

CHAPTER 2

Trucking in Africa Compared with Other Regions

The performance of transport corridors in other regions, especially those in developing countries, can provide useful clues to assess the operations and costs of road transport in Africa. To this end, this chapter provides a brief comparison of road freight operations and markets on transport corridors in Africa with those in other regions. Subsequent chapters of this report analyze in more detail the situation in Africa.

The situation in no country or region is fully comparable with that in Africa, yet in each region specific similarities or policy reforms in road freight have been carried out that are of interest to Africa. Central Asia's countries have long distances to the sea, and many are landlocked as in Africa. Latin America has also two landlocked countries (Bolivia and Paraguay), which need to cross long distances to reach an ocean port. This region also offers useful experiences on transport deregulation, as does Central and Eastern Europe. Indonesia's deregulated road freight market is also of interest, especially due to the large proportion of small trucking companies. The Southeastern European countries trade mostly with countries outside their region, which is similar to the situation in Africa. In Pakistan, utilizing mostly old vehicles, many bought secondhand as in Africa, truckers manage to achieve very low transport costs and offer their services at low prices. Furthermore, Pakistan's road

infrastructure on the main corridors is comparable in quality to that of the main corridors in Africa.

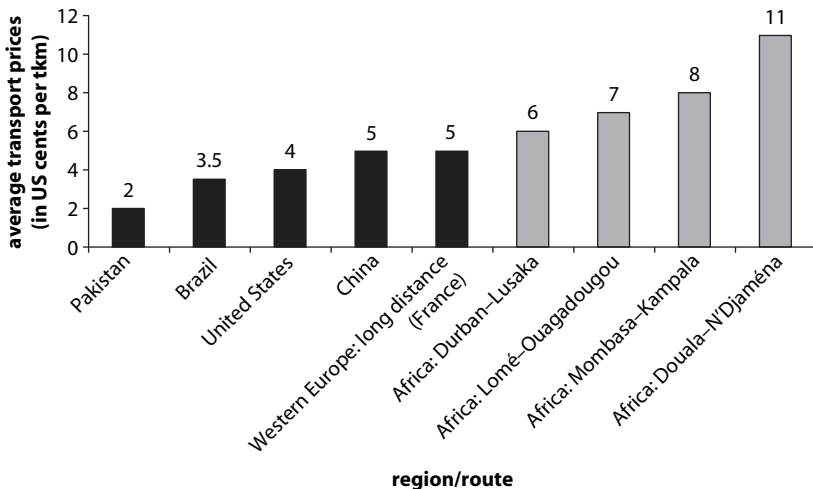
Transport costs on the main international corridors are not outrageously higher in Africa than elsewhere. But the paradox lies in the fact that with low wage levels, transport costs and prices should be much lower and probably the lowest in the world, as the trucking industry is intensive in labor.

Moreover, the four African subregions (West, Central, East, and Southern) are on average below other regions in the world with respect to transport quality, West Africa being the worst and Southern Africa being the best within Africa.

Global Comparisons

Transport prices. As shown in figure 2.1, transport prices in Africa are, on average,¹ higher than in South Asia or Brazil. Prices (per ton-kilometer (tkm)) on the Central African Douala–N’Djaména route (linking Cameroon with Chad) are more than three times higher than in Brazil and more than five times higher than in Pakistan. Only the Durban–Lusaka corridor in Southern Africa approaches the price level of other regions of the world.

Figure 2.1 Average Transport Prices: A Global Comparison in 2007



Source: Study team compilation of data from various sources.

Transport costs. Table 2.1 demonstrates that contrary to prices, transport costs on the main international corridors are not outrageously high. For instance, transport costs in Africa are not excessively higher than in Western Europe. Table 2.2 shows that indeed, variable costs in Africa are higher because of (i) high fuel costs; (ii) age of truck fleets, which leads to much higher fuel consumption; and (iii) road conditions that are probably the worst in the world. However, offsetting high variable costs, fixed costs are much lower in Africa than in Europe because of much lower wages and lower capital costs associated with aged trucks.

Despite such low wage levels, transport costs and prices were not much lower than in developed countries because of high variable costs. The trucking industry is labor intensive and, as such, the lower wages in Africa help to keep total transport costs down (see table 2.3).

