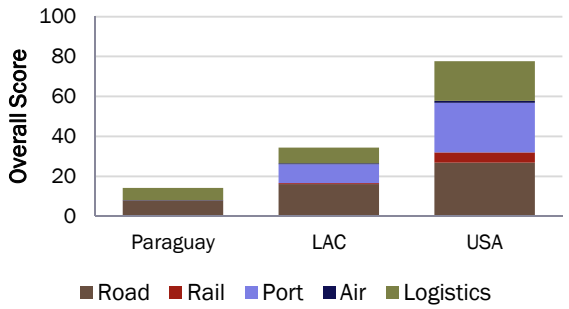
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

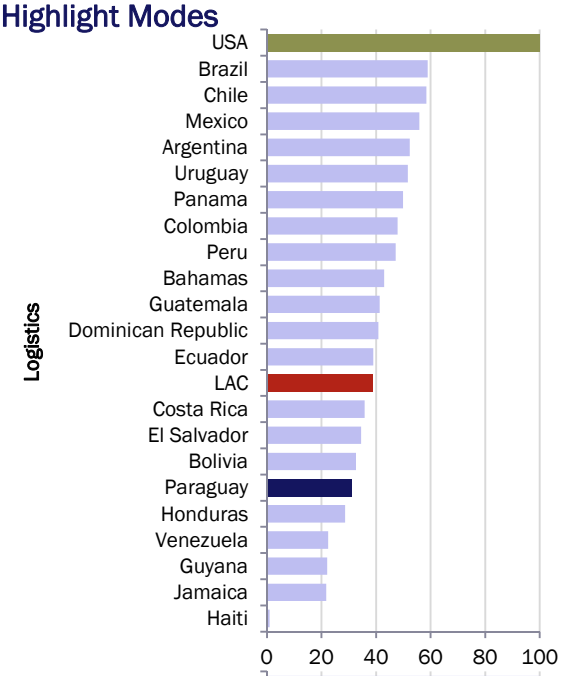
Overall Data Completion Rate

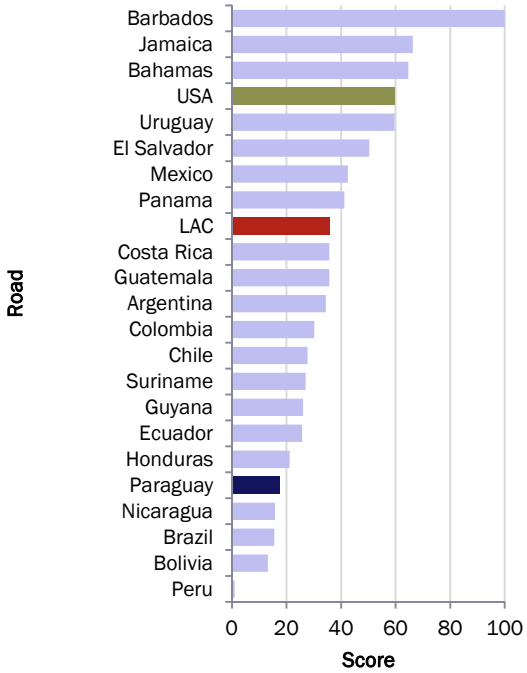


Benchmarking Paraguay's Overall Score

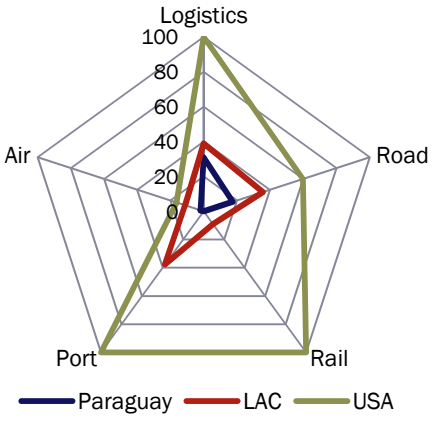


Highlight Modes





Overall Score by Mode



2012 PARAGUAY SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*18*	*18*
Road network (km)	32,059	11
Motorway/freeway/express road (km)	82	7
Primary network (km)	9,910	9
Secondary network (km)	6,670	11
Other networks (km)	15,479	9
Paved network (% total)	16	17
Heavy vehicles (#)	242,257	7
Fleet average age (years)	17	7
Estimated CO2 emissions (ton)	5,159,170	14
Domestic freight productivity (million ton-km)	8,120	5
Domestic freight carried (ton)	39,315,970	6
Average distance per vehicle (km/year)	61,758	3
Retail diesel oil price (US$/liter)	1.495	20
Average freight tariff (US$/ton-km)		
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*na*	*na*
Maximum draft in container terminal (ft)		
Bridge (gantry) cranes (#)	2	14
Container berth length (m)	5,940	7
Container storage facilities area (m2)	224,000	13
Port traffic (ton)	9,039,237	13
Exports port traffic (ton)	5,648,214	13
