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### PRIVATE INVESTMENT IN RAILWAYS: EXPERIENCE FROM SOUTH AND NORTH AMERICA, AFRICA AND NEW ZEALAND<sup>1</sup>

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**Introduction.** Many, perhaps most, of the railways in Latin America and Africa were originally built by private investors and operated under various forms of contractual agreement (often called “concessions”). During the period immediately after the Second World War (for Latin America) and the decolonialization of Africa in the 1960s, virtually all of these railways were taken under public ownership and control for operations and investment. As of the beginning of the 1990s, virtually all<sup>3</sup> of the Latin American and African railways were owned and operated by the public sector – as was also the case with the railways of New Zealand and half of Canada.<sup>4</sup> With few exceptions, the railways of Latin America and Africa had fallen on hard times, with track in bad condition, many locomotives out of service (locomotive availability ratios often below 50 percent), and freight and passenger traffic locked into a downward spiral. With deficits high and growing, and public funds limited, there was little reason to believe that much could ever be done about this Railways Problem.

By the beginning of the new millennium, however, there were **no** more significant publicly operated freight railways in the Americas (excepting only Cuba, Uruguay, Ecuador, El Salvador -- perhaps 0.1% of total freight traffic in the hemisphere), and

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<sup>2</sup> Conclusions expressed in this paper are those of the authors and should not be attributed to the World Bank or any of its members or Directors.

<sup>3</sup> The Antofagasta and Bolivia railway in Chile and Bolivia has always been privately owned and operated, and was never nationalized.

<sup>4</sup> Canada had two major railways, Canadian National (CN) and Canadian Pacific (CP). CN was a nationally owned, “Crown Corporation,” whereas CP was shareowner-owned.

many suburban passenger railways and several Metros had also been transferred to private operation. At least 6 African railways had commenced concessioned or private management operations as well, and another 5 were in the process of transfer. During the decade, the largest railways in Canada was also privatized, as was the railway in New Zealand.<sup>5</sup> This is one of the most sweeping changes ever observed in a transport sector – a complete change in approach and objectives. Why did this happen, how well did it work and what should we learn from it?

**The Privatized Railways Website.** With the support of a grant from PPIAF mentioned above (footnote 1), the Bank is developing a detailed database on the performance of the rail concessions in Latin America and Africa. Much of the analysis discussed below is based on this database which can be found on the Bank's Website at <http://www.worldbank.org/html/fpd/transport/rail/denning.htm> The database is newly established and is still being refined. Comments and questions addressed to the authors at [lthompson1@worldbank.org](mailto:lthompson1@worldbank.org) would be welcome.

**Why did it happen?** It would be satisfying to report that logic and reason prevailed: the Governments involved looked carefully at their railways, realized that they were falling into irrelevance and disrepair, and decided to fix the problem using carefully designed strategies taking effect over a number of years. What appears actually to have happened, however, is that a series of economic crises removed the ability of most Governments to pay their railway losses (many railways were losing hundreds of millions of US Dollars annually, upwards of 0.5 percent or more of GDP, amounts that were no longer affordable). Far from being able to afford continuing financial drains, national treasuries wanted to bring some money **in** for a change, not pay it **out**, and they looked to private sector involvement as a way to reverse (or, at least, stem) the outflow. Many of the governments also recognized that the massive losses were due to inefficiency and poor response to competition (loss of market share), neither of which seemed particularly deserving of public support. The political rationale for rail subsidies was further undermined by the inevitably poor service of capital-starved public sector enterprises.

In practice, an equally important factor seems to have been a simple change in paradigm; railways were shifted (back) to private operation for the same reason that they were nationalized in the first place – because there was a change in the prevailing way of thinking about the problem. Rail private sector development programs were very much a part of a general trend toward increasing the role of the private sector in the delivery of all types of services. This led to a shifting of the burden of proof prevailing at the beginning of the decade where advocates of **change** bore the burden to a point later in the decade of the 1990s in which those advocating the **status quo** bore the burden: from “why?” to “why not?” As the change progressed, it became popular to ask why the public sector should operate railways at all. And, why should the private sector have to

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<sup>5</sup> These are, of course, not all of the privatizations. Perhaps the most notable (and hotly debated) of the privatizations not covered in this paper was that of British Railways. Another privatization was Conrail in the U.S., but this took place in 1987, before the decade of the 1990s which is the focus of this paper.

face unfair competition from the public sector in a business where government has no definable comparative advantage, and many obvious disadvantages?<sup>6</sup>

**What did governments do?** In general, the governments involved decided to withdraw from actual public operation and delivery of rail services. Most retained ownership of the underlying assets while transferring managerial control to new, private entities; but, in New Zealand, Canada and the Northern railway (Ferronor) in Chile, full “ownership” control<sup>7</sup> over the infrastructure was transferred to the new owners.

**The railways involved.** Figure 1 displays a brief statistical comparison of the selected group of freight and passenger railways which were privatized or concessioned in the 1990s. This Figure also includes data on a few railways outside the sample in order to provide perspective. Figures 2 and 3 provide general maps of these concessions. Overall, 44 railway in 16 countries were concessioned or privatized during the 1990s, and another 7 railways in 7 countries are now in the process of concessioning. Figure 4 summarizes a number of the aspects of concessioning or privatization in a number of countries.

**Who managed the process?** An unusually consistent outcome of government decisions about how to conduct privatization was that most governments elected not to have the existing railways manage the concessioning or privatization.<sup>8</sup> Although governments tried very hard to secure active cooperation from railway management (with more success in some countries such as Mexico and Brazil than in others, notably Argentina), an agency outside the railway was usually given overall control of the process in order to prevent antipathy at the working level in the railways from hindering the changes. In some cases, this agency was the supervisor of privatization (Cote d’Ivoire), in others a specialized department of the Ministry of Transport and Communications (Mexico) and in others a national development Bank (BNDES in Brazil). Quite frequently, the process was further strengthened by putting at the head of the process managing agency **and** at the railway seasoned managers who had the full confidence and backing at the highest political levels.

**What did they sell?** Generally, countries sold exclusive freight concessions.<sup>9</sup> In some cases, the exclusivity was limited in time (after 7 years in Cote d’Ivoire/Burkina Faso competition can be permitted if the oversight agency believes that this is needed). In Chile, the existing national railway company (EFE) sold non-exclusive operating access to a freight concessionaire on the broad gauge lines from Valparaiso/Santiago toward the

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<sup>6</sup> Explicitly: “If trucks, buses, airlines and autos are private and virtually unregulated, and assuming that the public sector does take care of compensation for social benefits derived, is there **any** reason why railways, especially freight railways, should necessarily be operated by a **public** agency?”

<sup>7</sup> Strictly speaking, it can be deceptive to use the word “ownership” because railways often have significant restrictions on their ability to use or dispose of the properties underlying their tracks. It be more accurate to focus on the degree and time period of control over the assets. A railway that has a full control lease, with and unlimited period, effectively “owns” the asset.

<sup>8</sup> The only exception appears to have been Chile, where the railway (EFE) negotiated the trackage access conditions for the freight concessionaire, FEPASA.

<sup>9</sup> A “concession” describes the situation in which the owner of assets retains ownership but transfers the rights and risks of use to another party.

South. In Mexico, the Government attempted to create the basis for some competition in major markets (permitting the Northeast and Northwest concessionaires to serve the Mexico City/Guadalajara market – see [Figure 5](#), by requiring that certain competitive access rights (trackage rights) be granted between the concessionaires. In addition, the Mexican Government created a neutral terminal access area for the Mexico City area so that all carriers would have full competitive access to shippers and receivers in the capital area. In Brazil and Argentina, connecting<sup>10</sup> concessionaires can be required to grant trackage use rights to each other under reasonable terms, but this condition has rarely been used. Suburban railways and metros have invariably been exclusive concessions; but, where suburban and freight concessions interconnect, freight railways have been granted limited transit access to the suburban network in off-peak times for access to ports and critical facilities in urban areas.

The nature of the sale of the infrastructure also varied among countries. Some (Argentina and Brazil) sold the concession by itself. Mexico first created in Government hands the companies to be sold along with the required rolling stock and the concession: the shares in these companies were then sold competitively to strategic investors. The shares in Canadian National were sold via public underwriting, while the shares in New Zealand Railways (which became Tranzrail) were sold to strategic investors by competitive tender. In most cases, the ownership of required rolling stock was sold along with the concessioning process (that is, the offer for the rolling stock was added to the offer for the concession). In a few cases (Argentina) the Government offered to lease existing rolling stock to concessionaires at standard leasing fees. In almost all cases, purchase of new rolling stock became the responsibility of the concessionaire/purchaser.