Quality of service. A yearly survey of international freight forwarders allows the creation of a Logistics Performance Index (LPI).² The LPI, which is a useful indicator of quality of service, integrates a number of quality attributes into a single number. As shown in figure 2.2, the four African subregions considered in this study rank on average below other regions in the world on transport quality, West Africa being the worst and Southern Africa the best within Africa.

Transport price and quality. Comparing transport prices and the quality of service as measured by the LPI shows that Africa's transport is both more expensive and lower in quality than developed countries such as France and United States (figure 2.3). In the figure, the greater the LPI, the better the transport quality. The United States has an LPI of 3.84, whereas Africa ranges between 2.19 (West Africa) and 2.73 (Southern Africa). The Central African region is an extreme case of high prices associated with low quality.

The above findings are striking. Within individual markets it can be expected that higher-quality services command higher prices, since they normally cost more. Yet, as noted above, the comparison with other

Table 2.1 Comparative Transport Costs, Africa and Europe (Eastern and Western) in 2007

	<i>Central Africa</i>	<i>East Africa</i>	<i>France</i>	<i>Spain</i>	<i>Germany</i>	<i>Poland</i>
Transport costs per vehicle-kilometer (US\$)	1.87	1.33	1.59	1.52	1.71	2.18

Source: Trucking Surveys for Africa, Comité National Routier (CNR) for Europe.

Table 2.2 Comparative Transport Costs, Central Africa, East Africa, and France in 2007

	<i>Central Africa^a</i>	<i>East Africa^b</i>	<i>France</i>
Variable costs (US\$ per km)	1.31	0.98	0.72
Fixed costs (US\$ per km)	0.57	0.35	0.87 ^c
Total transport costs (US\$ per km)	1.88	1.02	1.59
Average fleet age (years)	11	7	7
Fuel consumption (liters per 100 km)	65	60	34
Yearly mileage (km)	65,000	100,000 ^d	121,000
Average daily speed (km per hour) ^e	30	43	69
Payload utilization ^f (percent)	75	76	87
Immobilization time before loading ^g (hours)	13	6	1.6
Articulated trucks (US\$)	n.a.	169,200	138,000

Source: CNR for France. Trucking surveys for Central and East Africa.

Notes: East Africa truck price (in US\$) corresponds to a heavy truck.

n.a. = Not applicable

a. Douala–N'Djaména corridor.

b. Mombasa–Kampala corridor.

c. Data for 2006.

d. Based on interviews.

e. Data from HDM-4 for African corridors.

f. Ratio of the number of kilometers with payload over the total number of kilometers of a truck. Data are based on rather similar truck capacity; African companies usually importing trucks from Europe after several years of use.

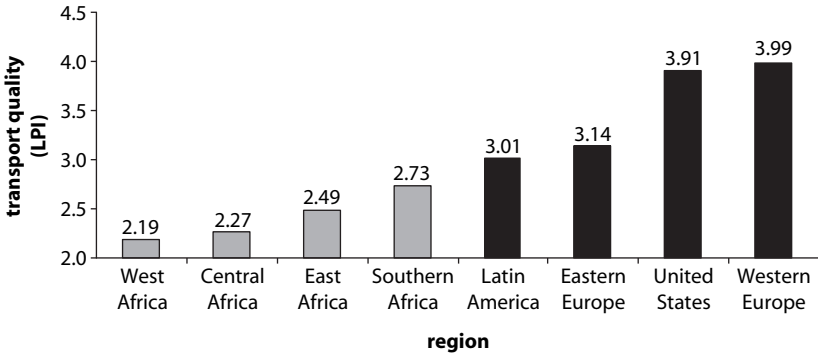
g. Calculations for immobilization time before loading for African routes come from the trucking surveys when loading at ports, in particular the following question: What was the average amount of time you waited to pick up freight once inside the port?