Imports port traffic (ton)	3,391,023	16
Liner shipping connectivity index (2004 = 100)		
Container terminal utilization (Latin America average = 100%)		
Container terminal extent of competition (# terminals)		
Gateway proximity to population center (category)		
Gateway (TEU/truck)	1	21
AIR		
Mode Score (1-100)	*2*	*24*
International airports with cargo terminal facilities (#)	2	11
Area of cargo facilities in international airports with cargo terminal facilities (m2)	2,800	16
Domestic freight carried (ton)		
International freight (ton)	22,877	18
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*31*	*17*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.48	18
LPI infrastructure index	2.41	15
LPI competence (services) index	2.49	16
Overall Score	**na**	**na**

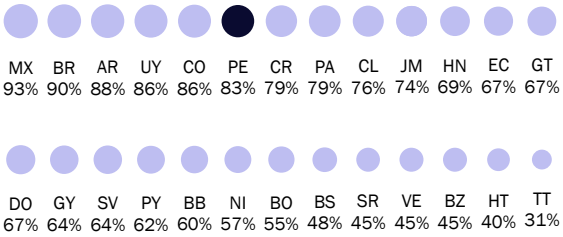
Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

PERU

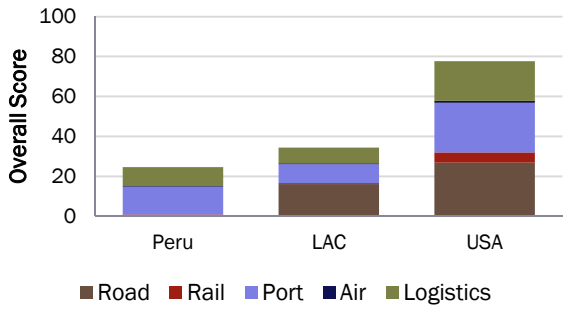
2012 FAST FACTS	
Population	30,474,000
Land area (km2)	1,285,220
GDP (US$ billions)	199
Transport share of GDP (%)	6.97
Transport service imports (US$ billions)	327
Transport service exports (US$ billions)	2.58
Overall Score (1-100)	24.55
Overall Rank (1-26)	9

Source: WDI-World Bank and IMF.

