

FINAL AICCF DIRECTIONS OF RAILWAY REFORM

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REFORM FORCES

Railway reforms are rooted in the growth of competition from trucks, autos, barges and airlines. One of the first great national railway crises was the collapse of the Penn Central railroad in the U.S. in the early 1970s. There were subsequent financial train wrecks in Japan, Germany, Argentina, Mexico, Brazil and Poland, all of which eventually forced changes. Most of the significant reform efforts began in a financial crisis which threatened either shutdown or at least significant harm to the railway. Governments also discovered that railways in financial crisis invariably offer poor service. Whether weak cash flow causes, or results from, poor service may be debatable, but that they occur together is not.

Beginning in the 1990s, governments began to ask their railways to achieve more than financial stability and service quality. Localized air pollution and the growing concern for global warming offered an opportunity and a challenge: railways could help clean air and reduce energy consumption, but only if well operated. Another social role for railways is providing economical transport to **individuals** who need mobility, but cannot afford automobiles and air transport. Poorer **countries** also realize that their economic development hinges on access to markets outside their borders. The World Bank, and the regional development Banks, are therefore putting heavier emphasis on efficient transport, including railways. This higher visibility for railways is again an opportunity and a challenge: market responsive railways have a positive role to play, while poorly performing railways actually **impoverish** their countries.

Regional pressures, such as the European Commission Order 91-440 can promote reform. The Commission found that the E.U. railways were performing poorly, and that, without dramatic action, many railways would become irrelevant. Moreover, the Commission's rules are having an impact on countries planning to join the E.U., or on countries with linkages to the Union important enough to harmonize their transport policies. The North American Free Trade Area (NAFTA) is also forcing reforms on the U.S., Canadian and Mexican railway systems because increased trade demands integrated transport.

A similar, but broader force is **globalization**, which simply means that the wealth of **any** nation is increasingly tied to the wealth of **all** nations through trade. Some of this trade is "virtual" (financial flows and intellectual properties), but huge and growing amounts of trade depends on physical transport. Countries lacking effective linkage with the world will suffer, and railways are a central part of the effectiveness of these linkages.

Overall, there is a paradigm change in what we need railways **for**, and in the concept of what **kind** of railways we need. The recognition that efficient markets are a better way of

providing goods and services than commands or public monopolies has changed the way we can think **about** railways, and has freed us to look at all of the variables involved in services, structure and competition in transport markets.

SERVICES, STRUCTURE AND COMPETITION

Services

Most railways operate in a number of different commercial and “social” service markets. Commercial freight and intercity passengers are different services with different demands on track and equipment. They are provided in competition with other private modes and, by and large, are justified only if the revenues from customers (and/or from contracts to governments) exceed costs. Normally, government support would be for capital and not operations and, for the most part, the customers are individuals or shippers.

In the social arena, urban passengers are a different (often growing) market segment from low density (often shrinking) regional passenger services. The supporting governments can be local or regional rather than national. Though the users are individuals, the real “customers” are government agencies at various levels, and government payment (operating and capital) for social benefits delivered is the critical element closing the gap between costs and the fares paid by customers.

The term “core business” describes the fact that efficient markets demand focussed management. As applied to railways, it means that few managements perform well in four (even two) radically different “core” businesses, particularly facing vigorous and privately-owned competition in each of the markets. Railways range from one percent passenger traffic (the U.S.) to over 90 percent passengers (several Asian railways), and their passengers range for having no suburban service to as much as 40 percent suburban – highlighting the need for individual solutions where railways differ so widely.

Organizational and Ownership Structure

Railways traditionally were vertically and horizontally integrated -- “monolithic.” They had unitary control not only of all of services and facilities, but also a complete social support system for employees and sometimes even manufactured rolling stock and a substantial part of supplies. In some cases, railways were (are) independent government ministries -- “states within a state”.

Monoliths are expensive anachronisms. Their social burdens hinder them in competition with leaner private competitors. They cannot compete in non-rail activities (locomotive or coach manufacture) with more specialized, private firms which operate on a world scale using world-class technology. Their mélange of incompatible rail markets restricts their ability to compete effectively with enterprises having a tighter, “core” focus. Their confusion of costs among many different activities makes it impossible to calculate costs of individual activities accurately, inviting politically inspired cross-subsidies, and making it difficult to resist pressures from powerful special interests. Their independent governmental status makes it much harder to integrate railway policies and activities into an effective national transport policy.ⁱⁱ

Two basic structural alternatives to the monolith are emerging, one model in which the **dominant** user of the infrastructure remains **integrated** with infrastructure management and control while **minority** users pay for access to the infrastructure,ⁱⁱⁱ versus a model in which the infrastructure is separated from **all** of the users but accessible to all under an access regime.

Keeping the dominant user integrated with infrastructure while incremental users are separated and pay access fees emerged naturally in many railways as a response to the need to separate the costs and revenues of the incremental users. Amtrak, VIA and the Japan Rail Freight Corporation are examples. It was also used in Argentina, where the freight and suburban passenger concessions are separated, but there are areas in which each pays for access over the other.

There are benefits to having the dominant user retain control over infrastructure. First, the performance of the incremental users is clarified and, assuming reasonable access fees, their operations strengthened. Second, the potential risk of disruption due to coordination problems between infrastructure provider and dominant operator is reduced – important when the dominant operator plays a significant role in the country's transport. Moreover, the infrastructure investment program can potentially be better coordinated with the primary user. The disadvantage is that the incremental operators may not be fully integrated into investment planning, and they survive at the (sometimes questionable) mercy of the dominant operator – risking reduced service reliability, increased costs and possible safety hazards for the incremental operators..

The **complete separation** model (no operator has any control over infrastructure) has only emerged in the last decades, first in Sweden and then in the U.K. Broadly this has resulted in a separated infrastructure enterprise (public or private) in conjunction with a freight company, intercity passenger companies, and a series of regional or suburban passenger companies.

E.U. countries (and the Commission) had a number of objectives in opting for the separation model: 1) ensuring equality of access by all users; 2) enhancing the economics of increased density of use; 3) improving market focus by the various, separate operators; 4) promoting rail versus rail (intra-rail) competition; 5) enhancing the clarity of government policy and expenditures; and, 6) facilitating the introduction of the private sector into rail operations (if not necessarily into infrastructure). Complete separation can ensure equality of access because no user controls the infrastructure. Separation can facilitate multiple purpose usage thus reducing the total length of track needed to serve total demand. Separating different users permits each to focus on only its core markets, and relieves operators from worrying about infrastructure planning and maintenance (with the associated risk that the operators may be excluded from infrastructure planning and maintenance). A primary objective of the European Commission was to break the financial^{iv} link between national infrastructure companies and their associated operating companies so that intra-rail competition could be fostered. Separation enhances clarity of government policies by permitting costs to be clearly separated and subsidies focussed on particular services and agreed purposes. Separation facilitates introduction of the private

sector by breaking the system into manageable components some of which (freight in particular) can be privatized without necessarily having to privatize others.

Ownership of railways has been either public or private. Public ownership can have the railway as a public Ministry, which was typical of the formerly socialist countries, or as a public enterprise in corporate form, which is more typical of the market economies. Few of the traditional rail ministries still exist, and those (e.g. China, Russia and India) are changing. Though the ministry approach nominally gives government control over rail policies and management, it also insulates the railway from market forces. Further, it can actually be more difficult for the state to exert its control because the railway becomes a direct actor in the political tradeoffs and conflicts that governments face. The public enterprise form (State Owned Enterprise, or SOE) retains public ownership of enterprise shares, but makes the enterprise function more like a business. More important, it also separates the railway from the rest of government, and insulates it to some degree (certainly not totally) from many of the less transparent tradeoffs that governments make. Government ownership can be national, regional or local, or a mixture.

Railways are exploring **partnerships** between governments and the private sector. The most common partnerships have been concessions or franchises, in which a private operator provides rail transport services using publicly owned infrastructure for which it often has an exclusive right of use. Such concessions or franchises can be either “positive” in which the operator pays money to the public owner for the right to operate, or they can be “negative” in which the public asks for competitive bids for minimum subsidy and investment cost to provide public services at controlled fares. These partnerships can apply to operating services alone or they can extend to management of the infrastructure as well. There can also be private operators without a concession or franchise, as in the U.K. freight carrier (EWS).

Totally private railways have been the exception. In fact, until the end of the 1980s, the U.S. freight railways and the Canadian Pacific railway in Canada were the only major privately owned and operated railways in the world.

Though the spectrum ranges from wholly public to wholly private, experience shows that the ownership decision is not an either/or matter. Mixtures of ownership are quite possible and, in many cases, may be the best approach. **Figure 1** gives an idea of the approaches that many countries have followed.

Enhancing Competition IN the Market

Enhancing competition **in** markets as an explicit objective of transport policy has become important, especially because of the linkage between competition and regulation. In some cases, governments have decided that rail freight faces enough competition from other modes (especially trucks and sometimes barges) that rail tariffs and services can be left essentially to the market to determine. Many European governments made this decision years ago, and U.S. deregulation in 1982 dramatically shifted the regulatory balance toward reliance on competition rather than regulation: subsequent rail merger policy has also generally accepted the argument that rail versus rail (intra-rail) competition is not as important as inter-modal competition. While this may be a viable

approach when rail carries a minority share of transport activity, it becomes highly questionable in countries where the rail share is much higher.