**Period of concession and why?** Freight concessions tended to have a term of around 30 years (Chile was 20 years, Mexico 50 years), and limited extensions of 10 to 20 years were usually allowed if both parties consent. The 30 year period (with extensions) was selected because that is roughly the lifetime<sup>10</sup> of wagons and locomotives: concessions significantly shorter than 30 years would require the governments to remain as potential financiers as, indeed, is the case with SITARAIL in Cote d'Ivoire/Burkina Faso. Passenger concessions tended to be somewhat shorter, at least at the outset, because governments wanted to have more involvement in the concession's behavior, and more frequent concession turnover was seen as a way of assuring that governments could do so.<sup>11</sup> As a result, Governments retained a much larger voice in the ownership and financing role for passenger rolling stock.

**How did they sell it?** There were three general approaches to sale of the concessions or shares in companies holding concessions: sealed bids, public auction, and direct

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<sup>10</sup> In Brazil there are two gauges, meter gauge and broad gauge (1676 mm). In Argentina there are three gauges, meter gauge, broad gauge and standard gauge (1435 mm). Chile has two gauges, meter and broad. Most other Latin America railways are meter gauge except for Mexico and Peru (mostly 1435 mm) and the Central American railways (914 mm). Trackage rights among concessions of differing gauges would have very limited or no competitive value.

<sup>11</sup> In practice, the Argentine Government found that the initial 10 year concession period for the suburban systems, and the 20 year period for the Metro, were both too short to permit the concessionaire to make the added investment which surging demand for the services generated. By negotiation the concession periods were lengthened to 30 years.

negotiation. The predominant approach used was sealed, best offer bidding, but Brazil typically uses public auctions for the sale of all public enterprises, and Cote d'Ivoire/Burkina Faso and Guatemala used direct negotiations. A second option is whether to have a minimum acceptable price and, if so, whether to state the minimum price publicly. While most countries had calculated an estimated value of the concession, few countries attempted to develop a minimum acceptable offer or price because they felt that a market determination of the price was the most reliable indicator of value. Several countries are required by their laws or Constitutions to have a minimum price: Brazil's minimum price is made public in advance and in effect constitutes the required opening bid in the auction. The auction managers in Brazil devoted significant resources to the determination of the minimum price. In Mexico, the Government had a minimum price but it was not made public: in one case (the first concession) the bidding did not reach the minimum and the concession had to be withdrawn to the embarrassment of the managers of the process.<sup>12</sup> A third question is whether to pre qualify bidders, or simply to let all parties bid. In virtually all cases, some form of pre qualification was used in order to ensure responsible bids.

**How was the winner selected?** The fundamental choice is between using various types of "points" formulae that attempt to bring various measures of performance together versus a unified monetary measure (though the measure may be a composite or weighted monetary measure). Points formulae are inherently subjective, but they arguably can permit inclusion of factors that are not readily quantifiable. Monetary criteria are more readily measured but, of course, may leave out factors (especially social issues) that are hard to include within a cash measure.

The most significant use of a points formula was for the Argentine freight concessions, as shown in **Box 1**. The formula is interesting for three reasons: 1) the weighting of the factors is so heavily slanted toward investment plans; 2) the attempt to convert inherently qualitative factors ("Argentine presence" or qualifications) into

Box 1		
Argentine Bidding Formula		
Factor	Maximum points	For
Bidder's experience, personnel and business plan	23	Best presentation
Basic investment plan amount and quality	33	Largest and most specific offer
Additional investments proposed	5	Largest offer
Annual payment (canon) to Government for infrastructure concession	10	Highest offer
Toll ("peaje") to be charged to passenger operators for use of track	5	Lowest charge
Number of former railway employees to be hired	15	Highest offer
Argentine presence in concession	9	Highest local involvement
<b>Maximum Total Points</b>	<b>100</b>	

quantitative measures through the judgment of the evaluators; and 3) the internal conflicts among factors (maximum employment versus payment to Government, canon versus peaje, bidder's experience versus Argentine presence). To be fair to those who developed the formula, this was the first set of concessions offered and there was only

<sup>12</sup> The Brazilian auctions always received an acceptable opening bid at the minimum price. Of the seven concessions sold, two sold at the minimum price, and five sold for more.

limited direct experience available for use in designing the award process. This said, the points formula encouraged unrealistic and unpredictable bidding, a fact that has been borne out in the subsequent performance of the concessions.

In most cases, bids were awarded on the basis of a monetary measure, though the imagination exercised in developing such measures was impressive. Bidding was usually preceded by a pre-qualification round where many of the factors included in the Argentina points formula could be expressed and prescreened before monetary bids were considered. Only bids deemed “qualified” were opened. When used carefully, therefore, the prequalification process can deal with many of the subjective issues that are otherwise not includable within a monetary bid.

Perhaps the simplest awarding approach was in Mexico where the largest cash offer for the shares on offer was accepted: bidders were required to pay 50 percent upon award, and the remaining 50 percent upon actual transfer of ownership control. Equally simple was Bolivia where the winning bidder placed the entire bid price in cash into the company’s accounts on the day of transfer.<sup>13</sup>

More complex were the Brazilian freight concessions, where the winning bidder paid 30 percent of the minimum price and the surplus (if any) of the winning bid over the minimum bid in cash; the remainder was paid to Government in 360 equal monthly payments. Still more complex were the passenger concessions in Rio de Janeiro where the concessionaires were given service levels and maximum fares, and were asked to make offers on the initial down payment, monthly lease payments, payment for materials inventories, investment commitments, and takeover of value from an on-going equipment rehabilitation program. In the Rio case, concessionaires could in principle have submitted a combination of positive (value of materials) and negative bids (the monthly lease fee) which might or might not have resulted in an overall positive balance: in the event, the bids on all components were positive.

The most sophisticated bidding process was the Buenos Aires suburban and Metro systems where the bidders were again given service requirements and maximum fares, and asked to make an offer for: 1) a monthly flow of operating support required (which could be negative over the life of the concession, consistently positive, or negative at the beginning and positive later); and, 2) a required capital program defined in advance by Government (but for which the concessionaire had control over the timing of the program). The Government awarded the concession to the best offer calculated as the minimum Net Present Value (12 percent discount rate) of the sum of both the operating support and investment flows. In both Brazil and Argentina, concessionaires took full commercial risk (demand forecasts and operating cost forecasts), subject to the maximum tariffs and service requirements prescribed, even though the governments were in effect subsidizing the service for social reasons.

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<sup>13</sup> The objective of the Bolivian process was transfer to private operation of a “recapitalized” railway. The Government did not receive the proceeds of the sale: these were instead allocated to be used in rebuilding the assets of the companies involved.

**How much did they get?** Box 2 displays the amounts the governments of Argentina, Brazil, Bolivia, Mexico and Cote d'Ivoire/Burkina Faso) received (or paid) from the concession sales. Though it is difficult to make comparisons because of the differences in the timing of receipts (and the different currency values), the favorable impact is clear when compared to the losses the governments started with. Ferrocarriles Argentinos (FA) was losing consistently around US\$800 million annually, a loss that was replaced by an income from the freight concessions, and a limited and defined capital flow for the passenger concessions. The Brazilian Federal Railway (RFFSA) was losing around US\$500 million annually: this became a payment to government of US\$1.7 billion. In Mexico, annual losses of around US\$400 million were transformed into a positive payment of US\$2.4 billion.

Box 2					
Payments for Concessions					
(U.S. \$ millions)					
Freight			Passenger		
	Fees to Government	Committed Investments		Net Operating Subsidy	Cost of Capital Program
<b>Argentina</b>			<b>Argentina</b>		
	36	218	Mitre	84	271
FEPSA	49	411	Sarmiento	(178)	276
NCA	15	166	Roca	(70)	48
Ferrosur Roca	71	344	San Martin	(45)	523
BAP	2	58	Belgrano Sur	166	121
FMGU		1197	Belgrano Norte	197	87
<b>Brazil</b>			Urquiza	102	82
FCA	317		Metro (Subté)	(439)	61.6
ALL	216		<b>Brazil</b>		
Novoeste	60		Supervia (sub'n)	36	-244
Tereza Cristina	19		Oportrans (Metro)	292	
MRS Logistica	889				
Nordeste	16				
Bandeirantes	245				
<b>Chile</b>					
Fepasa	30				
Ferronor	13				
<b>Bolivia</b>					
FCO	26				
FCA	13				
<b>Mexico</b>					
TFM	1,400				
Ferromex	552				
Ferrosur	377				

note: a negative number is a payment to government

**Who were the buyers?** There can be a great deal of political concern over privatization of formerly state-owned assets on the grounds that sale to outside investors would constitute "recolonialization" or at least surrender of an important mark of sovereignty to foreigners. In some cases, such as Mexico, countries took direct action to deal with this concern by initially requiring that consortia bidding on the concession have majority ownership from national investors. Some countries placed various restrictions on the role of foreign investors in certain concessions deemed critical to the national interest (e.g. the trans-isthmus line in Mexico) or, required that there be government agreement to any

proposals that were based on majority foreign ownership. As noted, Argentina awarded points for the “Argentine Presence” in freight concession bids which had the effect of preferring local investors and operators. At the same time, most countries required that bidding consortia demonstrate expertise and experience in operating commercially managed freight and passenger services which generally had the effect of mandating at least some external participation in the consortia.