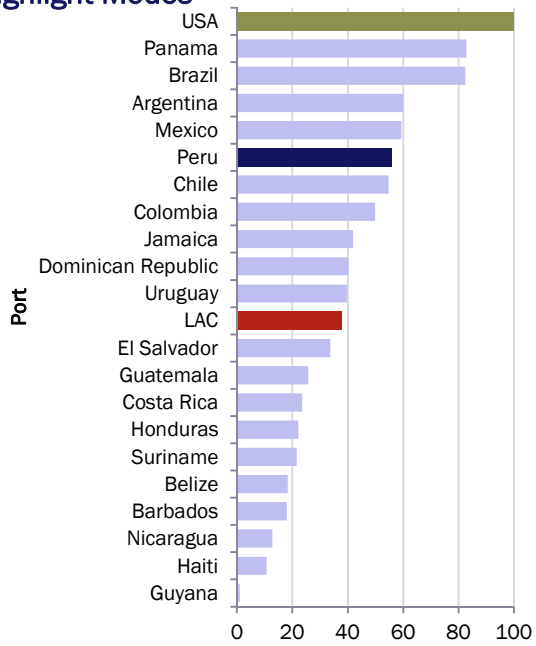
Overall Data Completion Rate

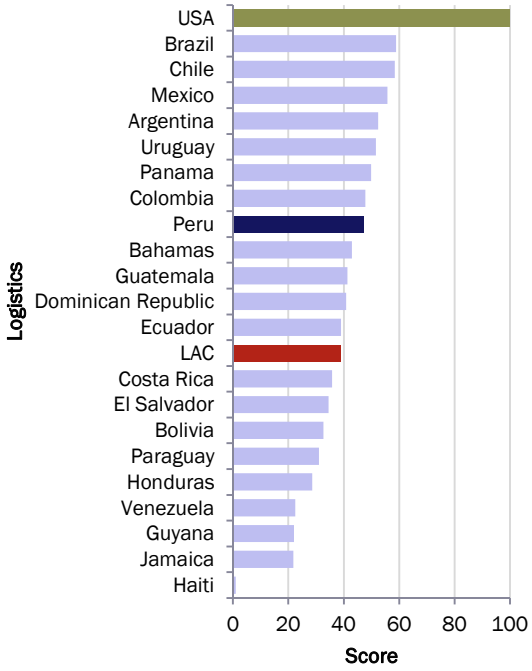


Benchmarking Peru's Overall Score

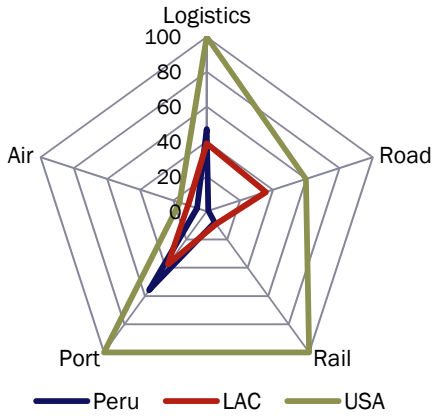


Highlight Modes





Overall Score by Mode



2012 PERU SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*1*	*22*
Road network (km)	149,660	5
Motorway/freeway/express road (km)		
Primary network (km)	26,495	5
Secondary network (km)	29,030	7
Other networks (km)	94,136	5
Paved network (% total)	13	18
Heavy vehicles (#)	106,151	12
Fleet average age (years)	13	3
Estimated CO2 emissions (ton)	16,765,970	19
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)	60,000	4
Retail diesel oil price (US$/liter)	1.338	16
Average freight tariff (US$/ton-km)	0.475	24
RAIL		
Mode Score (1-100)	*8*	*7*
Railway network (km)	1928.8	6
Average power of freight locomotives (HP)	1,434	3
Railway freight companies (#)	7	2
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)	965	7
Domestic freight carried (million ton)	7,618,026	6
Average tariff of freight (US$/ton-km)	0.080	1
PORT		
Mode Score (1-100)	*56*	*6*
Maximum draft in container terminal (ft)	52	5
Bridge (gantry) cranes (#)	8	10
Container berth length (m)	1,040	19
Container storage facilities area (m2)	560,000	8
Port traffic (ton)	93,168,896	5
Exports port traffic (ton)	42,043,514	6
Imports port traffic (ton)	29,622,665	6
Liner shipping connectivity index (2004 = 100)	33	7
Container terminal utilization (Latin America average = 100%)	149.84	5
Container terminal extent of competition (# terminals)	2	7
Gateway proximity to population center (category)	3	16
Gateway (TEU/truck)	19	5
AIR		
Mode Score (1-100)	*6*	*15*
International airports with cargo terminal facilities (#)	11	5
Area of cargo facilities in international airports with cargo terminal facilities (m2)		
Domestic freight carried (ton)	37,858	5
International freight (ton)	275,878	4
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*47*	9
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.94	6
LPI infrastructure index	2.73	8
LPI competence (services) index	2.91	7
Overall Score	**25**	**9**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

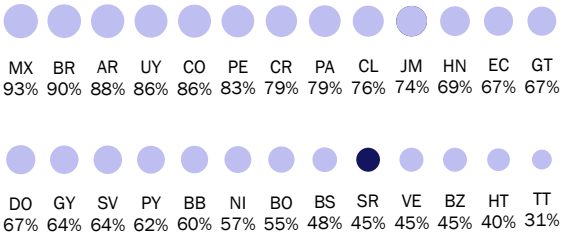
SURINAME

2012 FAST FACTS	
Population	546,000
Land area (km2)	163,820
GDP (US$ billions)	5
Transport share of GDP (%)	6.06
Transport service imports (US$ billions)	7
Transport service exports (US$ billions)	0.08
Overall Score (1-100)	na
Overall Rank (1-26)	na

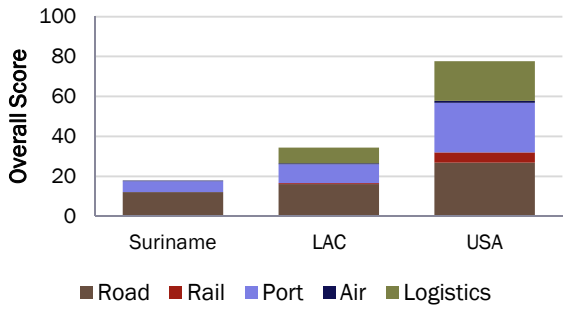
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