Even where regulation is clearly needed, however, many countries are concluding that regulation alone is not sufficient, either because they doubt the potential quality of their regulatory agencies, because intermodal competitors may be cartellized, or because they believe that some shipping demands could not rely on a single rail supplier. In these cases, countries have acted to create more intra-rail competition.

There are a few countries, such as the U.S. or Canada, where the rail system is dense enough to permit competition between rail **lines**. The U.S. and Canadian rail systems have a number of geographic markets (Chicago to Los Angeles or Chicago to New York) in which there is direct, line-versus-line competition between two railroad companies. Even in these cases, however, there are major areas in which there is only one rail company.

Where competition between lines cannot exist, then controlled or limited competition **on the same lines** can be created. In the U.S., this occurs through trackage rights -- one railroad company has the right to provide defined competitive services over selected tracks of another company in return for a trackage fee. About 25 percent of the U.S. tracks carry at least two freight operators and, because the multiple-use tracks are higher density, it is likely that the percentage of tonnage exposed to intra-rail competition is even higher. The Canadian approach, in which shippers can use either railroad if they are located on one company's line but within 50 kilometers of a connecting point with a line of the other company, has also created intra-rail competition. Although the U.K. passenger franchises generally create exclusive areas of service, there are a limited number of individual markets in which passengers have a choice of two or more companies. These are, in fact, franchises in which the degree of competitive overlap has been (or could be) designed to provide both exclusive and competitive areas for franchises.

The highest level of intra-rail competition is **open access**, when a rail line is made available to all users on non-discriminatory terms by an independent infrastructure provider. Open access does not actually exist in any country as yet, though the U.K. system of freight operators would theoretically accept all users and the European Freight Freeways may eventually be fully open. The E.U. orders could eventually lead toward more open access than prevails today, if the national infrastructure agencies are eventually persuaded to reduce their resistance to competitive operations. Even in this case, though, there will potentially remain restrictions on who can be licensed to operate. In fact, as the U.K. example shows, it is the rules of access which create (or foreclose) competition, **not** infrastructure separation, *per se*.

Competition FOR the Market

Economists also recognize competition **for** the market, where the characteristics of the market make competition **in** the market infeasible, either because economies of scale rule out multiple entrants, or because the market is not financially viable and the objective is to produce minimum subsidy rather than maximum payment to government. In this case,

the services required are defined (service frequency and quality over specified lines, maximum tariff allowed, investments required) and the service is offered for competitors based on minimum payment **by** government. If the competition is well designed, competition **for** the market can have the same beneficial effects as competition **in** the market. This approach has proved to be especially useful for smaller integrated freight concessions and for providing urban and suburban passenger services where the economic benefits are significant (environmental pollution, urban congestion, access for the poor) but the fares cannot be high enough to make the service financially viable.

SELECTED CASES

As the **Figure 2** shows, there have been a lot of cases of railway structural and/or ownership change over the past decade. **Figures 3, 4, and 5** provide comparisons of the results of a number of these changing railways.

Latin America

Argentina – beginning in 1991, Ferrocarriles Argentinos was split between freight, intercity passengers and suburban passengers. The freight services were split into six pieces of which five were concessioned for private operation between 1991 and 1993.^y Between 1993 and 1995, the suburban passenger services were split into seven packages which were awarded to four concessionaires and the Buenos Aires metro (the Subt ) was also concessioned. The Federal Government withdrew from operating intercity passenger trains and transferred these services to provincial governments.

As **Figures 3 to 5** show, the Argentine concessioning program has been successful. The railways are now on a stable footing and in position to occupy a solid position in the transport sector. Government support has been reduced by about US\$800 million annually. Equally important, the transition was accomplished without major social disruption, and the use of negative concessions for the suburban services and the Subt  permitted the needs of the poor to be protected while improving service and efficiency.

Brazil divided the Federal Railway (RFFSA) into six freight concessions beginning in 1996, and ending in 1998. Later, the Railway of Sao Paulo State (FEPASA) was also concessioned. At the same time, the large, state-owned mining conglomerate (CVRD), which owned two large iron ore railways was itself privatized. In addition, the State of Rio de Janeiro concessioned the suburban railway and the Metro of Rio de Janeiro. All of the freight railways in Brazil are now privately operated, as are two passenger carriers in Rio de Janeiro.

Results in Brazil have been positive. Traffic has grown, productivity is up and tariffs have fallen. In addition, an annual freight loss of around US\$500 million annually was erased and the Government received about US\$1.4 billion in payments for concessions. The Government of Rio de Janeiro eliminated annual deficits on the suburban and metro services of over US\$100 million, and is to receive over US\$400 million in concession payments.

Mexico -- Ferrocarriles Nacionales de Mexico (FNM), had been losing around US\$500 million annually for years, and was gradually losing its share of the freight market. Change in Mexico was also driven by the North American Free Trade Agreement (NAFTA) which confronted Mexico with developing a transport sector which could compete in the open North American market. The Government split FNM into four larger pieces and a series of smaller pieces. In the larger cases, a corporation already holding a track concession and a rolling stock fleet was created, and the stock in this corporation was sold.

The Mexican concessioning is more recent than Brazil, but it is clear that the system has made considerable progress. In addition, the Government eliminated the annual deficit and received over US\$2 billion of cash into the national treasury.

Other countries in Latin America also concessioned their railways. The railway of **Bolivia** was concessioned in two pieces in 1996 and 1997, and the Western concession, in particular, has done quite well. **Chile** retained its broad gauge infrastructure and passenger services in public hands while concessioning the freight operator (FEPASA). The northern, meter gauge railway (Feronor) was sold to private investors. The link from the Chilean port of Arica to La Paz, Bolivia was concessioned. **Peru** concessioned two parts of its railway and the concessionaire is now beginning operations. A concession was negotiated for the railway of **Guatemala**, and the northern part of the system is now back in operation after years of cessation of services. The **Panama Canal Railway** has been concessioned and, after rehabilitation and re-gauging, will recommence operation later this year. The **Costa Rican** railway is up for concessioning, and bids are now being evaluated.

Sub-Saharan Africa

Cote d'Ivoire and Burkina Faso were the first countries in Africa to act, as a result of many years of rail stagnation and the break-up of the formerly unified rail operations. They formed a bi-national concession to operate the rail network of both countries. The concessionaire, Sitarail, has now had five years of operation, and the results are quite encouraging, particularly given the unsettled political environment in which Sitarail has had to operate. There has been solid growth of traffic and productivity which has benefited both countries.

Cameroon and **Gabon** have developed concessions of their own, using arrangements based on the lessons learned in Cote d'Ivoire and Burkina Faso. The Government of the **Congo** (Brazzaville) has restarted the process of concessioning of its railway. Preparations are now underway in **Ghana** for offering a concession for the Ghana Railway Corporation. The Governments of **Senegal** and **Mali** have recently announced a decision to award a bi-national concession for the Dakar-Bamako railway. The railway of **Togo** has been operated for several years under a management contract which should be transformed into a concession during the next year. **Benin** and **Niger** have decided to concession the Cotonou-Parakou railway – interesting because of the multi-modal linkage onward to Niger. **Malawi** Railways has begun concessioned operations in cooperation with the Northern section of **Mozambique** Railways. A concession was awarded in early 2000 for the railway in **Madagascar**. Concessioning studies are also underway in

Zambia, and the South African railway is commercializing activities prior to adopting some form of private sector involvement.

Sub-Saharan railways have made a great deal of progress in bringing in the private sector for operations. Experience is showing that improvements are quite possible when conditions permit; but, several of these countries are difficult business environments, with civil strife severely hindering private (and public) operations in all sectors.

The European Union

The railways of the E.U. have encountered a great deal of turbulence in the 1990s. In part this has been caused by continuing disputes with their governments over inefficiency, huge financial requirements, and declining market share. A more immediate cause of debate and change has been the Commission Order 91-440, combined with the White Paper on “A Strategy for Revitalizing the Community’s Railways” which called for dramatic changes to overcome the increasing irrelevance of the Community’s railways in the freight and intercity passenger markets.

A detailed treatment of the European experience would be beyond the scope of this paper. However, because of the interaction between the Western European experience and the plans of the Eastern European countries for reform, we have tried to assess the lessons learned to date from E.U. railway experiences. We believe the experience leads to some broad conclusions (open to debate, we realize):

1. The diversity in approaches to compliance with the Order 91-440 has reflected the circumstances of the countries involved, and has provided a useful laboratory for comparing differing ideas.
2. The Order has provoked in some countries a positive and fundamental re-thinking of the objectives for rail services and how to provide them. Other countries have chosen so far to resist change.
3. The two countries that have so far taken the deepest changes (Sweden and the U.K.) have demonstrated that infrastructure separation and even privatization can have substantially positive (though not unmixed) effects on rail services. Both traffic and infrastructure conditions have improved in Sweden. In the U.K., passenger and freight demand have improved substantially and rapidly. On-time performance **and safety** have improved from the levels under British Rail management. Private sector investment is substantially higher than under Government ownership. While certain aspects of the U.K. approach, for example the large number of private enterprises, might not be repeated elsewhere, others, such as the importance of correct access charges and the continuing need for government involvement, must receive careful review by all other governments. Despite the critical press coverage of a small number of accidents, both freight and passenger traffic in the U.K. have grown faster than in any other E.U. country over the same time period.
4. However slow the transition and great the resistance, E.U. railways and their governments (and the Commission) will eventually need to deal with the need for intra-rail competition in order to try to get freight off the highways, and the need for a better use of the private sector in rail operations. Neither of these issues can be resolved by monolithic national monopolies: implementation of some form of the

Commission Order may be the only approach that will help the railways to retain and rebuild market share.