In practice, the fears appear to have been groundless. Perhaps the most important reason was that most of the concessions were granted for the use of assets that had long been built and financed (and depreciated). As a result, the immediate capital required to manage the concession was relatively limited (compared with that needed for a green field BTO) and thus within the capabilities of local investors. Actual new investment was related mostly to working capital and purchase of a limited portion of the rolling stock fleet. For the Argentine passenger concessions, the required capital programs were compensated by government which meant that the concessionaires needed only to finance that portion of the subsidies and capital that was not yet eligible for reimbursement. Even where, as in Brazil, the prices paid were high, a significant amount of the payments were stretched out over time which in effect meant that government was financing a share of the purchase. In other cases (Guatemala or Malawi) where the payment was based on a share of gross revenue, the up-front burden could be further minimized. The result was that most concessions were consortia in which the majority ownership share is local with various pieces of key expertise and experience (especially commercial experience) are external. Other than the culture shock that foreign investors always experience, the consortia appear to have functioned reasonably well.

**Method of dealing with labor.** Box 3 shows what has happened to rail labor forces in a number of the concessioning countries. As the concessioning process began, it was immediately clear that finding an acceptable solution to dealing with the impact on rail labor would be the key issue in the political (and social) success of concessioning.

For a number of (well understood) reasons, government-owned railways had gradually accreted large and unproductive labor forces which were both the major financial burden on the railway and an adamant barrier to change. Countries were immediately required to decide how to cushion the impact of privatization on labor in order to reduce union opposition to change.

Box 3 Labor Force Changes in Concessioned Railways			
	Labor Force in Year Before Concessioning	Labor Force in Most Recent Year	Percent Reduction
<b>Freight Concessions</b>			
Argentina	67,000	5,300	92.1
Brazil	49,896	12,251	75.4
Bolivia	3,900	785	79.9
Mexico	46,823	16,000	65.8
Cote d'Ivoire/Burkina Faso	1,811	1,673	7.6
<b>Passenger Concessions</b>			
Buenos Aires Suburban	15,000	7,600	49.3
Buenos Aires Subt�	4,750	2,100	55.8
Rio Suburban	4,170	2,236	46.4
Rio Metro	3,272	1,534	53.1

One of the more positive aspects of the rail concessioning experience is that countries chose to conduct the process in a way that left concessionaires free to hire only the labor force needed, and to work under the conditions needed for efficient and customer responsive services. As **Box 3** shows, this meant that labor forces fell at least by half, and often much more. The *quid pro quo* was that rail labor received fair compensation for the social impact of employment loss, typically in the form of early retirement (3 to 5 years early with no reduction in benefits), retraining and relocation allowances for workers changing jobs, and an allowance for redundant workers (typically one to two month's wages for each year of prior employment in the railway). Analyses showed that these safety net programs were good for rail service, for the country and for the workers. Financial rates of return on the program (the balance between the cost of the program and the wage and other operating savings generated) were very high. Economic rates of return (the balance between the economic costs of the program and the change in the productivity of the economy) were also quite high – high enough so that the safety net package could be fair, even generous, and still benefit the economy significantly.

Labor programs also faced the question as to whether the program should be conducted by government prior to concessioning or by the private sector after concessioning (or a combination). The two approaches were best seen in Argentina and Mexico. In Argentina, the terms of the safety net were announced in advance so that each worker had the confidence that there would be protection.<sup>14</sup> As each concession was awarded, the concessionaire negotiated terms of employment with workers and hired those workers it chose (and who chose to accept the offer). Workers who were not offered jobs, or who chose not to accept the offers, were eligible for the compensation package. By contrast, in Mexico the Government computed a safety net package that reflected the worker's wage history, job security and benefits, employment potential, etc. As each concession was transferred, every worker was paid this package, after which the workers decided whether to accept any offers made by the new concessionaires. Brazil took a mixed approach. Because the Government was anxious to improve the financial performance of the railways (and reduce the budgetary burden) rapidly, it chose to pay immediate redundancy benefits to about 40 percent of the labor force, with the remainder of the workers required to be transferred to the concession in the concession contract. Concessionaires were then free to reduce the workforce as much farther as they chose but were allowed (and required) to use the government's compensation package. It is quite likely that the concessionaires simply deducted the expected further cost of their labor reductions from their bids to government

**Regulatory agencies.** Most countries established a regulatory agency, or agencies, in order to oversee the performance of the concessions. Performance of these agencies has been mixed, in line with the variations in the concessioning contracts and the economic circumstances in the countries – and the underlying regulatory capabilities of the countries. At least one instance of variation in practice deserves mention – the access to information. Certain countries, in particular Cote d'Ivoire/Burkina Faso, imposed specific information reporting requirements on their concessions with the result that the regulators (and others) have a good, public information base on which to assess the

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<sup>14</sup> Confidence was further strengthened by World Bank support for the program which ensured the workers that their benefits would in fact be paid – a major problem with earlier labor reduction programs.

performance of the concessions. Argentina, Bolivia and Brazil also have detailed public reporting requirements that provide good information to those with the resources to collect and analyze it. Other countries either did not specify in advance the detailed reports to be provided or have chosen not to enforce the requirement (or do not make the information readily available to the public). In these countries it is quite difficult to acquire the data needed to evaluate the performance of the concessions.

Perhaps a more important dimension in regulatory performance has been the response to the need to adjust the terms and conditions of concessions to changes in country condition and concessionaire performance. Virtually every concession has had to be renegotiated for a number of reasons, including: 1) the condition of the physical assets as delivered to the concessionaire was significantly different from that promised or expected (Argentina and Brazil); 2) unforeseeable circumstances such as natural disasters or acts of God made complete and specific performance impossible (Argentina); 3) economic crises (Argentina and Brazil) or even conflicts (Cote d'Ivoire/Burkina Faso) have rendered the financial forecasts to various degrees infeasible for reasons beyond the control or prediction of the concessionaire; 4) in some cases, demand increased so rapidly (Argentina suburban and Metro) that the capital forecast became inadequate; 5) concessions contained terms (highly specific investment commitments or physical transport volume commitments – Argentina and Brazil) that would have been irrational to meet as the concession actually developed; and, 6) governments did not fully live up to their commitments on such issues as contracted subsidy payments (Argentina), track access charges to be paid by governmental users (Argentina), completion of facilities or rehabilitation programs (Brazil), completion of labor adjustment packages (Brazil), or full access to infrastructure on expected terms and conditions (Chile).

None of the regulatory agencies has been fully up to the challenge of adjustment, partly as a result of legal constraints, and partly as a result of political perceptions which limited the flexibility for negotiation. To be fair, this would probably be a challenge in any country: the protracted experience with renegotiating the passenger franchises in the U.K. is a useful example. This said, getting regulation right has been a difficult, and not fully achievable target so far, and it has hindered the success of the overall process.

**What happened to demand?** The demand response to concessioning has generally been strong, especially in contrast to the years of shrinking or stagnating demand the state-owned railways had experienced as shown in [Appendix 1, "Traffic Indices"](#). Virtually all concessions are above, or well above, their pre-concessioning levels, and most are substantially above the demand levels which the trend of their pre-concessioning traffic experience would have suggested. The concessions almost certainly did better than their state-owned predecessors would have done in generating demand.

**Labor and labor productivity.** The most dramatic results of the involvement of the private sector in the concessions (or privatizations) are undoubtedly the significant improvements in labor productivity. [Appendix 2, "Labor Productivity,"](#) displays the results over time. In all but one case (Cote d'Ivoire/Burkina Faso – a 33 percent improvement in 5 years), labor output per employee (expressed as the sum of ton-km plus passenger-km per employee) at least doubled and more often tripled or quadrupled. To some extent this was a result of traffic growth, but the greater share of the improvement

must be attached to the programs which reduced the redundancy in the labor forces of the railways. By way of comparing labor productivities, EU railways (a mixture of passenger and freight) show an average output per employee of 635,000 TU/employee (range: 182,000 to 1,220,000) whereas the after-concessioning levels for the concessioned freight railways averaged 2,358,000 (range: 400,000 to 9,000,000) excluding the Canadian National, while the concessioned passenger railways averaged slightly over 1,000,000 (range: 1,000,000 to 1,200,000). On the same scale, the CN and CP figures are about 6,500,000 and the US Class I average is 11,800,000.