Table 2.3 Median Monthly Wages for Truckers in 2007

<i>Country</i>	<i>Median monthly wages (US\$)</i>
France	3,129
Germany	3,937
Chad	189
Kenya	269
Zambia	160

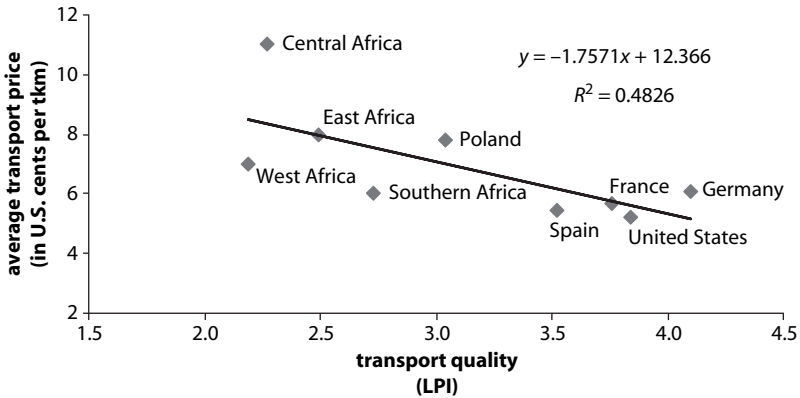
Source: CNR for France and Germany. Trucking surveys for Chad and Kenya. For France and Germany, monthly wages include bonuses.

Figure 2.2 Transport Quality Worldwide Based on the Logistics Performance Index in 2007



Source: World Bank, LPI (2007).

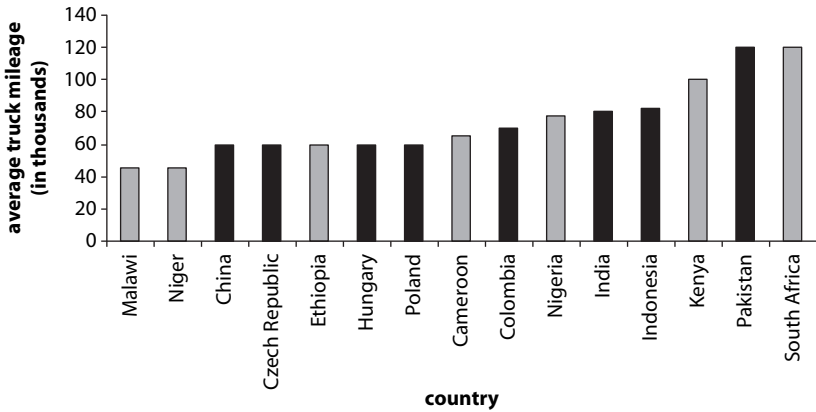
Figure 2.3 Transport Services in Africa—Expensive and Low Quality in 2007



Source: World Bank and task team compilation from various sources.

countries shows that transport services in Africa are both pricier (in most cases) and significantly lower in quality.

Efficiency. Figure 2.4 compares truck utilization in Africa with that in selected developing countries. The figure shows, on the one hand, a large disparity among the African countries, with South Africa’s trucks traveling almost three times as many miles as trucks in Malawi. On the other hand, trucks in other developing countries also show a large disparity in truck utilization, with Pakistan’s trucks doing twice as many miles as China’s trucks. It is striking that the trucks in the higher-income countries in Eastern

Figure 2.4 Average Truck Mileage in Selected Developing Countries in 2007

Source: Londoño-Kent (2007) and trucking surveys for African countries.

Europe are not utilized efficiently. This is mainly explained by the fact that there are relatively few trucking companies established in these countries that operate across borders. Thus, yearly mileage within countries remains lower than it would be if the companies would operate transnationally.³

Regional Perspectives

Trade. An important aspect of the operations and performance of international transport corridors is the nature of trade. In Africa, partly because of the similarity in production between the neighboring countries and partly because of infrastructure and other barriers to trade, most trade is international and not subregional. This means that trade logistics encompass not only land transport, but also ports and shipping issues.

On other continents, there are varying situations. In Latin America, an important part of exports in Bolivia and Paraguay go as final destination to neighboring countries, Argentina or Brazil. In Southeastern Europe, there was little trade among the countries. Sub-regional trade comprising only about 6 percent of total external trade in 2000.⁴

Operational issues. In the Southeastern European transport corridors, the key problems directly related to international road transport include some that are common to Sub-Saharan Africa, such as excessive waiting times at the border for clearing customs, and others that are more peculiar to the region. Such problems include difficulties in obtaining visas for

professional drivers, lack of bilateral trip permits, and slow implementation of innovation in logistics.