5. There will need to be limits to diversity in approach. The Commission's objective was to develop coherent rail services across the entire market, and this will not be promoted by having, for example, conflicting (even if non-discriminatory) access charging regimes.

Central and Eastern Europe, the Baltic States and the CIS countries

The impact of the collapse of the planned economies on their railways was severe. On average, these railways carry only half the freight traffic they were carrying in 1989, and only about 60 percent of the passenger traffic (some are doing worse). Traffic has stabilized and is even growing slowly in some: it is still slowly declining in others. None of them have been able to fully maintain and rebuild their systems: some have become intolerable financial burdens on their national budgets.

Both **Poland** and **Romania** have decided on infrastructure separation models and have announced their intention to bring private sector operators into freight and passenger services through either privatization, concessioning, or creation of new operators. Both have started to spin off their suburban operations to local authorities. Both are now in the process of implementing this approach. In both the issue of redundant labor has been important: the World Bank and the EBRD are now implementing a loan to the new Polish Railway (PKP SA) to help in financing a program of labor transition. **Estonia** has concessioned the operation of a small part of its railway and has awarded the operation of its freight railway and infrastructure to a private concessionaire.^{vi}

The **Russian Railway** (MPS) is undergoing changes in its structure. Russia is a clear example of the need for intra-rail competition on the same tracks, since MPS carries well over 80 percent of intercity ton-km in Russia, the lengths of haul are ideal for railways, there is not an adequate highway system to provide trucking competition, and Russia's sparse rail network will not support line versus line competition. The issues in Russia currently relate both to structure (general agreement on separating railway from government, eventual separation of infrastructure from operations, spin off of suburban operations and ending cross subsidy to passenger services) and, especially, the approach to transition.

Other Countries

New Zealand privatized its railway in 1993,^{vii} and the results show that preparation for privatization and the subsequent privatized operation radically improved the operations of the railway.^{viii} The various States and the central Government in **Australia** have embarked on a rich and highly complex approach to restructuring and privatization, with examples of nearly every restructuring approach being used in one or the other States.^{ix} Results in both countries are encouraging, though experience in Australia is still limited.

The **Kingdom of Jordan** is the first of the Middle Eastern countries to bring in the private sector. An operating lease (similar to a concession) has been awarded to investors who will also finance and manage the construction of a new line opening up extensive

new phosphate reserves. The Government and the operators are still negotiating the final terms of the lease.

China

As it enters restructuring, the Ministry of Railways (MOR) has several notable strong points. Its traffic and network are still growing (though its market shares are stable). Its technical efficiency is high and it has managed to maintain the railway in good shape. Perhaps most important, the ratio of passenger traffic to freight traffic is relatively low (see [Figure 6](#)) and the Chinese Government has resisted the political temptation to cross-subsidize passenger losses from freight profits. As a result, the Chinese have a strong and relatively stable economic base on which to build.

MOR is developing a restructuring plan to accomplish three objectives: 1) separate government functions (policy development, regulation, safety oversight) from railway enterprise responsibilities; 2) make the transport enterprises responsive to market demands rather than physical production targets; and 3) give the enterprises commercial goals and permit them to manage as commercial entities. The restructuring plans for MOR are based on the importance of the current, 14 Administration geographic structure and the general principle of “up/down” separation which means separation of operating companies from infrastructure providers. The issue of intra-rail competition is also important, but obviously complex and longer range.

Although the details and sequencing of implementation are under intense discussion, it seems likely that passenger enterprises will be separated from other operations, and the passenger companies may be a combination of local and national entities. Freight operating companies may be separated from infrastructure later, and may always remain closely identified with their Administration boundaries. China may also develop a series of national level operating companies (for passengers or containers or oversize cargo) which will pay access fees. Intra-rail competition, if it develops, is likely to be limited and generated through trackage rights or overlapping franchise rights: it seems less likely that China will develop competing rail freight or passenger companies over the entire network. Private sector involvement, *per se*, is not an objective of the current reform program although, in some areas (specialized freight carriers or wagon leasing) it is not ruled out. The Chinese approach to implementation is cautious and step-by-step, making use of pilot programs which, if deemed successful, are tried in other Administrations.

India

Indian Railways (IR) faces the greatest challenge of the large developing railways. For many years the real backbone of the country’s transport system, IR has (according to Indian observers), as a result of years of bureaucratic management, political interference and protection from market forces, become an unmanageable government conglomerate. Unlike China and Russia, IR is dominated by the haulage of masses of passengers at extremely low tariffs, a condition which has forced freight rates to extremely high levels in an increasingly vain attempt to cross-subsidize passenger losses. The net result has been that IR has been drawn into the well known downward railway spiral from which a serious financial crash will be inevitable unless corrective actions are taken soon.

A number of reform efforts have been made in the past decades, to no result. The most recent effort, the Rakesh Mohan Committee's review of Indian Transport infrastructure which will have a special report on IR, is due to be published in February, 2001. Preliminary announcements indicate that a key initial step will be separation of government from railway – a familiar refrain in Russia and China. Further steps at reform will have to take into account the particular circumstances that distinguish IR:

1. Predominance of passenger traffic at low fares will require much more government involvement than elsewhere, especially if the freight operations are set up separately from passenger services, and if suburban passenger services are separated and devolved to local control in Mumbai, Calcutta and Chennai.
2. IR is actually three networks, of which two (meter gauge and narrow gauge) are not significant in traffic terms (see [Figure 7](#)). The real restructuring attention needs to be given to the broad gauge network.
3. IR's nine zonal railways differ considerably in their characteristics, especially traffic mix ([Figure 8](#)). There may not be a uniform approach possible for all zones.
4. IR has many social functions and non-rail manufacturing activities that will need to be separated from IR.
5. Though IR's share of national freight traffic is lower than Russia's, competition from Indian highways is also limited by the poor condition and capacity of those highways. Consequently, if India wishes to promote intra-rail competition, it will need to look at approaches to infrastructure separation.

FORCES RESISTING CHANGE

Initial resistance to change usually comes from employees who fear that their jobs or security will be harmed. This valid concern that needs to be assuaged through social safety net programs for employees. The World Bank and EBRD have often supported such programs, such as the program in Poland covered almost 40,000 workers and included redundancy payments and early release bonuses (between US\$5,000 and US\$7,500 per employee depending on regional unemployment), early retirements (up to three years), and intensive training. In our experience, a serious and fair approach to employee issues has always found solutions which were acceptable to employees and were a productive investment for government and new operators.

Resistance from current management can be a concern. Interestingly, experience suggests that the better managers have little to fear from restructuring simply because the new railway will need them as much as the old one did. Very few concessions have had more than two or three outside managers because good local managers already exist if they are given freedom to manage. Of course, those current managers who enjoy “rents” due to corrupt practices (or those who suspect themselves to be redundant or incompetent) are difficult to persuade to change -- it is also difficult to argue that their concerns should be given much weight.

Competitors (especially trucking companies) are often a strong opponent of rail restructuring and private sector involvement, for a simple reason: it is more comfortable

to have financially weak, inefficient and lower quality competition from a state-owned railway. They rightly fear, and oppose, the creation of a competent rail competitor.

There remains ideological opposition to private sector management in railways, sometimes for historical reasons, or a fear that “private” equals “foreign” or “return of colonialism”. Where this has been a concern, methods have been developed for ensuring that local investors play a significant role in the new railway. One of the advantages of concessioning is that the purchase investment required is much smaller for concessioning than privatization, and local investors are not foreclosed from the deal the way they might be in a full privatization.

In many countries where rail service is important, there is a valid concern for issues of transition. It is often much simpler to decide on the ultimate objective than it is to decide how to get there. As suggested above, the ability to look at a range of mixed solutions over time as well as in the ultimate objective can be a major basis for success in the transition.

CONCLUSIONS AND LESSONS

We now have available a rich collection of experiences. At the risk of over generalizing, where railways need change it is clear beyond doubt that there is **no excuse for doing nothing**. Nor is it necessary to jump immediately to approaches for which there is no experience -- because almost everything has been tried somewhere.

It is vital to have in advance a realistic metric to measure the outcome -- “compared to what?” The U.K. situation is an excellent example of the problem. As discussed, the privatized rail system is performing better in **every** category than British Rail performed in the years preceding privatization; but, in reading the press one could conclude that privatization has failed. This is because privatization is being unfairly compared with (often conflicting ideas of) perfection, not with what went before.^x All rail restructuring is political, and success in the political arena is based on perceptions of results perceptions, if not corrected, sometimes create political realities.

The actual solution adopted is always a mixture of transport economics (the mix of services and competitive forces in and for the market) and political/cultural values (the power of special interests, attitudes toward the role of the private sector, the value attached to the degree of competition developed). No single solution could ever be optimum for all countries, and there are always different ways to approach the problem even within one country. But, it can be absolutely critical that **some** action be taken, even risking mistakes. It is usually possible to fix mistakes during the broader process of restructuring over time that will occur anyway, but inaction can be costly.