**The Tariff Experience.** Tariff calculations are always questionable because of the need to convert tariffs into a common currency standard, both in constant local terms and then into constant international terms. **Box 4** uses an estimated tariff calculation based on PPP dollars (1999) to compare the freight tariffs charged at the beginning of concessioning to the tariffs charged in 1999. Of the 18 examples shown, 16 had tariffs lower in 1999 than in the beginning year of concessioning. Applying the reductions achieved to the ton-km carried in 1999, the countries involved were paying about **PPP\$1 billion annually less** in rail freight charges than they would have paid had rail freight tariffs not fallen. This also understates the total savings to the country since the rail tariff reductions also exerted pressure to reduce competing truck tariffs as well. To some extent, the currency calculations can be bypassed by comparing tariffs reductions in percentage terms. **Box 4** shows reductions of between 7.7 percent and 53.8 percent, averaging around 21 percent (with increases of 34 percent and 61 percent factored into the average). In both cases, both the percentage and absolute savings to the countries are highly positive. Not only did the concessioning lead to greatly increased efficiency and demand, it also yielded significant benefits to the users of the transport system.

Box 4 Tariff Experience and Savings Calculation of savings from lower rates						
	Tariff in initial year	Tariff in ending year	Tariff in ending year	Ton-km in ending year	Total savings (million of PPP \$)	% tariff reduction
	Initial Year	(PPP\$/Ton- Km)	(PPP\$/Ton- Km)			
Cote d'Ivoire	95	0.123	0.106	523	8.9	13.8
Argentina Broad Gauge	93	0.039	0.036	6,898	20.7	7.7
Argentina Standard Gauge	94	0.032	0.043	495	(5.4)	-34.4
Bolivia FCO	96	0.147	0.123	626	15.0	16.3
Bolivia FCA	96	0.061	0.098	557	(20.6)	-60.7
Brazil:						
FCA	96	0.051	0.032	7,268	138.1	37.3
Novoeste	96	0.043	0.027	1,588	25.4	37.2
Nordeste	96	0.056	0.026	709	21.3	53.6
MRS	96	0.027	0.022	26,837	134.2	18.5
ALL	96	0.044	0.033	10,285	113.1	25.0
Tereza Cristina	96	0.120	0.101	259	4.9	15.8
Bandeirantes	98	0.038	0.023	5,984	89.8	39.5
Chile Fepasa	94	0.089	0.053	1,189	42.8	40.4
Chile Ferronor	96	0.072	0.046	743	19.3	36.1
Mexico -- TFM	97	0.054	0.043	17,256	189.8	20.4
Mexico -- Ferromex	97	0.041	0.036	20,638	103.2	12.2
New Zealand	92	0.104	0.081	4,078	93.8	22.1
Total					994.2	

**Regional Integration.** One particularly interesting aspect of the concessioning experience is the ability of concessions to promote regional integration in a way that government-owned enterprises find difficult. One good example is the SITARAIL concession in Cote d'Ivoire and Burkina Faso. Although both countries retained ownership of their parts of the track through separate societies de patrimoines, there is a single operating concession which provides seamless service from Abidjan to Ouagadougou. Similar bi-national concessions are under development in Senegal/Mali (Dakar to Bamako) and Mozambique/Malawi (Nacala to Blantyre/Lilongwe): in both cases, formerly landlocked countries can look to having effective rail service from the ports in other countries that they need for better access to the sea. Equally interesting is the cross-border ownership and investment in cases such as America Latina Logistica (ALL) which owns connecting concessions in Brazil (the former Ferrovia Sul Atlantico) and Argentina (FMGU and Buenos Aires al Pacifico). In addition, Chilean investors played an important role in the FCO concession in Bolivia, while Argentine investors were prominent in the Supervia concession (Rio suburban passengers) in Brazil.

**Overall assessment.** Nothing ever works perfectly, and there are always qualifications to every result – perhaps nowhere more so than in any privatization activity in formerly statist economies. There have been problems, as suggested above, and there have been the normal cavils from observers who find it difficult to acknowledge the positive side of any privatization effort. In fact, the glass is definitely **more** than half full: traffic increased in every concession, after years of decline in most of the formerly state-operated railways. Labor productivity, and other measures of effectiveness, also increased in every cases sometimes dramatically. Tariffs fell significantly, meaning that a major share of the benefits was passed on the shippers and users. And these achievements came in countries in which there was economic turmoil, especially in the later years of the 1990s. Accepting that there are problems that still need to be overcome, it is hard to see what more could realistically be asked of an attempt to make railways more efficient, customer responsive and socially responsive.

**What were the lessons learned?** If a country were looking at this experience and asking how to increase the role of the private sector in its railways, what should it take from this experience? How can the manifest benefits of private operation be generated without paying some of the prices experienced so far? At the risk of over generalizing, there do seem to be a few points that need to be assimilated in to privatizing programs:

1. **Try hard to develop agreed and realistic objectives.** Private sector involvement works, but there are always tradeoffs: programs that deny the need to make tradeoffs always end up making them badly, thus opening the results up to unnecessary criticism. Try also to define the answer to the “compared to what” question. The real issue is never “is it perfect” – nothing ever is: instead, the question ought to be, “is it better than before and is it headed in a better direction;” but, it takes continued effort to keep the assessment focused on these questions.
2. **Determined action in the right general direction is almost always better than delay** in the hope of perfect analysis or total consensus. This can be a difficult

tradeoff to make; but, while most mistakes can be fixed during the process, delay is almost always irreparable.

3. **Great care should be taken to get the objectives, terms and conditions of the concessioning (or sale) contract documents correct** because bad contracts can never be well enforced. At the same time, contracts should also be drafted with emphasis on the conditions that would guide subsequent renegotiations (if any). Developing economies and their legal systems are rarely predictable enough to permit rigid enforcement of concessioning agreements, and reasonable changes should be expected.
4. **Do not neglect the concession oversight function**, either before or after the concessioning. Concession contracts must be enforced, and that cannot be done without adequate skills and resources in the concessioning oversight function. At the same time, the concessionaires also depend on effective and fair oversight.
5. **Get the social protection right, and do it at the outset.** Labor is almost always vulnerable to the effect of concessioning, and unions will oppose concessioning if their members are not adequately protected. Experience has clearly shown that fair and effective safety nets can be implemented, and they are crucial to the success of the process.
6. **Keep the risk in the right place.** Even in the passenger concessions in Argentina and Brazil, the full commercial risk was transferred to the concessionaires. Governments should retain commercial of capital risk only in cases where transfer of the risk to the private sector would be unreasonable costly.

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World Bank, “Regional Conference on Railway Reform and Restructuring,” presentation of Jorge Kogan, 17-18 September, 1999