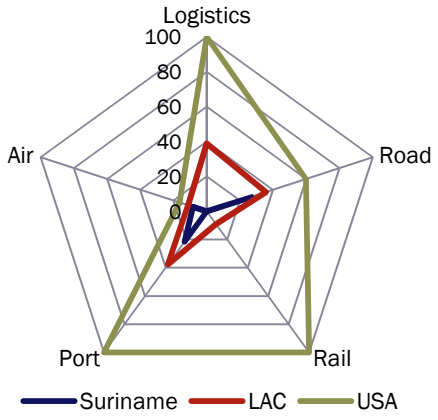
Overall Data Completion Rate



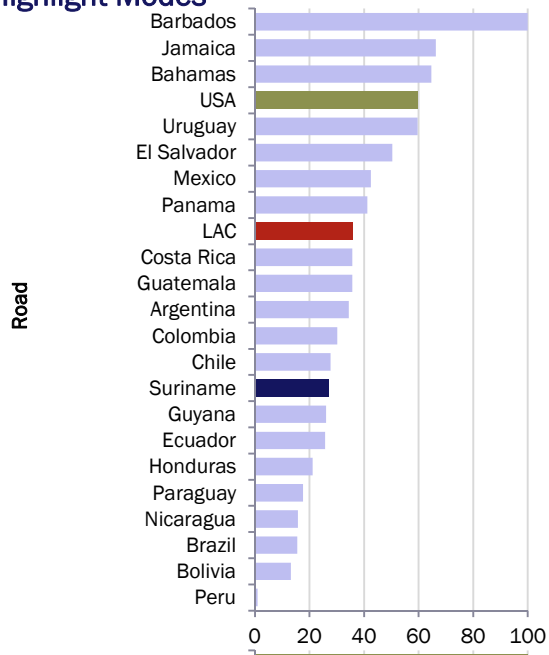
Benchmarking Suriname's Overall Score

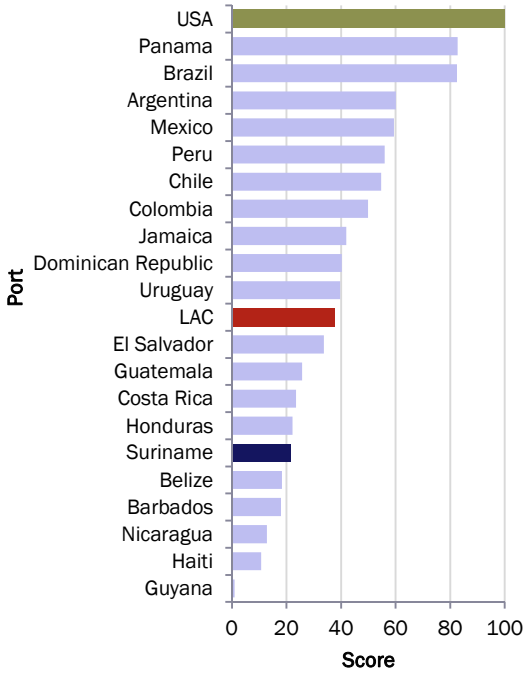


Overall Score by Mode



Highlight Modes





2012 SURINAME SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*27*	*14*
Road network (km)	4,635	22
Motorway/freeway/express road (km)		
Primary network (km)		
Secondary network (km)		
Other networks (km)		
Paved network (% total)	40	8
Heavy vehicles (#)	34,071	18
Fleet average age (years)		
Estimated CO2 emissions (ton)	941,630	5
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)		
Retail diesel oil price (US$/liter)	1.520	21
Average freight tariff (US$/ton-km)	0.211	18
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*22*	*16*
Maximum draft in container terminal (ft)	30	23
Bridge (gantry) cranes (#)	0	20
Container berth length (m)	1,849	16
Container storage facilities area (m2)	60,000	18
Port traffic (ton)	7,626,000	15
Exports port traffic (ton)	2,373,000	16
Imports port traffic (ton)	3,608,000	14
Liner shipping connectivity index (2004 = 100)	4	23
Container terminal utilization (Latin America average = 100%)		
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	2	9
Gateway (TEU/truck)	3	16
AIR		
Mode Score (1-100)	*8*	*10*
International airports with cargo terminal facilities (#)	1	18
Area of cargo facilities in international airports with cargo terminal facilities (m2)		
Domestic freight carried (ton)		
International freight (ton)	7,059	23
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*na*	*na*
Logistics centers' surface (km2)		
Logistics performance index (LPI)		
LPI infrastructure index		
LPI competence (services) index		
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

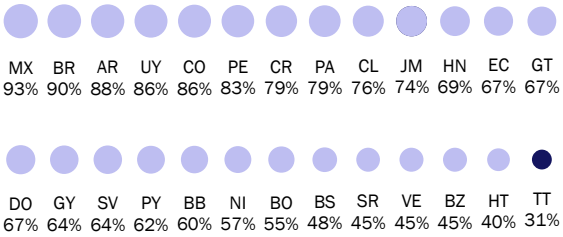
TRINIDAD AND TOBAGO

2012 FAST FACTS	
Population	1,329,000
Land area (km2)	5,130
GDP (US$ billions)	25
Transport share of GDP (%)	5.36
Transport service imports (US$ billions)	27
Transport service exports (US$ billions)	0.11
Overall Score (1-100)	na
Overall Rank (1-26)	na