Central Asian countries have the longest distances to an ocean port of any region in the world. The capitals of four Central Asian countries are 3,000 kilometers or more away from an ocean port. By comparison, distances to a port in Africa are mostly in the 1,000–1,500 kilometer range, with only three countries (Zambia, Rwanda, and the Central African Republic) being in the 1,500–2,000 kilometer range.⁵

In Latin America, the two landlocked countries, Bolivia and Paraguay, have some similarities with the international corridors in Africa in that they need to transit through other countries for export-import trade. The main international trade corridors run through Bolivia, which uses ports on both the Pacific and the Atlantic to connect with overseas markets. Paraguay's main route for both exports and imports is from Asunción to the duty-free port of Paranagua in Brazil. There is also important corridor traffic by road between maritime countries. For example, Brazil's trade crosses Argentina to reach Latin American countries on the Pacific or to use their ports for overseas trade with Asia. The cost of crossing international borders varies greatly in Latin America, with some of the higher-cost (both in monetary and time dimensions) border crossings occurring between maritime countries (for example, between Argentina and Brazil), rather than between Bolivia or Paraguay and their transit countries.

South Asia shares many similarities regarding trade and international transport with Sub-Saharan Africa: (i) both regions have a gross domestic product (GDP) per capita below US\$1,000 (average US\$684 for South Asia and US\$830 for Sub-Saharan Africa); (ii) both regions trade less than 10 percent of the exports and imports within the region; and (iii) both have poor-quality transport facilities and services along international trade corridors. Yet there are important differences in how the corridors operate. In South Asia, a key factor explaining why transport corridors operate poorly is that national policies of most countries in the region prohibit access of foreign trucks. As a result, freight needs to be transhipped at the border from one country's trucks to the next country's trucks. Road transport costs in South Asia are the lowest in the world. However, the high cost of transshipment at the border, coupled with other problems in the logistics chain, negate the benefits of low trucking cost when international transport is concerned. Transshipment not only dramatically increases transport cost, but also poses a high risk to the condition of the cargo.

Pakistan's National Trade Corridor (NTC) provides an excellent example of the operations of a national corridor, with a mix of good and bad features.⁶ The NTC links the Afghan border, close to Peshawar, through Lahore to Karachi and Port Qasim, with a link to Khunjrab. The NTC handles the major part of Pakistan's external and internal trade. In many respects, Pakistan's external transport and trade facilitation systems provide an adequate level of connection with the global economy. For instance, Pakistan's sea freight rates are in line with regional and international levels; its sea transit times are better for some major markets than for its competitors, and worse for others (largely a result of geography and distance); and its road transport rates are some of the lowest in the world. However, the system has a number of weaknesses that result in high cost and poor quality of service to the users. Major weaknesses include high port costs and rates; high dwell time for inbound containers; poor road transport services, with long transit times and unreliable service quality; the use of old and technologically outdated trucks, a result of import regulations and tariff structure; and poor road infrastructure with low capacity and quality not suitable for rapid and reliable truck services. Unfortunately, one of the main reasons for the low trucking costs in Pakistan is not efficient operation but a very high level of overloading, causing major damage to the roads. Some of these weaknesses can be removed by investments, but others require policy changes and freedom for the private sector to make its own decisions and investments.

Market Regulation, Competition, and Prices in the Trucking Industry

The prices charged for transport services and the quality of service depend substantially on the regulatory regimes and competitiveness in the trucking industry. International experience shows the benefits of strong competition in the trucking industry.

Many countries have over the past two decades introduced substantial reforms to their trucking markets, by essentially deregulating the industry. Selected examples are described below.⁷

Mexico. Until 1989, trucking in Mexico was strongly regulated, as in most of Latin America. Regulation was thought to promote fair pricing, prevent dangerous cost-cutting competition, and control quality of service. In practice, regulation served to restrict competition and limit supply to a few firms, resulting in high prices and poor service.

The government decided to deregulate trucking and did this gradually with changes effected over a two-year period (1989–90) with very positive impact.

Significant outcomes of the deregulation were as follows:

- Many new truck operators entered the market. Within a few months of completing the deregulation process in 1990, some 30,000 permits were issued for new entrants.
- Within five years, road transport prices had dropped by 23 percent in real terms.
- Trucking services improved in frequency, access, and speed of delivery.
- More flexible pricing of both truck and rail increased competition in the provision of transport services and helped to lower overall transport costs.