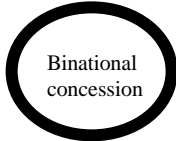
Figure 2



Figure 3



Concessioned



Being concessioned

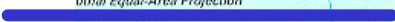
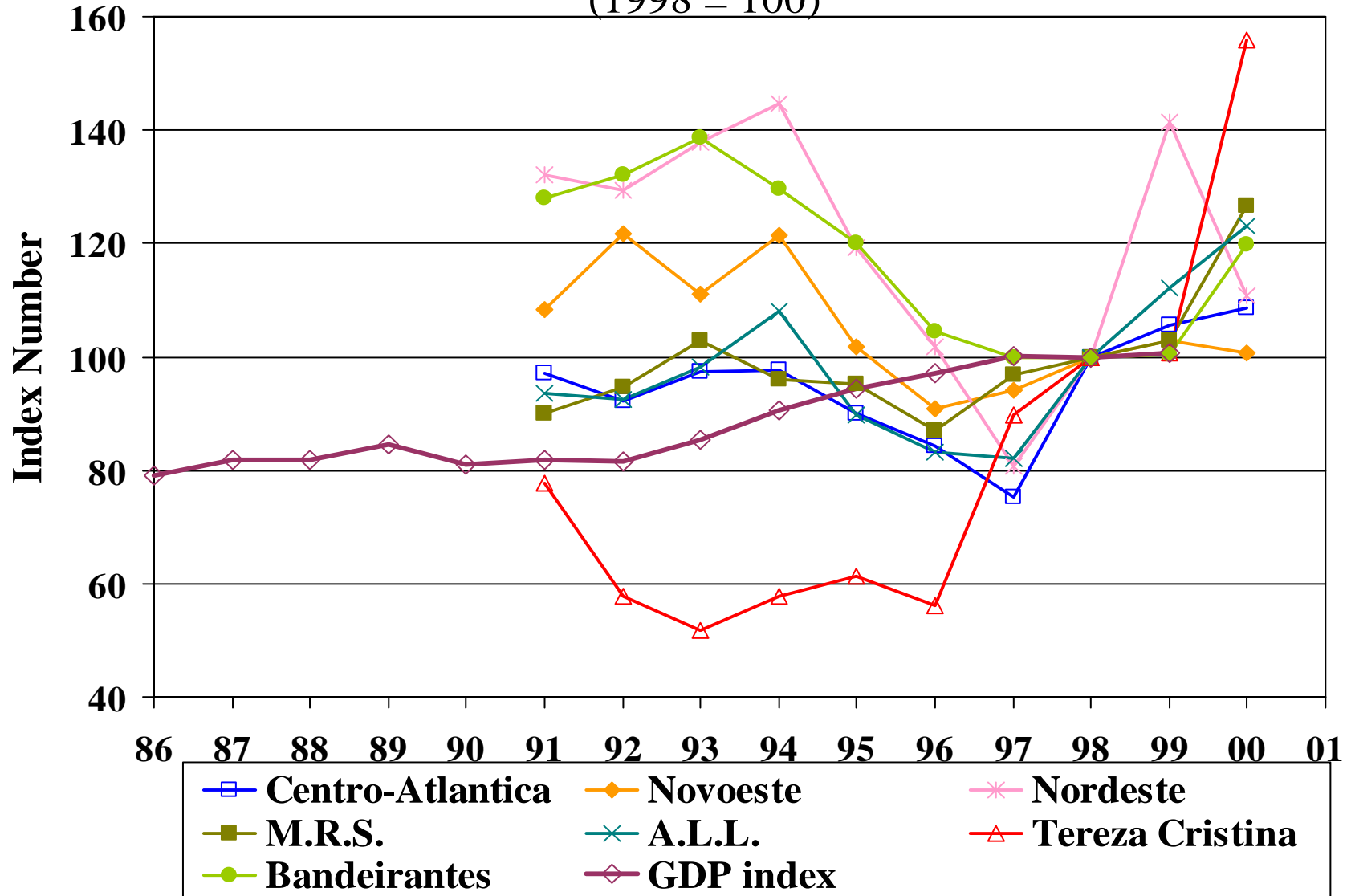


Figure Five



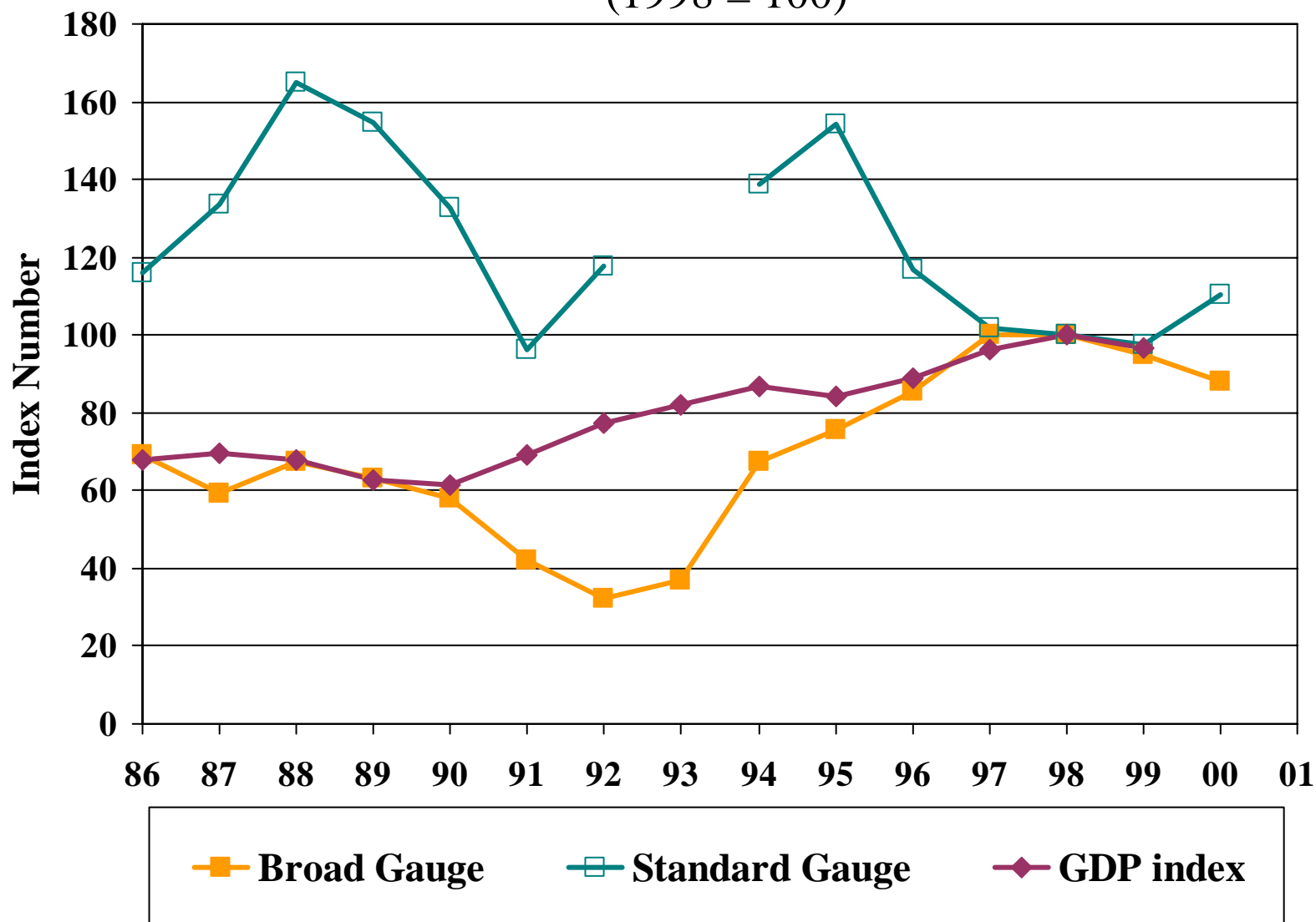
# BRAZIL - Output (ntkm) and GDP

(1998 = 100)



# ARGENTINA - Output (ntkm) and GDP

(1998 = 100)