Mixed solutions of structure, ownership and competition are often the best approach. In fact, insisting on an “all or nothing” approach to structure or ownership is a well-proven strategy for resisting change. Mixed solutions offer useful options in phasing of change, and phasing can be especially critical to large restructuring programs. For example, at first, infrastructure and freight can be left integrated (if freight is the dominant user) while passenger services are separated and established separately (whether privatized or

not). Next, infrastructure and freight could be separated, and freight privatized. Finally, infrastructure could be privatized if desired. Of course, in smaller and simpler cases, single-step programs may well be better.

The initial form of the concession agreement is vital, but growth, evolution and future modifications are also inevitable. It is always worth the effort to prepare initial concession or privatization agreements carefully, because the concession agreement often serves as the *de facto* “regulatory authority” between state and concessionaire, defining the terms and conditions under which the concessionaire may invest, maintain, and market services. In negative concessions, the agreement is even more important because it is the “purchase of services” contract between state and concessionaire.

This said, we have yet to see a concession or franchise agreement that did not need to be changed or renegotiated as a result of unforeseeable developments. Most rail concessions have been created in countries undergoing wrenching change in all sectors of the economy. It is extraordinarily difficult to predict the course of development under these circumstances and there are always events which no one could foresee. As a result, there needs to be a mechanism to facilitate necessary changes in agreements, or concession management and oversight will become unmanageable.

Changing railway structure and ownership is often socially traumatic. The mix of skills changes and the number of employees required will be adjusted (downward) and the locations of employment will change. State owned railways have tended to be environmentally insensitive, and pollution regulations (though strict on paper) have not always been enforced. Quite often, the era of state ownership and operation created interest groups that enjoy favorable rates or services: a transition to market-driven management will expose these groups to loss of privileges which they will oppose. In some cases, especially the poor, it will not be fair or reasonable to abandon their needs without appropriate continuing assistance.

Dealing with these social issues can be a critical part of the “software” of restructuring. Labor programs (redundancy schemes, early retirement programs, retraining programs, resettlement allowances) can be developed which provide a reasonable safety net to cushion the transition. Transition is also an excellent occasion on which to identify environmental issues and deal with them because the private sector will not assume existing environmental liabilities. There is no good formula for dealing with privileged groups, partly because the reason and justification for the privileges differs widely. In most cases, it is possible either to transfer the privilege with the restructuring (payments to the state will be affected accordingly) or, as in negative concessions, it is possible to ensure that the privileges continue at state expense (but more efficiently than before).

Taken together, our experience shows that the **only fatal mistake is inaction**. Opposition to change can be daunting, and the complexities seemingly overwhelming. When there is agreement on the need for change, though, and when there is willingness to compensate the actual losers from the process, there has always been a way to bring about improvement, if not ultimate perfection. We argue that the perfect should not be the enemy of the good...

ⁱ Opinions are those of the authors alone, and do not in any way necessarily reflect opinions or positions of the World Bank or of its Directors.

ⁱⁱ It is significant that few market economy governments have a Ministry of Railways. Instead, they have ministries of transport within which there is a rail policy development and regulatory function.

ⁱⁱⁱ This could, and probably should, be called a form of “partial” separation.

^{iv} The Commission Order 91-440 only required an accounting separation between infrastructure and operations. Some railways have chosen to go farther to institutional separation. The Commission has leaned strongly in favor of an eventual requirement of institutional separation, but has not done so to date.

^v The sixth concession, the Belgrano, was, after an unsuccessful attempt at concessioning, in effect given to the railway labor union for operation.

^{vi} When this paper was written, the concession award was under protest.

^{vii} The investors in New Zealand also bought the freight part of the UK Railway system (England Wales and Scottish Railways).

^{viii} ----, “The Privatization of New Zealand Rail”, New Zealand Institute for the Study of Competition and Regulation, Inc, July, 1999.

^{ix} ----, “Progress in Rail Reform,” Productivity Commission 1999, Inquiry Report No. 6, AusInfo, Canberra, Australia, 1999

^x Of course, there are some for whom the old system was nearly “perfect”. Unfortunately, this group did not include passengers or government finance officials.

Figure 1

Directions of Railway Change

Private Involvement

	Public Ownership	Partnerships: Concessions or Franchises Awarded	Private Ownership
Integral	China, Russia and India (ministries), MAV, SRT, MZ, others, (SOE's)	Argentina (13), Brazil (9), Mexico (5), Peru (3), Guatemala, Bolivia (2), Panama, Cote d'Ivoire/Burkina Faso, Cameroon, Congo (Brazzaville), Malawi, Madagascar, Jordan	New Zealand, Ferronor (Chile), CVRD (Brazil), A&B (Chile)
Dominant Integral, Separated Minority Operators	Amtrak, VIA, Japan Freight	Mexico City suburban, CONCOR (India)	US Class I, CN and CP, East/West/Central Japan Railways
Separation	E.U. and Chile passenger	Swedish suburban, FEPASA (Chile), LHS line (Poland)	U.K. franchises and EWS, Polish and Romanian freight

Mixtures are possible!

Figure 2
COMPARISON OF MOSTLY FREIGHT CONCESSIONS
(latest available data -- usually 1998 or 1999)

	Date In Operation	T-Km (000,000)	P-Km (000,000)	Line Km	Employees	TU/Km* (000)	TU/Empl* (000)
ARGENTINA							
NCA	1992	2,443		3,254	865	751	2,824
FEPSA	1991	897		3,527	575	254	1,560
Ferrosur Roca (FSR)	1993	1,593		2,991	705	533	2,260
Bs. As. al Pacifico (BAP)	1993	2,510		3,842	1,079	653	2,326
Mesopotamico (MGU)	1993	437		2,534	367	172	1,191
Belgrano ("concessioned" to union)	1999	811		6,400	1,300	127	624
CHILE							
FEPASA (infrastructure separated)	1996	920		2,200	475	371	1,718
FERRONOR (privatized)	1998	429		1,038	210	413	2,044
Arica-La Paz	1999	35		646	76	54	459
BRAZIL							
RFFSA: Nordeste	1997	905		4,381	639	207	1,416
RFFSA: Ferrovias Centro-Atlantico	1996	7,417		7,263	2,314	1,021	3,205
RFFSA: MRS Logistica	1996	21,823		1,675	3,058	13,029	7,136
RFFSA: ALL	1997	9,354		6,355	2,108	1,472	4,437
RFFSA: Ferrovias Tereza Cristina	1997	167		174	144	960	1,160
RFFSA: Ferrovias Novoeste	1996	1,625		1,621	645	1,002	2,519
FEPASA: Ferrobarragem	1998	5,014		4,235	3,050	1,184	1,644
CVRD: EFVM	1998	55,442	287	898	2,846	62,059	19,582
CVRD: Carajas	1998	43,129	538	1,175	1,301	37,163	33,564
BOLIVIA							
Andina	1996	370	114	2,082	368	232	1,315
Oriental	1997	600		1,179	375	509	1,600
MEXICO							
Ferromex (Northwest)	1997	20,638		10,702	8,666	1,928	2,381
TFM (Northeast)	1997	17,256		5,176	3,694	3,334	4,671
Southeast (est)	1998	4,734		4,233	2,097	1,118	2,258
PERU							
Southeastern	1999	5	83	185		474	
Central	1999	209	49	509		507	
Southern	1999	269	110	915		414	
GUATEMALA (94 est)	1998	28	240	640	430	420	624
SUB-SAHARAN AFRICAN RAILWAYS							
Cote d'Ivoire/Burkina Faso	1995	537	93	1,155	1,731	545	364
Cameroun	1999	592	450	1,006	3,853	1,036	270
Malawi	2000	52	65	789	3,658	148	32
Gabon	1999	295	98	683	1,893	575	208
Congo (Brazzaville)	2001	339	421	510	4,989	1,490	152
Senegal/Mali	2002	752	346	1,548	4,935	709	222
Zambia	2001	1,025	241	1,273	8,544	995	148
Togo (mgt. contract)	1996	19	9	532	800	53	35
OTHER RAILWAYS							
Jordan	1999	675		293	1,219	2,304	554
Estonia	2000	3,910	309	1,020	7,700	4,136	548
Poland	2002+	55,460	26,187	22,000	205,000	3,711	398
Romania	2002+	15,927	12,304	10,882	102,317	2,594	276
New Zealand	1996	3,505	525	4,000	4,604	1,008	875
US: Conrail	1987	128,627		19,082	24,728	6,741	5,202
Canadian National (CN)	1995	154,057		21,390	20,504	7,202	7,514