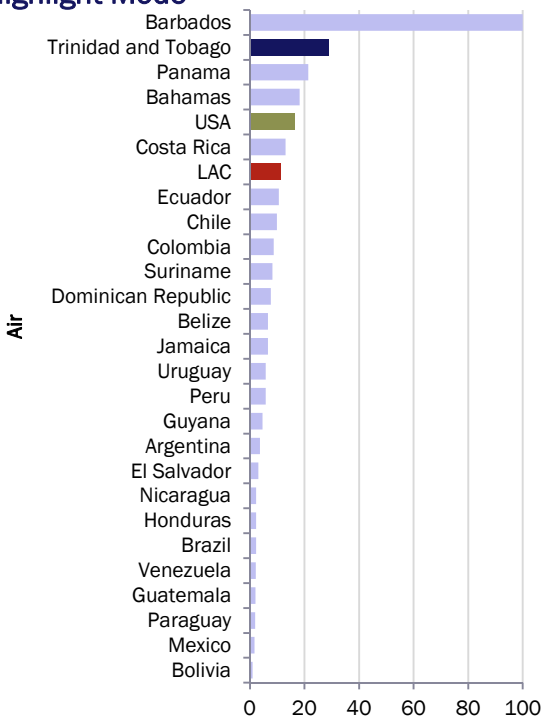
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

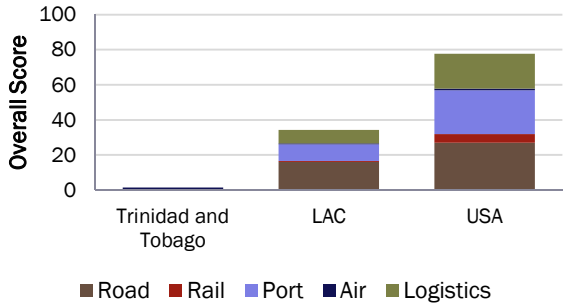
Overall Data Completion Rate



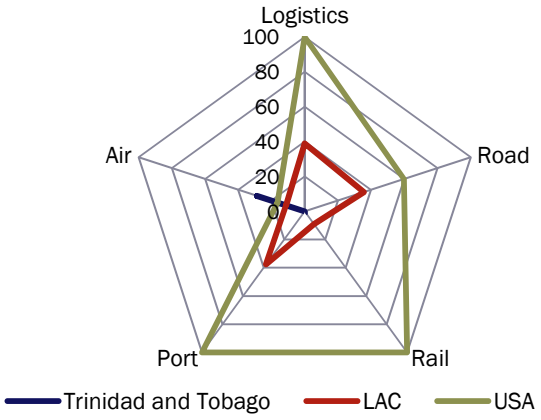
Highlight Mode



Benchmarking Trinidad and Tobago's Overall Score



Overall Score by Mode



2012 TRINIDAD AND TOBAGO SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*na*	*na*
Road network (km)	9,638	18
Motorway/freeway/express road (km)		
Primary network (km)	2,024	22
Secondary network (km)	5,590	20
Other networks (km)	2,024	21
Paved network (% total)		
Heavy vehicles (#)		
Fleet average age (years)		
Estimated CO2 emissions (ton)	3,289,830	9
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)		
Retail diesel oil price (US$/liter)		
Average freight tariff (US$/ton-km)	0.211	18
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)		
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*na*	*na*
Maximum draft in container terminal (ft)	39	12
Bridge (gantry) cranes (#)	4	13
Container berth length (m)	1,060	18
Container storage facilities area (m2)	220,000	14
Port traffic (ton)		
Exports port traffic (ton)		
Imports port traffic (ton)		
Liner shipping connectivity index (2004 = 100)	19	15
Container terminal utilization (Latin America average = 100%)	60.68	14
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	1	3
Gateway (TEU/truck)		
AIR		
Mode Score (1-100)	*29*	*2*
International airports with cargo terminal facilities (#)	2	11
Area of cargo facilities in international airports with cargo terminal facilities (m2)		
Domestic freight carried (ton)		
International freight (ton)	41,747	13
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*na*	*na*
Logistics centers' surface (km2)		
Logistics performance index (LPI)		
LPI infrastructure index		
LPI competence (services) index		
Overall Score	**na**	**na**