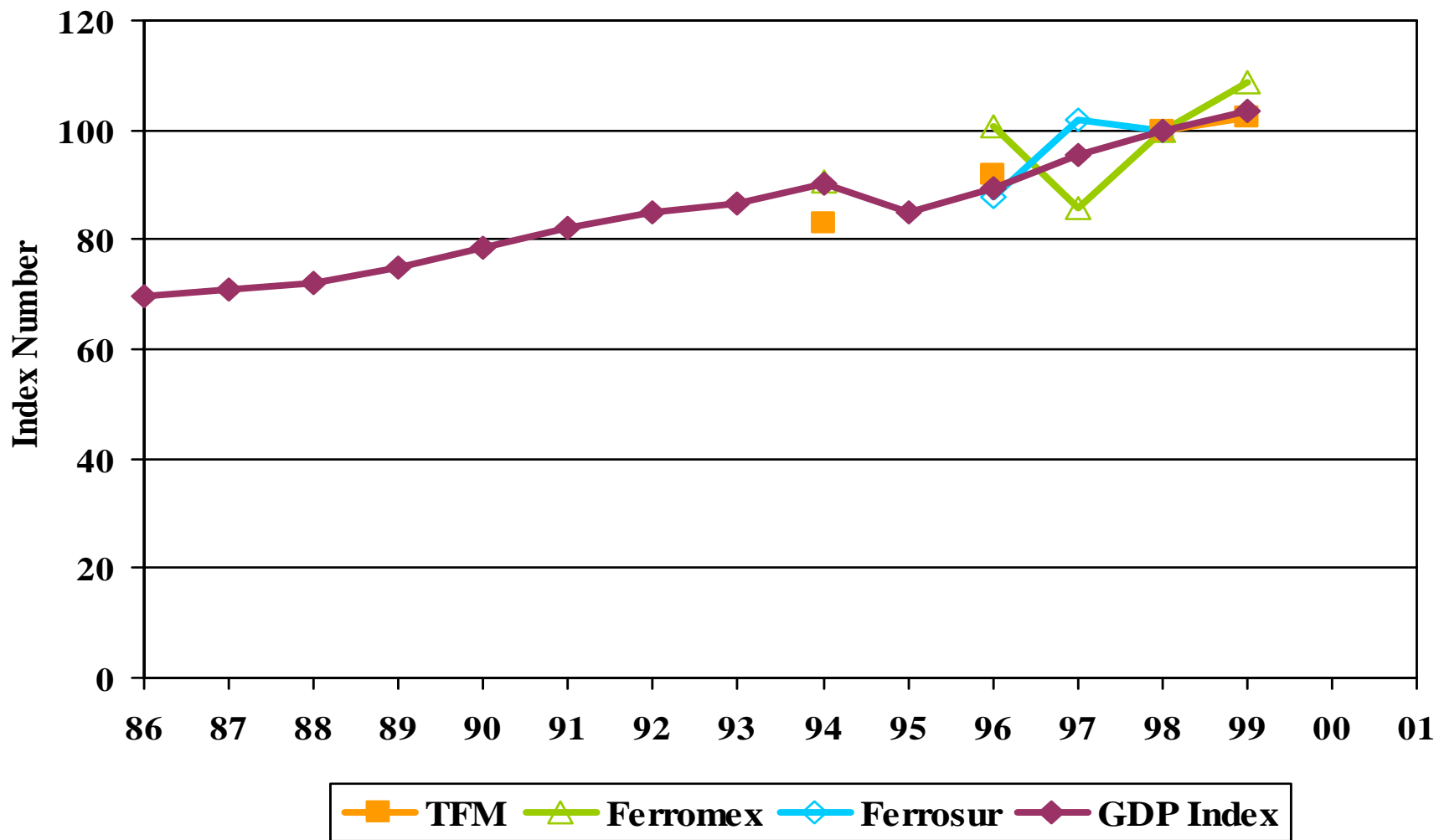


Private Railway Operations Database

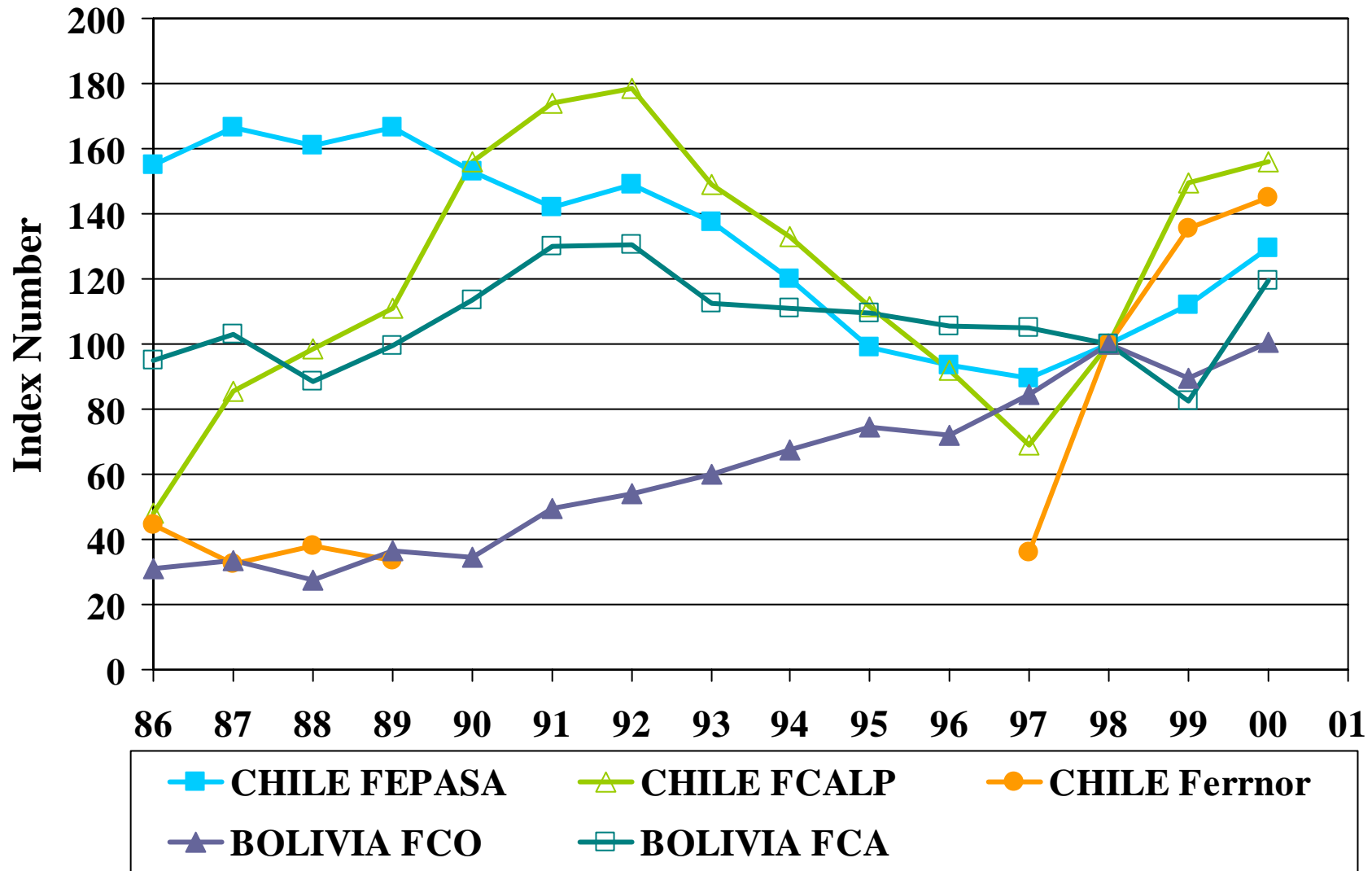
World Bank  
Infrastructure and Urban Department

# MEXICO - Output (ntkm) and GDP

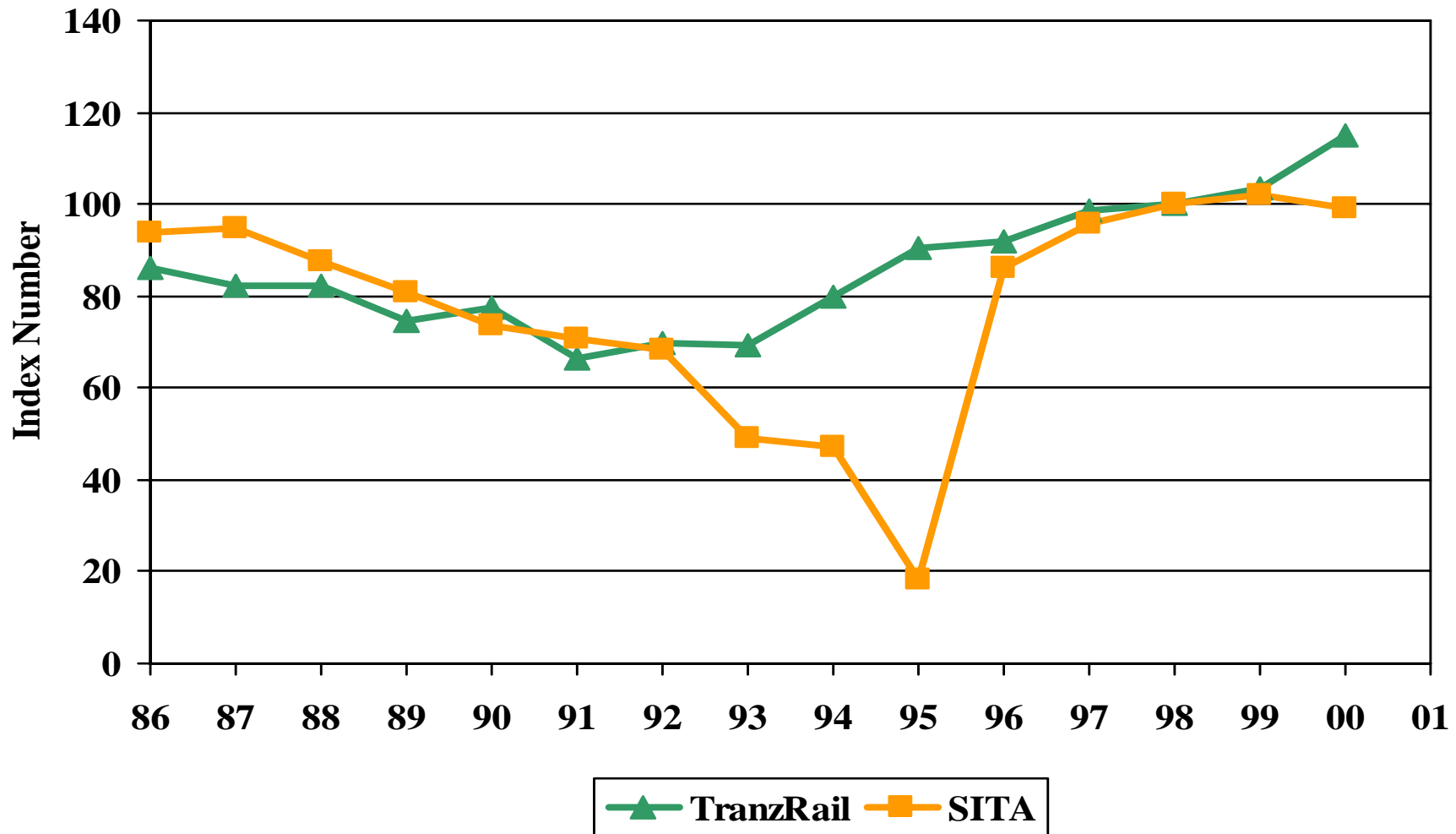
(1998 = 100)