* TU = T-km + P-km

Figure 3

Percent Change in Ton-Km Since Concessioning

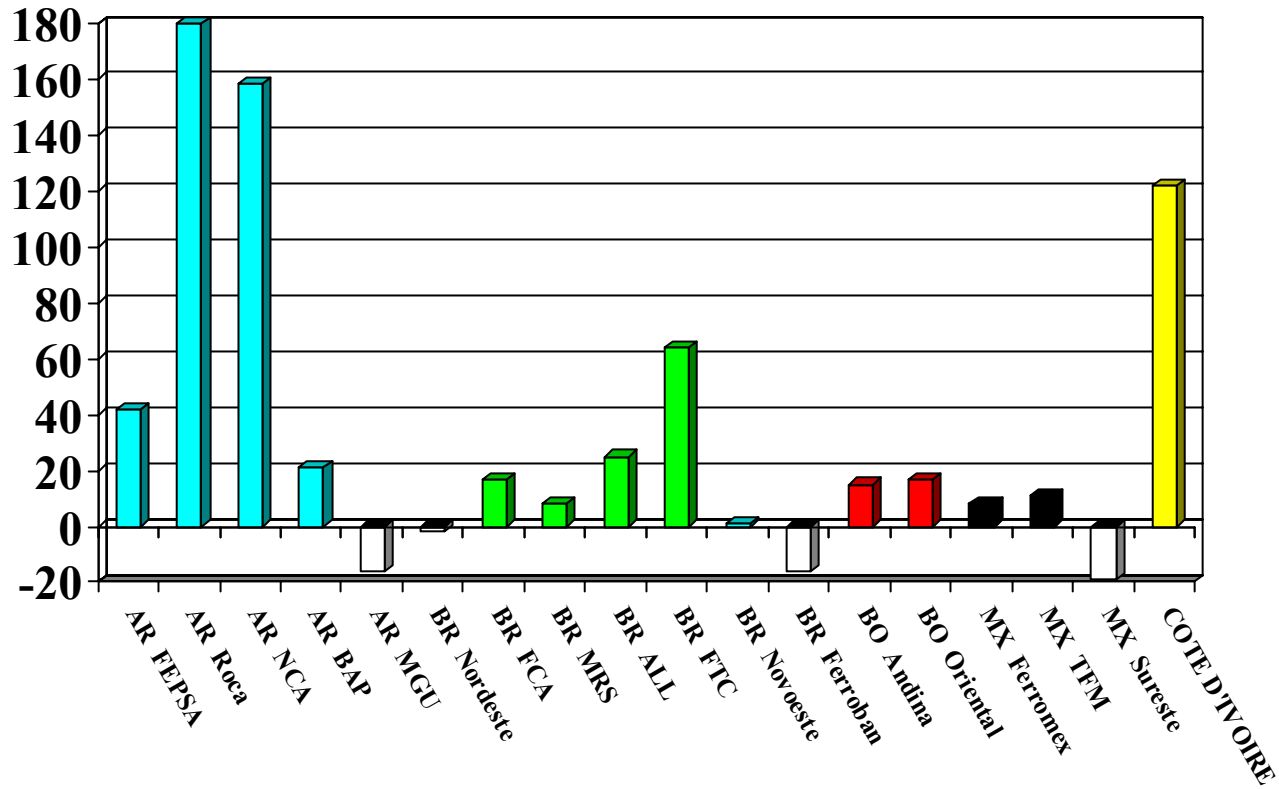


Figure 4

Revenue (US\$/Ton-Km) Before and After Concessioneing

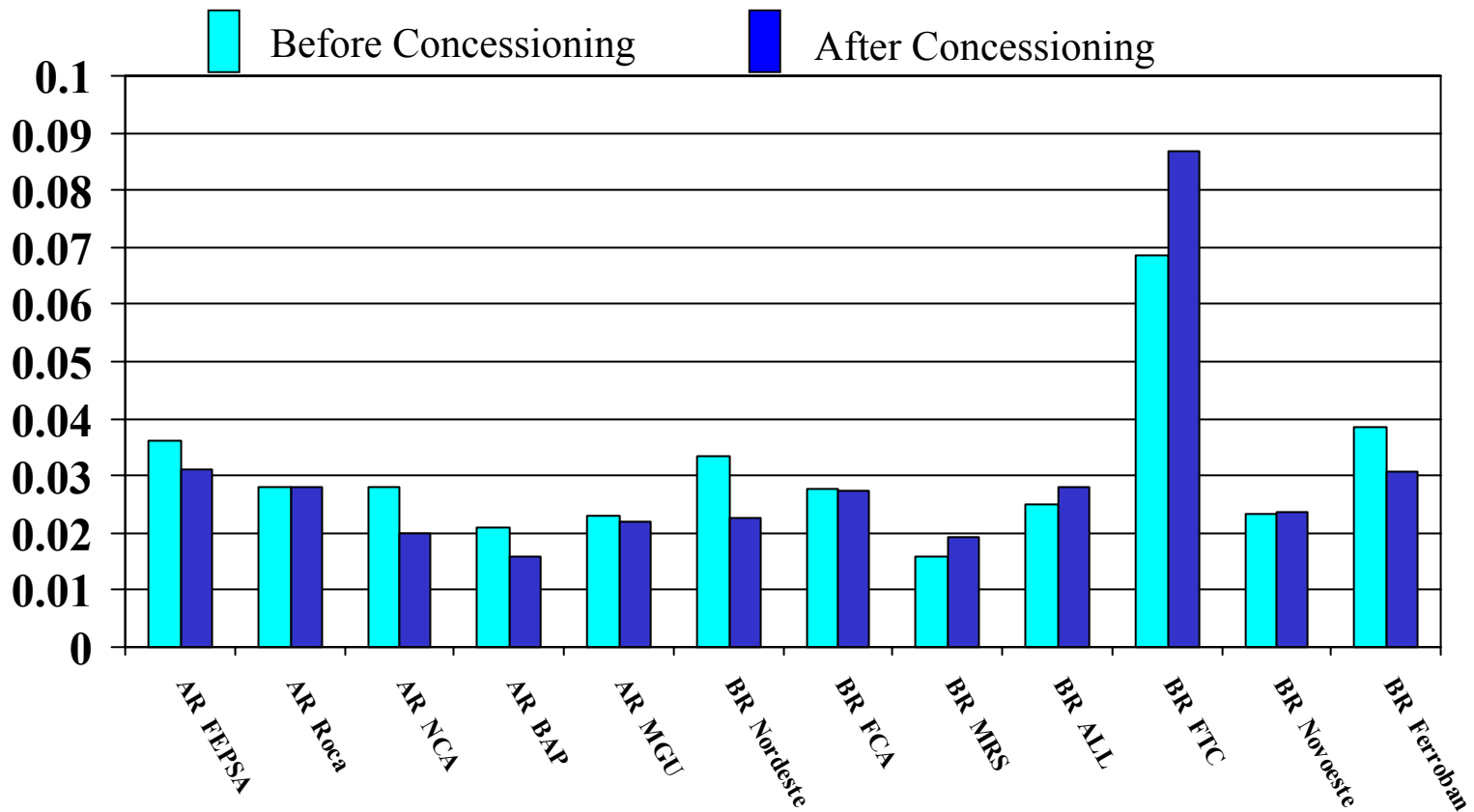


Figure 5

Labor Productivity Before and After Concessioneing

(000,000 TU/Employee)