Today, after almost two decades of deregulation, the benefits remain, although some problems remain to be fixed, such as the need for states and local governments to complete harmonization agreements, the lack of which affects market structure and facilitates the rebuilding of cartels.

Indonesia. As part of a major liberalization of the transport market, road transport prices were freed in 1985. Since then, prices have been set by the market. Liberalization caused a large increase in the number of truck operators, creating a competitive market. The majority of public transport companies own only a small number of vehicles, although some operators own relatively large fleets. One of the restrictions to route freedom is that freight vehicles are required to obtain licenses to cross provincial boundaries, but such regulation does not seem to cause major economic distortions.

The Czech Republic, Hungary, and Poland. Road freight transport was one of the first sectors to be privatized and liberalized in most of the Central and East European countries. Hungary, followed by Poland and then the Czech Republic, was the earliest to adopt pro-competition reforms. Hungary and Poland passed laws granting free entry to the trucking market in 1988, as did the Czech Republic after 1990. Market forces freely determine transport prices. The combination of privatization and liberalization, which included deregulation reforms such as elimination of rate and route controls, led to the entry of many new

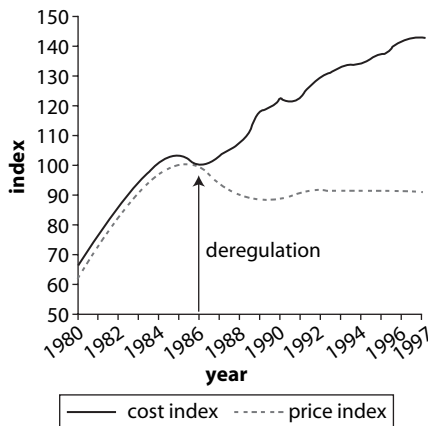
trucking operators with competitive prices and better-quality services. A consequence of the new competitive environment included several innovative logistics services initiated by the trucking companies, resulting in faster delivery times and less breakage or spoilage of cargo. In most cases, the more significant service innovations were started by the larger, internationally connected trucking companies.

France. The 1986 deregulation of road transport in France led to dramatic lowering of road transport prices, as shown in figure 2.5. Comparing the relevant cost and price indexes, the figure clearly demonstrates a parallel trend of cost and price movement before the deregulation and a sharp divergence after the deregulation.

Morocco. Initial conditions of the transport services market matter for the success of transport liberalization. Morocco is a relevant example in this regard since liberalization induced strong price decreases but also diminished transport quality.

For decades, road freight transport was strongly regulated, with the monopoly of freight allocation carried out by the Office National du Transport (ONT). However, because of the ONT fleet's low productivity, many individuals invested in trucks and oversupply gradually increased.

Figure 2.5 Cost and Price Trends before and after Market Deregulation in France, 1980–97



Source: Darbéra (1998).

In 2003, the Law 16-99 entered into force and abolished the monopoly of freight allocation for the ONT, and transport prices became deregulated.

Because of the initial large oversupply, along with exacerbated competition and low professionalism among individual operators, transport prices decreased for years and reached a level below transport costs, with a subsequent low quality of transport service. As a result, the Moroccan fleet has continued to age, drivers have remained untrained, and informal service predominates.

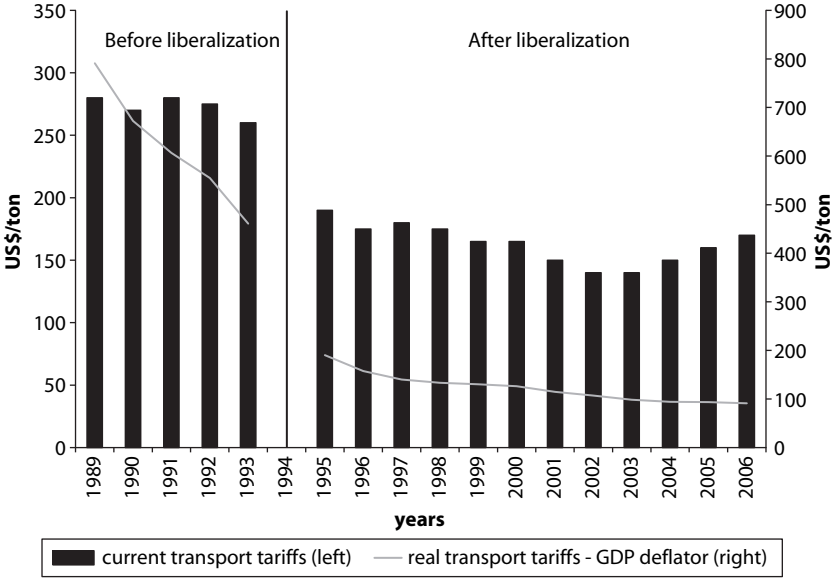
As a result, the Moroccan transport market is characterized by the following:

- a predominance of the informal sector, estimated at 70–75 percent of total freight transport in Morocco
- atomized supply with 90 percent of companies operating one or two trucks
- aging trucks (with 13 years as a median fleet age)
- average transport price below transport costs on most national corridors

An African experience: Rwanda. The only deregulation experience in the African region so far took place in Rwanda in 1994, and it had a huge effect on transport prices, confirming the impact that cartels have had elsewhere. After deregulation of international transport, prices declined by more than 30 percent in nominal terms and by almost 75 percent in real terms when taking into account the continued increase in input prices (figure 2.6). The impact in Rwanda was probably stronger than in most other countries because before deregulation road freight services were a monopoly of a parastatal trucking company (STIR) that was able to set high prices without any restraint (Mwase 2003). Furthermore, 1994 was also the bloodiest period of the Rwandan Civil War, when for all practical purposes a road freight fleet had ceased to exist.

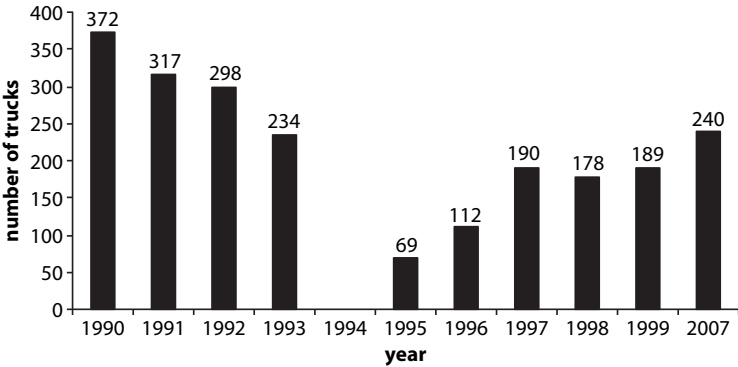
Deregulation not only resulted in lower prices, but also led to growth in the Rwandan fleet. This is in contrast to common fears that deregulation, which liberalizes market entry, leads to eradication of the fleet owned by truckers from landlocked countries. In the case of Rwanda, the fear was even stronger given the disappearance of its trucking fleet at the height of the Civil War in 1994. In fact, deregulation helped to achieve a rapid recovery of the domestically owned fleet. A distinctive feature of the business strategy followed by Rwandan truckers has been

Figure 2.6 Average Transport Prices from Mombasa to Kigali
(US\$, constant and current)



Source: Data from the Northern Corridor Transport and Transit Authority (NCTTA).

Figure 2.7 Number of Registered Heavy Trucks in Rwanda



Source: Data from NCTTA.

their specialization in specific goods to capture niche and profitable markets, such as petroleum products. This largely explains why the current fleet is equal to the level prior to deregulation of international transport (see figure 2.7).

Malawi. This was a case of attempted protection of the local trucking industry against competition from truckers from other countries, mainly South Africa. With that purpose, the Malawi government established a surtax on domestic transport in Malawi. Under the current tax system, the domestic transporter collects the surtax on transport from the customer.

The surtax in fact served no purpose, other than hurting farmers who had to pay the surtax for transport of their production, reducing their profit margins, and providing the local truckers with additional profit for their services. Market regulations in any case provided a strong entry barrier to South African truckers entering into the Malawi transport market, where the government intended to protect the domestic road transport providers. In the hypothetical case of real competition, the South African operator would have remained much more competitive than the local operator, as shown in table 2.4.