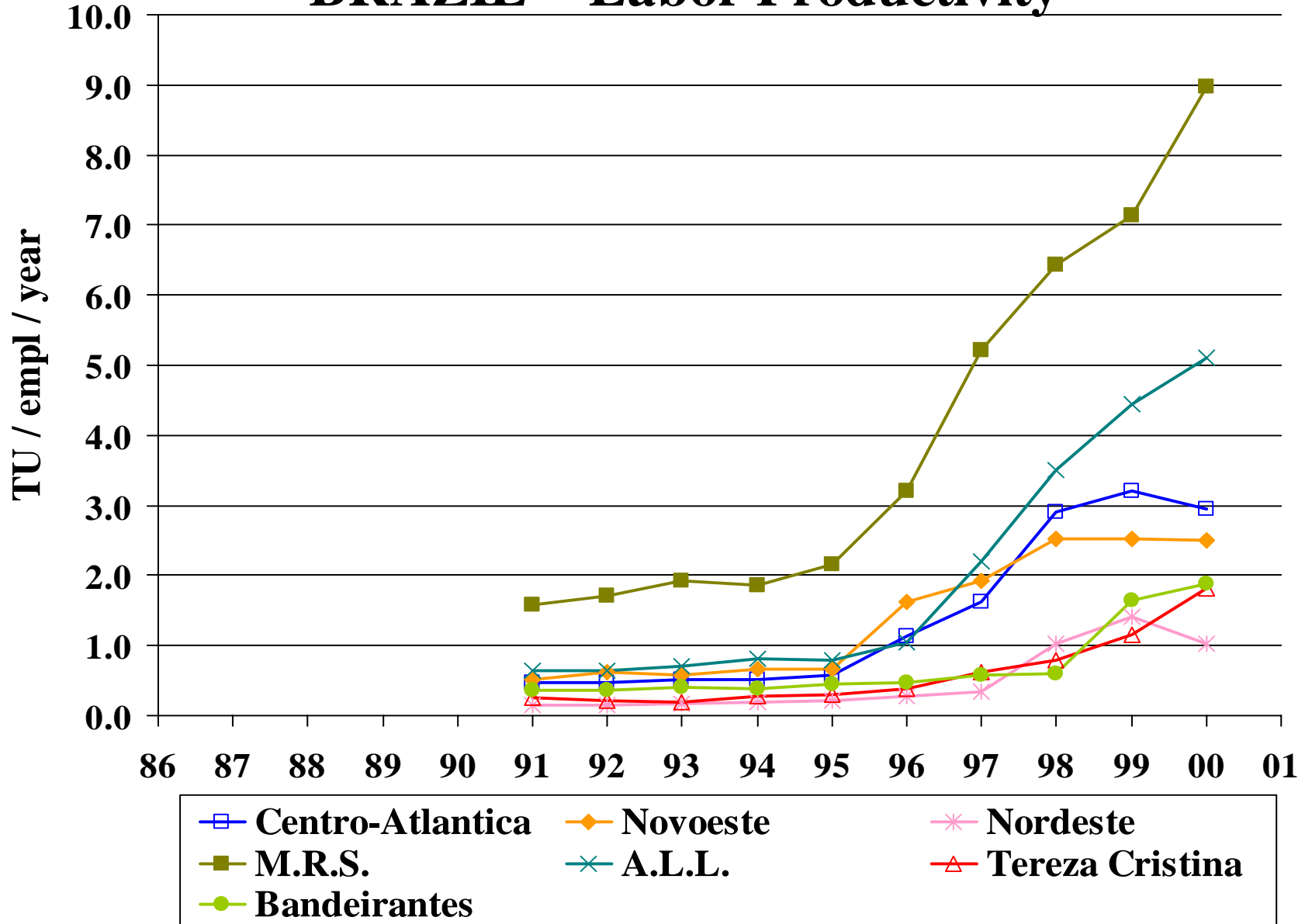
# LATIN AMERICA - Output (ntkm) (1998 = 100)



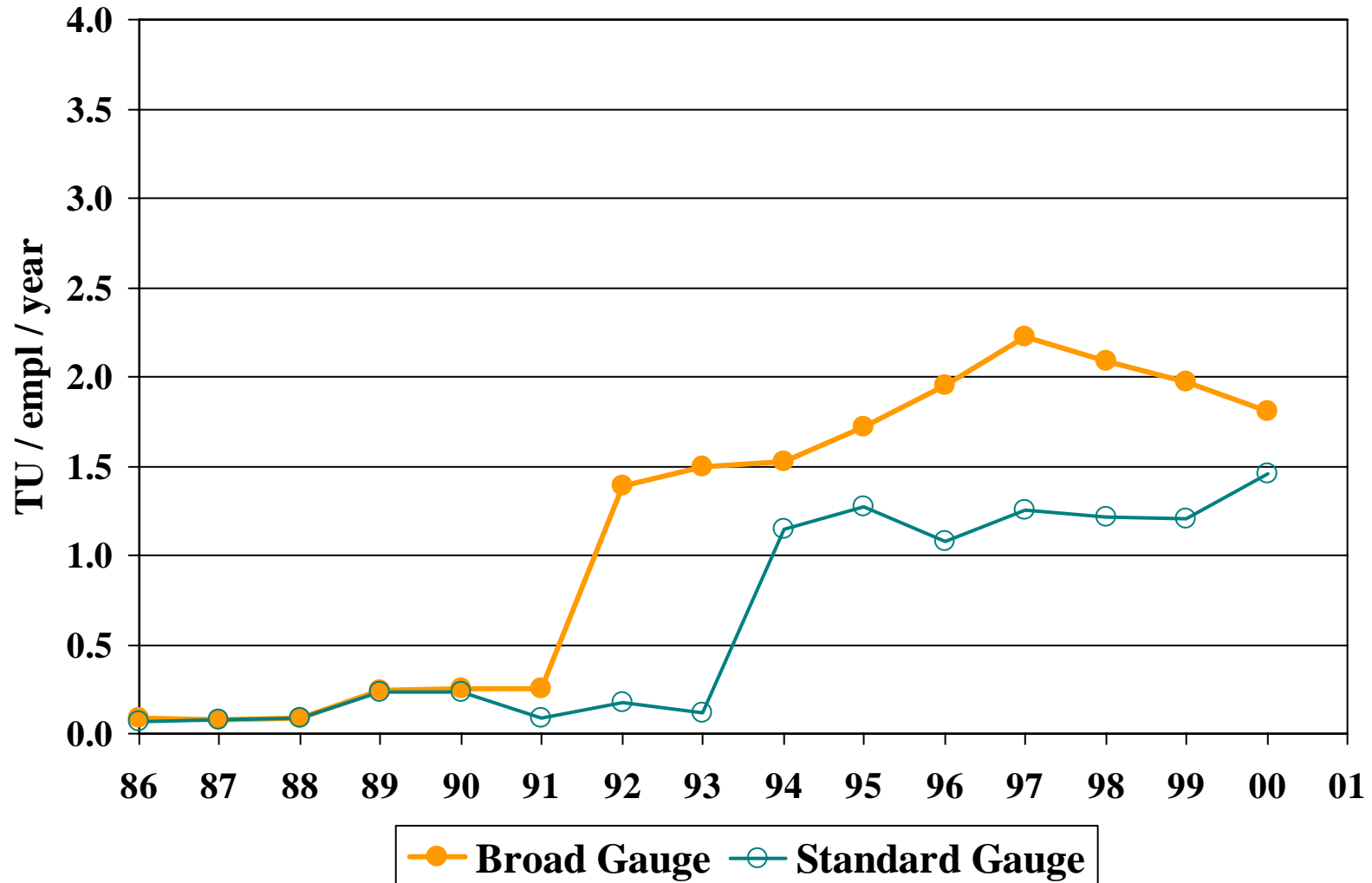
# OTHER - Output (ntkm) (1998 = 100)