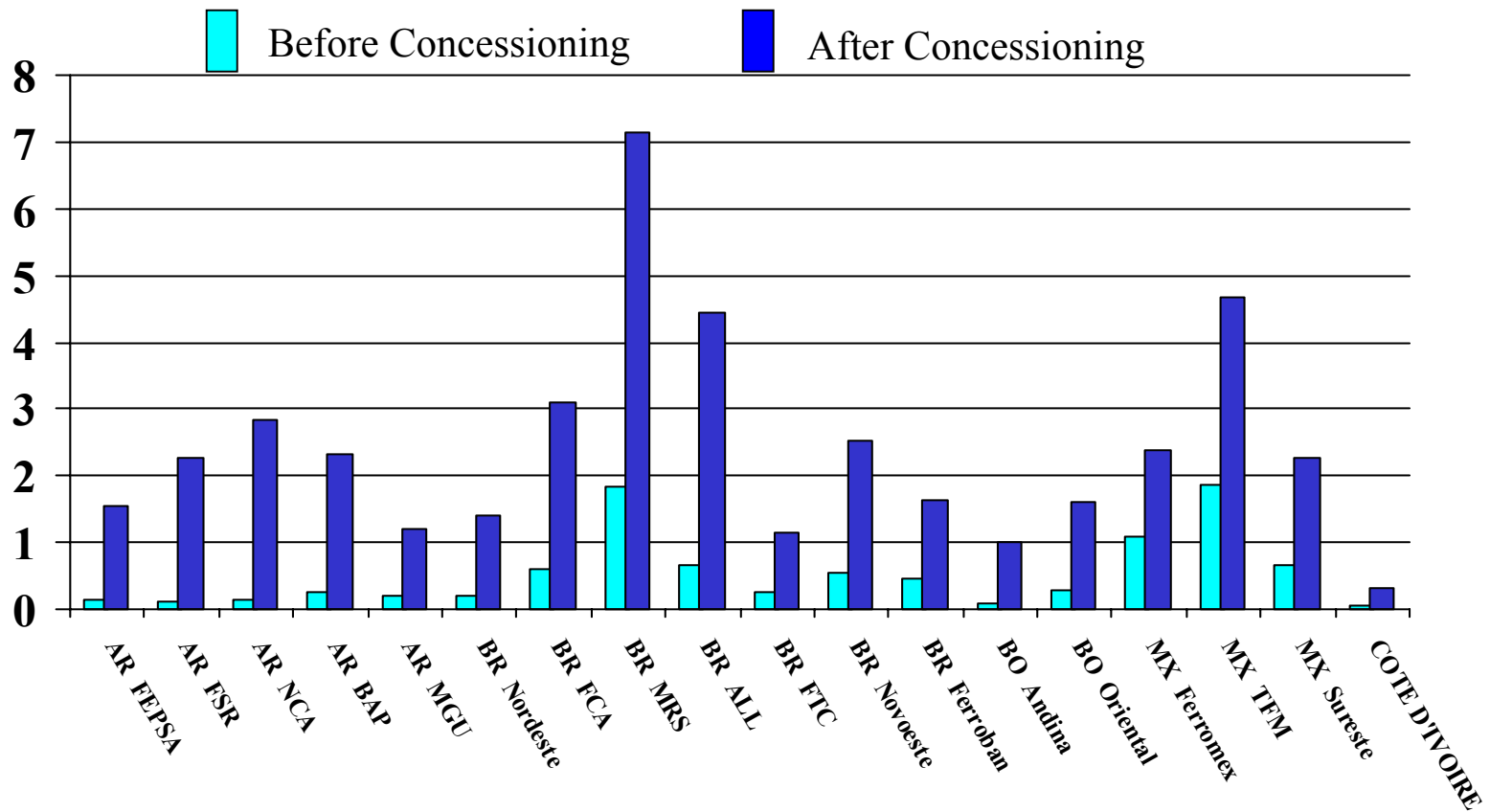


Figure 6

Traffic Mix and Fare Policies

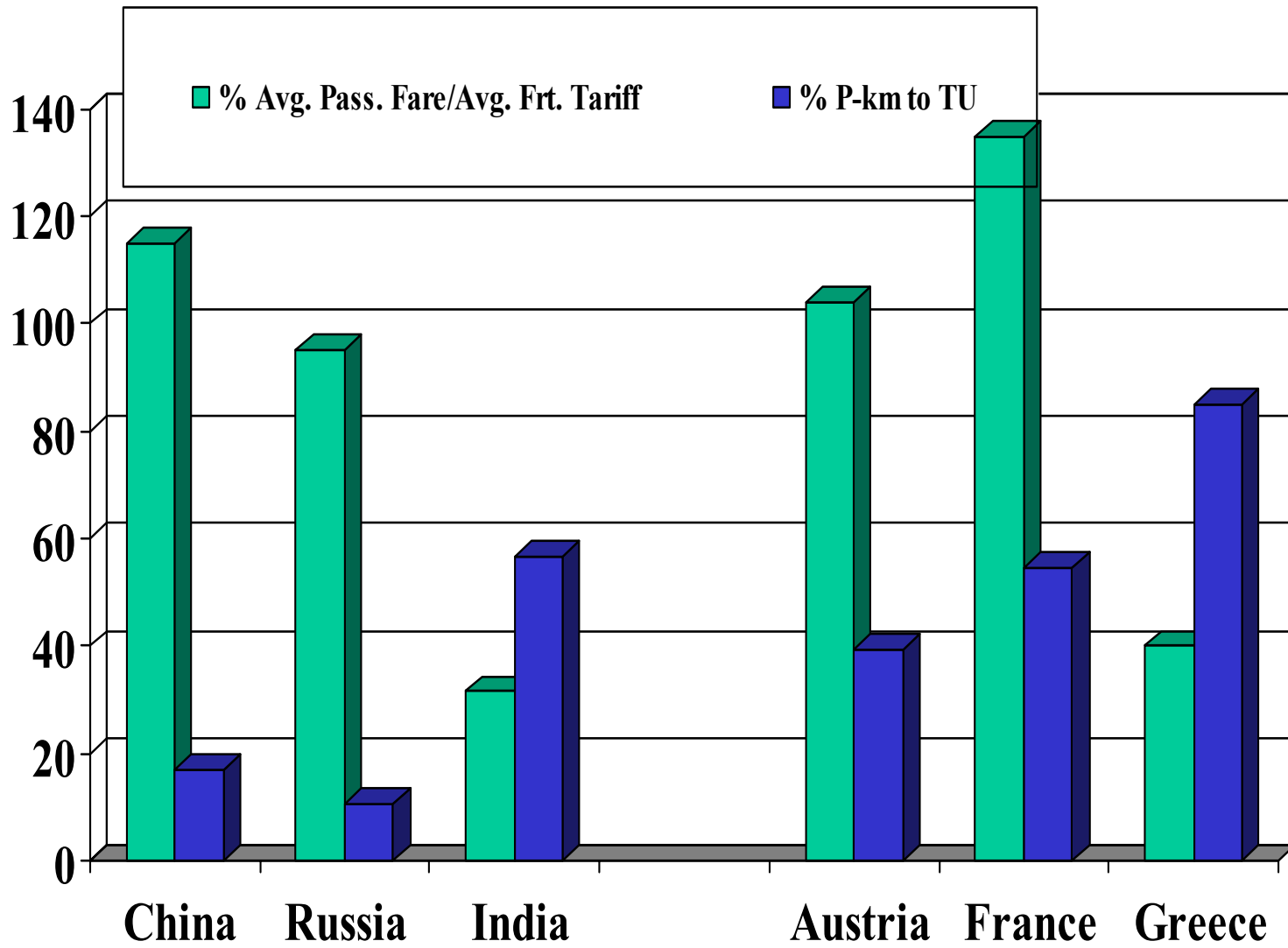


Figure 7

India's Three Gauges

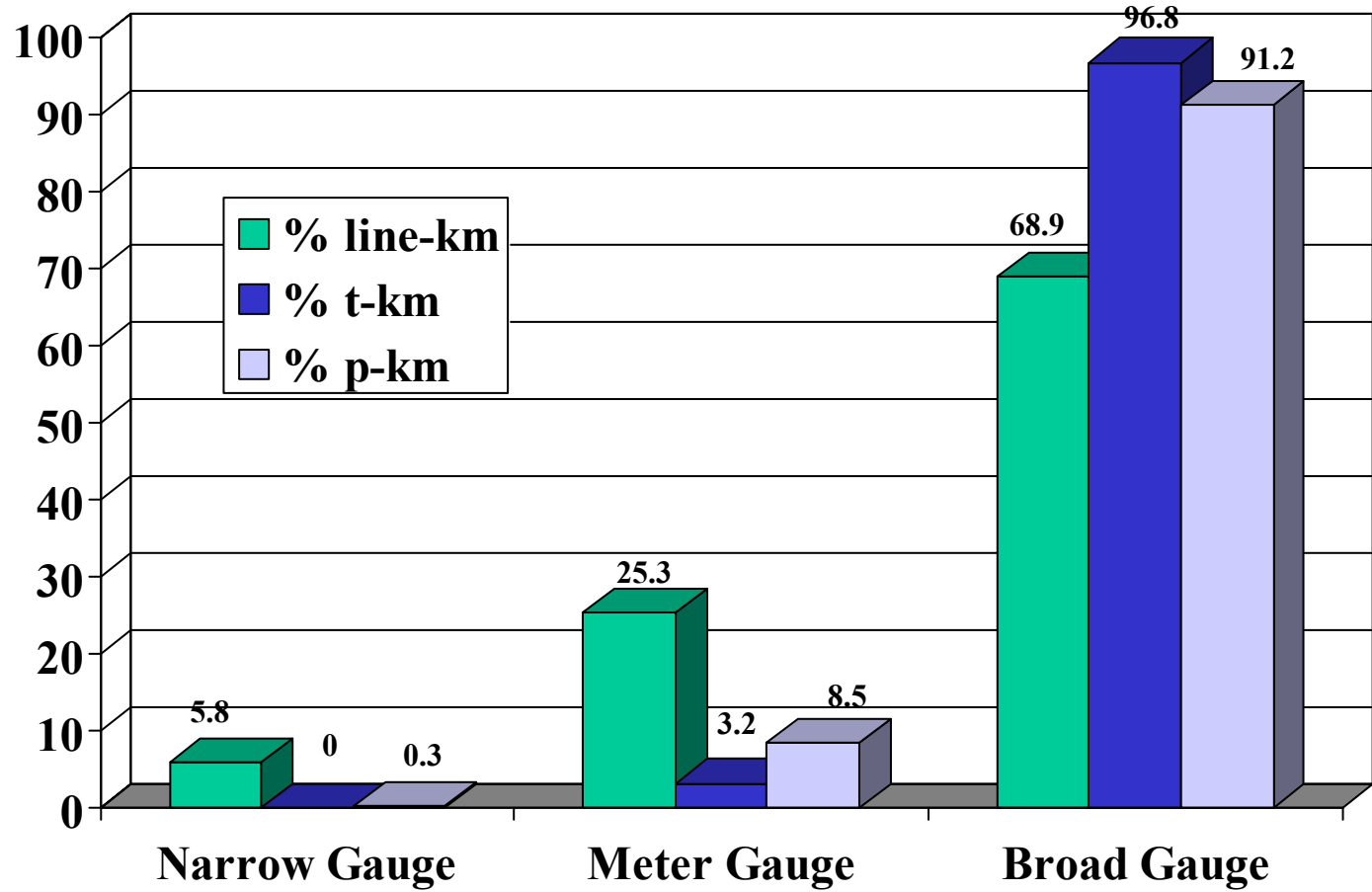
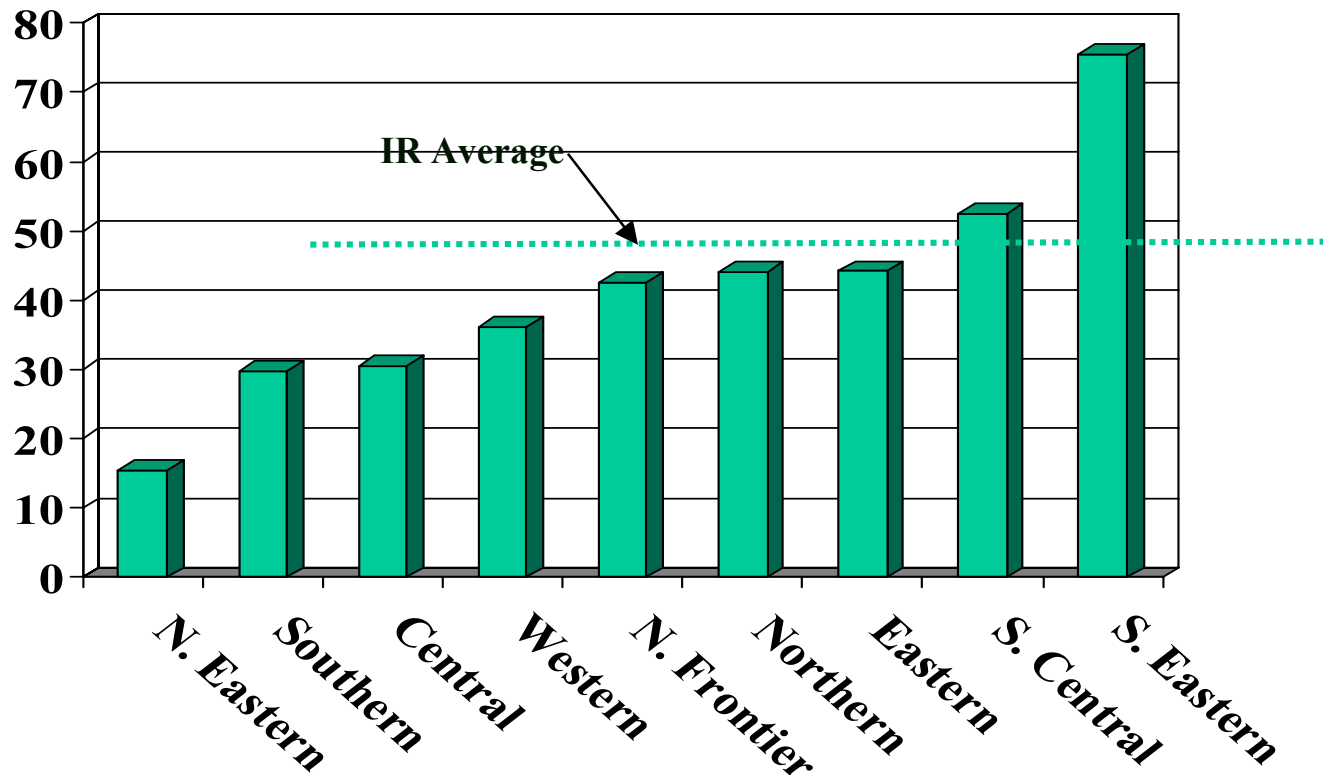
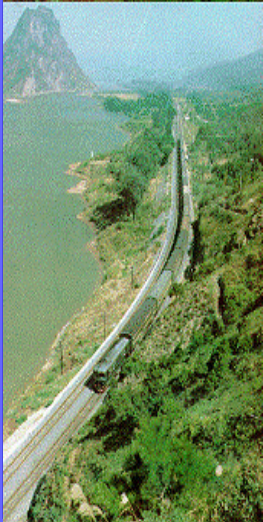