Thus, overall, trucking deregulation has been successful, leading to more competition, lower prices, and better services, while attempts to artificially protect local transporters (Malawi) have had perverse consequences. Table 2.5 summarizes the reform experiences.

Table 2.4 Comparison of Malawi and South African Fleet Competitiveness

<i>Combination vehicle</i>	<i>Malawi New</i>	<i>Malawi Used</i>	<i>South Africa</i>
Km/year	100,800	100,800	100,800
Load in tons	28	28	28
Payload utilization	75%	75%	75%
<i>Ratios, cost per km</i>	<i>US\$</i>	<i>US\$</i>	<i>US\$</i>
Tires	0.110	0.110	0.060
Fuel and top-up oil	0.560	0.560	0.300
Maintenance	0.130	0.150	0.120
Overhead	0.100	0.040	0.100
Depreciation	0.230	0.060	0.120
Capital	0.540	0.100	0.060
Transit fees	0.170	0.170	0.125
Insurance	0.210	0.002	0.080
Licenses and permits	0.010	0.010	0.015
Driver wages	0.010	0.010	0.100
Total per km	2.064	1.21	1.080
Tkm	0.098	0.058	0.051

Source: Tera International (2005).

Table 2.5 Summary of World Experiences in Transport Services Deregulation

<i>Country</i>	<i>Main achievements</i>	<i>Background</i>
Czech Republic, Hungary, Poland	Entry of many new operators Prices determined by market Innovative logistics services	Major reform in 1998–90. Road freight transport was one of the first sectors to be privatized and liberalized in Central and Eastern European countries.
France	Dramatic reduction in transport prices	Major reform in 1986. Some 10 years after deregulation, overall prices increased by 40%, transport prices fell by over 10%.
Indonesia	Entry of many new operators Prices set by the market Most trucking companies small	Major reform in 1985. Vehicles were required to obtain licenses to cross provincial boundaries, but there was no major impact.
Mexico	Entry of many new operators Transport prices dropped by 23% in real terms within five years Trucking services improved in frequency, access, and speed of delivery	Major reform in 1989. The deregulation process was gradual over a period of two years.
Morocco	Transport prices dropped dramatically Abolition of government monopoly of freight allocation	Freight allocation abolished in 2003. Large initial oversupply was not reduced and led to atomized and low quality of service, but prices were reduced.
Rwanda	Transport prices fell by 75% in real terms Rapid recovery of locally owned fleet	Major reform in 1994. Reform occurred after the genocide, when the public trucking fleet had practically vanished.

Source: Task team compilation from various sources.

Notes

1. Average transport prices are difficult to disaggregate because transport prices or freight rates/tariffs are dependent on several factors including the following: (i) *return cargo*—if backlog is ensured, freight rates are lowered; (ii) *cargo types*—tankers, oil products, machinery, and containers are more expensive to transport than general cargo in bags; (iii) *commercial practices/discounts*—there are often large discrepancies between published tariff schedules and what customers actually pay; (iv) *seasonal demand*—prices are seasonal and are highly sensitive to supply/demand, especially for certain export commodities and some imported finished goods.

However, although there are some possible biases and problems concerning data reliability, transport prices are rather homogeneous along the studied routes

- in the trucking surveys. Along a corridor, prices obviously vary: for instance, in U.S. dollars per ton-kilometer, from Mombasa, average prices are set at 4 cents per ton-kilometer for Kenya, 8.5 for Uganda, 9 for Rwanda, 11 for Burundi, and 12 for Democratic Republic of the Congo (from Goma) (Oyer 2007).
2. The LPI measures perceptions of the logistics environment of 140 countries on several dimensions (such as transport price, infrastructure, and customs). The survey uses an anonymous, Web-based questionnaire that asks respondents to evaluate their country of residence, as well as eight countries they are dealing with, on the following logistics dimensions: international transportation costs, domestic transportation costs, timeliness of shipments, tractability of shipments, transport and IT infrastructure, customs and other border procedures, and logistics competence.
 3. CNR (2005).
 4. World Bank (2004).
 5. Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. These figures are quoted in Snow et al. (2003).
 6. World Bank (2007b).
 7. Presentation of these examples draws substantially on three papers: Londoño-Kent (2007), World Bank (1994), and Dutz (2005).