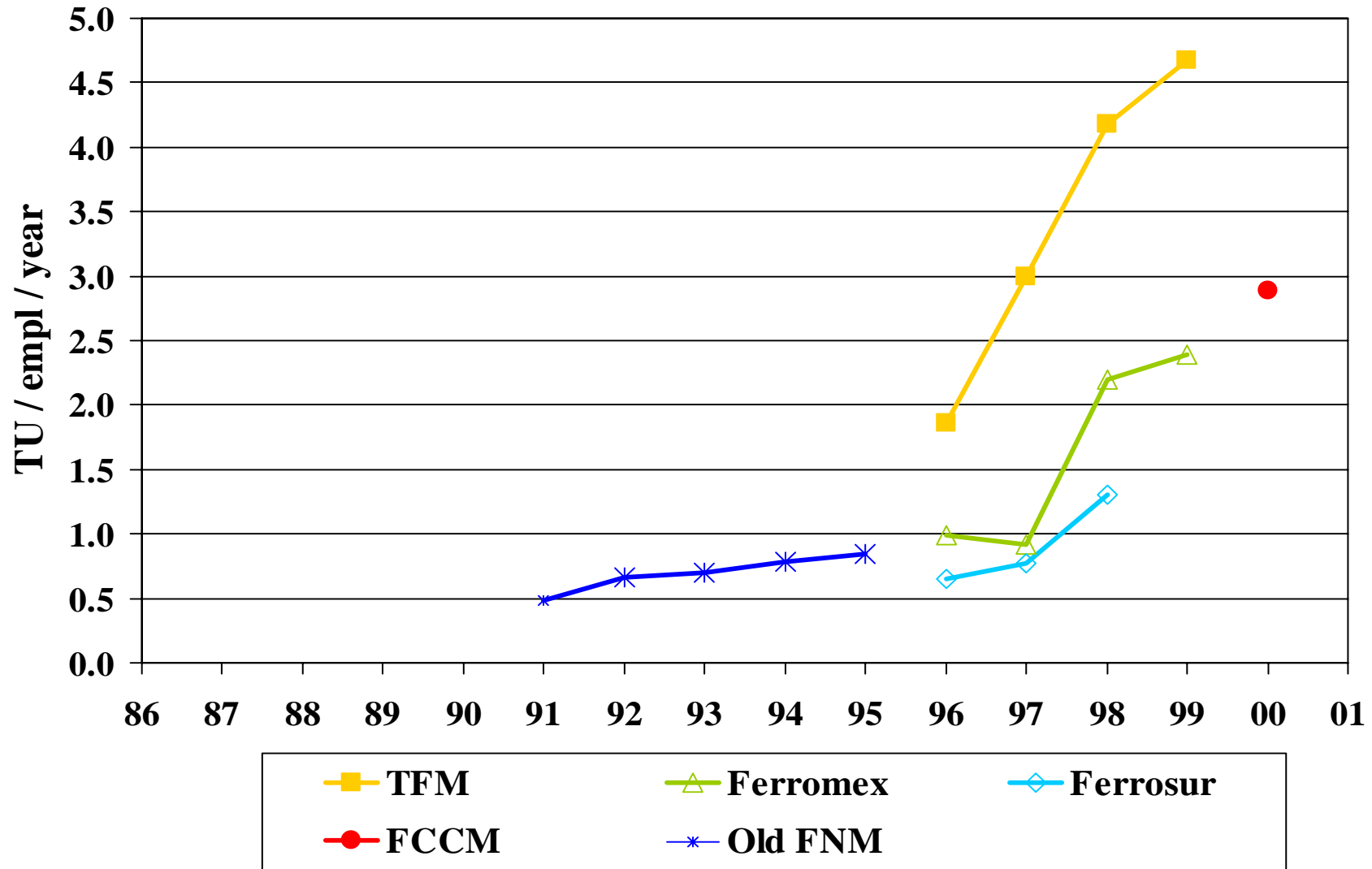
# BRAZIL - Labor Productivity



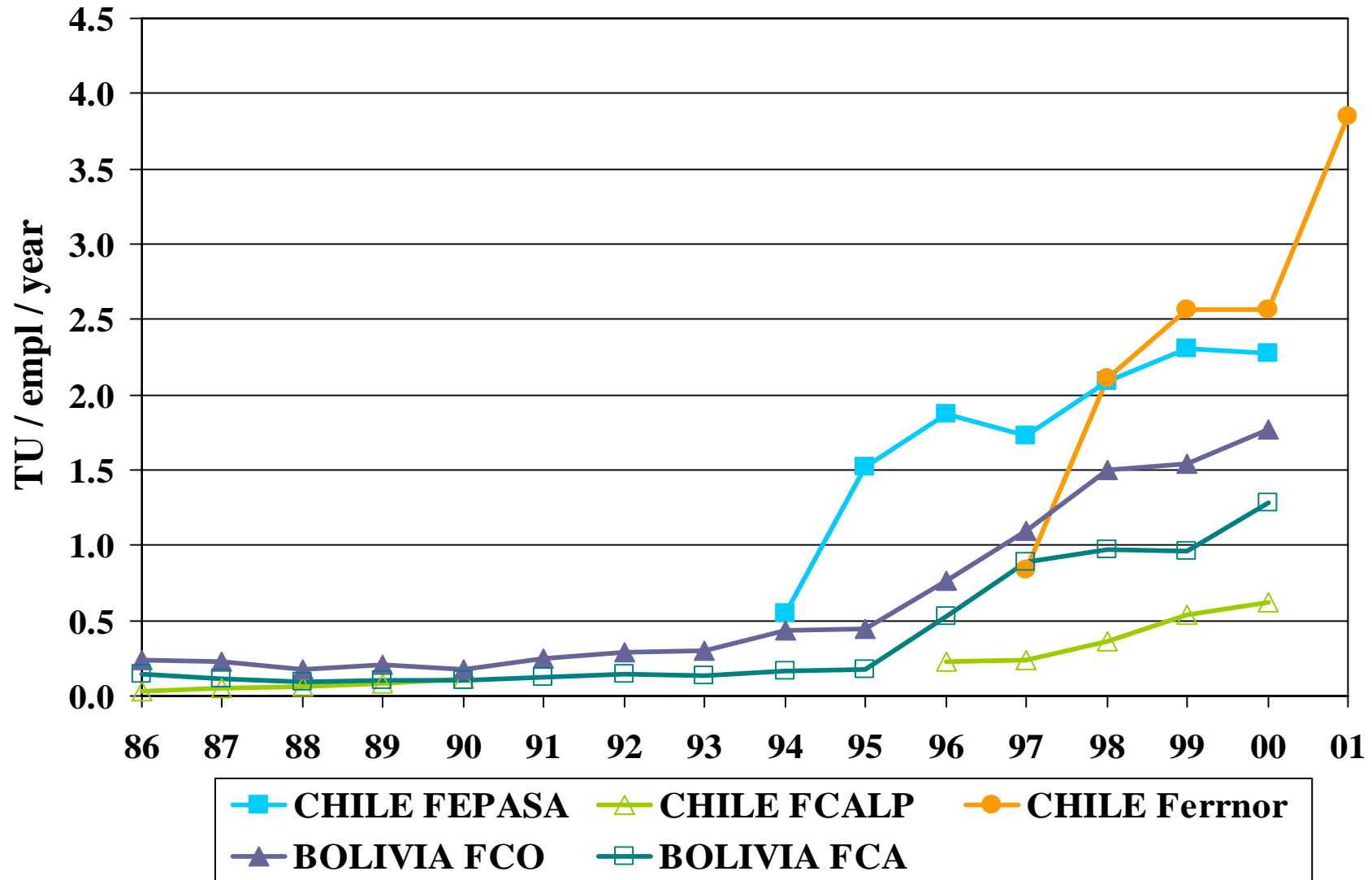
# ARGENTINA - Labor Productivity



# MEXICO - Labor Productivity



# LATIN AMERICA - Labor Productivity



# OTHER - Labor Productivity