Figure 8

India's Nine Zonal Railways Are Different:

(Freight Ton-Km as Percent of Total Traffic)





DIRECTIONS OF RAILWAY REFORM

Louis S. Thompson
Railways Adviser
Karim-Jacques Budin
Lead Railway Specialist
The World Bank



The World Bank

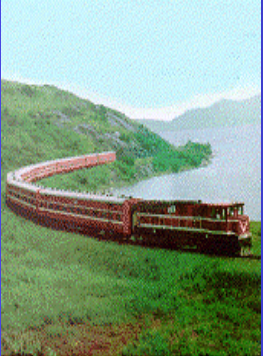
Reform is Vital

- ◆ Railway Deficits
- ◆ Regional Pressures
- ◆ Globalization
- ◆ Failure and collapse are possible
- ◆ > Paradigm Change: what do we need railways for?



Services, Structure and Competition

- ◆ Intercity, Suburban/Regional and Freight are different markets, need focused management
- ◆ Non-core out
- ◆ Organization options emerging:
 - Monolithic
 - Dominant operator, incremental user
 - Infrastructure separation
- ◆ Ownership – can be public, private, partnerships



Directions of Railway Change

Private Involvement

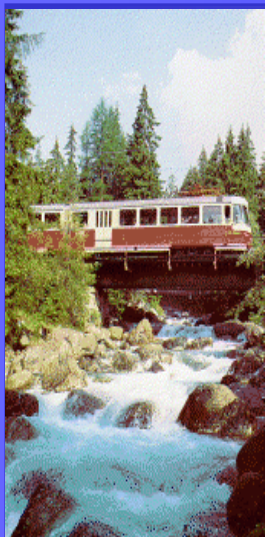
Structural Change

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Integral	China, Russia and India (ministries), MAV, SRT, MZ, others, (SOE's)	Argentina (13), Brazil (9), Mexico (5), Peru (3), Guatemala, Bolivia (2), Panama, Cote d'Ivoire/Burkina Faso, Cameroon, Congo (Brazzaville), Malawi, Madagascar, Jordan	New Zealand, Ferronor (Chile), CVRD (Brazil), A&B (Chile)
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Mixtures and partnerships are possible!



The World Bank



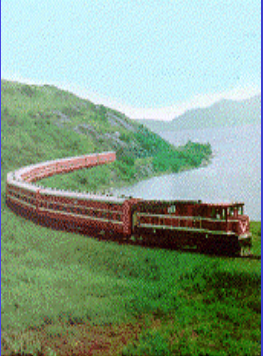
Competition Objectives

◆ IN the Market

- Parallel tracks
- Trackage rights
- Competitive access (EU or Canada)

◆ FOR the Market

- Exclusive concessions, positive or negative.