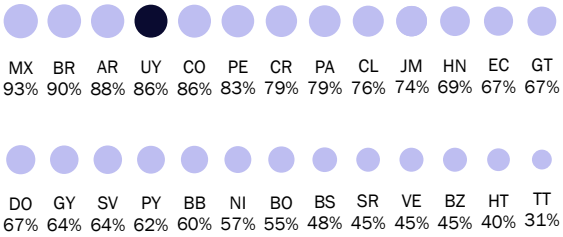
Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

URUGUAY

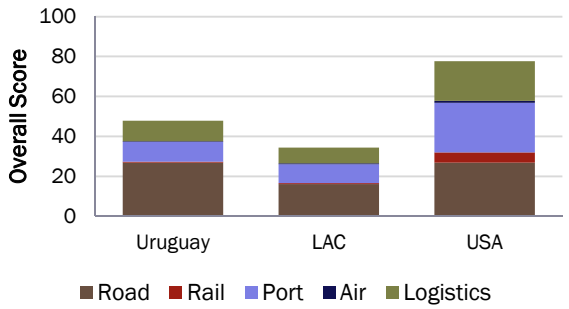
2012 FAST FACTS	
Population	3,381,000
Land area (km2)	176,220
GDP (US$ billions)	49
Transport share of GDP (%)	4.34
Transport service imports (US$ billions)	54
Transport service exports (US$ billions)	0.59
Overall Score (1-100)	47.89
Overall Rank (1-26)	2

Source: WDI-World Bank and IMF.