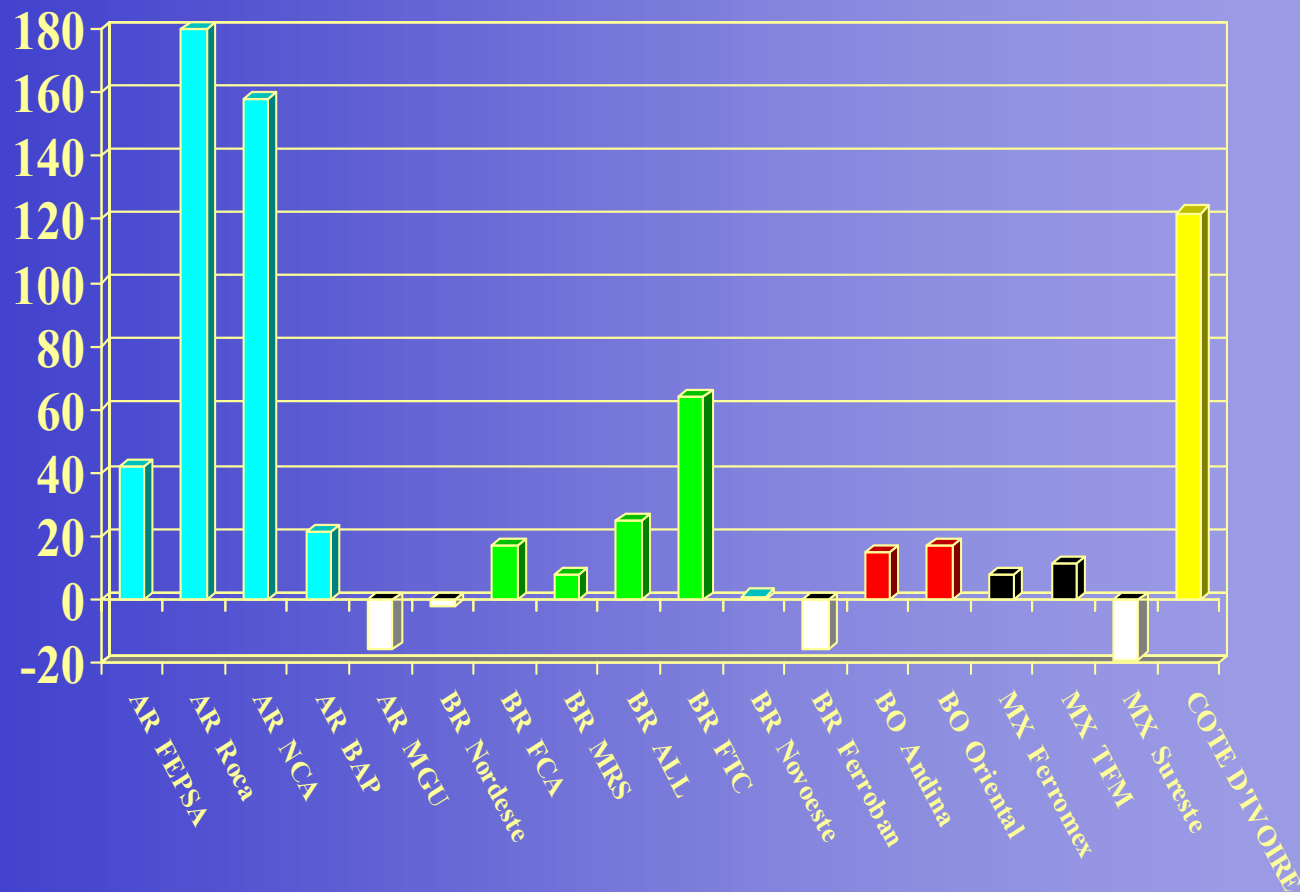


VERY WIDE EXPERIENCE WITH CHANGE

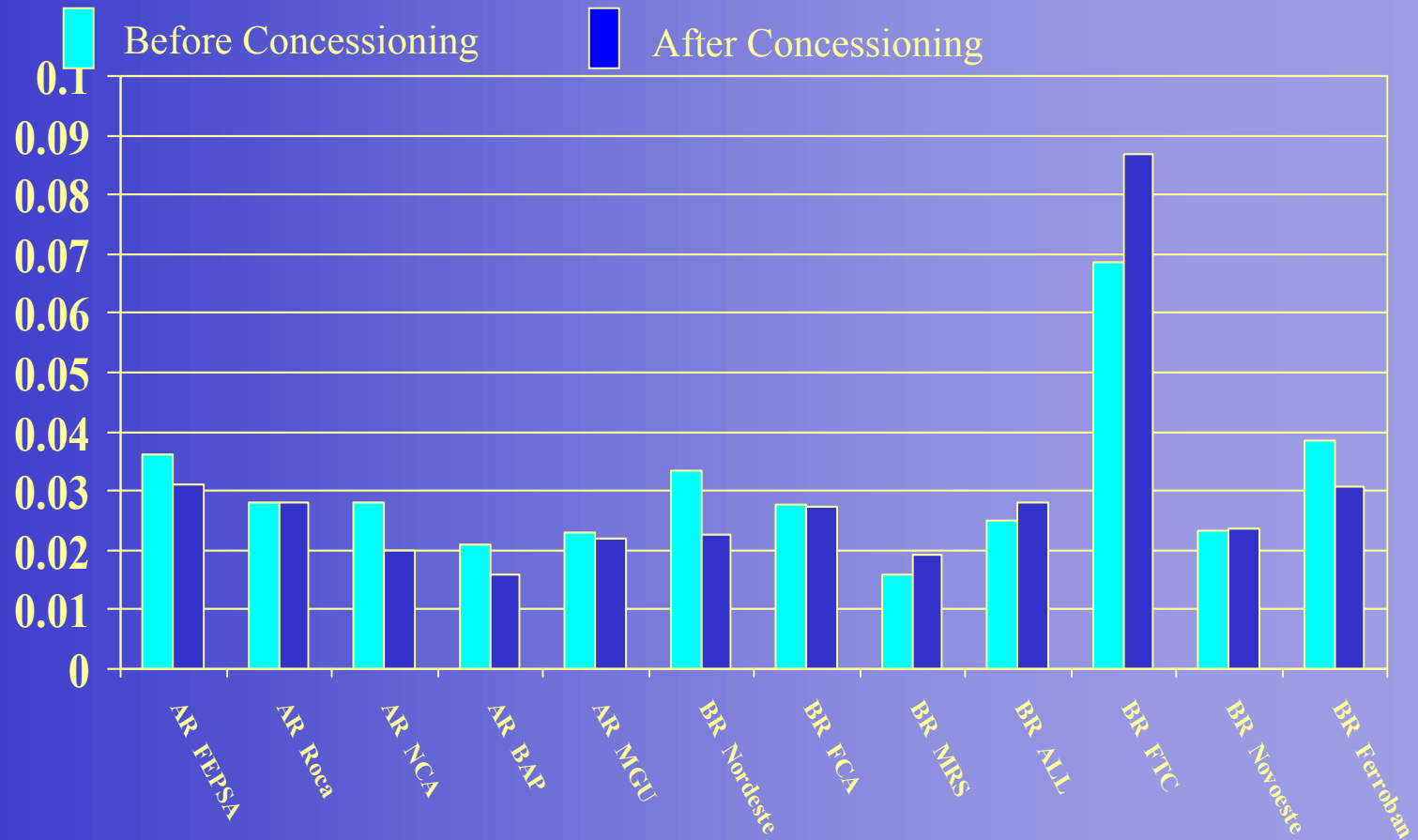
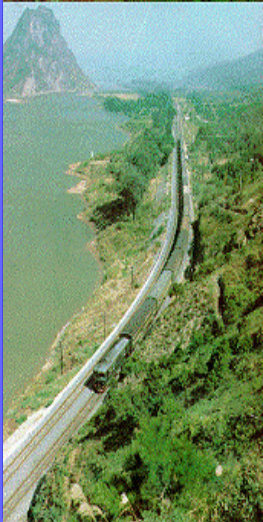
- ◆ Latin America
- ◆ Africa
- ◆ EU
- ◆ CEE countries
- ◆ Japan
- ◆ India, China, Russia
- ◆ Experience has been strongly (with exceptions) positive



Percent Change in Ton-Km Since Concessioning



Revenue (US\$/Ton-Km) Before and After Concessioning

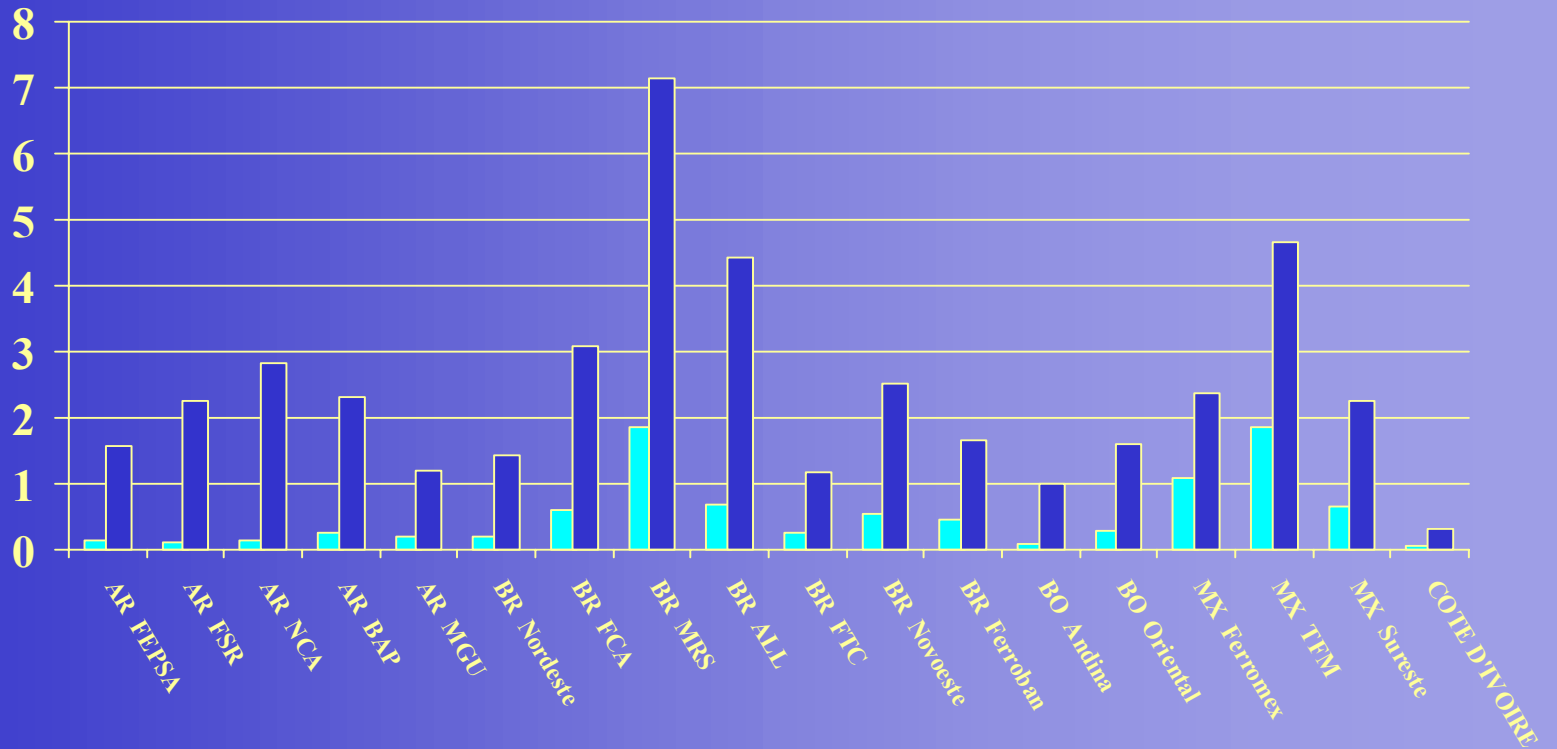




Labor Productivity Before and After Concessioneing

(000,000 TU/Employee)

■ Before Concessioneing
 ■ After Concessioneing



LESSONS

- ◆ Many approaches “work” – so don’t do nothing
- ◆ Get objectives and expectations right
- ◆ Mixed approaches can be best – avoid dogma
- ◆ Get agreements right, but prepare for renegotiation
- ◆ Resolving social issues – especially labor – is critical to success