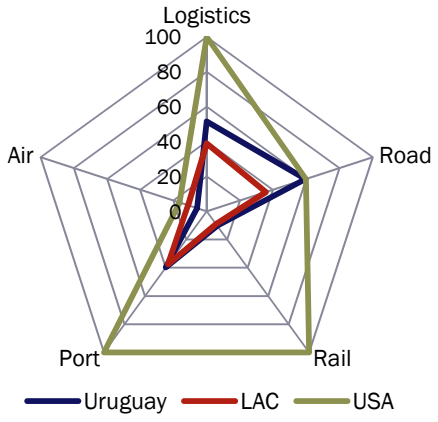
Overall Data Completion Rate



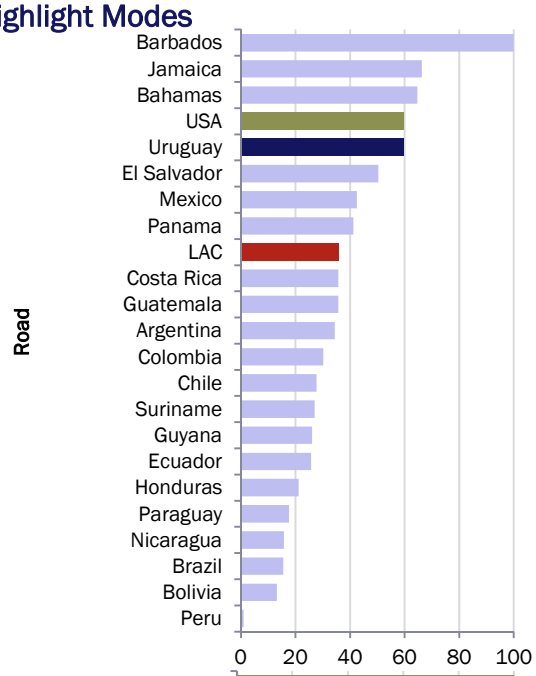
Benchmarking Uruguay's Overall Score

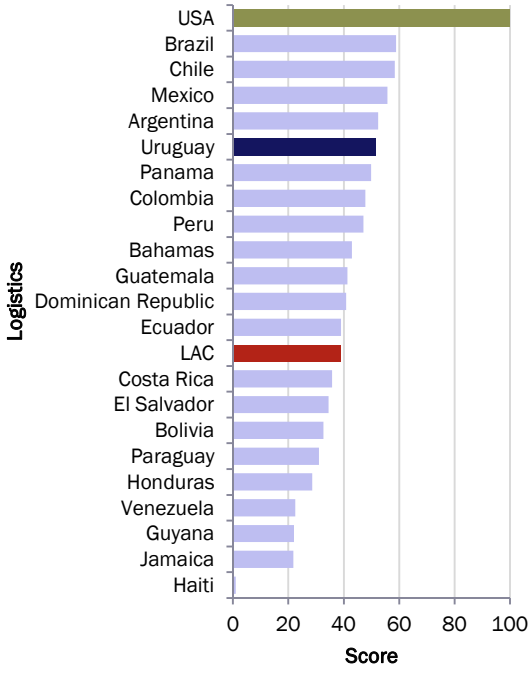


Overall Score by Mode



Highlight Modes





2012 URUGUAY SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*60*	*5*
Road network (km)	8,783	20
Motorway/freeway/express road (km)	2,311	3
Primary network (km)	1,653	16
Secondary network (km)	3,813	15
Other networks (km)	1,006	19
Paved network (% total)	90	2
Heavy vehicles (#)	53,762	16
Fleet average age (years)	16	11
Estimated CO2 emissions (ton)	3,514,660	10
Domestic freight productivity (million ton-km)	6,306	6
Domestic freight carried (ton)	30,408,158	9
Average distance per vehicle (km/year)	24,887	12
Retail diesel oil price (US$/liter)	1.951	23
Average freight tariff (US$/ton-km)	0.107	12
RAIL		
Mode Score (1-100)	*10*	*5*
Railway network (km)	1,640	7
Average power of freight locomotives (HP)	1,282	4
Railway freight companies (#)	1	8
Estimated CO2 emissions (ton)	17,000	1
Domestic freight carried - productivity (million ton-km)	162	8
Domestic freight carried (million ton)	941,874	8
Average tariff of freight (US$/ton-km)	0.053	3
PORT		
Mode Score (1-100)	*40*	*11*
Maximum draft in container terminal (ft)	36	15
Bridge (gantry) cranes (#)	7	11
Container berth length (m)	7,340	6
Container storage facilities area (m2)	629,278	6
Port traffic (ton)	22,995,391	10
Exports port traffic (ton)	7,685,758	9
Imports port traffic (ton)	2,409,135	19
Liner shipping connectivity index (2004 = 100)	32	8
Container terminal utilization (Latin America average = 100%)	89.62	11
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	2	9
Gateway (TEU/truck)	20	4
AIR		
Mode Score (1-100)	*6*	*14*
International airports with cargo terminal facilities (#)	1	18
Area of cargo facilities in international airports with cargo terminal facilities (m2)	13,500	10
Domestic freight carried (ton)		
International freight (ton)	30,985	14
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*52*	6
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.98	5
LPI infrastructure index	2.87	6
LPI competence (services) index	2.98	4
Overall Score	**48**	**2**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.

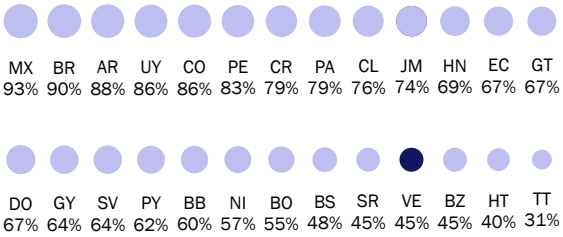
VENEZUELA

2012 FAST FACTS	
Population	29,517,000
Land area (km2)	912,050
GDP (US$ billions)	382
Transport share of GDP (%)	3.56
Transport service imports (US$ billions)	402
Transport service exports (US$ billions)	3.79
Overall Score (1-100)	na
Overall Rank (1-26)	na

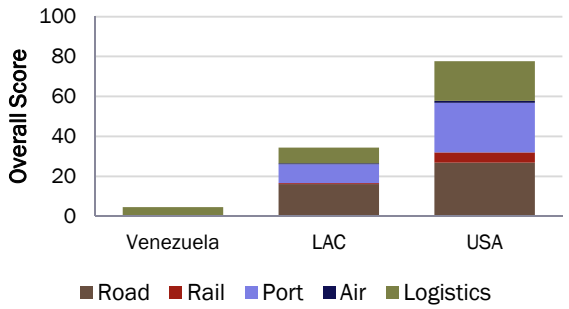
Source: WDI-World Bank and IMF.

Note: 'na' means not available because estimation of overall index is only possible when all mode indexes can be estimated.

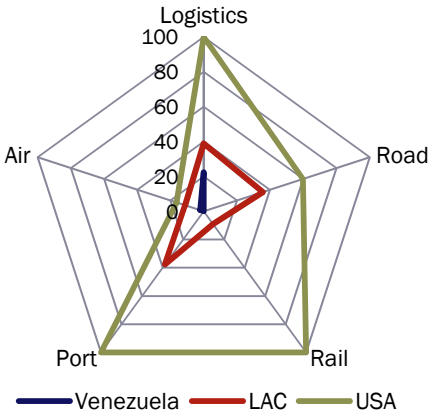
Overall Data Completion Rate



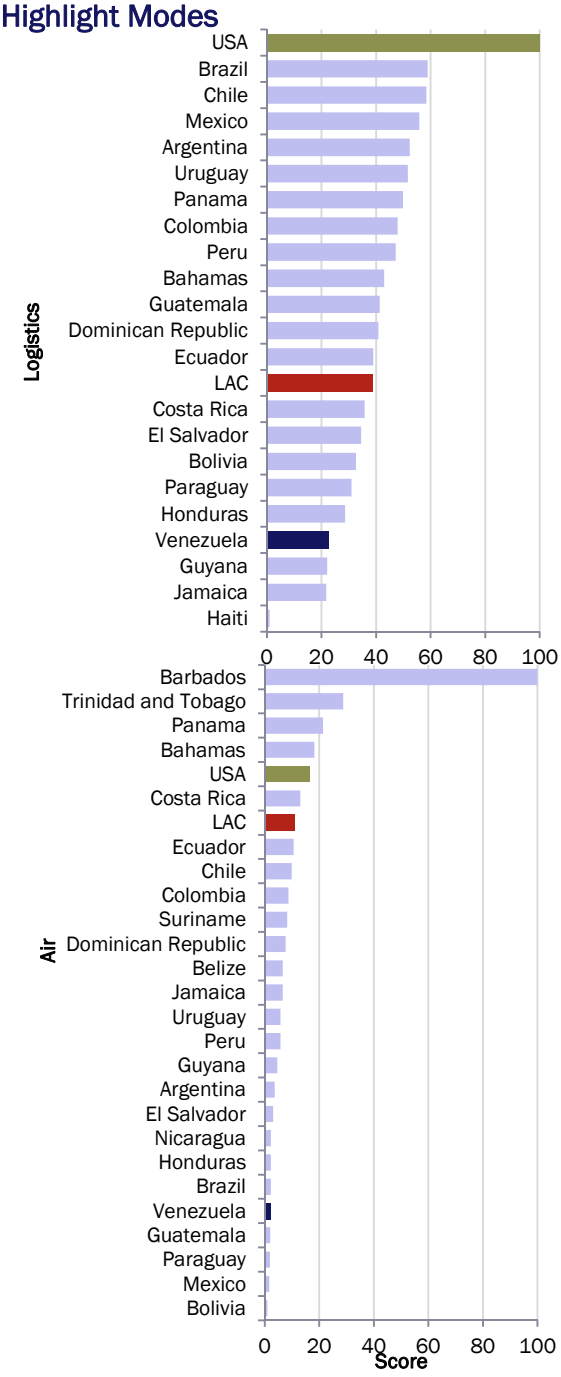
Benchmarking Venezuela's Overall Score



Overall Score by Mode



Highlight Modes



2012 VENEZUELA SCORE DETAILS	Value	Rank (1-26) a/
ROAD		
Mode Score (1-100) b/	*na*	*na*
Road network (km)	96,155	6
Motorway/freeway/express road (km)		
Primary network (km)		
Secondary network (km)		
Other networks (km)		
Paved network (% total)		
Heavy vehicles (#)	914,985	2
Fleet average age (years)		
Estimated CO2 emissions (ton)	33,492,230	23
Domestic freight productivity (million ton-km)		
Domestic freight carried (ton)		
Average distance per vehicle (km/year)		
Retail diesel oil price (US$/liter)	0.011	1
Average freight tariff (US$/ton-km)	0.087	10
RAIL		
Mode Score (1-100)	*na*	*na*
Railway network (km)		
Average power of freight locomotives (HP)		
Railway freight companies (#)	1	8
Estimated CO2 emissions (ton)		
Domestic freight carried - productivity (million ton-km)		
Domestic freight carried (million ton)		
Average tariff of freight (US$/ton-km)		
PORT		
Mode Score (1-100)	*na*	*na*
Maximum draft in container terminal (ft)	38	14
Bridge (gantry) cranes (#)	0	20
Container berth length (m)	600	22
Container storage facilities area (m2)	10,200	24
Port traffic (ton)		
Exports port traffic (ton)		
Imports port traffic (ton)		
Liner shipping connectivity index (2004 = 100)	19	14
Container terminal utilization (Latin America average = 100%)		
Container terminal extent of competition (# terminals)	1	11
Gateway proximity to population center (category)	3	16
Gateway (TEU/truck)	2	19
AIR		
Mode Score (1-100)	*2*	*22*
International airports with cargo terminal facilities (#)	11	5
Area of cargo facilities in international airports with cargo terminal facilities (m2)		
Domestic freight carried (ton)		
International freight (ton)	100,342	9
Domestic air freight carried (million ton-km)		
LOGISTICS		
Mode Score (1-100)	*22*	*19*
Logistics centers' surface (km2)		
Logistics performance index (LPI)	2.49	17
LPI infrastructure index	2.17	19
LPI competence (services) index	2.33	18
Overall Score	**na**	**na**

Note: a/ Rank 1 being the best performer and Rank 26 being the worst. b/ Score of Value 1 being the worst and score of Value 100 best performer.